Book started on 18 November 2011
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Steven Mark TPU, Tom Bearden MEG, Flynn SSG, Annis&Eberly generator, Sweet VTA (SQM), Rodin coil (4th Edition) 354 pages 18 Mb updated 23 March 2012
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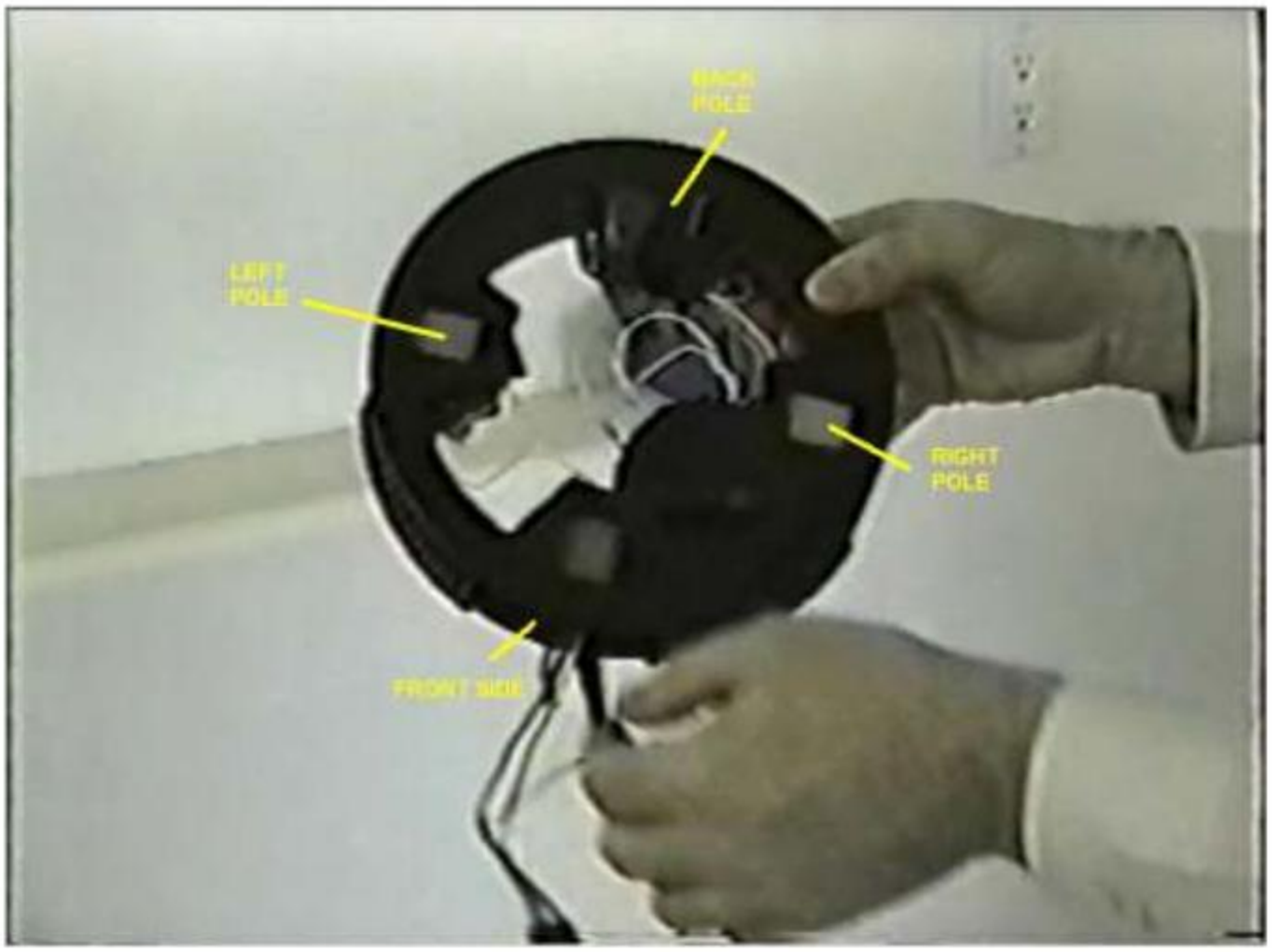
Mandatory study, prior of reading this material:
-Steven Mark Toroidal Power Unit(TPU) clip (one of many prototypes): *http://www.youtube.com/watch?v=pvLuQOKOVXQ*
-System of Electrical Distribution Tesla Patent 381,970: *http://www.google.com/patents/US381970?printsec=abstract#v=onepage&q&f=false*
-Tom Bearden Motionless Electromagnetic Generator(MEG) patent file: *http://www.rexresearch.com/meg/meg.htm*
-Marko Rodin basic introduction to elementary Vortex Mathematics and standard configuration Rodin coil clips: *http://www.youtube.com/watch?v=K93dL65Q724*
-Floyd Sparky Sweet VTA-SQM clip (hard to find) by Tom Bearden (torrent file) *http://torrentz.eu/search?f=floyd+sweet+secrets*
Good to know study
-Theodore Annis/Patrick Eberly single magnetic flux electric generator patent file:
http://www.google.com/patents?id=FS6gAAAAEBAJ&printsec=abstract&zoom=4&source=gbs_overview_r&cad=0#v=onepage&q&f=false
Optional study:
-Complete series of clips of Steven Mark TPU:
http://video.google.com/videoplay?docid=-1944827568401901581
http://video.google.com/videoplay?docid=167210479374903373
http://video.google.com/videoplay?docid=-8435800732540412467
http://video.google.com/videoplay?docid=333661567309752927
http://video.google.com/videoplay?docid=-5483558279656482347
-Donald L. Smith lecture at Tesla Symposium 1996 clips: *http://www.youtube.com/watch?v=6mV89RvaBYk*
-Charles Flynn solid state generator clip: *http://www.youtube.com/watch?v=9zh_C3yvJH0*

A DETAIL STUDY OF THE STEVEN MARK TPU

This study will bring us closer to understanding the toroid of Steven Mark, but not all the way to total understanding. I have discovered real construction behind the TPU from *hours and hours of frame by frame carefully and methodically watching SM videos*. First, I have come to believe that the various TPU-like devices presented by Steven in his videos are very different from each other. That is why there are so many different configurations, building plans, variants, opinions, topologies and implementations of Steven's TPU. The term "TPU" meaning Toroidal Power Unit is inappropriate, because the ***principle of operation has nothing to do with the Toroidal shape*** (with an open mind attitude, it can be for example, a cube).
Steven Mark has chosen just to implement the principle inside Toroidal cores in order to capture most of the magnetic flux. The simplest and most "transparent" from Steven's devices is this one (the one that can be studied in detail):



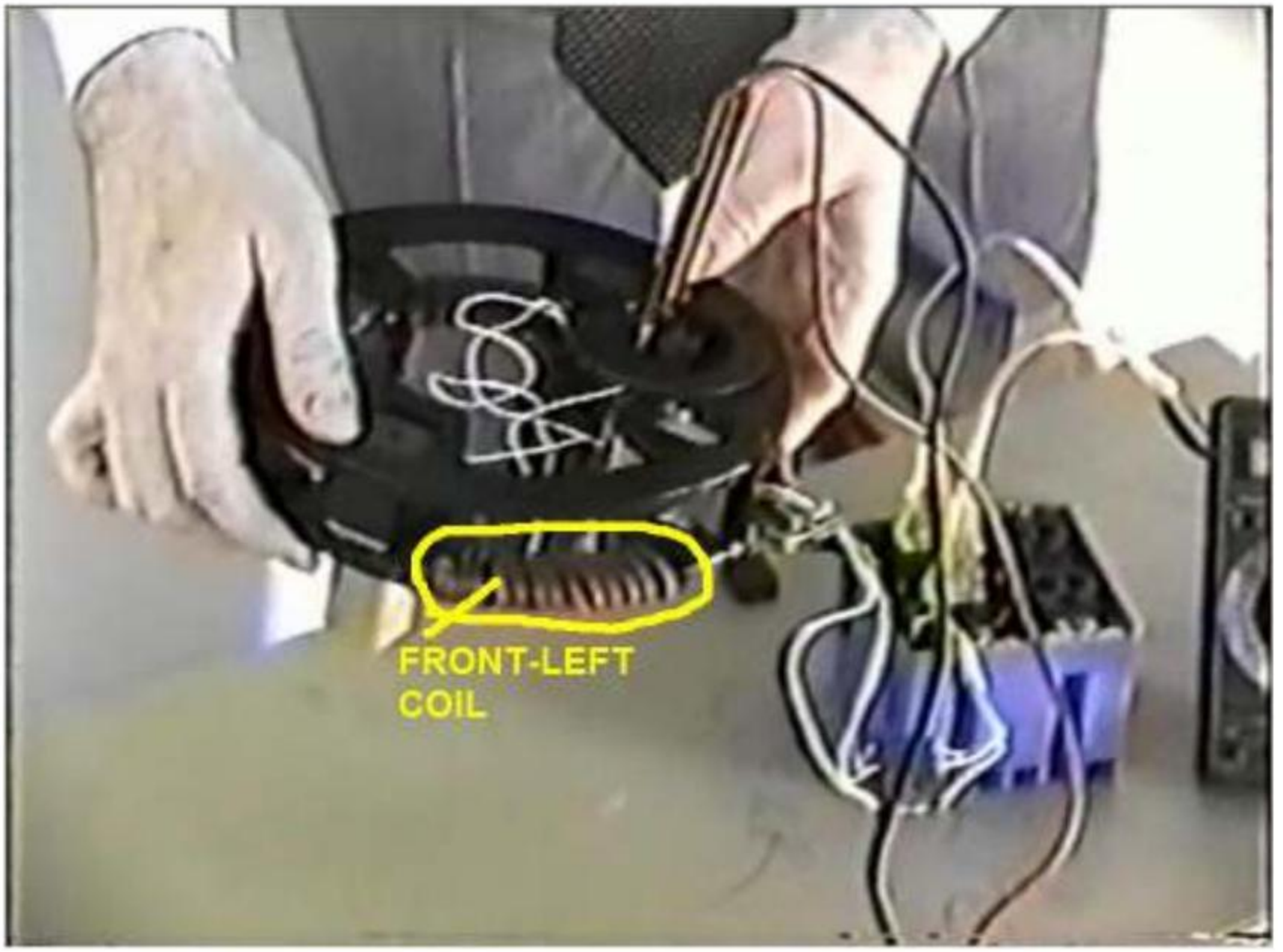
So let's decide on a convention for naming the parts which we see in the device:



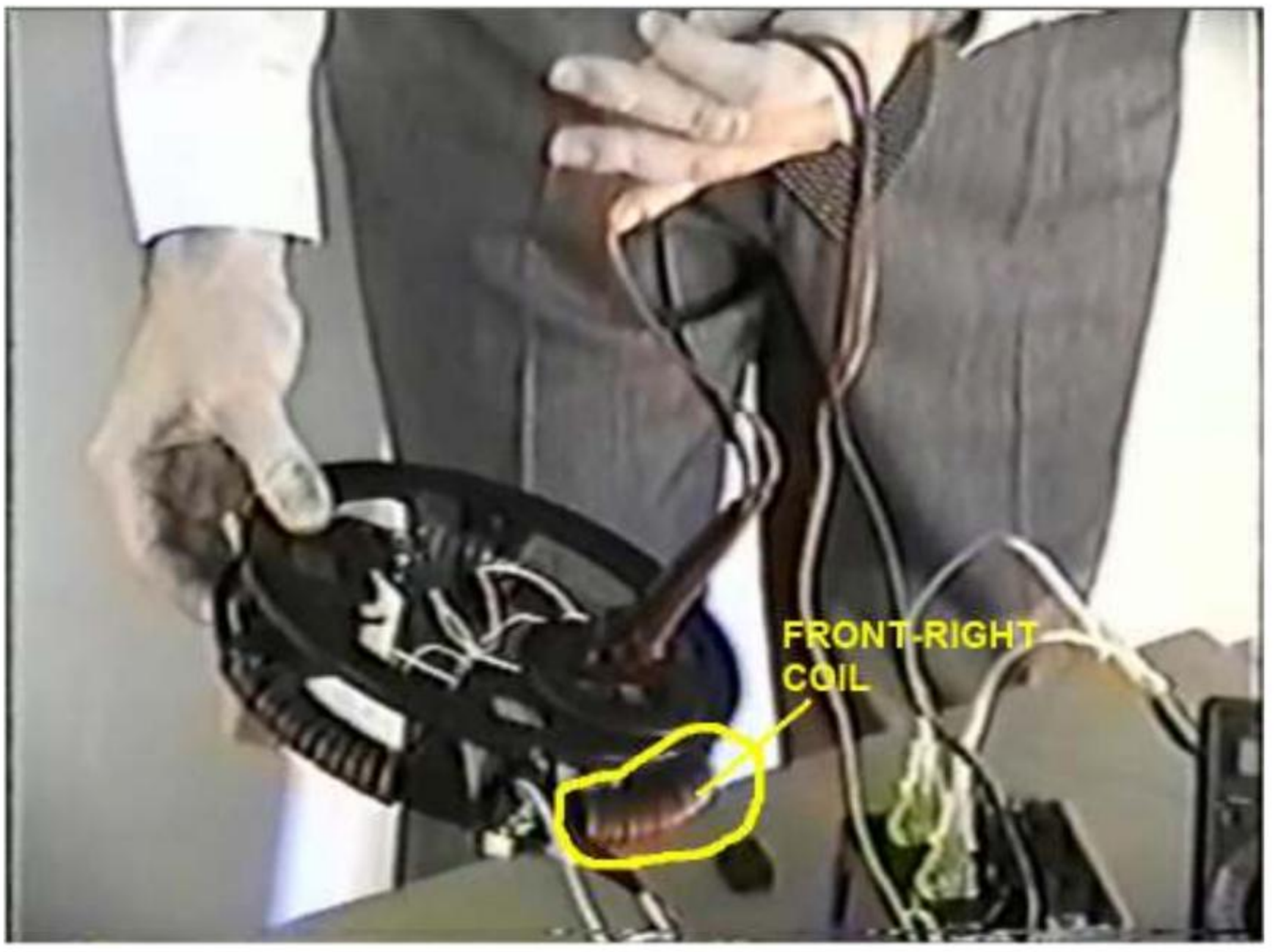
Many people say that Steven’s TPU has 3 coils inside it…hmm…let's take a closer look. We can first note that there appears to be 4 segments, and therefore, there must be 4 coils.



1. Pretty obvious this one.



2. Same here



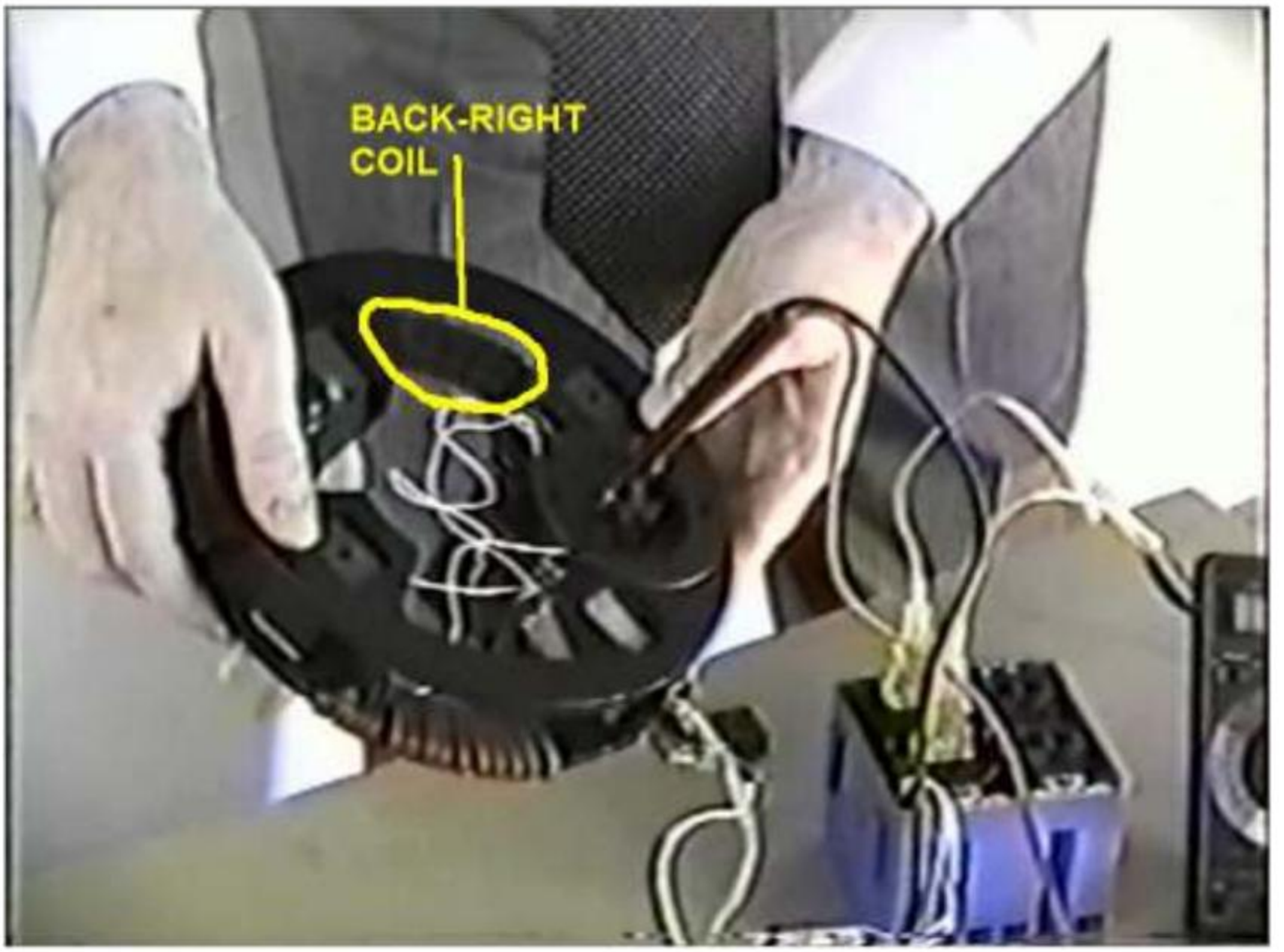
3. This one is obvious too



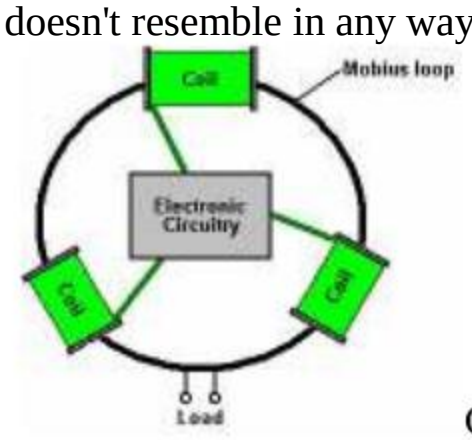
4. The forth coil is a little difficult to see



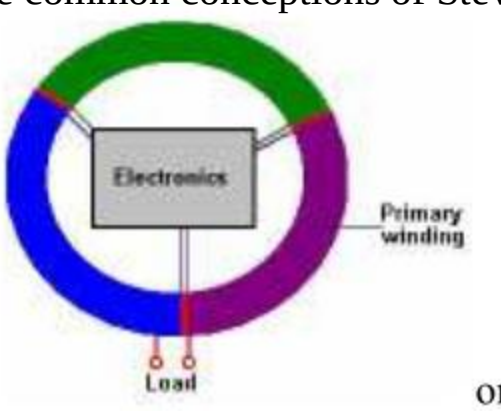
Yep. It's there all right. Here is another look:



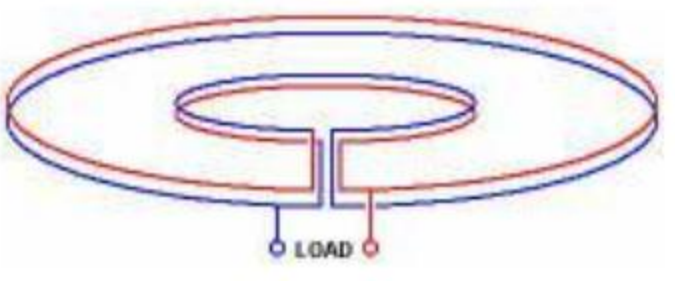
OK. Let's summarize what we have seen so far. We seem to have some kind of a transformer with 4 coil windings and this one doesn't resemble in any way, the common conceptions of Steven’s TPU construction:



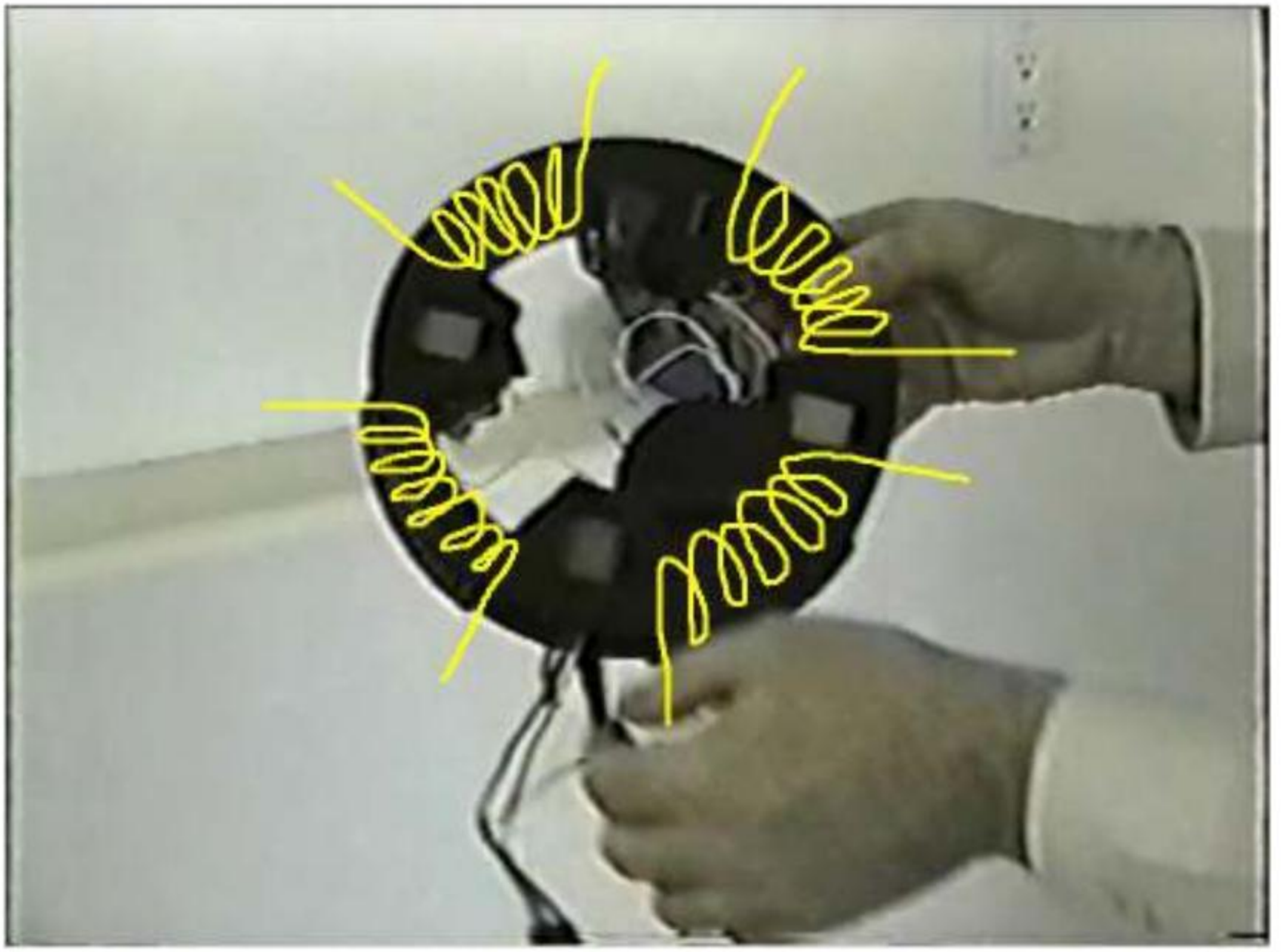
Or:



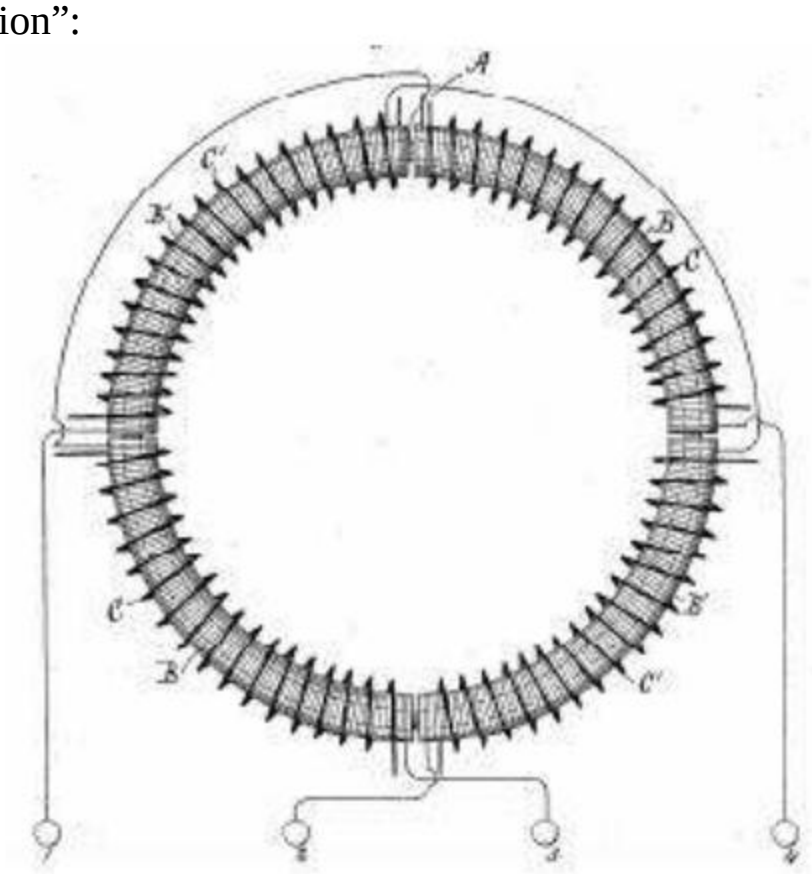
or:



These are nowhere near the configuration which we are studying here. These configurations seem absurd to me! Where the heck do we ever see this type of arrangement in Steven Mark presentations? I haven't seen this anywhere! But hey, maybe the guys who say these things know better. I ONLY KNOW WHAT I SEE. THE REST… IS SPECULATION. Although in some cases educated guesses are acceptable.
Ok. What we know so far:

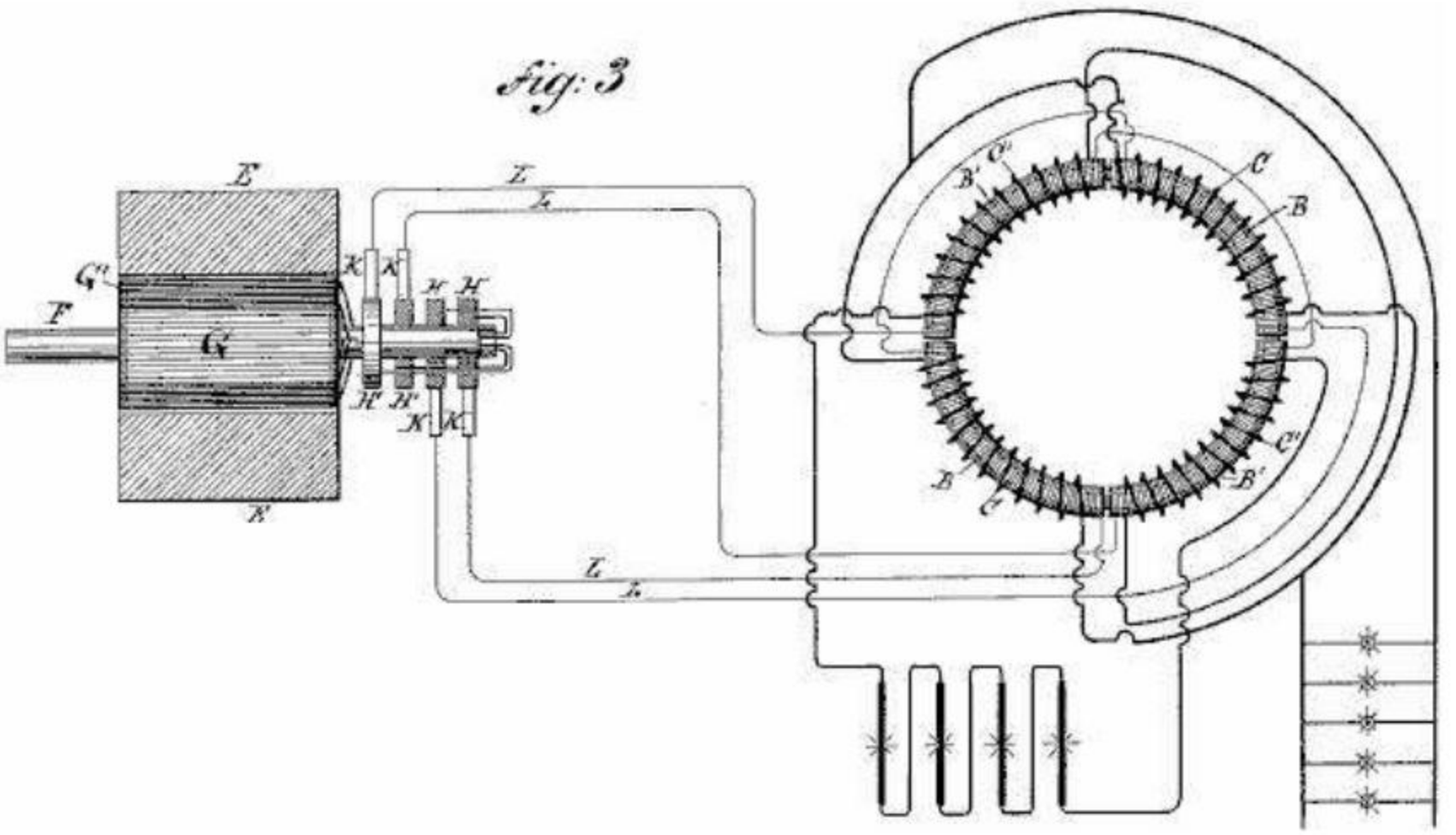


Some say that this "4 coil Steven Mark Toroidal-like transformer" is similar to Tesla Patent 381,970 “System of Electrical Distribution”:

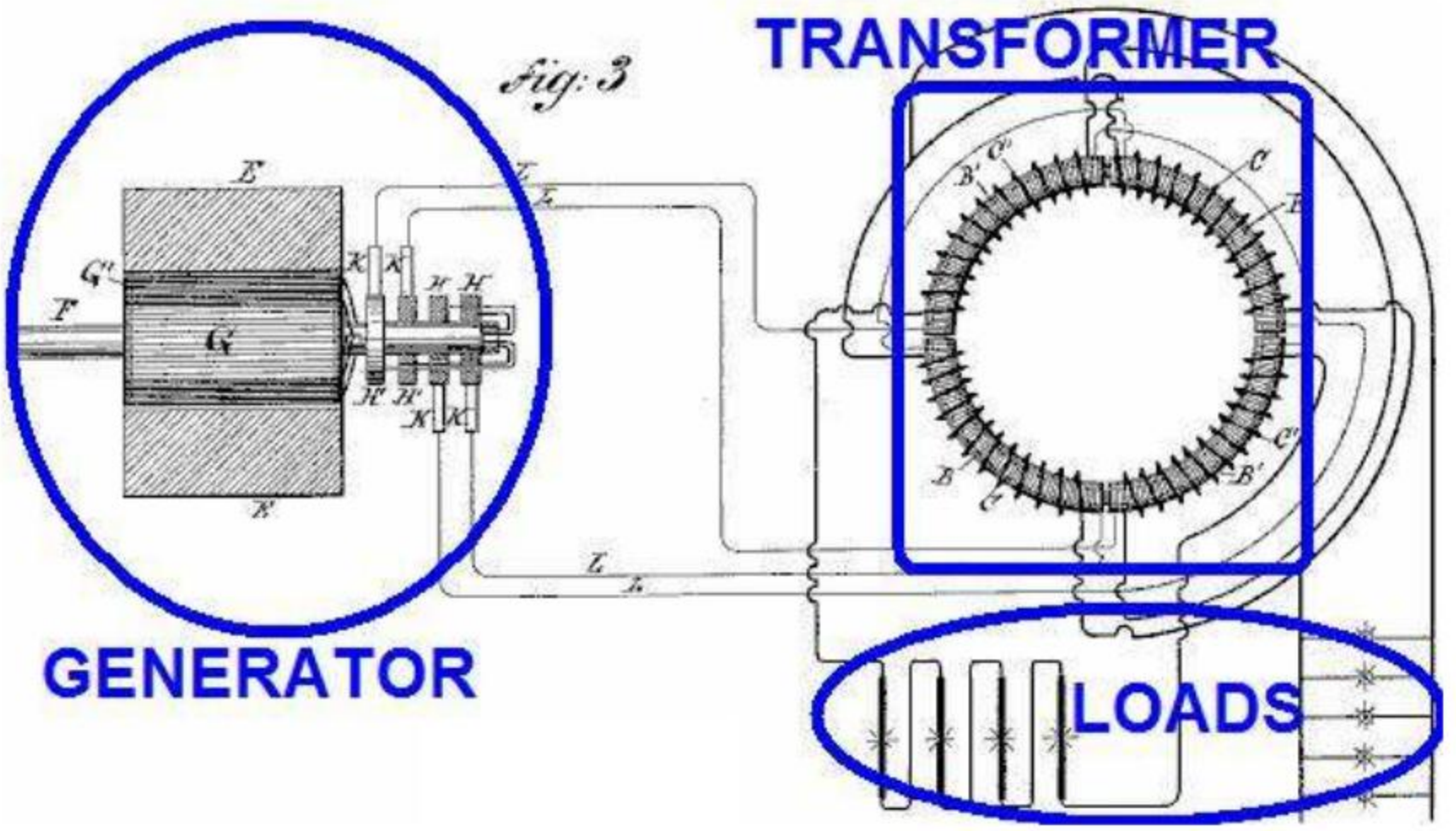




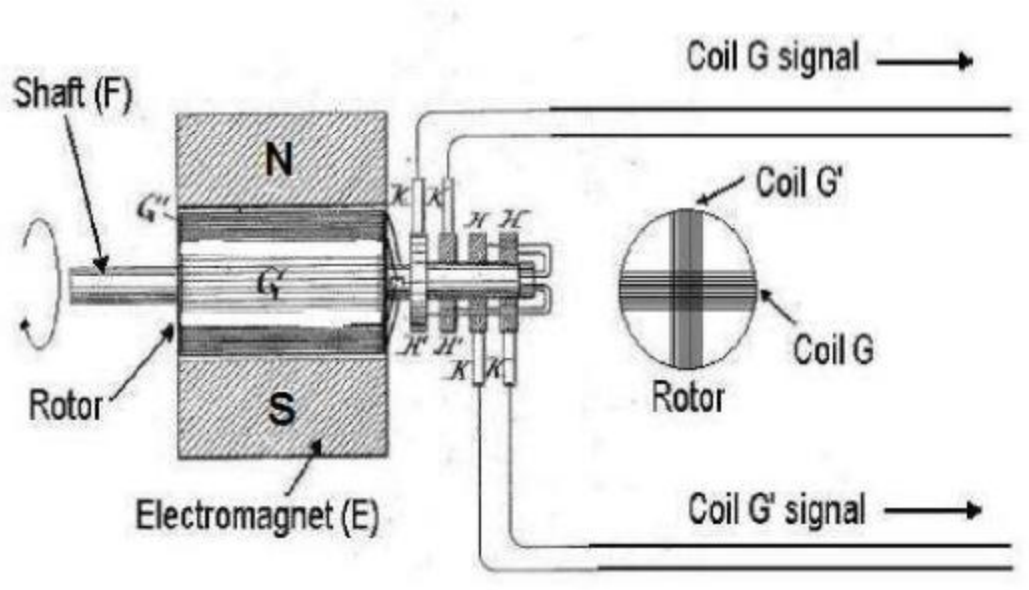
Hmm…Interesting…Looks similar. Let's take a closer look:

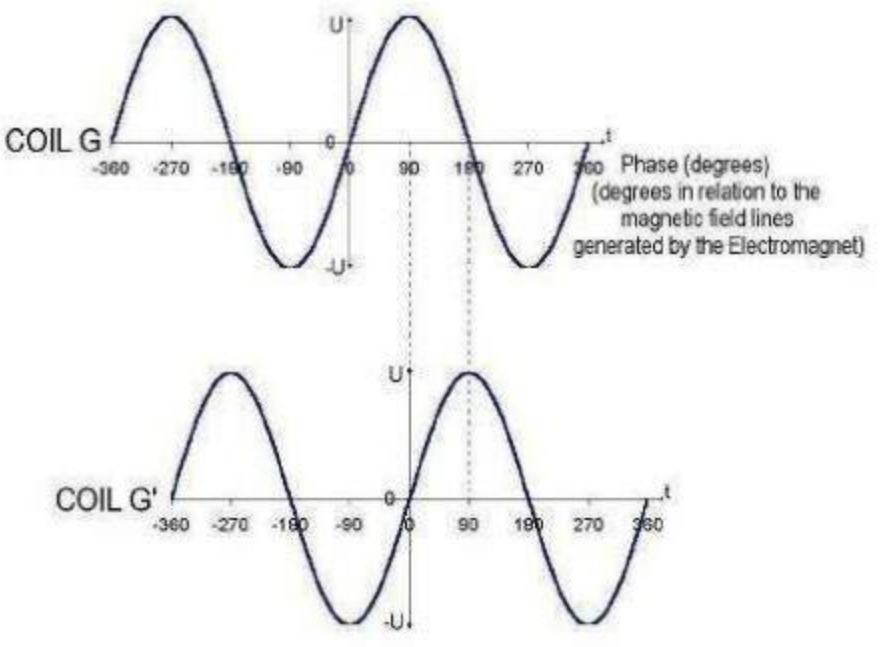


Ok, anyone who takes a look at this, might get confused by all these wires. Let's analyze what we have here, because it will help us a lot in figuring out how Steven's TPU works:



How does this work? Let us look at the generator:

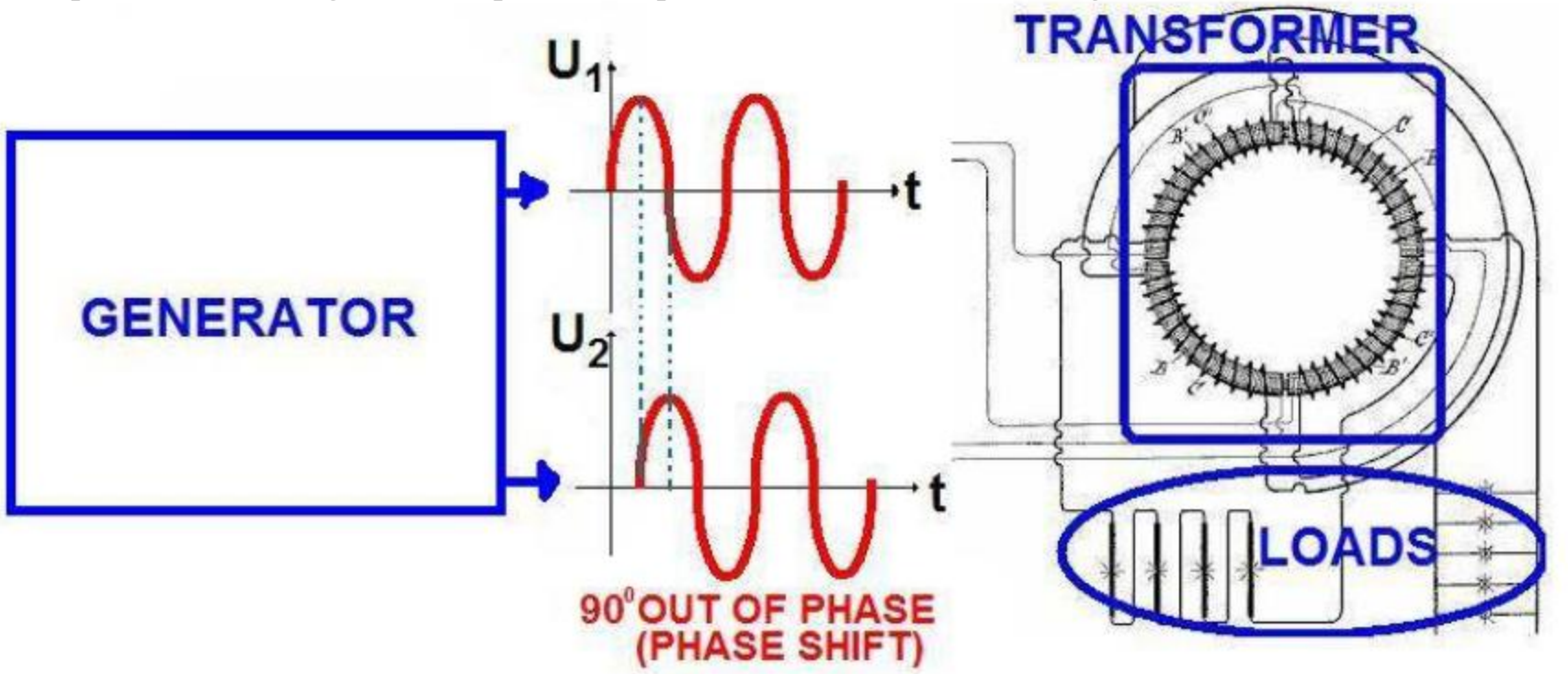




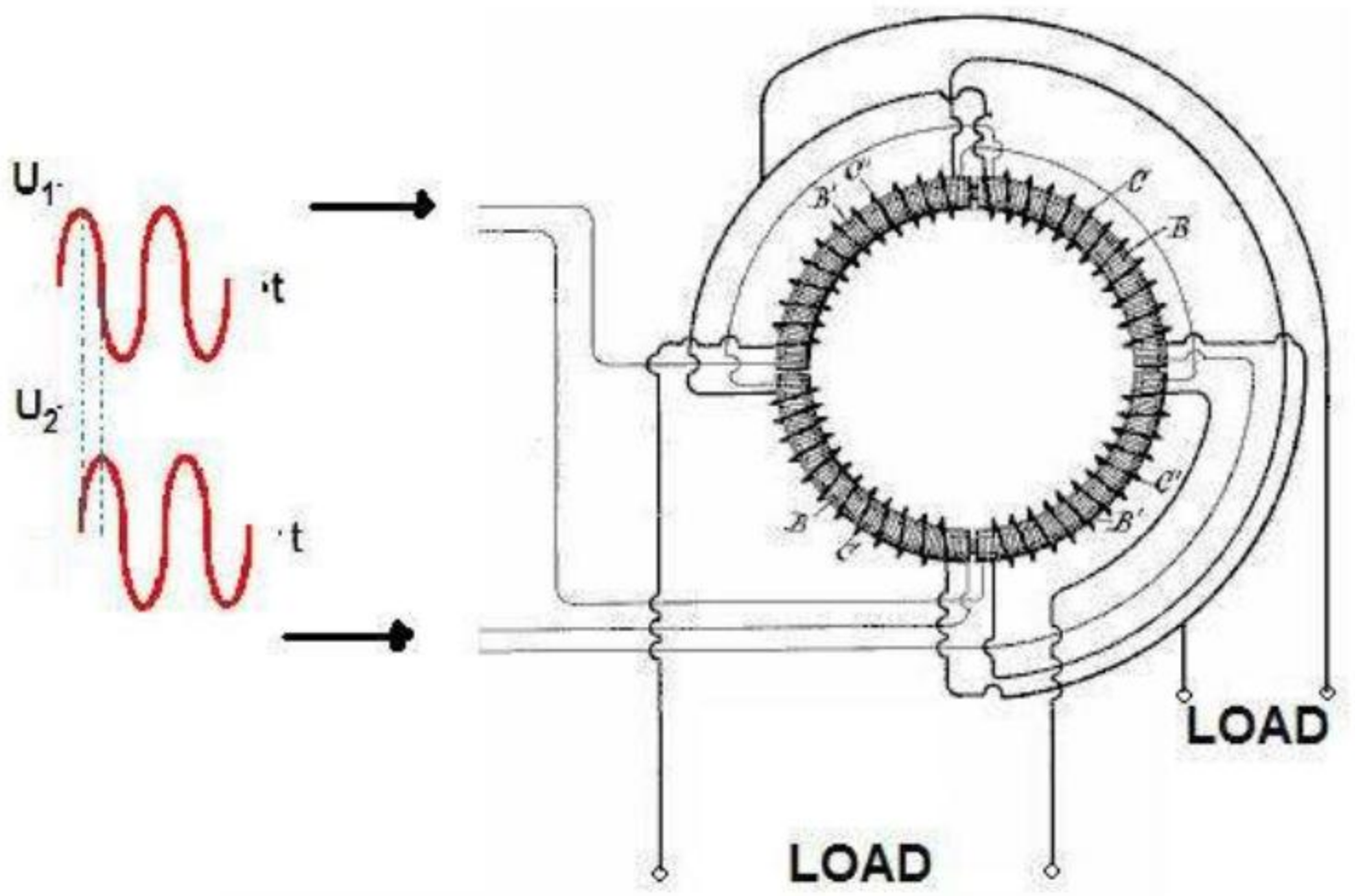
Let's quote Tesla:

"...it will be observed that at a given point of time the coil G is in its neutral position and is generating little or no current, while the other coil, G', is in a position where it exerts its maximum effect" (US patent 381970 page 2, line 95)

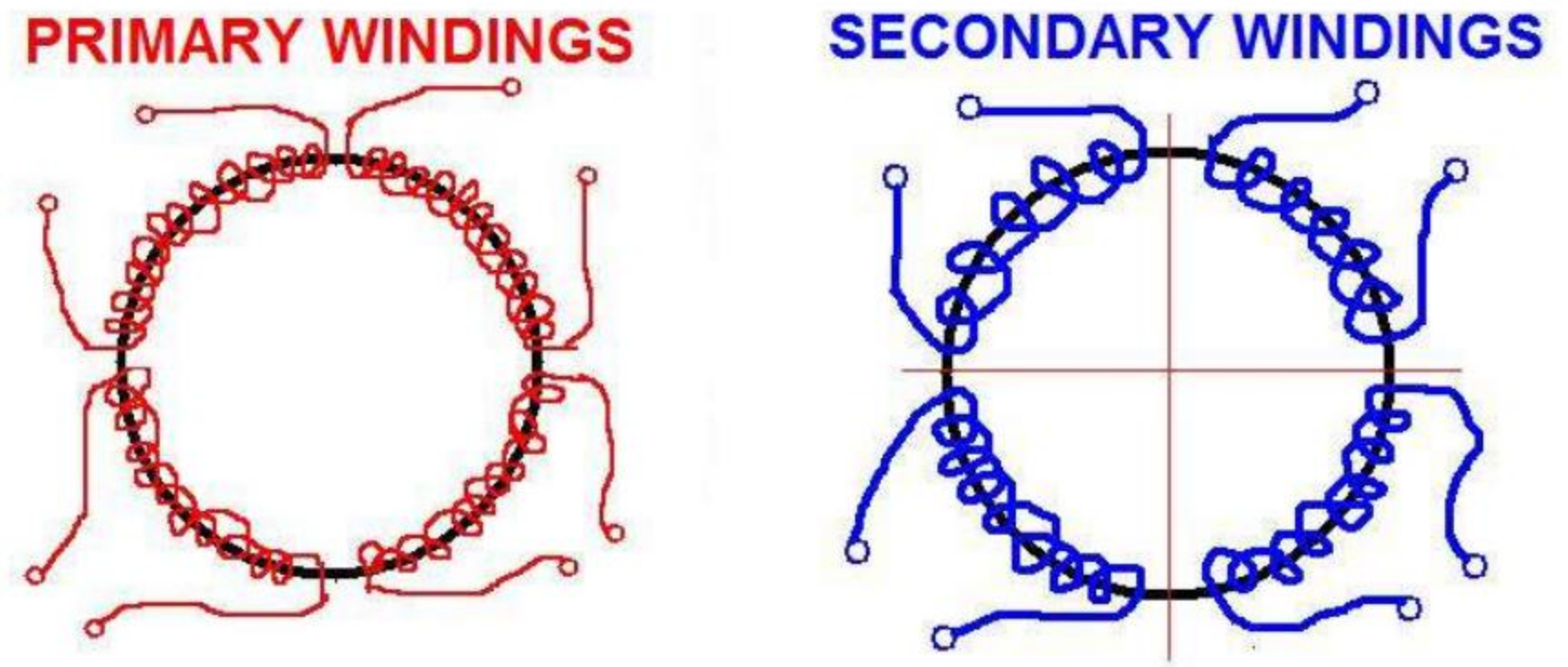
So this generator has 2 coils perpendicular one to the other inside a simple N-S magnetic field (2 poles). The commutator has 4 contacts (from the 2 starts and 2 ends of the 2 coils) and there are 4 wires coming out of this generator. Simple stuff. As the generator spins, it outputs the waveforms in the right



Just a two-phase electric generator…typical of Tesla…Nothing fancy here. Ok, so two signals 90° out of phase from each other, going into the transformer. One signal is a sine and the other is a cosine. So what happens then?
Let's look at the transformer:



Let’s simplify a little bit and take this Tesla transformer apart:

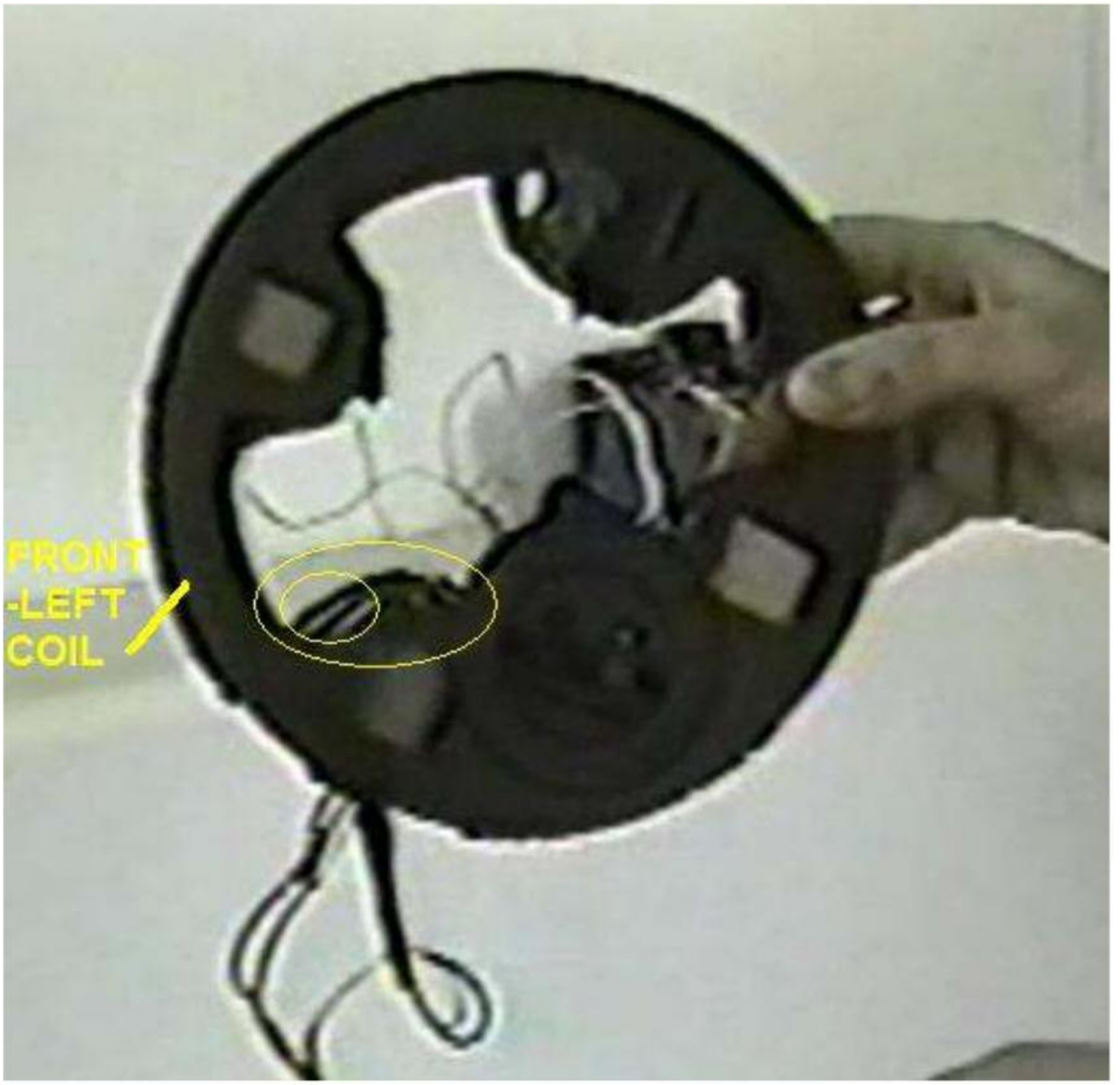


This is the basic configuration...so we have 8 coils here, and not 4, like in the TPU... This is important! This is the easiest place to start to understand how the TPU works! Ok, let's continue with harder stuff. So, the TPU has 4 windings, or does it have 8 ???

Let's take a closer look:



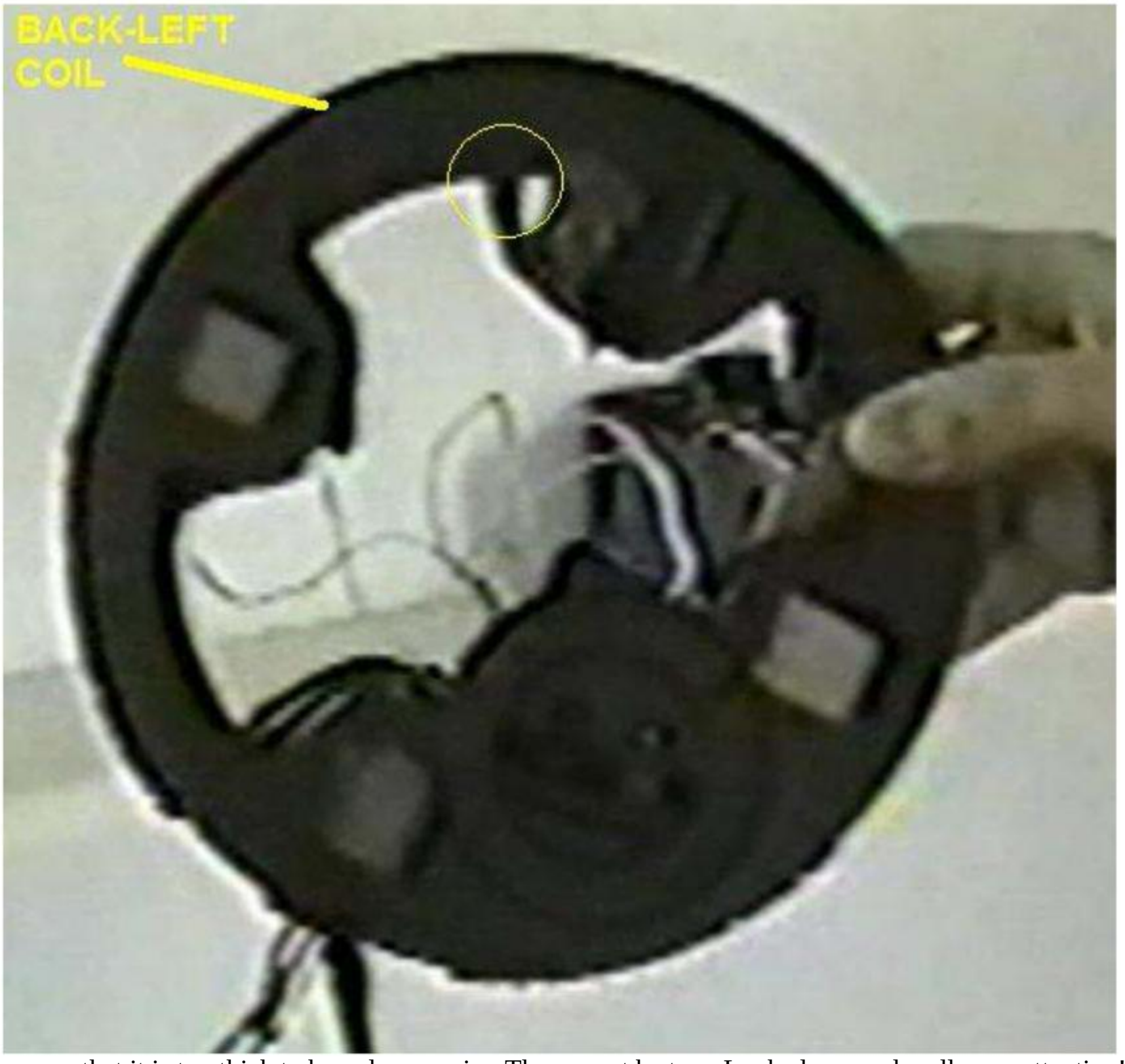
Hmm…not very clear… so let's look further:



Wow…what do we have there? It looks like 2 big thick heavy wires…could it be? Could it be a … bi-filar coil?

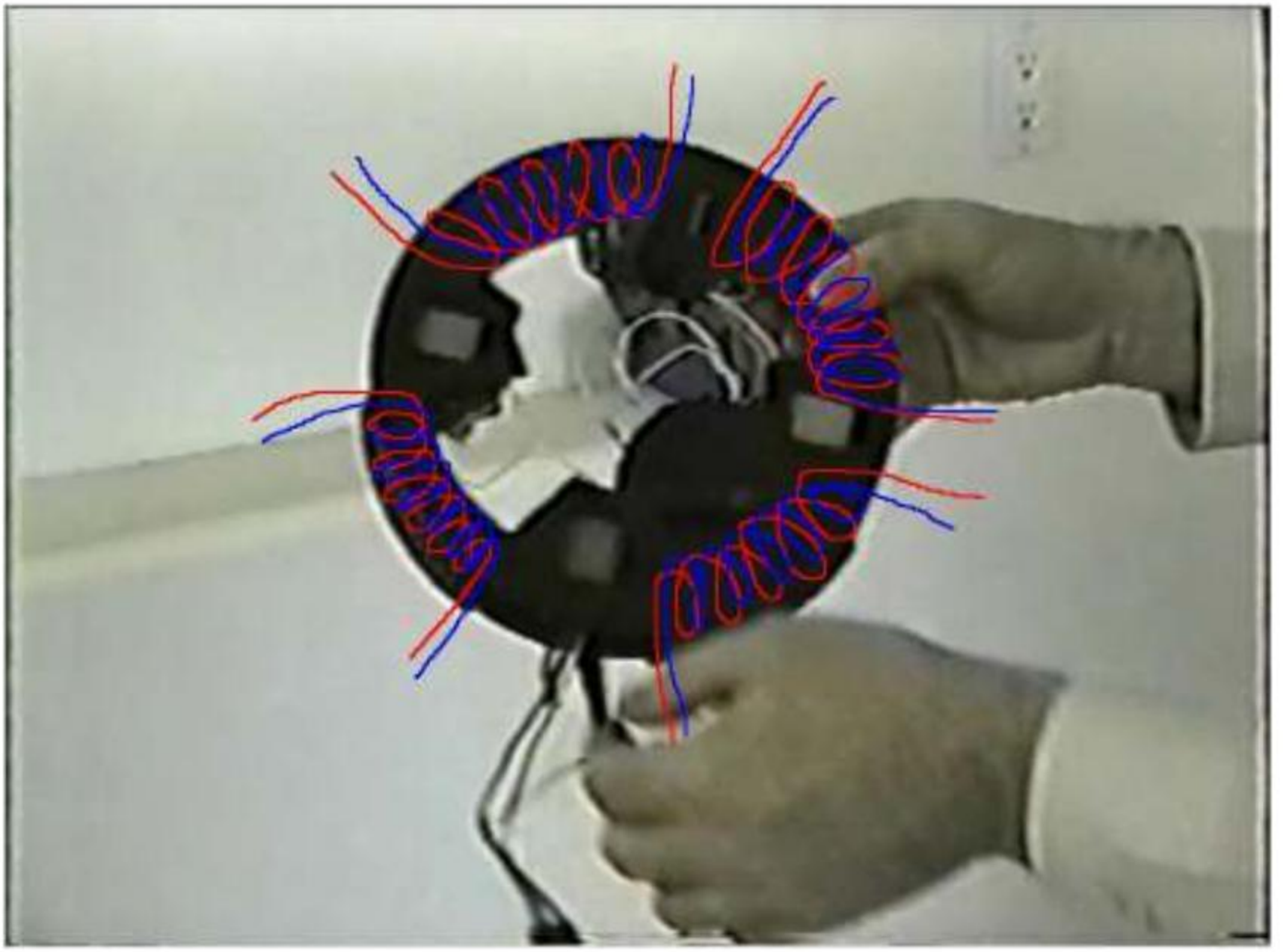


It's definitely a bifilar coil!!!



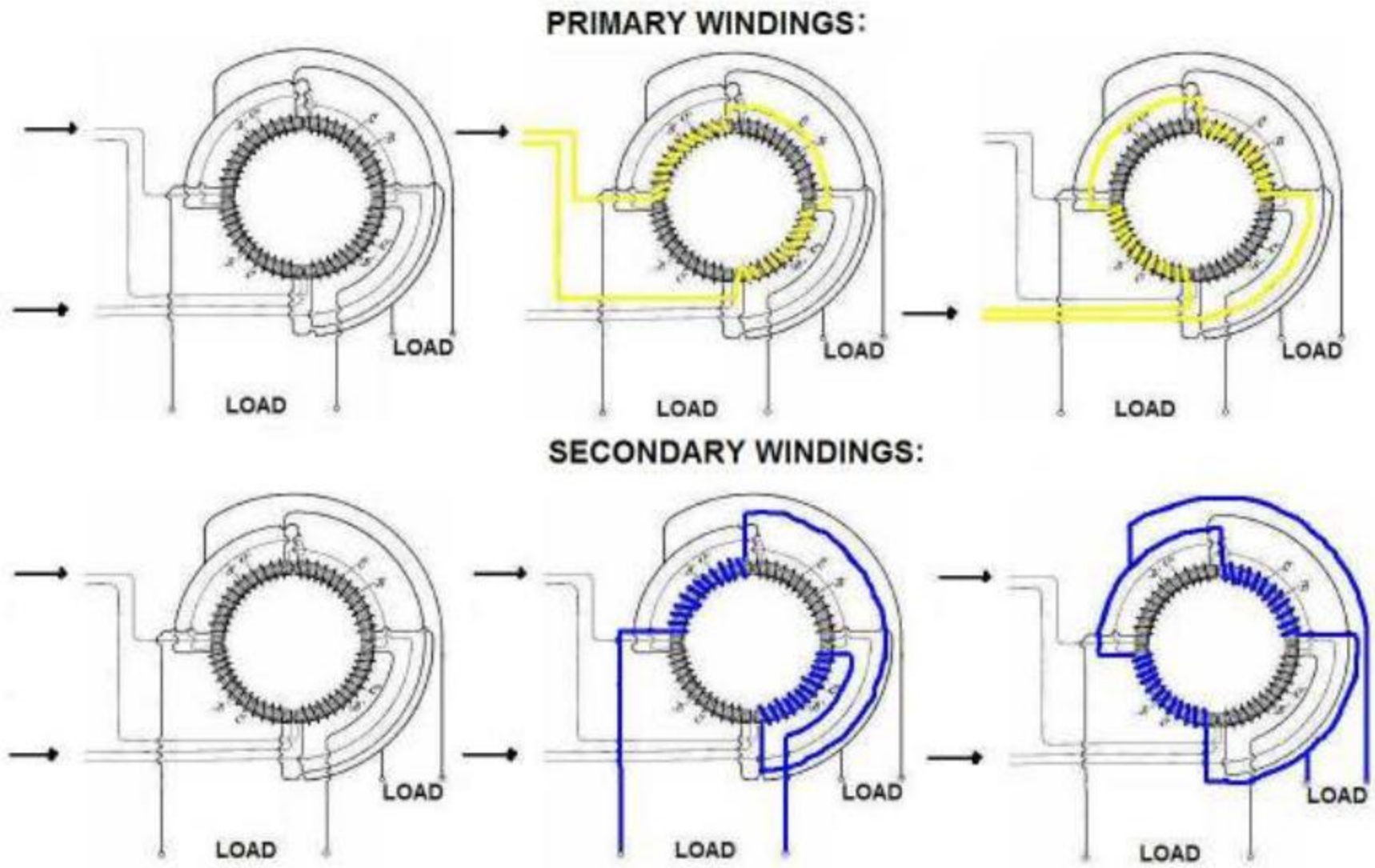
Here we can see that it is too thick to be only one wire. There must be two. Look closer and really pay attention! Each of the coils have 7 turns and they are definitely bifilar coils! There will be no point in having just the left coils bifilar, and the rest simple coils. It's got to be that all are bifilar. It's the only way to make sense. It's got to be a balanced symmetrical system. It's an educated guess! I hope you agree. If you don't agree, then find a better quality video, take a closer look than I did, and prove me wrong.

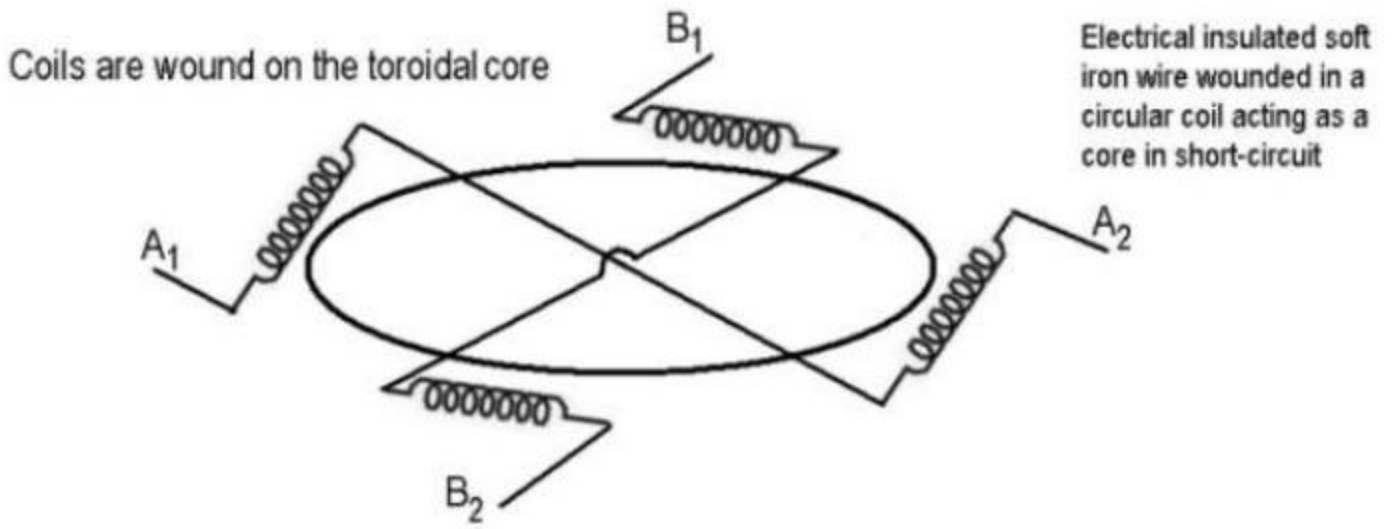
So let's summarize what we DO KNOW so far:



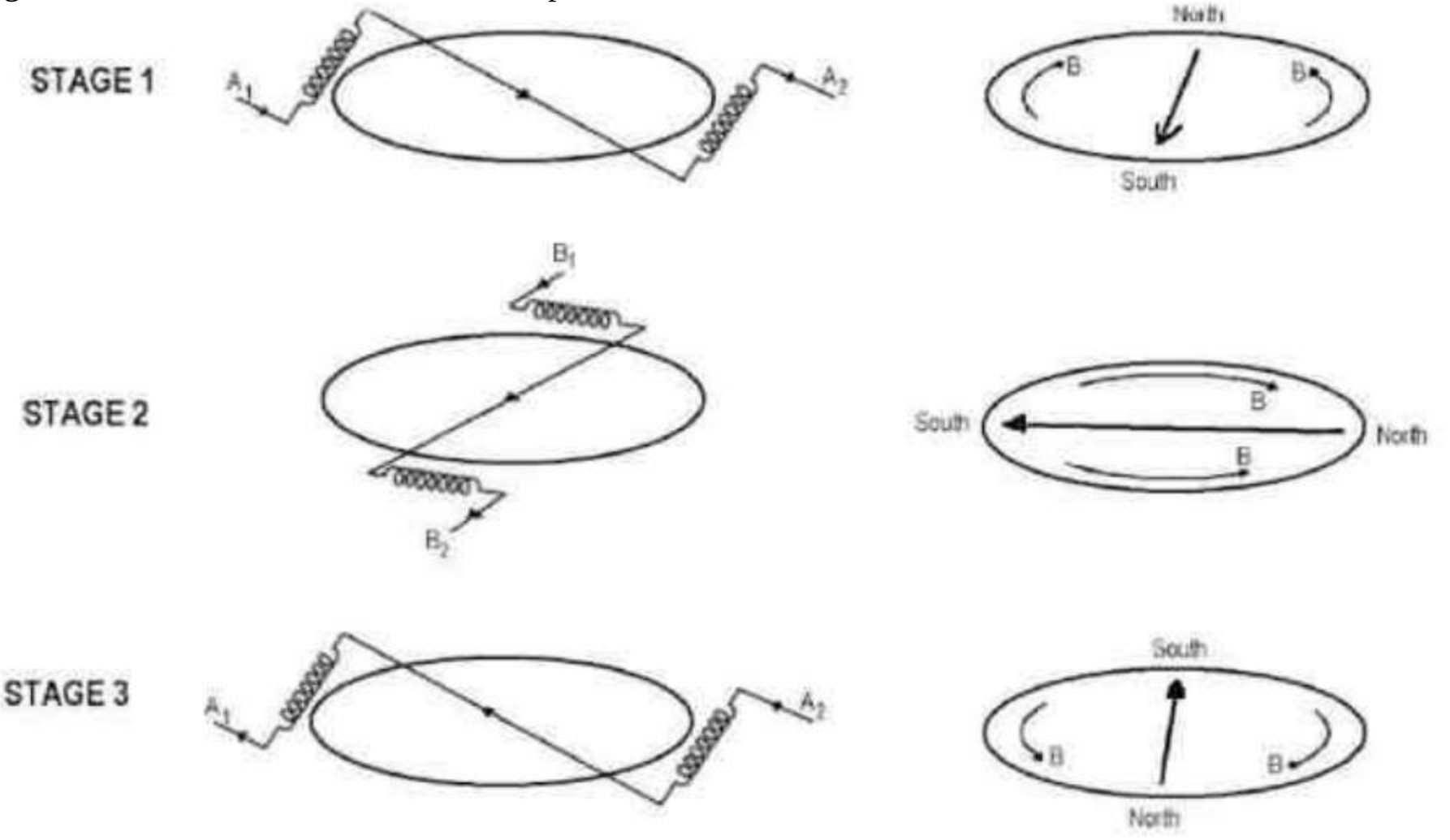
This is Tesla technology!

We need to study Tesla’s patent number 381,970 in the most minute detail. So, let's see how Tesla’s transformer works:

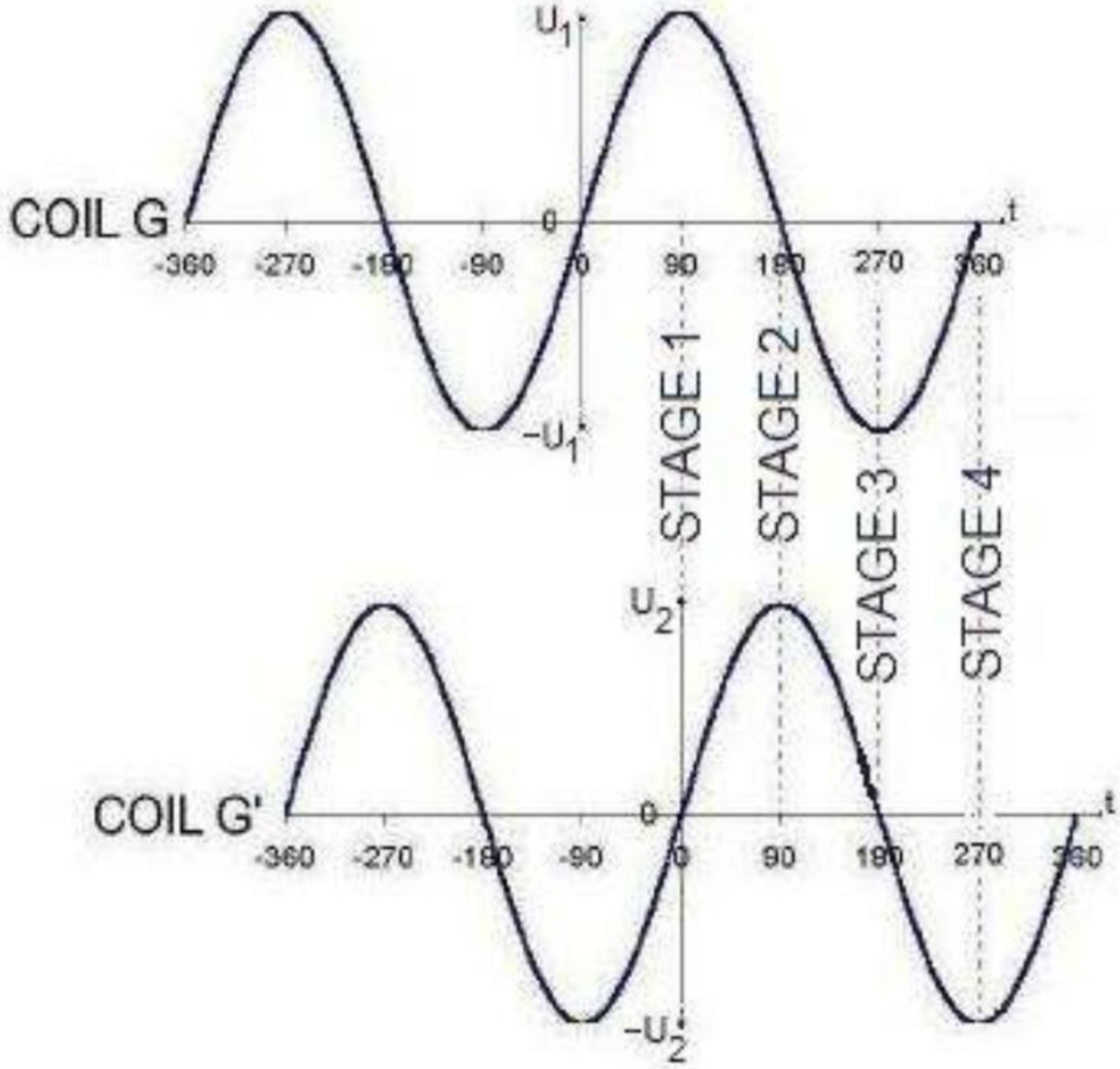




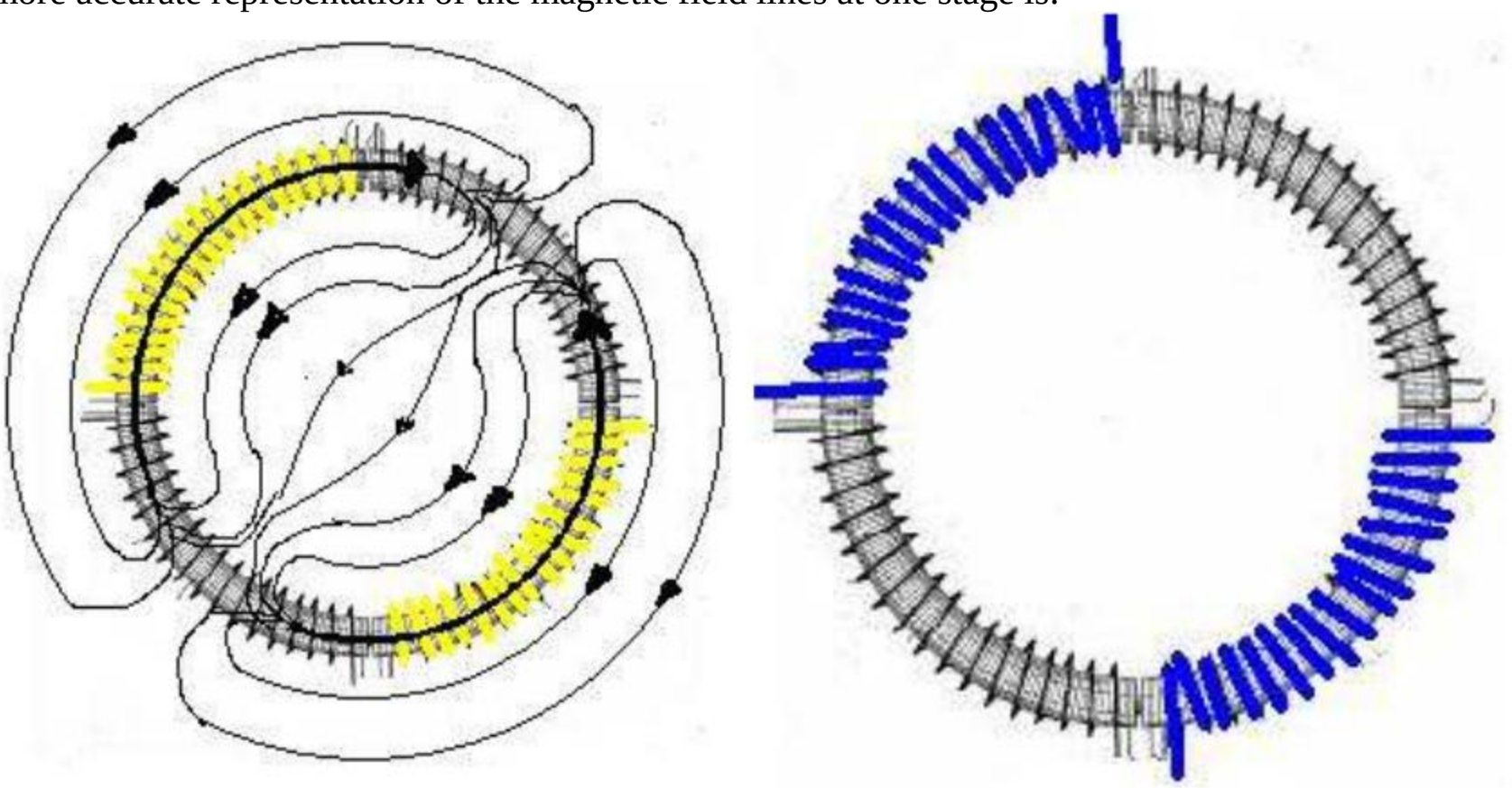
What is really interesting in this configuration is the way in which these coils are connected to each other. If we look closely, then we notice that they are connected in opposition to each other. So the magnetic flux created by these coils, is cancelling out…weird…How can a transformer work in such a way?
Well… your understanding of this depends on your expectation of how it must work… It will work… but the efficiency will be very, very poor. But Tesla knew all of these things and more, so then… he must have been looking for something else…he was exploiting and investigating an effect…
The Magnetic Flux vectors from these coils in operation looks like this:



This ancient Tesla design is still used in deflection coils in all CRT around the world. So much tribute we must give to this forgotten genius...
And the firing stages of the Tesla transformer are:



A slightly more accurate representation of the magnetic field lines at one stage is:



Now what happens is, that when you energize two opposite coils like this, you will get output power on their matching secondary coils.

If you build a transformer like this, try and short-circuit the secondary and see what happens!

What do you think will happen? Well…conventional education tells us that we will see a spark, and if we continue with the short-circuit, we could overheat and destroy the secondary winding. But not in this transformer… This type is a so called "Lenz-less solid state generator". Meaning that no matter what you do to the secondary winding you will not affect the primary winding in any way! No matter how much power you extract from the secondary, the

primary will never see it! It will not "see" a load connected to it! And even better - when you connect a load to the secondary…THE INPUT POWER DECREASES! Quite the reverse of what you would expect!!!

However, DON'T GET YOUR HOPES UP… because this is only half of the story. Here is the other disappointing half: even though this might seem like a huge COP, we are forgetting to take account of the power which the transformer itself consumes, when no load is connected to the secondary.

COP vs. OVERUNITY vs. EFFICIENCY

A NON-CONVENTIONAL APPROACH IN DEFINING COP

(FORCING A NEW DEFINITION FOR COP IN TRANSFORMERS CONSIDERING AS IF THERE IS ONLY ONE INPUT ENERGY SOURCE)

At first I believed that these terms are the same exact thing, but researching I stumbled upon this: http://www.cheniere.org/correspondence/022502.htm. It is a letter by Tom Bearden on the difference between COP end efficiency.

When I first saw it, I, like many others firmly believe that COP, Overunity and efficiency are one and the same thing. But then IN THE FIRST LINE, Tom Bearden says:

I quote:

"You confuse COP with efficiency, and they are two quite different things. Even many of the textbooks confuse these terms quite often"

End quote.

When I read this, I said to myself, Oh dear God. I too am making this confusion. I said to myself:

"If COP is not the same as efficiency, then I'm ***going to disregard all my definitions*** for COP, all my definition for Overunity, all my definitions for efficiency. I'm going to***erase all my definitions*** and start from scratch and take Tom Bearden word for granted. Ok. So, then I don't know anything if he says they are different things."

Then I say to myself: "What the hell are they then?"

I honestly responded to myself:

"Ok. The only premise I will allow myself to start with is that I don't know what COP is, I don't know what efficiency is BUT I DO KNOW THAT OVERUNITY IS THE RATIO OFTOTAL POWER OUTPUT, OVERTOTAL INPUT POWER. This is the only supposition I will allow myself to make in my head, being the simplest, and that everybody knows it."

So Overunity is a propriety of an system to generate a lot more total power than the total power it consumes. When I say a system, I'm thinking in my head for example at a simple transformer. This is the only idea I won't give up. This is the goal of Free Energy. Is the mission statement. Is where we all strive to reach. Everybody knows this. It's like the Lord Prayer. So then is has a dimensionless unit of measure (watt over watt gets reduced), and is expressed just by a number, usually below 1, and in the fringe research of free-energy we strive for it to be greater than 1.

USING ARISTOTELIAN LOGIC TO UNDERSTAND THE DIFFERENCE

Ok. Tom says that COP is different from efficiency. Therefore Overunity must be the same with COP OR the same with efficiency OR different from both. Right? We will take his word for granted. Ok. Instead of trying to understand HOW THEY ARE DIFFERENT , let's try with something more simple, like defining the simplest one. To me the efficiency seems more simple to define than COP. So what is efficiency?

To my amazement, HIS NEXT STATEMENT, defines exactly what is going in my head.

I quote:

"Rigorously, the ***efficiency*** *of a motor or system may be defined as (*total *useful output) divided by (*total *energy input from all sources)*. No inert system can have an efficiency of greater than 100%, for that would be a violation of energy conservation."

O MY GOD. WE HAVE FOUND THE DEFINITION! And is the same as my first supposition of Overunity.

OK.(**Total energy out/total** energy in) This means that **Overunity is the same as efficiency!** Just that efficiency is multiplied by 100 and expressed in percentages. (According to Bearden's definition of efficiency and personal definition of Overunity)

OK. Let's summarize what we have here:

Let's make these notations:

Overunity = variable A

Efficiency = variable B

COP = variable C

FROM THE TITLE OF THE PAGE WE KNOW THAT B ≠C (B<>C)

I allowed myself the cling to my own personal definition of Overunity, which is the same as Tom definition of efficiency. Therefore A=B.

Oh my GOD! Do you realize what this means? It means that A ≠B (A<>B). This means that **Overunity is not the same thing as COP!!!** (according to Bearden and my definition of Overunity)

Then What the hell is COP, if it's not the ratio TOTAL OUTPUT POWER/TOTAL INPUT POWER??? What is this COP? What on earth does is stand for?

Again, amazingly his third statement, is exactly on my line of though.

I quote:

"The coefficient of performance (COP) […]"

Ok so now we know that COP is just performance. Let's use that term. Therefore we have 3 terms: "Overunity", "Efficiency" and "Performance".

Overunity = variable A

Efficiency = variable B

Performance = variable C

We do know that "Overunity" is the same as "Efficiency" and both are different from "Performance".

Therefore (A=B) ≠C

(A=B)<>C

Let's now take the huge and last piece of the puzzle in trying to understand what Performance is:

I quote:

"The coefficient of performance (COP) of a motor or system may be defined as (total useful output) divided by (ENERGY INPUT BY THE OPERATOR ONLY)."

Ok. Forget the rest of things he says for a while, and let's stick with the above sentence. At first glance, what do we see? We see that in parenthesis he still has used the magic word "total" as in "total useful output" . OK? Ok! Then he says "divided by ", ok so it's still a ratio, NOTHING DIFFERENT UNTIL NOW , BUT HERE IT COMES: "ENERGY INPUT BY THE OPERATOR ONLY". What the hell is "Energy input by the operator only"? Honestly for now, let's play dumb and not have any idea of what he is talking about, but what I DO KNOW IS THAT **THE MAGIC WORD "TOTAL" has gone!**

HE IS NOT USING A TOTAL IN THE DENOMINATOR!!!

Let's try to understand what this alien concept of "energy input by the operator only means".

Let's quote him again:

"If the operator only has to input, say, 10 joules of energy and the active environment freely inputs 90 joules of energy, then the total input is 100 joules. Now suppose that the system has 50% efficiency; i.e., it wastes or "loses" half the energy before it dissipates the rest of it in the load to do useful work. In that case the system outputs 50 joules of work for a total input of 100 joules, but with the operator only inputting 10 of those 100 input joules. So this system has an efficiency of 50% but a COP =5.0."

End quote.

It's a little tricky but let's figure this together. Ok? If I'm wrong feel free to correct me. First of all we do see that in order to state his total output power he first states the efficiency of his system, since:

$$Efficiency = \frac{total\,OUT}{total\,IN} \Rightarrow Therefore \Rightarrow Total\,OUT = (Total\,IN * Efficiency)$$

Are we good until now? Good.

Now what he is doing **he is separating the INPUT POWER of his system into two separate entities:**

1. "[…] the operator only has to input, 10 joules […]"
2. "[…] active environment freely inputs 90 joules […]"

Interesting, so he differentiated the total input power of 100 joules into two SEPARATED DISTINCT ENTITIES. The "Operator" (me or you) and the "Environment" (air, sun-rays, wind, water, ether, vacuum etc).

His Total output is 50 joules.

Therefore efficiency is:

$$\frac{50}{100} = \frac{1}{2} \Rightarrow Efficiency = 0.5 * 100 = 50\,\%$$

Ok? Is everything clear until now?

Ok. FROM THE TITLE OF THE PAGE , we know that performance must be something different from 50. So we must get something different from 50. We will also keep that in mind to verify our correctness.

So then. His Performance will be this total output (50) over this "operator input only" concept of (10) which equals 5. Correct, right?

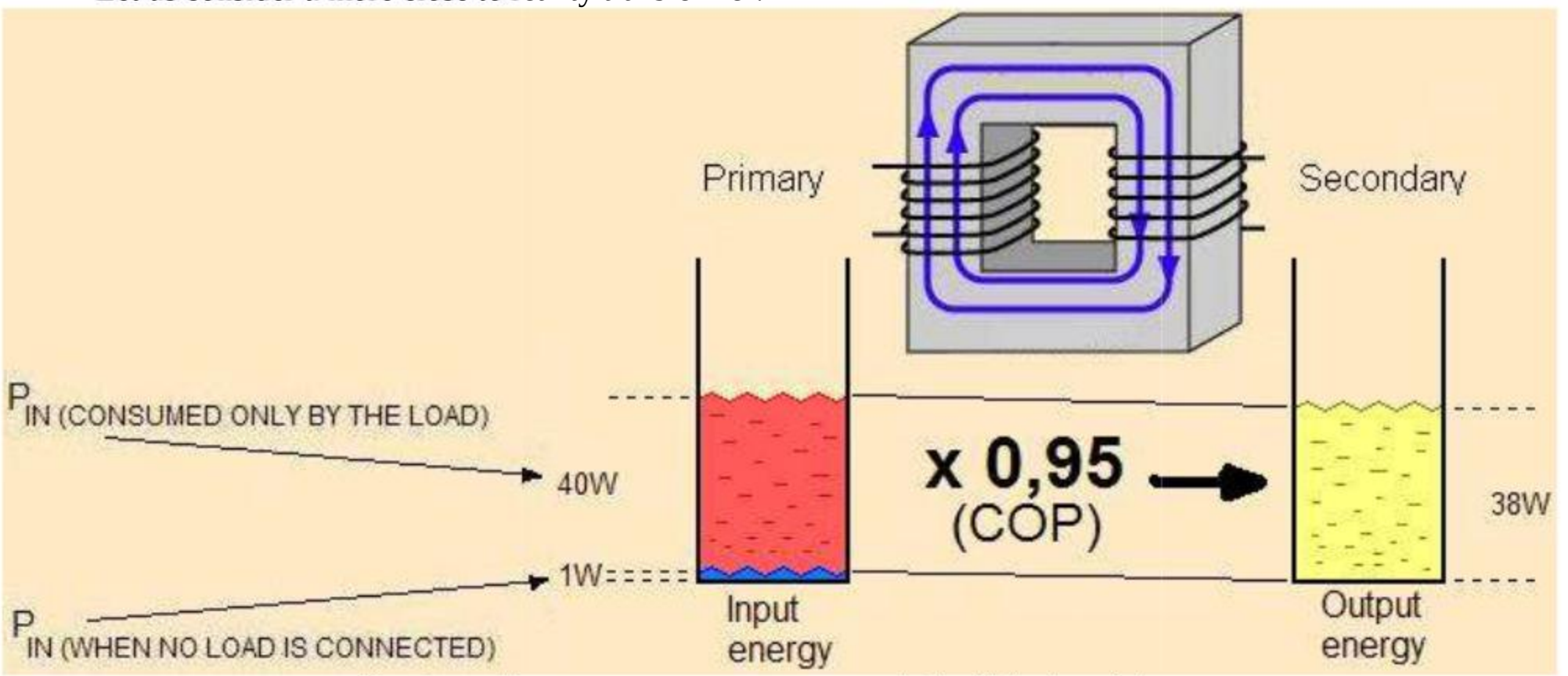
Hmm. Interesting. Let me guess. We will say that this system has a "very good performance" ? I guess so. What, have we learned so far?

That Tom Bearden, **when he is defining COP, he is using a simple common ratio, but in the denominator his is not using a total, because he differentiated the input power into two separate variables.**

Keep in mind that in my case I'm always thinking at a transformer. So therefore, to define the performance of a transformer, I feel obligated like him to separate the input power into two distinct entities (variables).

We must separate the input power into two distinct entities. The active environment HAS NO EFFECT ON OUR IDEAL TRANSFORMER OPERATION WHATSOEVER (according to *the conventional ideal transformer model*) . Therefore the active environment is inputting 0 joules of energy into our ideal transformer, right? (This might slightly inevitably distort the concept. Let us hope only that this distortion is not going to bring too much error in our calculations)

Let us consider a more close to reality transformer:



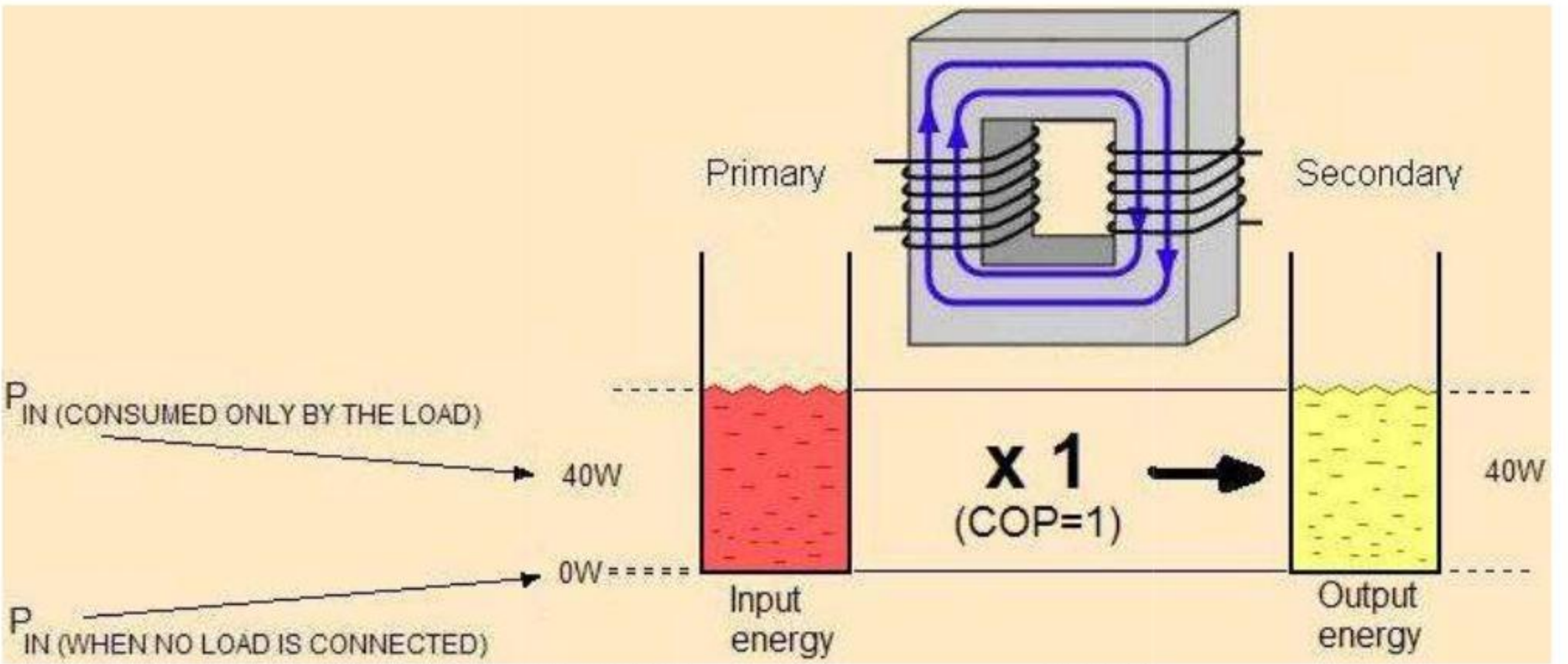
Note: This type of definitions of COP, Efficiency and Overunity are mostly applied to Transformers and Ideal Transformers. Using these definitions in any other type of generators, motors or devices, is not recommended and will likely lead to serious distortions and errors.

Now, he is using the concept "operator input power only" therefore I should understand only that which I'm inputting in the transformer right? Only the power that I have to pay for, when I'm connecting a load, right?

When I'm connecting a load to a transformer, only the power seen at the input for MY PARTICULAR LOAD ONLY is what we are interested, right?

Therefore I must disregard the rest, don't I? I must throw away the rest of the input power, because in calculating the COP I must take into account ONLY THE CHANGE I'M BRINGING TO MY TRANSFORMER, right? Only the input power, seen by my load, right?

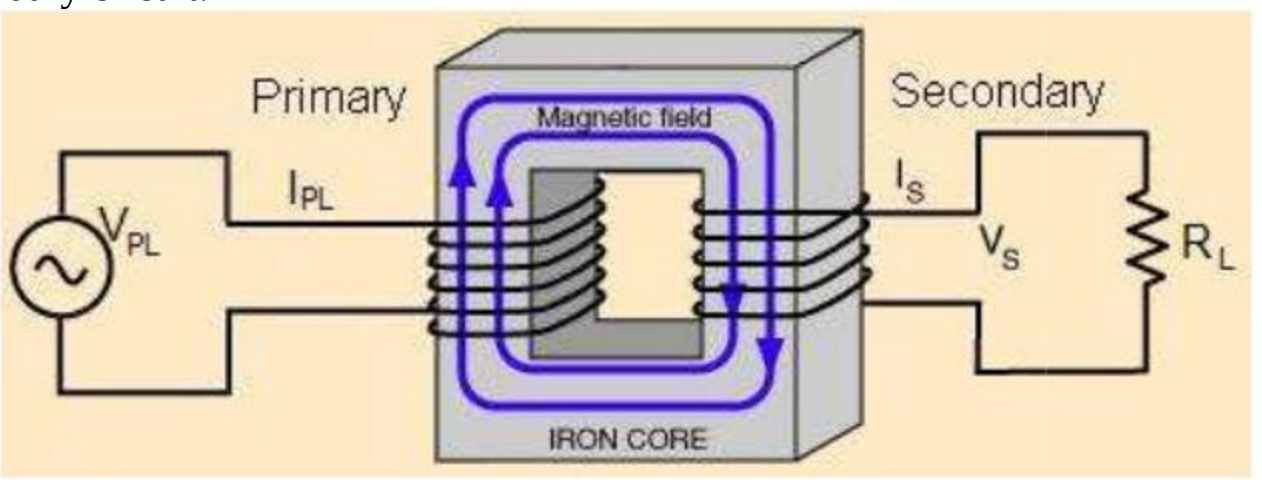
Now let us consider an IDEAL TRANSFORMER :



Note: This type of definitions of COP, Efficiency and Overunity are mostly applied to Transformers and Ideal Transformers. Using these definitions in any other type of generators, motors or devices, is not recommended and will likely lead to serious distortions and errors.

Ideal Power equation:

If the secondary coil is attached to a load that allows current to flow, electrical power is transmitted from the primary circuit to the secondary circuit.



Ideally, the transformer is perfectly efficient. All the incoming energy is transformed from the primary circuit to the magnetic field and into the secondary circuit. If this condition is met, the input electric power must equal the output power:

$$P_{IN} = V_{PL} * I_{PL} = P_{OUT} = V_S * I_S$$

Transformers normally have high efficiency, so this formula is a reasonable approximation.

Models of an ideal transformer typically assume a core of negligible reluctance with two windings of zero resistance. When a voltage is applied to the primary winding, a small current flows, driving flux around the magnetic circuit of the core. The current required to create the flux is termed the *magnetizing current*. Since the ideal core has been assumed to have near-zero reluctance, the magnetizing current is negligible, although still required, to create the magnetic field.

So, you see? **If I choose to define the "user input power" in the COP formula as the TOTAL INPUT POWER then it is the same as efficiency,** isn't it? If I divide the OUTPUT by the sum (P_{IN} consumed by the load+P_{IN} consumed by the transformer with no load) then I divide the Total OUTPUT by the TOTAL INPUT in defining COP, which is the same as Efficiency, and thus CONTRADICTING TOM BEARDEN, no?

Therefore, the "user input power" in COP for transformers should be only that which I'm inputting in the transformer. Only the power that I have to pay for, when I'm connecting a load When I'm connecting a load to a transformer, only the power seen at the input for MY PARTICULAR LOAD ONLY.

Then what I'm disregarding, and throwing away in my case, is the input power consumed by my transformer when no load is

connected, **which in an ideal case is 0 anyway!** (just like the active environment input power in an ideal transformer=0)

Thus in an ideal transformer COP will be equal to 1, efficiency will equal to 1, and overunity will be equal to 1! This is why so many people think all these are the same (like I did). Which is true, but not quite accurate. It is only true in an ideal case for an ideal transformer (in other generators, motors or devices, these rules, definitions and deductions will probably not apply. They mostly apply to transformers and ideal transformers). In reality and practice, COP will be different from the Efficiency because the Power consumed by the transformer with no load is not 0 in reality. So in a transformer with no load (open circuit), the magnetizing current is negligible but is not 0, resistance of the windings are negligible but not 0, thus COP **will be different from Efficiency.**

Therefore, now my transformer works in analogy like a market stall:



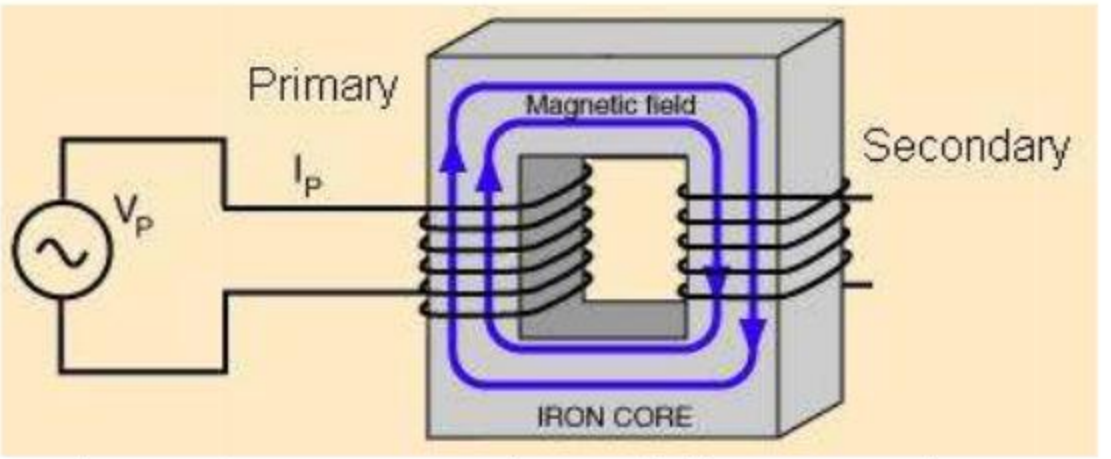
The load, are the apples that I'm buying, and the "input operator user input power only whatever stuff" must be the paper money that I'm giving, right?

If all these deductions I've made so far are correct, then what I'm disregarding, and throwing away in my case, is the input power consumed by my transformer when no load is connected, (when nobody is buying), right? The cost that it takes me to run the stall, or the shop, right? Which ideally should be as low as possible (ideal 0).

I have to divide the input power into two distinct entities. The way I'm describing this dichotomy is not recommended, due to distorting the actual concept of COP, therefore these rules, definitions and deductions should only be applied to transformers and ideal transformers. It is not recommended to make this dichotomy in other devices, generators or motors. So, if I do this separation of the input power, why not use the "user input power" as the power consumed by the transformer with no load, and disregard the power absorbed by the load seen at the input. Quite reversed then what I'm describing. In such a case then ideally, when I connect a transformer with a load attached to an AC source, then the efficiency will be 100% ($P_{OUT}=P_{IN}$), but the COP "user input power" will be 0, and dividing by 0 means infinity. This is absurd. I just said that in an ideal transformer COP= ∞ (infinity) like my ideal transformer would be a windmill or something (where the user input power is 0). This means that this case is incorrect. Therefore COP "user input power" is that which I'm inputting in the transformer. Only the power that I have to pay for, when I'm connecting a load. When I'm connecting a load to a transformer, only the power seen at the input for my particular load only, disregarding the power consumed by our transformer when the load is detached which ideally is 0 anyway. And thus ideally COP will be the same as Efficiency, but in reality they are different.

(INTRODUCING A NEW DEFINITION FOR COP IN TRANSFORMERS CONSIDERING AS IF THERE IS ONLY ONE INPUT ENERGY SOURCE)

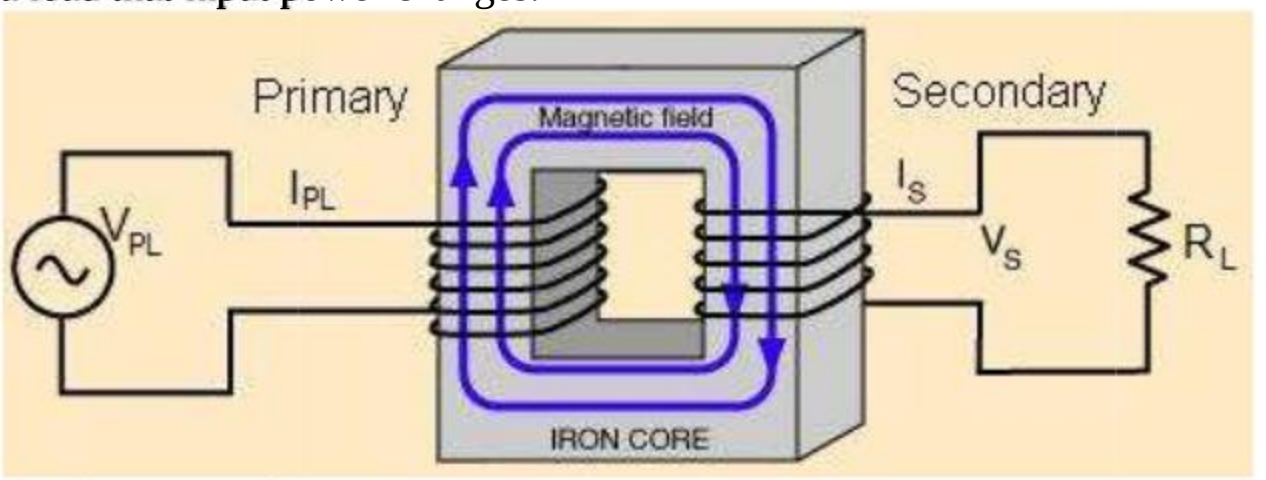
Let's summarize all this. The coefficient of performance is defined by the total useful output energy divided by energy input ***by the operator only***. To understand the difference let us consider a normal transformer.



In this first case, we have a regular transformer with its **primary winding connected to an** alternating current(AC) power **source. The secondary winding is not co**nnected to anything, it has no load (R=infinite)
We can calculate the power consumed by the transformer in this open-circuit test (P_{IN}**), w**hich is:

$$P_{IN(NO\ LOAD)}=V_P \times I_P$$

But, when we connect a load that input power changes:



In this case, with an output load, we calculate:

$$P_{IN(WITH\ LOAD)}=V_{PL}*I_{PL}$$
$$P_{IN(CONSUMED\ ONLY\ BY\ THE\ LOAD)}=P_{IN(WITH\ LOAD)}-P_{IN(NO\ LOAD)}$$
$$P_{OUT}=V_S*I_S$$

And what we are after are these ratios:

$$Coefficient\ of\ performance(COP)\quad \frac{P_{OUT}}{P_{IN(WITH\ LOAD)}-P_{IN(NO\ LOAD)}}\qquad \frac{P_{OUT}}{P_{IN(CONSUMED\ ONLY\ BY\ THE}}$$

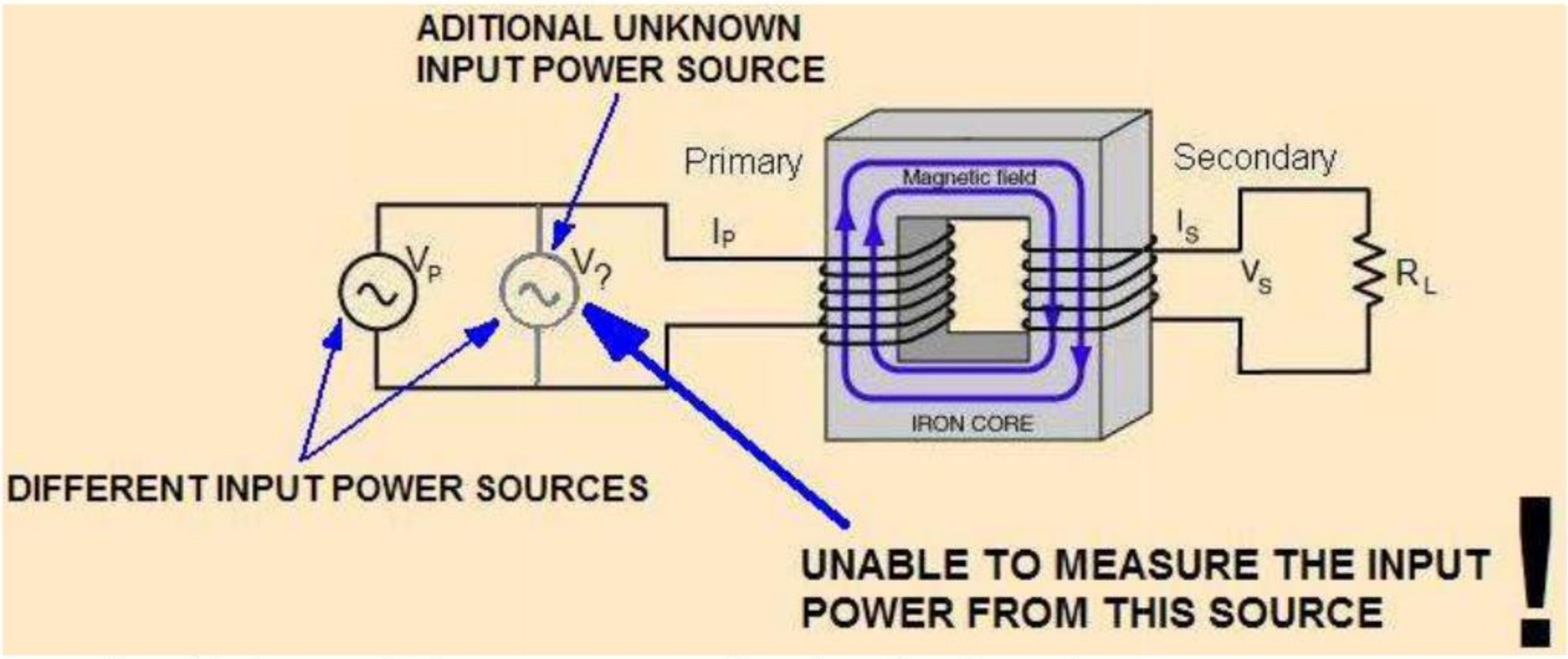
$$Overunity\quad \frac{P_{OUT}}{P_{IN(WITH\ LOAD)}}[no\ unit\ of\ measure]\ (2)$$

$$Efficiency\quad \frac{P_{OUT}}{P_{IN(WITH\ LOAD)}}*100\,[\%]\ (3)$$

This seems like a somewhat "brutal" way to put it, but we now see what a big **difference t**here is between these parameters.

CONVENTIONAL DEFINITION OF COP

(ONLY APPLIES WHEN WE HAVE MULTIPLE INPUT ENERGY SOURCES)



I hope it's clear now that the conventional definition only applies when we have an intersection of two special cases. Again I'm speaking only in regards to transformers. I don't care about other types of generators, batteries or other free-energy stuff. I'm only speaking from the limited view point of transformers. So again, going back to this conventional understanding of COP. It only applies in a special unique case. No! No...Wait there's more! When we have two unique special rare cases both at once!

First unique special rare case is when we have an additional input power supply. **But Most of transformers on the face of the planet are working having only ONE POWER SUPPLY!** But this is how conventional COP is defined. **We MUST have an additional input power source that provides for the extra energy we see at the output!**

Second unique special rare case that must occur at the same time with the first one, with makes this whole case more rare than rare, is when we are **unable to measure the additional power that this second input is providing**, or it is ambiguous. You see now why we need another approach in defining COP?

The Conventional definition of COP will now be:

$$Conventional\ COP = \frac{Total\ output\ power}{User\ input\ power} = \frac{V_s * I_s}{V_p * I_p}$$

This will mean that what we will normally be calculating as efficiency of a transformer, and come up with more than 100% efficiency, actually we have calculated COP. **Of course we wouldn't realize that, when this additional input power source is hiding or is not visible or is not very apparent.** So for all practical reasons we will be tempted to say that we have efficiency over 100%. This is what really Tom Bearden meant in his letter when he said we shouldn't confuse COP with efficiency!

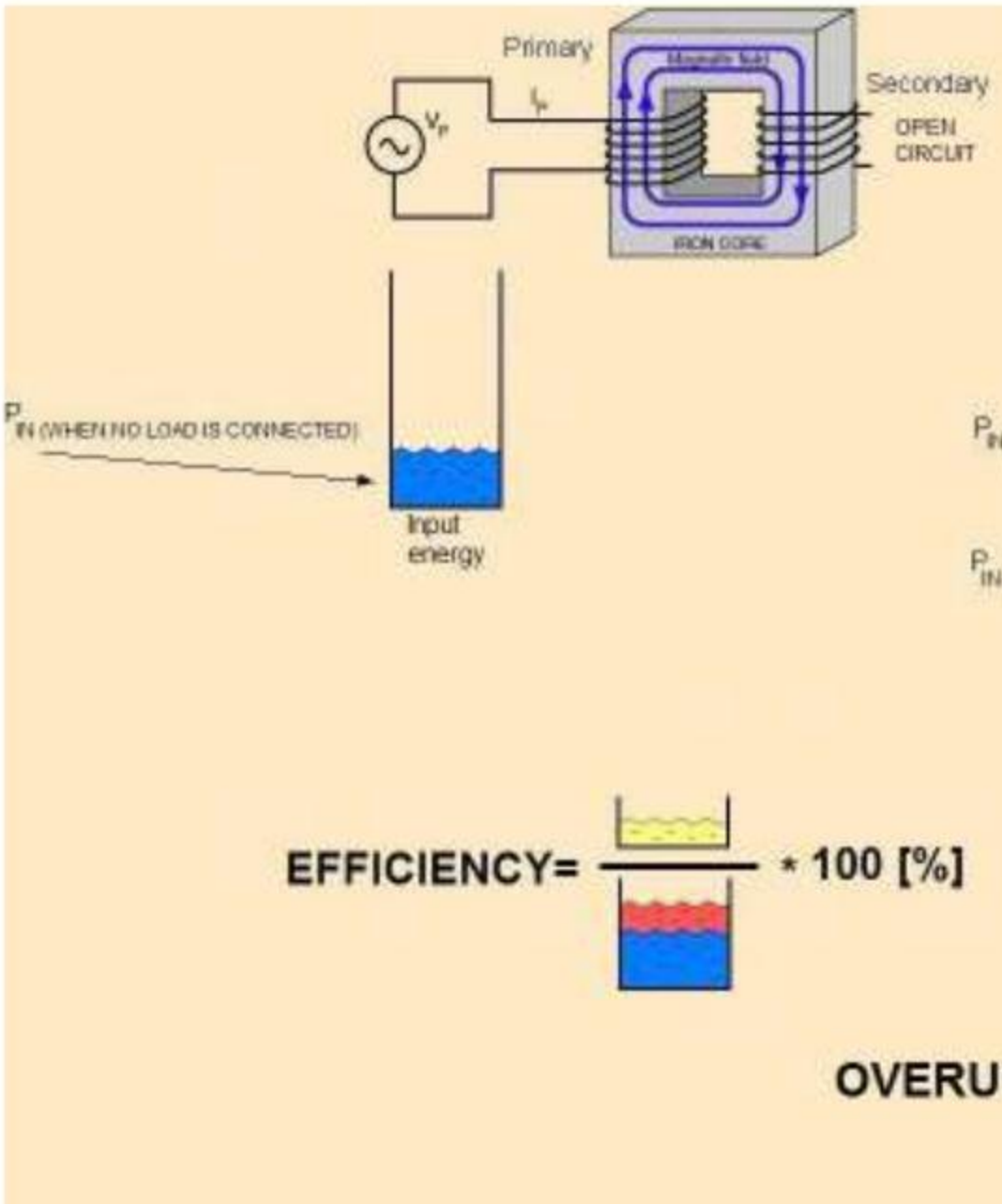
Now if we are indeed able to measure the power that this additional input is providing, then things are more different. We now have two cases, when we have efficiency below and above 100%.

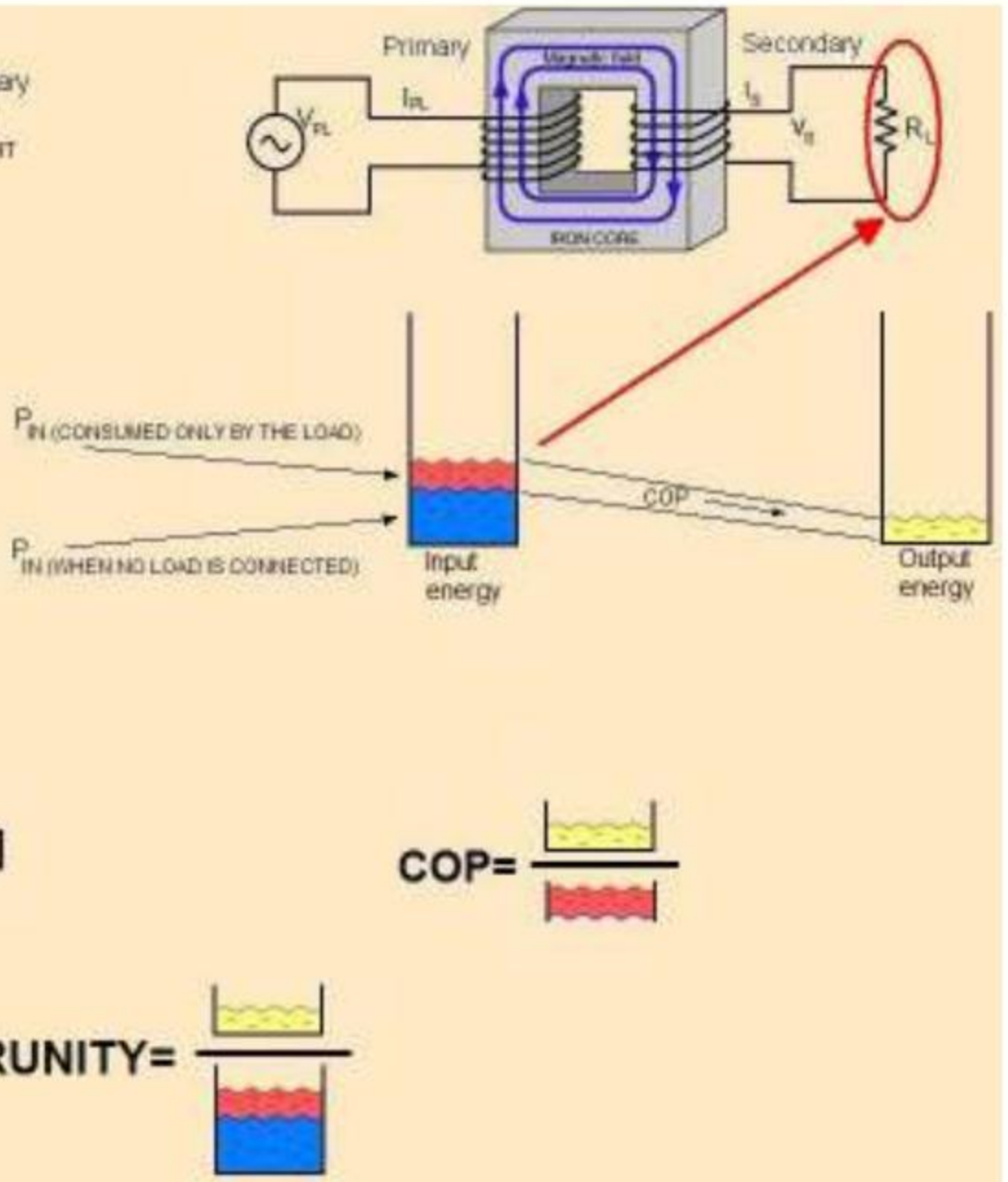
Now the Efficiency will become:

$$Efficiency \quad \frac{Total\ out\ put\ power}{Total\ input\ power\ from\ all\ sources} * 100[\%] \qquad \frac{V_s * I_s}{V_p * I_p + V_{additional} * I_{additional}} * 100[\%]$$

Which can be below 100% or above, case when we say we have achieved overunity.

A visual representation of the performance coefficient (COP) and efficiency in transformers.

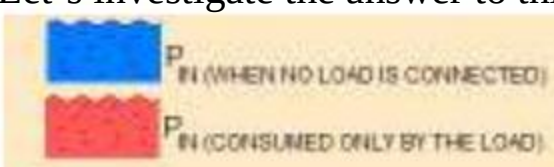


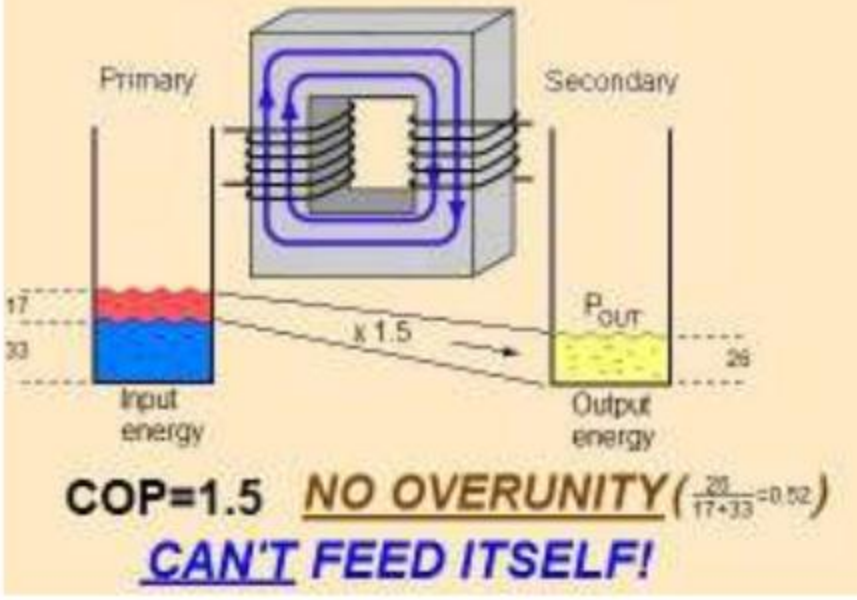


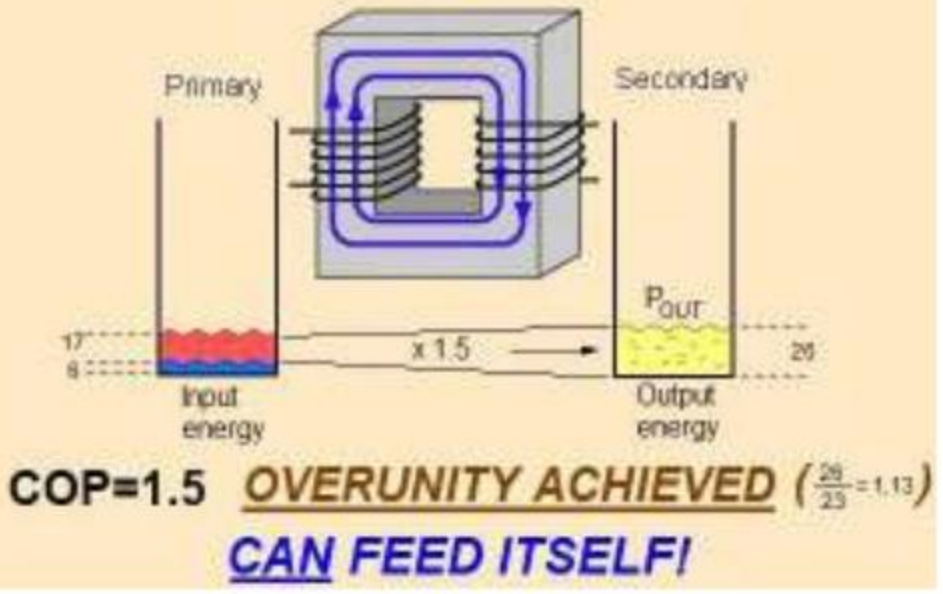
Note: This type of definitions of COP, Efficiency and Overunity are mostly applied to Transformers and Ideal Transformers. Using these definitions in any other type of generators, motors or devices, is not recommended and will likely lead to serious distortions and errors.

Ask yourself: Why some COP>1 devices can't feed themselves, by closing the loop between the output and the input?

Let’s investigate the answer to this question by considering some examples:



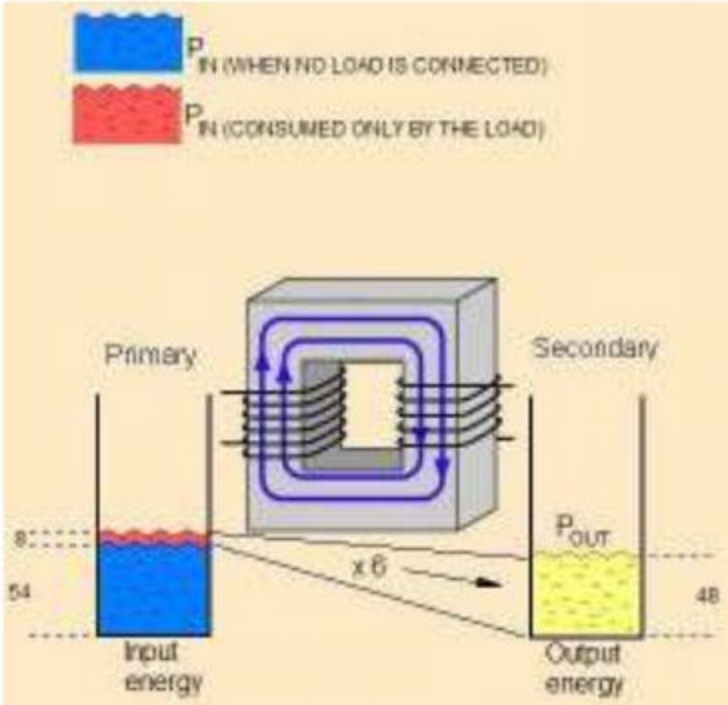




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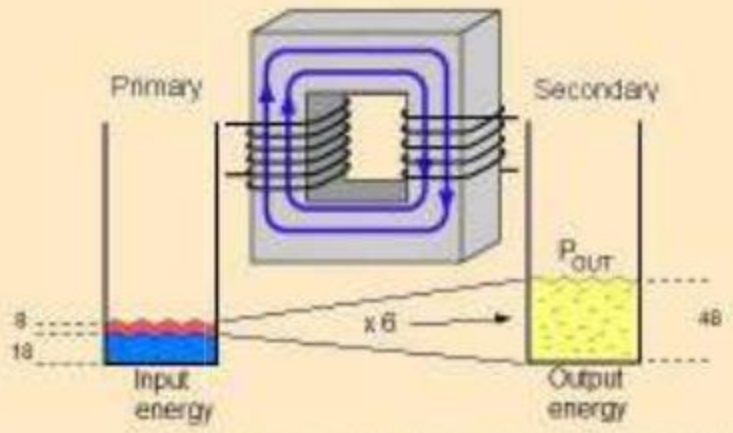
In the above case, we have the same transformer with a Coefficient of performance of 1.5 that in the first instance can’t feed itself, and the second it can. ***What’s the difference?***

Let’s take a look at another transformer, this time with a bigger COP (maybe the bigger, the better, right? wrong.):



COP=6 ***NO OVERUNITY*** $\left(\frac{48}{(54+8)}=0.77\right)$

CAN'T FEED ITSELF!



COP=6 ***OVERUNITY ACHIEVED*** $\left(\frac{48}{26}=1.84\right)$

CAN FEED ITSELF!

Note: This type of definitions of COP, Efficiency **and Overunity are mostly** applied to Transformers and Ideal Transformers. Using these de **finitions in any other type** of generators, motors or devices, is not recommended and will likely lead to serious distortions and errors.

In both examples, we have seen ***how COP≡1.5 and even COP≡6 are not overunity***, and can't sustain themselves. So then, Ove**runity is not de**pendent on COP. You could have overunity with a COP=1.1 device and not *have overunity with a COP=10 device*. In both four cases, the ***major player in achieving self-sustaining (overunity) is the "blue liquid"*** **or the power consume**d by the transformer in an open-**circuit test, when** no load is connected at the output.

If we carefully study the above pictures, we can se**e a pattern emerging and determ**ine the conditions that must ***be satisfied by the "blue liquid" in order to have overunity.*** So let's **write down the equa**tions (inequality) for this condition:

$$COP * P_{IN(CONSUMED ONLY BY THE LOAD)} > P_{IN TOTAL(WITH LOAD)} \quad (3.1)$$

$$(3.1) > \frac{P_{OUT}}{P_{IN(CONSUMED ONLY BY THE LOAD)}} * P_{IN(CONSUMED ONLY BY THE LOAD)} > P_{IN TOTAL(WIT}$$

$$(3.2) \Rightarrow P_{OUT} > P_{IN} \quad (3.3)$$

which is the true condition for overunity to exist **in order for our transformer to sustain its**elf. This means that our inequality (3.1) is true.

Let's analyze this inequality further:

For **simplicity reasons we will name these** parameters with the following letters:

$P_{IN\ (NO\ LOAD)}=m$;

$P_{IN(CONSUMED\ ONLY\ BY\ THE\ LOAD)}=n$;

$P_{IN\ TOTAL\ (WITH\ LOAD)}=p$;

$P_{OUT}=q$;

$$m+n=p \quad (3.4)$$

$$(3.4) \Rightarrow n=p-m \quad (3.5)$$

$$(3.1) \Rightarrow COP*n>p \Leftrightarrow \frac{q}{n}*n>p \quad (3.6)$$

$$(3.5) \rightarrow (3.6): \frac{q}{p-m}*n>p \quad (3.7)$$

$$(3.7)*(p-m) \Rightarrow q*n>p(p-m) \Leftrightarrow q*n>p^2-pm \Leftrightarrow -p^2+q*n>-pm \quad (3.71)$$

$$(3.71)/(-p) \Rightarrow \frac{-p^2+q*n}{-p}<m \Leftrightarrow m>\frac{p(p \quad \frac{q*n}{p})}{-p} \quad (3.8)$$

$$(3.8) \Rightarrow m>p-\frac{q*n}{p} \quad (3.9)$$

This translates into the ***condition for overunity or self-sustaining in transformers***:

$$P_{IN(NO\ LOAD)} > P_{IN\ TOTAL(WITH\ LOAD)} - \frac{P_{OUT} * P_{IN(CONSUMED\ ONLY\ BY\ THE\ LOAD)}}{P_{IN\ TOTAL(WITH\ LOAD)}} \quad (3.91)$$

SECRET IS IN LOWERING THE INPUT POWER CONSUMED BY A TRANSFORMER WHEN NO LOAD IS CONNECTED AT THE OUTPUT (OPEN-CIRCUIT) (A.K.A LOWERING THE "BLUE LIQUID"):

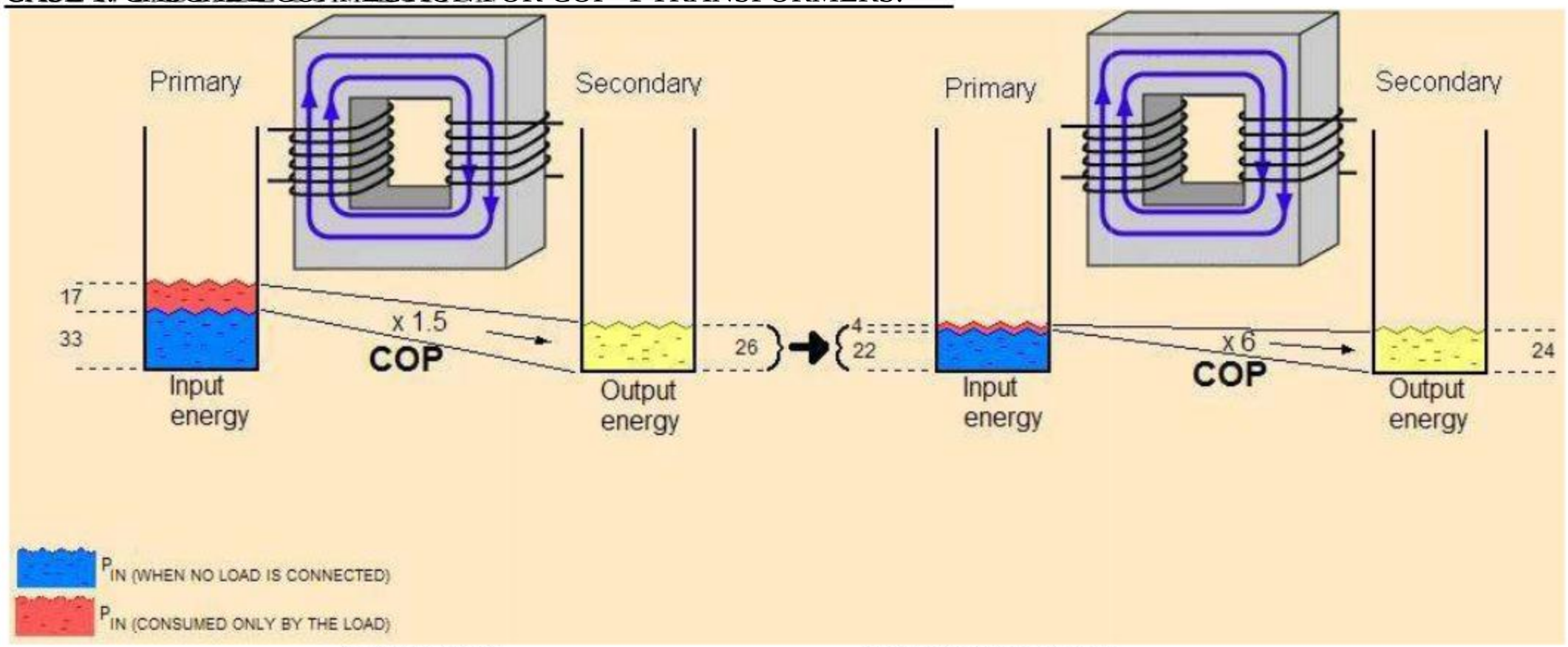
This $P_{IN\ (NO\ LOAD)}$ **"blue liquid", can be d**rastically reduced by provid**ing better containmen**t for the magnetic flux **generated by the primary windings. Whe**n this magnet**ic flux generated by the transforme**r is created in a material which can contain it and retain it (with low **mag**netic reluctance), and has a high magnetic **perme**ability μ_r, and this material also has a low magnetostriction **then the** input power consumed by the transformer wi**thou**t a load should decrease. Also using short square wave signals (one-**sho**t pulses or low duty cycle signals) as an alter**nat**ive to sine-waves signals, **should in theory spent less energy and d**rastically **reducing this "blue liquid". Using highe**r operating frequencies might reduce it.

Ask yourself: Why can't we connect more COP>1 devices together and achieve overunity?

INTERCONNECTING COP>1 DEVICES

Let us find an answer to such a question, by trying **to interconnect in various ways COP>**1 devices.

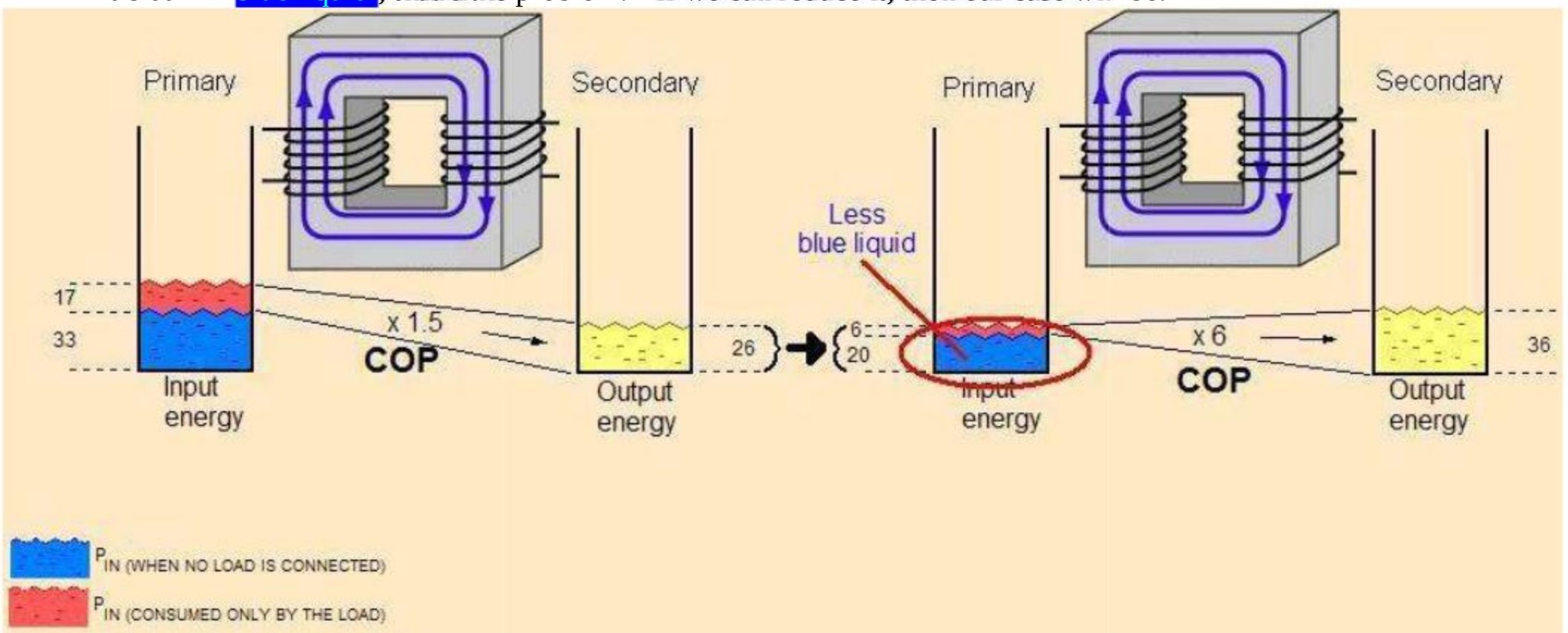
CASE 1: CASCADE CONNECTION FOR COP>1 TRANSFORMERS:



Note: This type of definitions of COP, Efficiency **and Overunity are mostly** applied to Transformers and Ideal Transformers. Us **ing these definitions in any other type** of generators, motors or devices, is not recommended and will likely lead to serious distortions and errors.

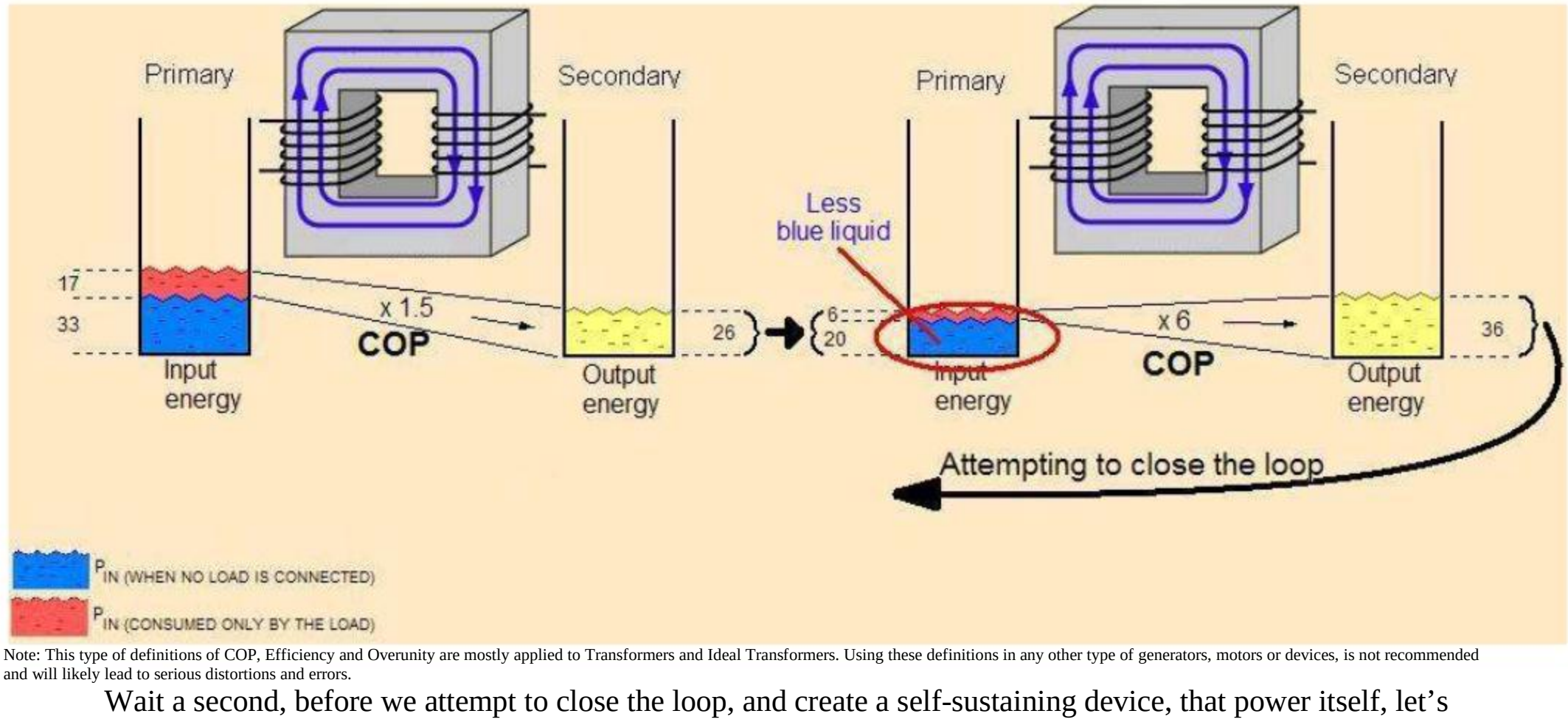
In this case, we have started with 50 units of "en**ergy liquid". This energy was tra**nsformed into 26 units of **energy with a good performance of 1.5,** and these 26 **units were again transformed with a** remarkable coefficient of performance of **6 and we ended up with** 24 units of energy.

It's damn blue liquid **, that's the** problem! **If we can reduce it, then our case will** be:



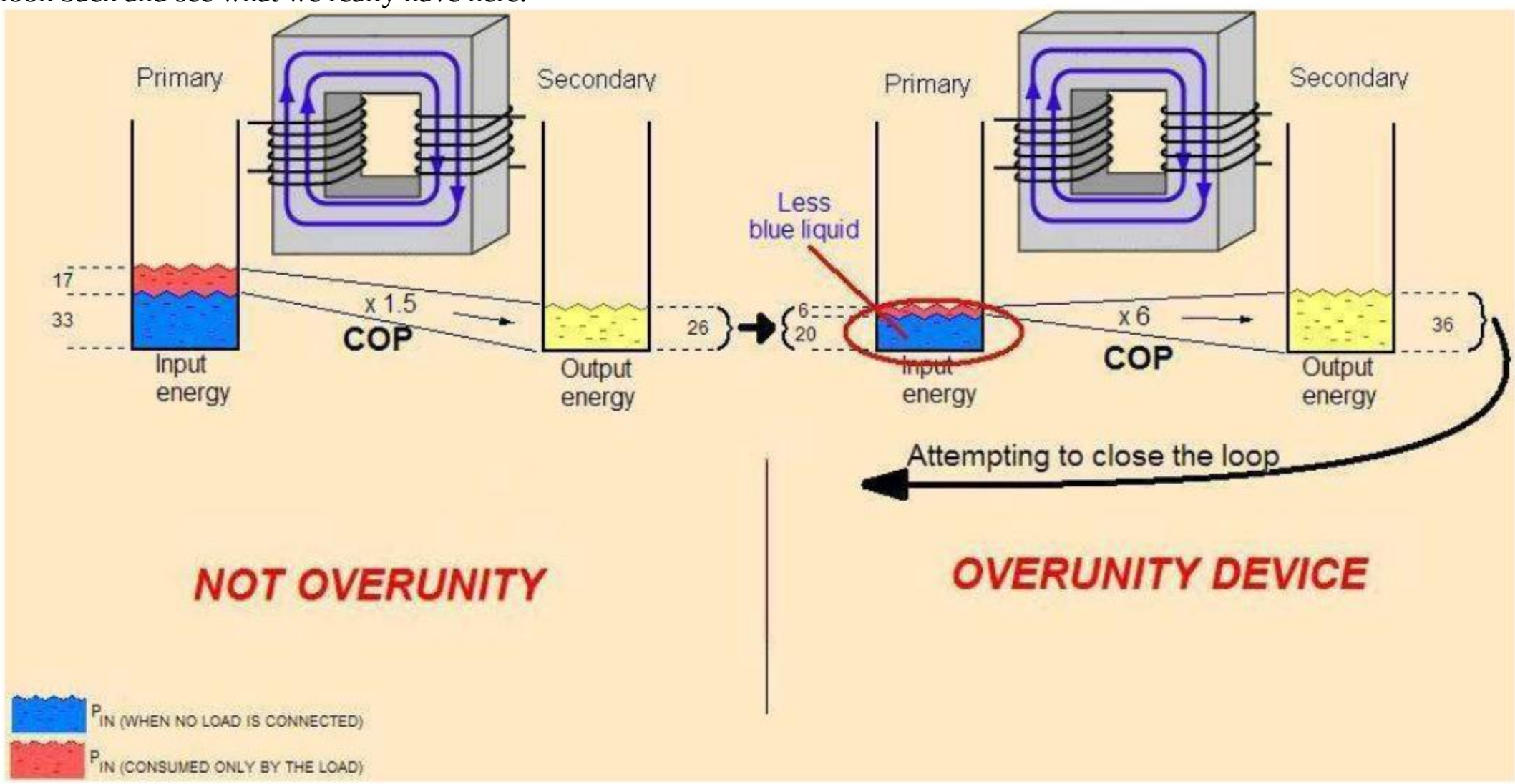
Note: This type of definitions of COP, Efficiency **and Overunity are mostly** applied to Transformers and Ideal Transformers. Us **ing these definitions in any other type** of generators, motors or devices, is not recommended and will likely lead to serious distortions and errors.

In this case we have 6 units of energy consumed only by the load **in the second tra**nsformer. With a COP=6 we **achieve an output energy greater than the** input energy. Finally**, we have an energy gain.** Then we will be tempted to close the loop:



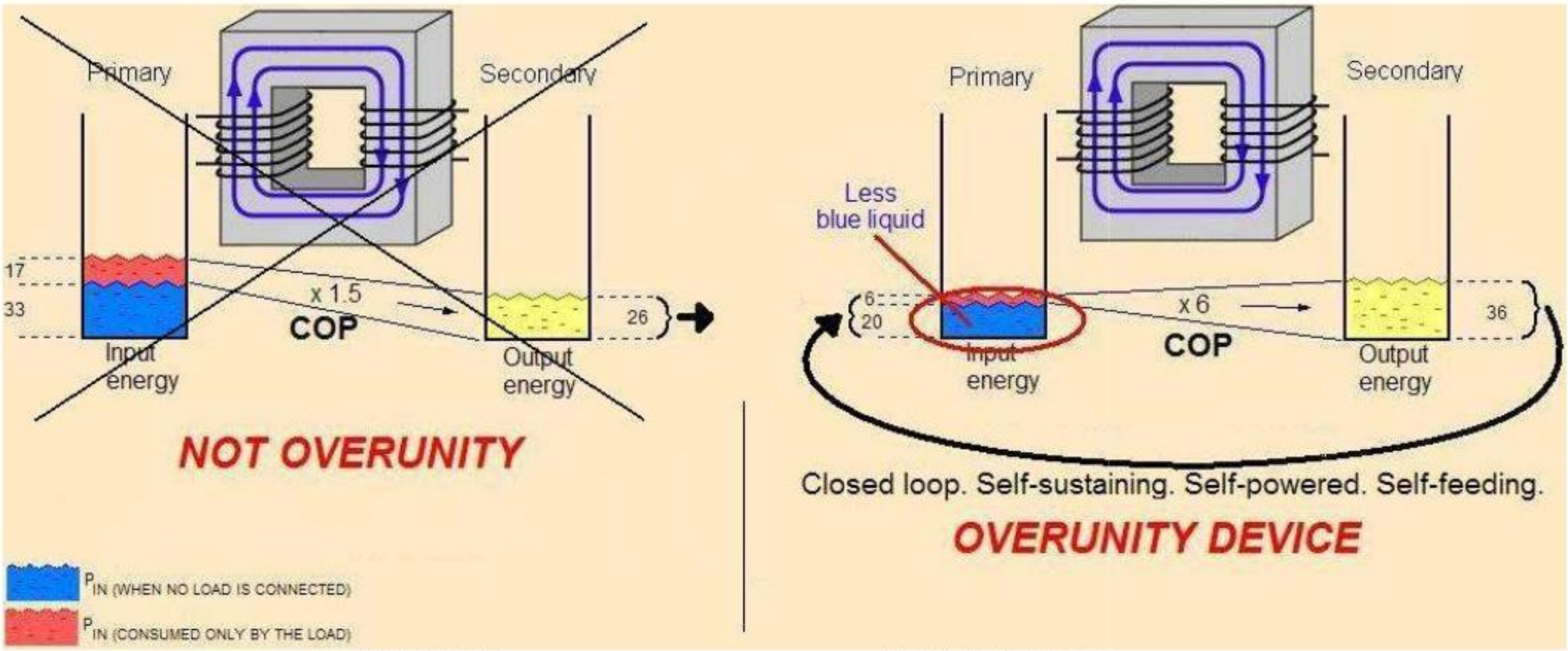
Note: This type of definitions of COP, Efficiency and Overunity are mostly applied to Transformers and Ideal Transformers. Using these definitions in any other type of generators, motors or devices, is not recommended and will likely lead to serious distortions and errors.

Wait a second, before we attempt to close the loop, and create a self-sustaining device, that power itself, let's look back and see what we really have here:



Note: This type of definitions of COP, Efficiency and Overunity are mostly applied to Transformers and Ideal Transformers. Using these definitions in any other type of generators, motors or devices, is not recommended and will likely lead to serious distortions and errors.

In this case, we must ask ourselves, what is the point in having the first transformer? What is its purpose? It serves no purpose, because if we are trying to achieve energy gain, then this first transformer is wasting energy and is not efficient. Let's discard it. But then we end up with only one system:

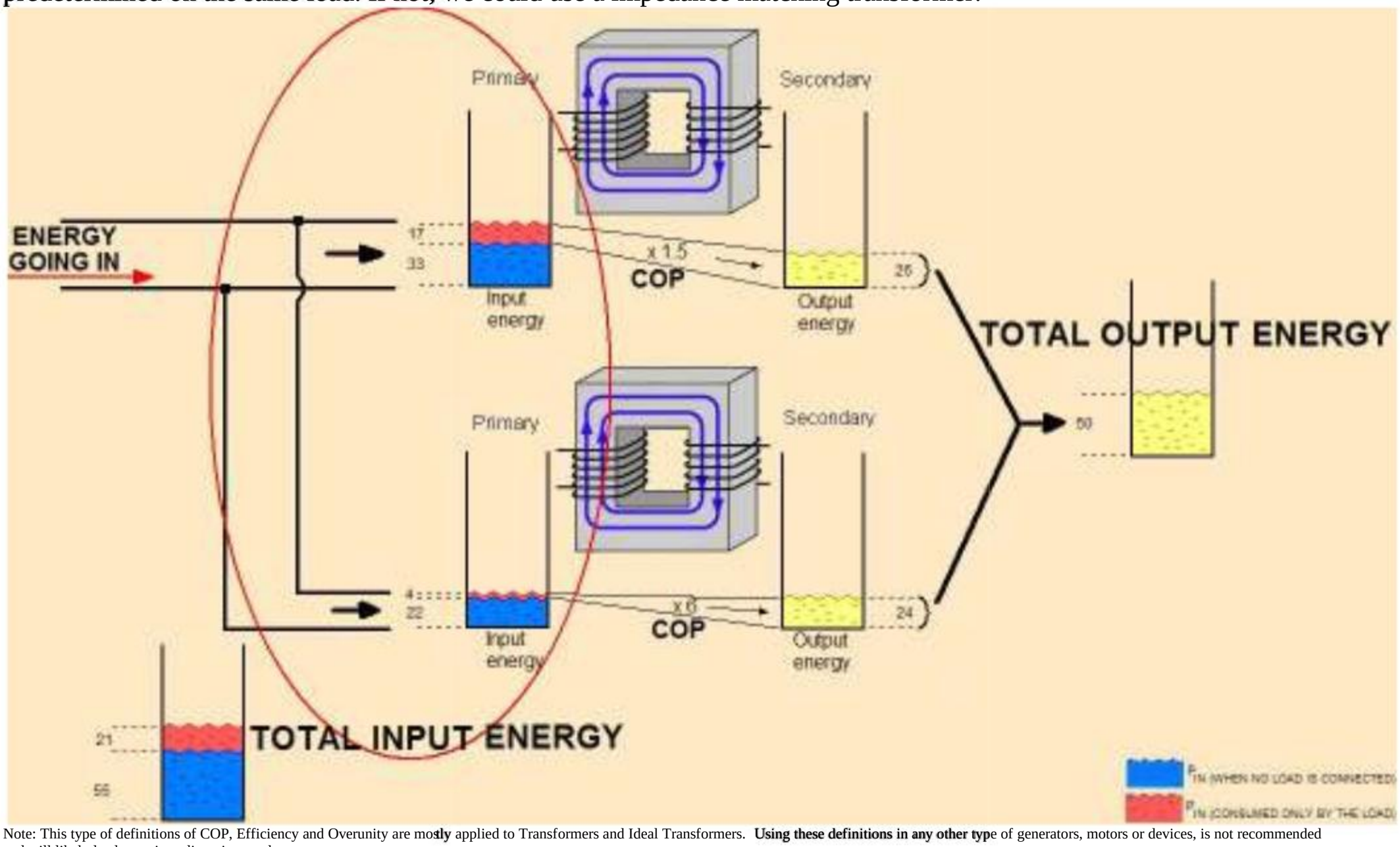


Note: This type of definitions of COP, Efficiency and **Overunity are mostly** applied to Transformers and Ideal Transformers. Using **these definitions in any other type** of generators, motors or devices, is not recommended and will likely lead to serious distortions and errors.

Conclusion: **We must not take** into account devices that have COP**>1 and are** already overunity, and can **sustain themselves. What is the point is c**onnecting **a transformer capable of sustaining itself** to another device with COP>1? ***A transformer with COP>1 and overunity>1 shouldn't be connected to anything, but itself!***

CASE 2: PARALLEL CONNECTION FOR COP>1 TRANSFORMERS:

A parallel connection case would be like the one in **the picture below. Bear in mind**, since COP is dependent on the load which we **are using, for simplicity** reasons we would consider **that the COP for these** next transformers is **predetermined on the same load. If not,** we could use a impedance matching transformer.



Note: This type of definitions of COP, Efficiency and Overunity are mostly applied to Transformers and Ideal Transformers. **Using these definitions in any other type** of generators, motors or devices, is not recommended and will likely lead to serious distortions and errors.

In this case the two transformers can be equivalence **with only one device exhibiting** this COP:

$$COP = \frac{50}{21} = 2.38 \ (3.92)$$

Note that 2.38 is not an average between 1.5 and 6. **This equivalent COP be determined** without making equivalences, **and calculating total input energy or total** output energy:

Again let's make the naming convention as above:

$P_{IN(CONSUMED\ ONLY\ BY\ THE\ LOAD)}$=n;
P_{OUT}=q;
Let's consider the first transformer COP to be:

$$COP_1 - \frac{q_1}{n_1} \rightarrow q_1 - n_1 COP_1 \ (3.93)$$

And the second transformer COP:

$$COP_2 - \frac{q_2}{n_2} \rightarrow q_2 - n_2 COP_2 \ (3.94)$$

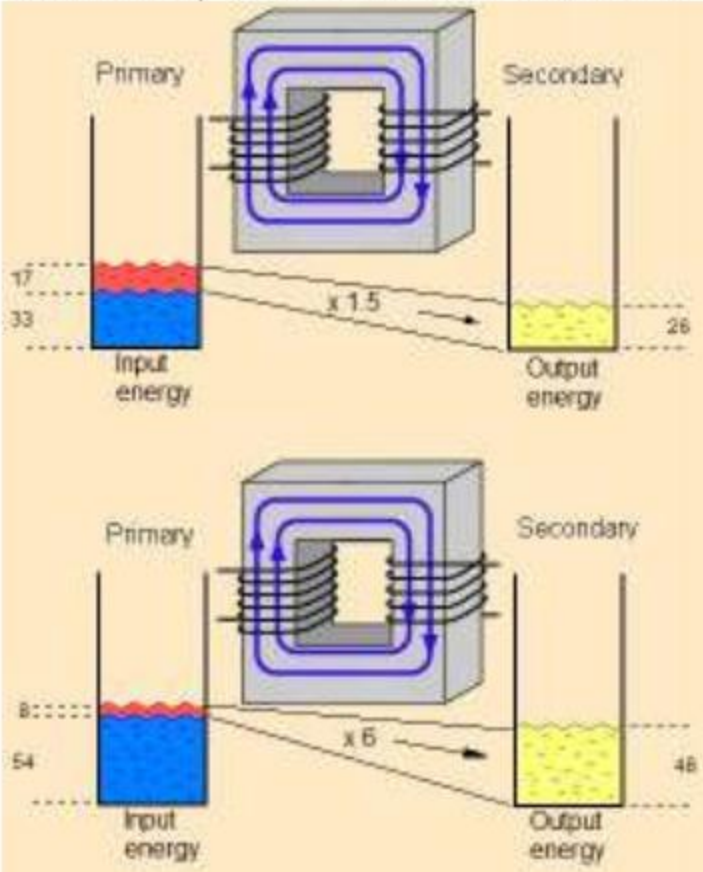
We are trying to determine $COP_{echivalnet}$ **a**s a relationship of COP_1 and COP_2:

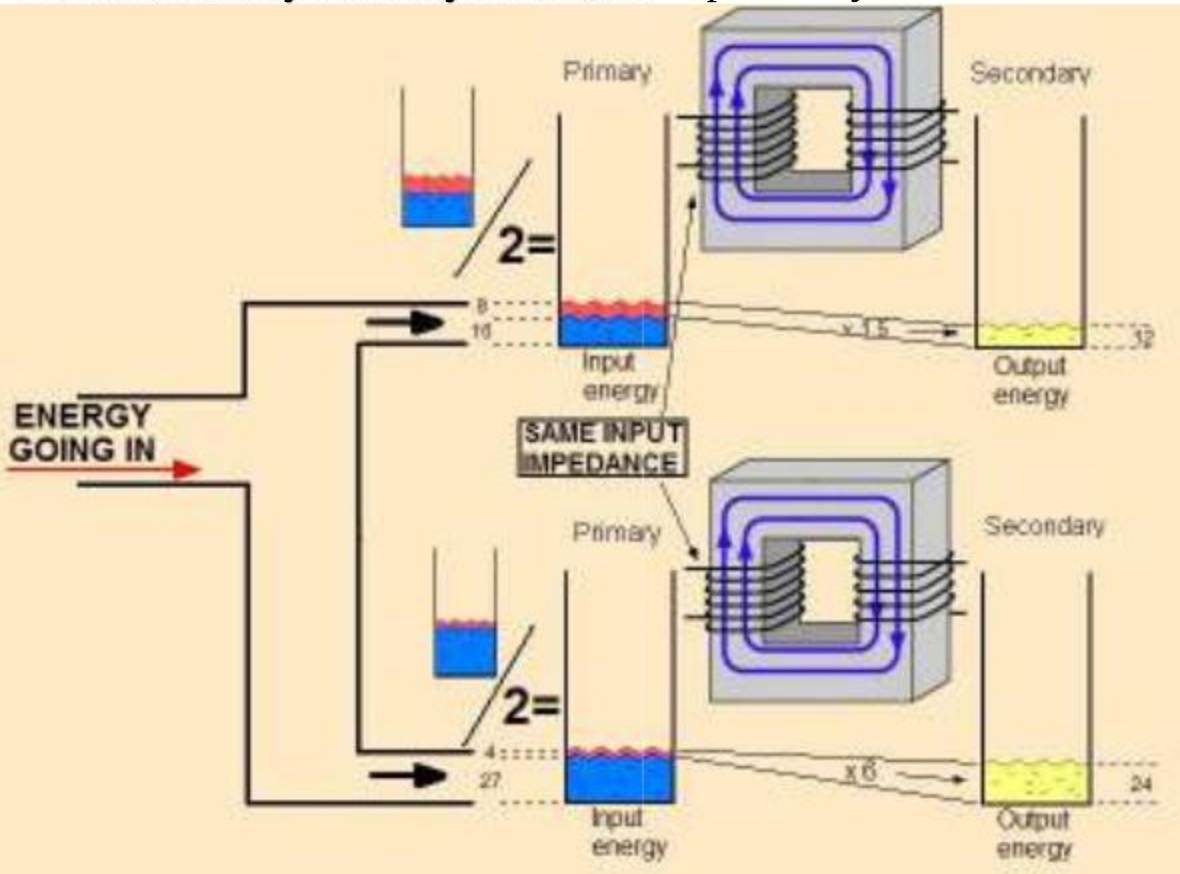
$$COP_{echivalent} = \frac{q_1 + q_2}{n_1 + n_2} \ (3.95)$$

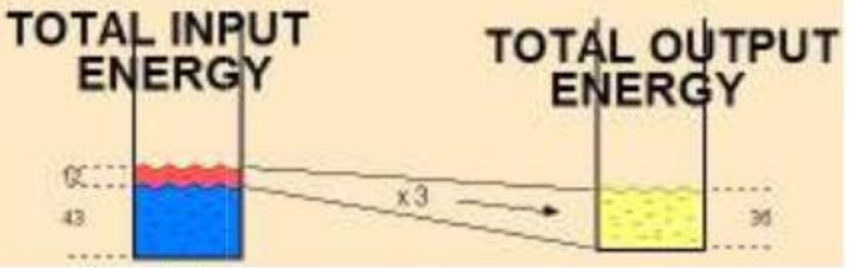
$$(3.93),(3.94) \rightarrow (3.95): COP_{echivalent} = \frac{n_1 COP_1 + n_2 COP_2}{n_1 + n_2} \ (3.96)$$

CASE 3: SERIES CONNECTION FOR COP>1 TRANSFORMERS:

Let us consider the easiest **setup in which** both of transformers have the same i**nput imped**ance. In this case the energy **consumed by each transformer will be di**vided in half **from what they normally consume i**ndependently.







Note: This type of definitions of COP, Efficiency and Overunity are mostly applied to Transformers and Ideal Transformers. Using these definition**s in any other type** of generators, motors or devices, is not recommended and will likely lead to serious distortions and errors.

The output energy generated by our transformers put **together will still be lower t**han the total input energy. **If the transformers have different input i**mpedance**'s, then the one with the lower impedan**ce will consume more energy than the other. **In any case, and** whatever we do, ***we are always losing energy, not gaining!***

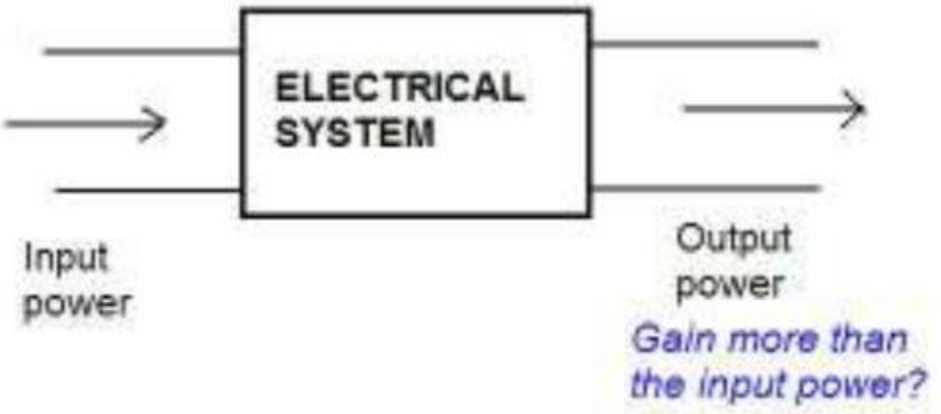
Conclusion:

COP>1 devices, can't feed themselves or one another, unless they are ALSO overunity! ***And i****f one of them is overunity, there is no need t****o con****nect it to anything else, but itself!*

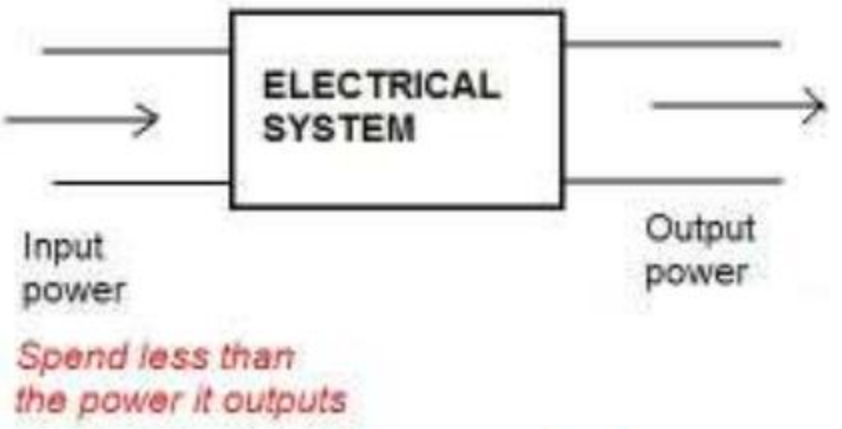
Note: The rules presented above might change with other type of devices and laws on which they operate.

Changing our mentality

Here is some more food for thought. Many people who are striving to reach over-**unity, a**lways expect to gain more energy **than they put in! But that is impo**ssible! Yeah, y**ou read it right! It's impossible to** gain something out of nothing! **And that's a universal TRUTH! The Law** of Conservation of energy always applies.



Here it comes…..BUT…you could bend it to your own advantage We must change the way we address this over unity issue. What if we don't have to gain more? What if we don't have to output more power than we put in? You might say: What the heck are you talking about there? You are full of shit! Bear with me a moment. Please. What if…we are approaching the over unity issue in a wrong way?
I believe that we don't have to gain more, but quite the reverse! WE HAVE TO SPEND LESS! And that is the key to over unity! We don't have to expect to gain more energy at the output! But in fact we must look at the input! That's where the magic happens. That is where we have to pay attention.



Reaching over unity not by gaining more energy at the output, but by spending less energy at the input (a.k.a "blue liquid")!!!

Yeah, but you still have an energy gain, where does that energy come from? From the magnetic field produced by permanent magnets. If you have a magnetic field already in place running through a core, then in theory you should spend less energy building the same magnetic flux, which would have taken a lot more energy to create if you didn't use a permanent magnet (inductance gain). But in theory, this energy gain from the magnet is so small and insignificant that you can't use it for anything! You can't do anything with it! ***Or can you?***
Yes you can, if you have a near 100% efficient transformer, you could raise its performance above the 100% mark and pass the over unity barrier by using this trick! That is again, in theory. That's how I think the TPU really works…in theory
To back these above words I'm going to use a famous quote:
"[…]With continuous flux paths the static flux from the permanent magnet or magnets is useless. However, if the static flux of the permanent magnet confined to the flux paths were modified to be time varying it would have utility for electromagnetic induction devices for power conversion like transformers and power inverters".
I will let the reader to figure out who said this. I don't believe it's a very comprehensive sentence, so let me explain what to above quote speaks about:

It speaks about an OVERUNITY SECRET:

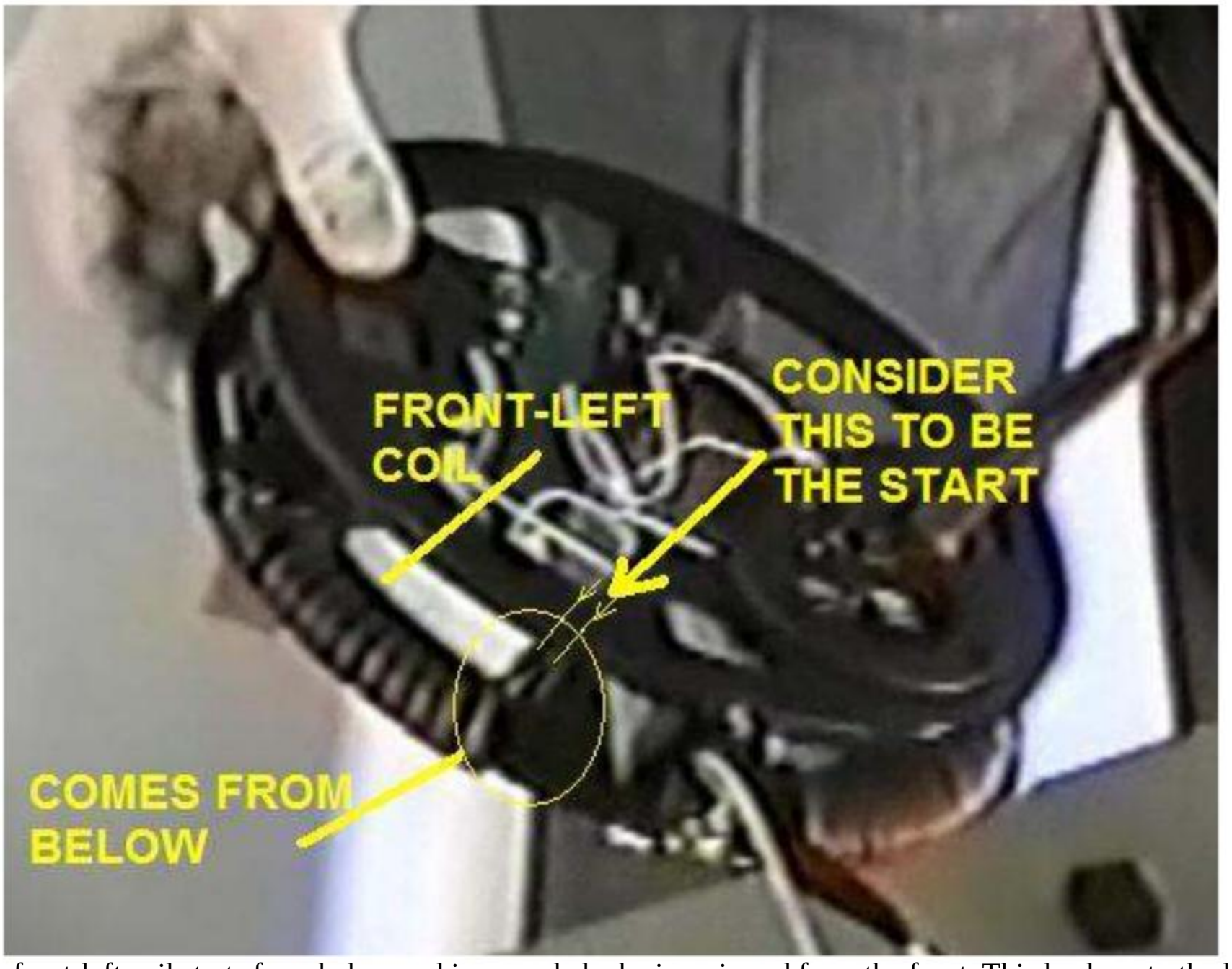
- First step: You don't energize the input primary side of a transformer with a normal, conventional approach with power from a power line, you let a permanent magnet energize it. Yeah, but the magnetic field of a magnet is static. That is correct, BUT you could make the magnetic field of a magnet be dynamic.
- Then the second and final step is to make sure that the energy spent dynamising the magnet field by exiting and kicking it, is lower than the energy provided at the output by the magnet.

So then, back to our Tesla transformer 381970, even if it has an extraordinary ***performance***, it is not ***efficient*** because of the input power consumed without a load. If you are lucky you can maybe get let's say 10% efficiency out of this Tesla transformer. 10% efficiency means for example that if the primary consumes 200W of power, you will see at the output a maximum of 20W. But the interesting effect here, that was the reason why we investigated this old Tesla

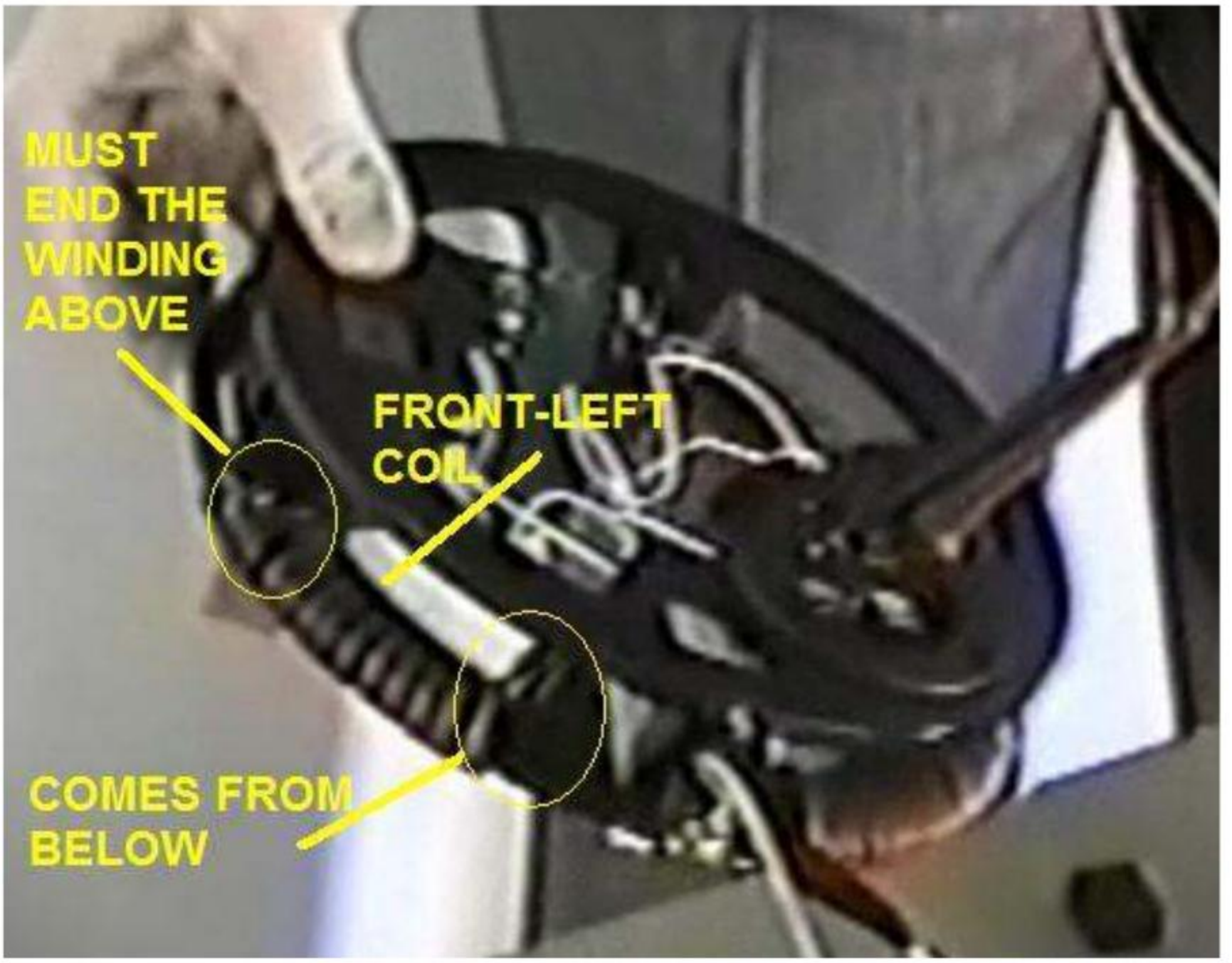
design, is the fact that when you extract the 20W of power from the secondary, the input power of 200W stays the same, and it doesn't increase to 220W as you would normally expect.

It is extremely low in efficiency because of the outside magnetic field, that is, the magnetic field lines outside the core are not closed. In theory if you could reduce the magnetic reluctance of the core material, and figure out a way to keep all of the magnetic flux inside the transformer, then maybe, you could in theory obtain over unity, and close the loop.

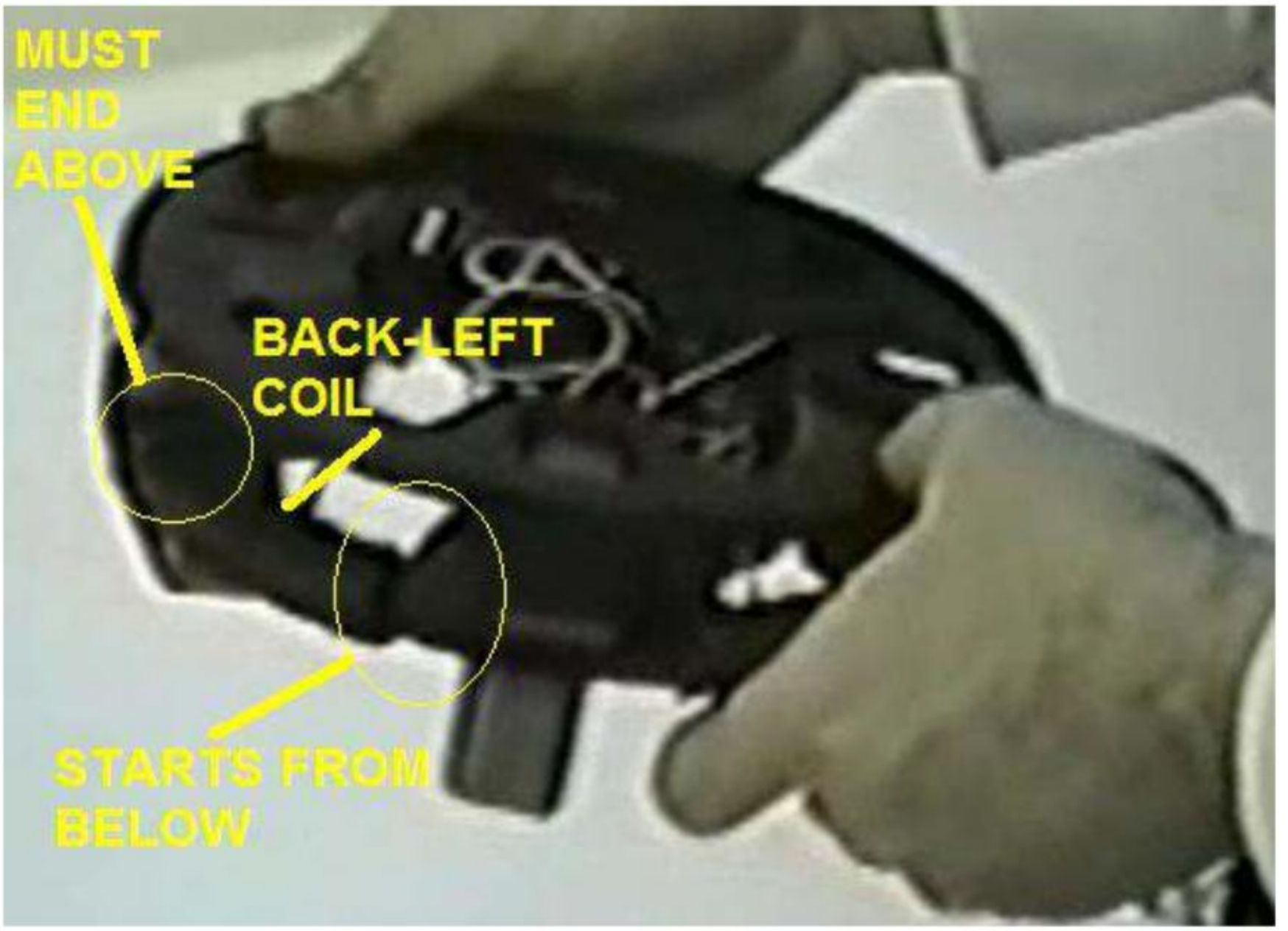
This is interesting stuff, but in Steven Mark's TPU do we have this Lenz-less opposing magnetic flux/magnetic decoupling effect in the coils as seen in the Tesla patent? All of the 8 coils of Steven's TPU appear to be wired in series, one after the other in a chain. Let's take a closer look:



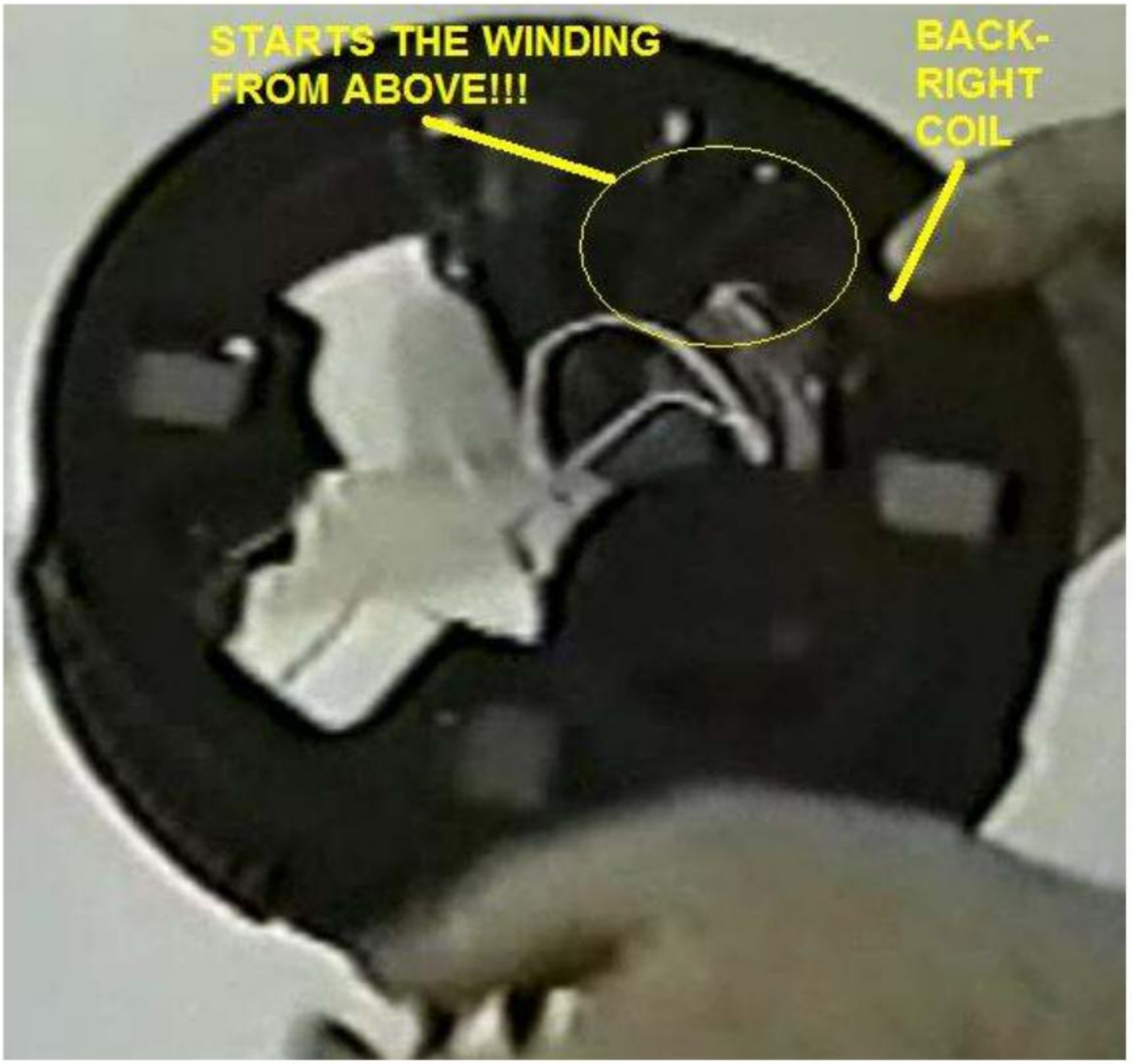
Ok, so the front-left coil starts from below and is wound clockwise, viewed from the front. This leads us to the logical deduction that it's end will exit the coil from the upper side of the coil:



Now, look at the back-left coil:



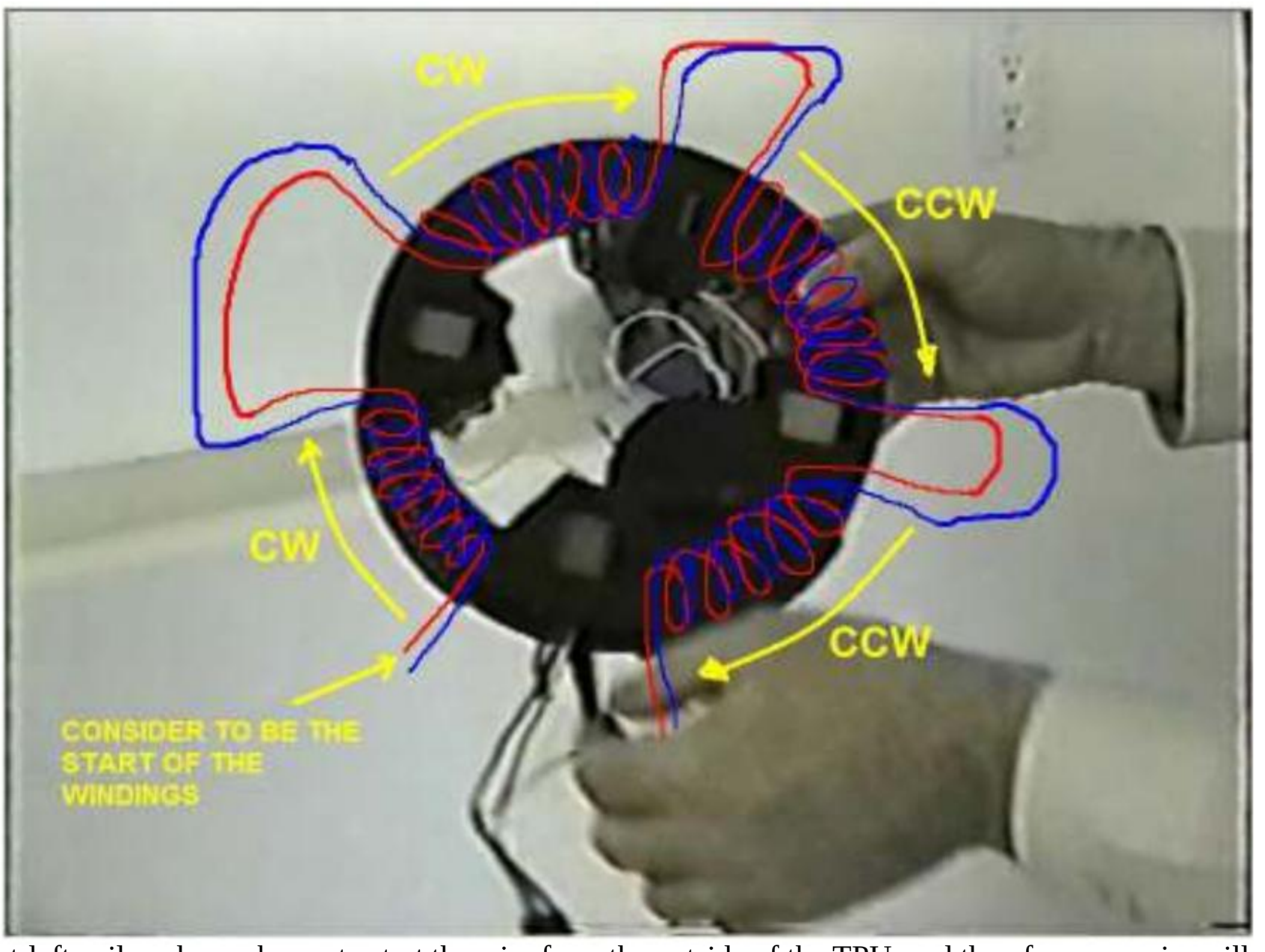
The back-left coil is wound in the same clockwise direction (if you start the windings of the toroid in a clockwise direction when viewed from above). Let's continue to investigate this:



This is very difficult to see, but I dare you to prove me wrong, by finding the same video in a better quality, change the brightness, contrast, color, saturation, hue, and all this parameters, and see this for yourself that it's right.
Hmm…he changed the direction of the winding to counter-clockwise, if you consider the start to be were the wires come out of the device.
Let's continue on…

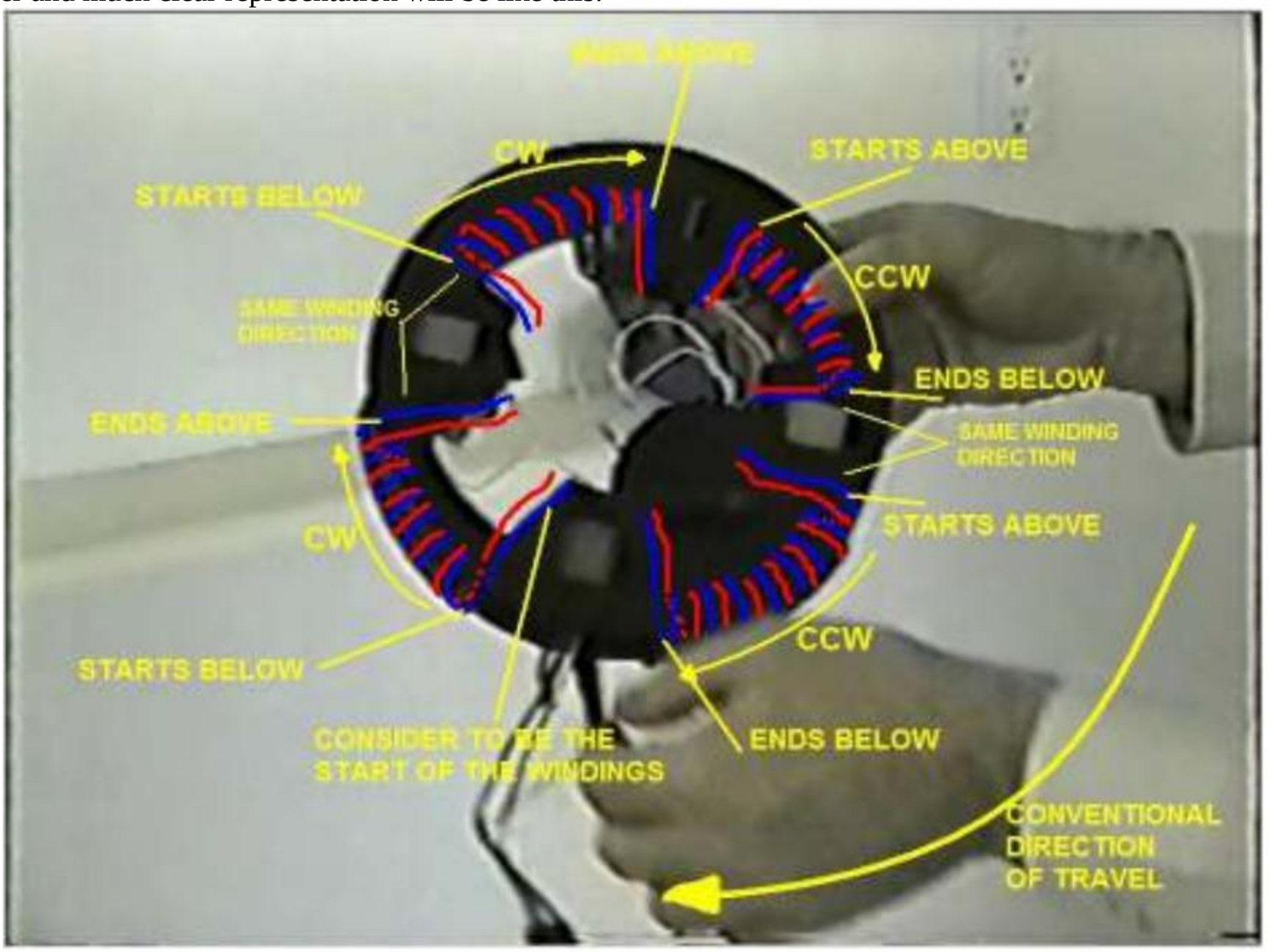


The front-right hand coil is wound in a counter-clockwise direction. It starts from above, and ends below. NOW WE KNOW ALL THE DIRECTIONS OF THE WINDINGS WITH A HIGH DEGREE OF CERTAINTY!! Let us summarize what we know so far:

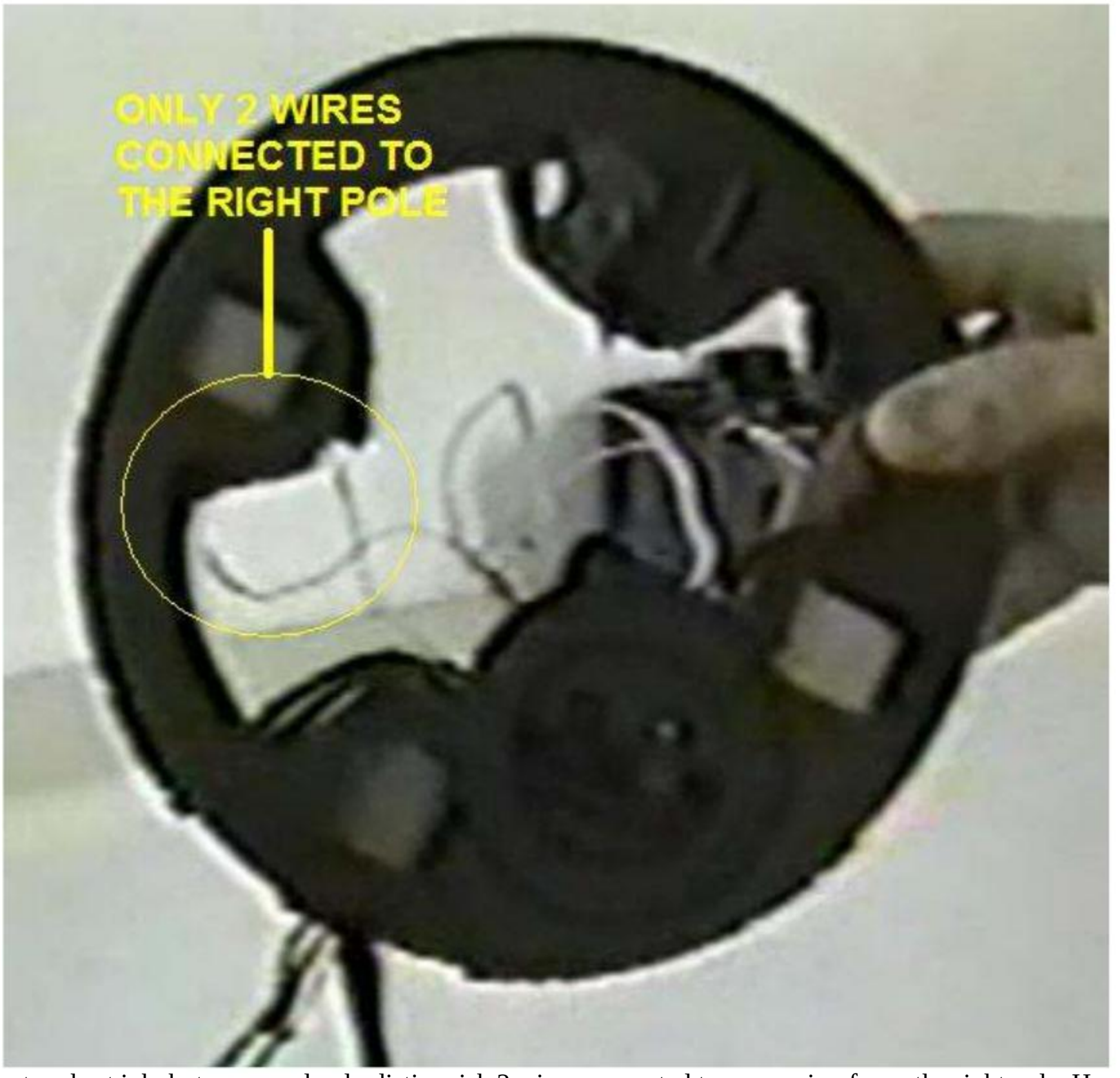


At the front-left coil we have chosen to start the wire from the outside of the TPU, and therefore, our wire will start above the core, and will end below the core. BUT the starting and ending leads of the coils are actually situated INSIDE

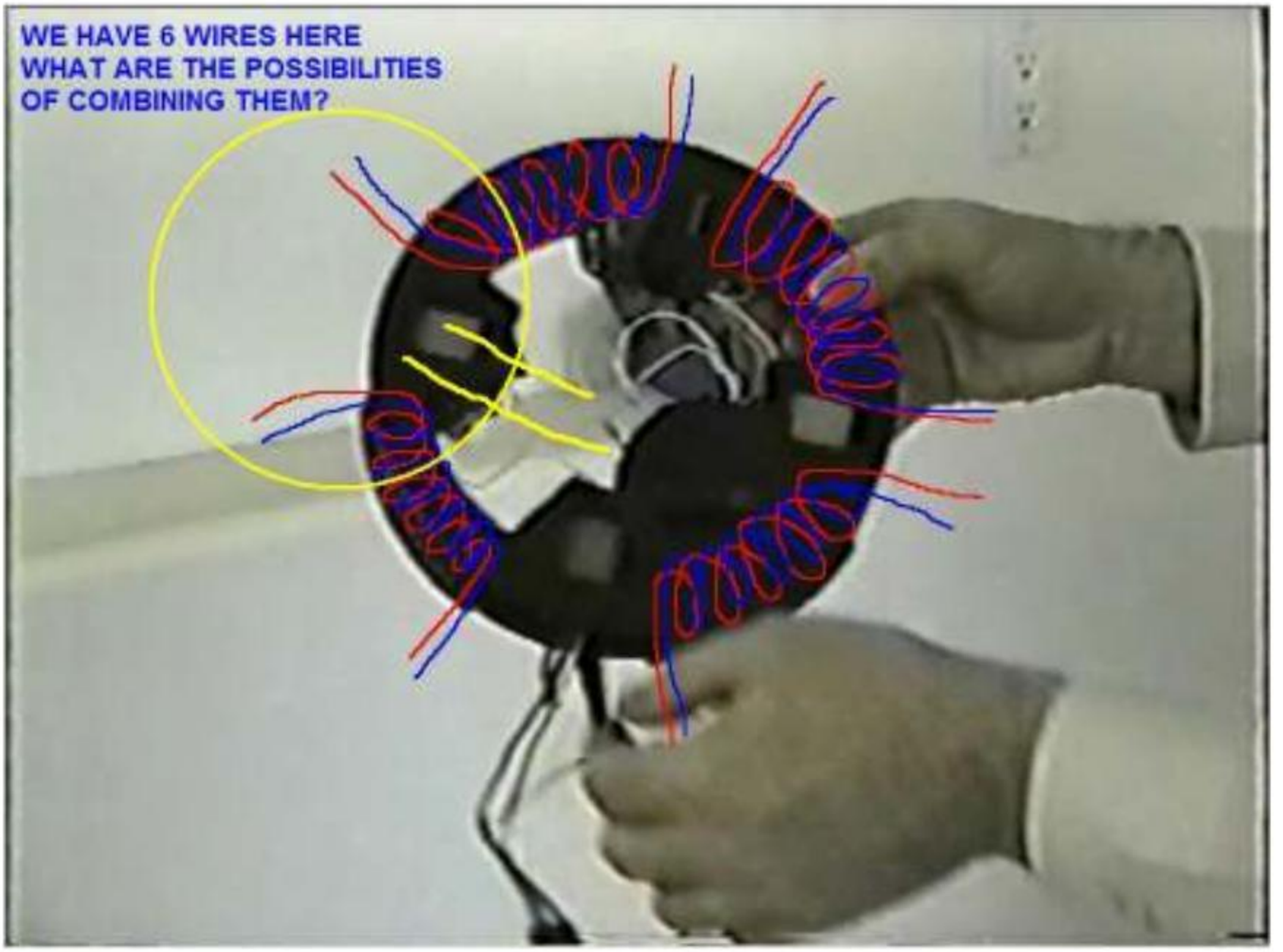
the TPU, therefore, the front-left coil which starts from the inside at the front pole, from below now, and ends at the left pole above going inside of the TPU.
So a better and much clear representation will be like this:



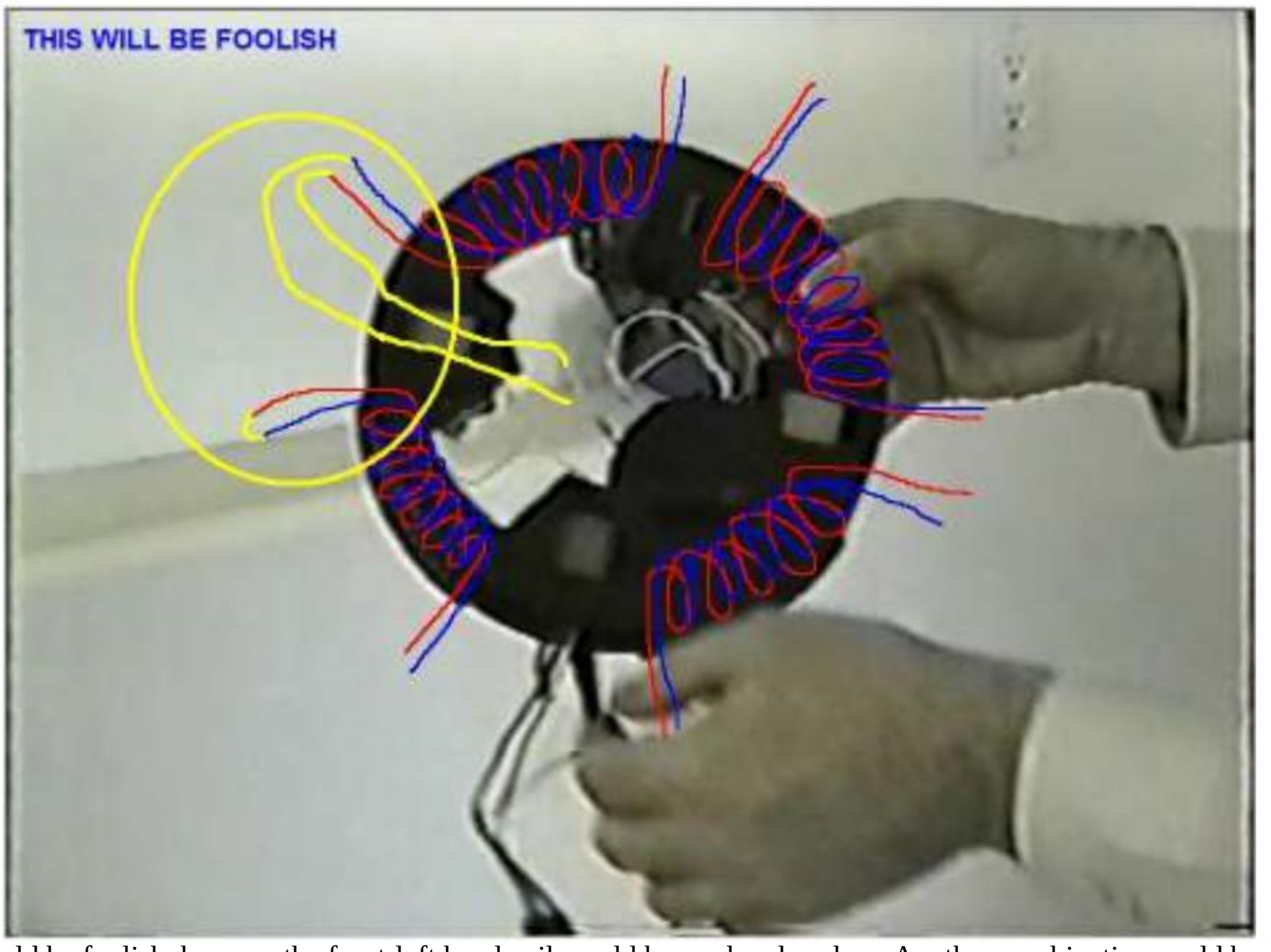
As suspected, Steven is creating the effect we are after, by using opposing magnetic fluxes. Let us take a look at that bundle of wires in the middle of the TPU. Where do they connect to?



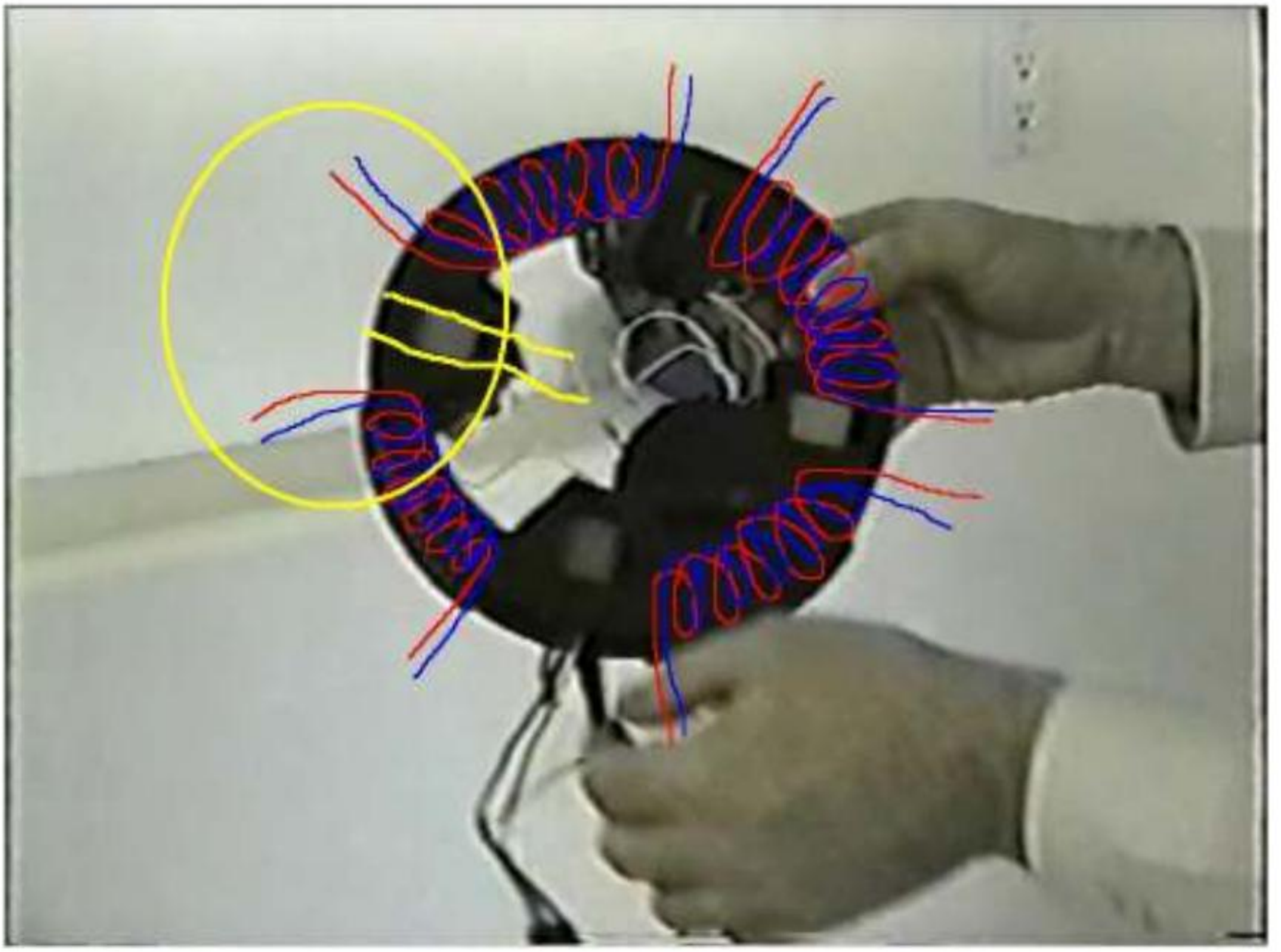
This is the toughest job, but we can clearly distinguish 2 wires connected to, or coming from, the right pole. How are these wires connected? To what? What other wires do we have here?



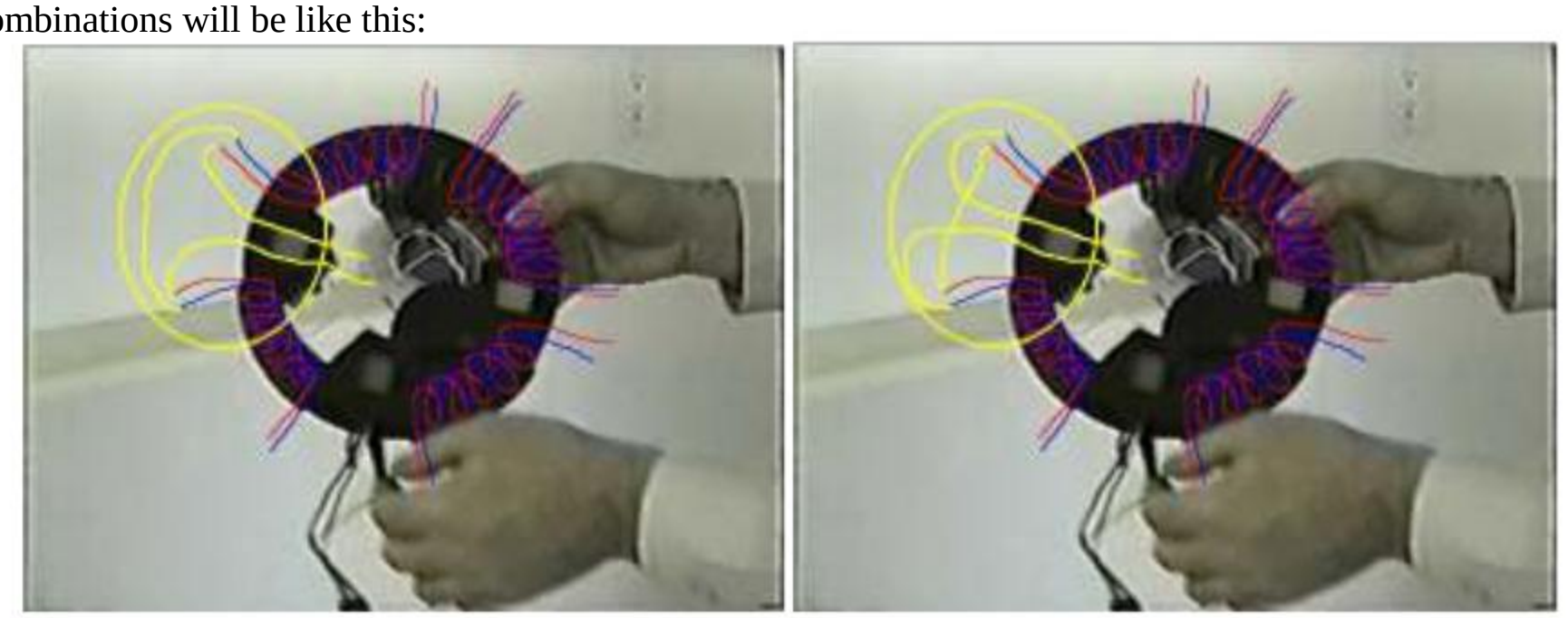
We could combine them like this:



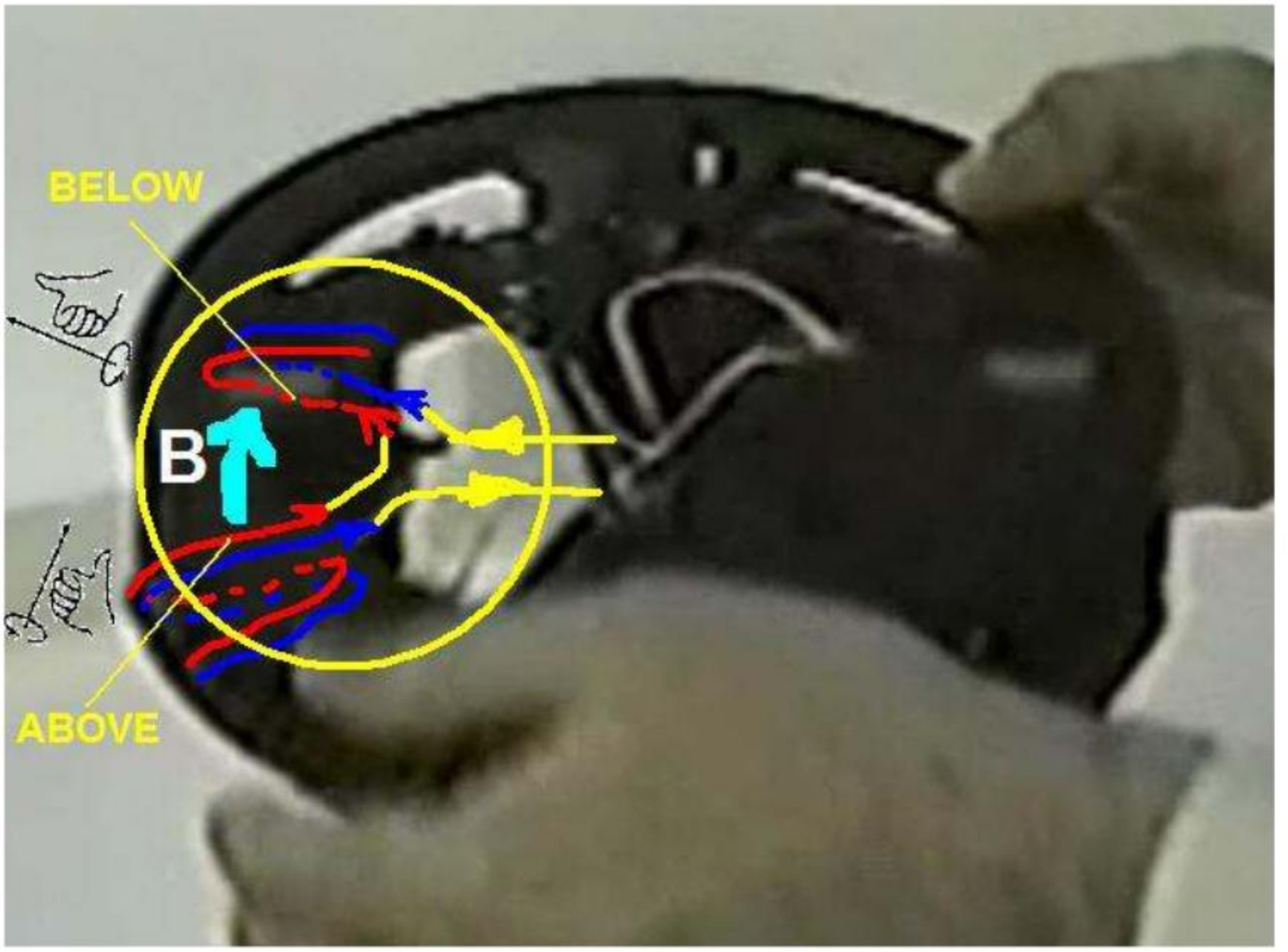
This would be foolish, because the front-left hand coil would be rendered useless. Another combination could be:



This would be ineffective also, because this time, the back-left coil will be redundant.
Other combinations will be like this:



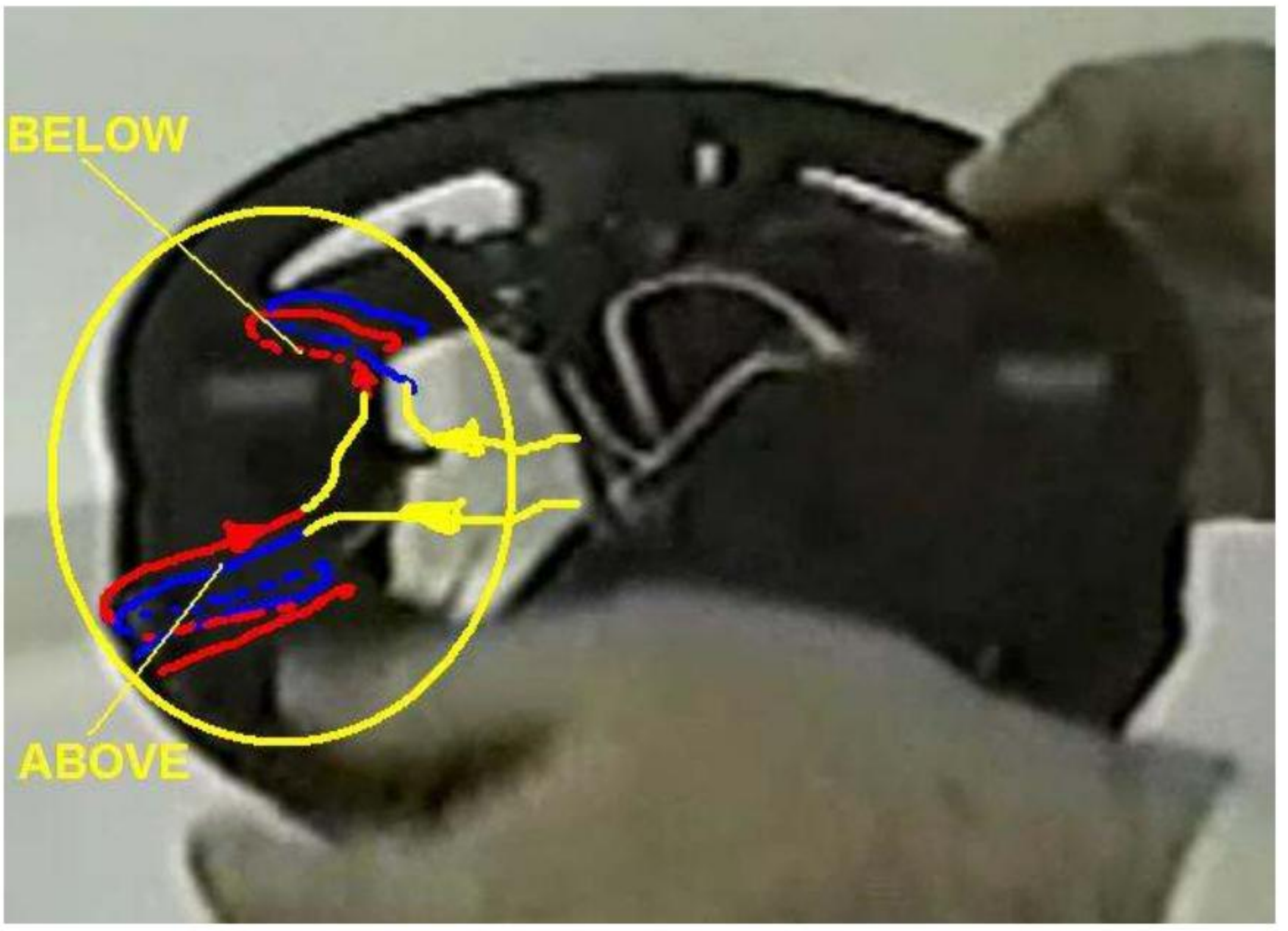
In these configurations, we have two sub-possibilities, both ineffective, as we will see. The first sub-possibility is that the current flow through these 2 yellow wires is in opposite directions with one going and one coming. Regardless of which one's which, let's think also about how the front left coil enters into this junction, and how the back-left coil leaves this junction.



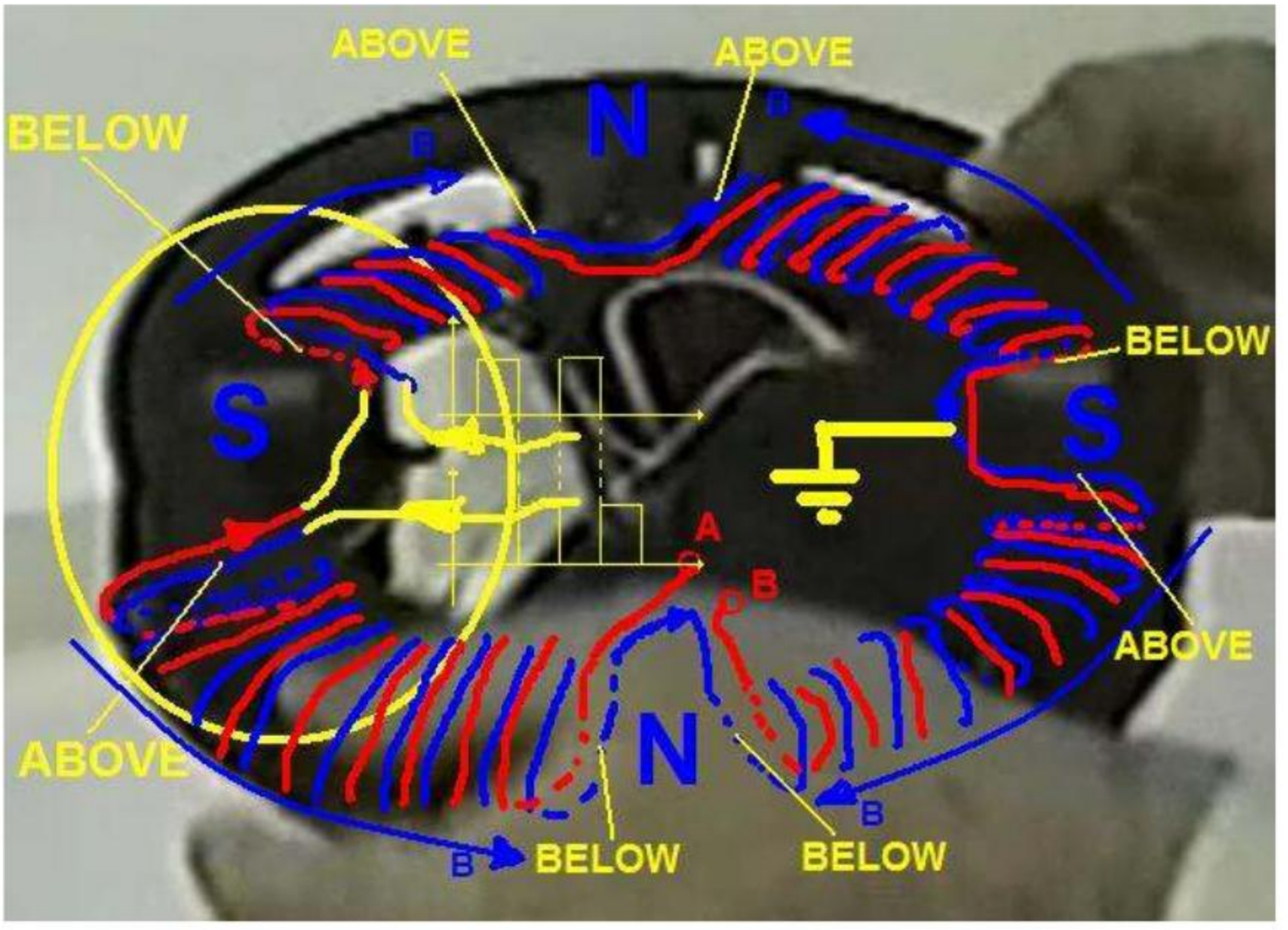
If the wires were connected like this, it would nullify our pole! So then what's the point in having the permanent magnet placed here??? Our coils don't create a magnetic pole here! So, this sub-possibility has to be wrong!

(Comment on 29.12.2011: If this is your first time reading the book, don't read this comment. It will be extremely confusing and even contradicting all I have stated. I have come to believe that this is actually not wrong, but in fact quite correct, and even more than that, it's an improvement of the final configuration. So study the final most likely configuration and the further study on improving performance to see how this above case is correct)

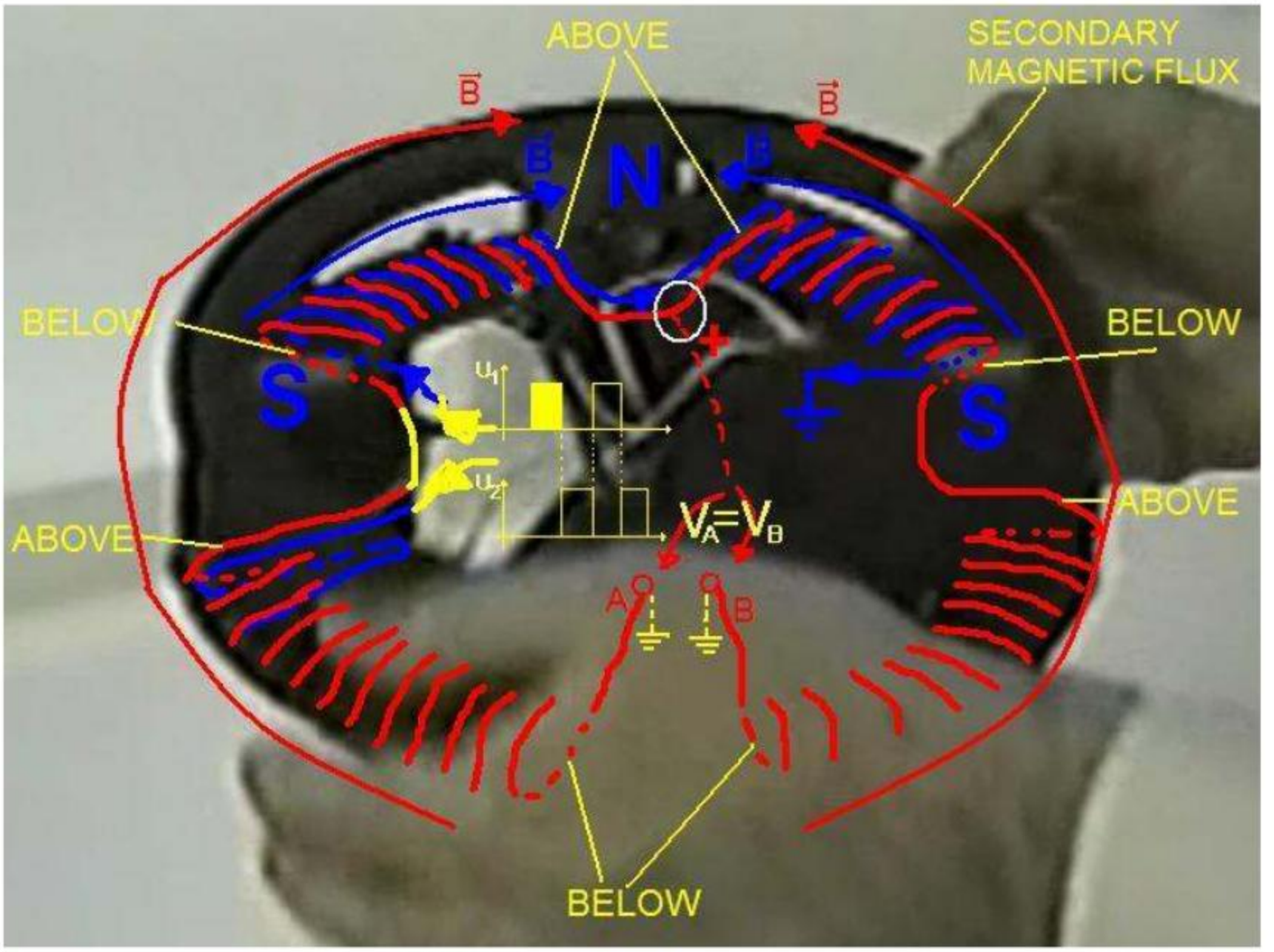
The last incorrect sub-possibility is that the direction of the current flow through these 2 yellow wires is in the same direction.



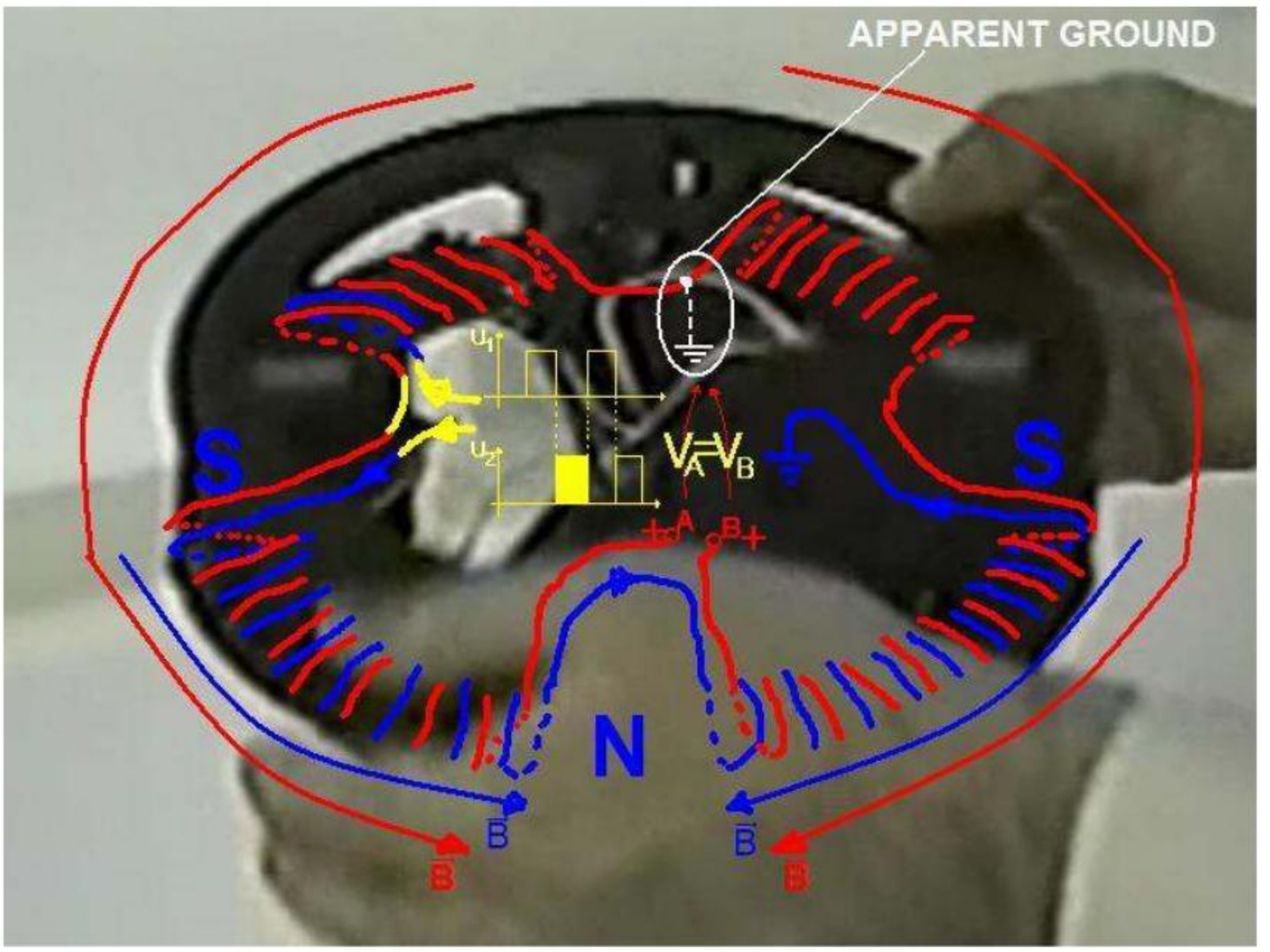
If the wires are connected like this, then you might say: what's the point in having 2 wires with the same current?, it can be just one…and you are right. If so, then it's a median point. But what if it's not the same current? It could be 2 sequential pulsed currents, when one in on, the other is off and vice-versa.
If the wires are connected like this, then bear with me, because it gets a little complicated. To pulse two flip/flop currents through these two yellow wires, will mean that you will need a ground for them. The only possible symmetrical ground for them will be on blue wire in the right pole. Now, this is somehow peculiar, but the blue 4 coils (let them be primary coils) will generate 4 magnetic poles like so:



But this is also a wrong configuration. Why? We will consider the blue coils to be our primary, then the red coils our secondary. Our primary fires first the back side of the TPU:



Then the front side of the TPU, and so on:



By doing this, Our secondary, due to not having any sort of connection at the back pole, will generate at the A and B terminals two equal voltages of same polarity. Due to the fact they have the same polarity at a particular time (either + or -), and equal voltage, there will be no voltage drop between them.

You may be wondering what is this "Secondary magnetic flux" in red. I know that's not quite correct, but it's the same flux as the blue vector , but for the sake of understanding how the secondary winding will operate, we conventionally chosen to represent it this way.

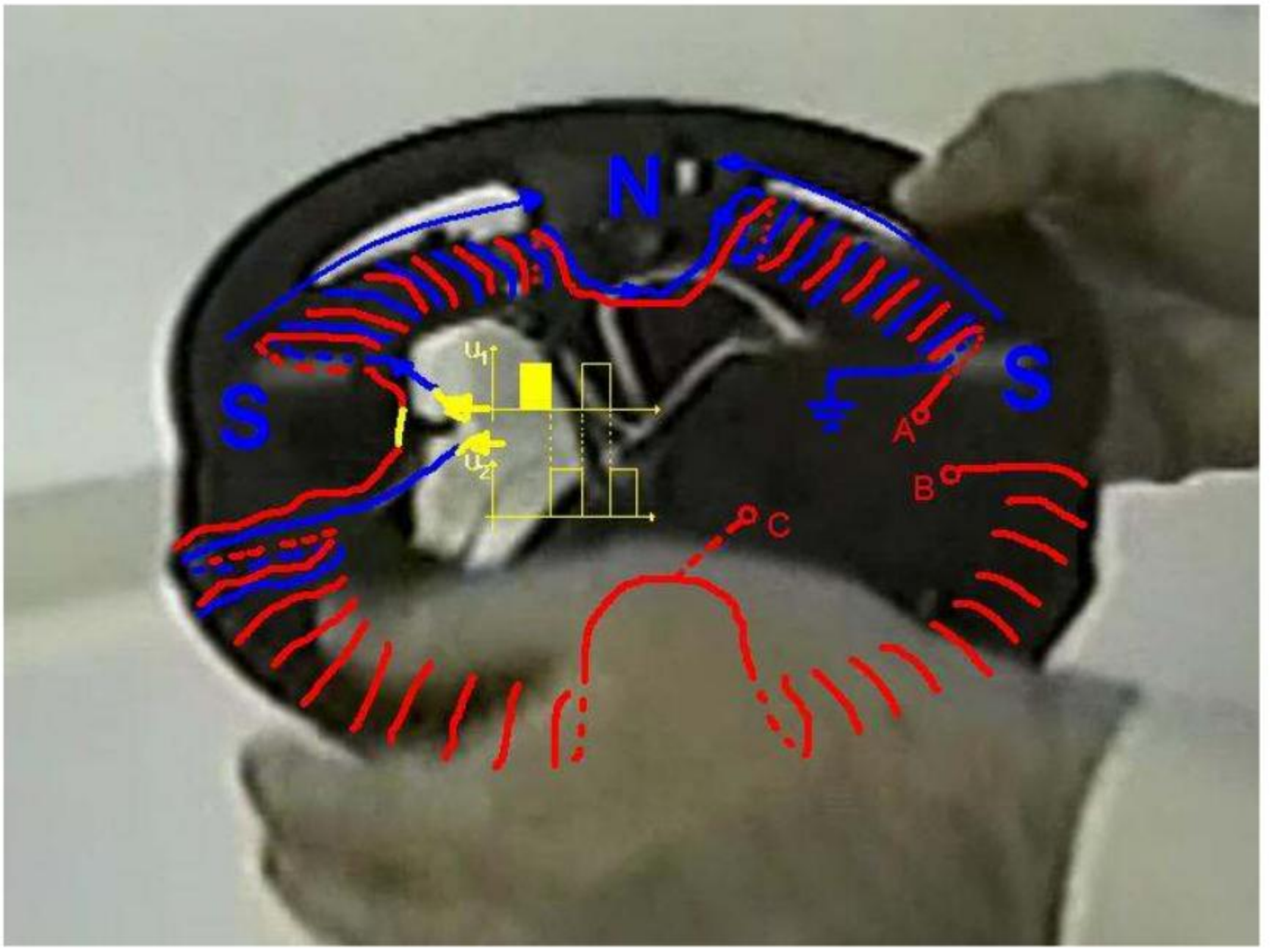
The only way to collect power from this type of red-secondary is to have a ground connection at the back-pole, because our voltage potential is created from this point.





But we cannot see any wire connected to the back pole. Therefore there is no possible way to generate an output from this red-secondary configuration.

There is another configuration, also false, and just like above, but this time, our secondary plugs are situated at the right pole:

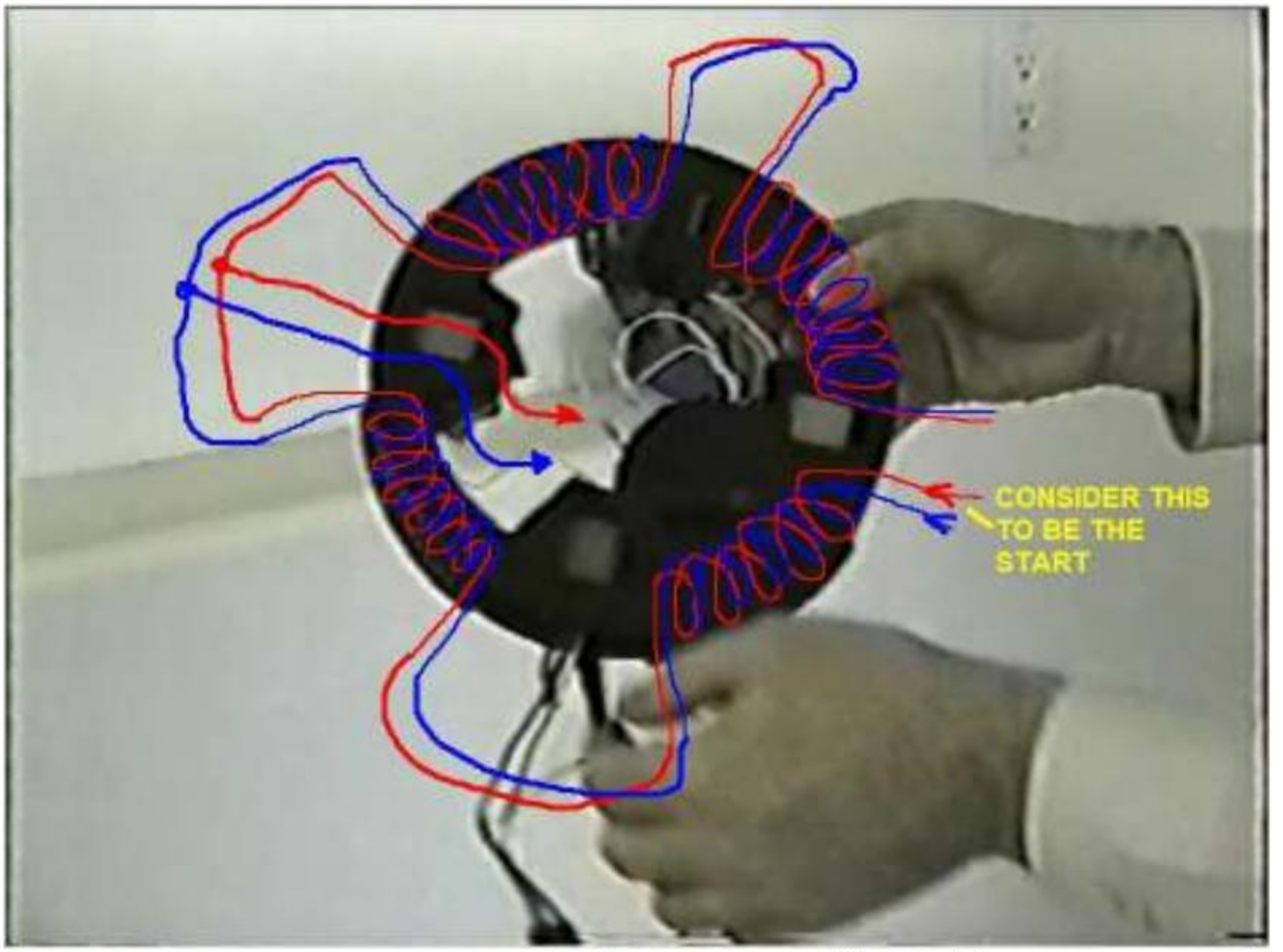


We know we don't have a connection at the back pole and at the left pole the 2 wires connected serve as inputs. No room for the third wire. So the only possible other connection will be at point C. But then the whole back red winding will serve no purpose.

Most likely this configuration the secondary winding will need another wire at the left pole of the TPU. (that makes 3 wires connected here - false configuration). But nothing will be generated on the back/front side of the TPU, because we have two magnetic fluxes that oppose each other in the middle (at the front & back pole).

Although there may be some true in these configuration, and it may be the way he is firing the primary.

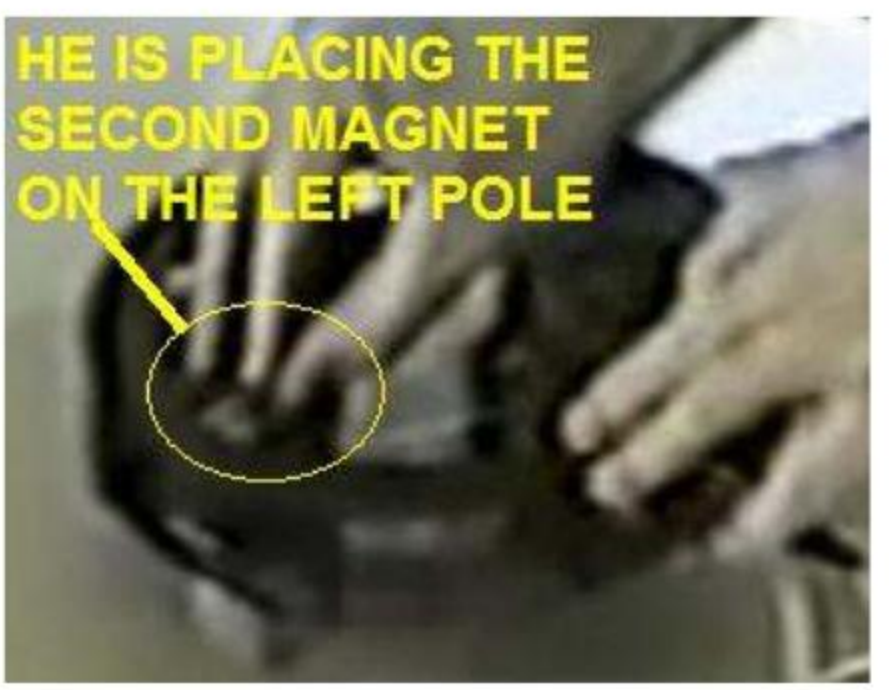
THE ONLY REMAINING MOST LIKELY POSSIBLE CONFIGURATION WILL BE LIKE THIS:



This is straightforward. First we have reached the ***point where we can say with certainty*** that Steven is using a tapped median point on the left pole, therefore, regardless of the direction of the current in or out of these median points, he will have created 4 magnetic poles (at the front, back, left and right of the TPU).
How are the poles really oriented? How are the magnets oriented? How is he firing the coils? Let's study possible answers to these questions:

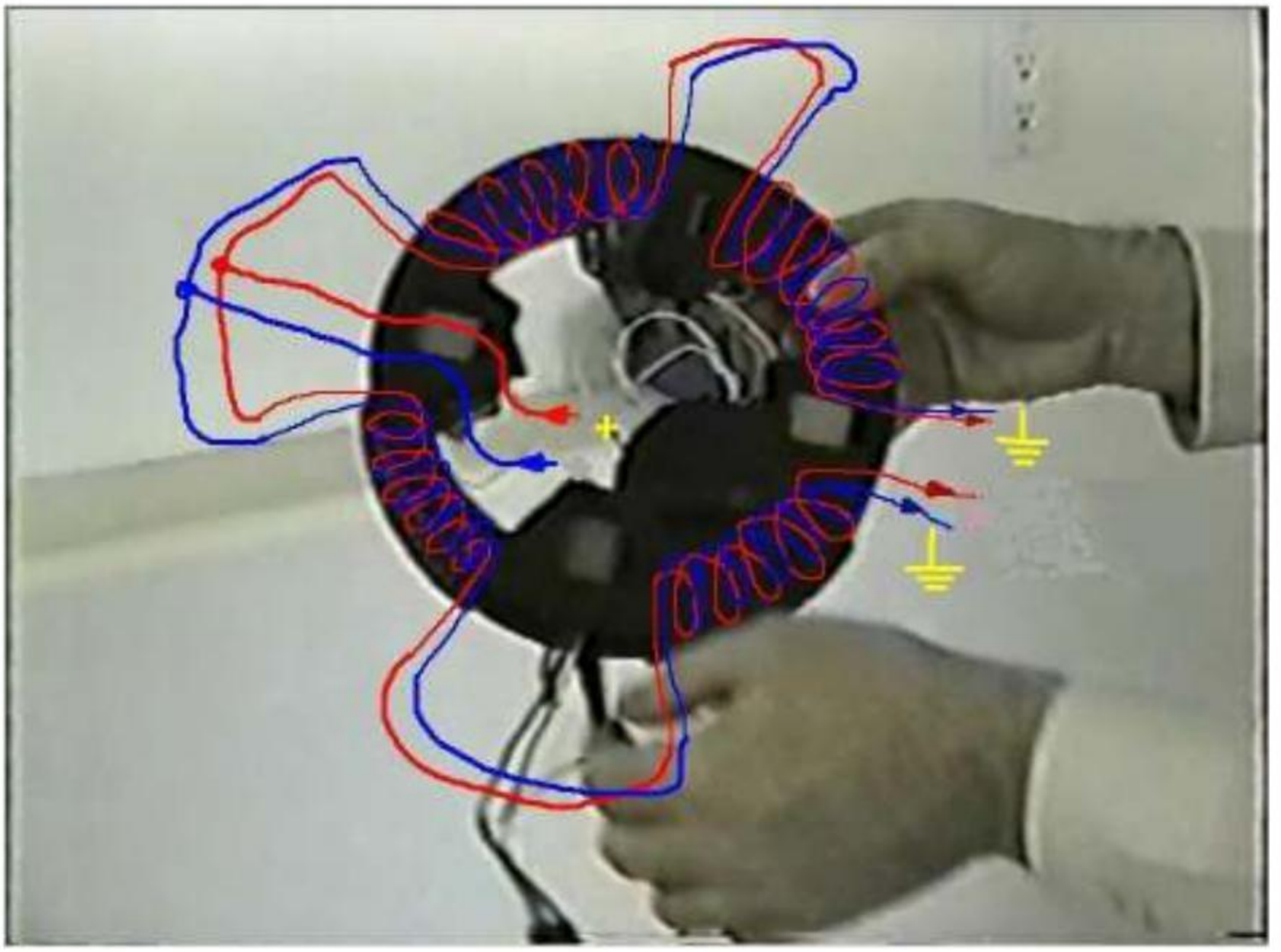
Steven says that his devices produces only DC. That to me seems pretty logical. Why? Well… because of the magnets which he places on the top slots of the TPU:





He is using two magnets one on the right hand pole and one on the left hand pole (conventional naming from the camera point of view, and from the wires that come out of the TPU).
If you are going to use permanent magnets, oriented like this, (with either south or north pole upwards or downwards), you must excite these coils ONLY WITH PULSED DIRECT CURRENT ! It's the only way it will work! You can't use alternating current, or alternating square wave, or anything like that, because one half of the sine-wave of your signal will be helped by the magnet, while the other half of the sine-wave will be disrupted. Pulsed Direct Current is the only logical way!

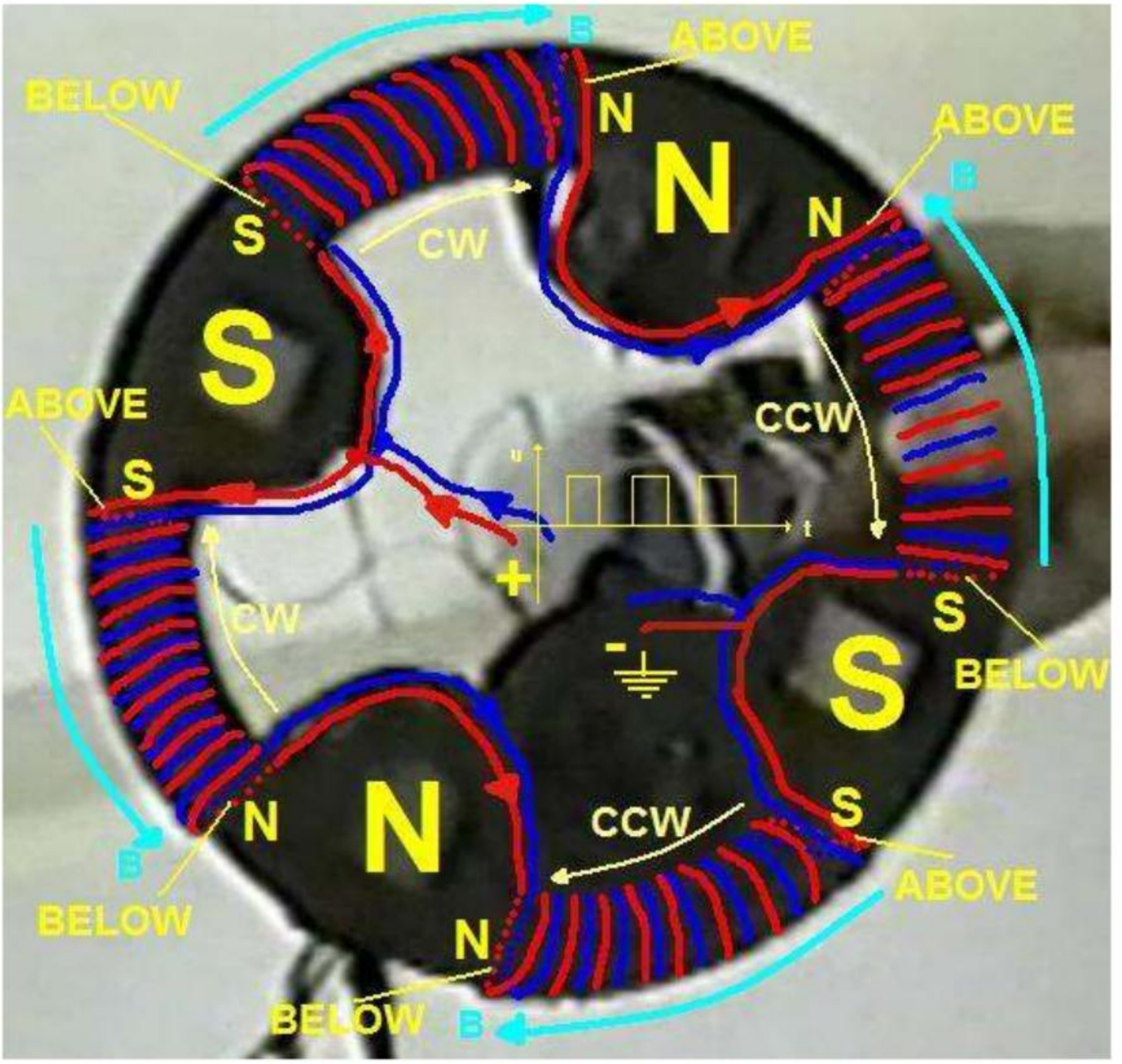
So then, we definitely know he is pulsing the coils with DC…BUT HOW? Well…Here my research stumbled a bit. The most likely configurations are as follows:



This would imply that we start from the left pole as the positive lead, but we will end up with 2 separate ground connections which must be connected together to form one ground. Why? Well... you could have separate grounds in any device, but in this one it's unlikely. I mean, think about it, that will imply that you would have two have different coil control circuits, and, as I have stated, that means that you will have to drive them sequentially, because if you drive them, excite them or power them, together (both at the same time) there is no point in having them separated. So if he is driving them sequentially, which is most likely, he would have ***use one ground and two positive leads*** not the other way around, so that he will use one control circuit with two switching transistors.

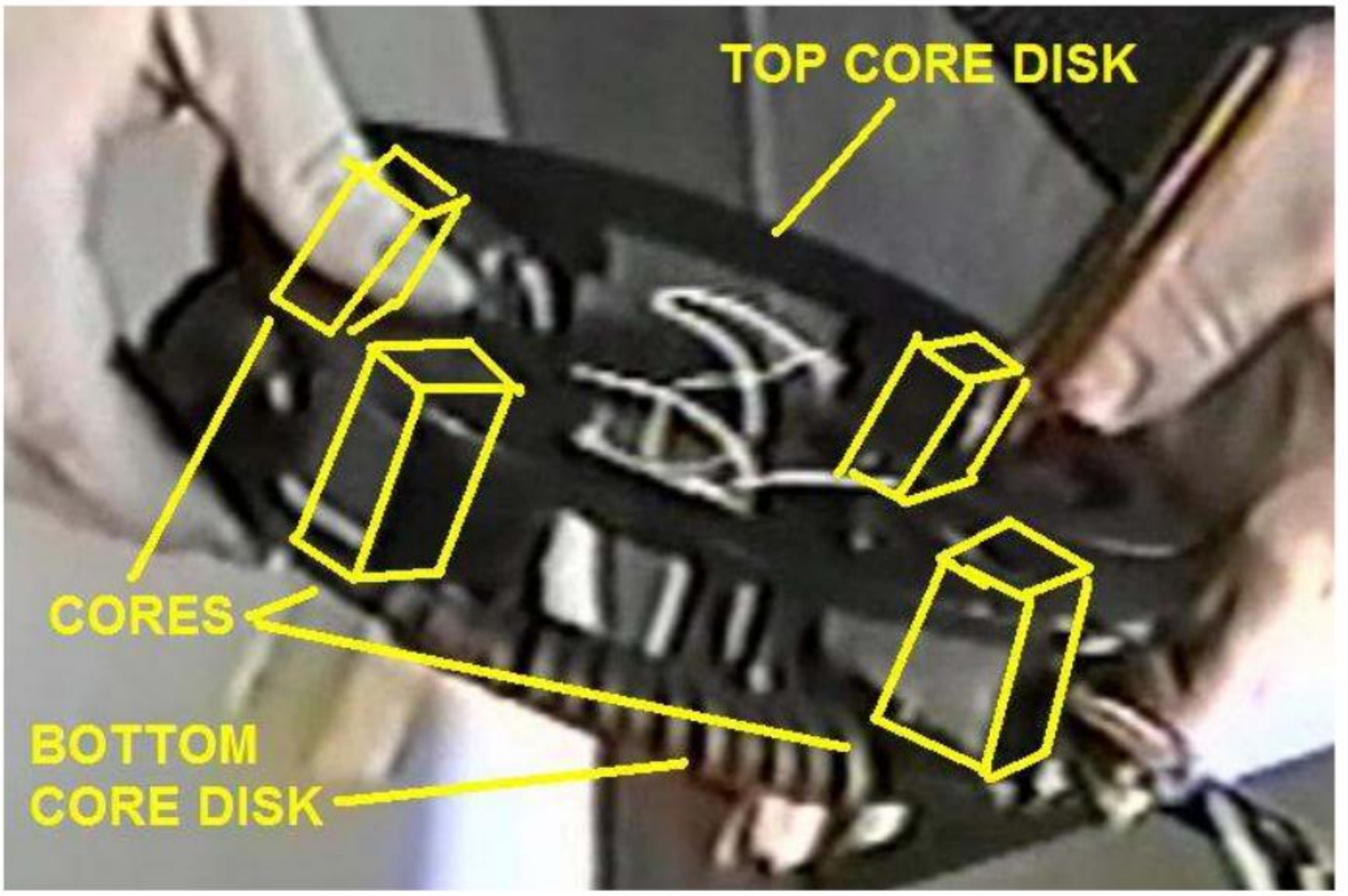
Again, having two separate grounds will imply that he must have two control circuits or different excitation for each ground, that means that the device gets a little more complicated, and this complexity is not supported by what we see in the videos. Complicated how? Again you might wonder. Well…let's think this through. Two separate grounds that don't go to Earth (real ground/dirt) in such a small device, must be very well insulated from each other. One power source draining towards two separate grounds. These grounds not only they require proper insulation due to nominal operating voltage of the device, but they must be very well "grounded" meaning that they must provide a very good "antenna" or a way to dissipate or drain the electron flow that will come from the positive lead. You could connect them to something that drains the electrons, let's say the core(metallic disks), but then where do you connect the second ground in a symmetrical fashion? But again, you might be thinking that he doesn't dissipates the electron flow towards these grounds, that he is creating a feedback loop, returning what he separated in to two grounds back to the same source that he started with. My reply is that it's possible, but unlikely. Now the device has become more complex and has a totally different "exotic" operation principle than the one that I'm describing. If he has two grounds, and if he is using an asymmetrical operation, then why is he using a symmetrical construction?

Therefore our final, and only possibility will look like this:



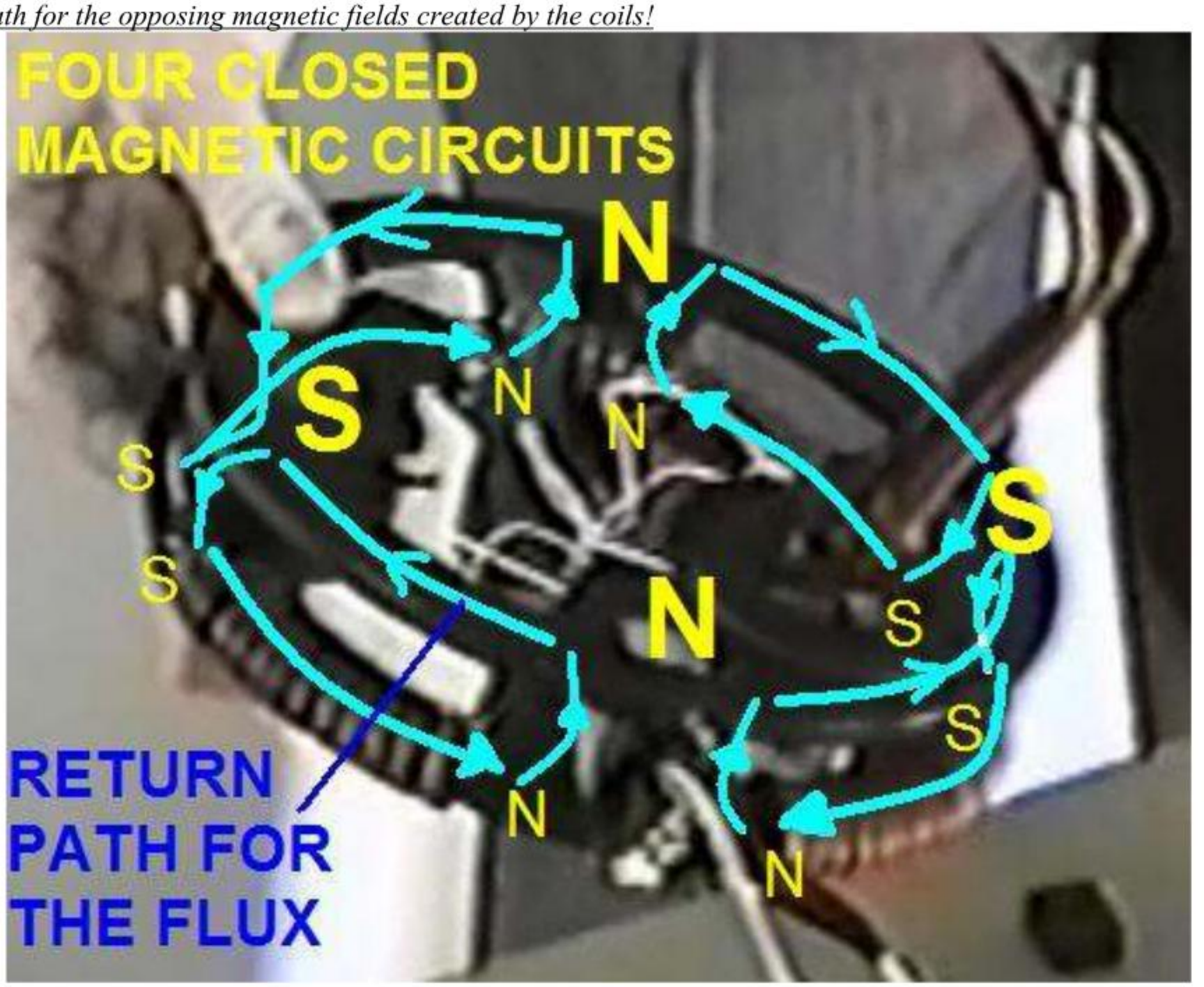
This could be one very possible configuration for a working model, but it still has a long way to go. I intentionally did not mention an obvious construction detail until now, indicating the reason why he build it in the way that he did.
If you haven't yet figure it out by now, let's think about this topology for a second. We know from the Tesla transformer that it is extremely inefficient due to the fact that more than 80% of the field created by the primary coils is situated outside of the core, and can't be tapped, (although there are some implementations which use a rotor, inside the Tesla Transformer). So how can we close all the magnetic field lines, to increase its efficiency?

That is the correct and right question! The answer was found by Steven Mark with his clever and ingenious design:



You probably think that I've made a mistake and that the front pole in fact has no core. That's true, there is a junction box there, but again, you get the picture.

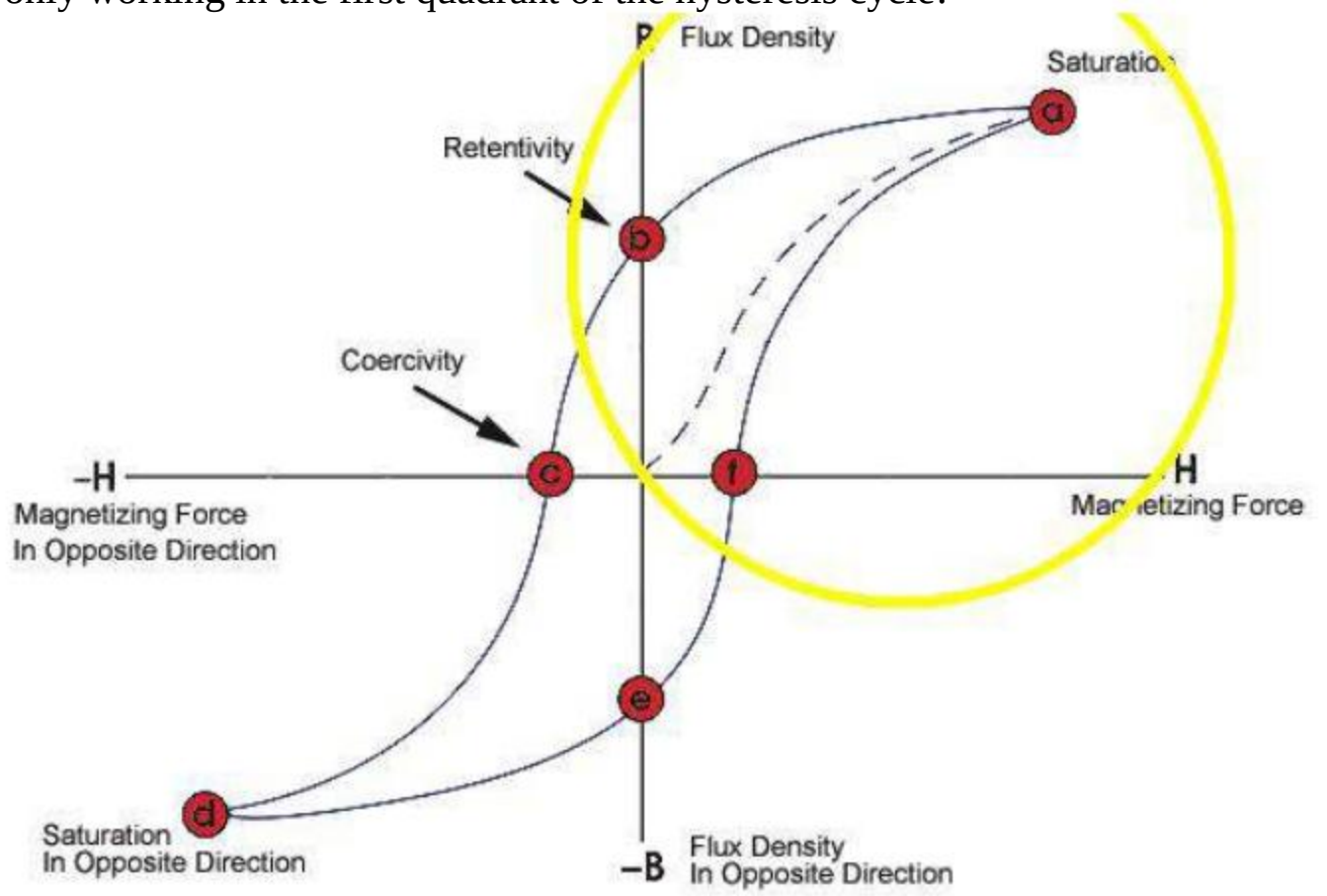
You might think that the top core disk is just for design. If so, then …you are so wrong… it's actually what makes this design unique!! It's what makes it work! It's the key to ***magnetic containment!*** It's how Steven Mark figured out how to return the opposing magnetic flux lines in the Tesla transformer through another one on top! *The top disk provides the return path for the opposing magnetic fields created by the coils!*



If you don't believe that the above picture is correct, then, first you must realize that everything up to now has been pure, sane, healthy, rational, fine deduction. NOTHING SPECULATIVE! NO GUESSING! NOTHING LIKE THAT! Read again, how I come to this conclusion from the deductions I made until now. Then to prove me wrong you must first prove that the above statements I made above are wrong. But hey, if you know a better way, why don't you write it down, and share it?

With this configuration we can proudly say:
Outside magnetic field? In theory? 0!
Efficiency? In theory? 100% energy conversion.

So let's theorise a little bit now. If this configuration can have a core with a high permeability, then a primary winding and a secondary winding that generate such a field (four closed magnetic circuits), would have in theory above 98% efficiency. You might say that's ridiculous high and I'm forgetting about iron loses. No I'm not . Regarding this, iron loses are energy loses due to hysteresis magnetization and demagnetization of a ferrous metal. Right, but you have to remember that we are only working in the first quadrant of the hysteresis cycle!



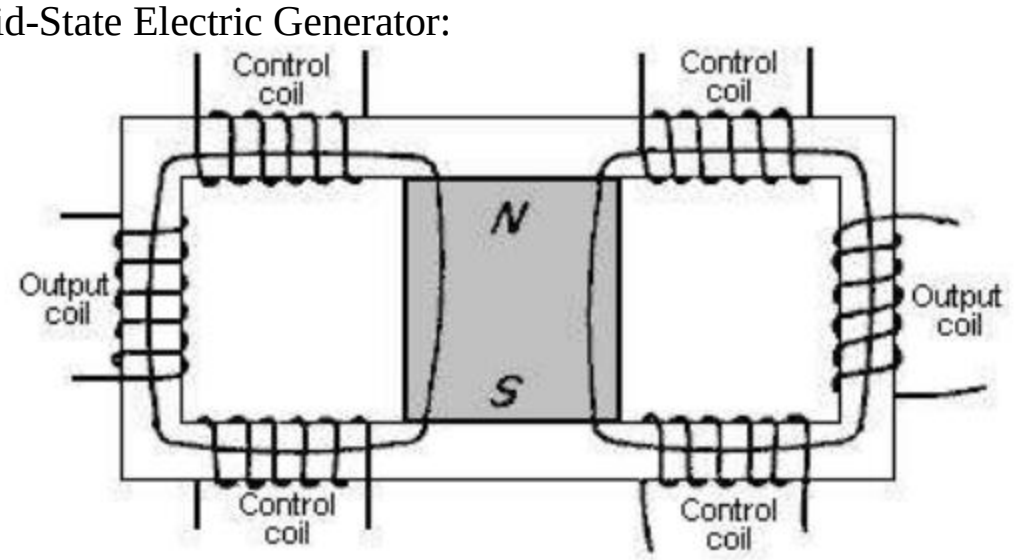
That means that we are not demagnetizing the core ! The core is in fact reaching magnetic saturation! (it is not fully saturated). It is always magnetized in one direction! (comment on 02.12.2011: I'm wrong here. Although many TPU researchers believe this to be so, I no longer consider this to be a valid working principle. The input of the TPU is pulsed short square wave, below 10% duty cycle (a.k.a kicks), the output is sinewave, rectified and filtered. This is a fact. Read further and you will be convinced.)

That is another reason why we must place the magnets carefully always in one way. We shouldn't reverse them during experiments, because due to the high magnetic flux density, the retentivity of the core will be at a high state. So if we change the direction, we have to spend extra energy to "reset" (reverse) it, that is in theory anyway.

Now here's another theory, what if we can provide an already existing magnetic field, in the same configuration and direction as the flux generated by the coils, so that we can raise above 100% efficiency? Wouldn't that be something?

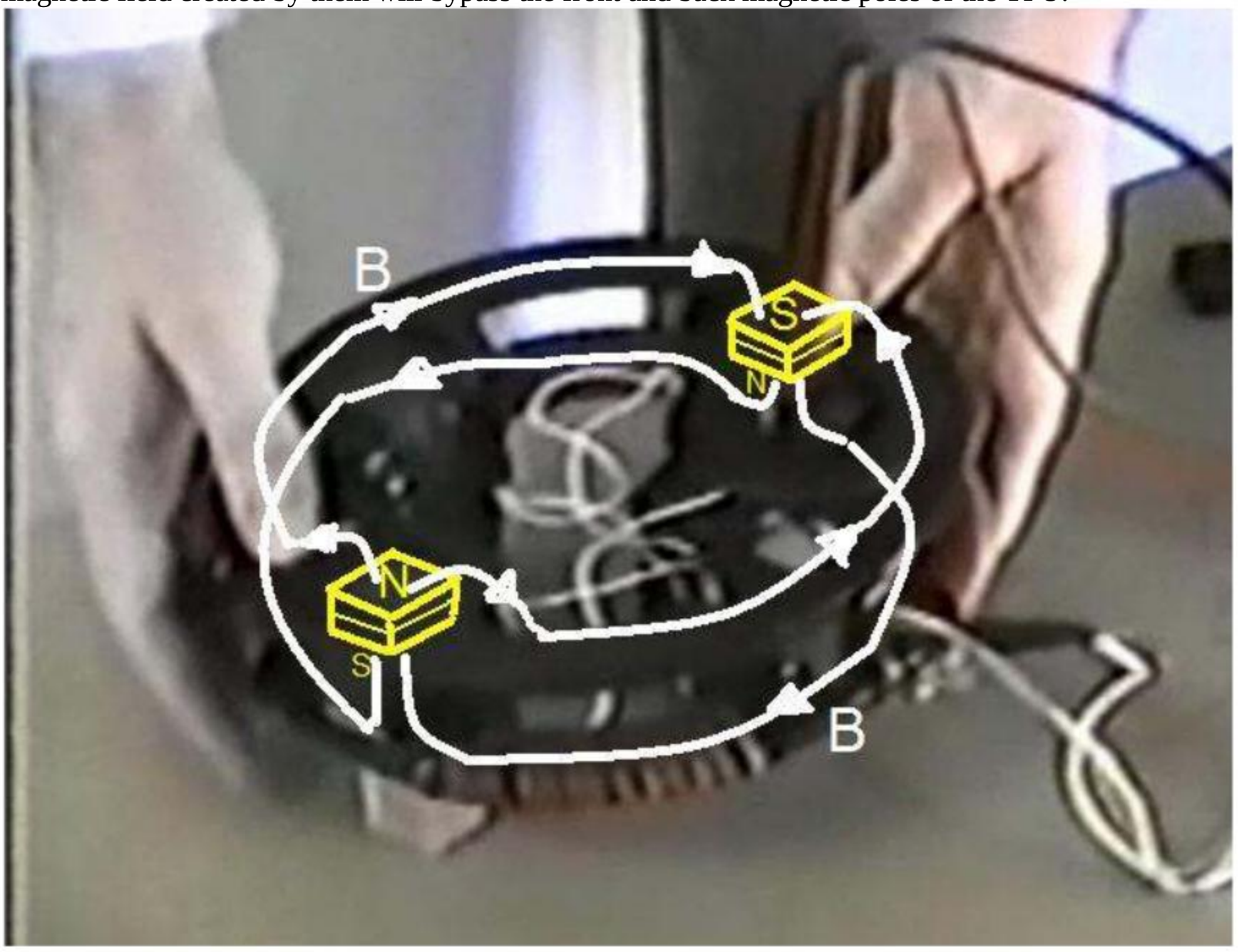
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Anyway, I have come to believe that the reason Steven Mark is using permanent magnets might be the same thing as Charles Flynn does in his Solid-State Electric Generator:

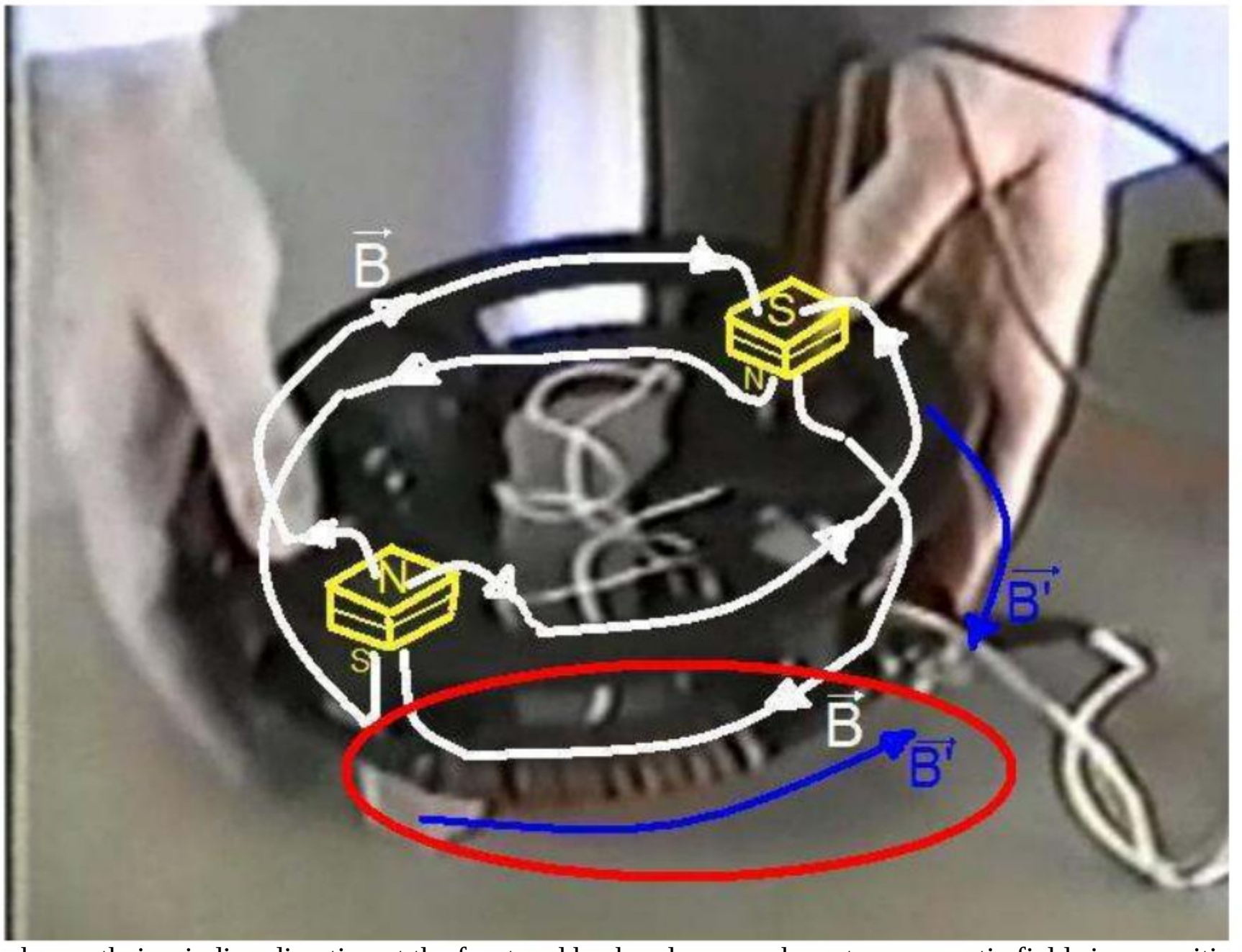


This is another transformer, but which has a magnet in the middle. What's the point? The point is to manipulate the opposing flux fields generated by the coils with these magnets, to "reinforce" the field created by them, and to spend a

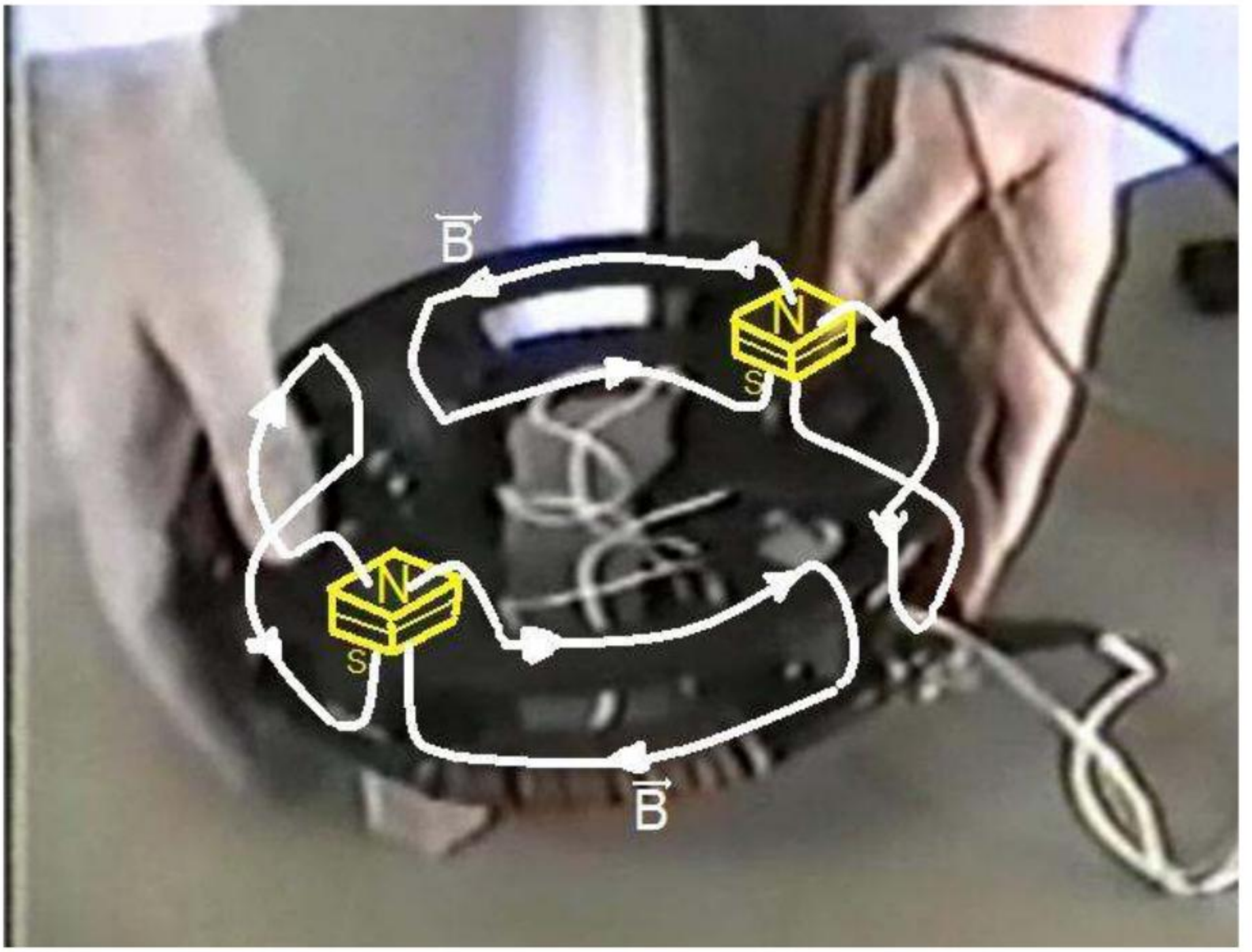
little less energy in creating a magnetic field once you have one already from the permanent magnet. The Charles Flynn generator works in a different manner, but Steven Mark's TPU is using magnets for the same reason.
If one of the TPU magnets has it's north pole facing upwards and the other magnet has it's south pole facing upwards, then the magnetic field created by them will bypass the front and back magnetic poles of the TPU:



There will be just these two poles created by the magnets (two magnetic closed circuits).
This configuration must be wrong, because of the direction of the magnetic field from the magnets with this arrangement. Half of the magnetic field would opposite the magnetic field created by the coils. Remember how those fields are orientated:

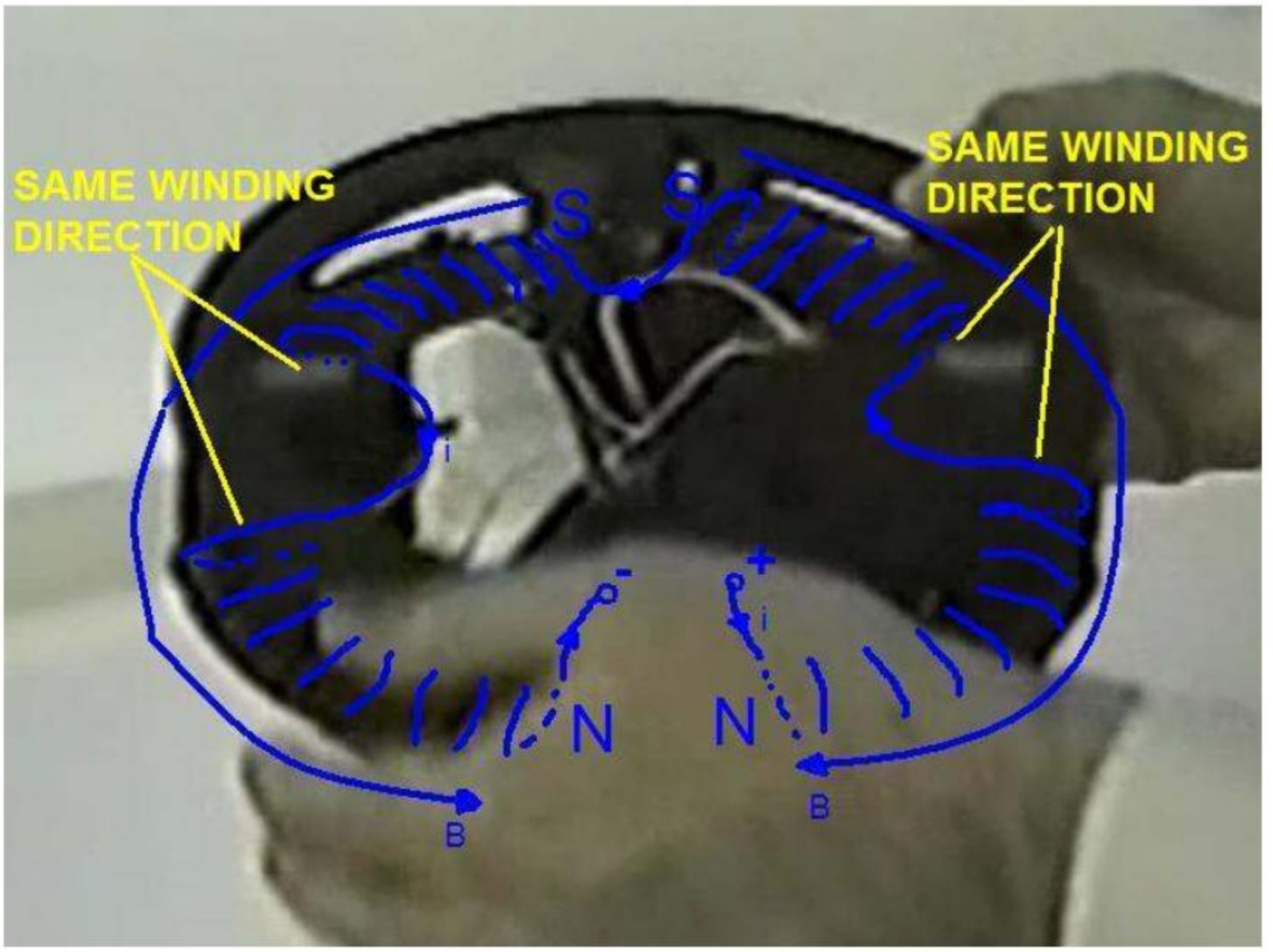


The coils change their winding direction at the front and back pole, so we have two magnetic fields in opposition in these places, and one of them will be also oppose the field from the magnet.
But by using them in repulsive mode, and orienting them so that they both have similar poles facing in the same direction, then their fields will look exactly like the one's generated by the coils:

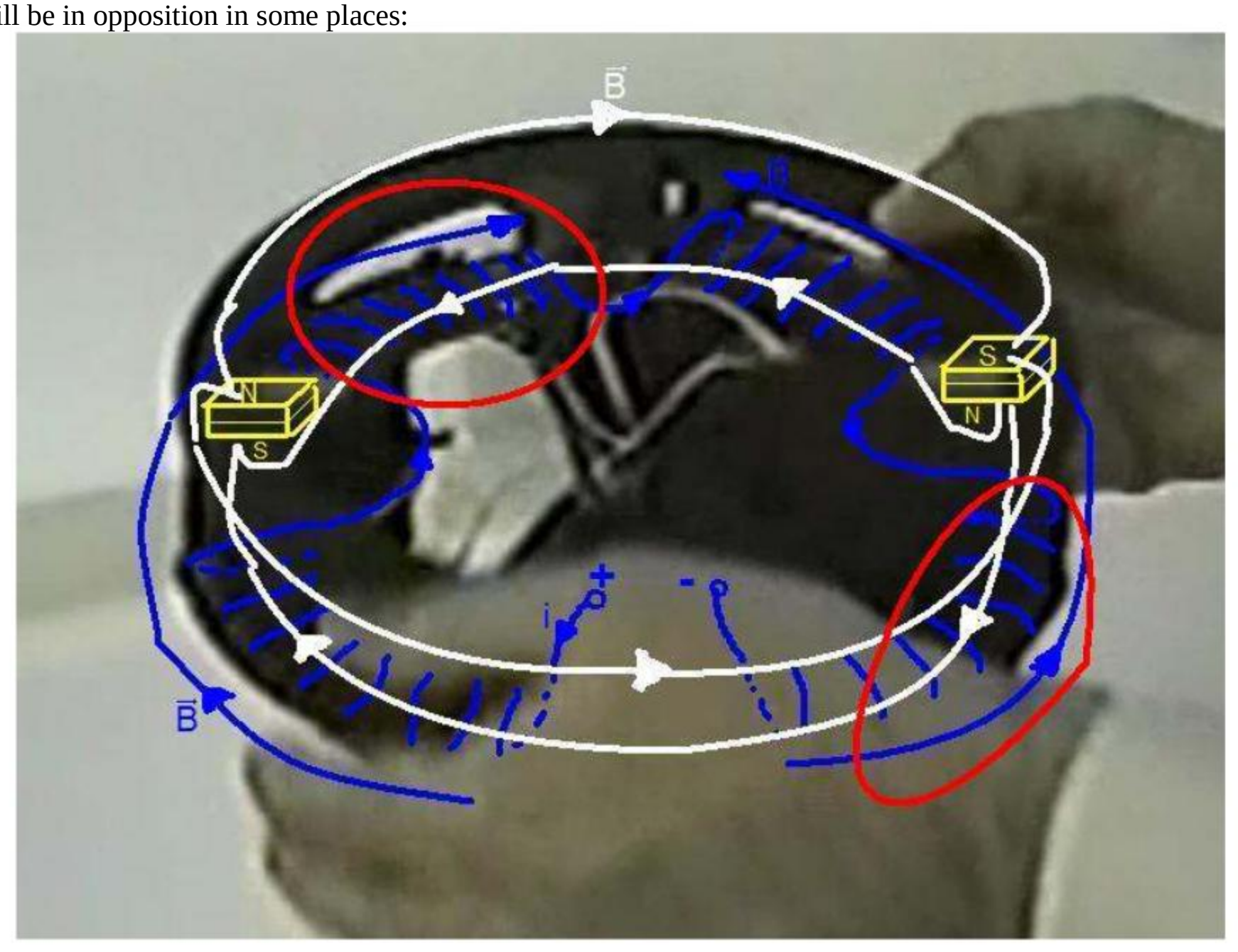


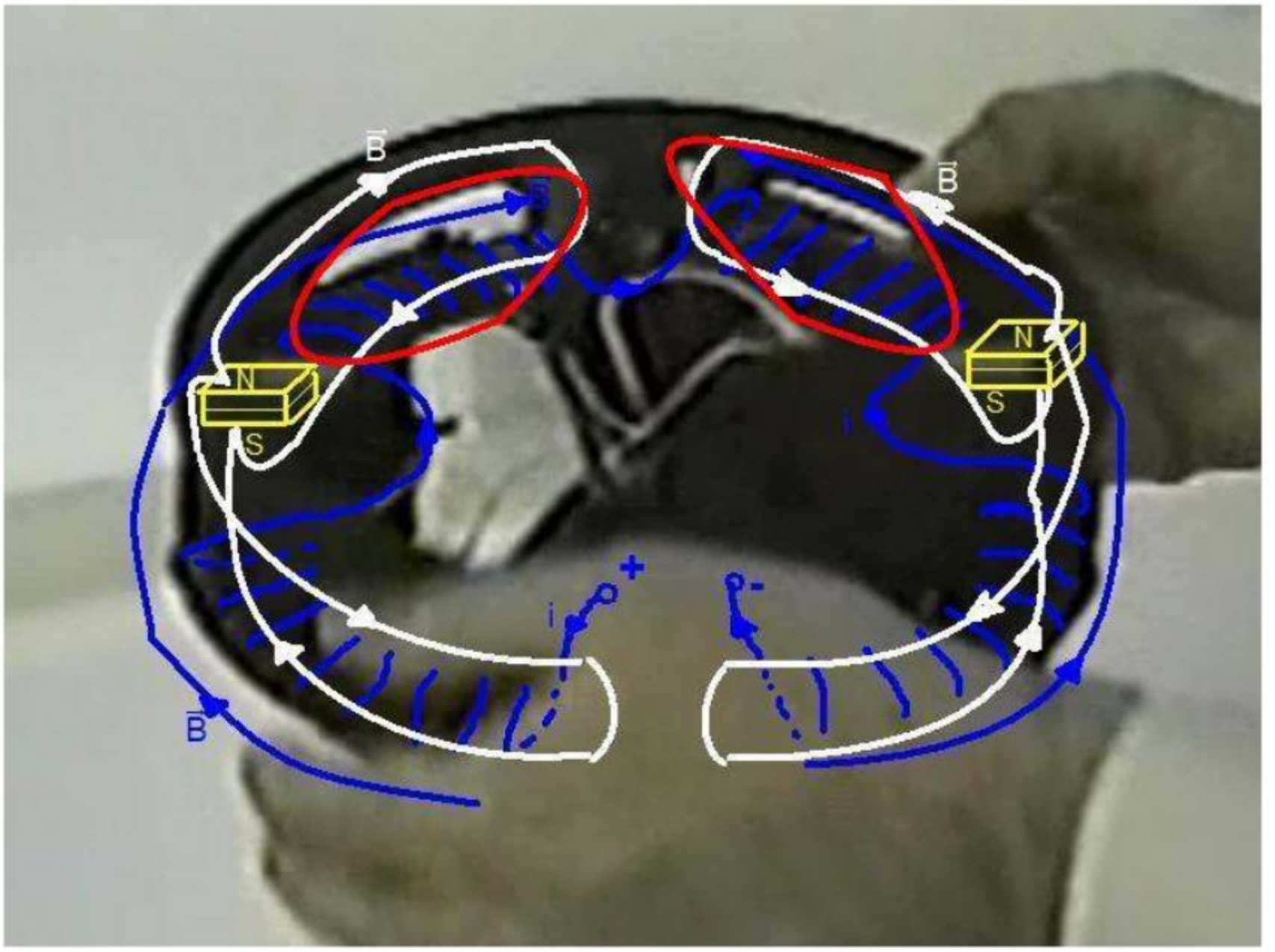
So now, we have determined with a high degree of certainty how he orients his magnets in the TPU!
We could re-analyze all possible configuration, and determine that there are only very few that might work, and the rest will not work, like these ones:



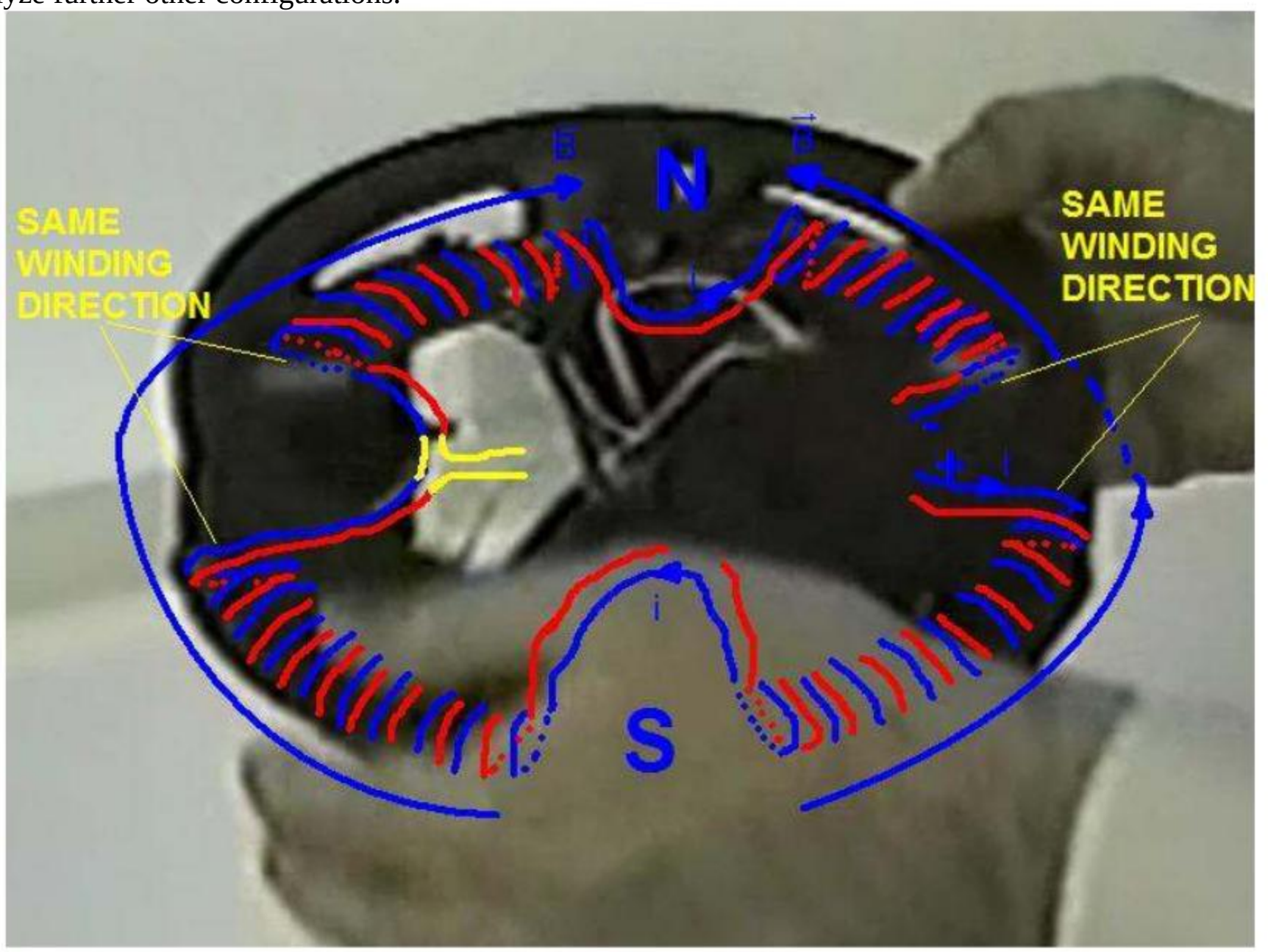


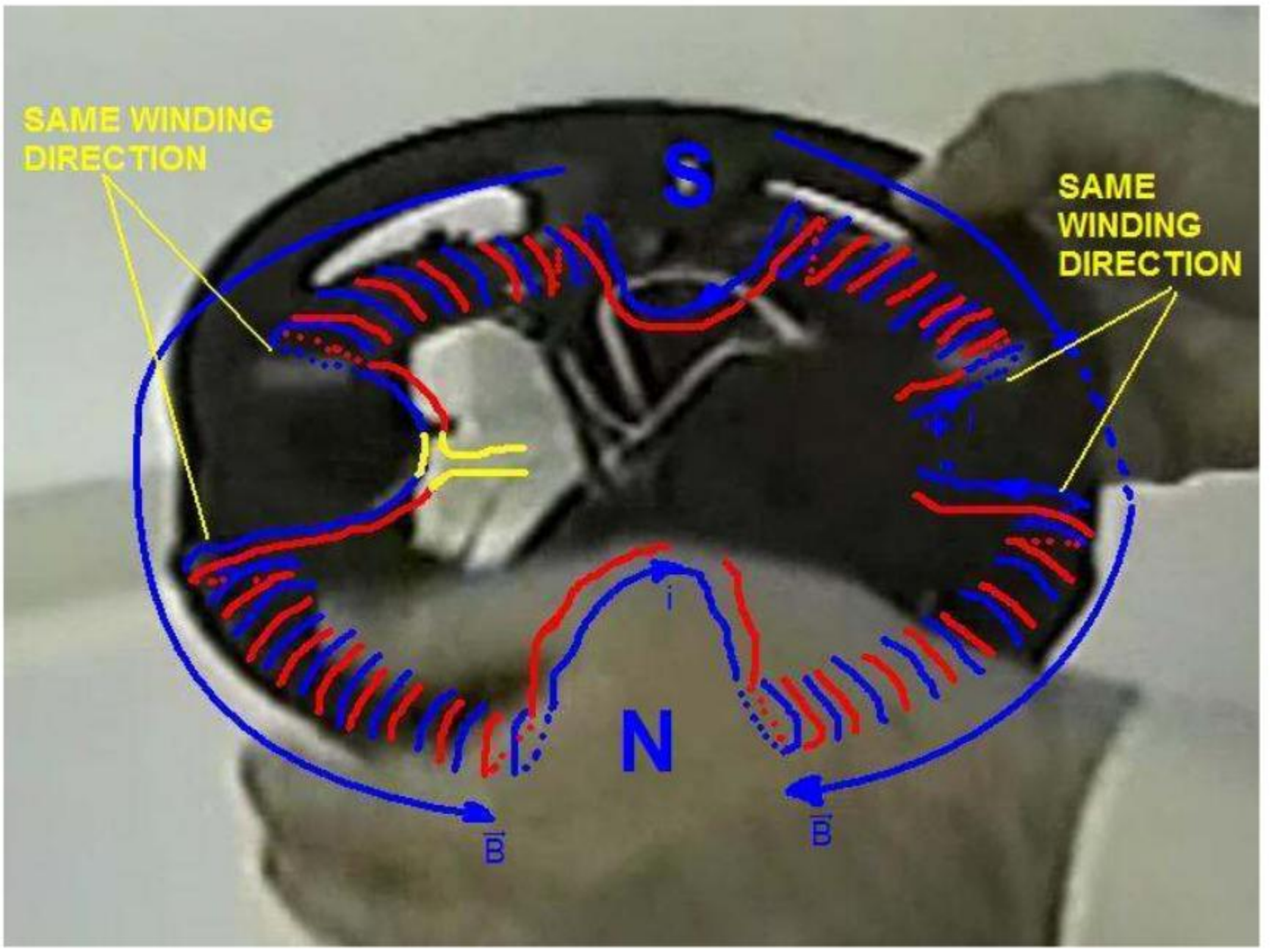
Why wouldn't this way be a valid configuration?
Remember that he is placing the magnets at the left & right pole, so the interacting flux fields, from the magnets and the coils, will be in opposition in some places:





Let's analyze further other configurations:





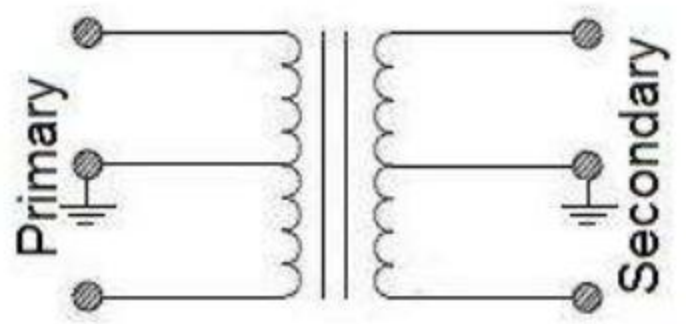
These ones are also false, just like above, because the magnetic field vectors from the magnets, work against the flux developed by the coils.
The magnets must help the flux created by the coils, so knowing this, there are not much true working configurations left.
This is where this deductive, and certain study ends, but it's not over. If, like me, you feel drawn to this type of technology, then please continue the work which I have started here!
I am going to continue further, but from this point on, please be aware that I am going to guess a lot, so the certainty factor will be greatly reduced.

Firing the coils

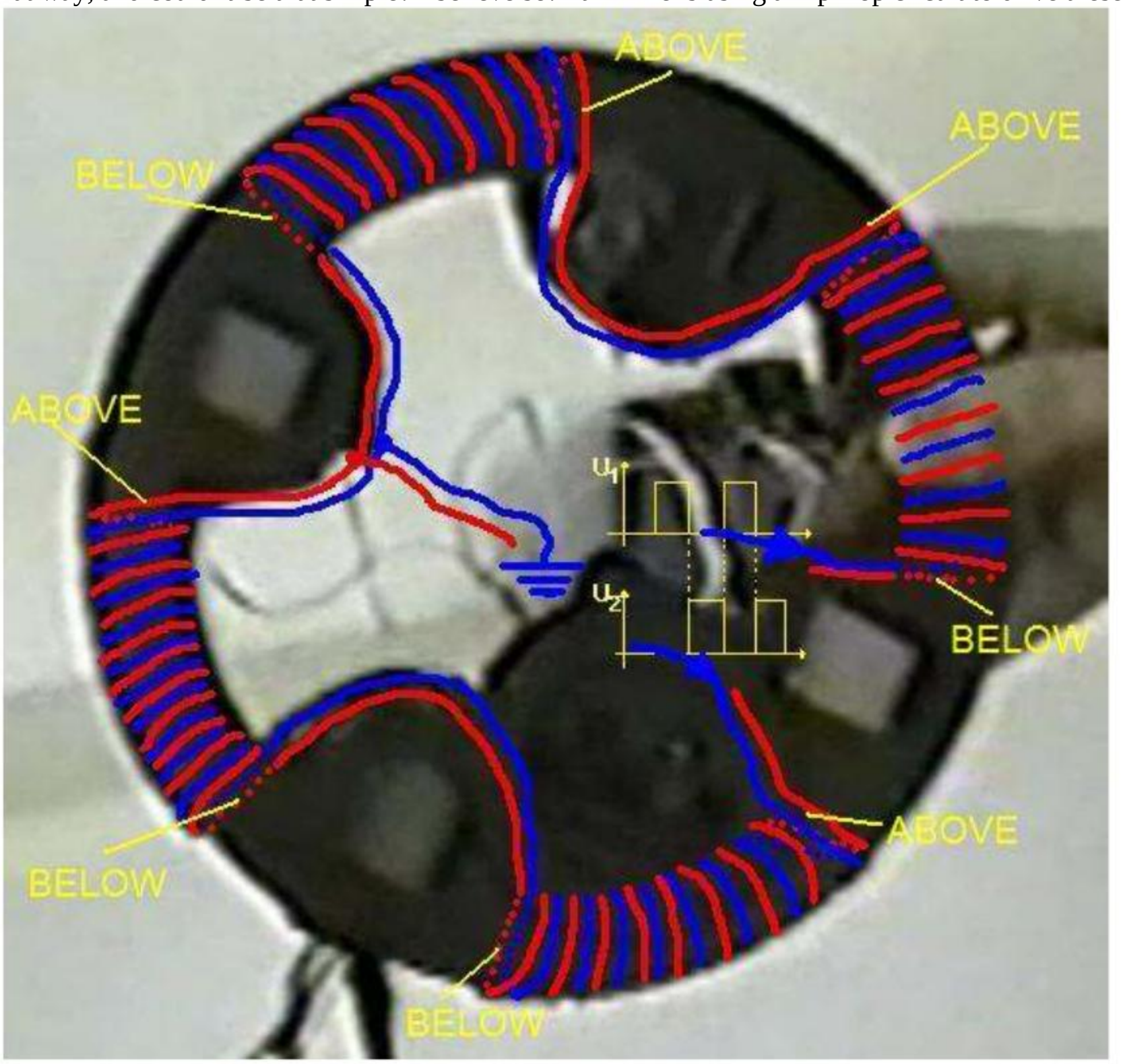
How is Steven exciting the coils? Well we do know for a fact that he is using pulsed DC, but how is he driving this type of pulsed current through the coils? Which connection points does he use? It seems most likely that he is using a square wave with sharp rising and falling edges (the so called "kicks"). Some say that he isn't using any type of control circuit board, and no integrated circuits. That seems most likely to me, because Steven says that his device is extremely simple. So let's keep things as simple as possible. (I'm not saying that having IC control board for a TPU is complicated).

I think that there are no MOSFET's in his device ! Why? Well…think about it! If he were to use MOSFET's, then they would have to switch at least 100V at more than 10 Amps, judging by the wire gauge which he is using. He would also need a control circuit to drive the gates of these MOSFET's, and due to the closed feedback loop, and having no battery in the device, he would have to generate a low voltage and low current inside a some sort of feedback/coil that drives the gates in order not to burn those transistors out. But nothing which we have seen supports that! Therefore the supposition, that he is not using MOSFET transistors, is likely to be true (I'm not saying that with a high degree of certainty, as I could be wrong).

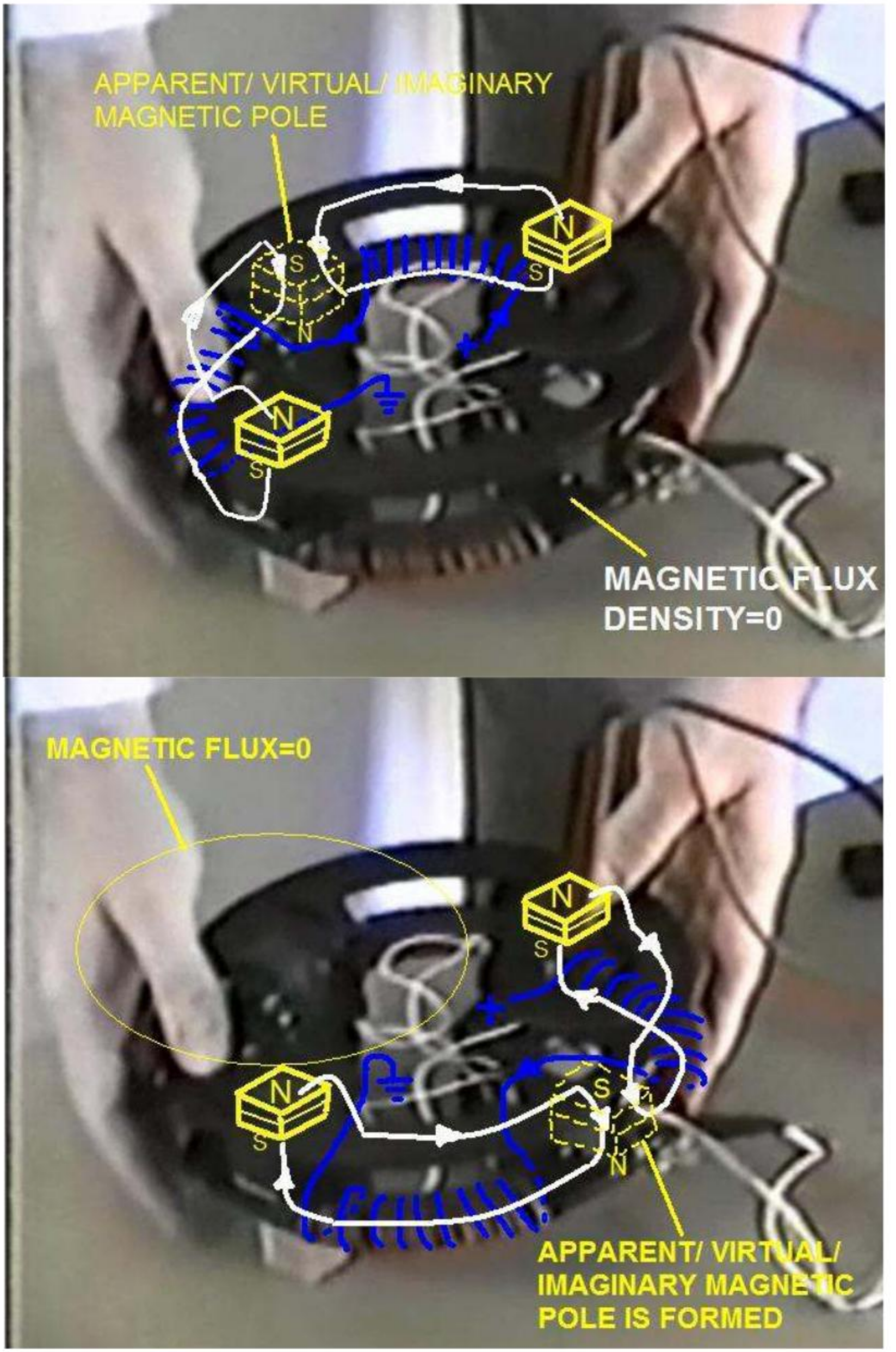
There is no feedback coil in this system, and that, I state as a fact. This system is balanced and symmetrical, and we have chosen for the sake of conventional knowledge of transformers, terms like "primary windings" and "secondary windings". But we know that we are dealing with a 1:1 ratio transformer, therefore the primary can be used as a secondary, and vice-versa. You could swap them, because they are identical. That's a fact! We also know that this transformer has a median point in its secondary, and also his primary winding has a median point. Two median points in his transformer (at the left pole in the pictures):



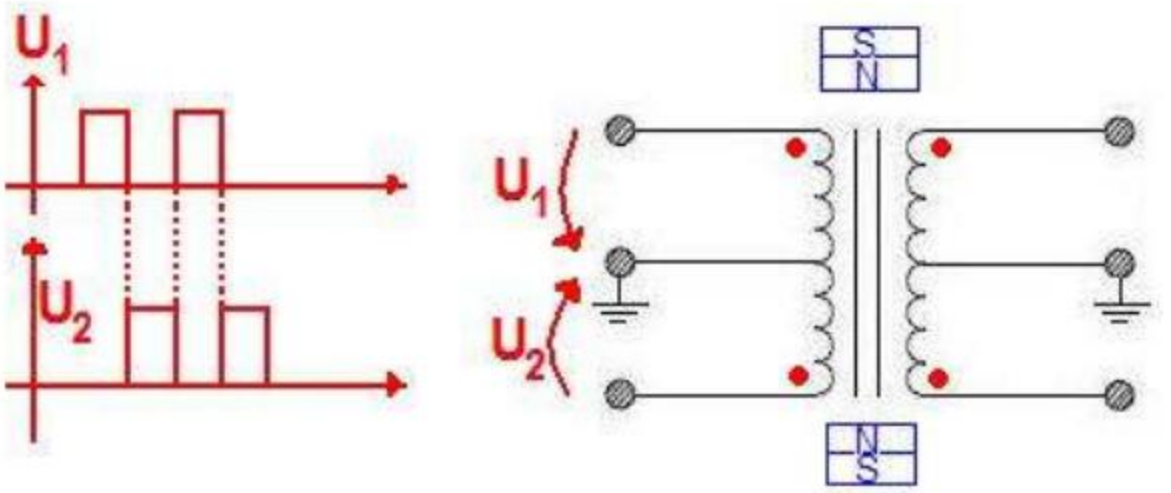
I believe that he is somehow using a common bistable/astable bipolar transistor circuit, with only two transistors. Why do I think that way, and could it be that simple? I believe so! I think he is using a flip-flop circuit to drive these coils:



So in this arrangement the TPU should work like this:

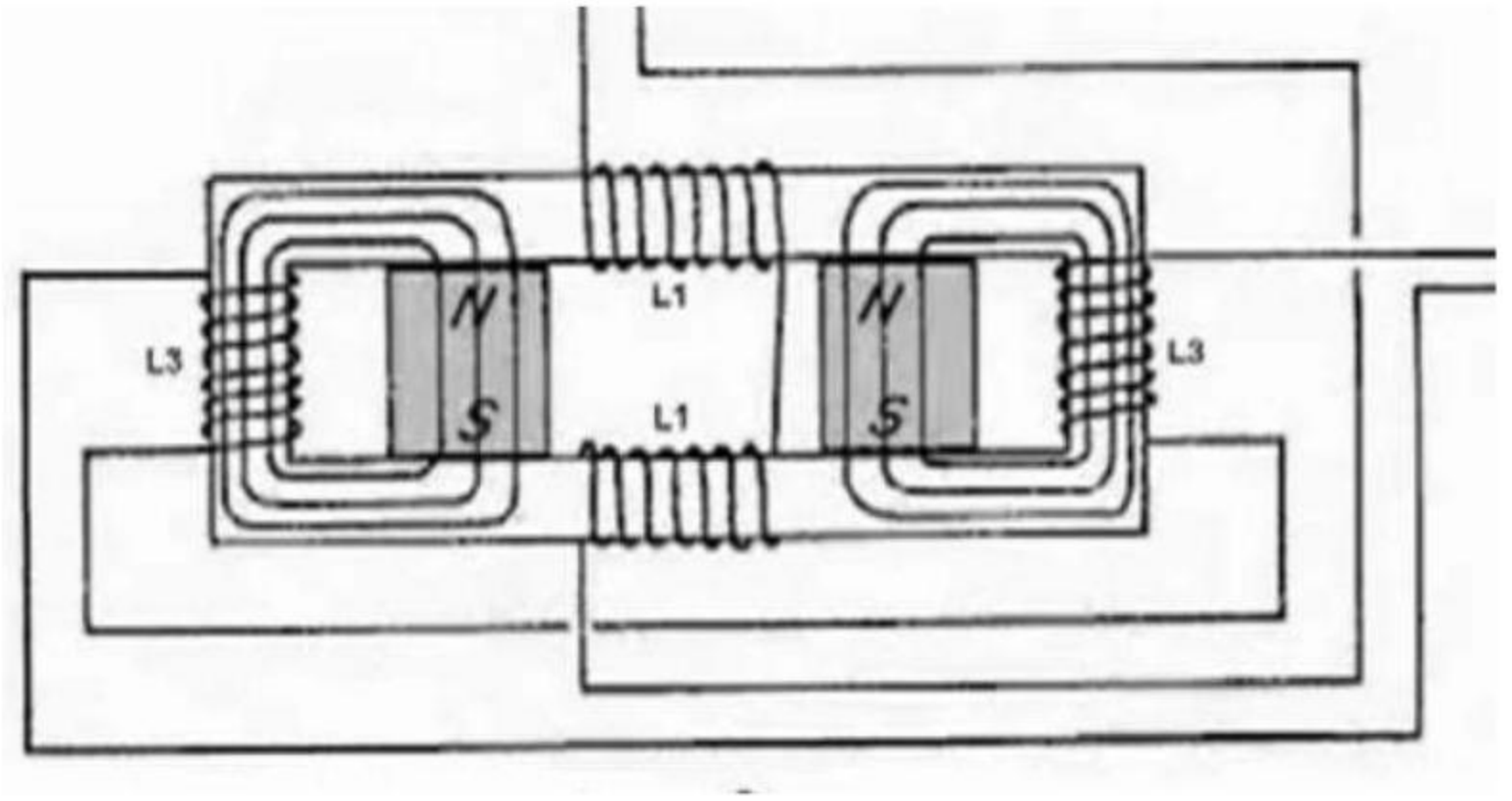


The most likely working principle of all analyzed possibilities.

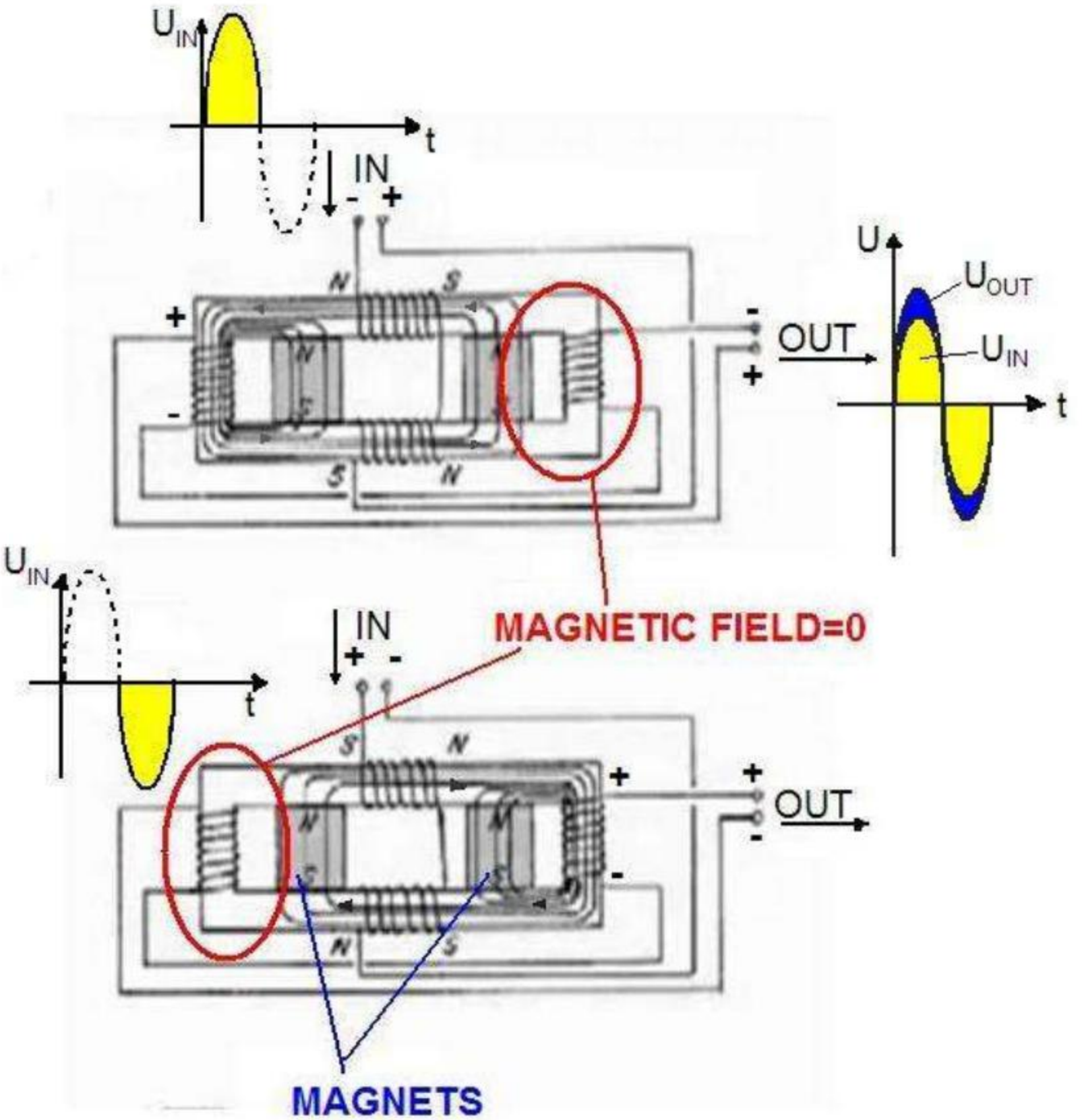


This configuration is most like to be to operation of the TPU, because now it is very similar in operation to the

Charles Flynn Generator:



It has simple working principle:

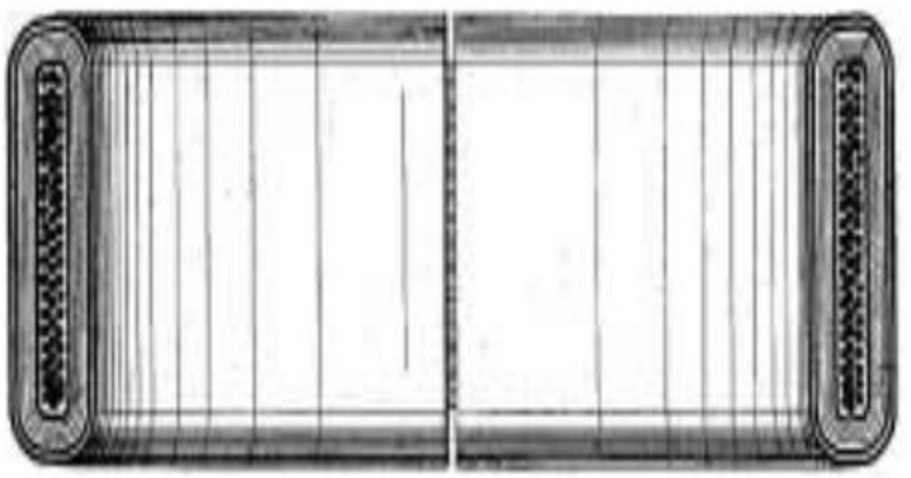


When you understand how the Flynn generator works, then you will see that Steven's TPU is actually a better version of the same technology. Although this type of generator is working in AC, Steven's TPU can't work like that due to the coil winding direction at the front and back poles. Check the picture above, and you will realize that if you change the direction of the current through the TPU coils, then the 4 magnetic poles created around it will alternate and the magnet will vibrate, because one moment it is attracted by the flux inside the TPU, and the next moment it is repelled, so it can't work with sinewave AC! By implementing the Charles Flynn solid state generator in a toroid core, it becomes more efficient, due to providing a better magnetic flux containment construction.

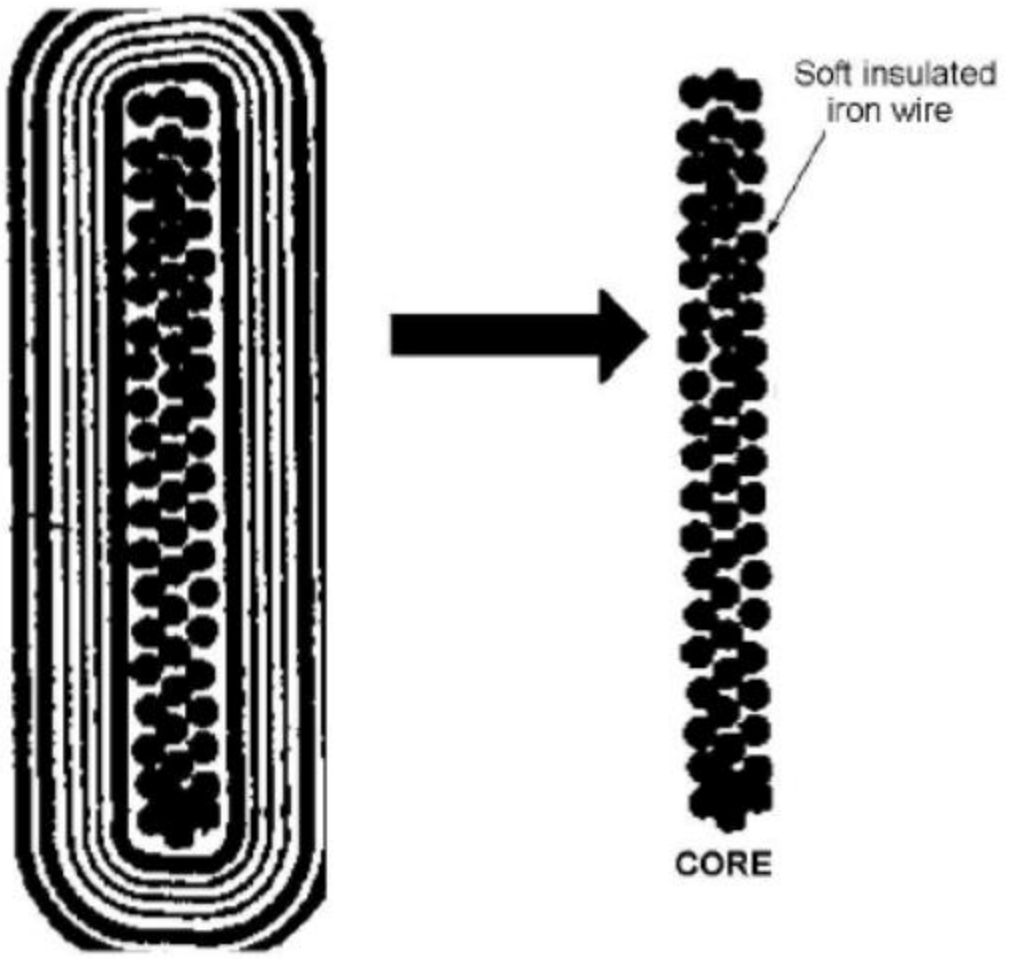
Applications:

Ok. Let's put some of the things we've learn into practice. Let's start with the first analyzed system, the Tesla Transformer, patent nr. 381,970

The first practical consideration is the core:



And what is made of:



Let’s quote Tesla:

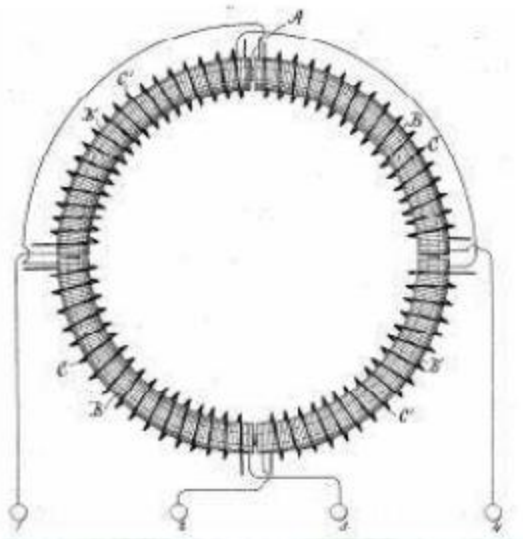
“I use a core, A, which is close upon itself [...] I make it of thin strips, plates, or wires of soft iron electrically insulated as far as practicable.” (US patent 381970, page 2, line 52)

So then, insulated soft iron wire...

I will insulate the wire with electrical tape, and achieve the beehives shape of the core described above, using ordinary sewing wire:



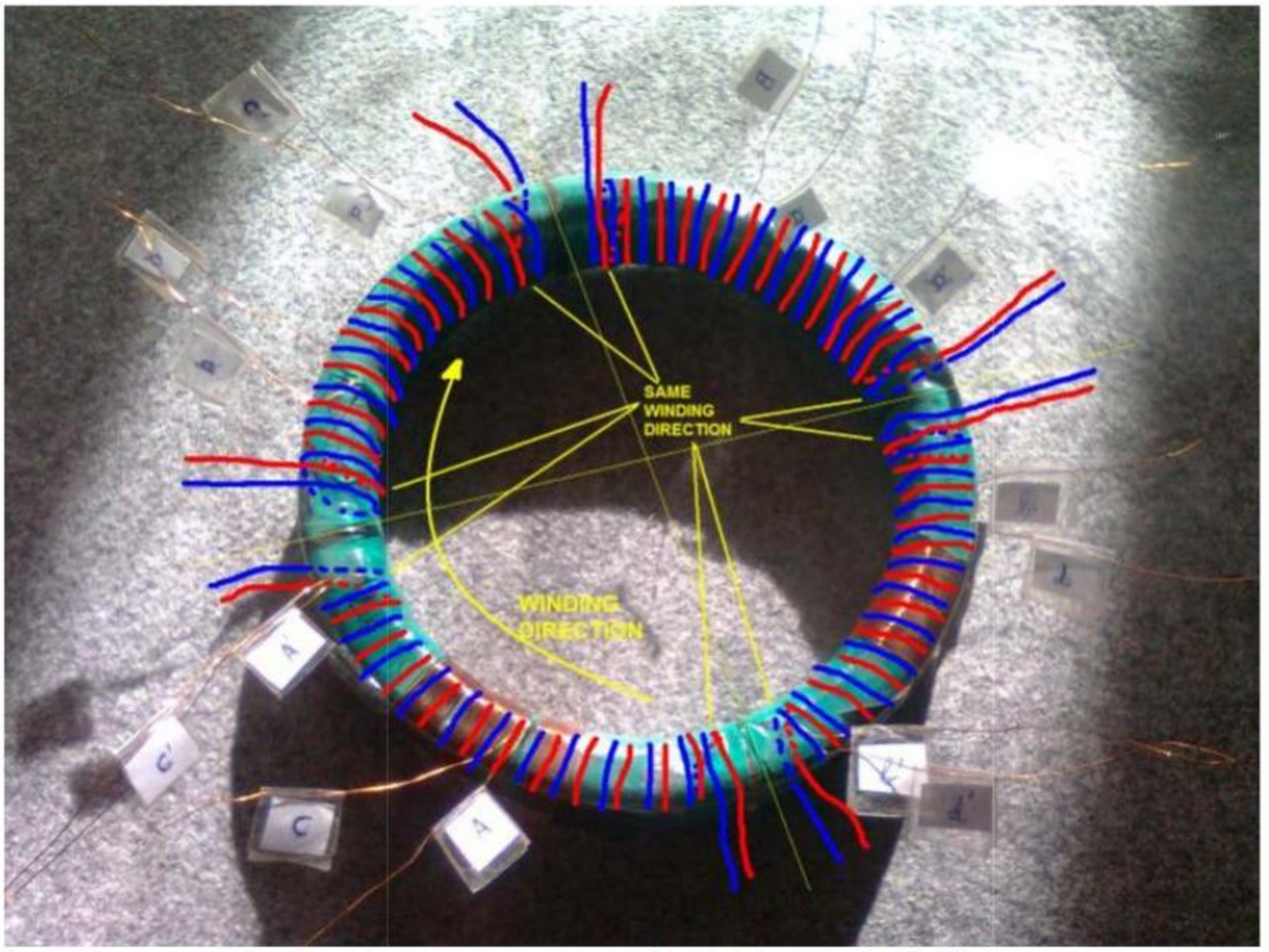
Then I used 4 bifilar coils to wind it just like Tesla, and this is the final result:





Sorry that I skipped so many constructive steps, but I didn't took pictures as I built it. Please ignore, the additional coils winded over the green electrical tape. They have a complete different purpose, that doesn't relate to our study. I will speak about them some other time.

Ok, so this is what we have here:



I forgot how many turns I used in all the coils. Even though I struggled to build it as symmetrical as possible, some coils might have 2 to 10 turns is addition or less than the other coils. All coils have 10 Ohms +/- 0.1 Ohm. I used 0.32004mm wire(0.0126 inch), which is AWG 28. This type of wire has 64.9 ohms/feet or 212.872 ohm/km. This data is collected from http://www.powerstream.com/Wire_Size.htm. I have build this device I think back in 2008 or something, and don't remember how much wire I used, but I can calculate based on this data. So all my 8 coils have 10ohms, that makes 80 Ohms of AWG 28 wire, so the material I used should be somewhere around:

$$\frac{10\Omega}{0.212872\frac{\Omega}{m}} \sim 47m \sim 154\,feet \quad (4)$$

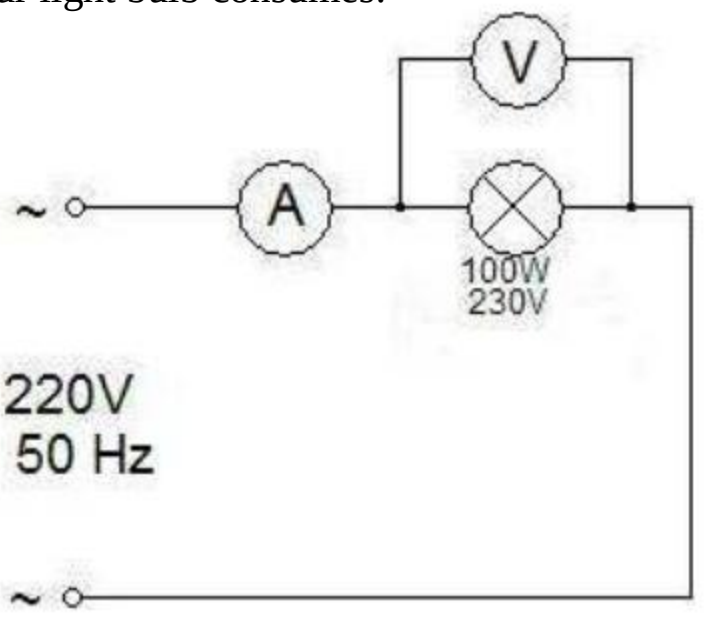
Minor details about the coils: Winding was done with a bifilar coil, so I used 2 spool of wires in the winding process. All coils are multi-layered coils winded in one direction only (meaning that after I completed a layer, to begin the second layer I returned with the wire back where I started, so not to change the winding direction, although this doesn't really matter and it's not important), manually all turns were laid neatly and compactly as I could.

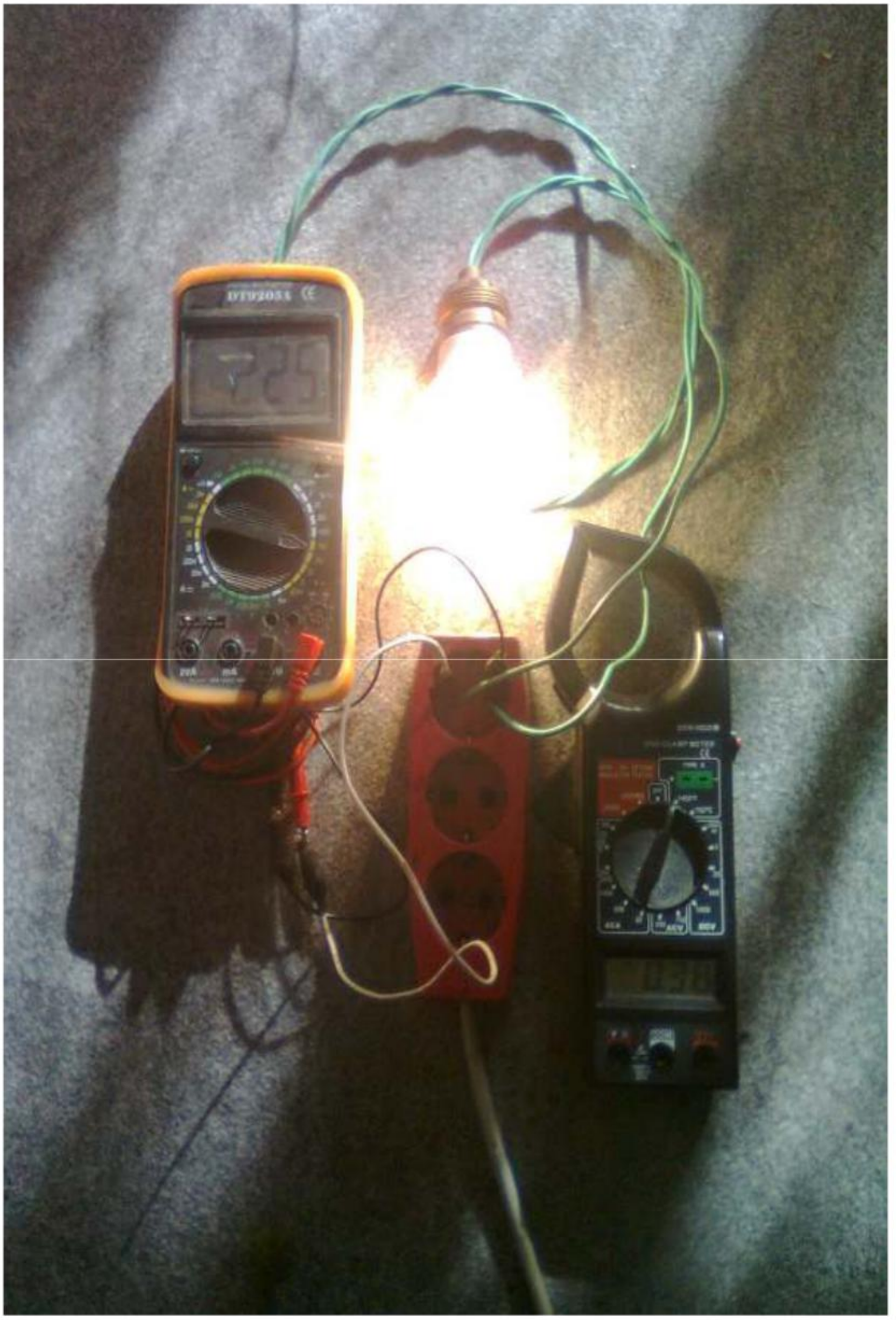
POWERING (AC) HALF OF THE TESLA TRANSFORMER 381970 WITHOUT A LOAD

Ok. So let's test this device. We will power the device through a 230V 100W light bulb:



First let's see how much actual power our light bulb consumes:



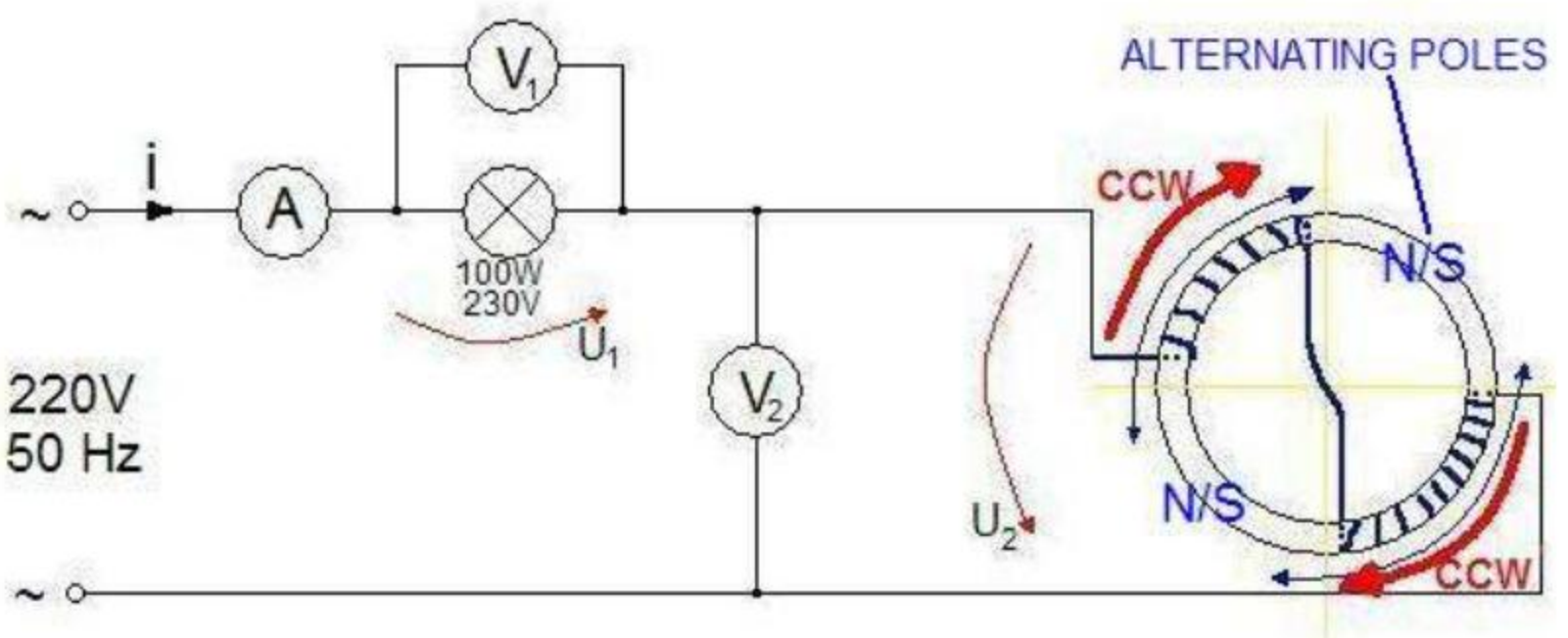


So we have:

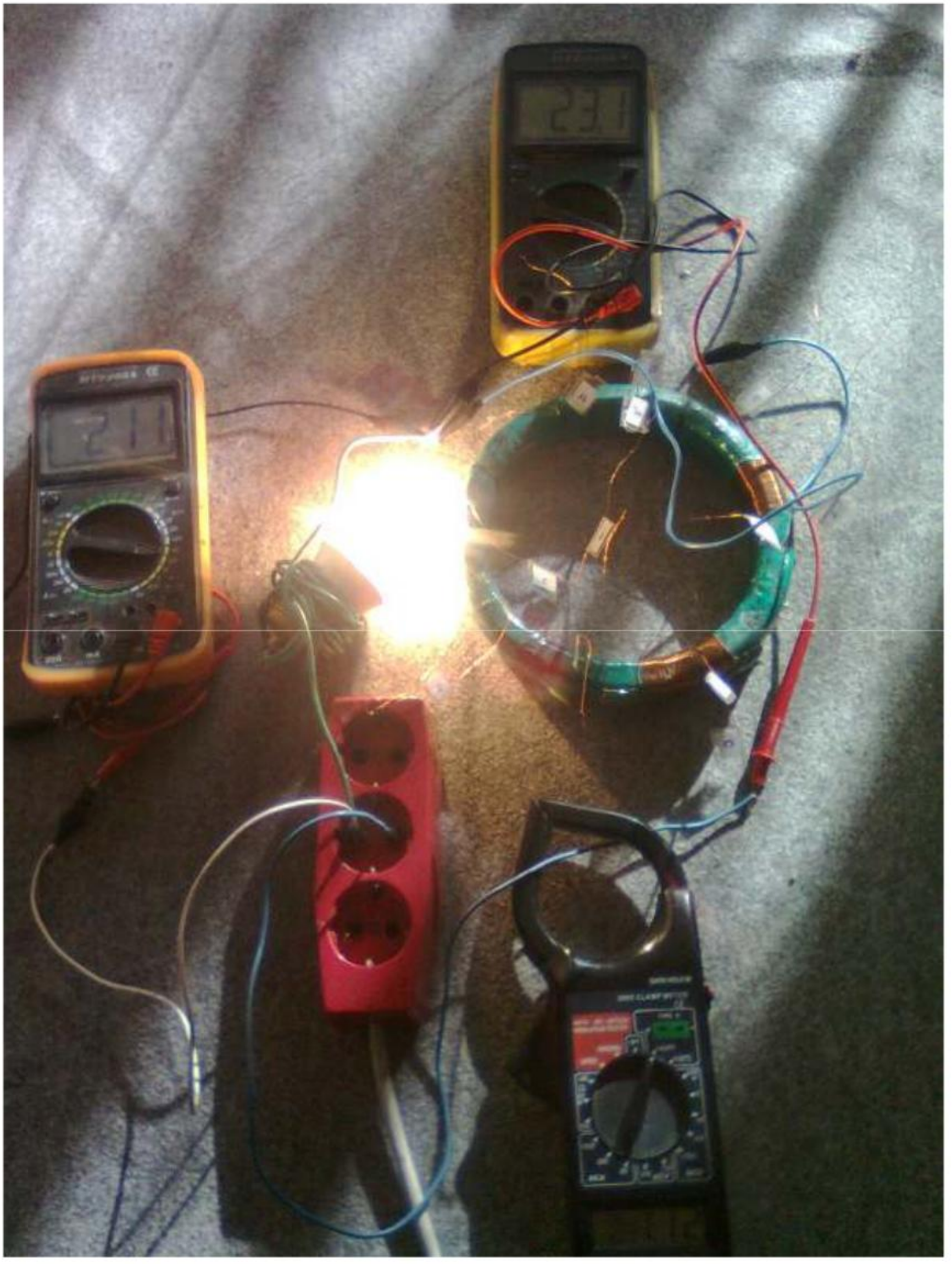
$$P=U \times I=225V \times 0.38A=85.5W \quad (5)$$

SETUP 1

For testing let's use this schematic diagram:

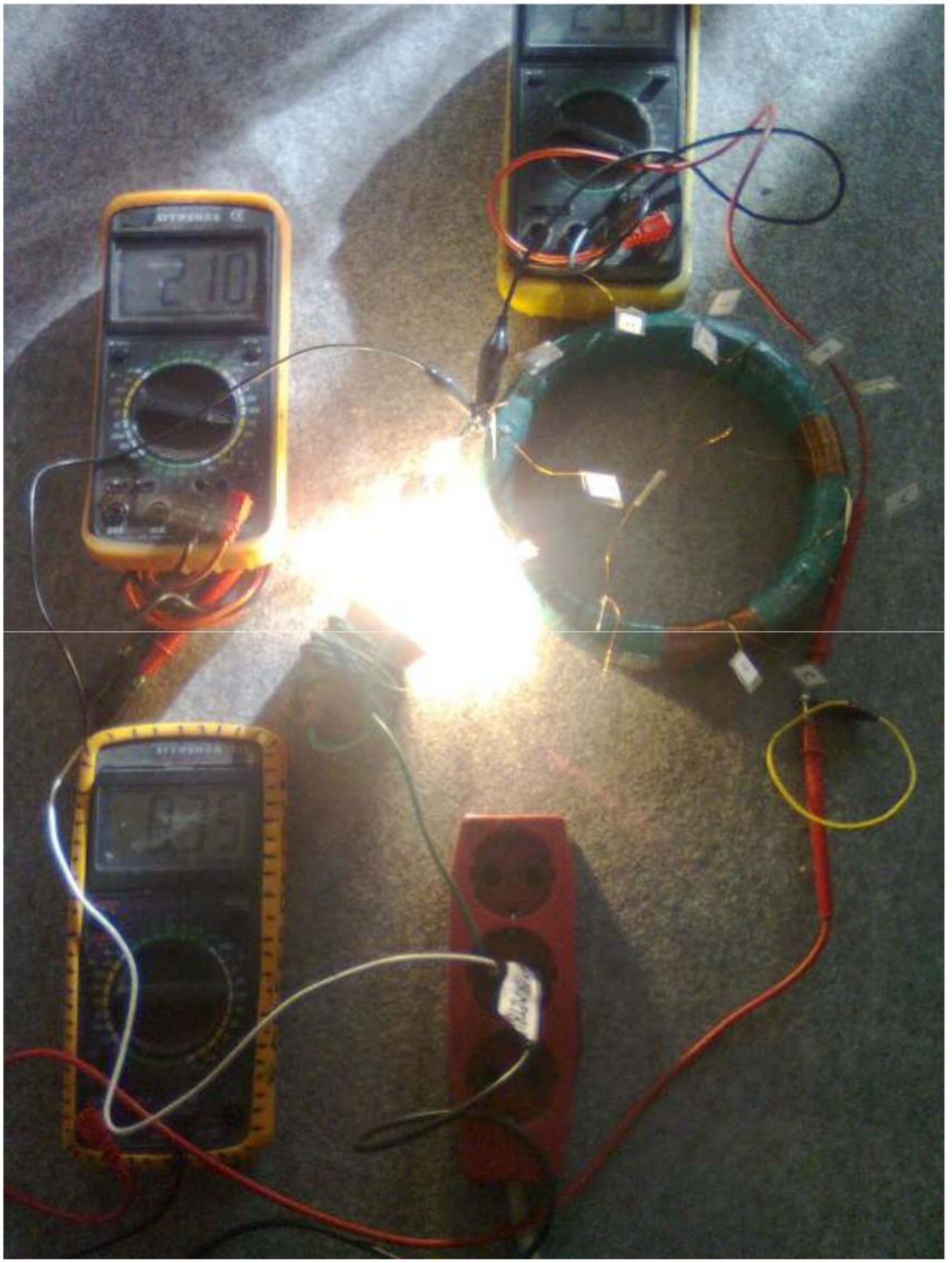

ALTERNATING POLES
V1
i
A
100W
230V
U1
220V
50 Hz
V2
CCW
N/S
N/S
U2
CCW

U1+U2=220V (6)


231



Here the Clamp meter gives a false reading of 1.12 Amps due to the strong outside magnetic field he have discussed above. Even two feet away it still gives a false reading of 0.43Amps.
Let's discard this type of amp-meter, because it's too sensitive to the magnetic field created by the devices (as it should be).



And closer shots of the measuring devices:



So our measuring devices indicate these parameters:
I=0.35Amps
U_1=210Volts
U_2=23.2Volts

$$U_1+U_2=210V+23.2V=233.2V \quad (7)$$

So we have 233.2V compared to 220V in theory from equation (6)
We can calculate the power consumed by the light bulb:

$$P_{lightbulb}=U_1 \text{ x } I=210V \text{ x } 0.35A=73.5W \quad (8)$$

and the power consumed by the device without a load connected at the output :

$$P_{device}=U_2 \text{ x } I=23.2 \text{ x } 0.35A= 8.12 \text{ W} \quad (9)$$

Total power consumption by our configuration:

$$P_{total}=P_{lightbulb}+P_{device}=73.5W+8.12W= 81.62 \text{ W} \quad (10)$$

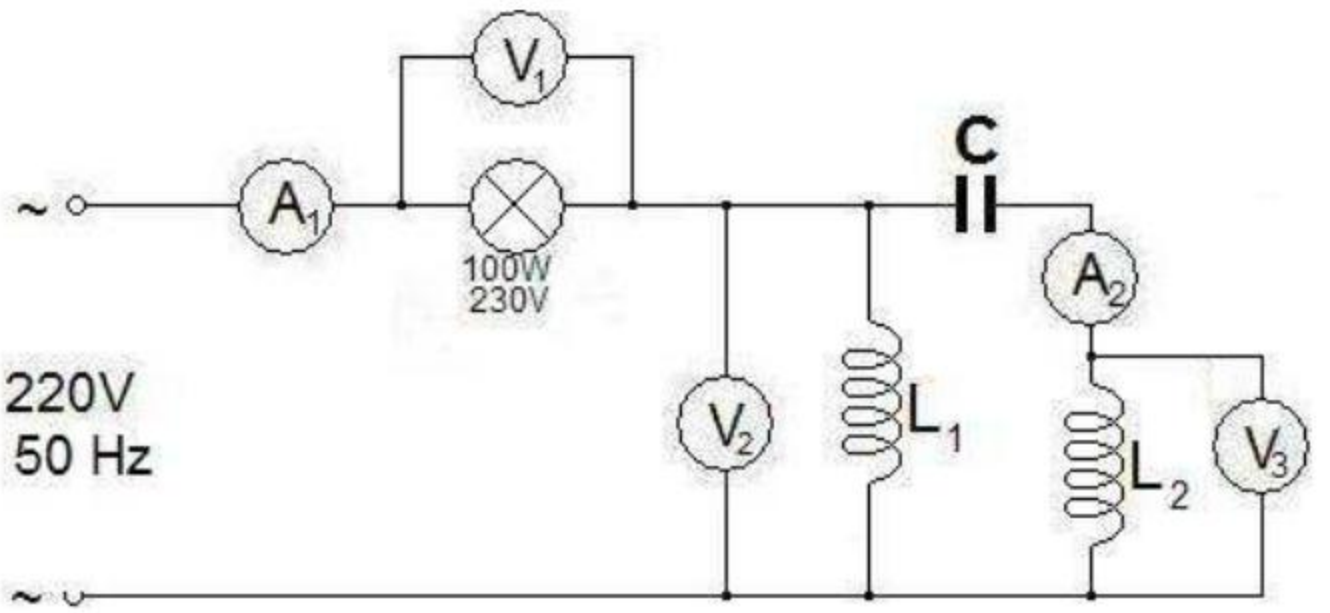
For simplicity reasons we won't take into account the power consumed by the devices.

FULL POWERING (AC) THE TESLA TRANSFORMER 381970 WITHOUT A LOAD

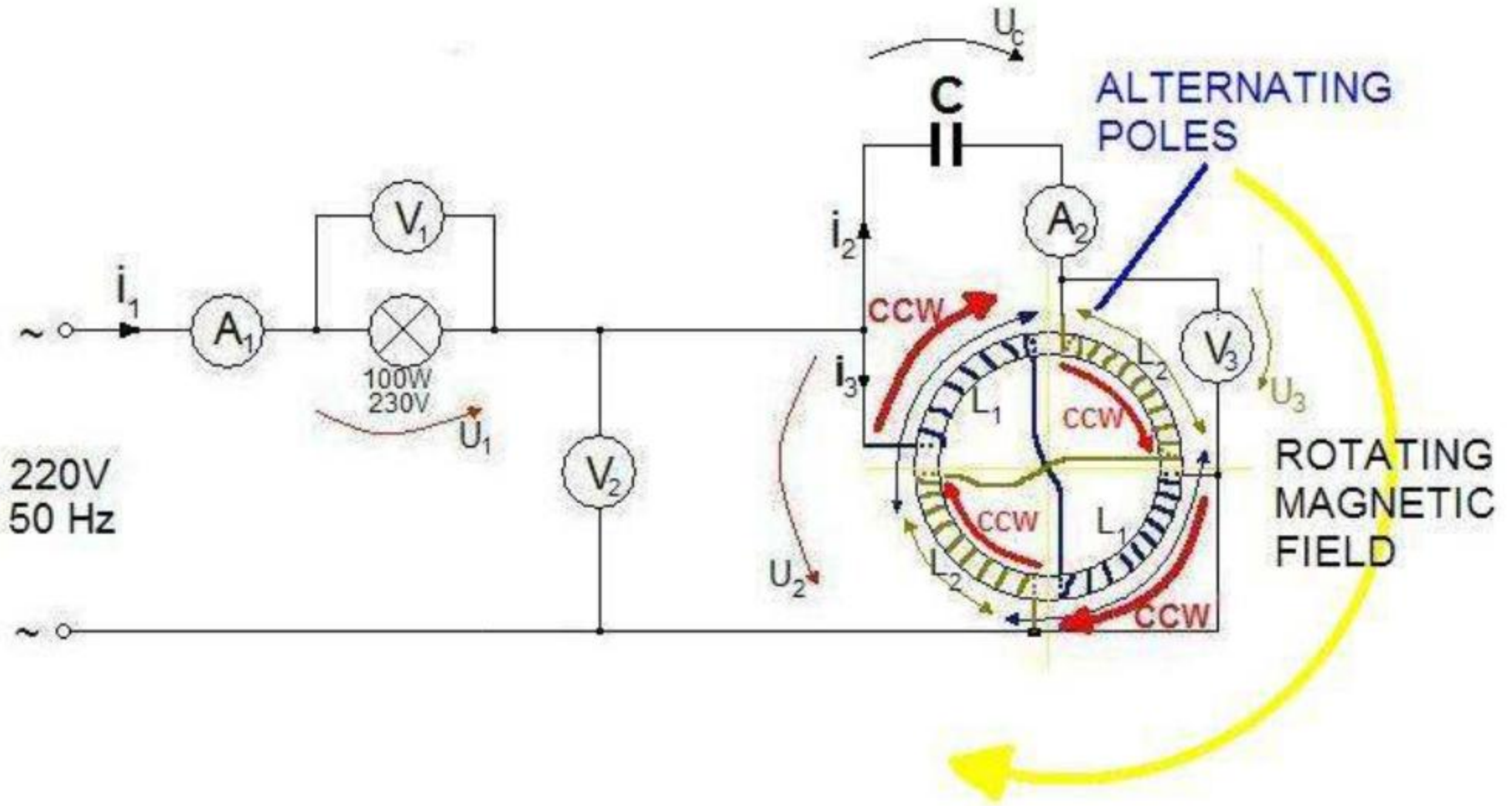
SETUP 2:

Now, let's try a different setting, by powering up the other side of the device:

In this arrangement we are using a capacitor (C) in order to shift the voltage by a theoretical 90°(more like 60° in reality):



Note: L_1 is actually created from two coils in series. Same with L_2.



Due to the phase shift created with capacitor C, the magnetic poles created by coil L_2 **will** lag so a rotating magnetic field will be formed.
Voltmeter V_1 **will measure the voltage d**rop U_1 on the light bulb;
Voltmeter V_2 **will measure the voltage d**rop U_2 **on the first half of the primary winding (in** blue)
Voltmeter V_3 **measures the voltage drop** U_3 **on the second half of the primary winding (in** orange)
Amp-meter A_1 measures the current i_1
Amp-meter A_2 measures the current i_2
The rest of the parameters in the diagram can be calculated from following formulas:

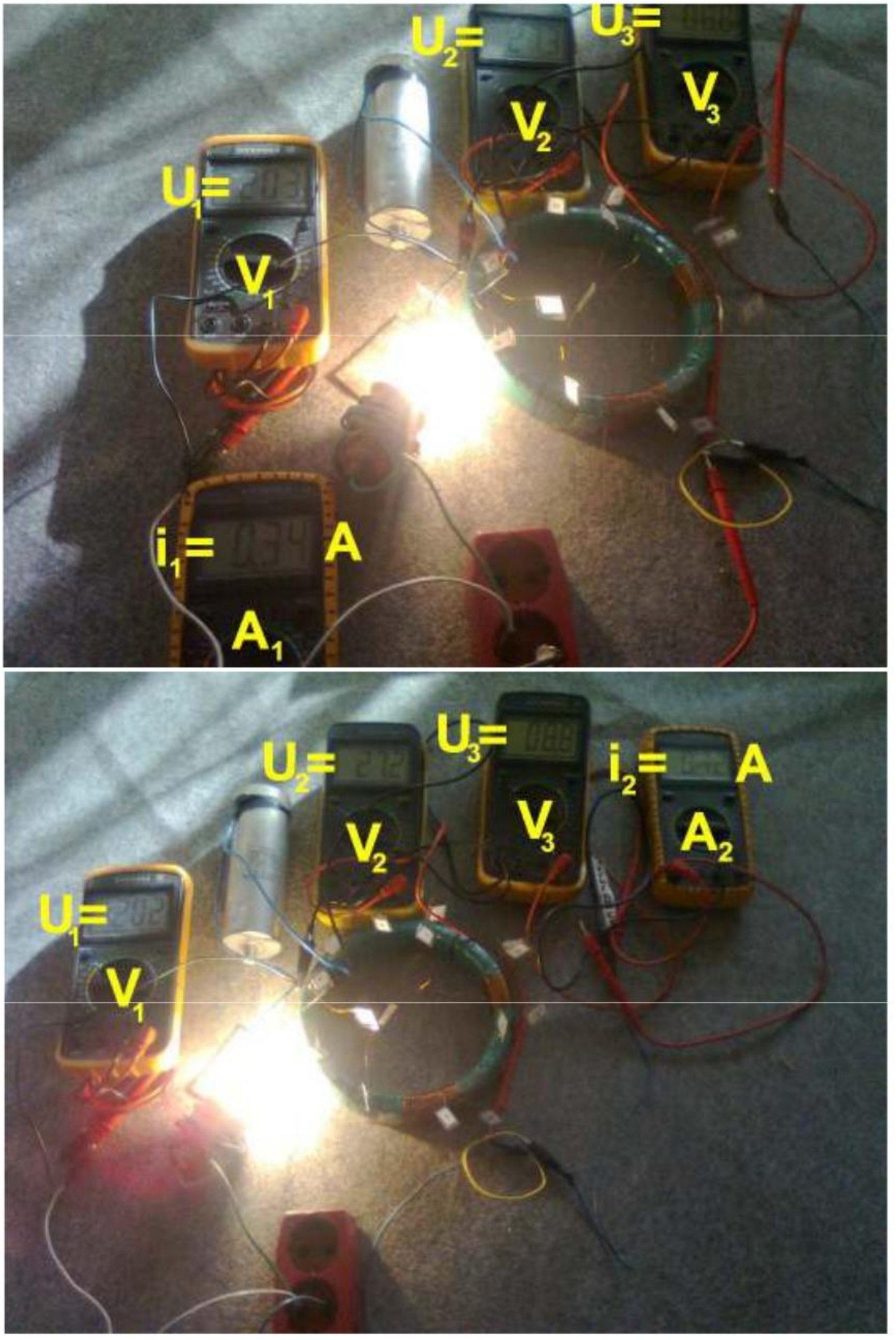
$i_1=i_2+i_3$ from Kirchhoff's first law **also known as Kirchhoff's current law** (KCL) (11)

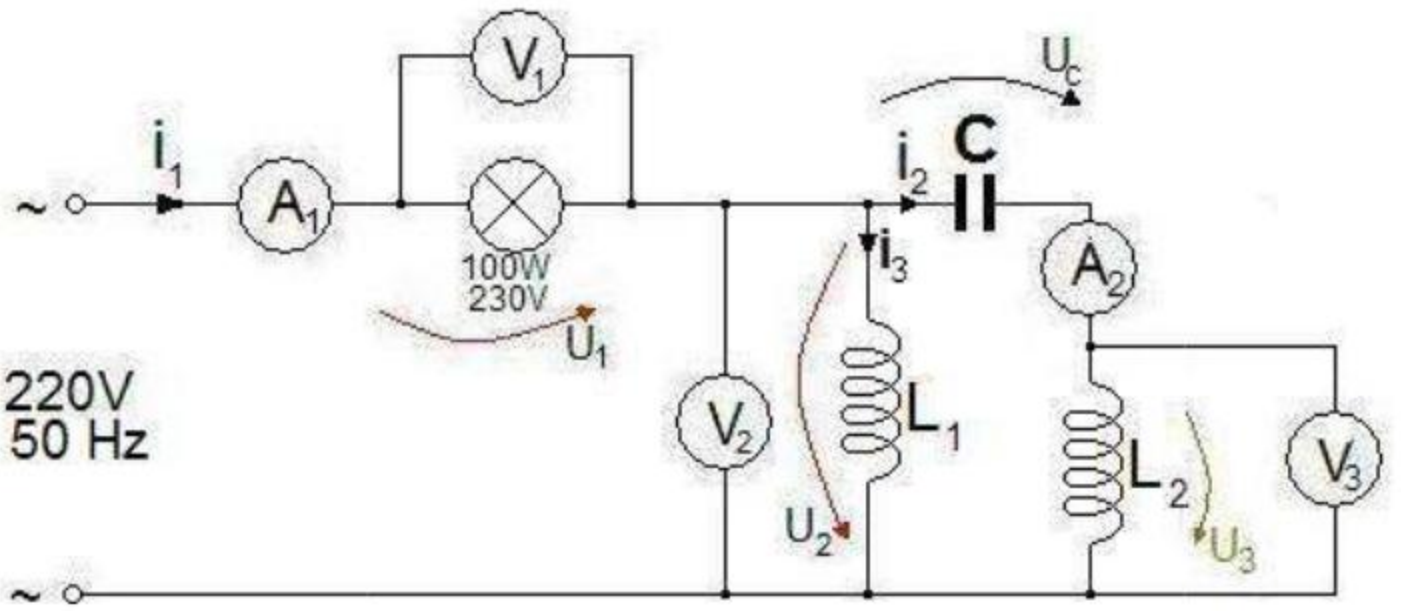
and $U_2=U_C+U_3$ (12)

I will use a 15 μF capacitor at 450V.



I will make two measurements, one with an amp-meter as A_1 and second as A_2.


U2=
U3=
V2
V3
U1=
V1
i1=
A
A1
U2=
U3=
i2=
A
V2
V3
A2
U1=
V1



Note: L_1 is actually created from two coils in series. Same with L_2.

With the second coil on operation, our instruments indicate these values:

i_1=0,34A

U_1≡202,5V (average between the two measurements)

U_2=27,25V

U_3=8,8V

i_2=0,12A

Let us calculate the Power consumption of the light-bulb:

$$P_{lightbulb} = U_1 * i_1 = 202.5V * 0.34A = 68.85\,W \quad (13)$$

We could calculate the voltage drop across the capacitor from equation (12)

$$(12) \Rightarrow U_C = U_2 - U_3 = 27.25V - 8.8V = 18.45V \quad (14)$$

Let us calculate the current i_3 that the coil L_1 drains:

$$(11) \Rightarrow i_3 = i_1 - i_2 = 0,34A - 0,12A = 0,22A \quad (15)$$

Now we can calculate the power consumption of the coils L_1 and L_2:

$$P_{L_1} = U_2 * i_3 = 27,25V * 0,22A \simeq 6W \quad (16)$$

$$P_{L_2} = U_3 * i_2 = 8,8V * 0,12A \simeq 1W \quad (17)$$

You are probably thinking that it's not right that the coil L_2 should consume so less power, and that I should change the capacitor value. But, if I do that, then the phase shift will be less than 40°, so the less voltage I will have on the coil L_2 the more phase shifted it will be from the voltage on coil L_1.

Now we can say what the power consumption of our transformer without a load connected at the output:

$$P_{device} = P_{L_1} + P_{L_2} \quad (18)$$

$$(16),(17) \rightarrow (18): P_{device} = 6W + 1W = 7W \quad (19)$$

And finally calculate the total power consumption of our circuit:

$$P_{TOTAL} = P_{lightbulb} + P_{device} \quad (20)$$

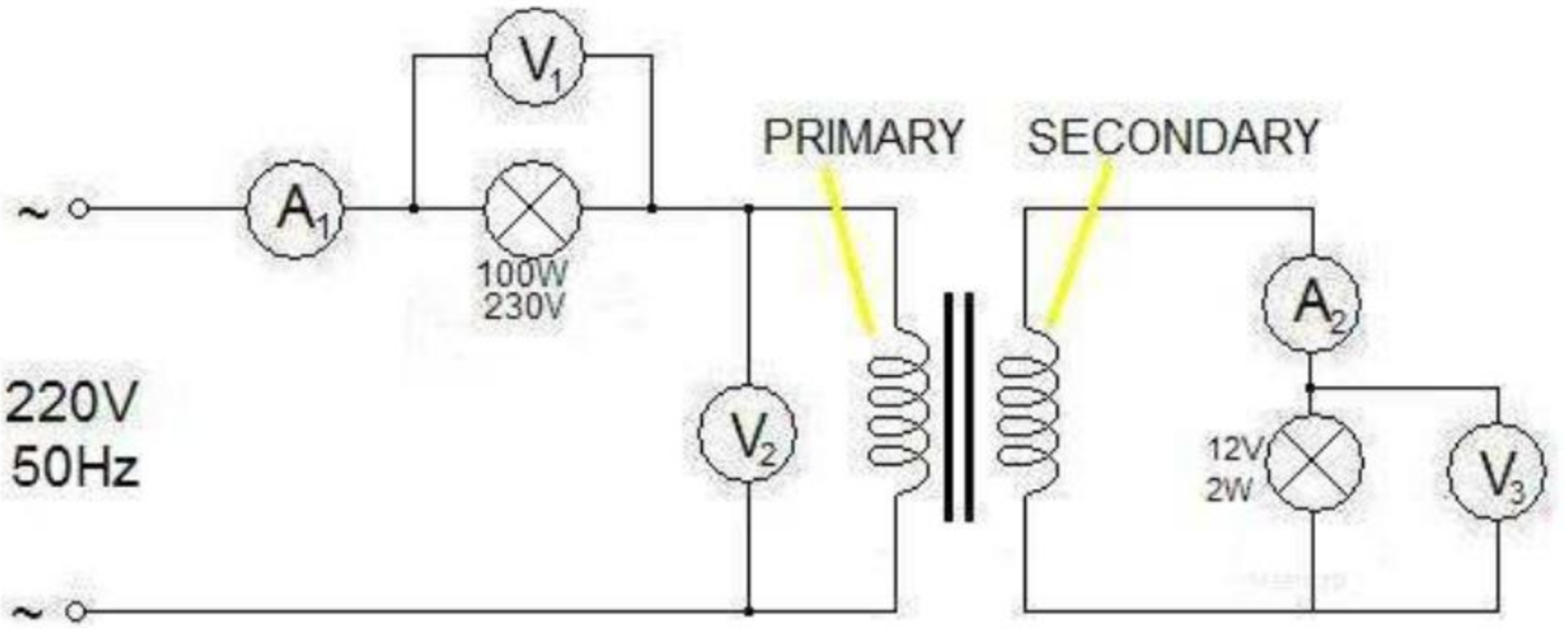
$$(13),(19) \rightarrow (20): P_{TOTAL} = 68,85W + 7W = 75,85\,W \quad (21)$$

POWERING (AC) HALF OF THE TESLA TRANSFORMER 381970 WITH A LOAD

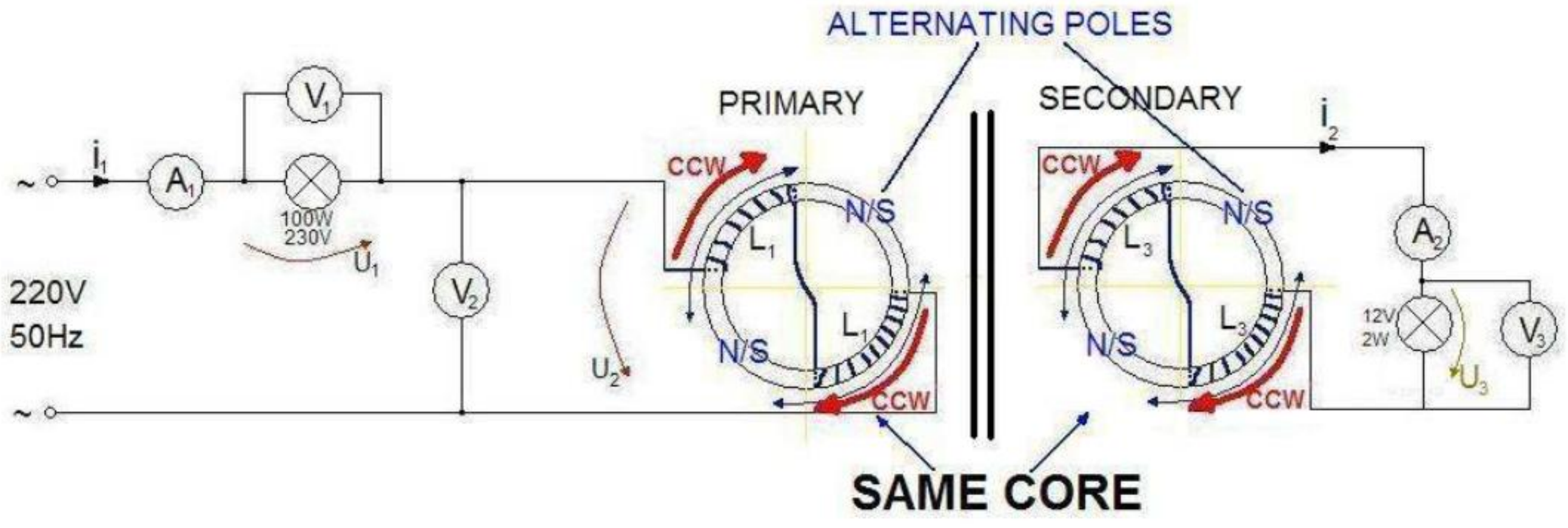
SETUP 1:

Case 1

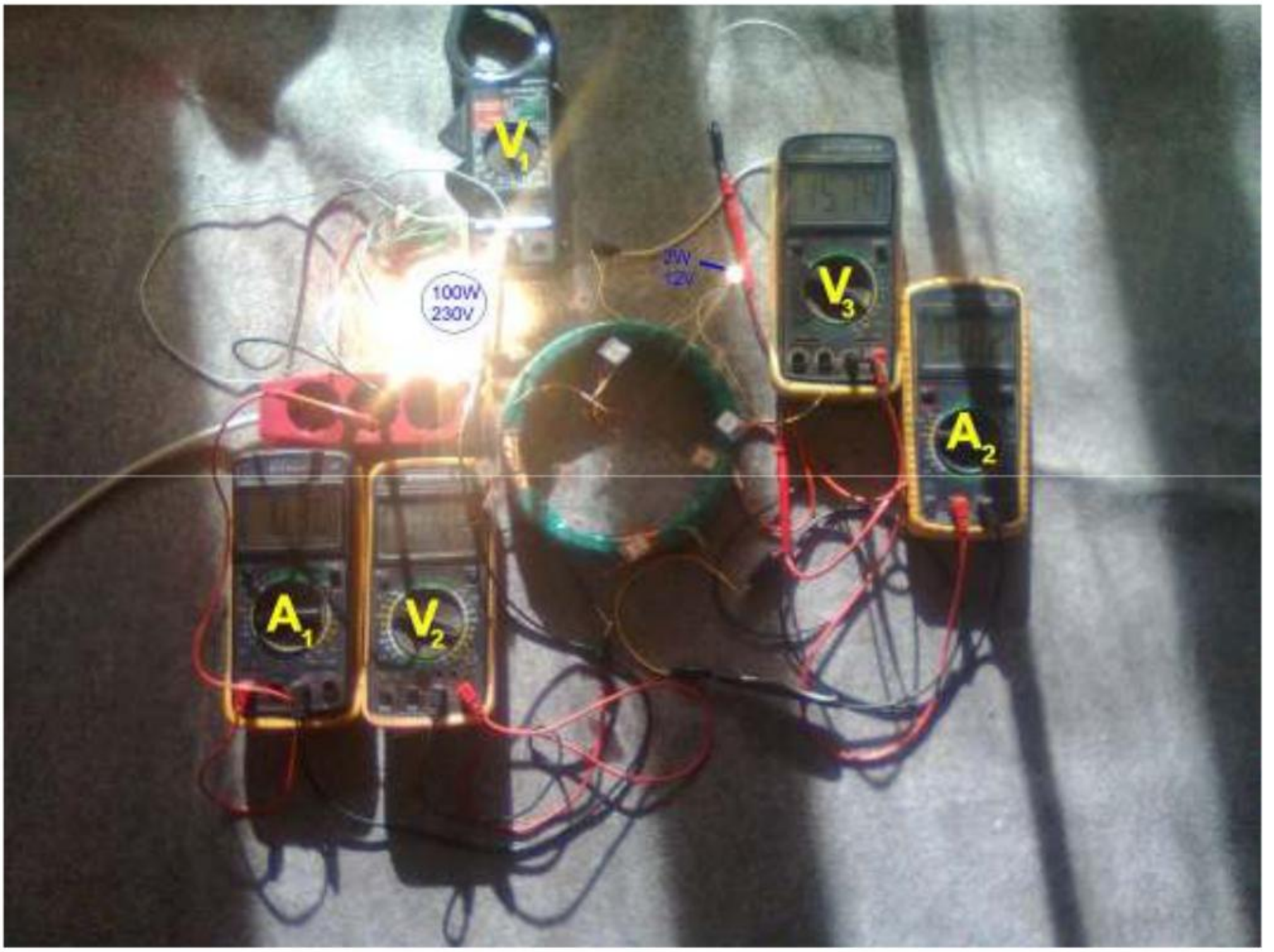
Let us use a 12V 2W filament light-bulb acting as a resistive load, in this next setup:



In more detail:

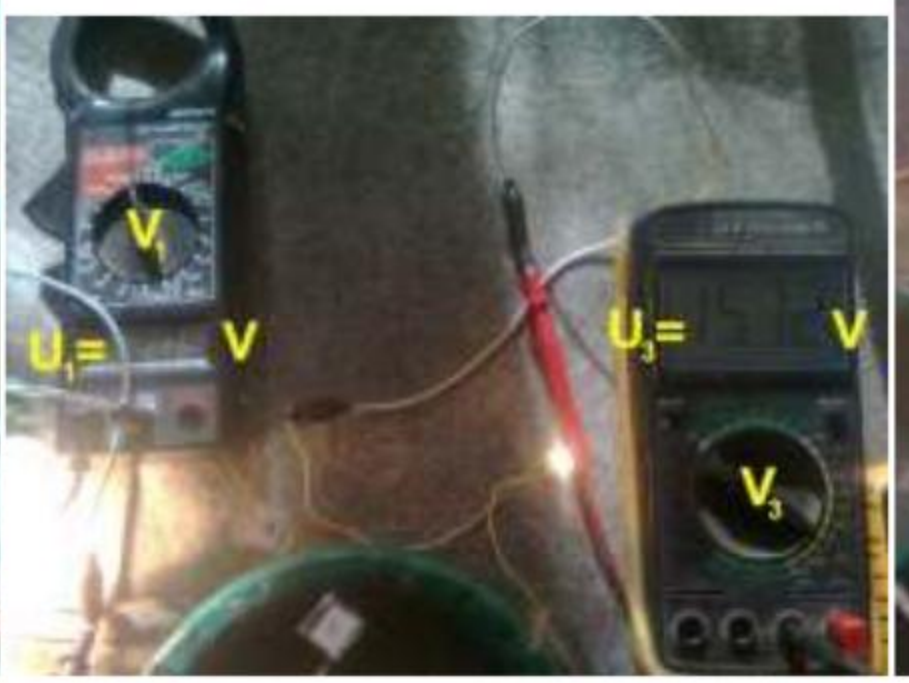


Amp-meter A_1 will measure the current i_1 (input current);
Volt-meter V_1 will measure the voltage drop across the 100W light-bulb;
Volt-meter V_2 will measure the voltage drop across the coil L_1 from the primary windings (input voltage)
Amp-meter A_2 will measure the current i_2 (output current);
Volt-meter V_3 will measure the voltage drop U_3 across our 2W light-bulb acting as a load (output voltage);

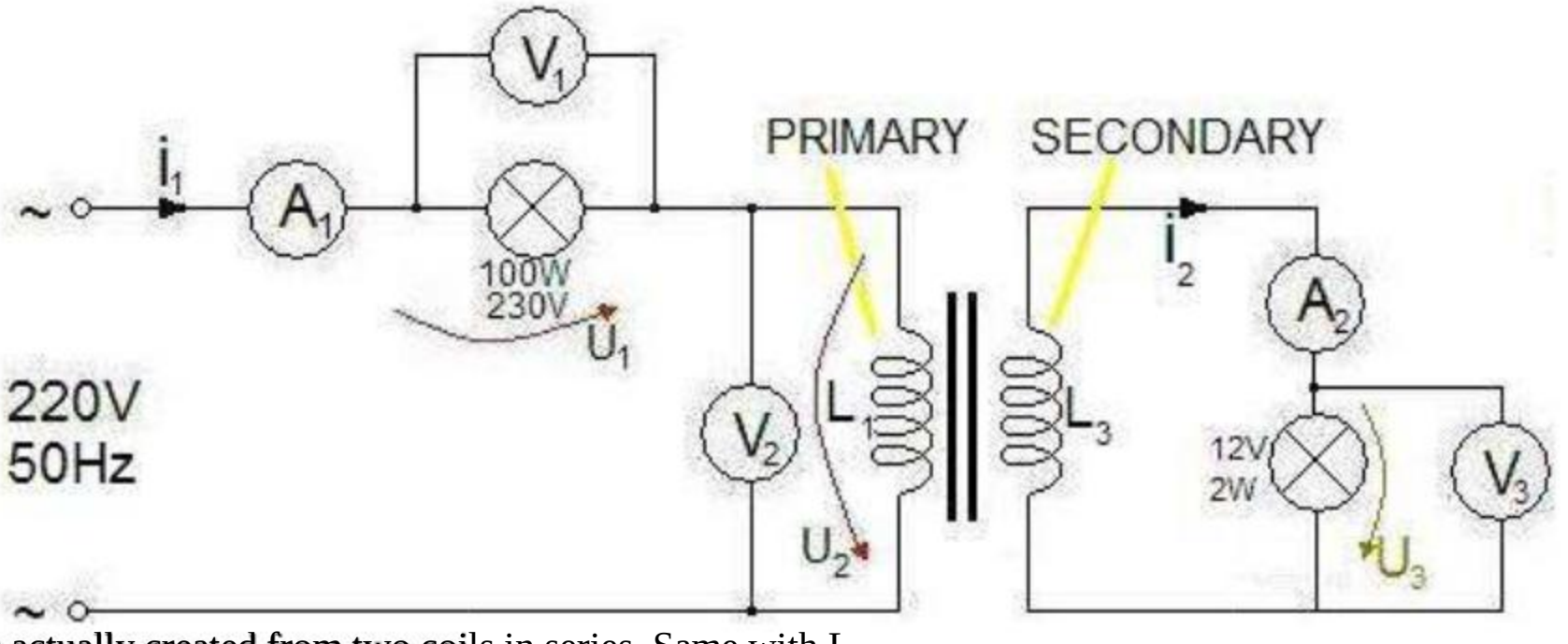


Closer shots of the instruments:









Note: L_1 **is actually created from two coi**ls in series. Same with L_3.
So, we have these values:
i_1=0,37A
U_1=205V
U_2=24,4V
i_2=148,1mA
U_3=15,725V (average)
Let us calculate the Power consumption of the light-bulb:

$$P_{lightbulb} = U_1 * i_1 = 205V * 0.37A = 75.85W \ (22)$$

We will calculate the power consumption of the coil L_1 (i***nput power***):

$$P_{IN} = U_2 * i_1 = 24.4V * 0.37A = 9.028W \ (23)$$

Power consumed by this setup:

$$P_{TOTAL} = P_{lightbulb} + P_{IN} \ (23.1)$$

$$(22),(23) \rightarrow (23.1): P_{TOTAL} = 75.85W + 9.028W = 84,878W \ (23.2)$$

And let us calculate the ***output power:***

$$P_{OUT} = U_3 * i_3 = 15.725V * 0.1481A \simeq 2.33W \ (24)$$

Let us see if we have overunity:

$$(23),(24) \rightarrow (2): Overunity = \frac{2.33W}{9.028W} = 0,258 \ (24.1)$$

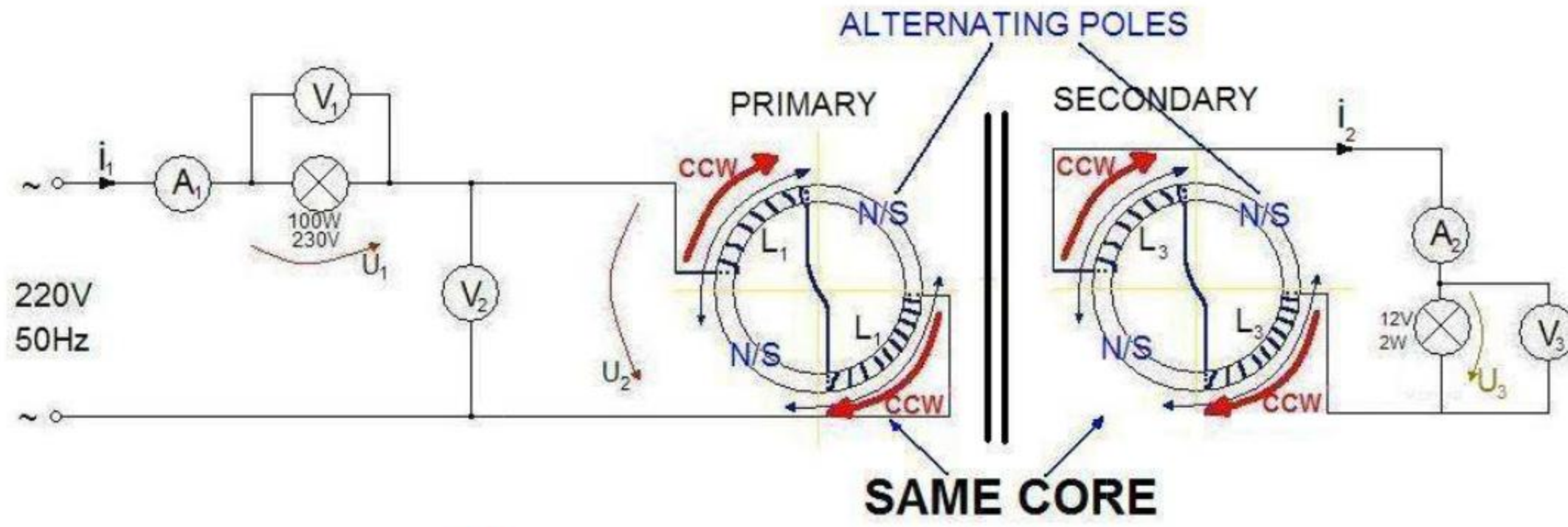
Well, we don't have overunity, so then let us see the efficiency of our tr**ansformer in this** present setup:

$$(23),(24) \rightarrow (3): Efficiency = \frac{2.33W}{9.028W} * 100 = 25.8\% \ (24.2)$$

In order to calculate the COP, **we need t**he ***user input power***, which is in our case, the ***input*** power consumed only by **the load, discarding the power consumed** by the transformer .
So, then we need to know how much power our **transformer consumes without a load con**nected at the output. We have calculated this in equation (9)

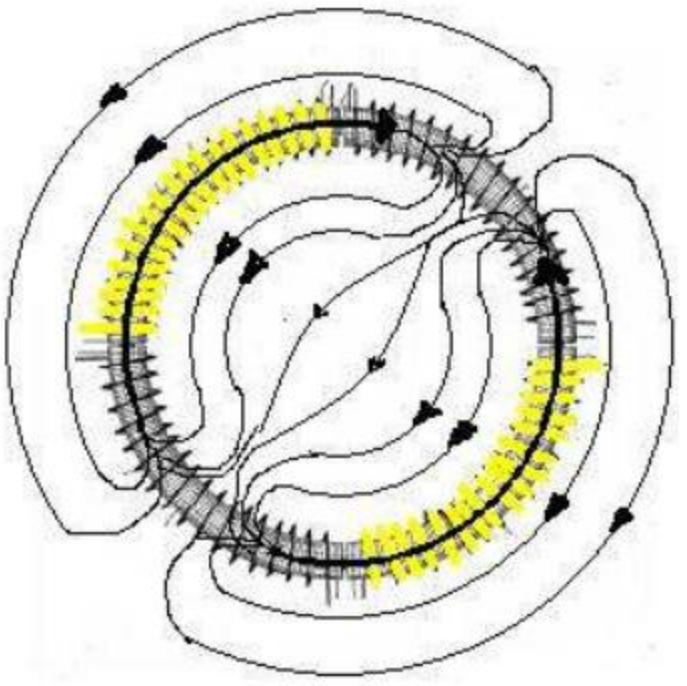
$$(9),(23),(24) \rightarrow (1): COP = \frac{2.33W}{9.028W - 8.12W} = \frac{2.33W}{0.908W} \simeq 2.5$$

SETUP 1 Case 1 Conclusion:



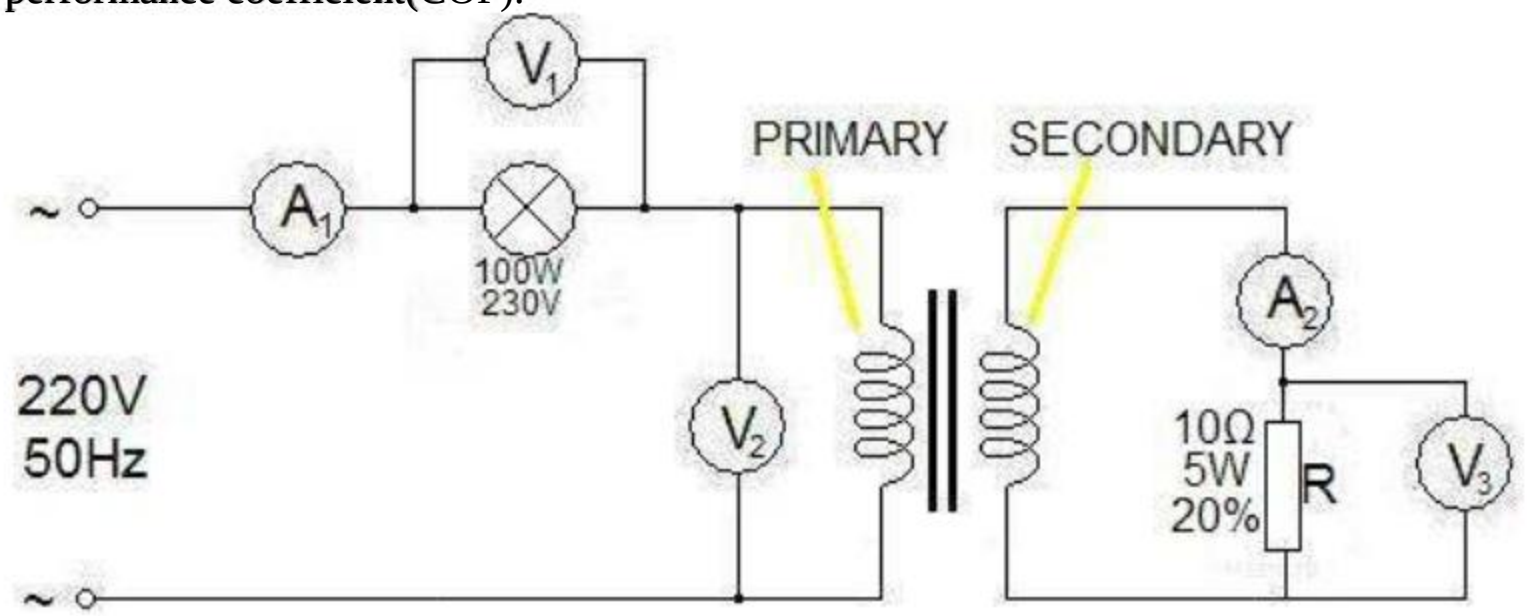
<u>This setup gives us a COP of 2.5 with efficiency 25,8% (overunity=0.25)</u>

And remember, this is only half the toroidal windings firing:

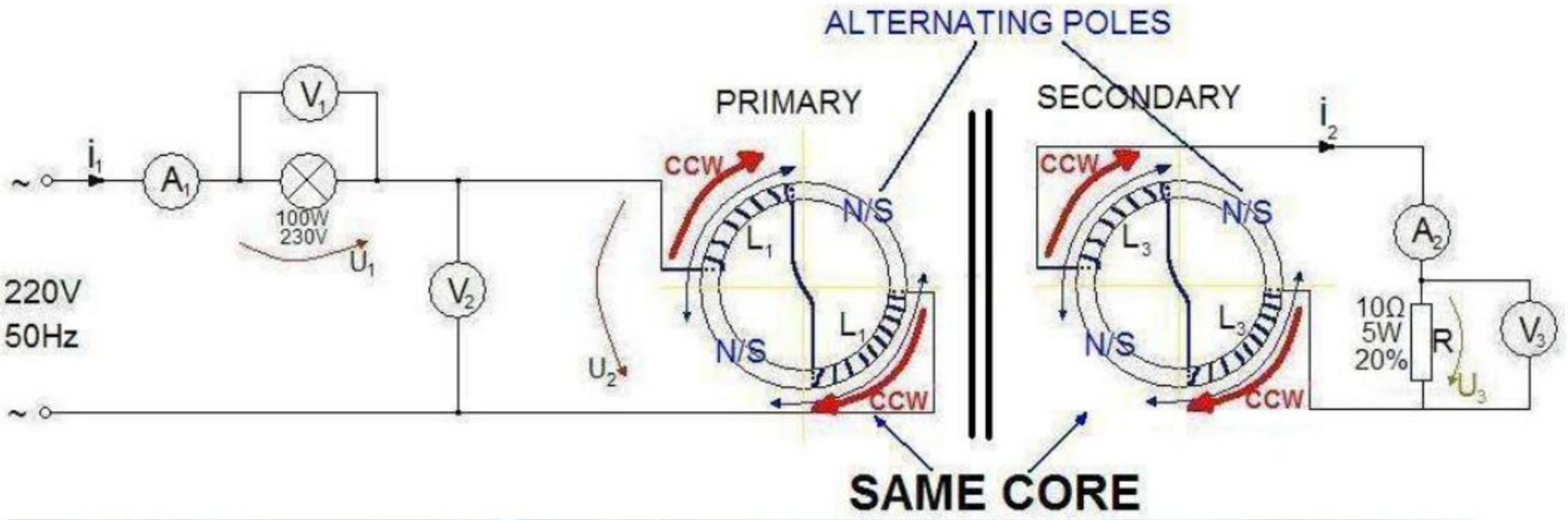


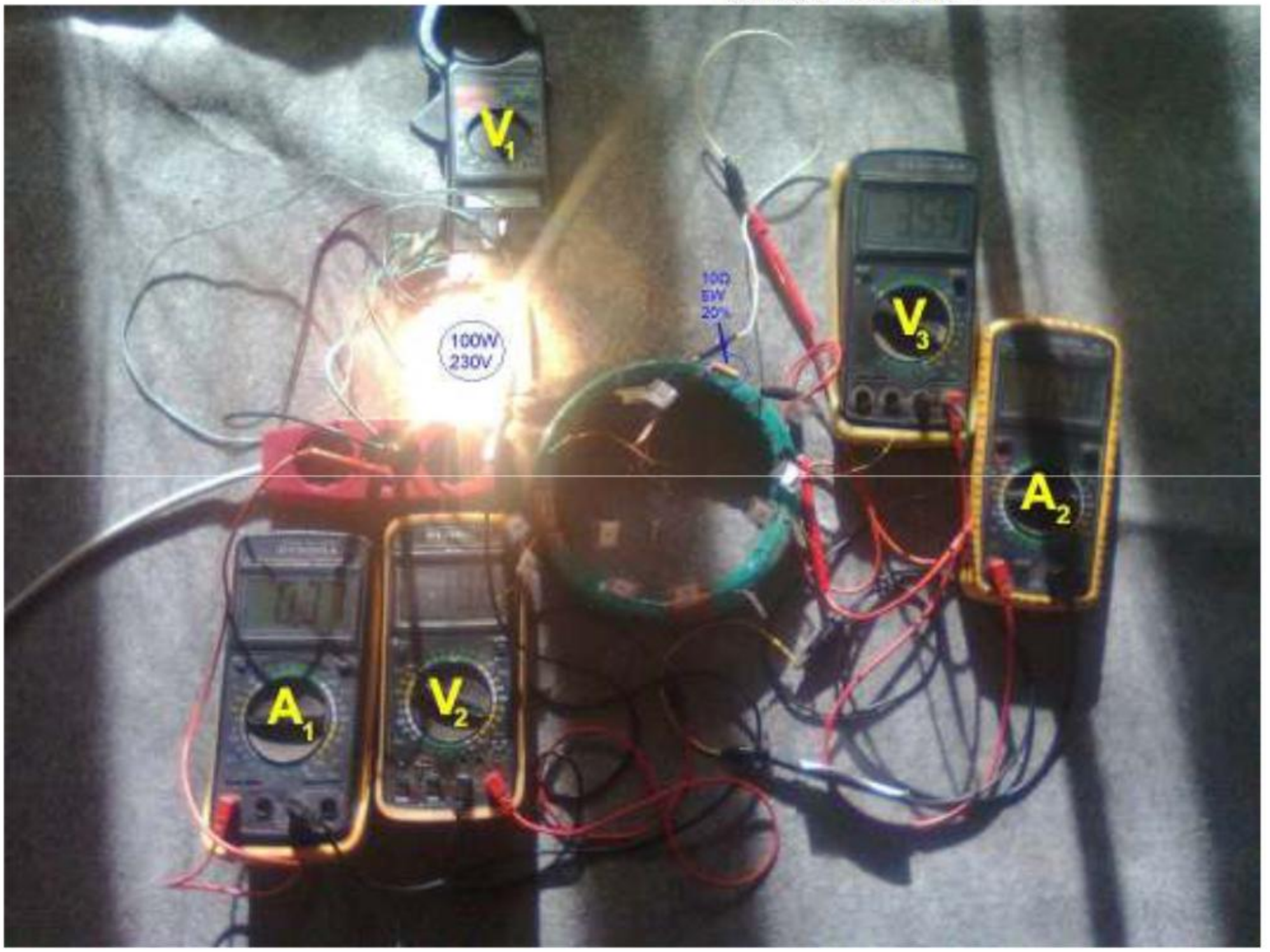
<u>Setup 1 Case 2:</u>

Let us increase the output current by changing the light-bulb with a 10Ω **5W 20% resistor**, and see how this effects our **efficiency and performance coefficient(**COP).



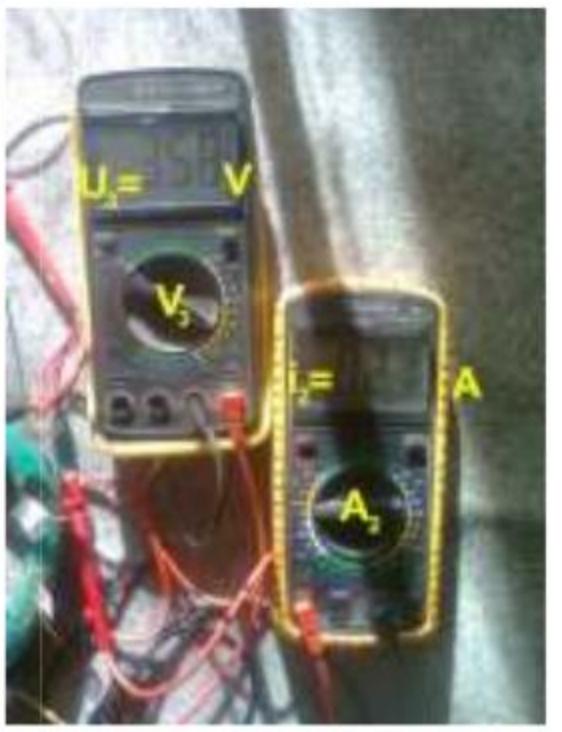
Same design (setup 1**) but with a resistor** as a load.

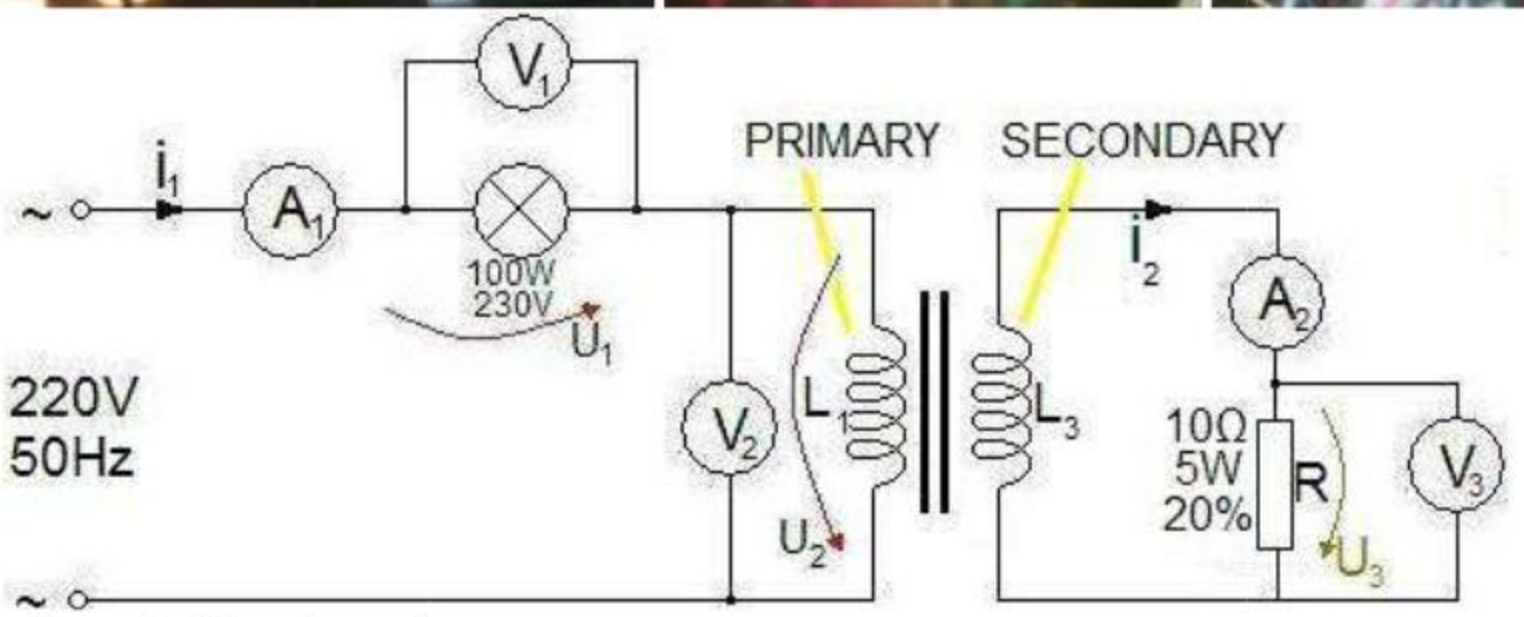

ALTERNATING POLES
PRIMARY
SECONDARY
i_1
i_2
V_1
A_1
100W
230V
U_1
220V
50Hz
V_2
U_2
CCW
N/S
L_1
L_3
A_2
10Ω
5W
20%
R
V_3
U_3
SAME CORE


V_1
100W
230V
V_3
A_2
A_1
V_2









Note: L_1 **is actually created from two coi**ls in series. Same with L_3.

In this case, our instruments indicate these value:

i_1=0.37A

U_1=209V

U_2=19,6V

i_2=0,27A

U_3=3,58V

Calculations:

Power consumed by the light-bulb:

$$P_{lightbulb} = U_1 * i_1 = 209\,V * 0.37\,A = 77.33W \quad (25)$$

Power consumed by the coil L_1 ***(input power for the transformer)***:

$$P_{L_1}(P_{IN}) = U_2 * i_1 = 19.6V * 0.37\,A = 7.252\,W \quad (26)$$

Total power consumed by this present setup:

$$P_{TOTAL} = P_{lightbulb} + P_{L_1} (27)$$

$$(25),(26) \rightarrow (27): P_{TOTAL} = 77.33W + 7.252W = 84.582W \quad (28)$$

We immediately can observe something out of the ord**inary by comparing equations (23.2)** with (27). Total power **consumed by the setup has decreased by** 0,34%. We have increased the ***load on the trans****former*, and due to the unusual **magnetic field in the transformer (more l**ike outside of it), the ***power consumed by the tra****nsformer is reduced* instead of **being capable of providing more power** to our load.

Let us calculate the ***output power*** delivered to our $10\,\Omega$ resistor:

$$P_{OUT} = U_3 * i_2 = 3.58V * 0.27\,A \simeq 0.97\,W \quad (29)$$

Now let us determine the Overunity factor:

$$(26),(28) \rightarrow (2): Overunity = \frac{0.97W}{7.252W} = 0.13 \quad (30)$$

We multiply this by 100, to calculate the efficiency:

$$(26),(28) \rightarrow (3): Efficiency = \frac{0.97W}{7.252W} * 100 = 13.37\,\% \quad (31)$$

Again, let us determine the performance coefficient:

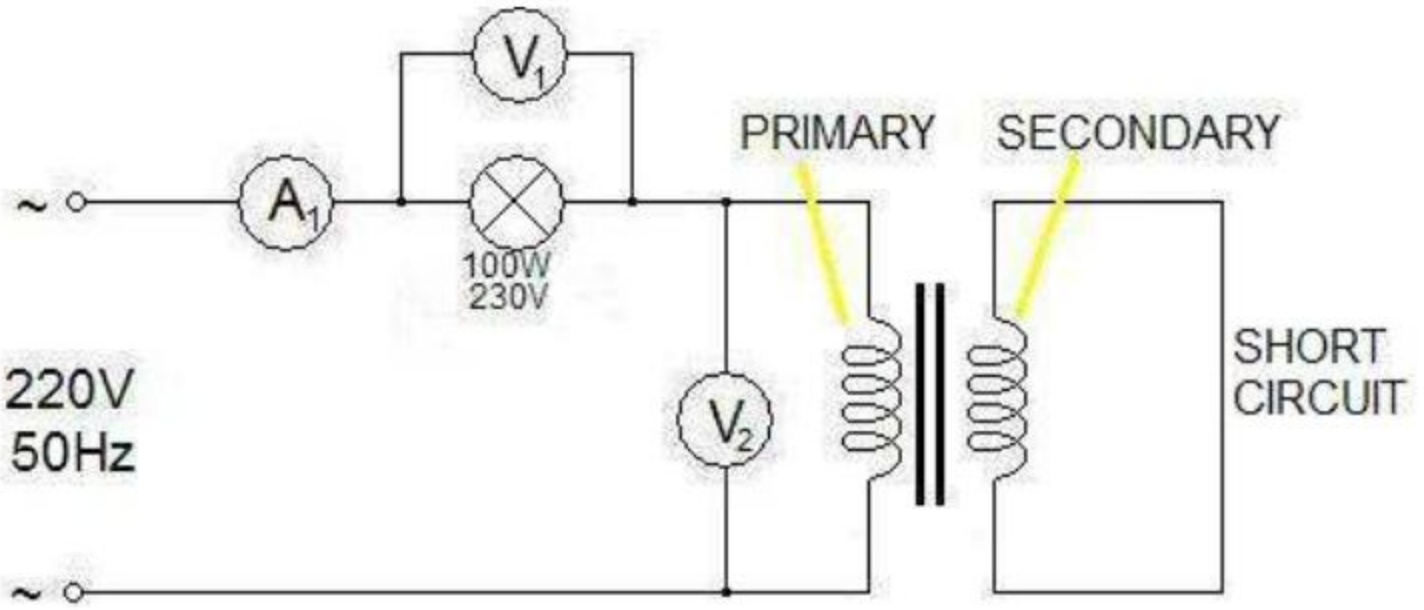
$$(9),(26),(29) \rightarrow (1): COP = \frac{0.97W}{7.252W - 8.12W} = \frac{0.97W}{-0.868W} = -1.11 \quad (32)$$

We definitely are dealing with a strange transformer. Reaching negative performance, means that this transformer must not work on low impedance's. Therefore there must be a minimum allowed impedance at which this transformer will still have positive performance coefficient.

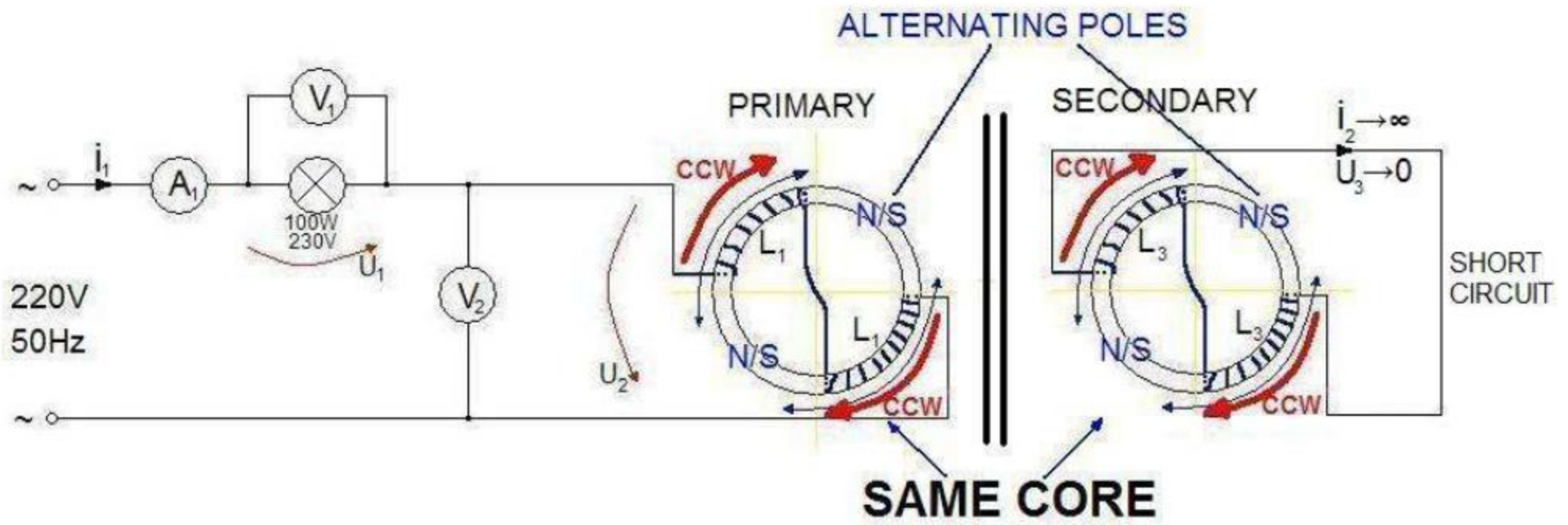
More study here. Determine the nominal current and voltage of the device from the graph (efficiency vs. Output power). Determine the minimum allowed impedance at which this transformer will still have positive performance coefficient, and minimum impedance at which COP is greater than 1. (using 3D Graph, plotting ox, oy, oz -> R, (COP; Efficiency), P_{IN})
How it’s operation change with frequency (3D graph), phase shift between primary & secondary change with other parameters (3D graph, oscilloscope shots)
More 3D graphs for COP and efficiency vs. frequency and input power when we are dealing with inductive and capacitive loads.
<<<<<<<<<<<<<<<<<<Work in progress>>>>>>>>>>>>>>>>>

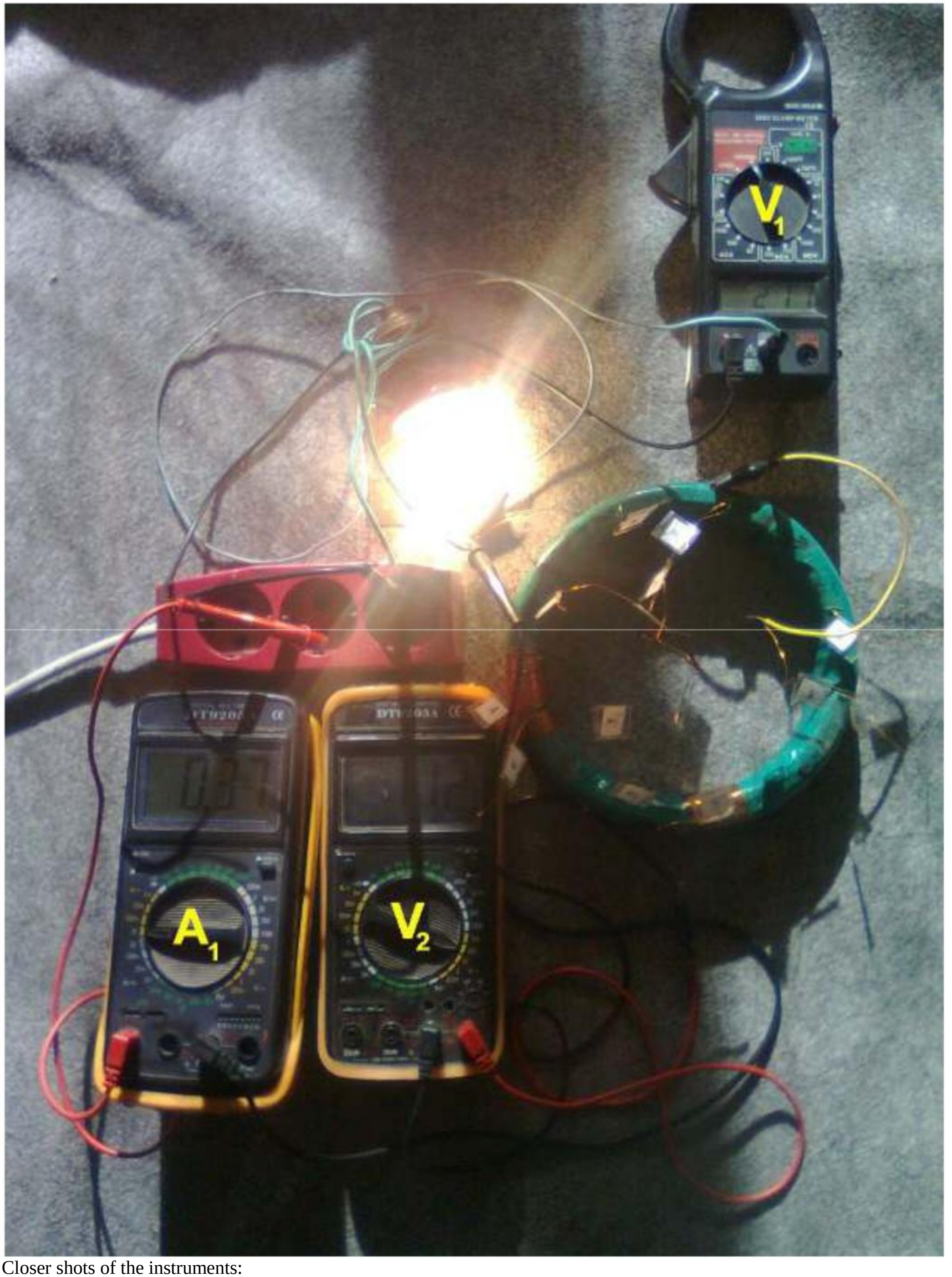
Setup 1 Case 3:

Secondary in short-circuit test:



In more detail:

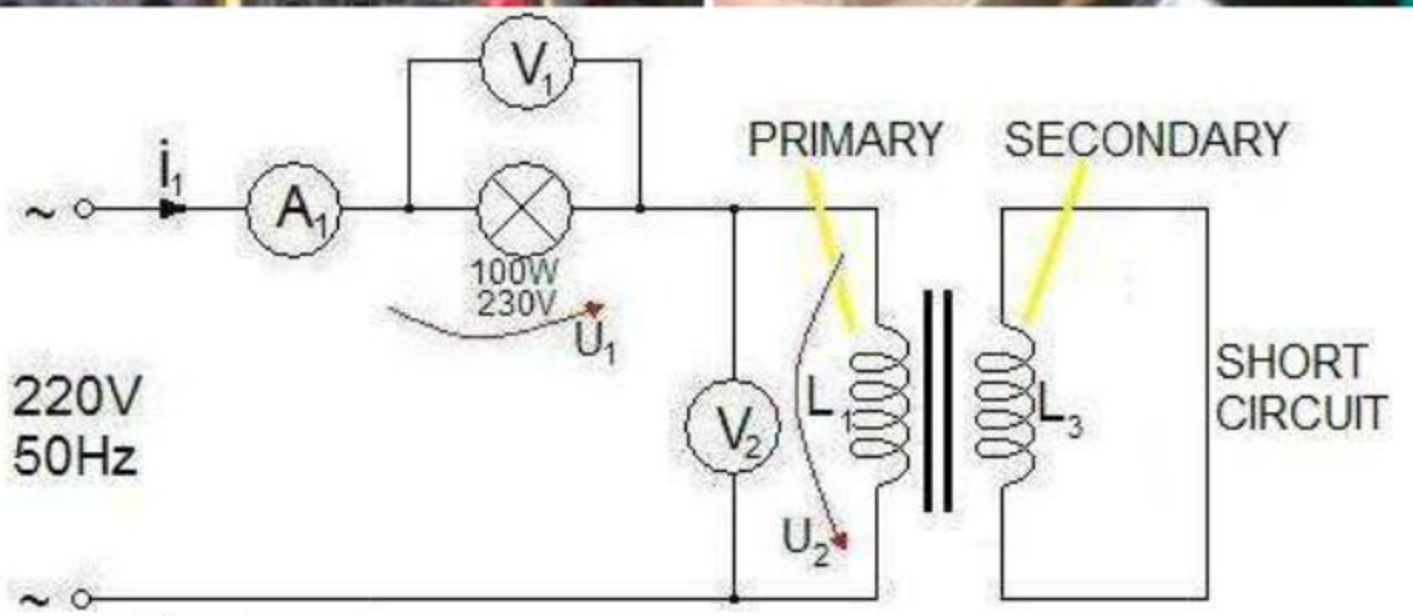




Closer shots of the instruments:







Note: L_1 **is actually created from two coi**ls in series. Same with L_3.
Instruments indicate these values:
i_1=0.37A
U_1=211V
U_2=17.2V
In this particular case, power consumed by the light-bulb would be:

$$P_{lightbulb} = U_1 * i_1 = 211V * 0.37A = 78.07W \quad (33)$$

and the power consumed by the transformer:

$$P_{TNsr} = U_2 * i_1 = 17.2V * 0.37A = 6.364W \quad (34)$$

Total power consumed by our circuit:

$$P_{TOTAL} = P_{lightbulb} + P_{TNsr} \quad (35)$$

$$(33).(34) \rightarrow (35): P_{TOTAL} = 78.07W + 6.364W = 84.434W \quad (36)$$

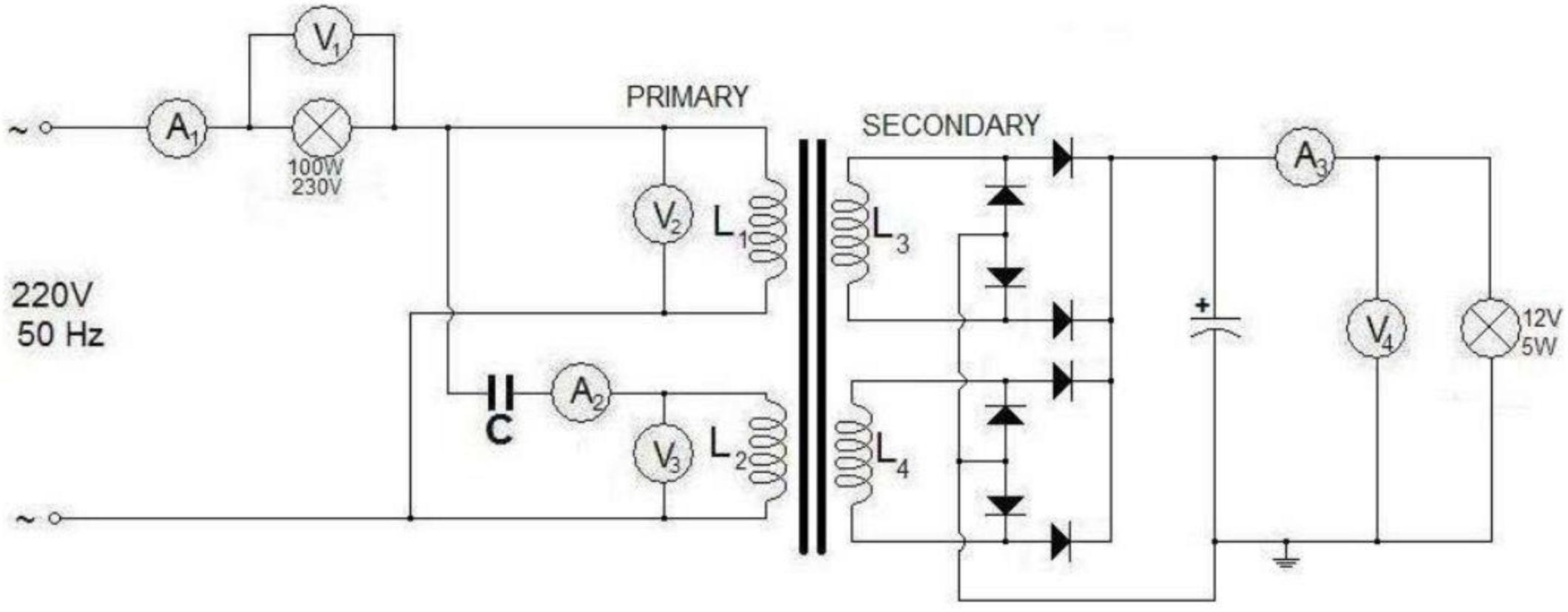
CONCLUSION:

We can compare the power consumed by our transforme**r in open circuit test 8.12W (from** relation 9) to 6.364W consumed in a short-**circuit test (relation** 34) and we deduce that we have a 21.6% ***decrease in energy consumption*** **in a short circuit test compared with a op**en circuit **test. Yes you read it right. When you s**hort circuit this transformer it will consume 21.6% less **then when it op**erating in open circuit. (This is wh**en is half pow**ered by only one sine-wave)

FULL POWERING (AC) OF THE TESLA TRANSFORMER 381970 WITH A LOAD

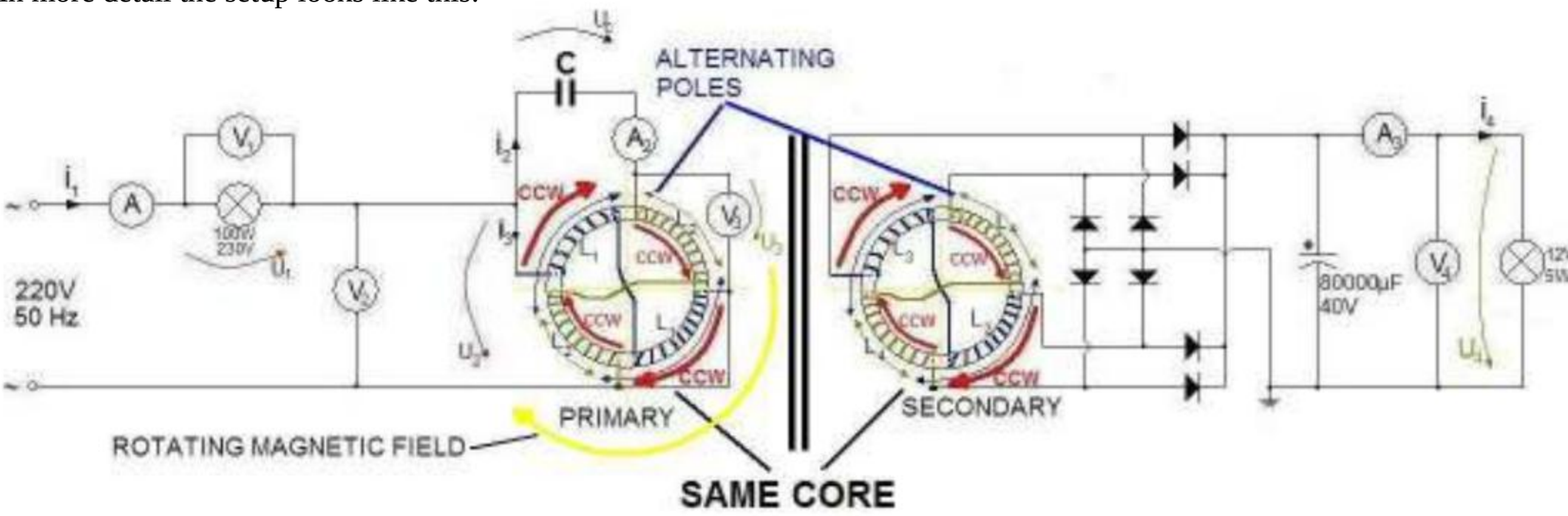
SETUP 2 Case 1:

We will start the second half of the transformer ag**ain using the same capacitor, and use a** 12V 5W filament light-bulb acting as a load.

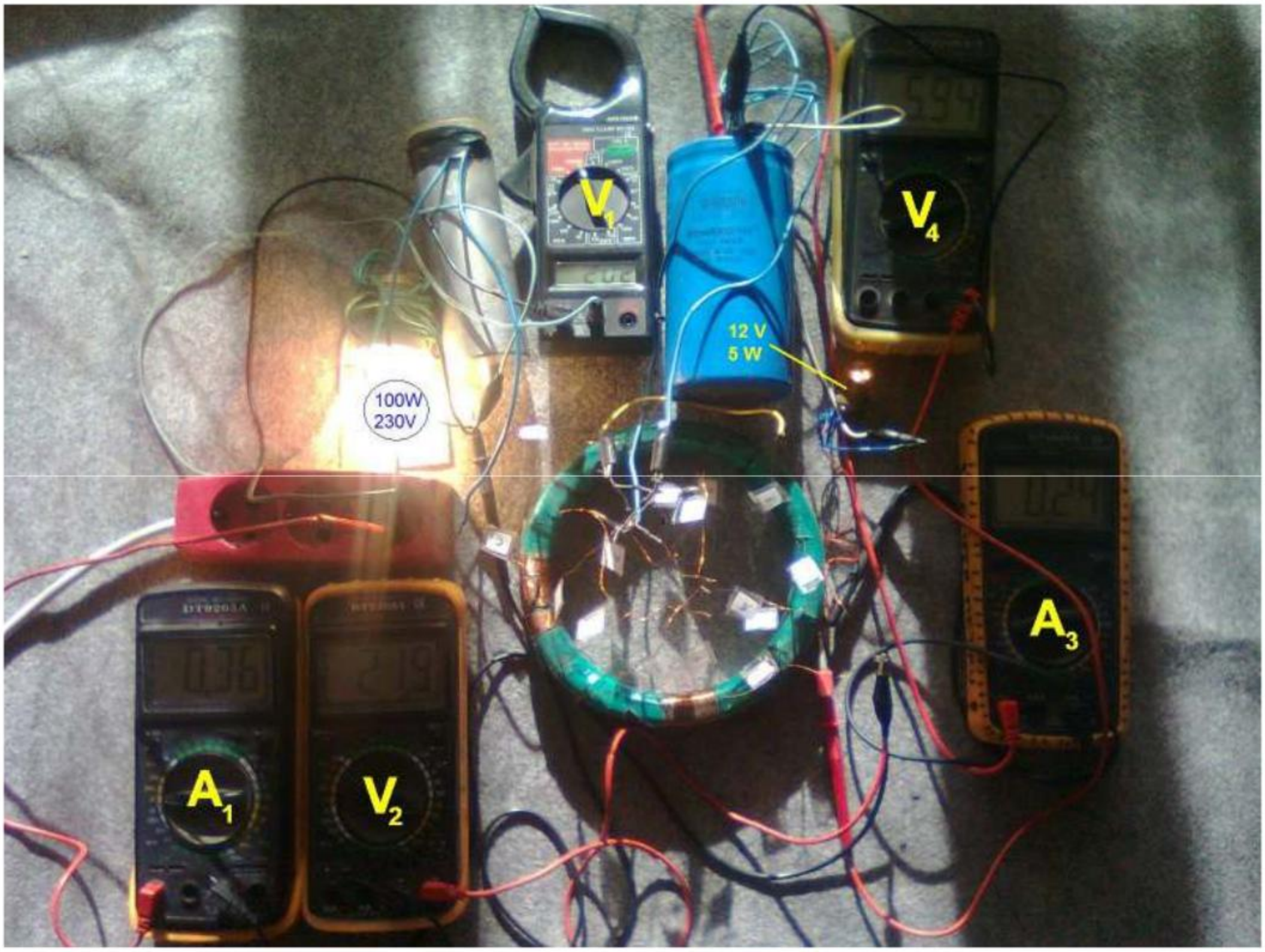


Note: All coils (L_1,L_2,L_3 and L_4) are actually formed by two coils in series.

In more detail the setup looks like this:



In the secondary, we are using two bridge rectifier circuit to bring the two out of phase signals generated on the same load.

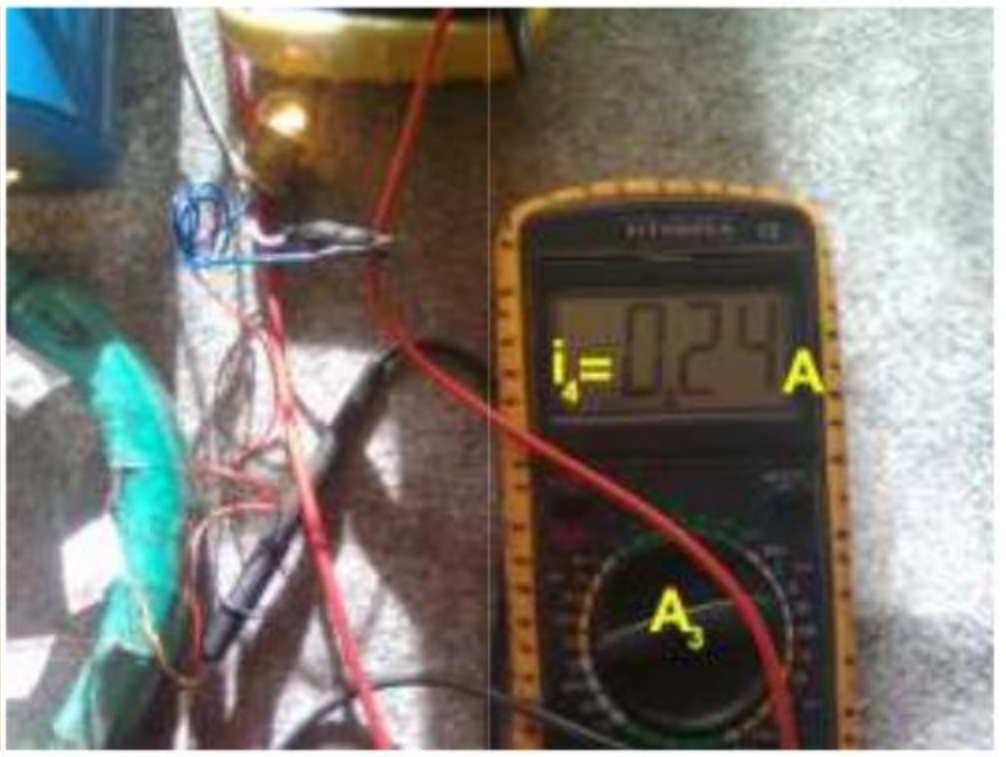


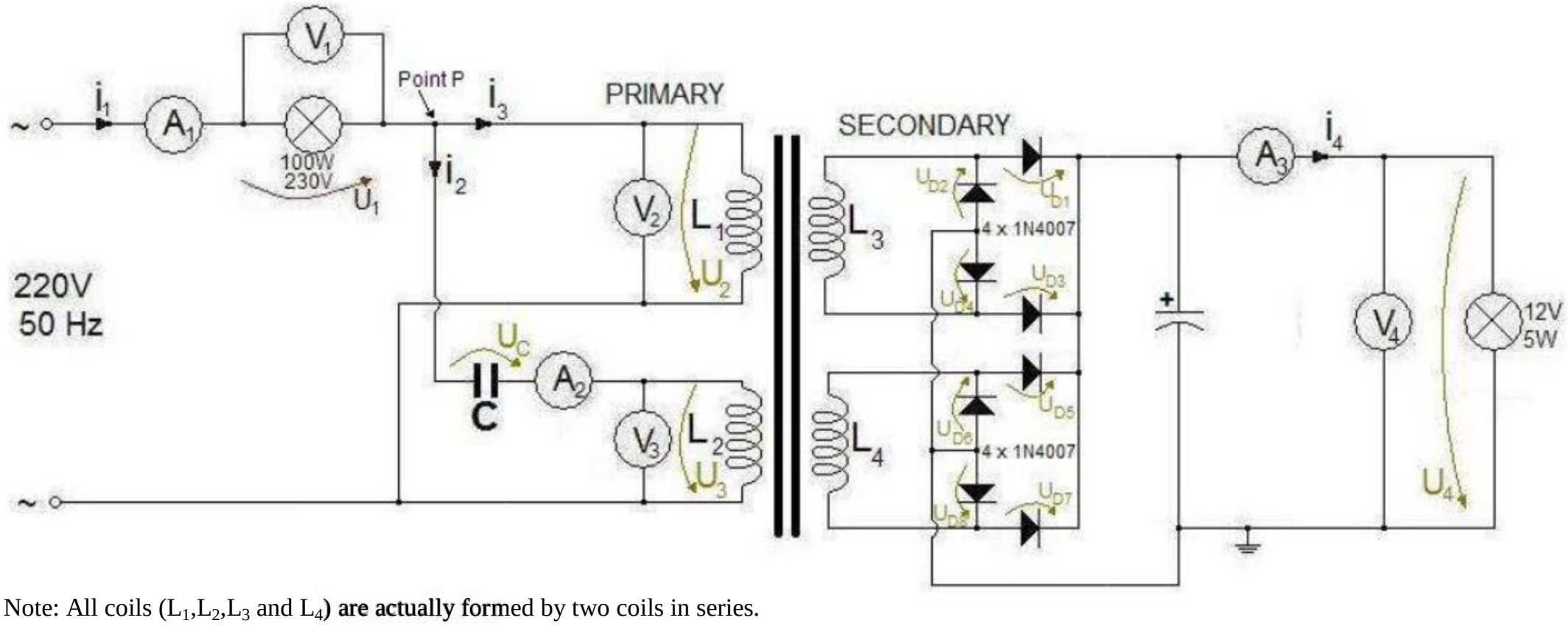
Closer shots of the instruments:











Note: All coils (L_1,L_2,L_3 and L_4) **are actually formed** by two coils in series.

Instruments indicate these values:

i_1=0.36A

U_1=202V

i_2=121.8mA

U_2=21.5V

U_3=8.05V

i_4=0.24A

U_4=6V

As before, let us determine the power consumed by the light-bulb:

$$P_{lightbulb} = U_1 * i_1 = 202V * 0.36A = 72.72W \quad (36.1)$$

We can calculate the current that flows through coil L_1:

$$Kirchhoff's\ first\ law\ at\ point\ P: i_1 = i_2 + i_3 \quad (37)$$

$$(37) \Rightarrow i_3 = i_1 - i_2 = 0.36A - 0.1218A = 0.239A \quad (38)$$

Let us determine the power consumed by coil L_1:

$$P_{L_1} = U_2 * i_3 \quad (39)$$

$$(38) \rightarrow (39): P_{L_1} = 21.5V * 0.239A = 5.139W \quad (40)$$

and power consumed by coil L_2:

$$P_{L_2} = U_3 * i_2 = 8.05V * 0.1218A = 0,98W \quad (41)$$

Now, we can calculate the total power consumed by the transformer. ***(transformer total input power)***:

$$P_{IN} = P_{L_1} + P_{L_2} \quad (42)$$

$$(40),(41) \rightarrow (42): P_{IN} = 5.139W + 0.98W = 6.12W \quad (43)$$

and **the total power consumed by our se**tup circuit:

$$P_{TOTAL} = P_{lightbulb} + P_{device(IN)} \quad (44)$$

$$(36.1),(43)\rightarrow(44):P_{TOTAL}=\text{72.72W+6.12W=78.84W}\ (45)$$

Let us determine now, the output power of this pres**ent setup. Bear in mind that we also h**ave to take into account the **voltage drop across the bridge rectifiers.** In a bridge rectifie**r only two diodes are working** at an instance and permit the **signal to pass through, so the DC voltage** will be l**ess by (0.7+0.7=1.4V) than the original** AC voltage. But we have two **bridge rectifiers, and if you consider add**ing 2.8V to the final DC voltage yo**u are wrong,** because the total voltage peak to peak generated in the coil L_4 **is much** less than the voltage generated in the coil L_3**. If th**ey were to have same voltage, **that will be a total different story. We mu**st not forget that these are not extremely pr**ecise** measurements, and they are **done just to determine basic parameters** like effici**ency and performance with an acceptab**le margin of error.

$$P_{OUT}=(U_4+1.4V)*i_4=(6V+1.4V)*0.24A=7.4V*0.24A=1.776W\ (46)$$

$$(19),(43),(46)\rightarrow(1):COP=\frac{1.776W}{6.12W-7W}=\frac{1.776W}{-0.88W}=-2\ (47)$$

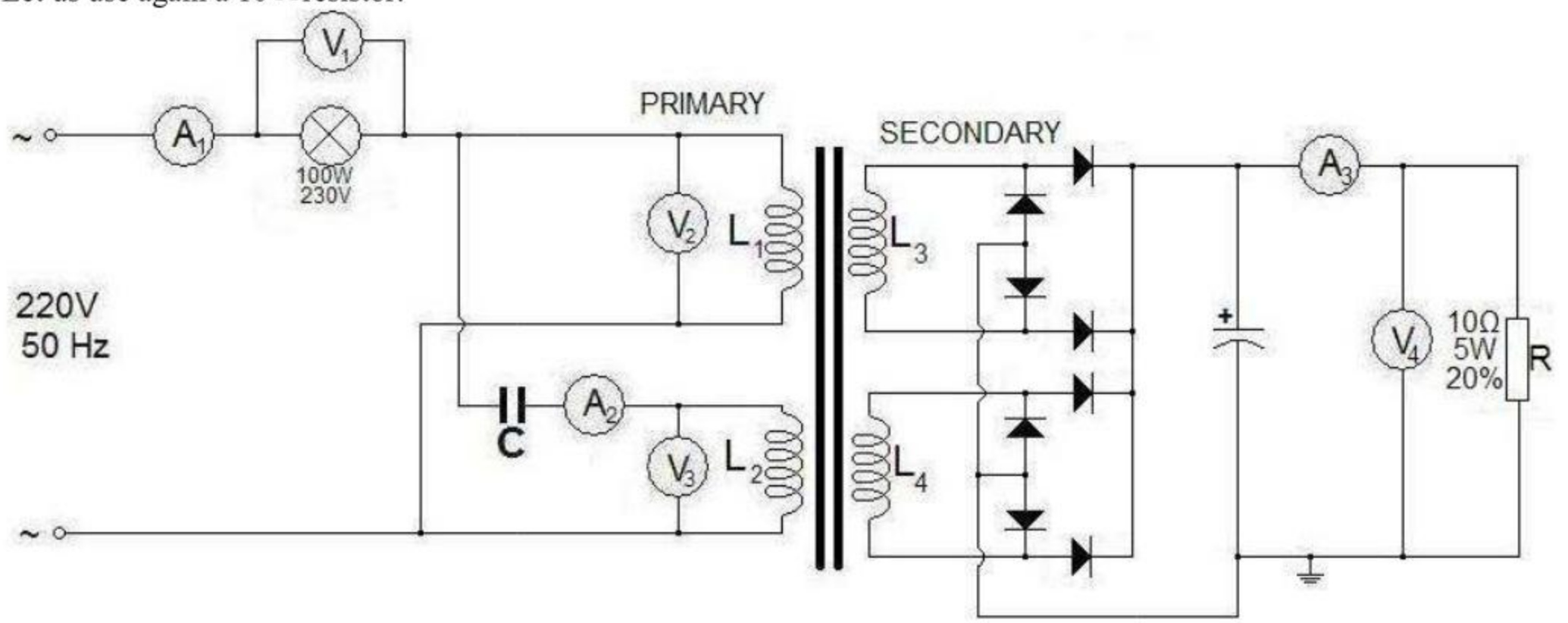
$$(43),(46)\rightarrow(3):Efficiency=\frac{1.776W}{6.12W}*100=29\%\ (48)$$

$$(43),(46)\rightarrow(2):Overunity=\frac{1.776W}{6.12W}=0.29\ (49)$$

Again we see negative performance. But, we did howe**ver increased the efficiency of our** transformer (compare **equations 24.2 and 31 with 48).The perfo**rmance coef**ficient is intimately related to our lo**ad. So let us change it, and see how the performance changes.

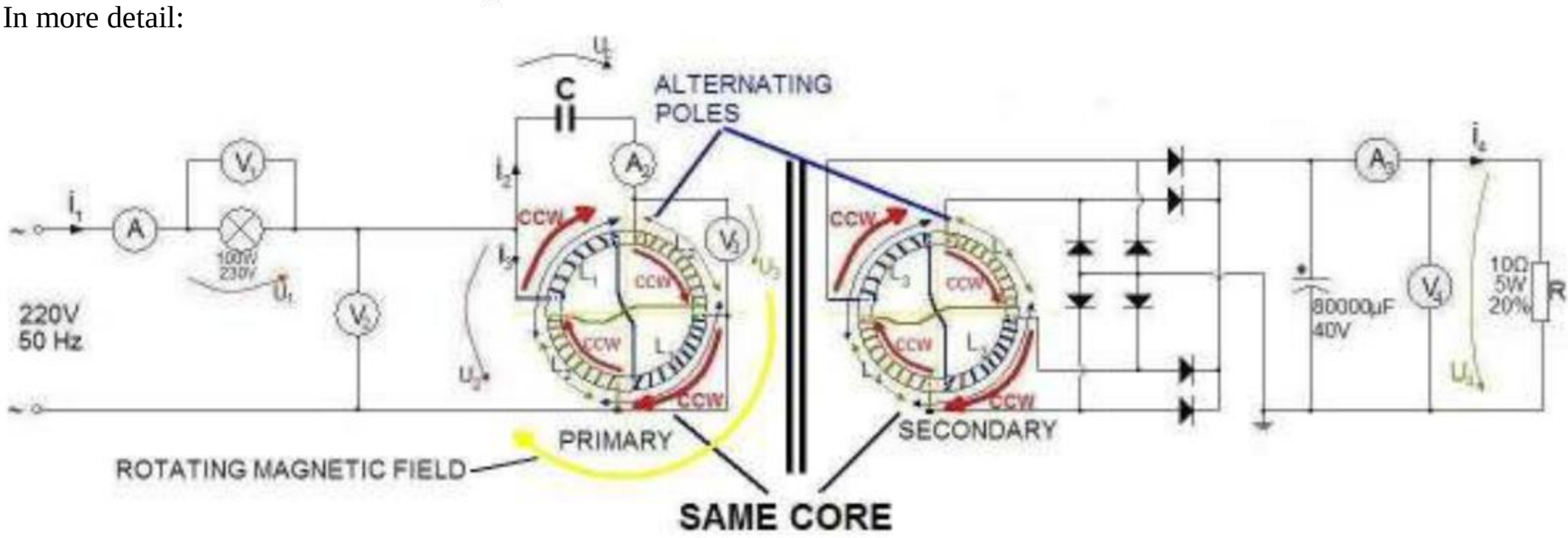
SETUP 2 Case 2:

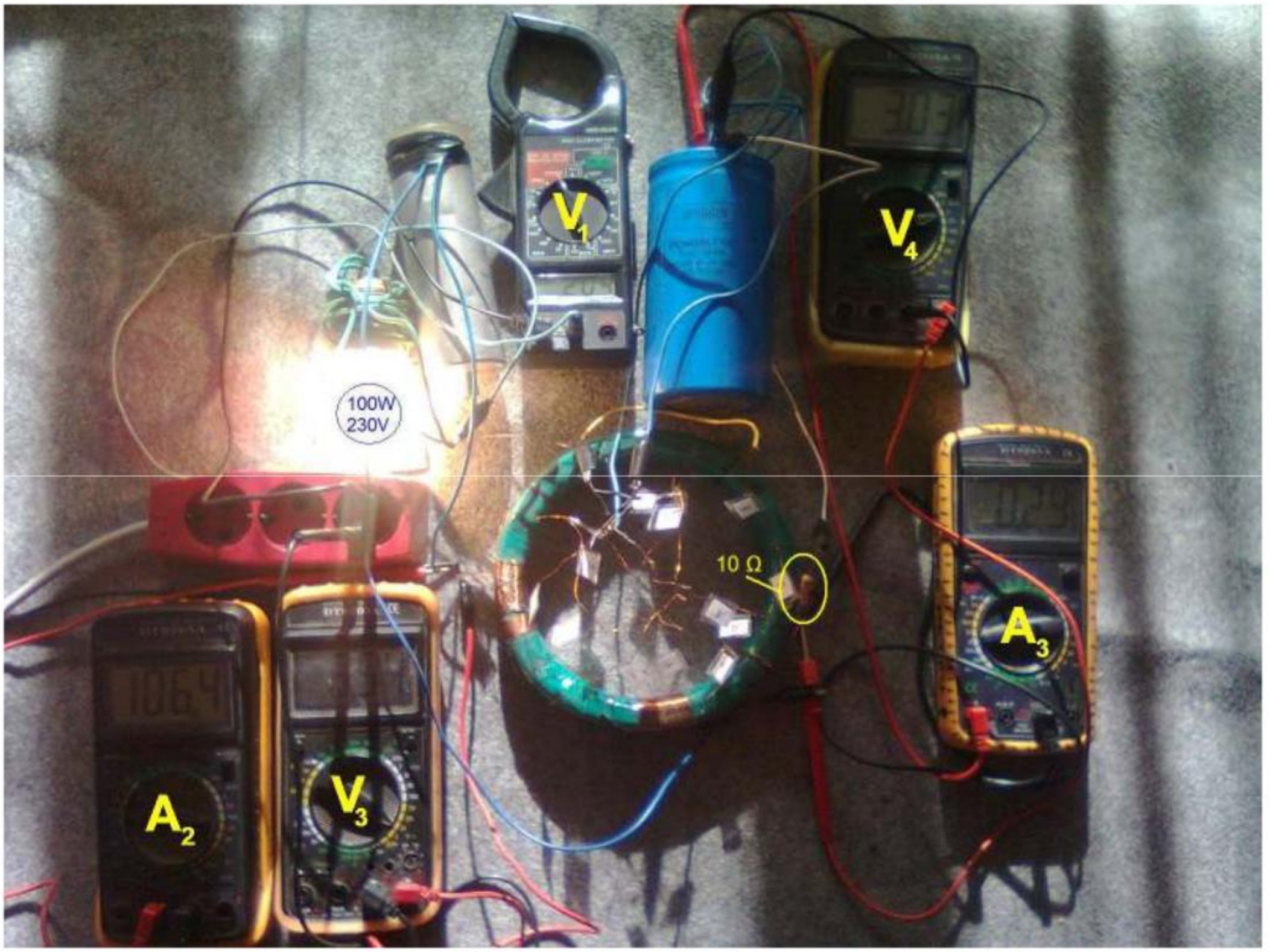
Let us use again a 10 Ω resistor:



Note: All coils (L_1,L_2,L_3 and L_4) are actually formed **by** two coils in series.

In more detail:





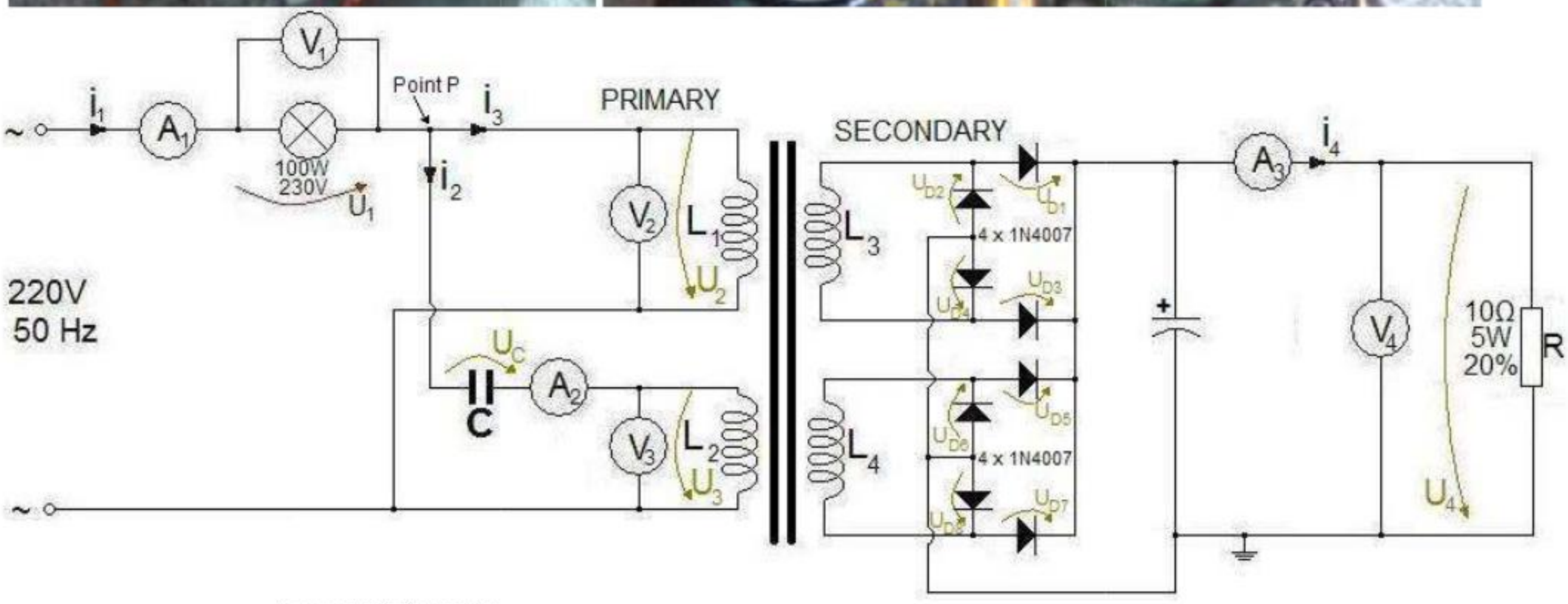
Closer shots of the instruments:











Note: All coils (L_1,L_2,L_3 and L_4) **are actually formed by** two coils in series.

In this case, our instruments, indicate these values:

A_1: I_1=0.37A
V_1: U_1=204V
V_2: U_2=20V
A_2: I_2=106.4mA
V_3: U_3=6.53V
A_3: I_4=0.29A
V_4: U_4=3.04V

As before, let us determine the power consumed by the light-bulb:

$$P_{lightbulb} = U_1 * i_1 = 204\,V * 0.37\,A = 75.48\,W \quad (50)$$

We can calculate the current that flows through coil L_1:

$$Kirchhoff's\ first\ law\ at\ point\ P: i_1 = i_2 + i_3 \quad (37)$$
$$(37) \Rightarrow i_3 = i_1 - i_2 = 0.37\,A - 0.1064\,A = 0.2636\,A \quad (52)$$

Let us determine the power consumed by coil L_1:

$$P_{L_1} = U_2 * i_3 \quad (53)$$
$$(52) \rightarrow (53): P_{L_1} = 20V * 0.2636\,A = 5.272W \quad (54)$$

and power consumed by coil L_2:

$$P_{L_2} = U_3 * i_2 = 6.53V * 0.1064\,A = 0.7W \quad (55)$$

Now, we can calculate the total power consumed by the transformer. ***(transformer total input power)***:

$$P_{IN} = P_{L1} + P_{L2} \quad (56)$$

$$(54),(55) \rightarrow (56): P_{IN} = 5.272W - 0.7W \simeq 6W \quad (57)$$

Total power consumed by our setup circuit:

$$P_{TOTAL} = P_{lightbulb} + P_{device(IN)} \quad (44)$$

$$(50),(57) \rightarrow (44): P_{TOTAL} = 75.48W + 6W = 81.48W \quad (58)$$

Even if our total power consumed by the setup has increased by 3.3% from 78.84 to 81.48W (compare relation (45) with (58)) we can see that by increasing the load, the power consumed by our transformer has decreased by 2% from 6.12W to 6W (relation 43 and 57). But wait, as I already told you, this has drawbacks. Let's continue.

$$P_{OUT} = (U_4 + 1.4V) * i_4 = (3.01V + 1.4V) * 0.29A = 1.41V * 0.29A = 1.2876W \quad (59)$$

$$(19),(57),(59) \rightarrow (1): COP = \frac{1.2876W}{6W - 7W} = \frac{1.2876W}{-1W} = -1.2 \quad (60)$$

$$(57),(59) \rightarrow (3): Efficiency = \frac{1.2876W}{6W} * 100 = 21\% \quad (61)$$

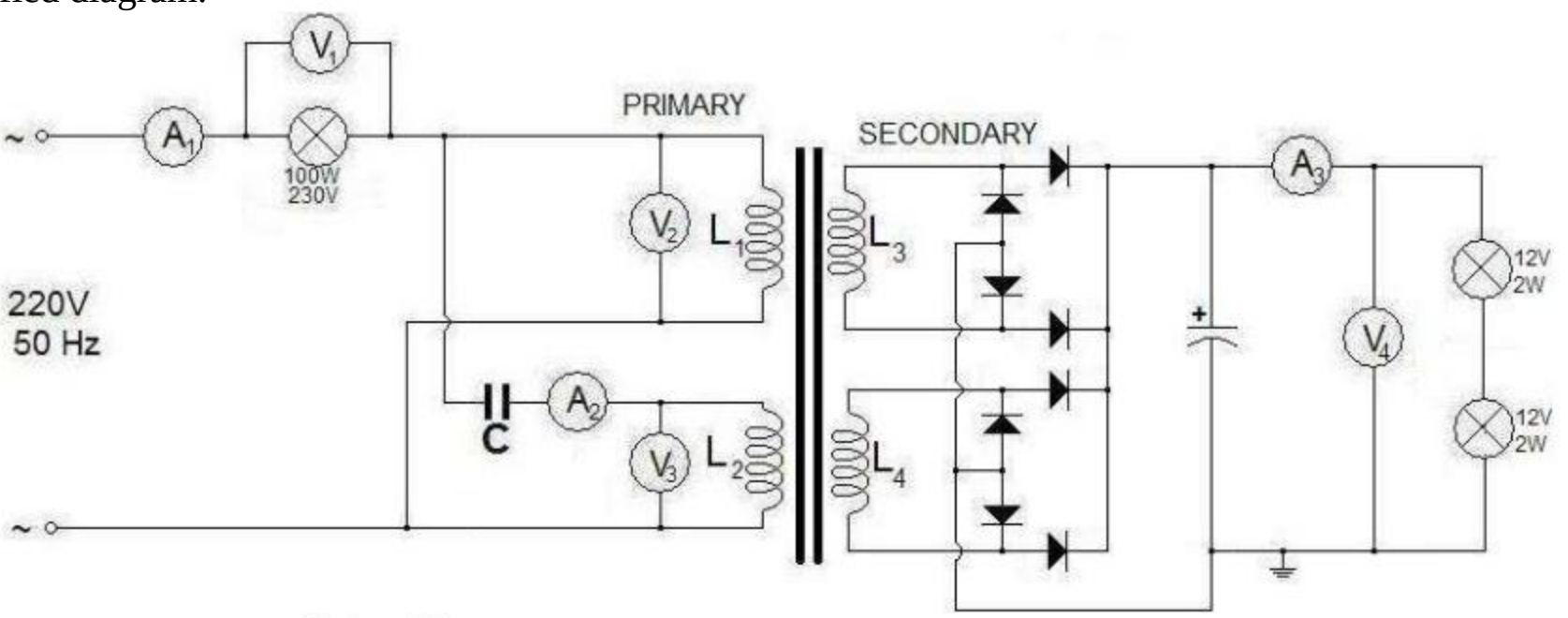
$$(57),(59) \rightarrow (2): Overunity = \frac{1.2876W}{6W} = 0.21 \quad (62)$$

Again, even if the input power decreases with the increase of the load, our efficiency will decrease also (relation 48 and 61)

SETUP 2: Case 3

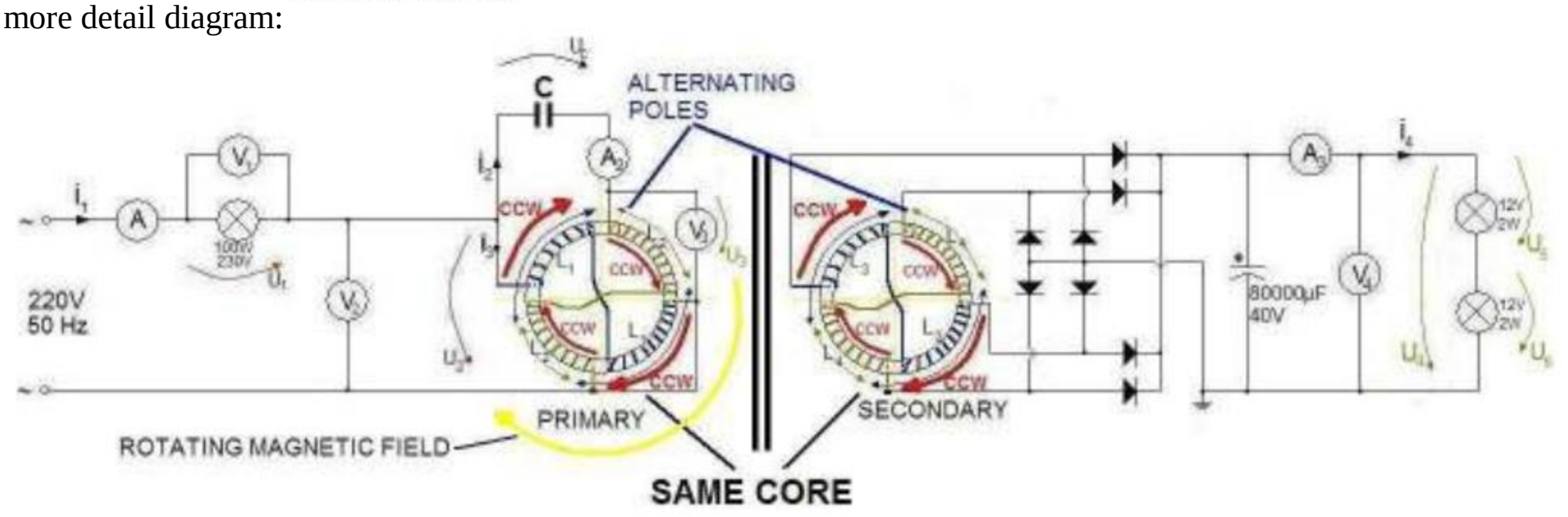
I will use now, two 12V 2W light-bulbs connected in series:

The simplified diagram:



Note: All coils (L_1,L_2,L_3 and L_4) are actually formed by two coils in series.

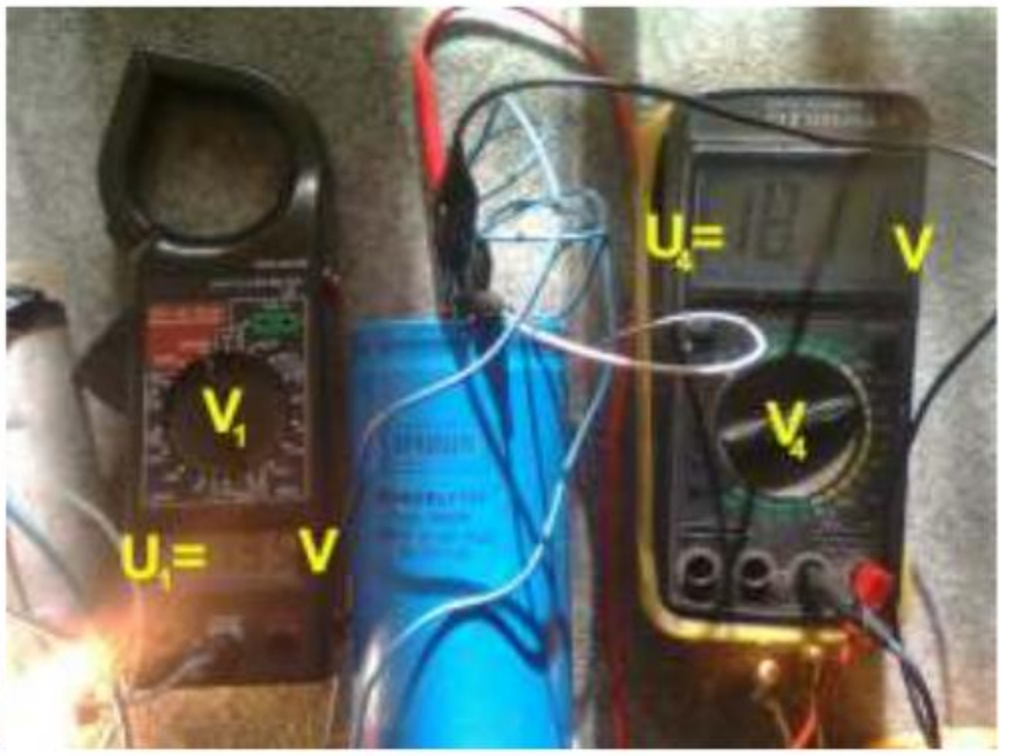
A more detail diagram:



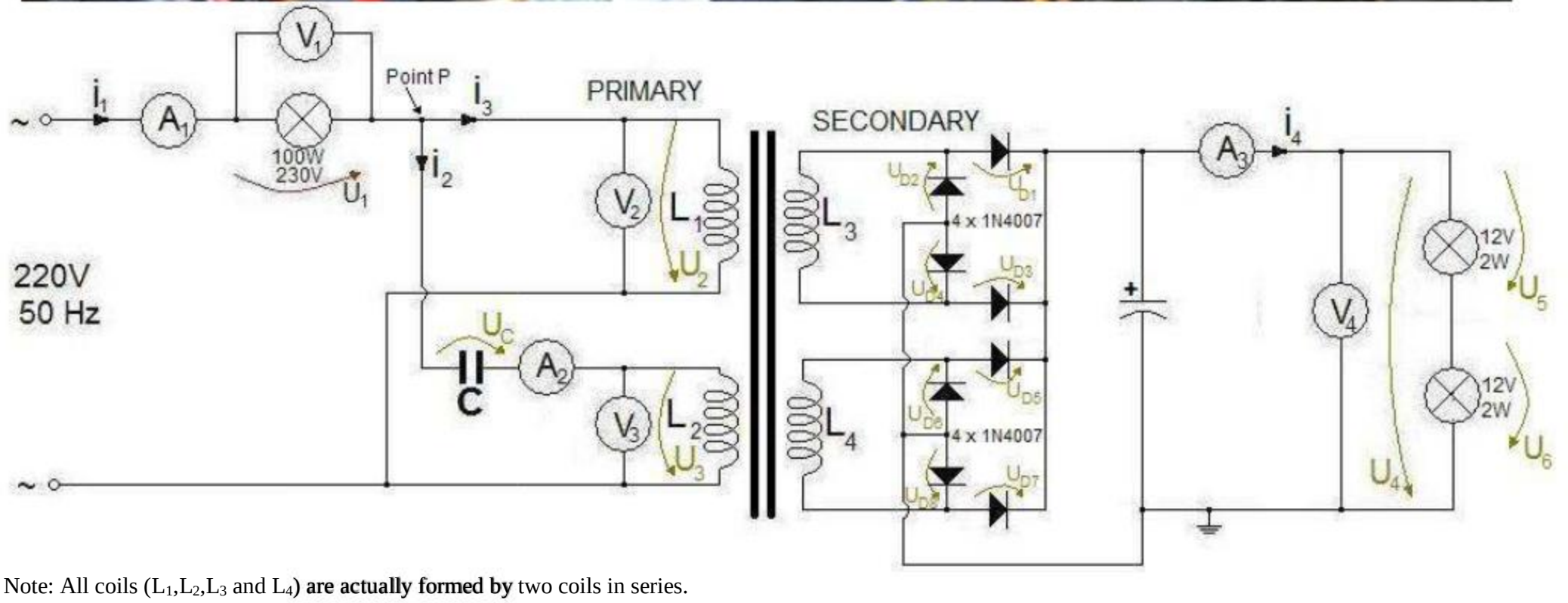


Instruments shots:









Note: All coils (L_1,L_2,L_3 and L_4) **are actually formed by** two coils in series.

Instruments, indicate these values:

A_1: I_1=0.36A

V_1: U_1=195V

V_2: U_2=26.7V

A_2: I_2=152.2mA

V_3: U_3=9.84V

A_3: I_4=115.6mA

V_4: U_4=18.11V

The power consumed by the light-bulb:

$$P_{lightbulb} = U_1 * i_1 = 195V * 0.36A = 70.2W \quad (63)$$

We can calculate the current that flows through coil L_1:

$$Kirchhoff's\ first\ law\ at\ point\ P: i_1 = i_2 + i_3 \quad (37)$$

$$(37) \Rightarrow i_3 = i_1 - i_2 = 0.36A - 0.1522A = 0.2078A \quad (64)$$

Let us determine the power consumed by coil L_1:

$$P_{L_1} = U_2 * i_3 \quad (65)$$

$$(64) \rightarrow (65): P_{L_1} = 26.7V * 0.2078A = 5.549W \quad (66)$$

and power consumed by coil L_2:

$$P_{L_2} = U_3 * i_2 = 9.84V * 0.1522A = 1.5W \quad (67)$$

Now, we can calculate the total power consumed by the transformer. ***(transformer total input power)***:

$$P_{IN} = P_{L_1} + P_{L_2} \quad (56)$$

$$(66),(67) \rightarrow (56): P_{LN} = 5.549W + 1.5W = 7.05W \quad (68)$$

Total power consumed by our setup circuit:

$$P_{TOTAL} = P_{lightbulb} + P_{device(LN)} \quad (44)$$

$$(63),(68) \rightarrow (44): P_{TOTAL} = 70.2W + 7.05W = 77.25W \quad (69)$$

Now let us determine the output power produced at the output of our Tesla transformer:

$$P_{OUT} = (U_4 + 1.4V) * i_4 = (18.11V + 1.4V) * 0.1156A = 19.51V * 0.1156A = 2.26W \quad (70)$$

Since our light-bulbs are identical in impedance, the power consume**d by one light**-bulb is the total output power divide in half:

$$P_{One\,lightbulb} \quad \frac{P_{OUT}}{2} \quad (70.1)$$

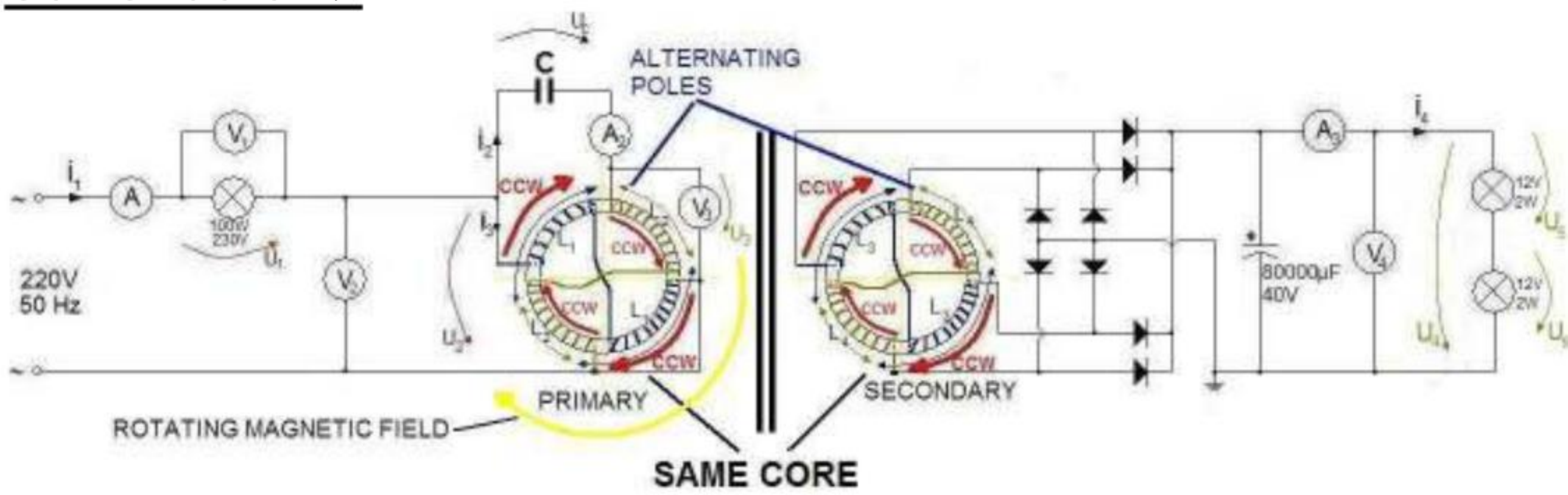
$$(70) \quad \rightarrow (70.1): P_{One\,lightbulb} \quad \frac{2.26W}{2} \quad 1.13W \quad (70.2)$$

$$(19),(68),(70) \rightarrow (1): COP = \frac{2.26W}{7.05W - 7W} = \frac{2.26W}{0.05W} = 45 \quad (71)$$

$$(57),(59) \rightarrow (3): Efficiency = \frac{2.26W}{7.05W} * 100 = 32\% \quad (72)$$

$$(57),(59) \rightarrow (2): Overunity = \frac{2.26W}{7.05W} = 0.32 \quad (73)$$

CONCLUSION:



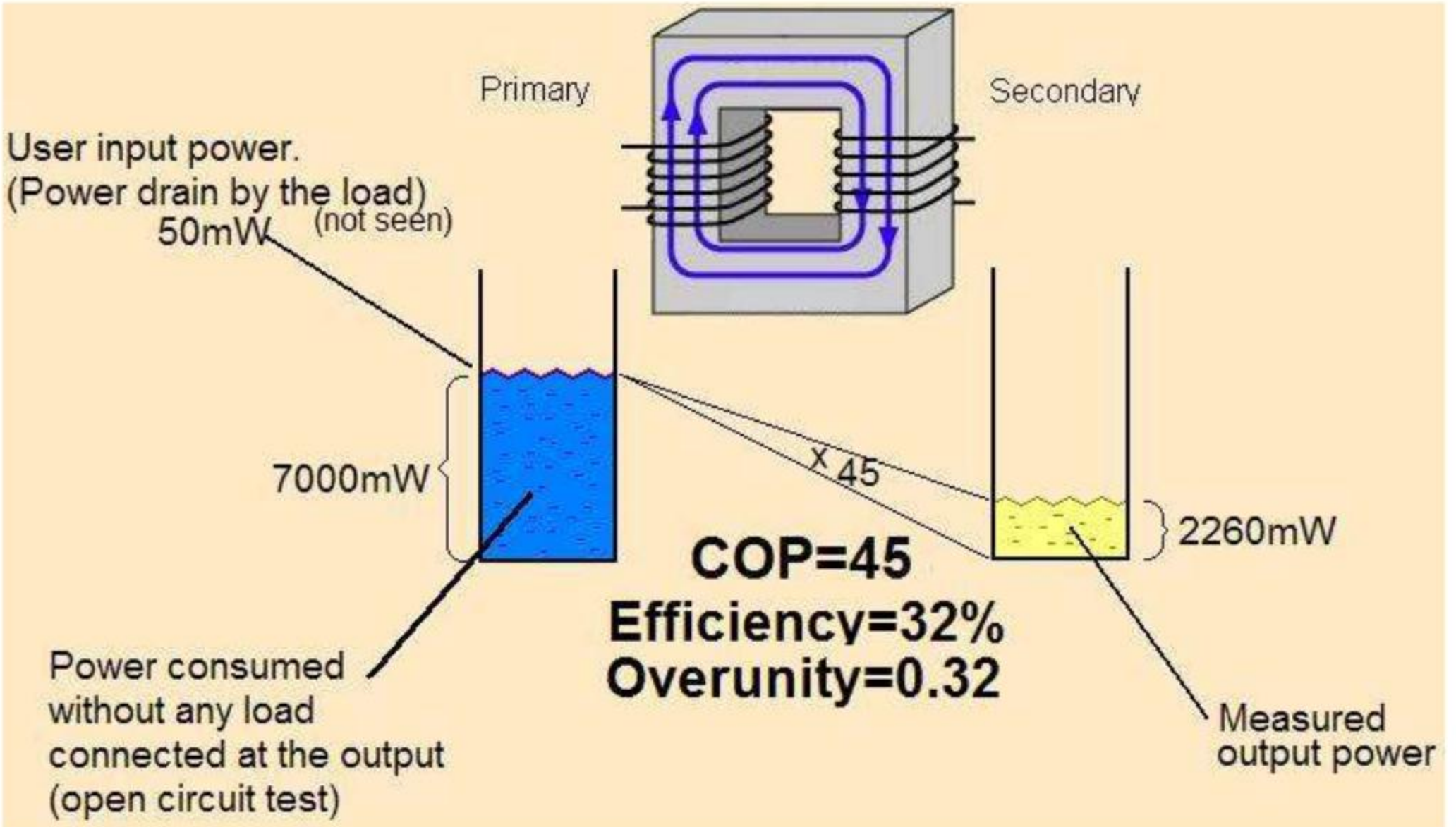
This setup gives us a COP of 45 with efficiency 32% (overunity=0.32)

Even if we input 50mW in the transformer, and we get 2200mW in return, we MUST NEVER FORGET the 7000mW our transformer consumes by itself (without any load attached)!

And remember we still have the ***outside magnetic field problem!*** **We still don't intercept the entire** flux generated by the primary windings of the Tesla Transformer 381970!

Visual aid in understanding this:

By drastically simplifying all our work until now we can bluntly say:



Note: This type of definitions of COP, Efficiency and Overunity are mostly applied to Transformers and Ideal Transformers. Using these definitions in any other type of generators, motors or devices, is not recommended and will likely lead to serious distortions and errors.

Think what will happen if we have another Tesla Transformer on top of this one rotated 180°, so that the magnetic poles created are coupled one to each other to close all the flux, and thus nullify the outside magnetic field. Think about it!

Answer: It will lower the "blue liquid" or the power consumed by our transformer without any load connected to it. Thus COP>1 will become in theory overunity and closing the loop between output and input will then become possible.

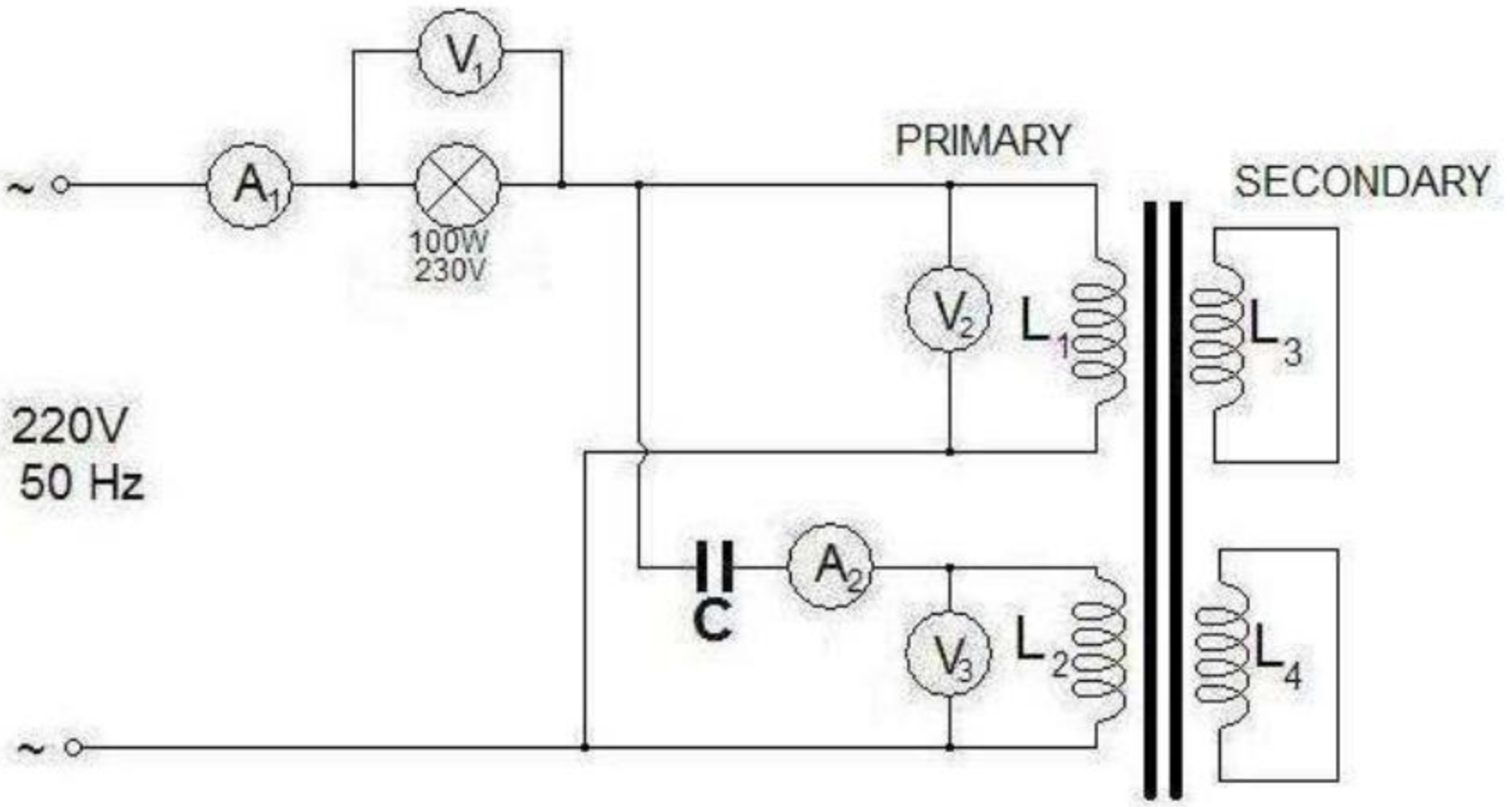
Slight glimpse of things to come: We are going to analyze a double Tesla transformer 381970. One on the bottom, and one on top. The one on top will be powered 180° in respect with the one on the bottom in order to nullify the outside magnetic field:



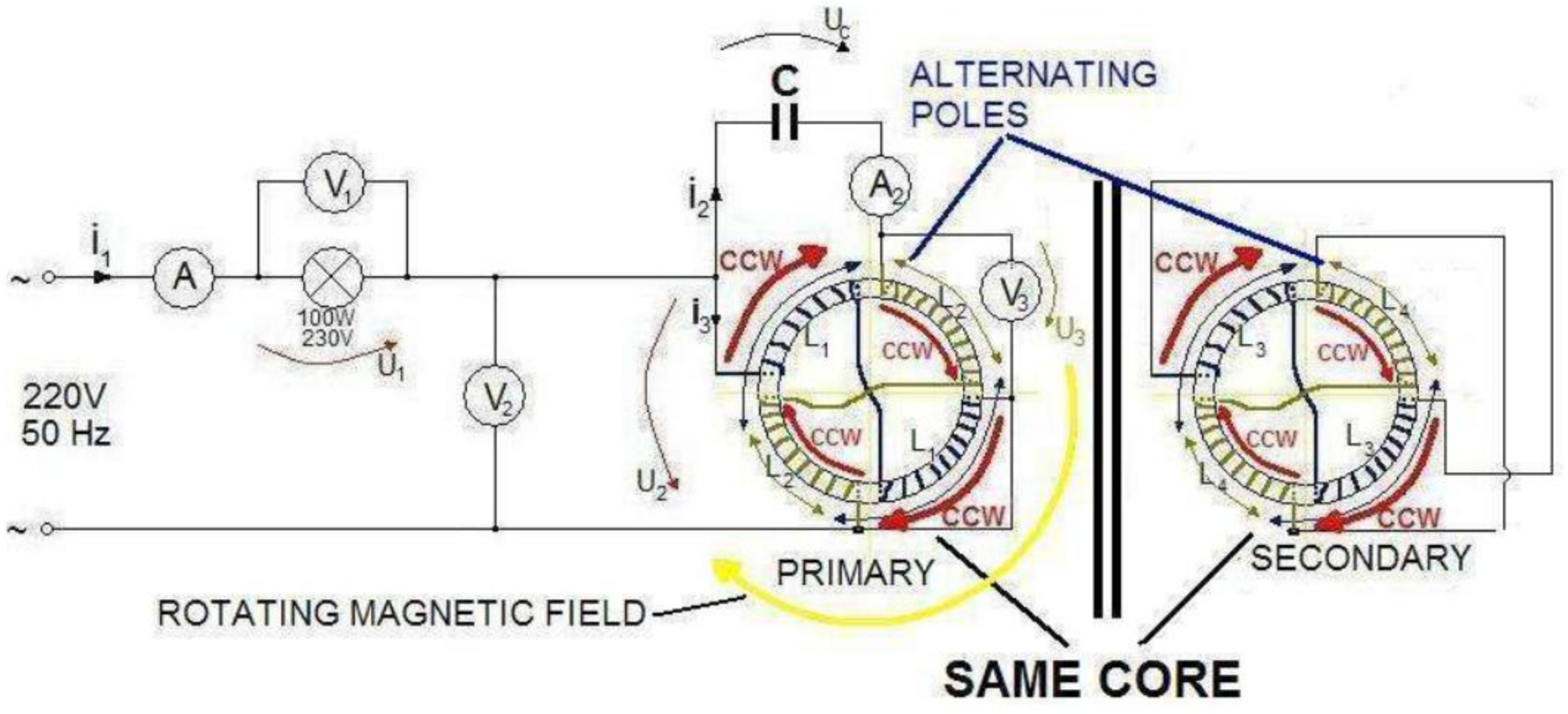
SETUP 2: Case 4

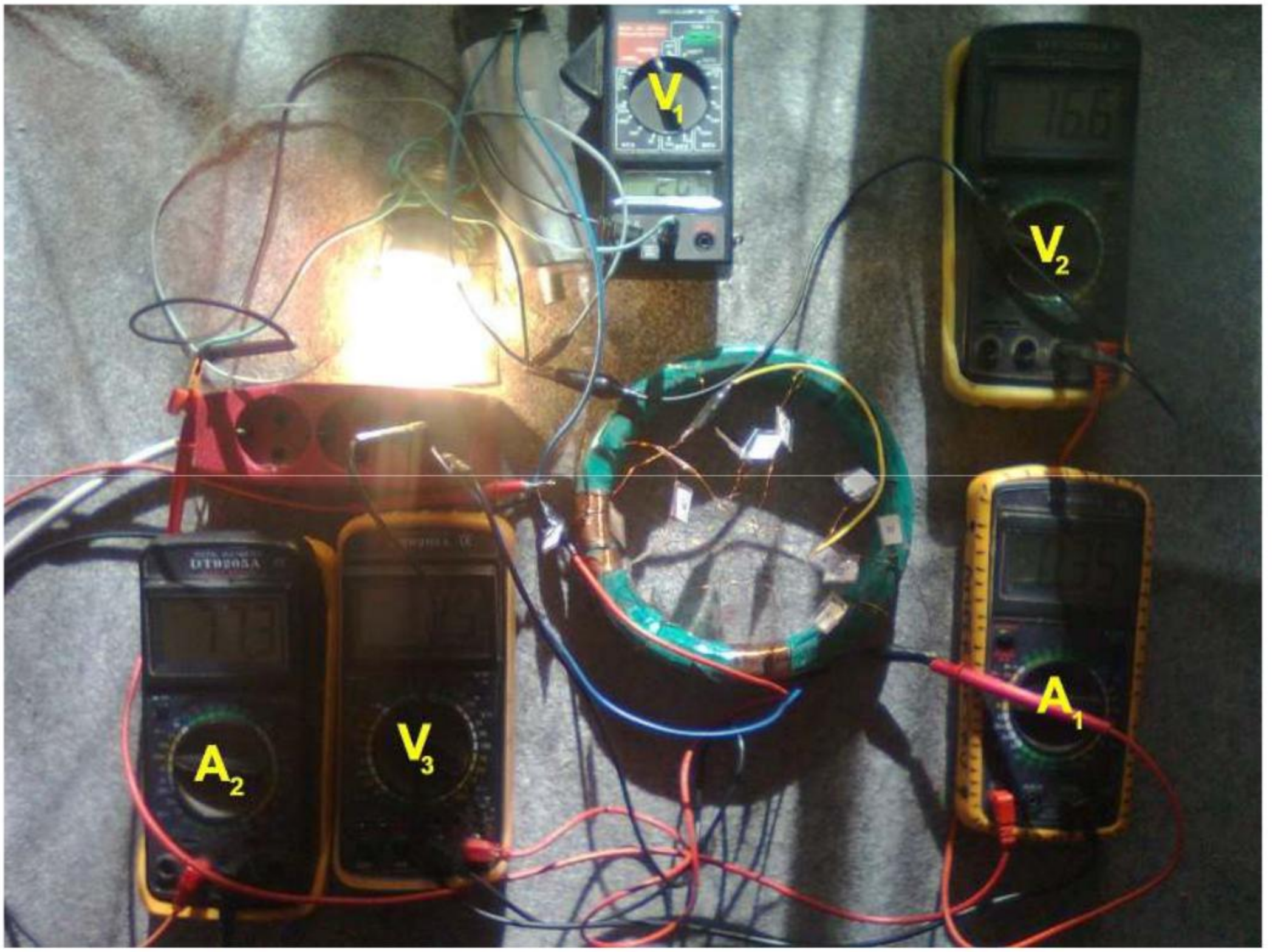
Let us see in this final case of the setup 2, what is the power consumed by our Tesla transformer in a short-circuit test when it is full powered:

This is a simplified diagram which we are going to use:



In more detail:



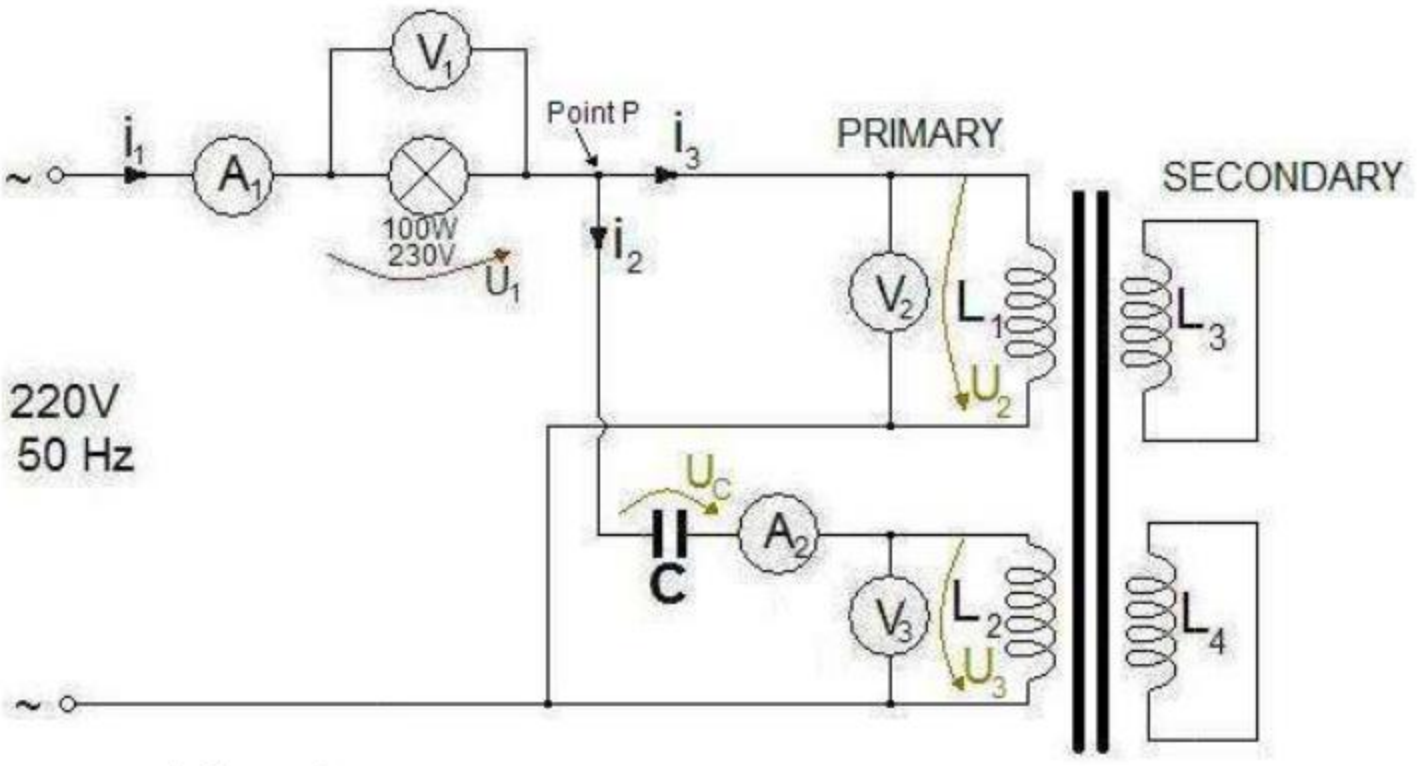


Instruments close-ups:









In **this case our instruments indicate these** values:
A_1: i_1=0.355A (average)
V_1: U_1=203V (average)
V_2: U_2=16.55V (average)
A_2: i_2=77.35mA (average)
V_3: U_3=3.235V (average)
The power consumed by the light-bulb:

$$P_{lightbulb} = U_1 * i_1 = 203V * 0.355A = 72.065W \ (74)$$

We can calculate the current that flows through coil L_1:

$$Kirchhoff's\ first\ law\ at\ point\ P: i_1 = i_2 + i_3 \ (37)$$
$$(37) \Rightarrow i_3 = i_1 - i_2 = 0.355A - 0.07735A = 0.27765A \ (75)$$

Let us determine the power consumed by coil L_1:

$$P_{L_1} = U_2 * i_3 \ (65)$$
$$(75) \rightarrow (65): P_{L_1} = 16.55V * 0.27765A \simeq 4.6W \ (76)$$

and power consumed by coil L_2:

$$P_{L_2} = U_3 * i_2 = 3.235V * 0.07735A = 0.251W \ (77)$$

Now, we can calculate the total power consumed by the transformer. ***(transformer total input power)***:

$$P_{IN} = P_{L_1} + P_{L_2} \ (56)$$
$$(76),(77) \rightarrow (56): P_{IN} = 4.6W - 0.251W = 4.851W \ (78)$$

Total power consumed by our setup circuit:

$$P_{TOTAL} = P_{lightbulb} + P_{device(IN)} \ (44)$$
$$(74),(78) \rightarrow (44): P_{TOTAL} = 72.065W - 4.851W \simeq 77W \ (79)$$

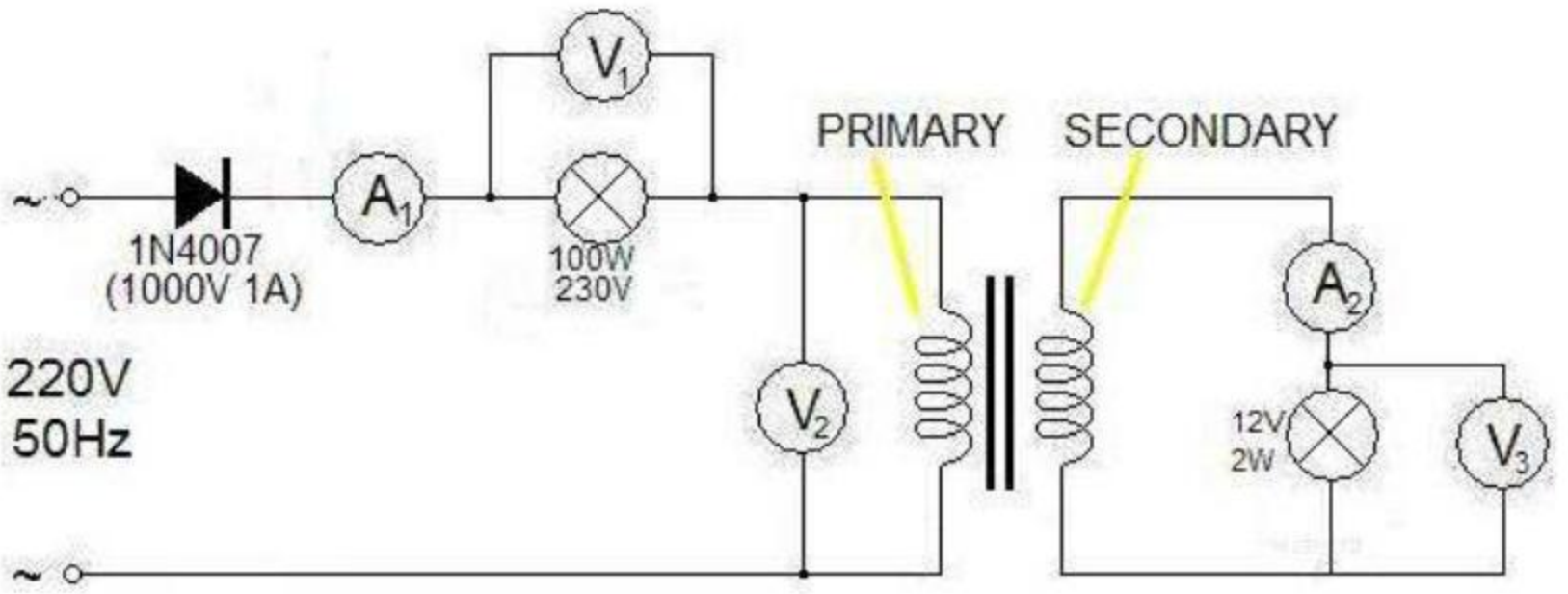
CONCLUSION:

We can compare the power consumed by our transformer **in open circuit test 7W (from re**lation 19) to 4.851W consumed in a short-**circuit test (relation** 78) and we deduce that we have a 30.7% ***decrease in energy consumption*** **in a short circuit test compared with a op**en circuit **test. Yes you read it right. When you s**hort circuit this transformer it will consume 30.7% less **then when it op**erating in open circuit. (This is wh**en is full pow**ered by two 90° out-of-phase sine-waves)

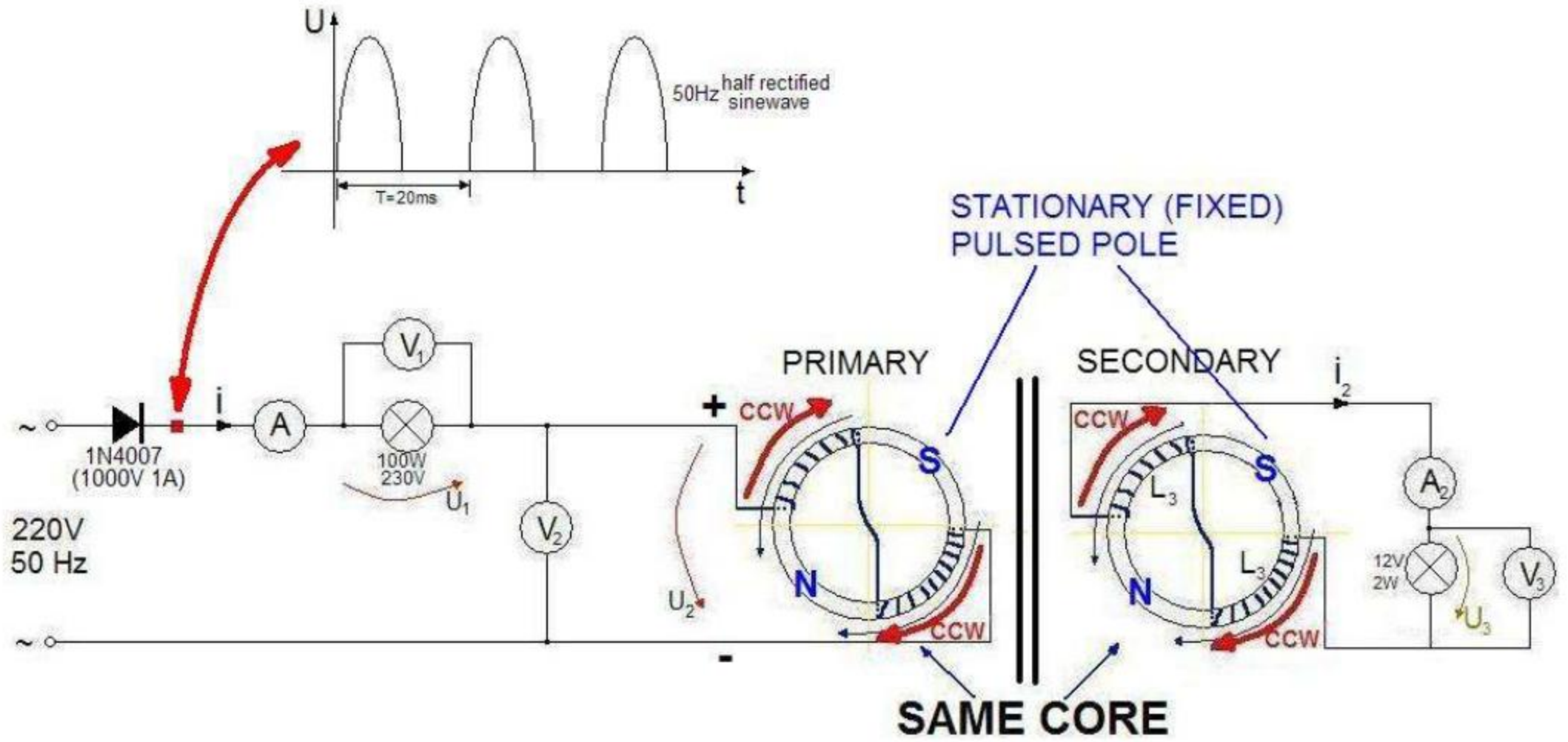
POWERING (pulsed AC) HALF OF THE TESLA TRANSFORMER 38970 WITH A LOAD

SETUP 3: Case 1

We will use this again a 12V 2W light-bulb in this schematic:



In more detail:



<<<<<<<<<<<<<<<<<<<Work in progress>>>>>>>>>>>>>>>>>>>

More study here. Determine the minimum allowed impedance at which this transformer will still have positive performance coefficient, and minimum impedance at which COP is greater than 1. (using 3D Graph, plotting ox, oy, oz -> R, (COP; Efficiency), P_{IN})

How it's operation change with frequency (3D graph), phase shift between primary & secondary change with other parameters (3D graph, oscilloscope shots)

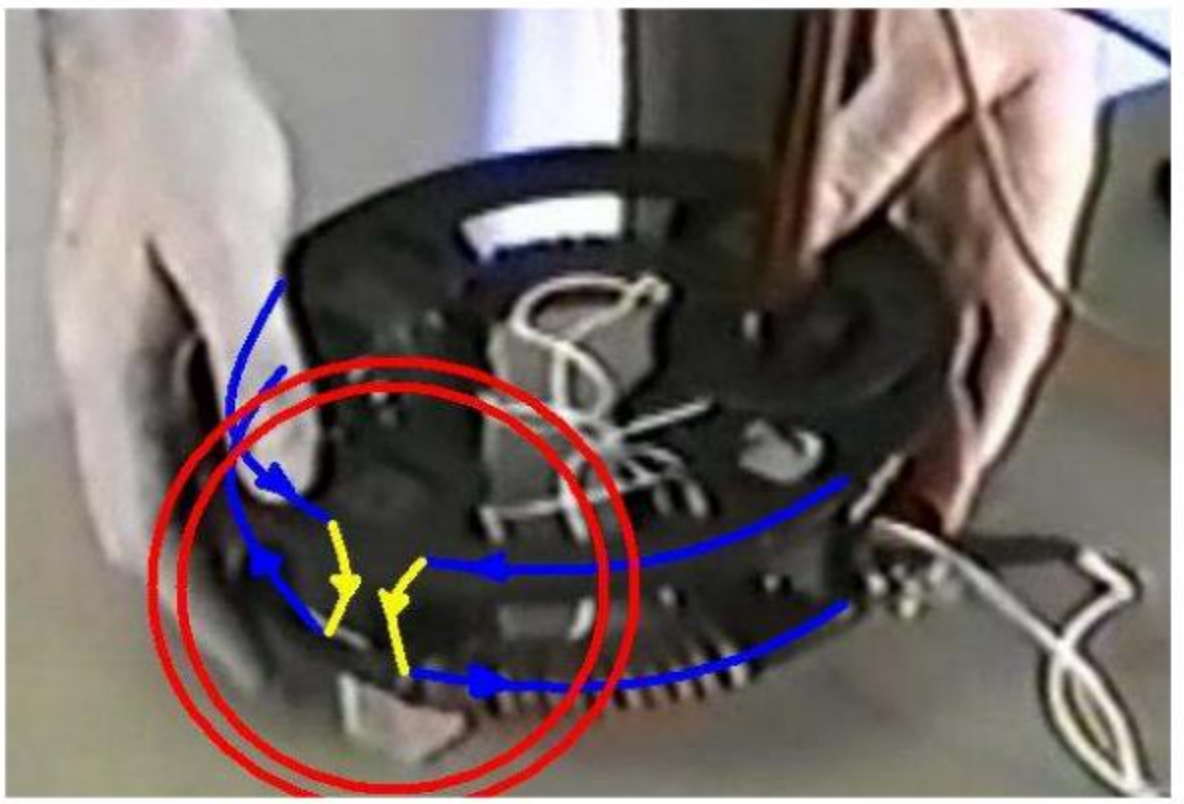
More 3D graphs for COP and efficiency vs. frequency and input power when we are dealing with inductive ***and capacitive loads.***

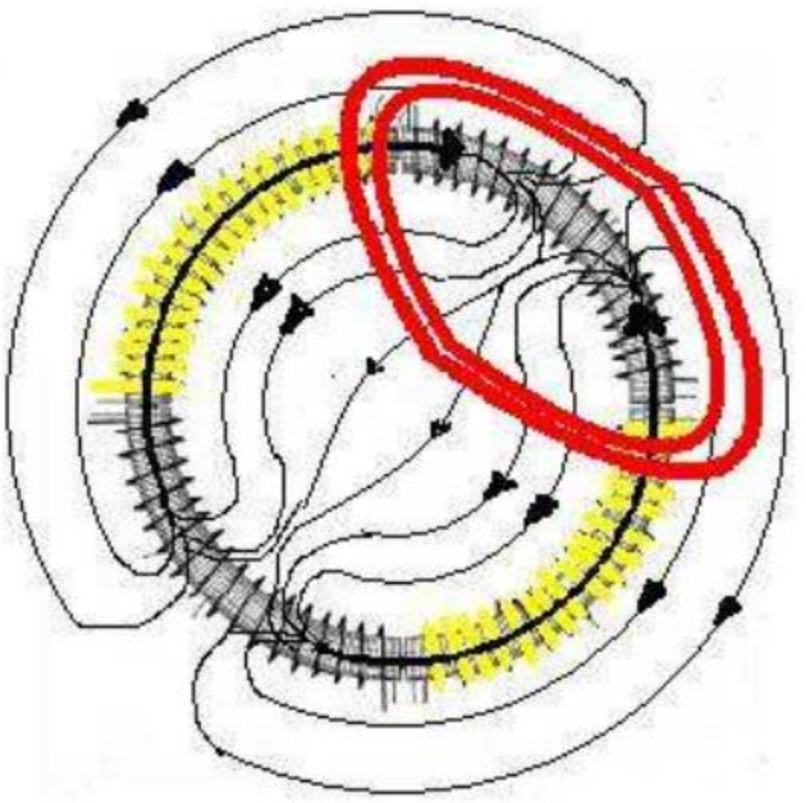
<<<<<<<<<<<<<<<<<<<Work in progress>>>>>>>>>>>>>>>>>>>

What makes this transformer behave like this? Why in some cases exhibits COP>1. What makes it tick? What is the basic operation principle? What is the heart of this device?

Let's analyze possible answers:

Looking back, at the most likely operation principle of the Steven TPU, and at Tesla transformer 381970, we can say that the behavior of the transformer is due to the unusual interference/opposing magnetic fluxes:

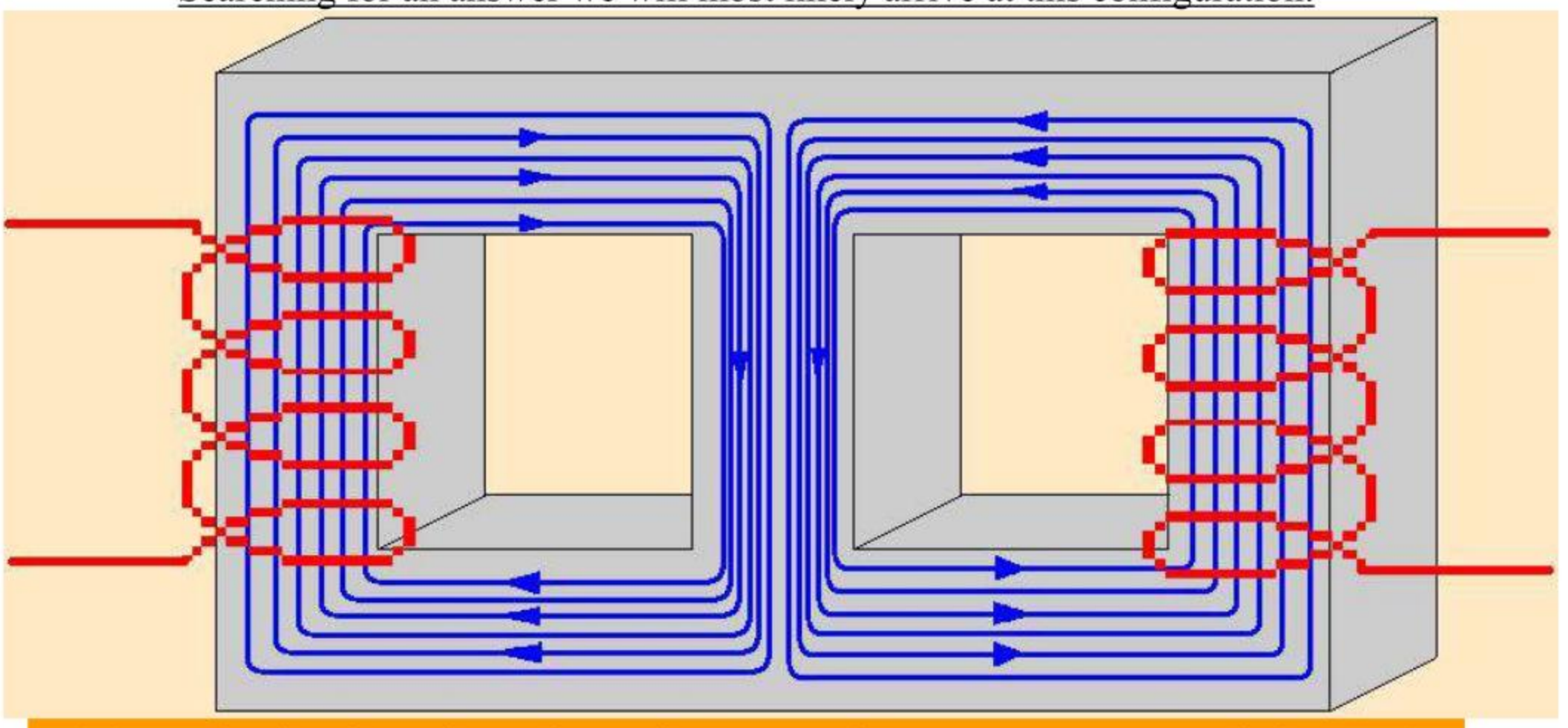




Ask yourself these questions:

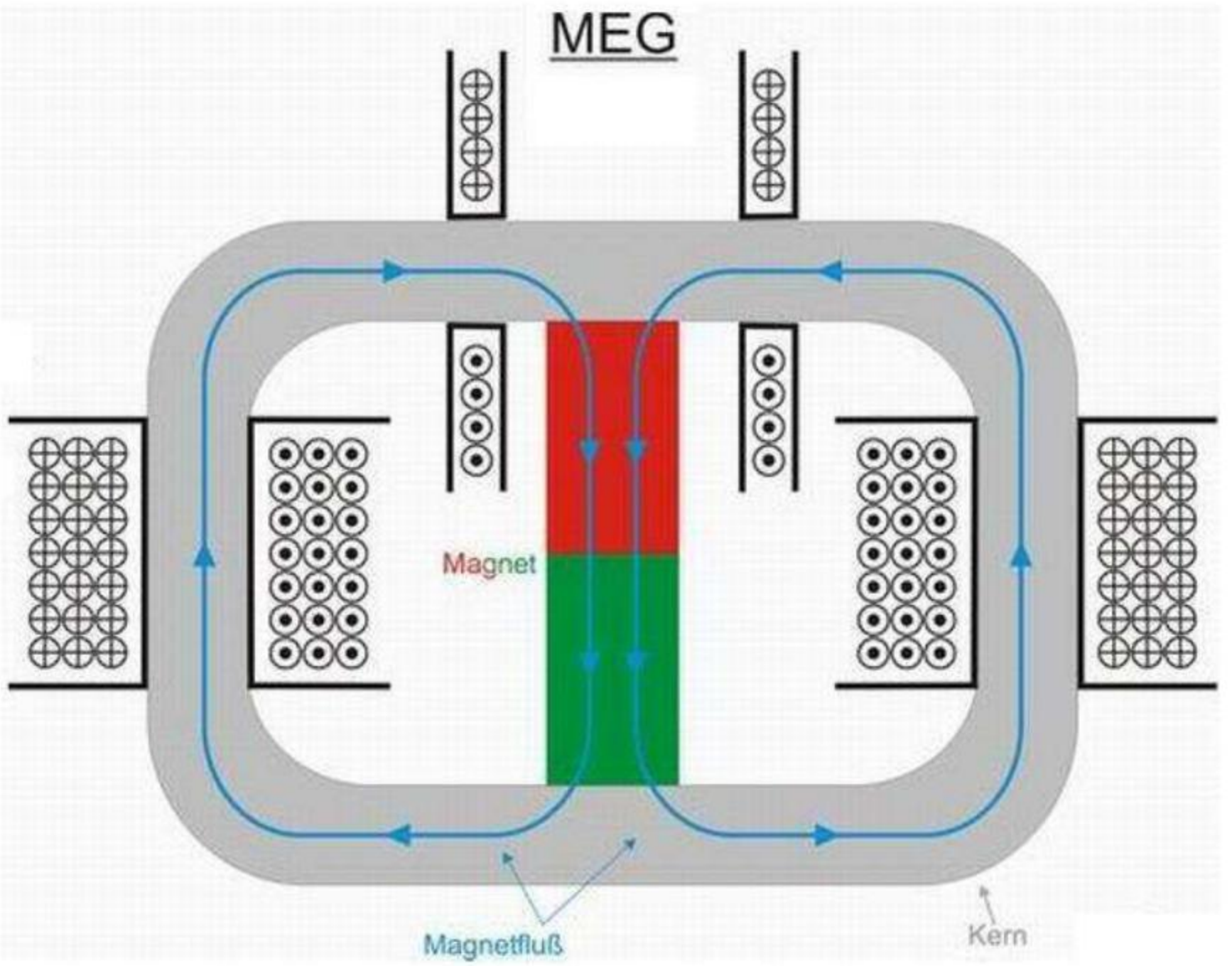
How can we create this effect, in the most elementary fashion? What is the easiest way we can replicate this ***effect? What is the simplest constructive solution, to encompass this effect?***

Searching for an answer we will most likely arrive at this configuration:



This might be the simplest variant we can achieve by simplifying Steven TPU technology.

If we stare for a while at the above picture, and if we have a basic study of free-energy devices out-there, we can say: "Wait a minute... I have seen this device before, somewhere...yes...I definitely seen it...it's...it's...Oh my God!...It's Tom Bearden "Motionless Electromagnetic Generator(MEG) !!!
And of course it is! Where was I thinking?



Motionless Electromagnetic Generator (US patent number 6.362.718)

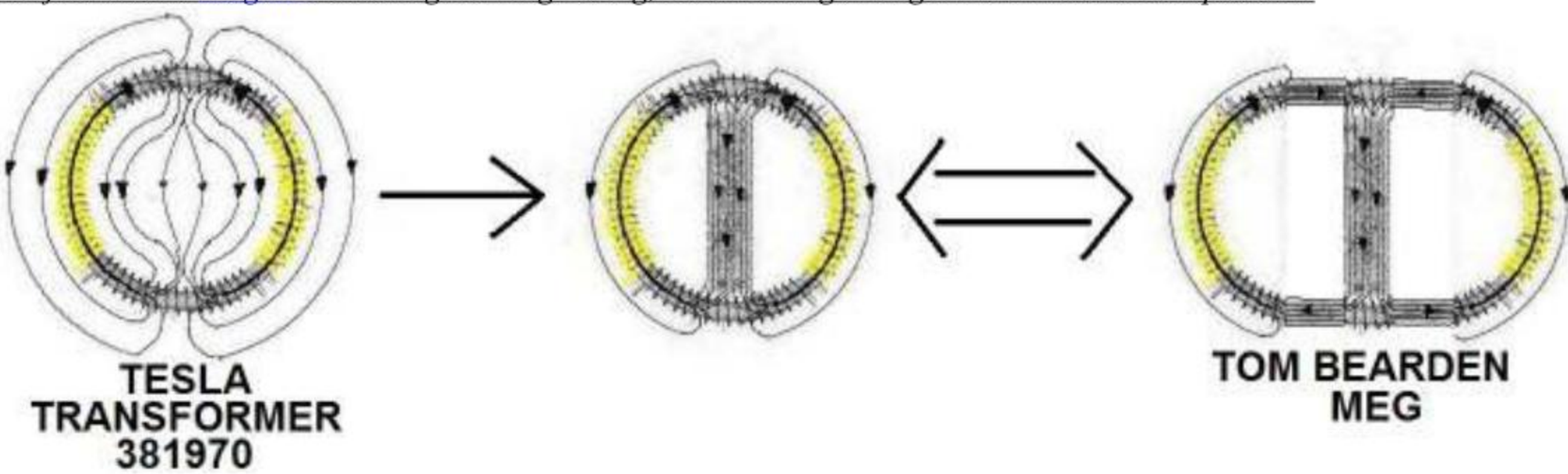
Damn! Somebody else figure out this thing too!!! Why do I have the feeling that I'm rediscovering the wheel here ?

Well then...***there might be something to this after all!!!***

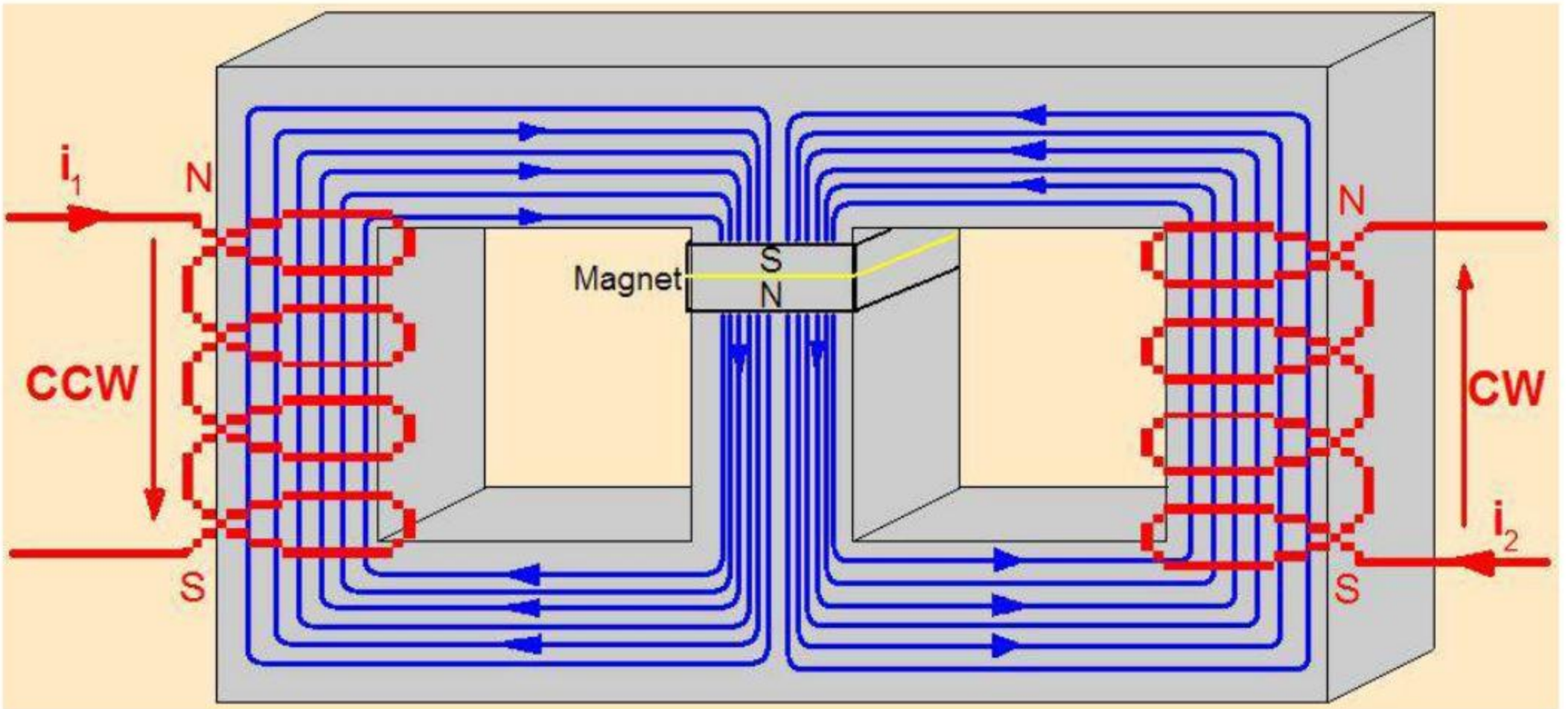
We must acknowledge that this configuration will work far more efficient than the Tesla Transformer 381970, due to the fact that we no longer have an outside magnetic field. This time the entire magnetic field generated by the coils, should in theory be situated inside the core.

What in God's name am I talking about? How can I make similarities of a fairly recent device, patented in 2002 with a device from a 100 years ago of Tesla, They are totally different devices with different operating principles! Am I crazy? No, I am not. I can make a comparison, and point out similarities that show in fact that they are not so different. Just the way they operate is a little different.

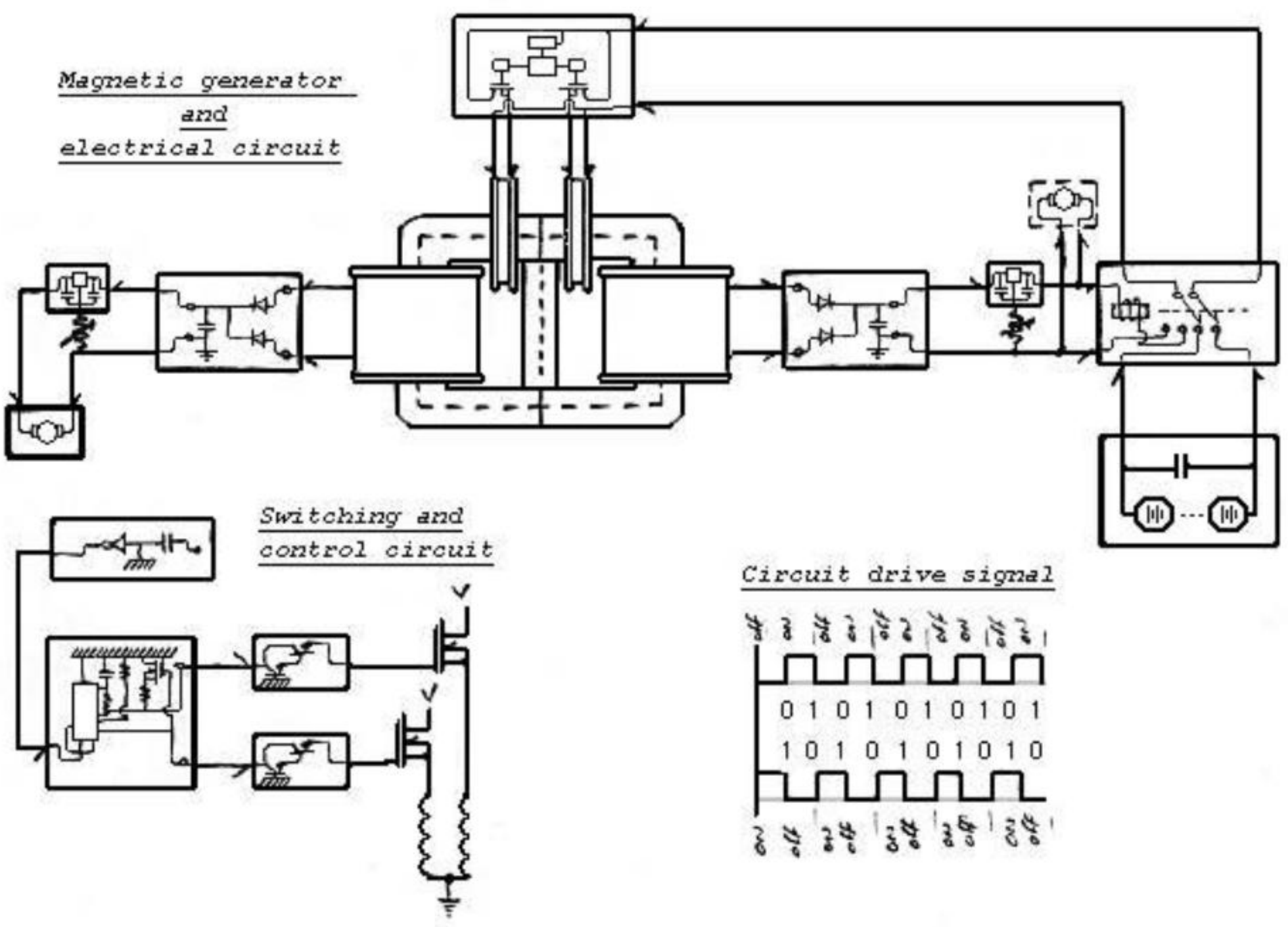
You just have to imagine these things as we go along, because things will get more and more complicated:



And, of course we need a magnet to "reinforce" the field. By "reinforcing" I mean, (for the readers who desire a more academic approach) the catalyst that *just slightly* reduces the energy spent magnetizing the core:

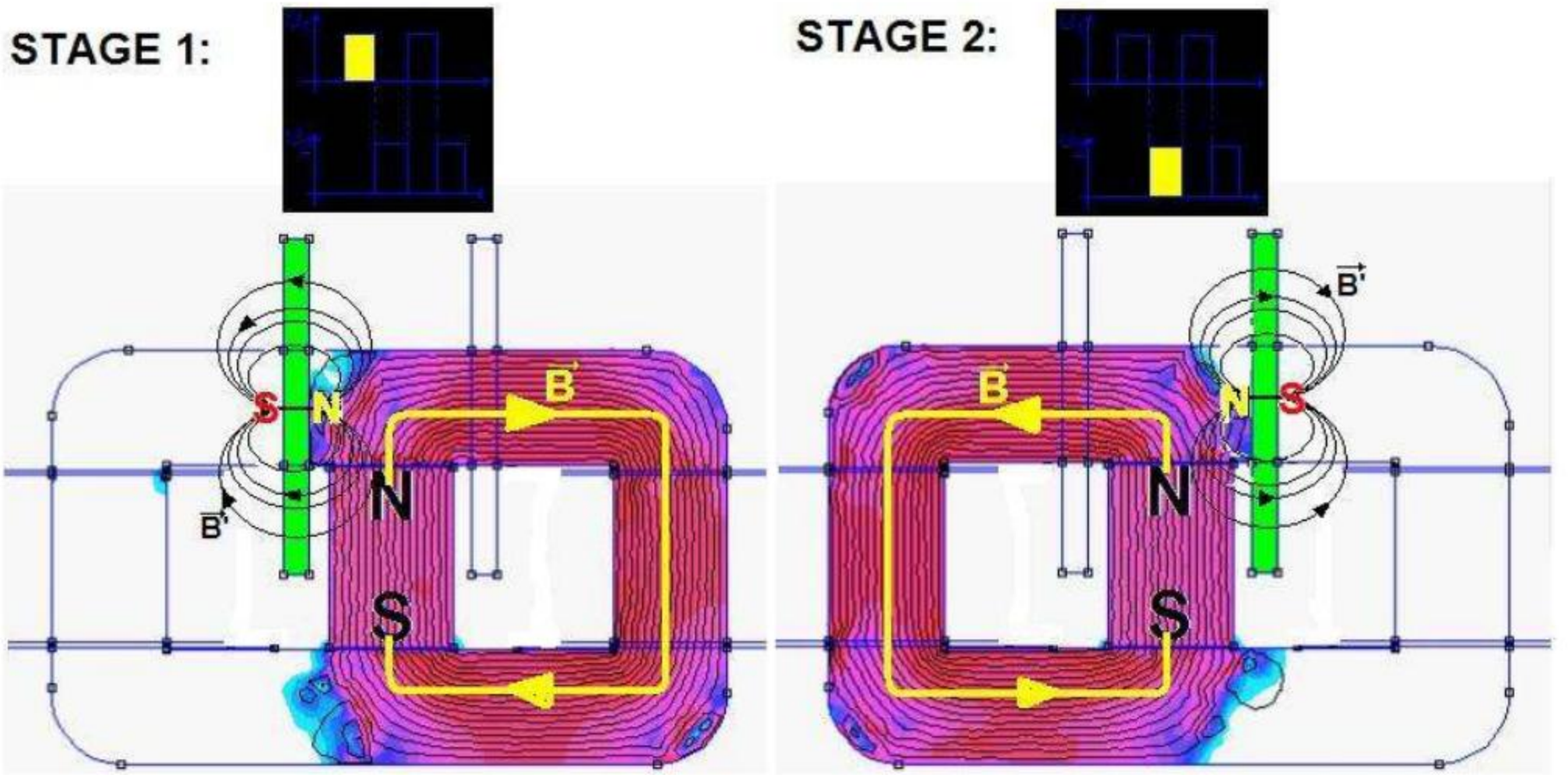


Let us analyze this MEG device and see what can we learn:



From MEG device, if we study the patent carefully, and I recommend for the reader who is unfamiliar with this device, to draw with his own hands the drawings in the patent paper and follow the explanations, by pointing the numbers in the text to his made drawings. If you really want to learn, draw the pictures in the patent by hand. Don't try to print them, if you really want to understand. Do it, how they do it in first grade schools: manually draw with pencil on paper. Teachers force us to do this, knew what they were doing. Trust this! It's something to do with mnemonic systems for remembering the numbers in the patent. Let's get back to our MEG, we have drifted enough from the subject.

This is how the device function:

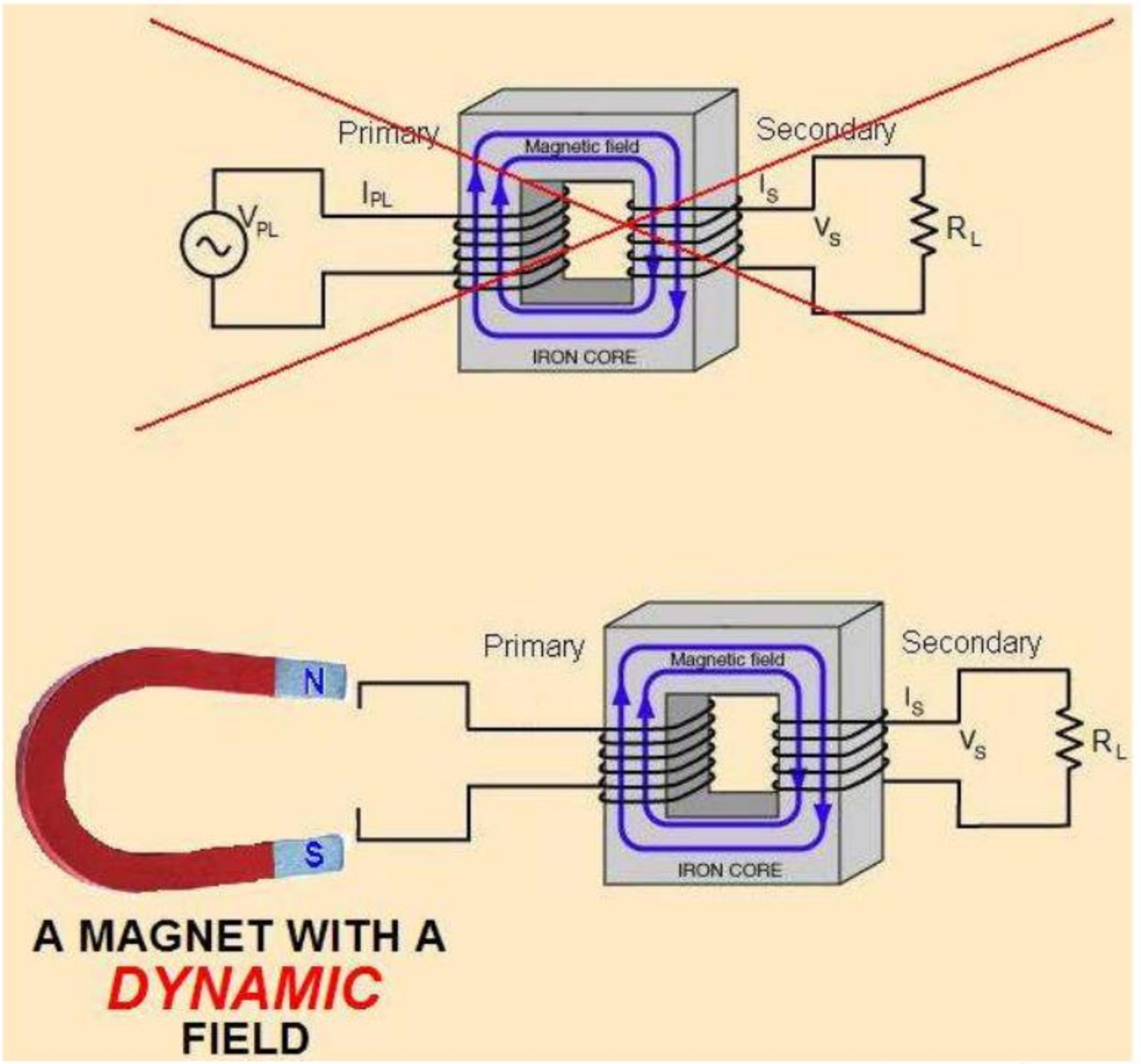


Now, if we study the patent carefully, we will understand that in this device, and probably in the Steven TPU also, that ***in fact the magnet serves not as the "helper" or "catalyst" as we have thought***, but is actually the only "person" who works in this device. The only true "worker". ***The magnet is the one that is doing all the labor!*** The input coils, just "excite" the magnet, or "dynamising" it, or "***KICK" it, in order to make the static magnetic field of the magnet, a dynamic field.*** We can actually say that THE MAGNET ***is really powering the device*** (MEG & TPU & Flynn alike) and the input coils (a.k.a. "actuators") are just there to just kick the magnet in the butt, so that it's field won't become static as it normally want to be.

This stated in the patent:

"[...] the present invention should be considered not as a perpetual motion machine, but rather as a system in which *flux radiated from a permanent magnet is converted into electricity,* which is used both to power the apparatus and to power an external load" (US patent 6.362.718, page 12, paragraph 2, line 2).

An analogy to this, is that the magnet is you at work, doing all the hard labor. The input coils are your boss, that kicks you in the butt so that you always keep going and not to take a break for a coffee or something. Another analogy is that the magnet is your heart, and the small input signal, is your heart beat, is the divine small input source (The Boss) that keeps you going and alive. These analogies can continue forever. But I think that it's pretty clear:



If all this would to be true, and they are, then the magnet will do all the work *(as in a scalar quantity)* and according to the first law of thermodynamics that states that when work *(as in thermodynamics)* is done to a system its energy state changes by the same amount. This put this in other words, will mean that the:

Magnets will soon demagnetize (loose their energy) because of all the work they do by providing their energy to the load!

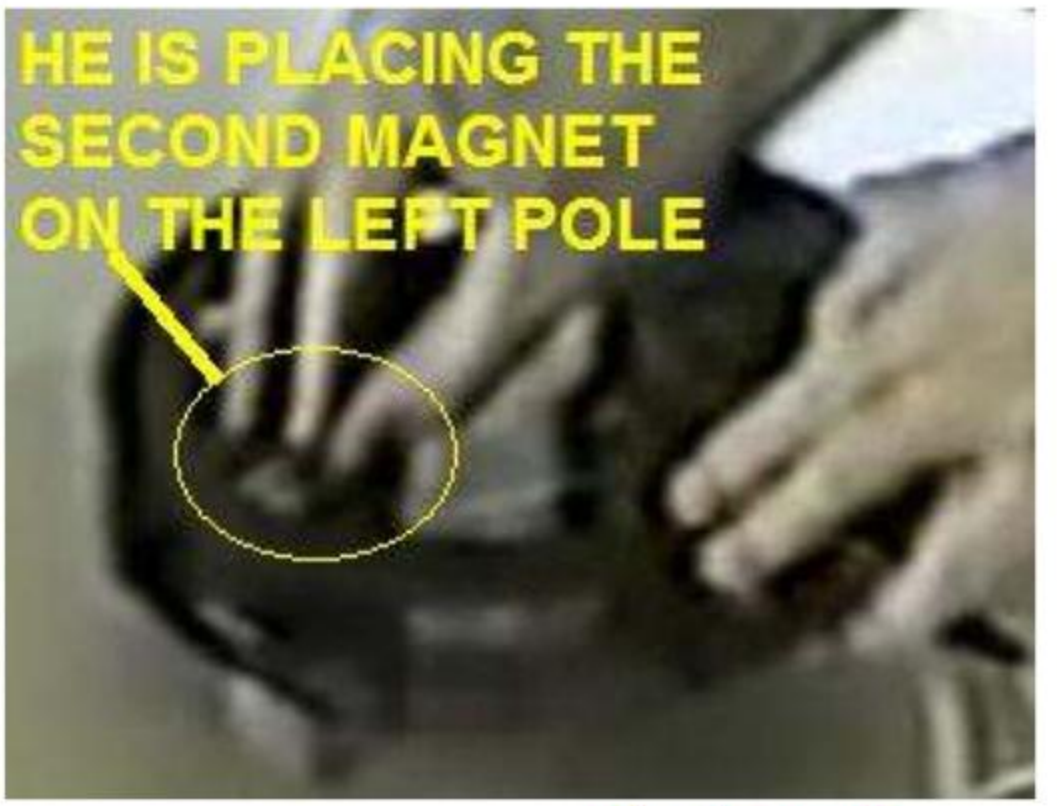
This is backed-up by the following words in the MEG patent:
"Continued operation of the electromagnetic generator 10 causes demagnetization of the permanent magnet" (US patent 6.362.718, page 12, paragraph 1, line 8).

Damn! I thought this was free energy! It turns out that it's not. Nothing is free. Except this book. So what happens now? Shit! I'm disappointed! Hey, I just figure out something! If this technology is really behind Steven TPU described above, then I BELIEVE THAT STEVEN MARK KNEW ABOUT THIS!

What makes me think that?

The magnets he is placing on their slots:



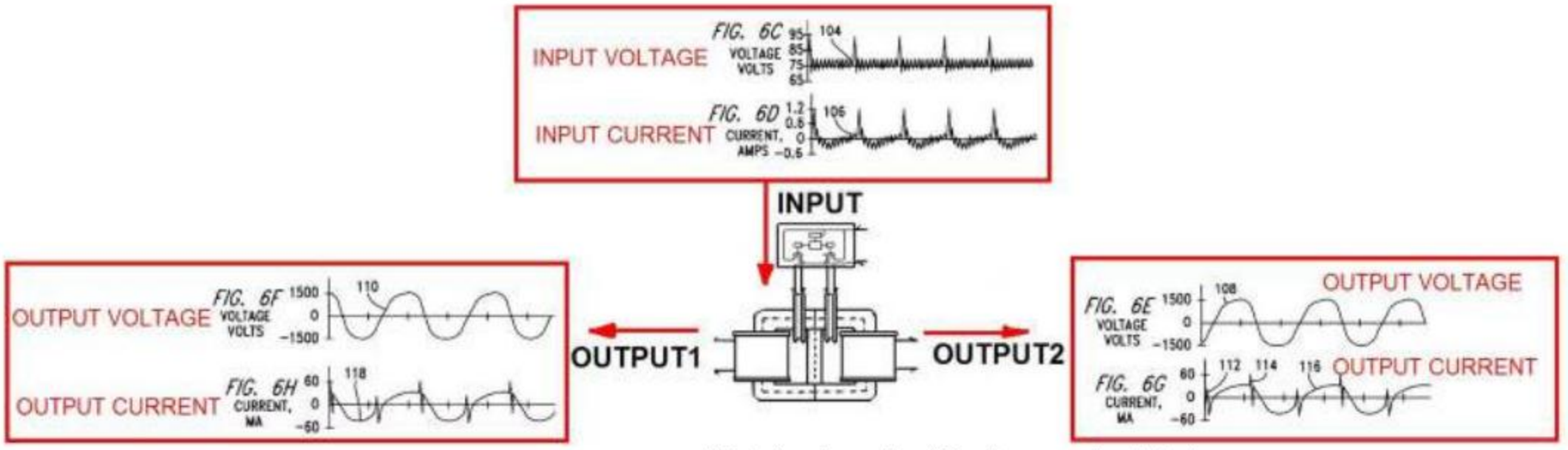


I think, that is why he didn't permanently integrate the magnets in his device, and so ***nicely and carefully*** build slots ***for the magnets, like he were replacing*** batteries! And that is exactly what I think they are. He repeatedly states that there are no batteries in his device, but he is lying! **The magnets are the "batteries" here!** They will soon demagnetize! How soon? Well, it depends on the stress they are put through. Could be years or even months if the device works on extremely heavy loads. If you build such a device, make sure you have access at the magnets if you want to replace them someday. And you will!

Given all of this, I believe there is a **workaround solution for this problem**. What if you could always have a battery near the device, that it's not connected to anything, it's just sitting there. Such a battery will serve two purposes. First, it will be as a backup system providing power to an inverter(12V to 110V or 220V) that will still supply power for a short while if something were to happen to the device. Such a device could have a sensing circuit that measures the magnetic flux intensity(H) from the magnet, and, if it drops below critical limits, our device will switch immediately to a this **backup battery**, and the battery in this time will serve our second most important purpose in the same time with the first. In the exact time as the backup system is in place, running power from the battery through the inverter, our battery will deliver an instant ***jolt of continuous applied power*** *to the output coils of the device for a few seconds.* Our output coils of the device (if they have a lot of Ampere/turns) they will act as an electromagnet that **will regenerate the magnet** (re-magnetize it <=> re-charge it). This entire operation will take for example, 100 seconds at most, because this will be a huge drain for the battery. It will probably in this hypothetical case, can drain let's say more than 75% of its capacity depending of the loads that are also powered through the inverter. When the magnet has been re-magnetized then our sensing circuit will restart the device and switch our load to it, relieving the battery, and then recharging the battery from the output of the device. Of course the magnet will have to be cold in order to re-magnetize it, so the second phase will have to happen after some time, to let the magnet cool down.

All of these technologies are in the same family, having the same blood, brother TPU, sister MEG and brother Flynn solid state generator. The grandfather in this family of all these technologies I believe is the so called "The Astronaut's magnetic boots" originally developed by John Radus with his switchable magnet invention intended for NASA astronauts boots. Read more (click here)

Let us analyze in more detail the MEG patent. The first most apparent odd thing we observe (that is if we observe from a conventional view), is that in this transformer the ***input is low duty cycle square wave AND*** THE OUTPUT IS A SINEWAVE!

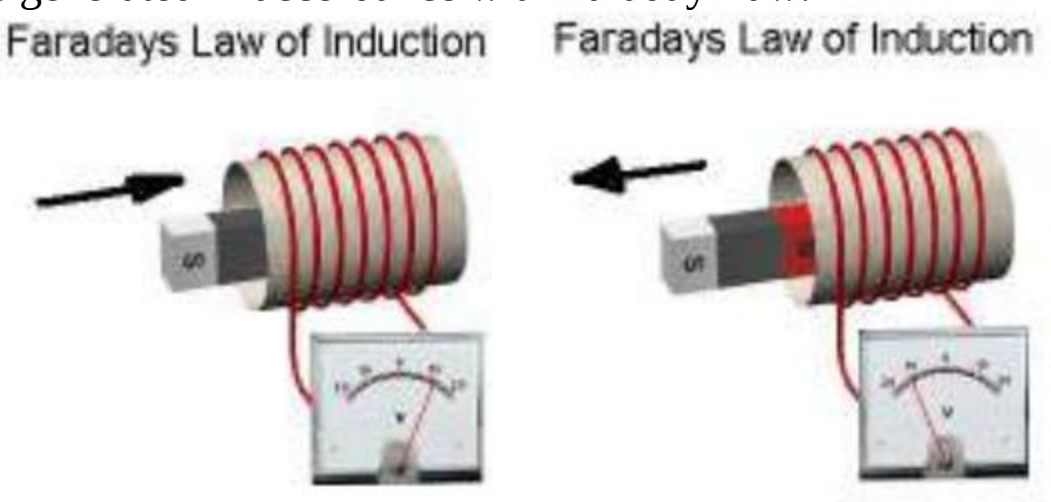


What in God's name is this shit? You might say: **This is absurd, ridiculous and a joke!**

Listen to this fool: **In his transformer he inputs square-wave and gets sinewave in return!** Ha. Ha. Ha. Very funny.

BUT THIS IS NO JOKE. This is serious and if you agree with all presented so far you will realize that. Then where the heck does that sinewave coming from? Again, it's coming from the magnet that is doing all the work in this transformer! All of this is real. The conventional view teaches us that the spikes we see on the output current, should be all that there is to be on this transformer. But as conventional approach has proven flawed in many occasions in this field of study, we must look at other explanations.

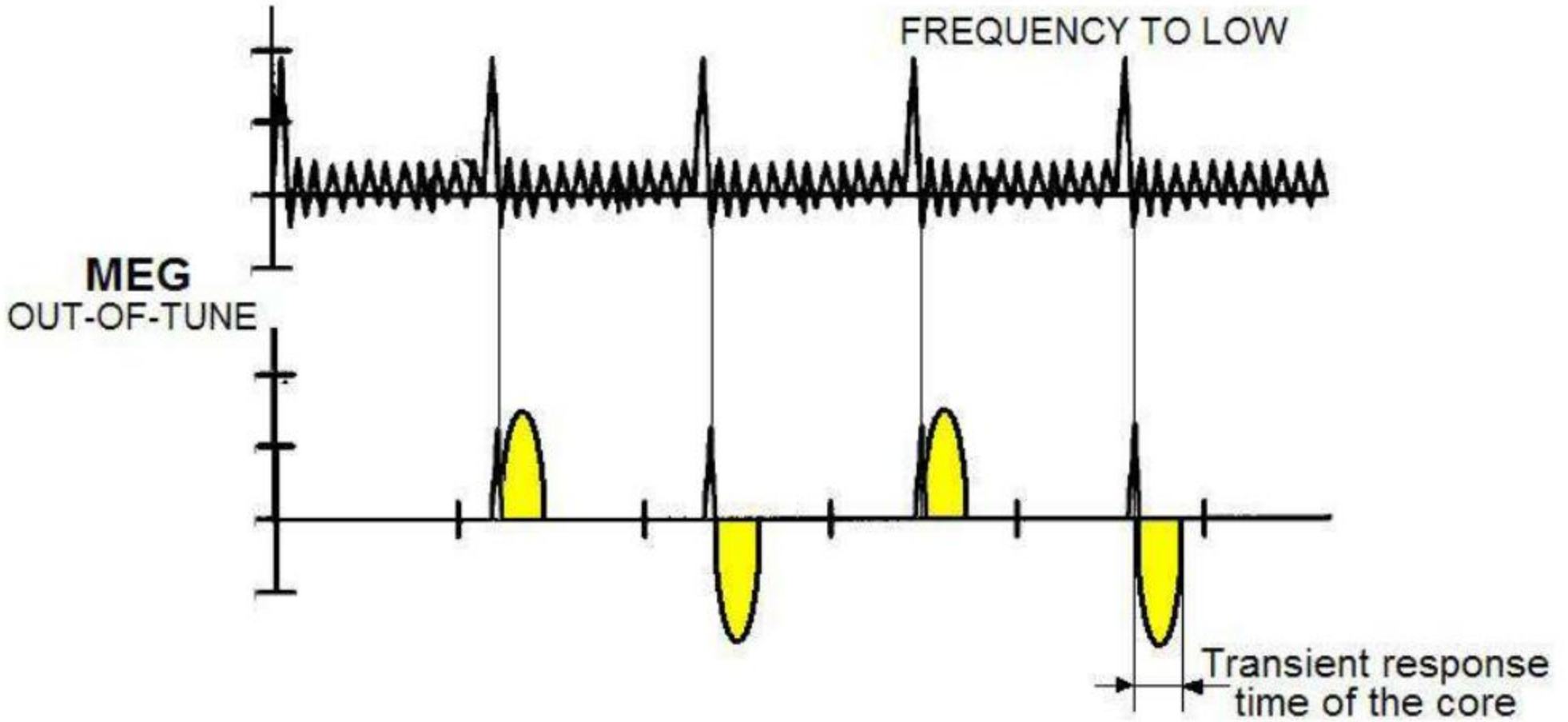
The sine waves are generated in accordance with Faraday Law.



The pattern of magnetic flux in the core doesn't change suddenly, but gentle.

As the right input coil fires, it generates an opposing flux to the static one established in the core. This doesn't want to fight with this new one, so it ***gently*** and completely retreats to the left side, leaving the left side completely unoccupied by any flux, even if the input pulse disappeared. In retreat to the left side, a negative half sine-wave voltage is generated in the right coil while the left side that receives this flux generates a positive half sinewave signal. So our flux pattern doesn't change abruptly, or suddenly changes sides. No, because Faraday Law applies in this case too. In the next phase, our flux having a so called "magnetic memory" or "flux capacitance" to the left side stagnates here peacefully and undisturbed. This newly formed asymmetric stability to the left side gets changed, ***but not abruptly***, by the left input coil when it fires. So our flux yet again is forced to abandon the left side, and with all its luggage journeys to a more peaceful place called...right side. So our poor flux from the magnet is always seeking a more peaceful place to stagnate as it generally wants, but is constantly bombarded by these "kicks". Poor magnet, it will never have the rest that it seeks so much...

If all of this is to be true, and it is, then it would imply that this transformer can work even with 60 or 50Hz! So why not generate the spikes on 60/50Hz and then the output used directly by our appliances? This question will lead us to a more intimate secret detail about MEG operation, which not every researcher realize.



When we are dealing with these gentle magnetic flux pattern changes in the core, they are actually the response of the magnet to the input spikes. (By gentle I mean a sinewave signal is more “gentle” compared to a sudden spike (short square) signal). Right, but when the spike has occurred, the flux starts to gather it’s “luggage” to seek a new place. The spike disappears, and our flux is still gathering all its “possessions” from this side to the other. After a short time, which we will name ***“transient shift time”,*** our flux has completely changed its dwelling to the other side. This newly formed home, will yet again be disturbed, and our flux will be forced to desert this place again. But ***the process of deserting, the process of moving, the process of shifting, this process when the flux changes sides, this process of abandoning one side to move to the other, doesn't happen suddenly, but happens after a “transient shift time”, that lasts longer than the period or duration of the input spike.***

THE REAL OPERATING FREQUENCY OF MEG.

TUNING THE MEG

This “transient shift time” generates in the output coils half a sinewave, which is positive in one side and negative on the other side. This “transient shift time” is actually half of the real operating frequency of our device.

What we are seeking is to never let the magnet “rest” in his “new dwelling”, never give the magnet a time to breathe. When the magnet has finished moving from one side to the other, then, we hit him again on that side. So in this accurate precise “bombing attack” of the magnet, it will be constantly moving from one side to the other. We must tune exactly to this specific frequency.

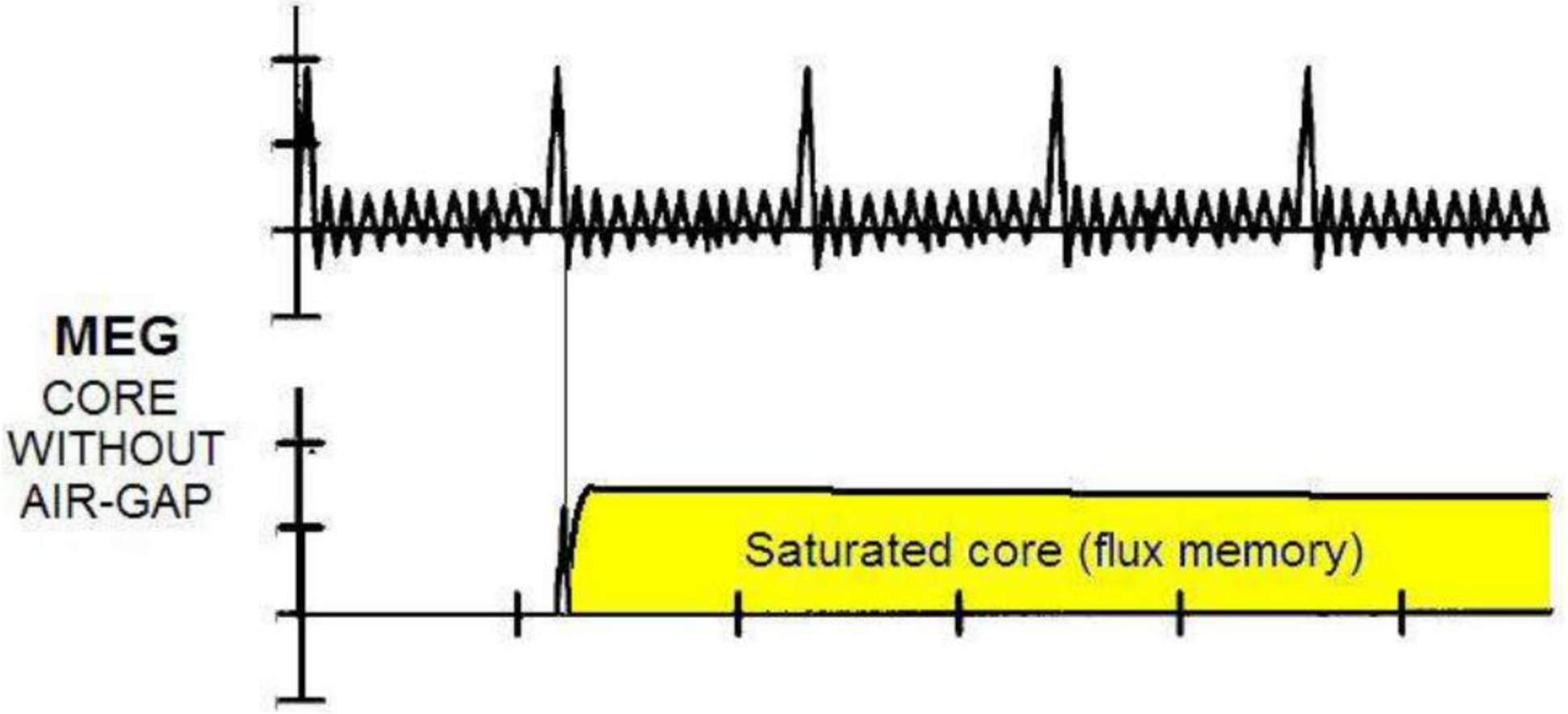
This frequency is specific to every device in particular and is determined by the core material, composition, permeability, surface area, volume, magnet strength, how fast the magnetic domains in the core material align to accommodate the change in the flux pattern, and much more. The easiest way to determine it is to measure it with an oscilloscope. We will perform a test to determine the frequency response of our transformer with the magnet in place, at a single input square wave pulse. By instantly and rapidly manually pulsing one of the input coils, we should see the response as a half sine-wave generated in one of the output coils. So when we know this frequency we will set our flip-flop to oscillate on that frequency and no more adjustment will be necessary (maybe fine-tuning).

The air-gap in the MEG core

I believe that an air-gap is an essential part in the operation of the MEG. In this regard I find myself (among other couple of times) in contradiction to the conventional thought purpose of the air-gap in the core of a transformer. The conventional view is that the an air gap reduces the effective permeability and thus the magnetic flux. The larger the air gap, the stronger the reduction in flux and the higher the maximum current the inductor can handle. We say that the magnetic energy is stored in the air gap.

I agree with all the above statements, except the last one: ”We say that the magnetic energy is stored in the air gap”. I disagree. First of all I am firmly convinced that the air-gap doesn’t store anything, in fact quite the opposite, it dissipates! Second, it acts like a resistor in the magnetic circuit formed in the core, damping the magnetic energy, acting as a load for this magnetic current established in the core. Third, the bigger the air-gap the higher the “resistance”,

(higher reluctance, lower permeability) the magnetic flux established in the core, escapes through this air-gap. We say you “lose the magnetic containment” through this air-gap. If you say that the air-gap stores energy, then you probably think that a resistor in a circuit also “stores energy” which is absurd, because that’s the real purpose of the air-gap: provide serial connection of a “resistor” for this “flux-capacitor-leedskalnin-magnet-core-saturation-magnetic-memory effect”. Thus, we avoid core saturation (conventional academic expression) by providing an air-gap, we dissipate the energy stored in this “flux-capacitor” with a “resistor” in series played by the air-gap, we “consume” or “dump” the perpetual magnetic current established in the core through the use of an air-gap(that has a higher reluctance to magnetic field than the core), the “magnetic memory” will “fade away” if we provide an air-gap, or back again to the conventional more correct expression, we have an air-gap so that the core won’t reach saturation. Therefore our MEG, TPU and Flynn SSG have an operation principle more like a flyback transformer than a regular transformer.



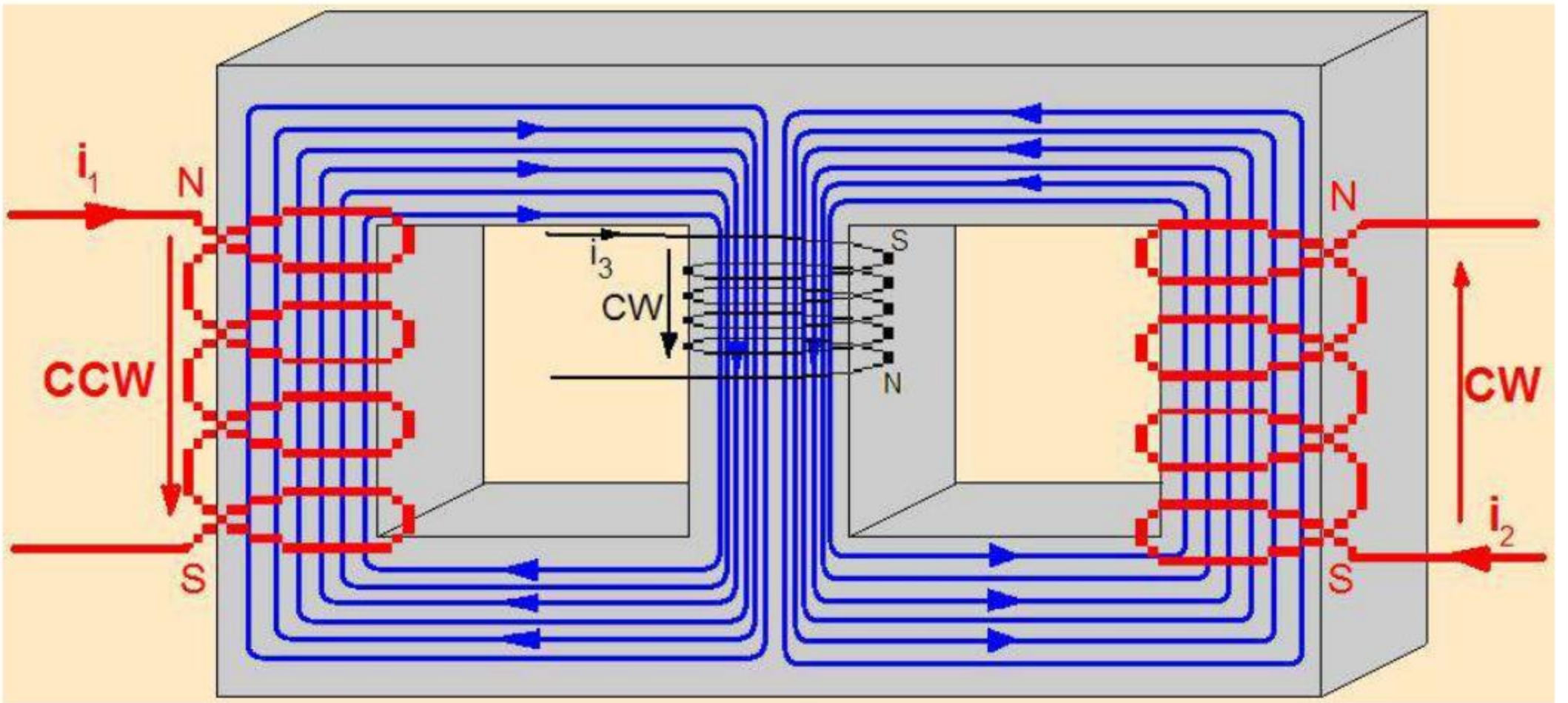
Note: The Yellow zone doesn’t represent voltage, nor DC. It is just a conceptual representation for this particular example.

So, If we don’t provide an air-gap in any “magnet switcher” like TPU, MEG or Flynn SSG we are faced with an irreversible core saturation problem. If the core becomes saturated, then we won’t be able to see the “transient response time” on an oscilloscope, and accurately determine the operation frequency. We want to avoid the “magnetic memory” at least it doesn’t last that long. This period of time will determine the operation frequency. Thus we can control this ***“flux capacitance” by adjusting the air-gap. The “flux capacitance” is what determines the “transient response*** time”.

We want this “magnetic memory” to fade away because we want the magnetic field to come back to its natural balanced/equilibrium/natural/normal/common symmetrical state. We must seek for the magnet to come back to its natural symmetrical shape from the path we have set for him. Thus *less energy is spent switching the magnet,* by not opposing the magnetic current or flux established in the core in one way when the next spike comes in the other way.

<<<<<<<<<<<<<<<<<<<<<<<<Work in progress>>>>>>>>>>>>>>>>>>>>>>>>

Of course, we could remove the magnet, and replace it with an electromagnet, with no significant difference:



In this configuration, we have made things a little bit complicated by introducing in our equations, another variable: The strength of our electromagnet directly proportional to the power we deliver to it. This strength of the middle coil magnetic flux intensity or strength is actually “H” measured in Ampere/meter or the old “Oersted”.

The MEG patent has actually five inventors behind it: Stephen L. Patrick, Thomas E. Bearden, James C. Hayes, James L. Kenny, and Kenneth D. Moore. These guys announced the arrival of the MEG technology on March 26 2002 and promised unlimited energy from the vacuum, to answer mankind's power needs and mass production by 2003. 9 Years later, and this technology is still not born. Tom Bearden also claims he needs about $11 million to develop it to a viable commercial form. Ok. Let me get my head around that. Commercial form? How can this be? I personally believe that t***his technology is just like the engine of a car.*** But there is ***no automotive industry out-there*** to be interested in this technology and implement it in their field of production. We have to understand that, in order to accept that huge figure that Tom Bearden needs to develop it. Mass Production needs an industry to support this technology, but such an industry doesn’t exist, so they have to build factories from scratch. It’s the only theory that supports those claims.

An industry that can support free-energy technology exist!

What if we don’t have to think this way? What if there is another solution to this? What if we don’t need such a huge sum of money to begin the mass production? Think about it! The industry that must support such a technology that can start mass production doesn’t exist, but what if it does? What if we are blinded by prejudice?

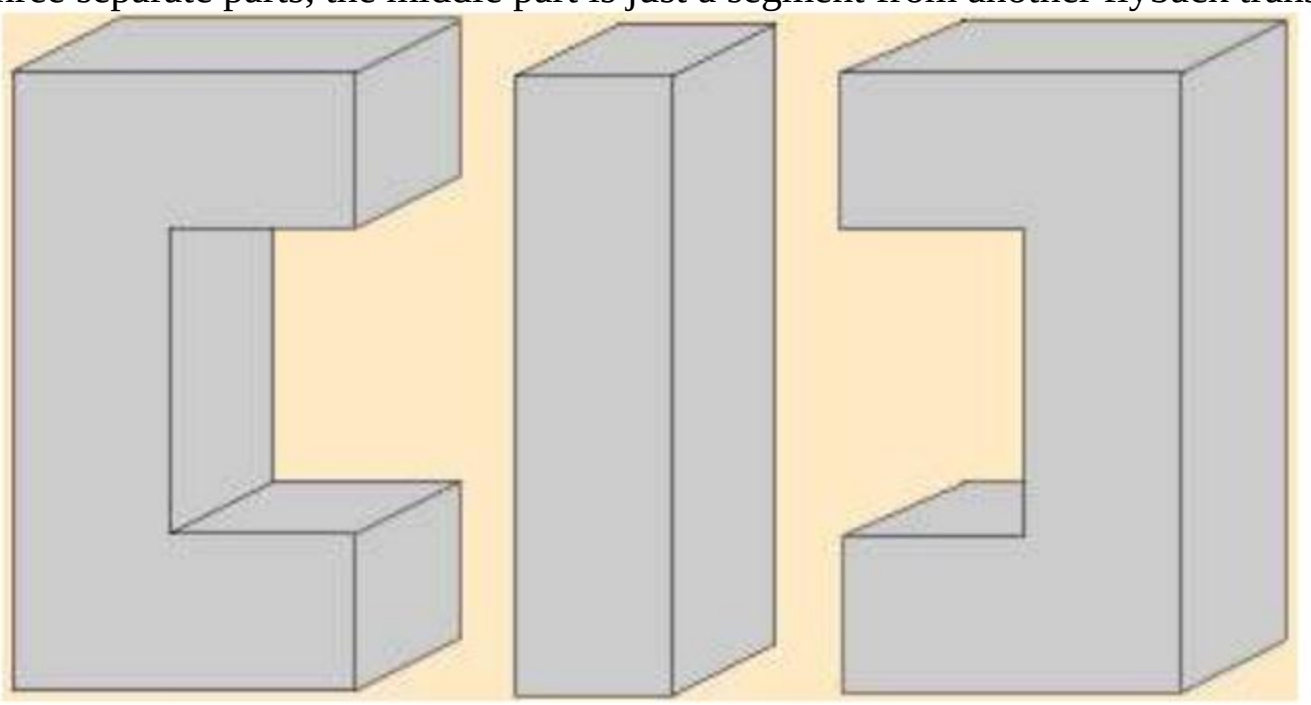
I believe that the Uninterruptible Power Supply Industry must be interested in incorporating such technologies in their products. ***With all their innovations and trends can’t they see*** that? Why can’t an inventor that has developed a “free-energy” device, seek investors among such companies, instead of seeking other ambiguous investors and private entrepreneurs, that gives him false hope and promises? Ask yourself, **Why not?**

Ok. Let’s start building this configuration and test it.



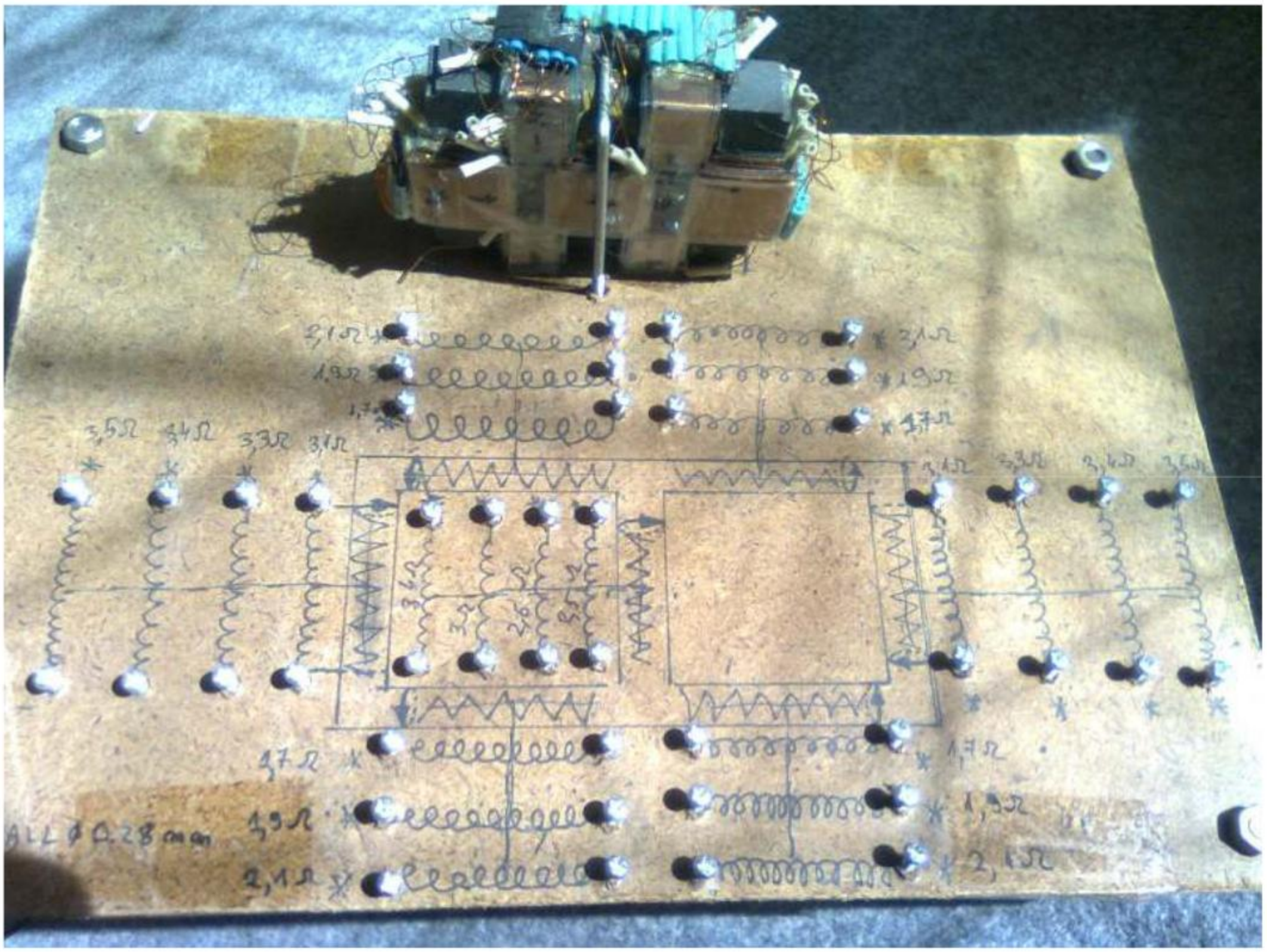


The core is made of three separate parts, the middle part is just a segment from another flyback transformer, like so:



Of course if we have other core materials than ferrite laying around, like electrical steel, permalloy, mu-metal, nano-perm or metglas, we should use them in such a device, the higher the permeability of the material, the better, but for now we can work with what we have at hand.

All coils are 0.28 mm (AWG 29) Copper wire. The three coils on the left, middle and right arm are all the same. The four coils at the top and at the bottom, are all identical. All the coils have their windings laid neatly and compactly as possible. I used heavy plastic insulation material (0.21 mm) between each layer of all the coils. This plastic insulation material will be stressed by having to withstand high-voltage spikes generated in the coils. This material is made out of...don’t freak out...clear plastic bottles cut with scissors, bent at right angles to form perfect rectangular turns just like the form of the core, and fixed in place with transparent adhesive tape. You might think that I’m a fool, and that this material is not good for this purpose, and you are right, it’s extremely thick, and can’t withstand such a great high voltage, and the next layers of the coils will be to distanced from the core, reducing the inductance they have. I know, I know, you are right, but I don’t have other options, I have to cope with what I have. So if you can, good for you, use a proper special insulation material between the layers that can withstand the highest voltage possible, and being as thinner as possible. Also the trick to neatly lay the start turn and end turn of a layer or coil is to use a small piece of adhesive tape, to hold it in place like this:

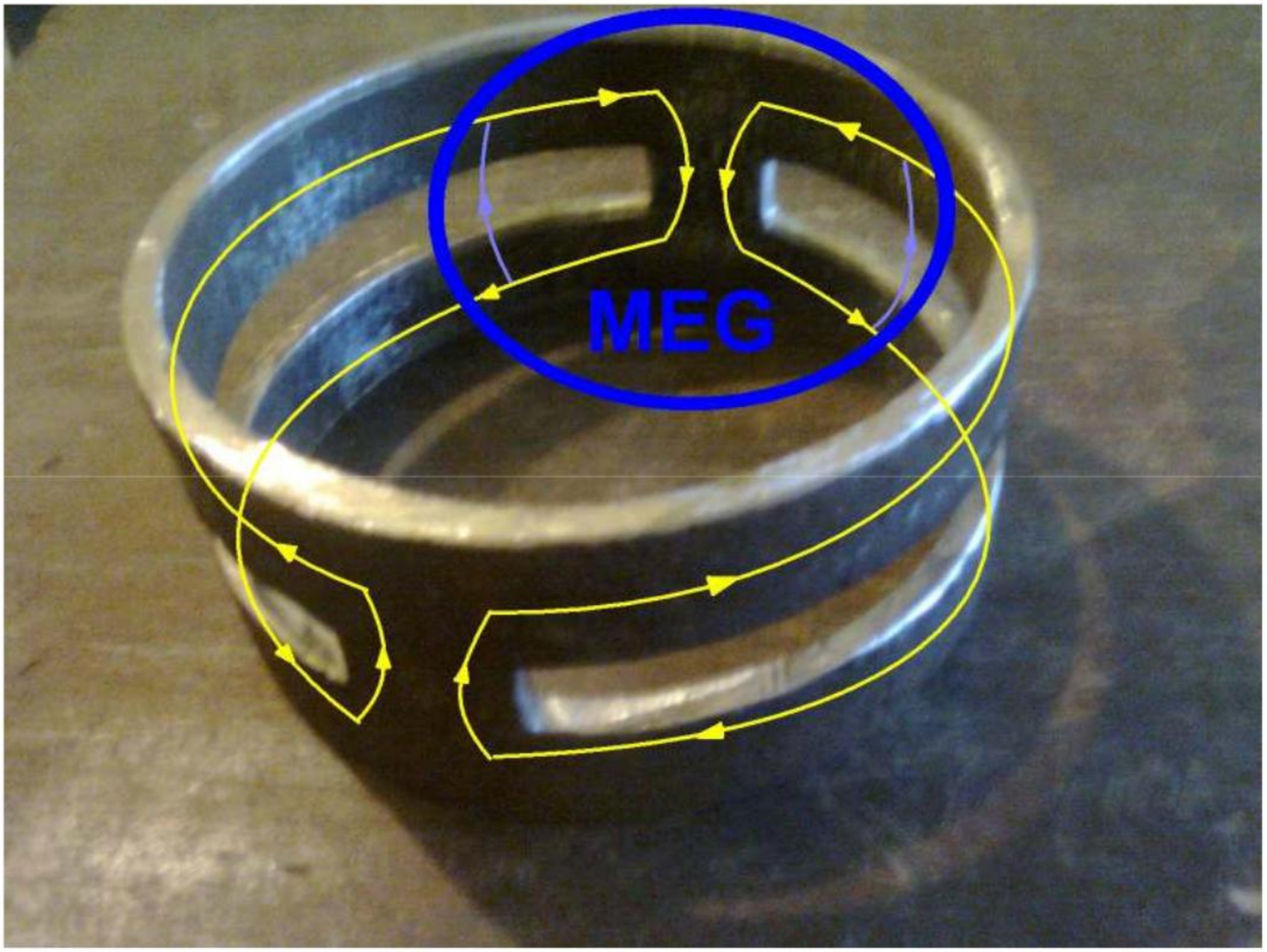


The reason I have so many coils, is because in a coil each layer of windings is not connected to the next layer. I did this because I wanted more control by providing many more configurations and possibilities of interconnecting. In this construction, each coil can function as an independent transformer by using two of its layers as a secondary and primary. Another advantage is that I can easily adapt input/output impedance's of this transformer by connecting or removing additional layers in a particular coil. Of course anyone who wants to build this, doesn't have to follow my footsteps (it's a lot of hard labor).

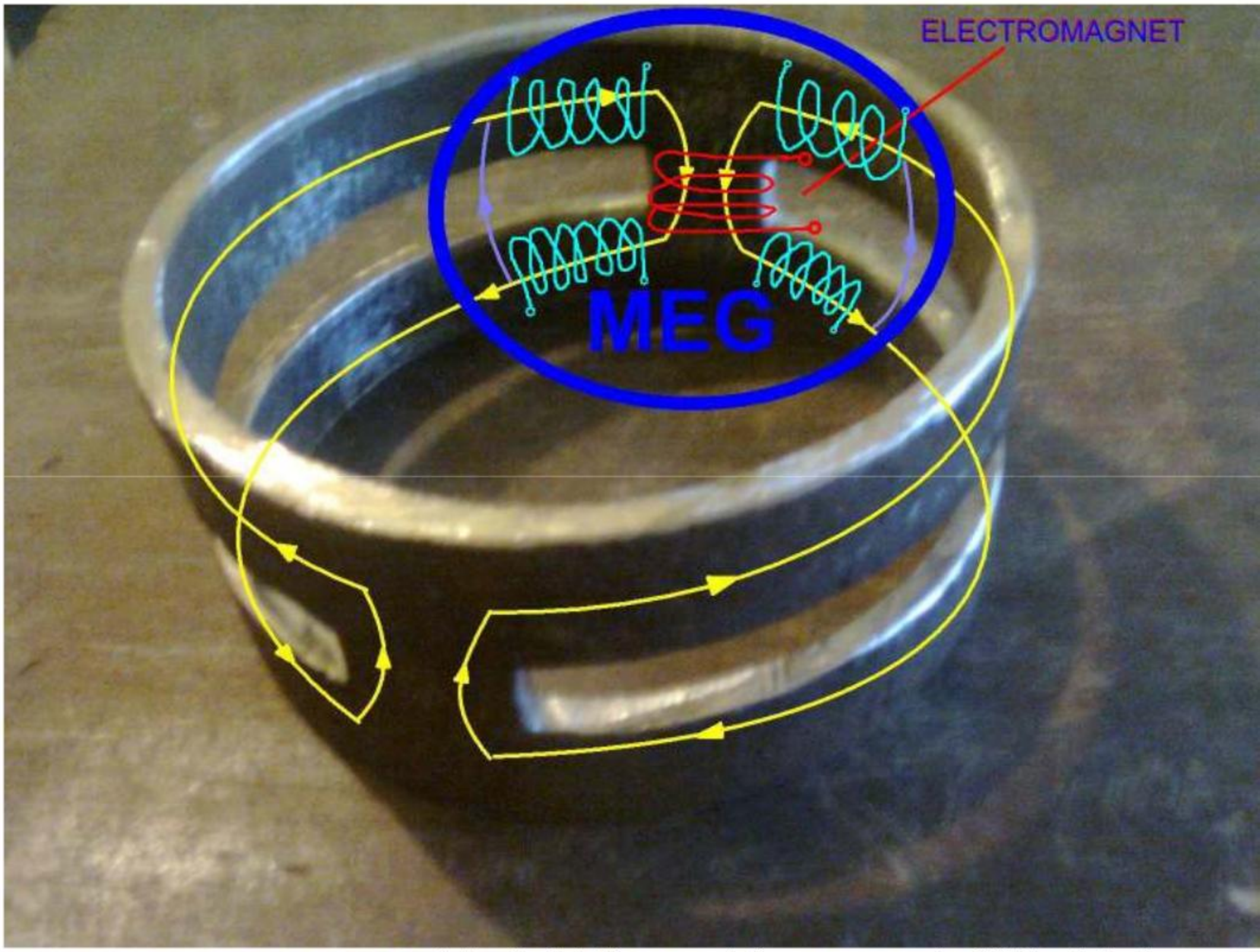
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Now that the TPU study has lead us analyzing the Charles Flynn solid state generator and Tom Bearden Motionless Electromagnetic Generator, let's see were this technology is further going:

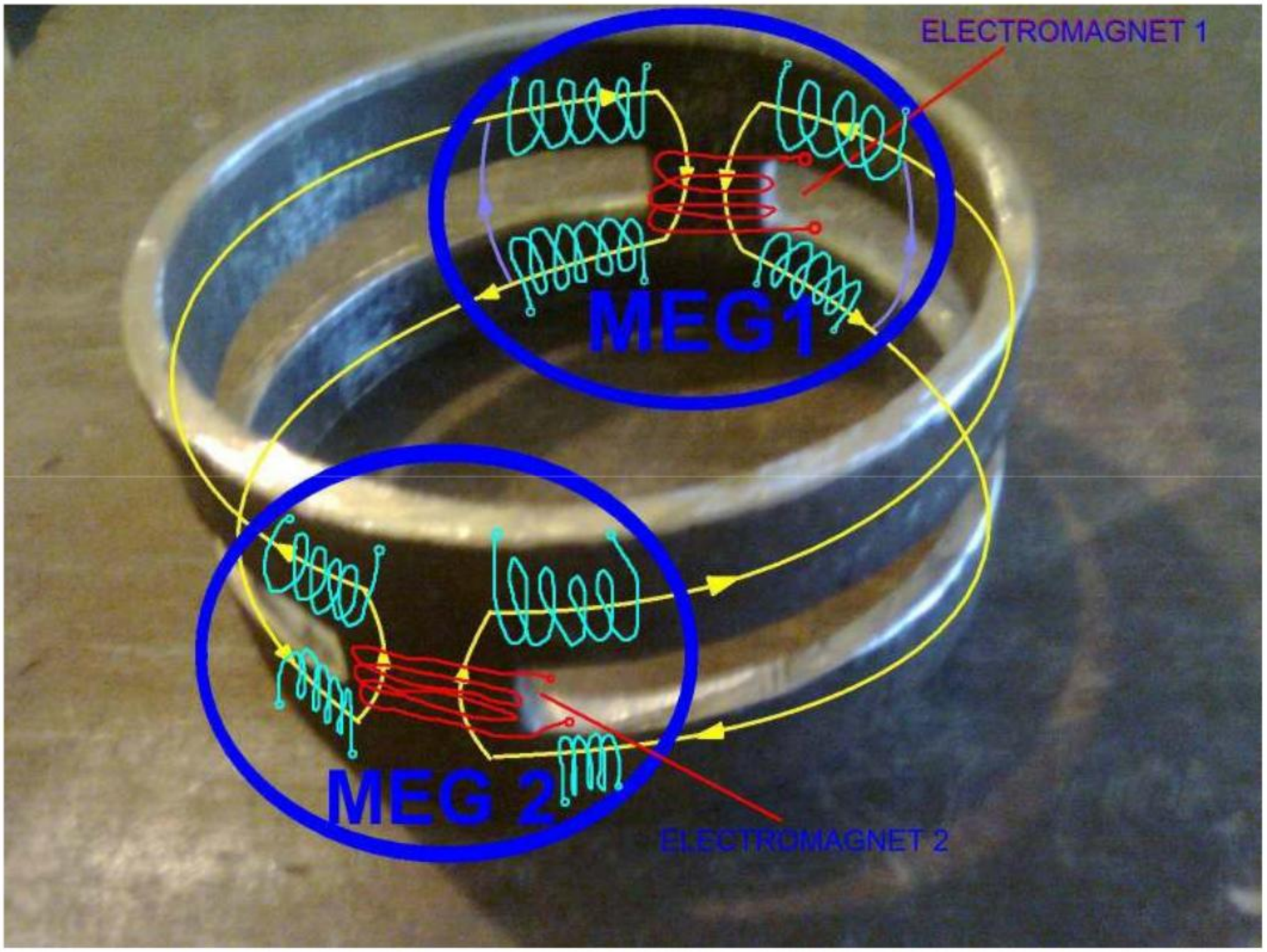
Enclosing the left and right sides of the MEG into one side:



Of course a more accurate and detail operation would be like this:



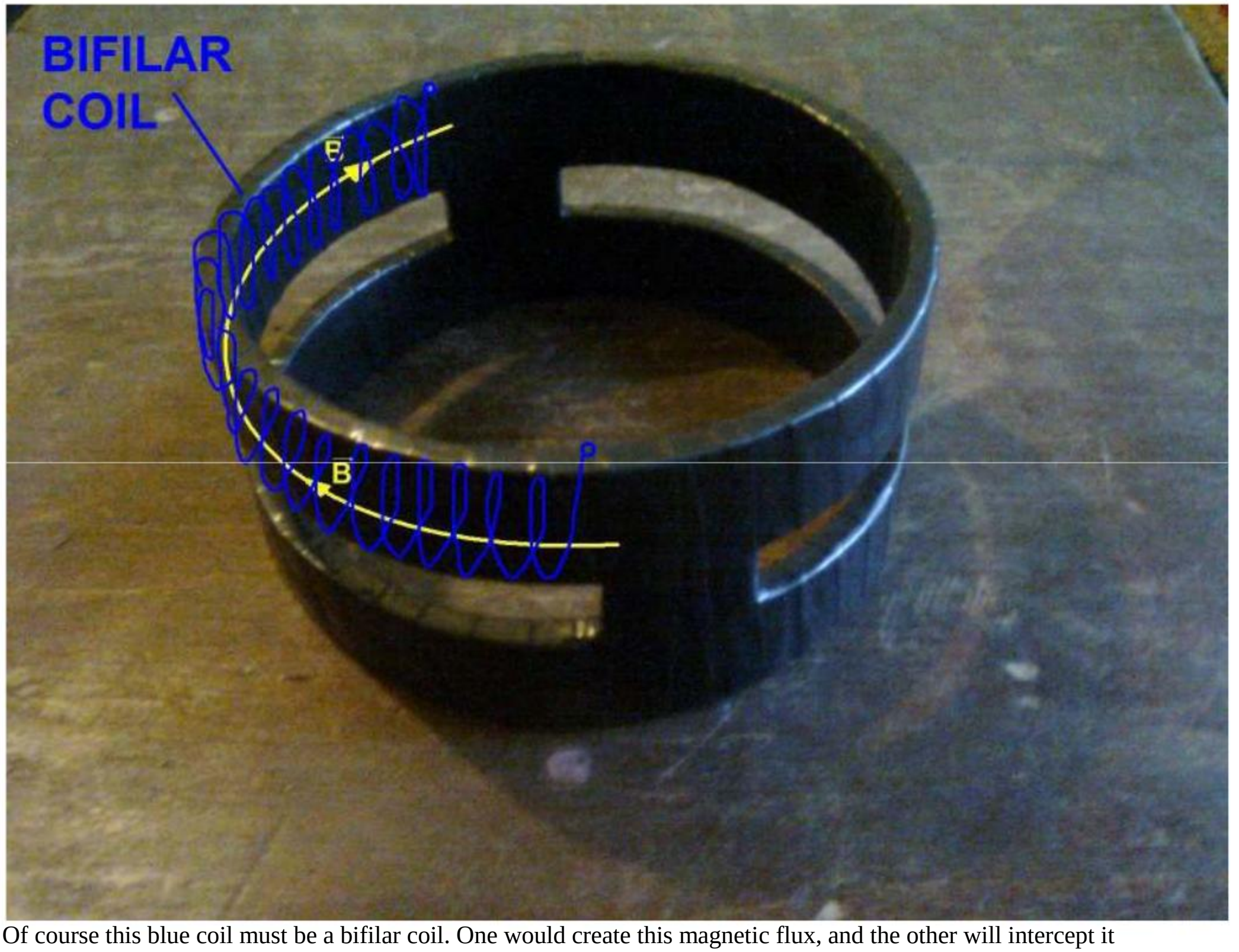
So, you see what we are after? We are **closing the *light blue magnetic flux to create another MEG at the back***:



If we have the same coils on both MEG1 and MEG2, then in theory it should be much a more efficient device.
But wait, let’s not rush into this thing yet. How are we going to connect the coils, on such a device?
Let’s think for a bit. If we have a magnetic flux vector like so:

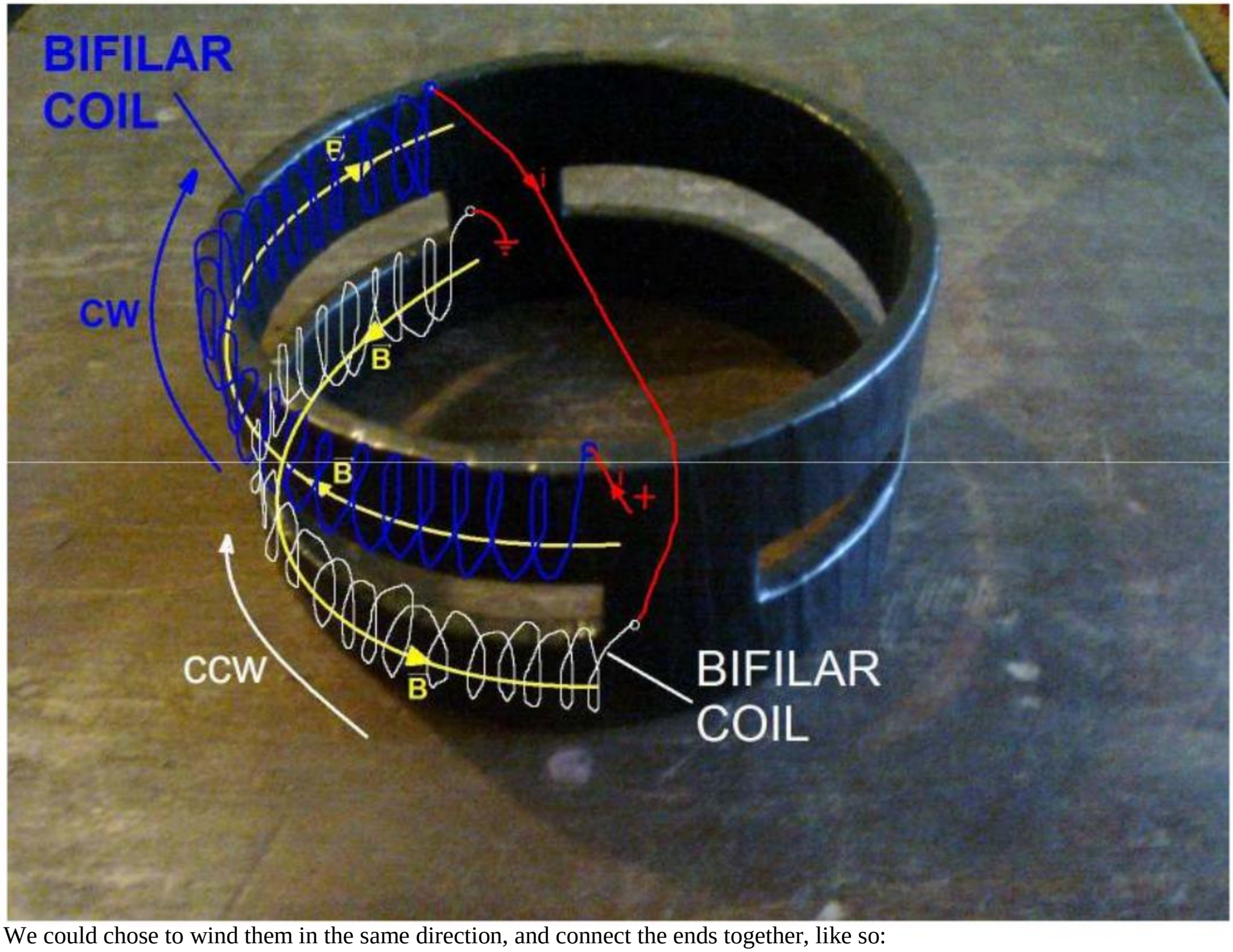


Then we can wind a single coil around like this:

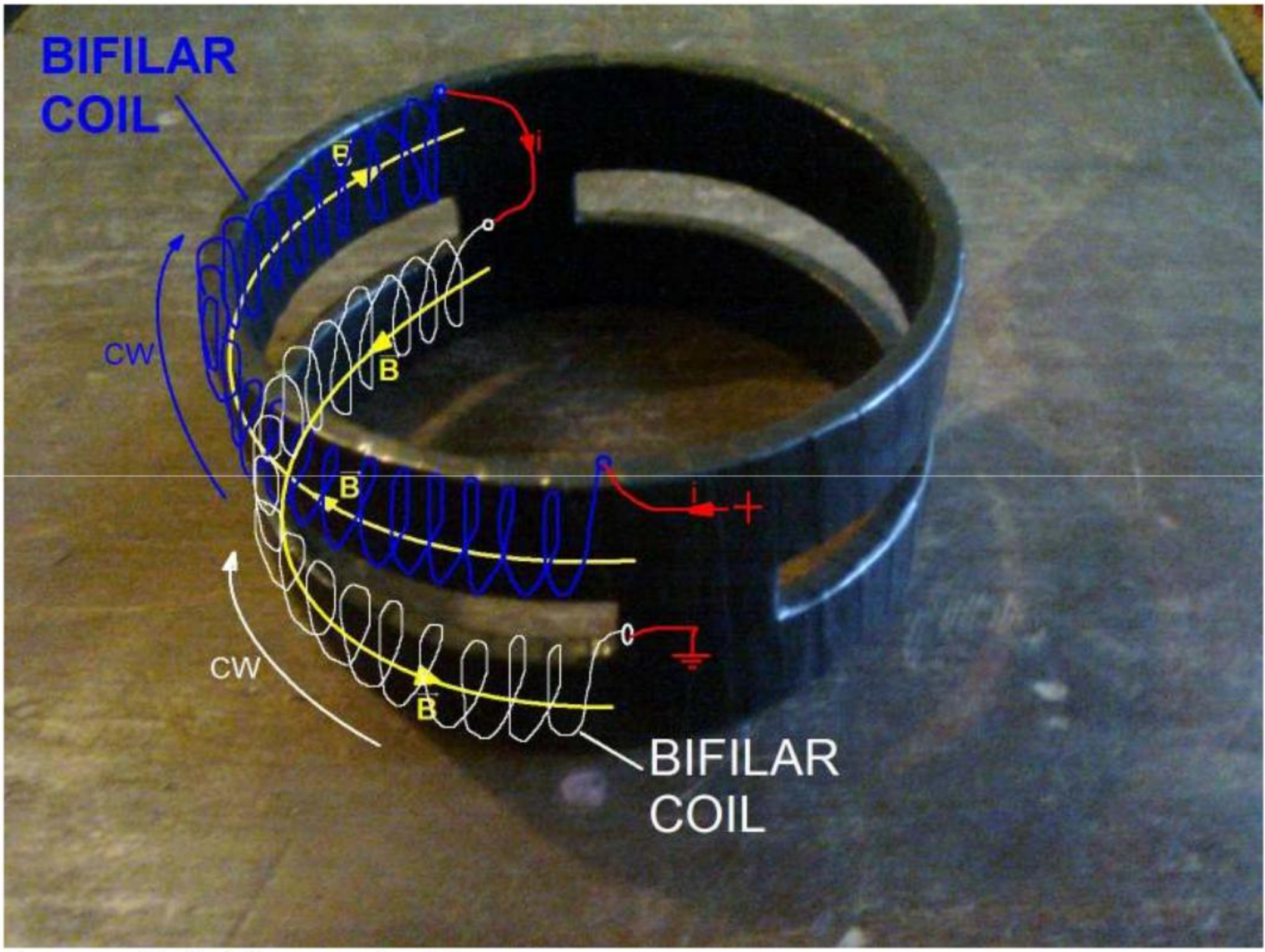


Of course this blue coil must be a bifilar coil. One would create this magnetic flux, and the other will intercept it (primary and secondary windings). But for simplicity reasons, I decided to represent only one winding in the lame drawing above.

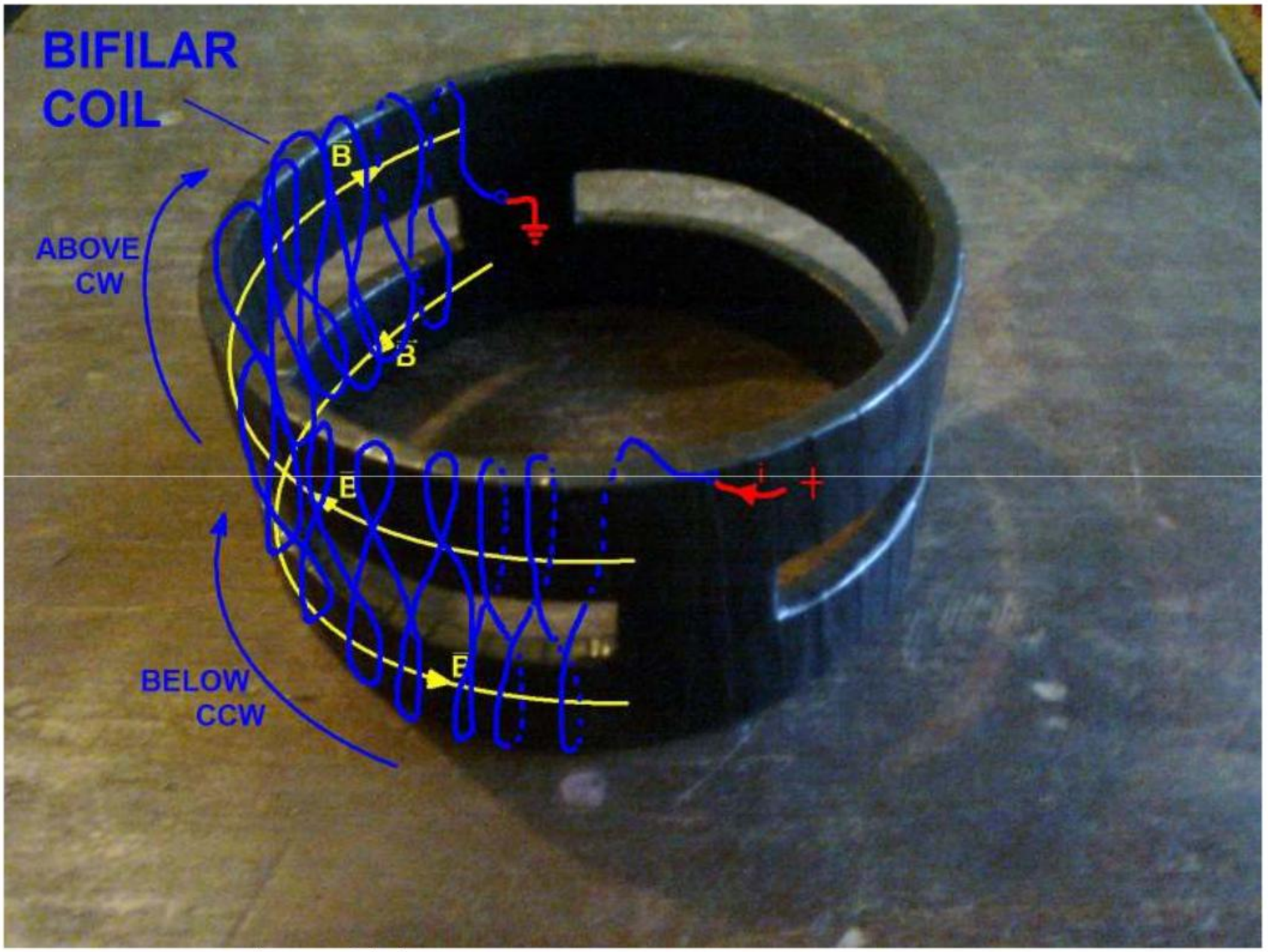
But the second flux at the bottom, comes in the opposite direction, so if we change the winding direction to Counter-Clockwise for the bottom coil then we have to connect the end of the blue coil with the start of the white coil:



We could chose to wind them in the same direction, and connect the ends together, like so:

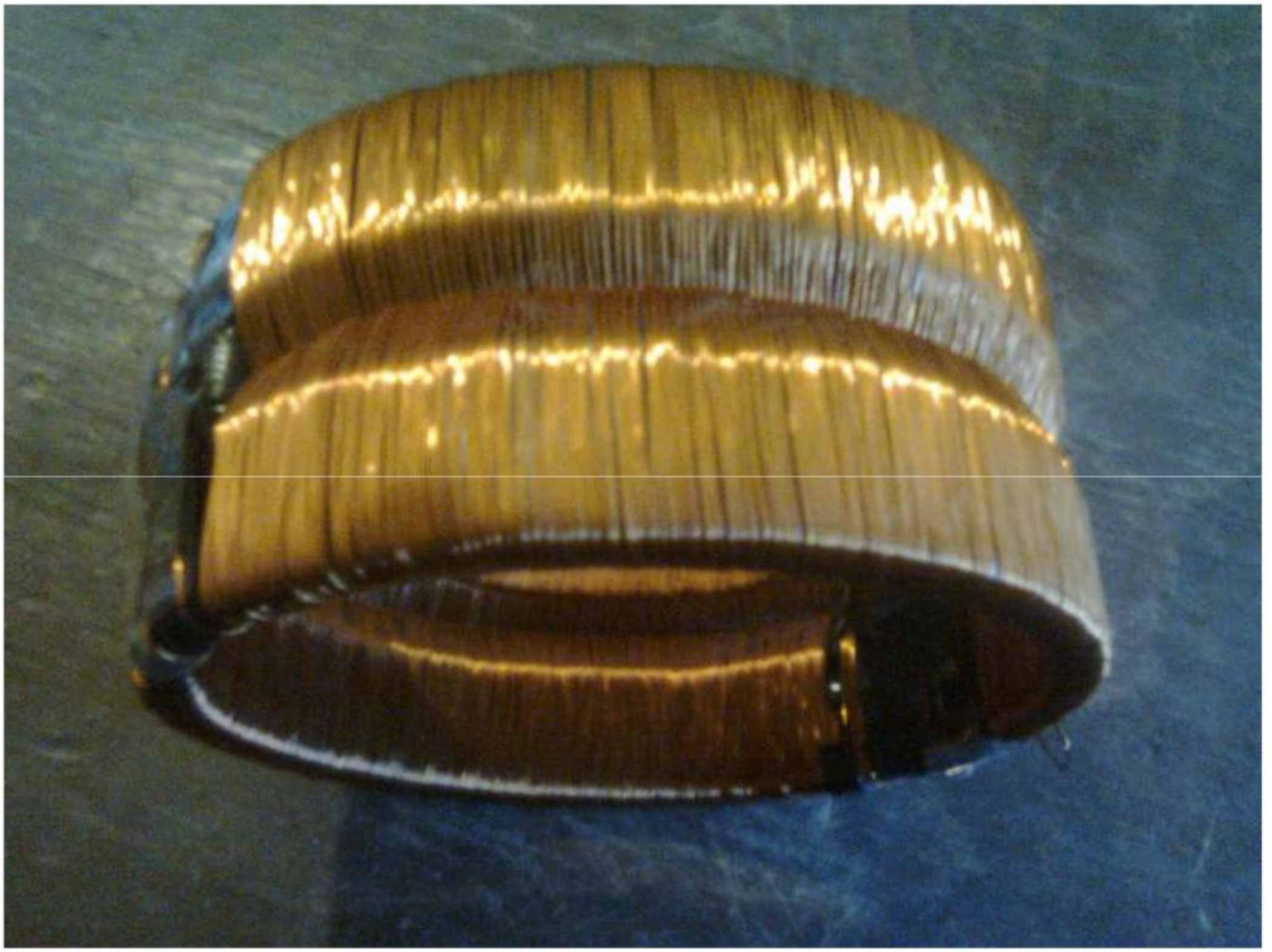


Or we could wind them together like so:



Now we have an **improved design** by having only one bifilar coil, instead of two bifilar coils, and we don't have to think how to connect them, or worry if we miss-connect a coil or something.

It should look something like this:



My final version looks like this:


Top
Bottom

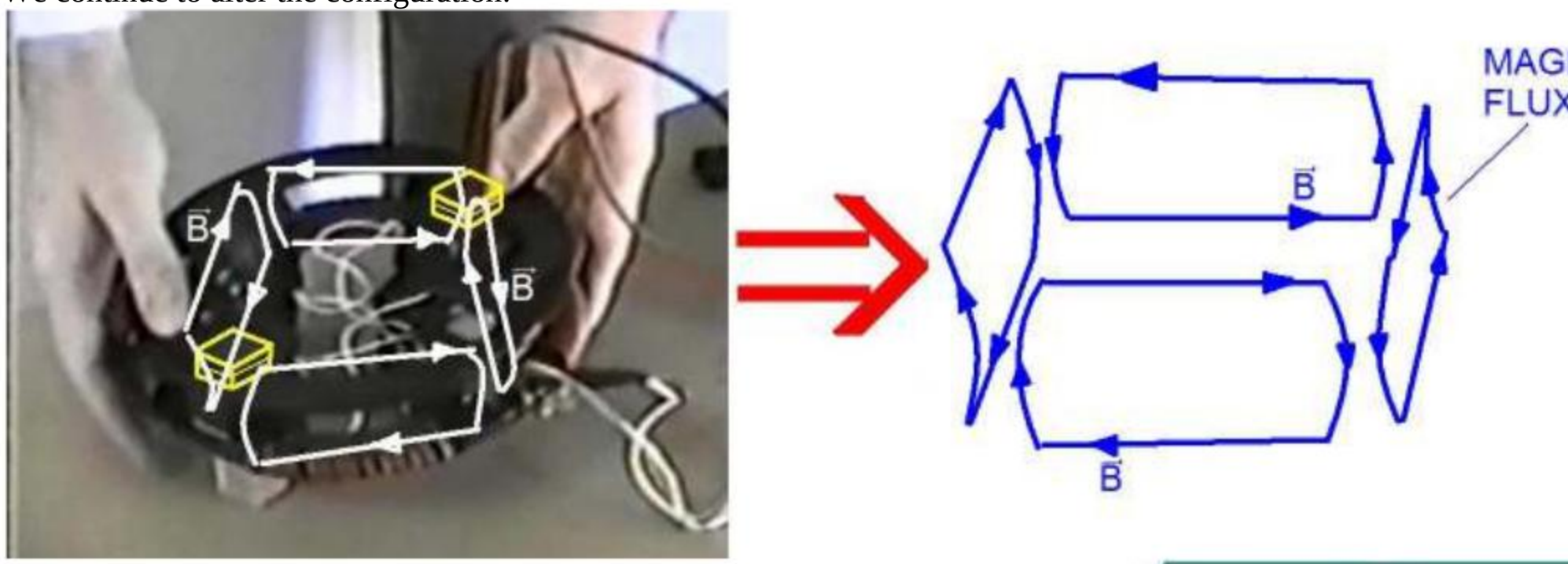


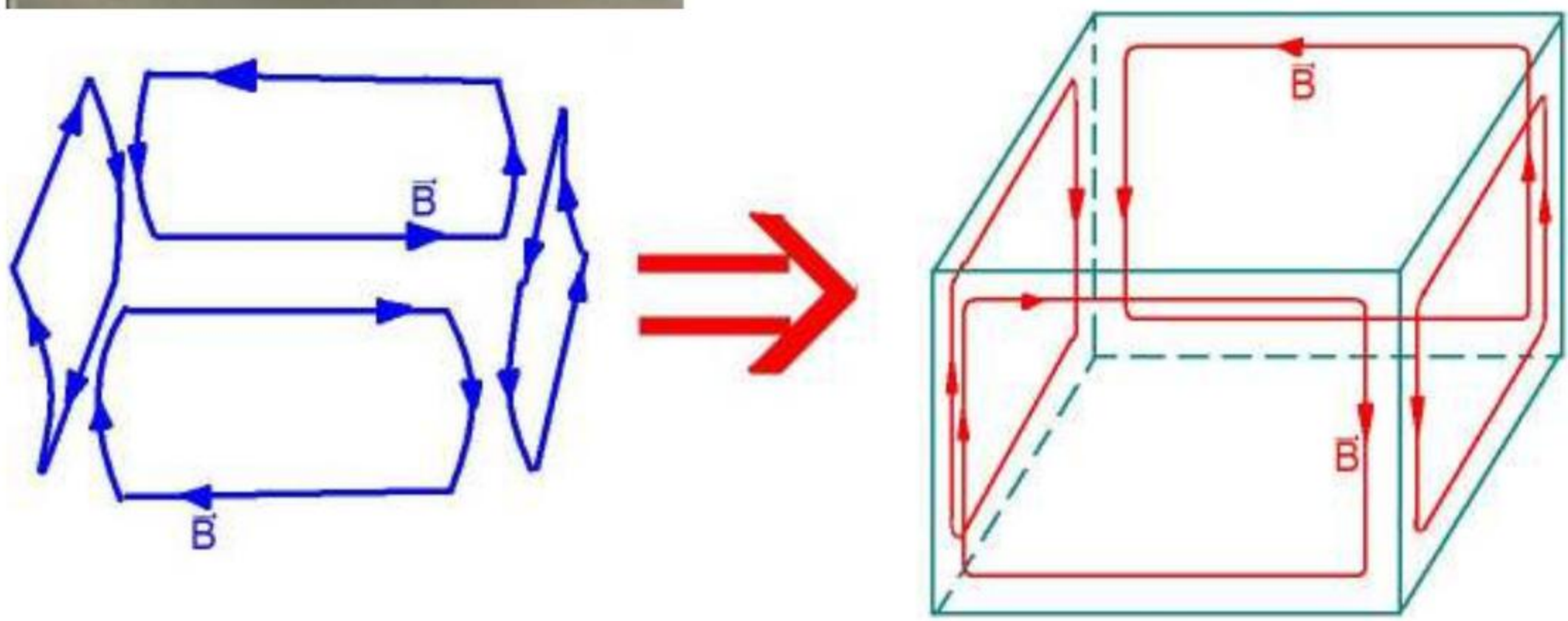
<<<<<<<<<<<<<<<<<<<<<<<<<<<analysis in progress>>>>>>>>>>>>>>>>>>>>>>>

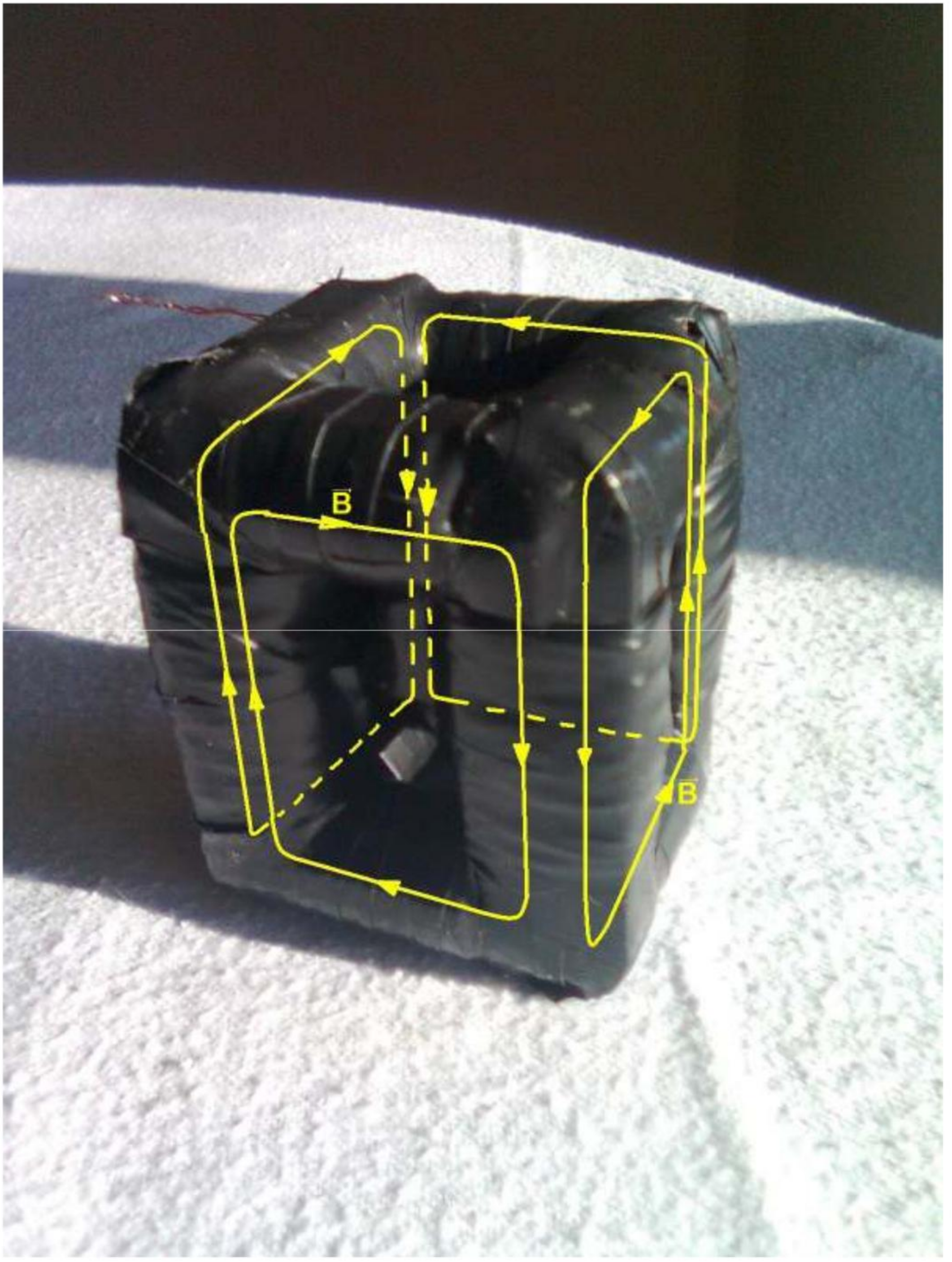
Now, if we look back at how Steven is creating the magnetic fluxes in his TPU, we can extract the relevant core principle behind this device, and replicate it in a different one:



We continue to alter the configuration:






B
B



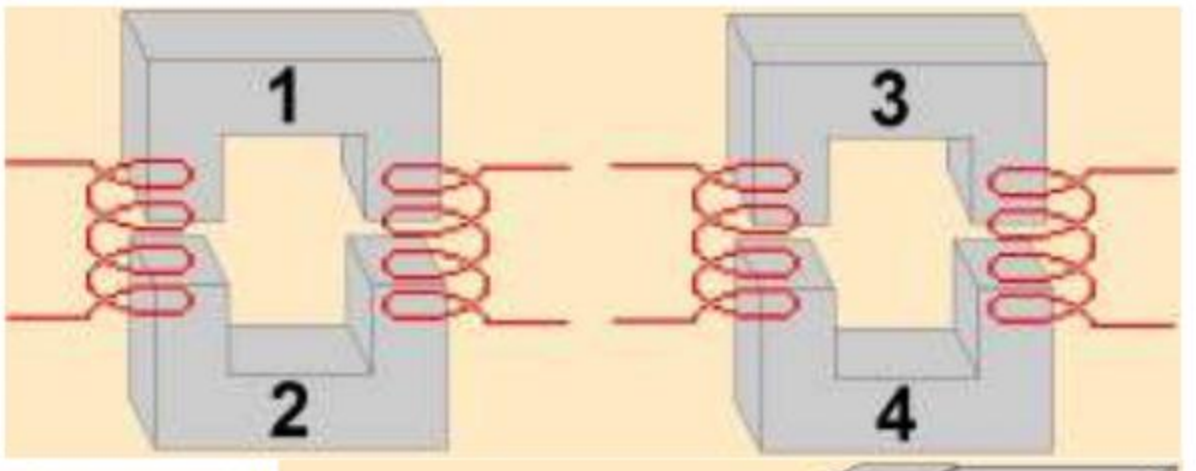
The core is made of two ferrite flyback TV transformer. (4 segments)

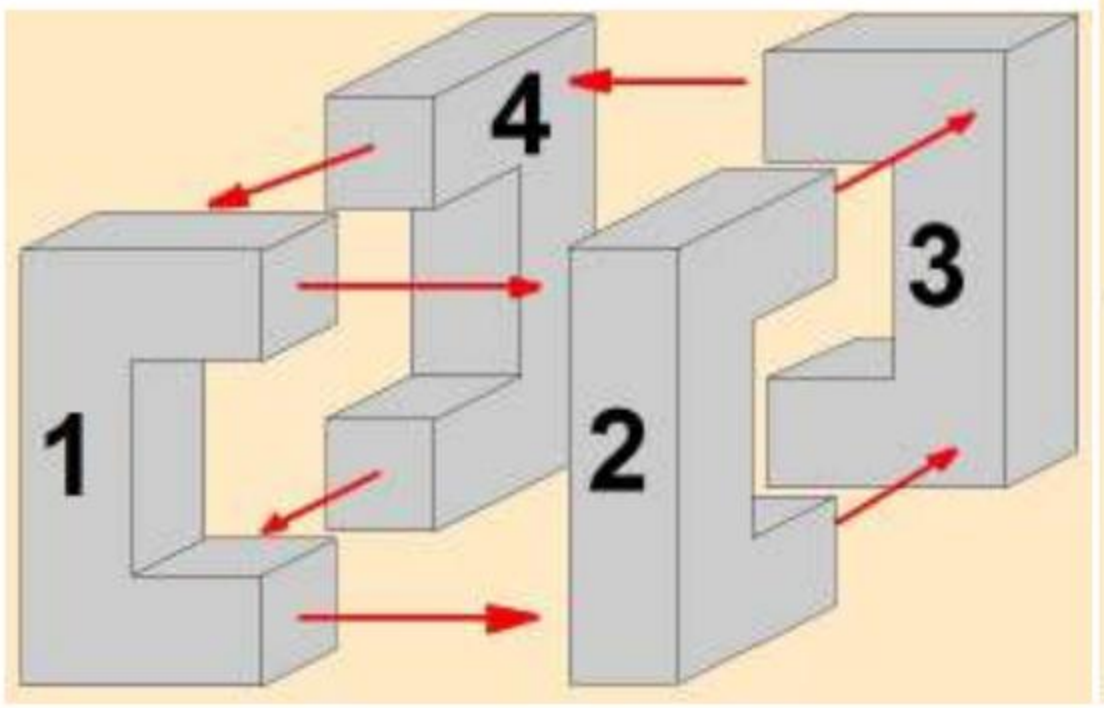


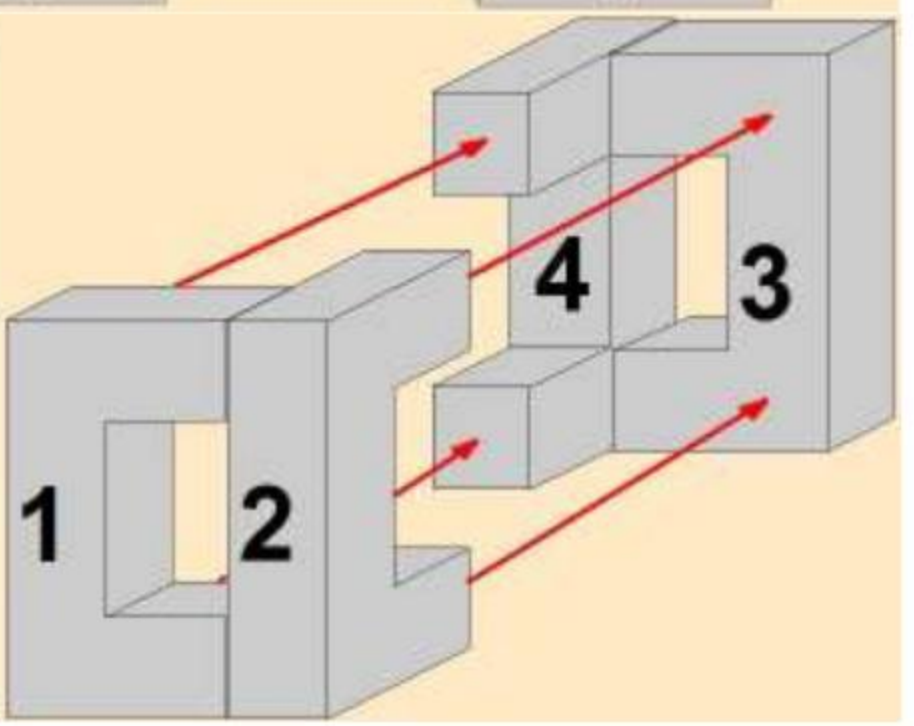


Like this:









Using a cube shape instead of a toroid is not such a far-fetch idea. This is also found in MEG v1 embodiment 2 (Tom Bearden Motionless Electromagnetic Generator first version of a second embodiment of his invention):

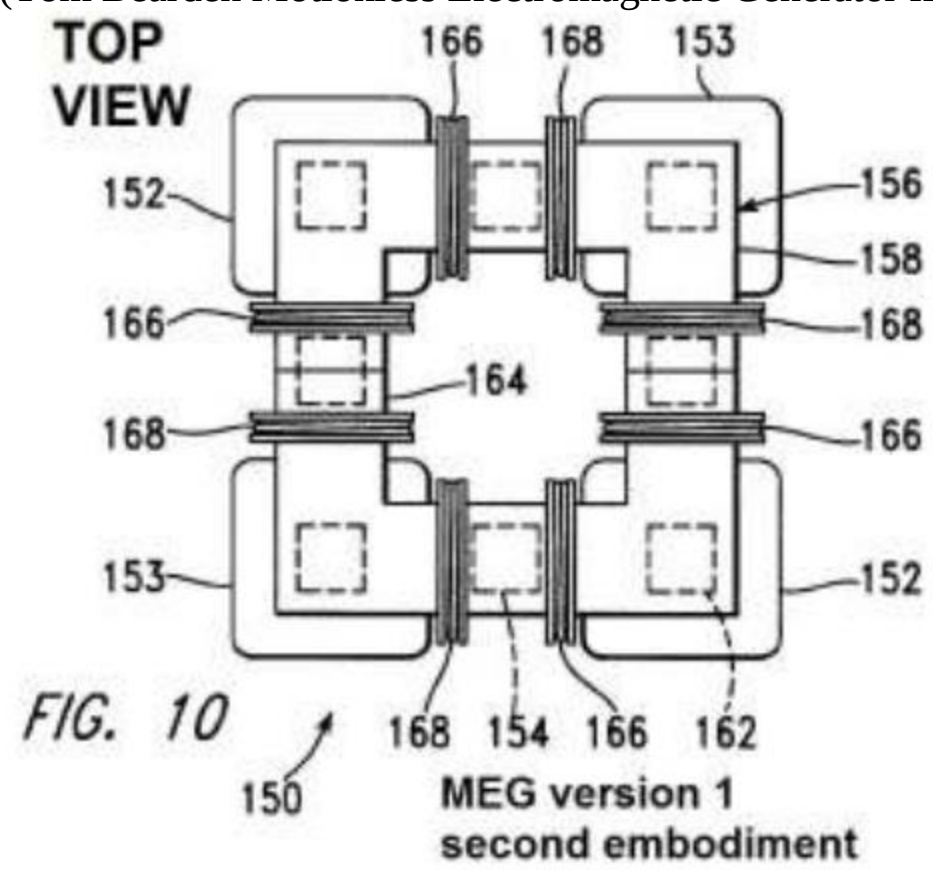


FIG. 10

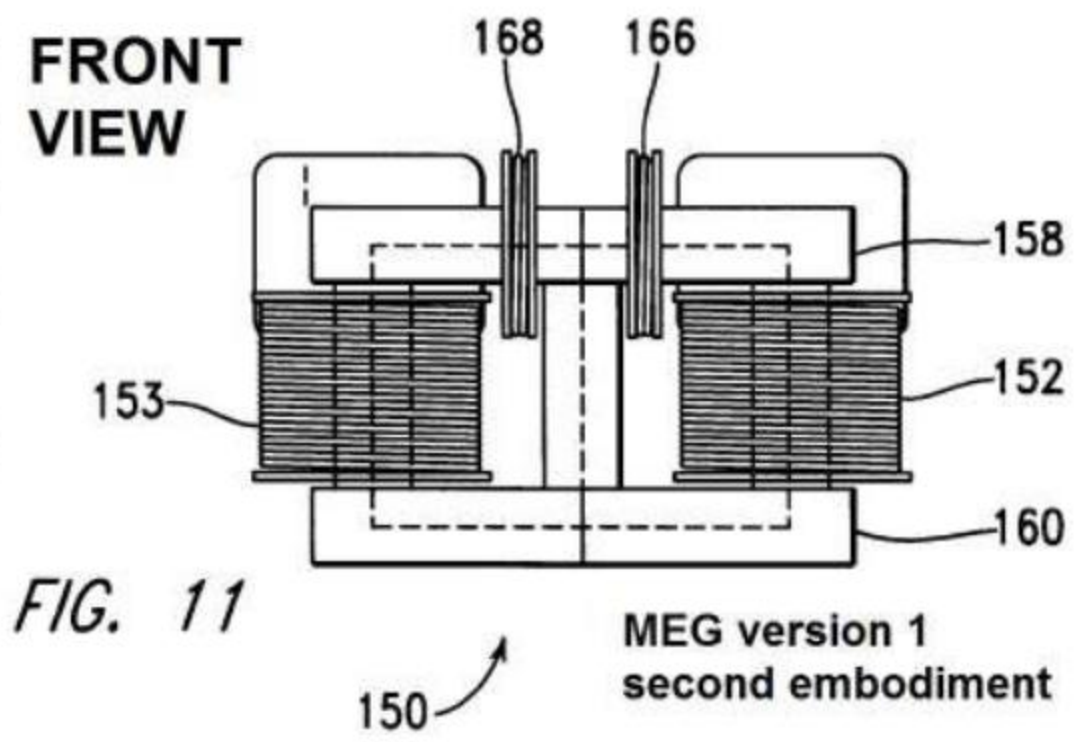
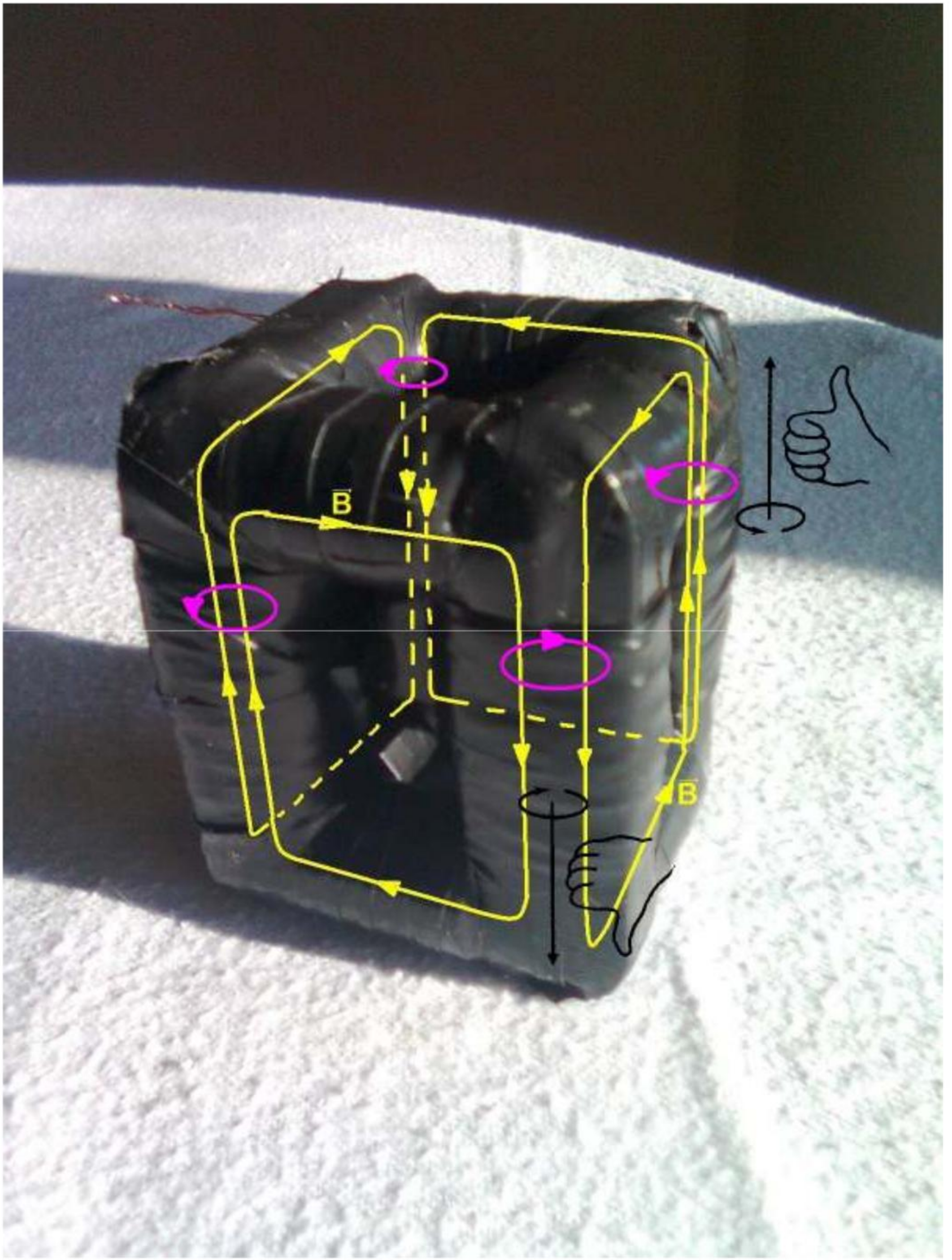


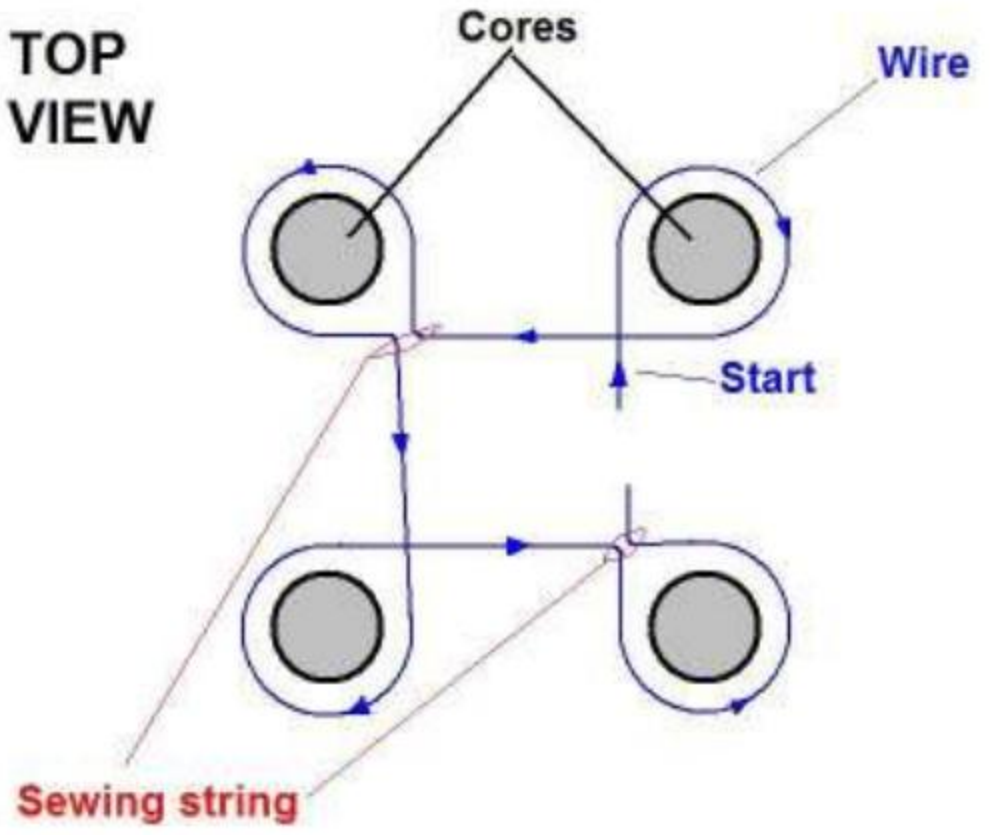
FIG. 11

Although it works in a slightly different way, you get the point.

Now we will have to design a winding procedure, to create these 4 magnetic circuits we see in Steven TPU with less coils possible. Can we replicate the four magnetic flux interference seen in Steven TPU, with only one coil? Yes we can! First we must determine how the winding direction should be, in order to create the magnetic flux vector in the desired pattern:



Ok. So this is how we must wind our transformer:

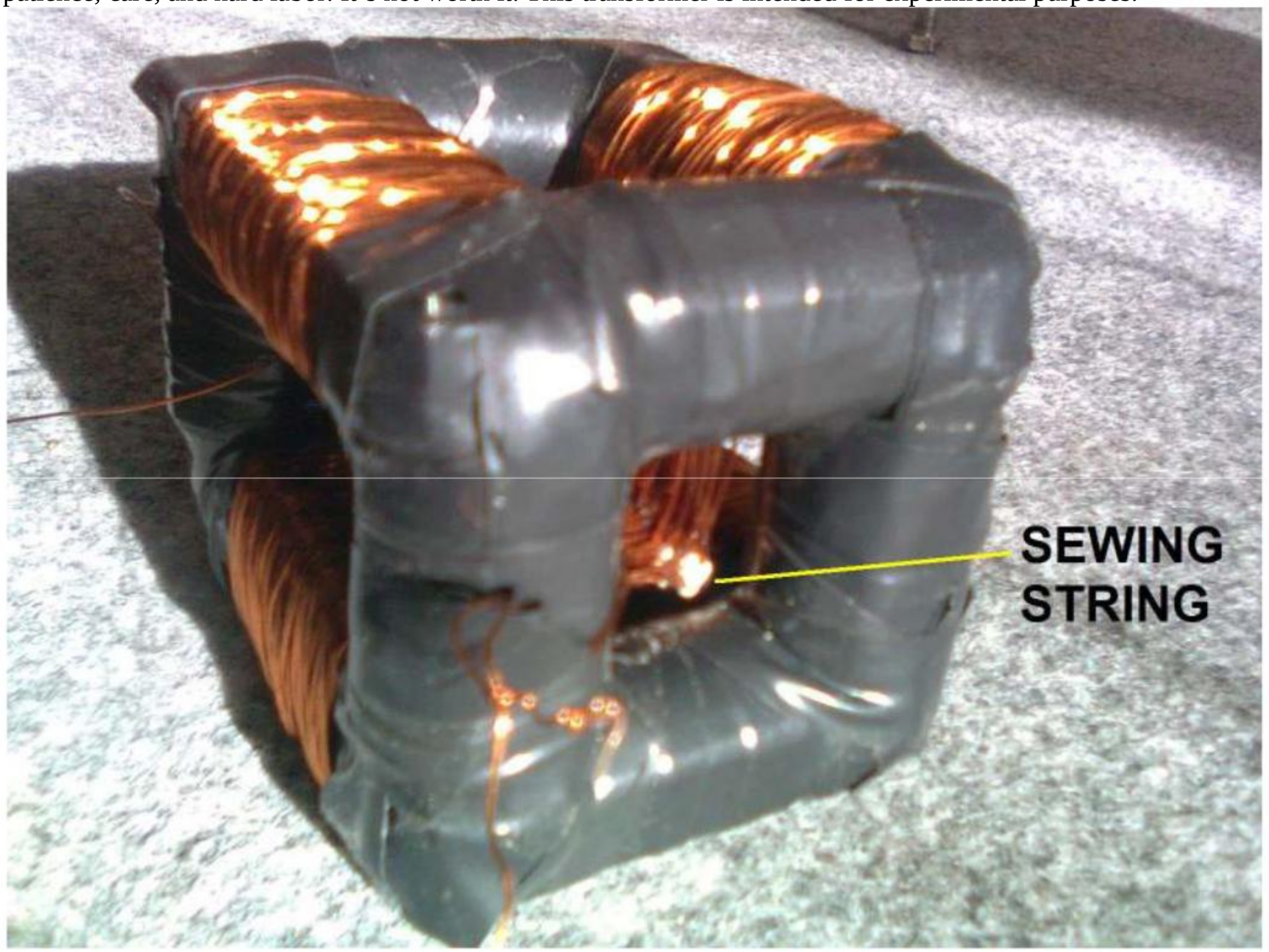


(comment on 03.12.2011: This may not work.. No way to switch the electromagnet flux path. Further study required)
(comment on 04.12.2011: This will work if the windings in the picture below are actually the electromagnet, and the primary and secondary coils firing sequentially will be winded on the opposite edges of the cube)
(comment on 04.12.2011: I still don't think it will work because the electromagnet will be equal in flux in any point in the cube core. It must alternate between two halves of the core or more. It should have been winded in this regard. Further study in place)
(comment on 05.12.2011: I have made a mistake. This is all ok if Steven in his TPU uses four magnets (he has four slots) but he is using only two magnets, in order for the magnetic flux to switch from one side of the TPU to the other, from one virtual pole to the other. In this case I can't switch the flux, because in one side must be close to 0 while in the other side should be maximum (memory effect). In this case the flux can't switch because it is balanced in all the structure. I can't say that I failed. I will say that I may have discovered a new method by which it may not work. :D . I will test this configuration nevertheless and see how it behaves and then I will make the necessary corrections)

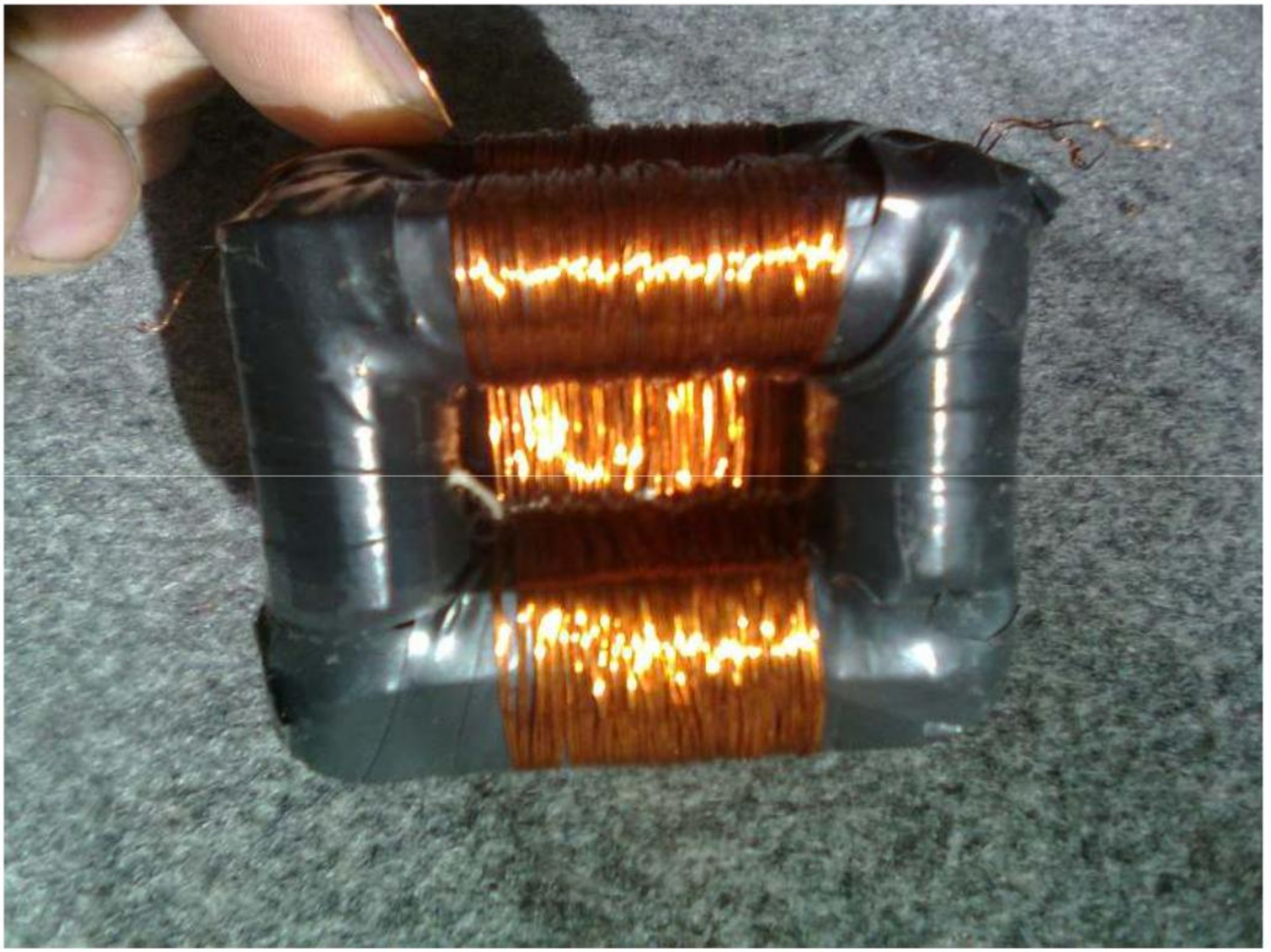
The end result will look like so:



Note: given the fact that there are no possible practical methods of creating multiple layers of the same coil, and no way to take more insulation precautions, this particular transformer must work below 60-70V range. I could have divided the transformer in half, one half for the primary winding and the other for secondary winding. This would have allowed for much higher operating voltage ranges. But this would mean that I would have had only half the space available to lay down a coil. Of course that doesn't matter if I used a much lower gauge wire, but that would have implied more turns, much hard to work with, much more patience, care, and hard labor. It's not worth it. This transformer is intended for experimental purposes.







Now, I’m going to tape this bifilar coil, and continue to wind the primary and secondary coils, on the opposite edges:





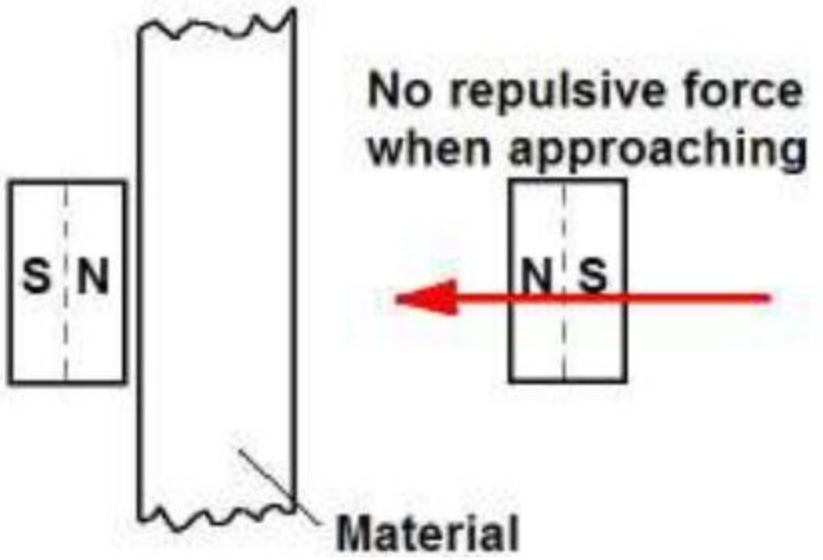
I’m sorry that I didn’t specified how many turns I used in my other devices. I build them a long time ago, and abandoned them (If you look carefully you can still see some dust on some of them :)). But in this case the coil in the picture above is made of 20 turns, changing the winding direction only two times in the 4 segments. That means I start with an arbitrary winding direction, then after 20 turns in this “infinity” type loop turn, I change direction. After 20 turns, we now have winded half of the cube, we ***don’t change*** the winding direction, and provide here a median point. We wind again 20 turns, totalizing 60 turns by now, and after these ones we change again the winding direction, wind 20 turns and we are done.

The reason we don’t change the winding direction after we have wind a half of the cube, as I stated in the Steven TPU, in this place, a median point is formed, and the current has different flowing directions, thus forming opposite magnetic flux.

<<<<<<<<<analysis in progress>>>>>>>

Replicating the Steven Mark TPU:

_____First thing first is the core. It must be a high permeability core, which is a material that has a high magnetic flux conductance. This can be easy determined by using two simple magnets and stick it to different metals, and see how well it shields one magnet from the other when they are in repulsive mode:



So, a good magnetic shield is also a high magnetic permeability material. If we are searching for a low cost, easy to find, accessible high permeability material we could use, the metal that is used to shield the back magnetic field of magnets in speakers:











We will need two identical metal shields from old speakers. I don’t know with certainty but I think it’s Permalloy. I started by drilling small holes on the circumference of the inner hole, in order to achieve a disk shape core (more like a ring):









I then nicely smooth out the inside with a grinder:



And then the second disk:





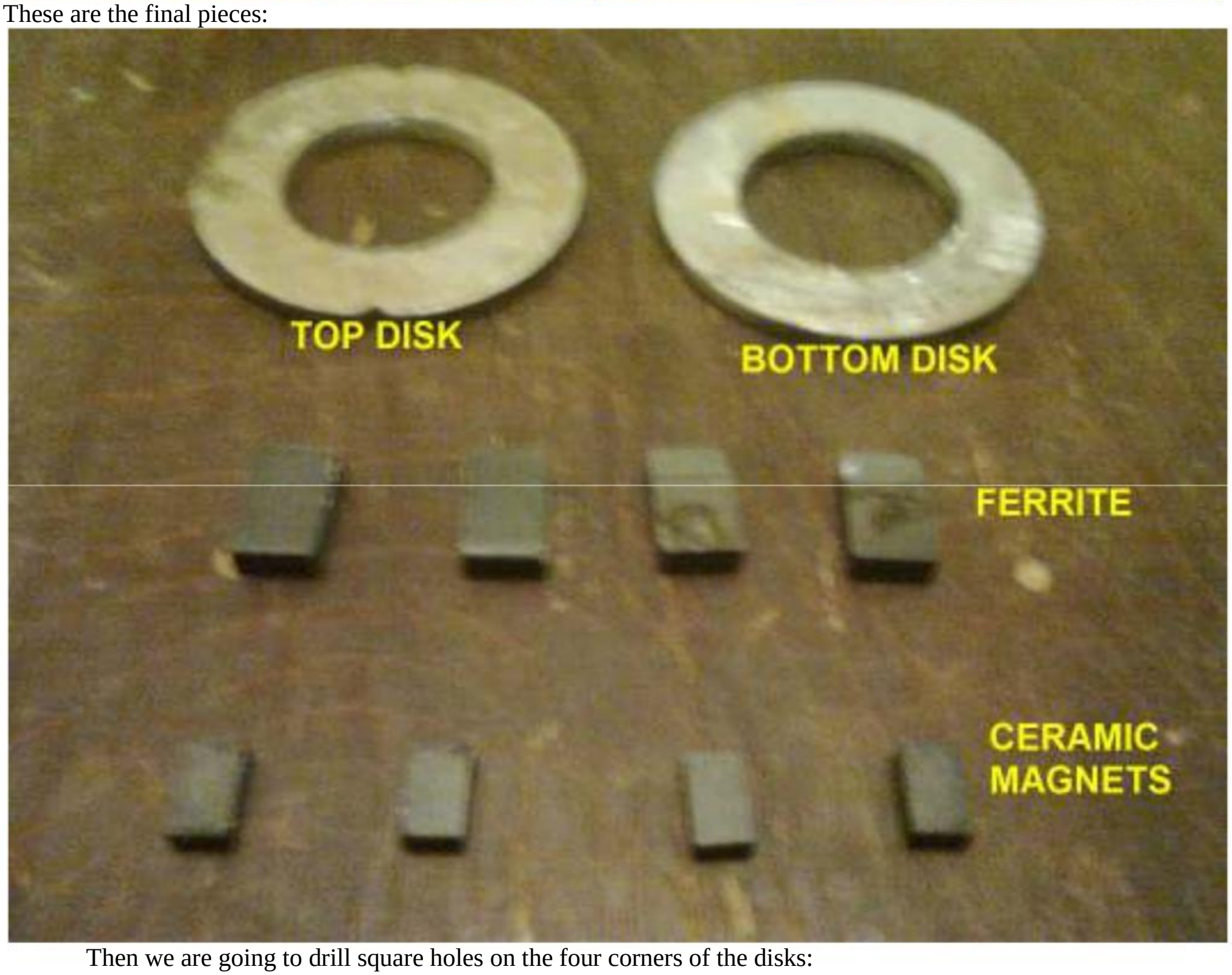




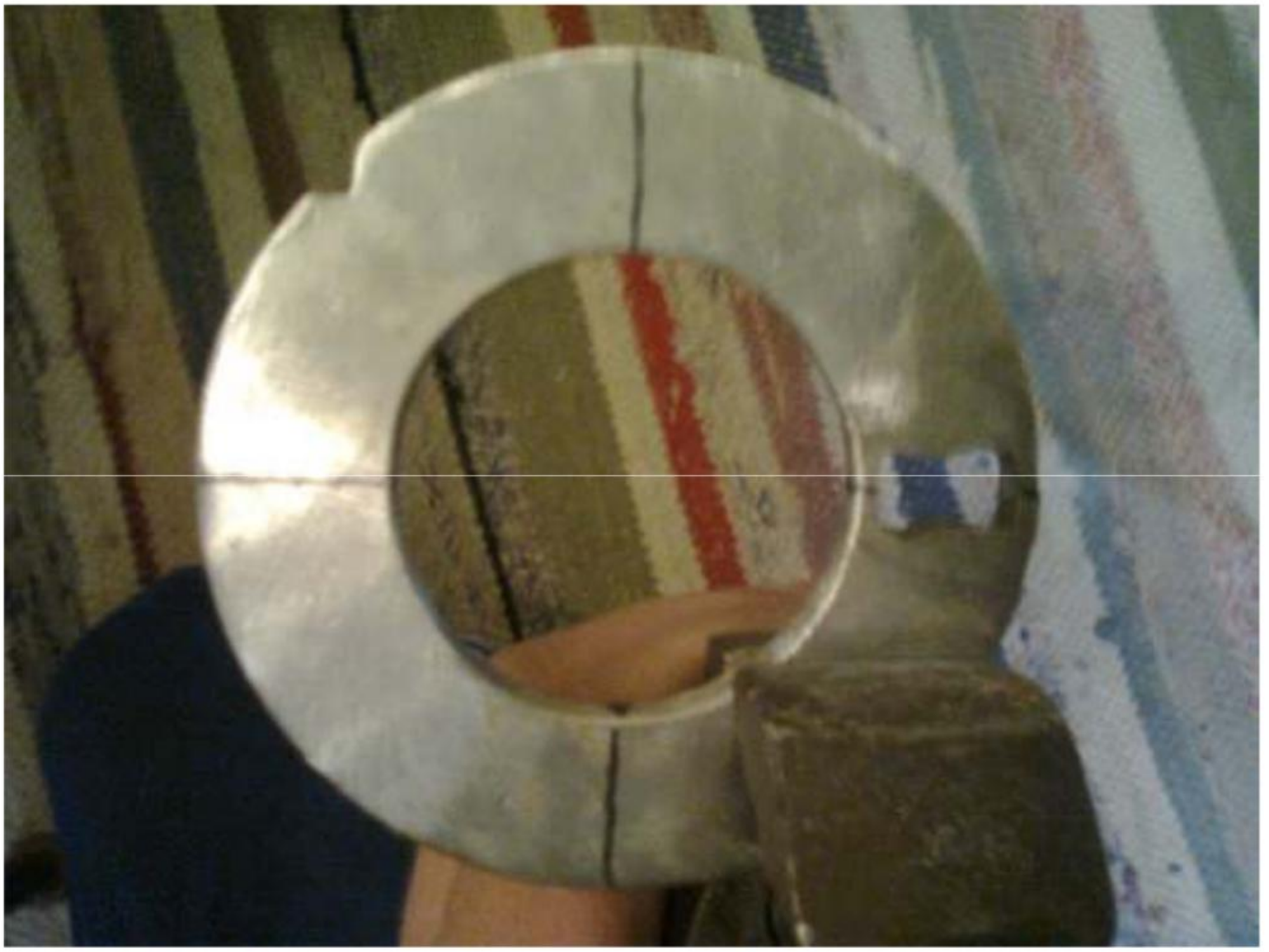
Then, we are going to need the four magnetic poles. I will use ferrite for them (from a small transformer):



These are the final pieces:



Then we are going to drill square holes on the four corners of the disks:





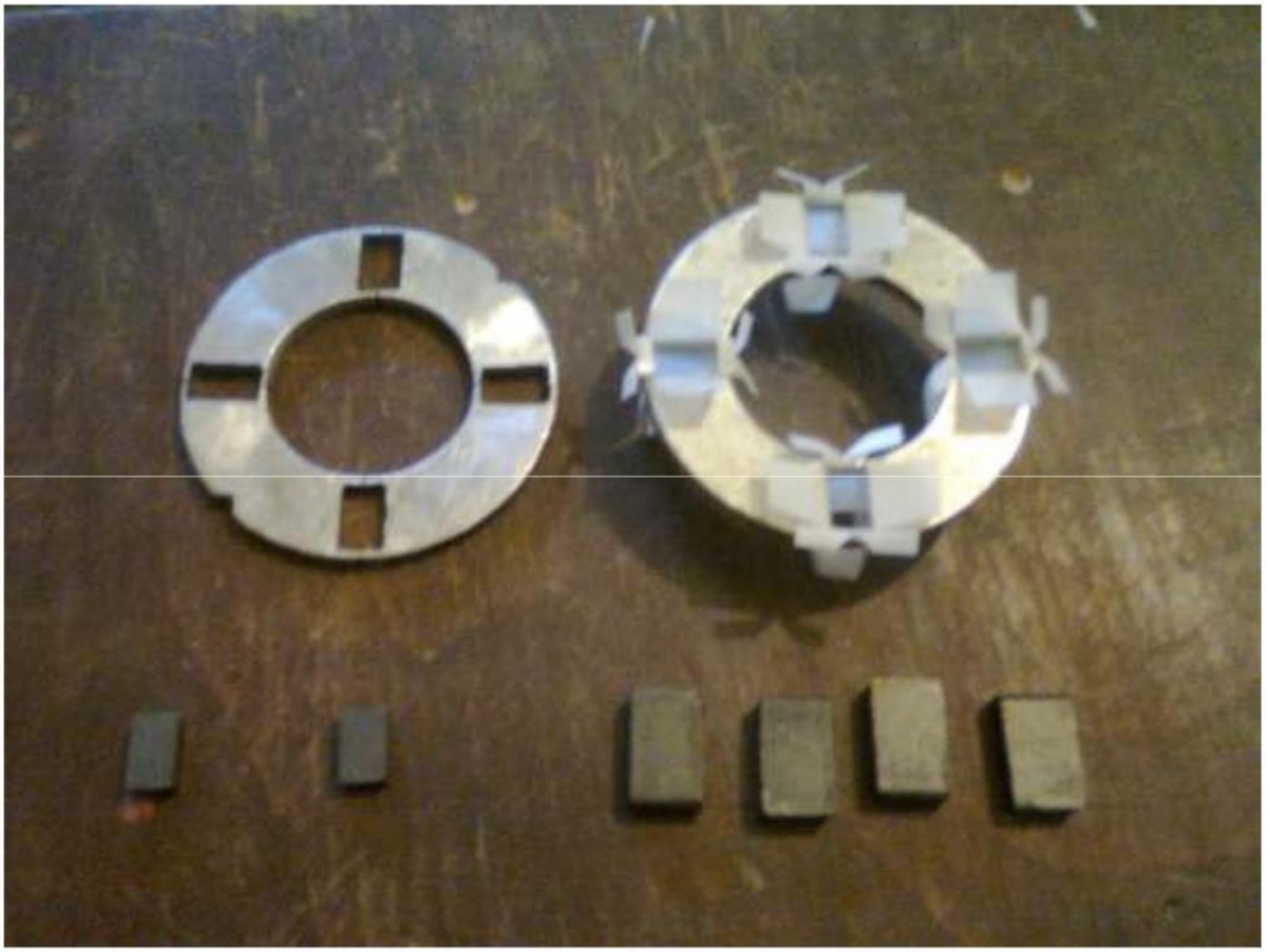
And in the end, now the disk look like this:

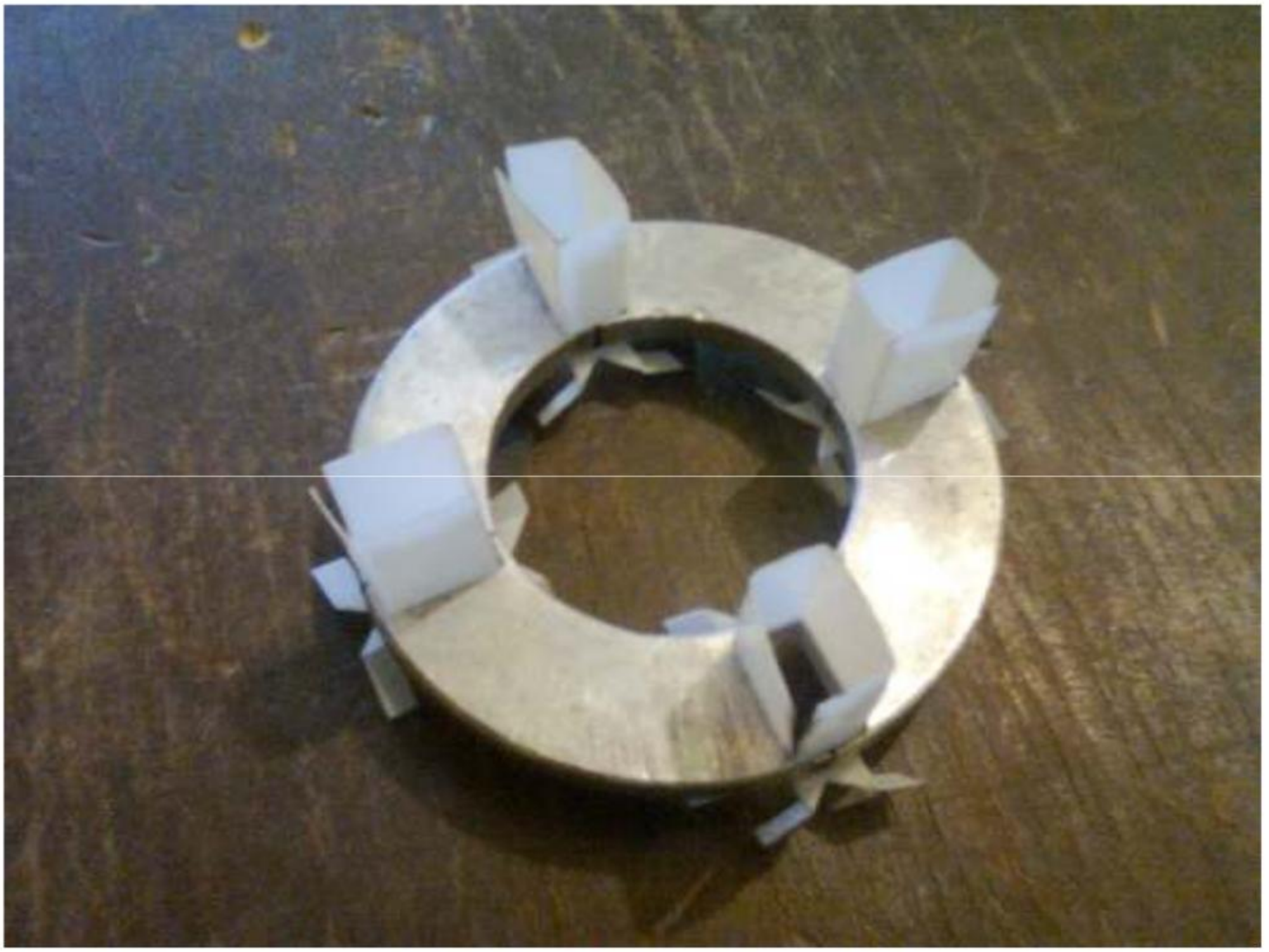


The holes are big enough so that the magnets nicely fit in:

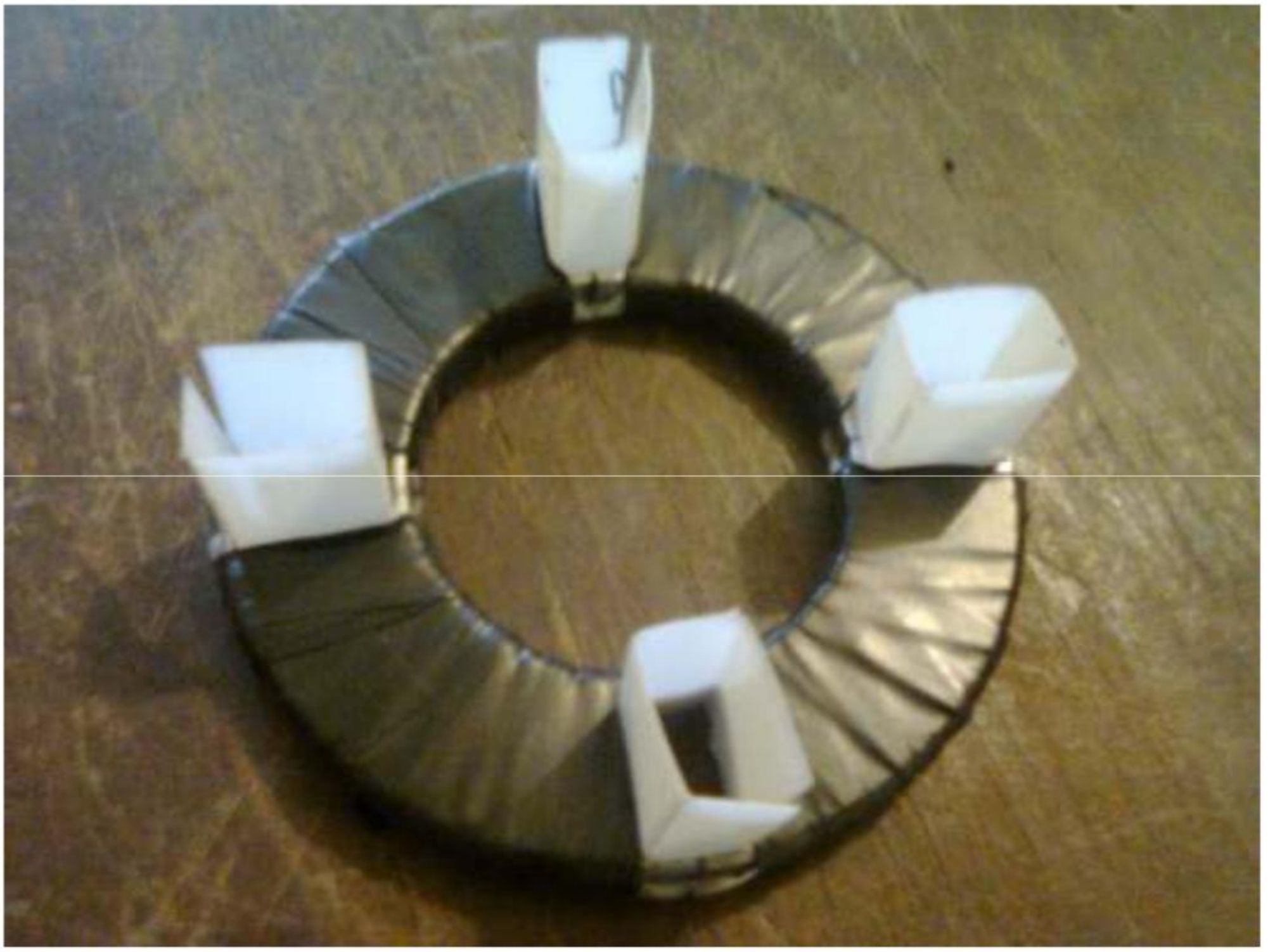


Then I used an insulation material to isolate the ferrite cores from the top and bottom cores:



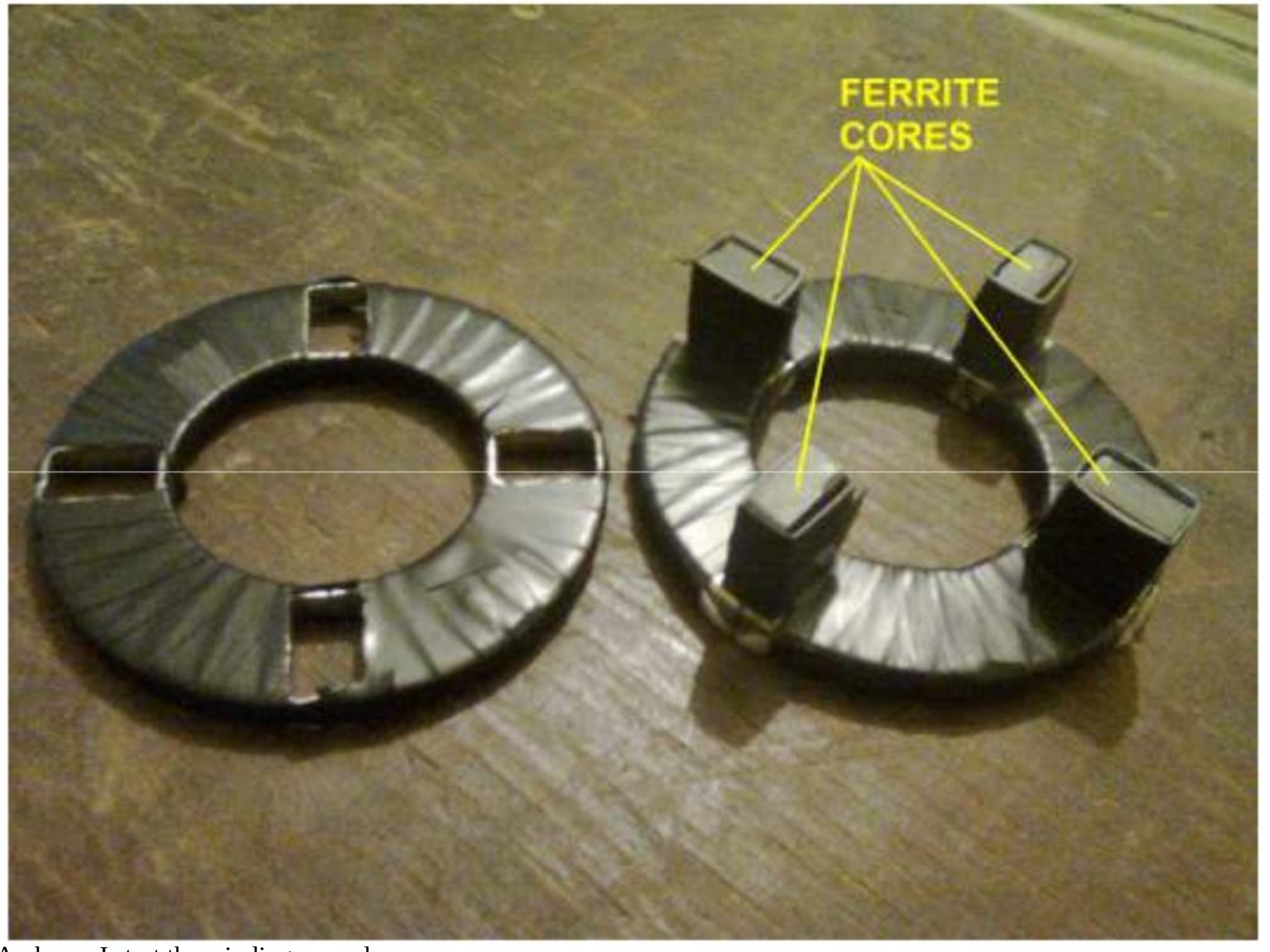


Electric tape in many layers, to insulate the core from the windings:





Now, the cores fit in nicely in their slots:



And now I start the winding procedure:



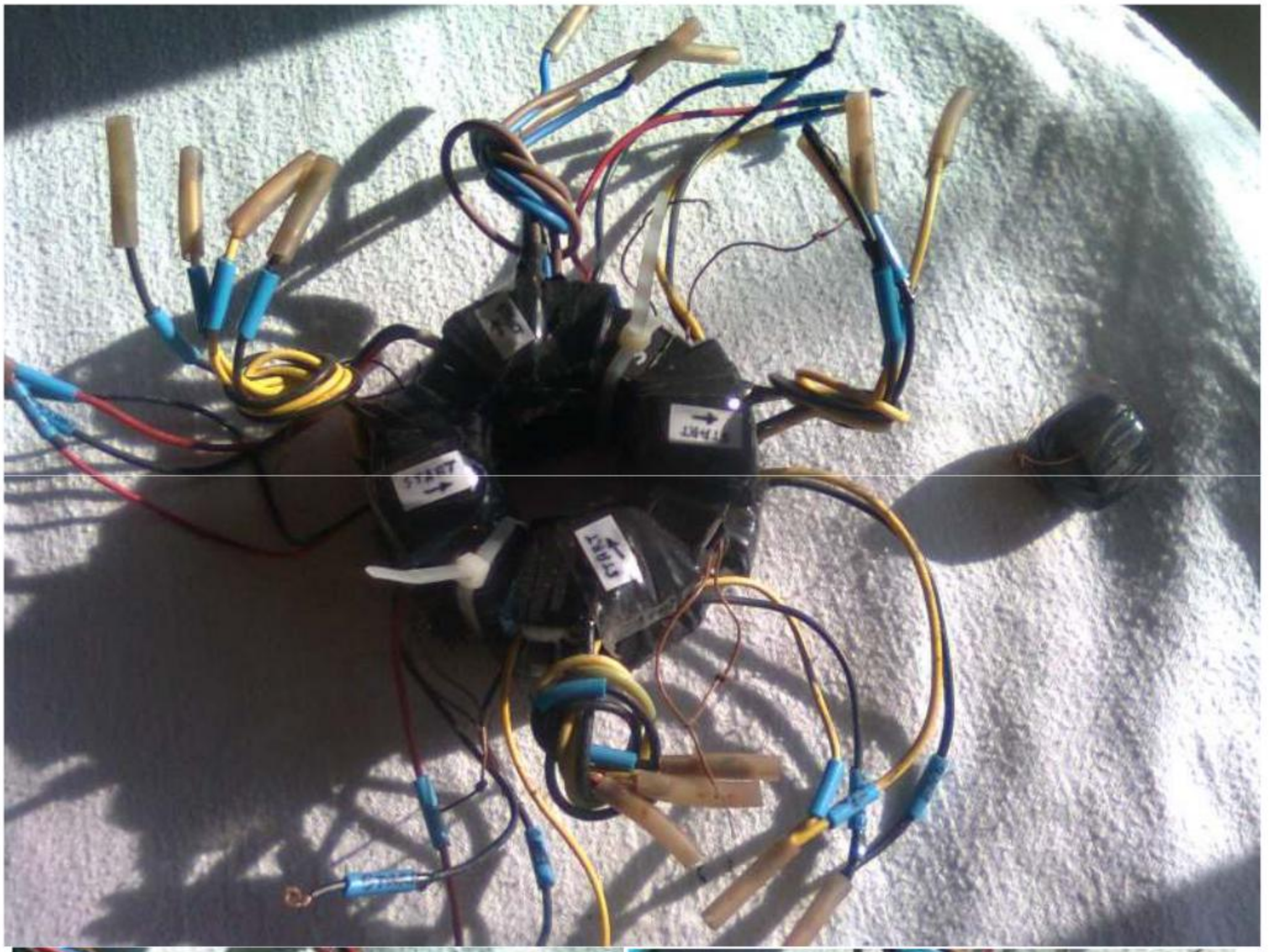
The end result:







And the final device:







Locking at this you could say:

-***Hey! This is not an accurate replica of Steven Mark TPU!***

-Why?

-You winded the top disk too!

-So?

-It’s not exactly the same, so how do you expect to work?

-Listen. Winding the top disk doesn’t make any difference what so ever. If it makes you feel better, then I promise you I won’t use the top disk coils in any connection or circuit. I won’t power them at all. Hell, I will even cut the wires forever if you make me mad. Ok?

-If they don’t serve any purpose, why did you wind them?

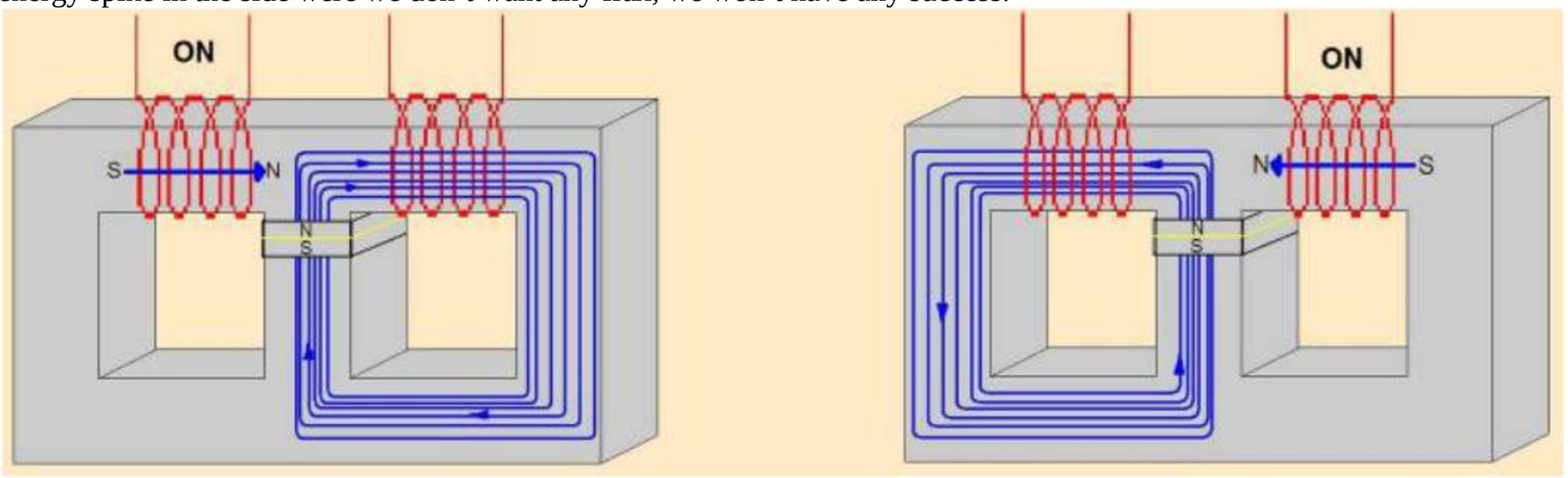
-I winded them for backup versions or setups. I will first run tests with only the bottom coils in all possible combinations to prove and backup my theories presented so far, completely discarding the top disk coils, and then after

I did all the combinations setups, I will go further by making modification to the first original prototype replica by winding the top core disk to. So I winded it in advance thinking at this. Does that make it clear?
-Yes. But the copper wire will still have a small effect by providing magnetic reluctance to these four circuits.
-That is true only if you have an outside magnetic field. But in this configuration you don't. All the magnetic field should be in theory situated inside the core disks.
-I have another question: What is that small black ball to the right of your TPU in the above pictures?
-It's not a ball. It's actually a cylinder made out of same material as the core disks. It has two coils winded 90° one from each other.
-What's it for?
-It's intended to be placed in the inner hole of the TPU.
-Why?
-To study the inductance in the cylinder from the fields created by the coils, and to compare efficiency between this cylinder and the top disk.
-The fields created by the coils? Wait...you don't make sense! **You are contradicting yourself!** You are insane! You said that there is no outside magnetic field, and that all the field should be situated inside the disks. How can you then expect this cylinder to have any effect on this type of operation?
-You begin to annoy me. You are right in this present setup. It won't have any effect. But you are forgetting that the top disk is detachable. When ***the top disk in not present, and the four ferrite cores removed, then will be left with a Tesla Transformer 381970*** that has a huge outside magnetic field.. Then I will use this winded cylinder to study the ***efficiency improvement*** between this setup and using a top core disk. Is this clear enough?
-Yes. But why did you wind this cylinder? To study this "efficiency improvement" you are speaking about doesn't justify the reason why you winded it. This efficiency improvement could be determined even without the windings on the inner cylinder, by studying the input power to output power ratios. of the bifilar coil you used on the core bottom disk. So what's the point in having windings on this cylinder?
-I want to study how much actual power I can extract from the outside field with this winded cylinder and compare this power with the power produces by the secondary coil on the core disk.
-Ok. But why did you wind two coils 90° apart one from the other?
-Because that is how the field is created in a Tesla Transformer 381970, when you power the complete transformer, not just half of it. When you feed a second 90° out of phase signal from the previous one to the other half of the Tesla transformer, the poles will always shift 90° to form a common ordinary rotating magnetic field that fascinated Tesla so much. Besides, I also winded the cylinder in order to ***study the actual phase shift*** created in the Tesla Transformer by connecting the two coils on this cylinder to a two channel oscilloscope and plot one signal against the other.
<<<<<<<<<<<<<<<<<<<<<<<<<<work in progress>>>>>>>>>>>>>>>>>>>>>>>>>

Further study on improving the final most likely construction of Steven TPU

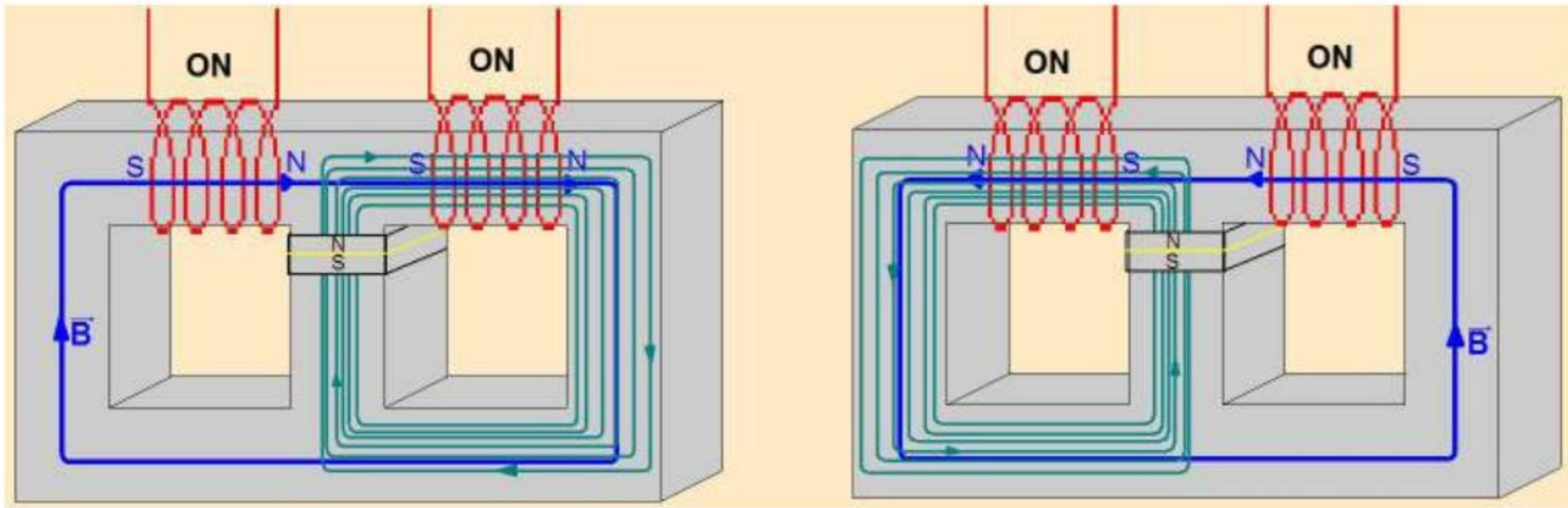
What we are dealing in the TPU, MEG and Flynn SSG is something that we can call a "magnet switcher". All these devices are exquisite embodiments of "magnet switchers". A magnet switcher is just a simple permanent magnet with a dynamic field. You just "kick it" a little bit with a little energy, that distorts it's field, and that distortion when It's made and when the magnetic field returns to its symmetrical toroidal form, you will find that it did a lot more work than your initial "kick" (spike signal).

If we try to replicate the MEG which is a simpler version of the TPU as I have shown, we will reach an interesting conclusion. We will observe that the field of the magnet doesn't switch! The field doesn't magically changes the magnetic flux path as we would expect! Why? Ok. If we try to change the flux to the other side by using only one energy spike in the side were we don't want any flux, we won't have any success:



This is not enough to switch the flux!

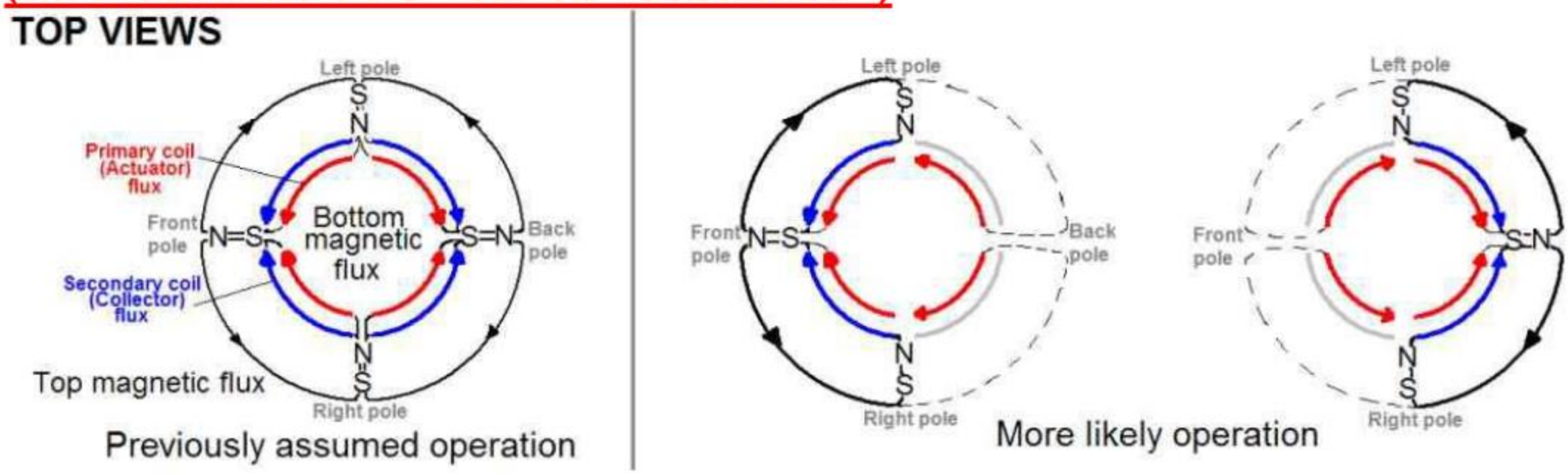
If we study this video (click link here) and look again at how Flynn SSG actuator coils work, it will become clear that we must **not just** energize the opposing flux that drives the magnet field away, but we must also drive the other coil in the opposite direction, so that we also provide an alternative path to the magnet field once it's repelled from one side:



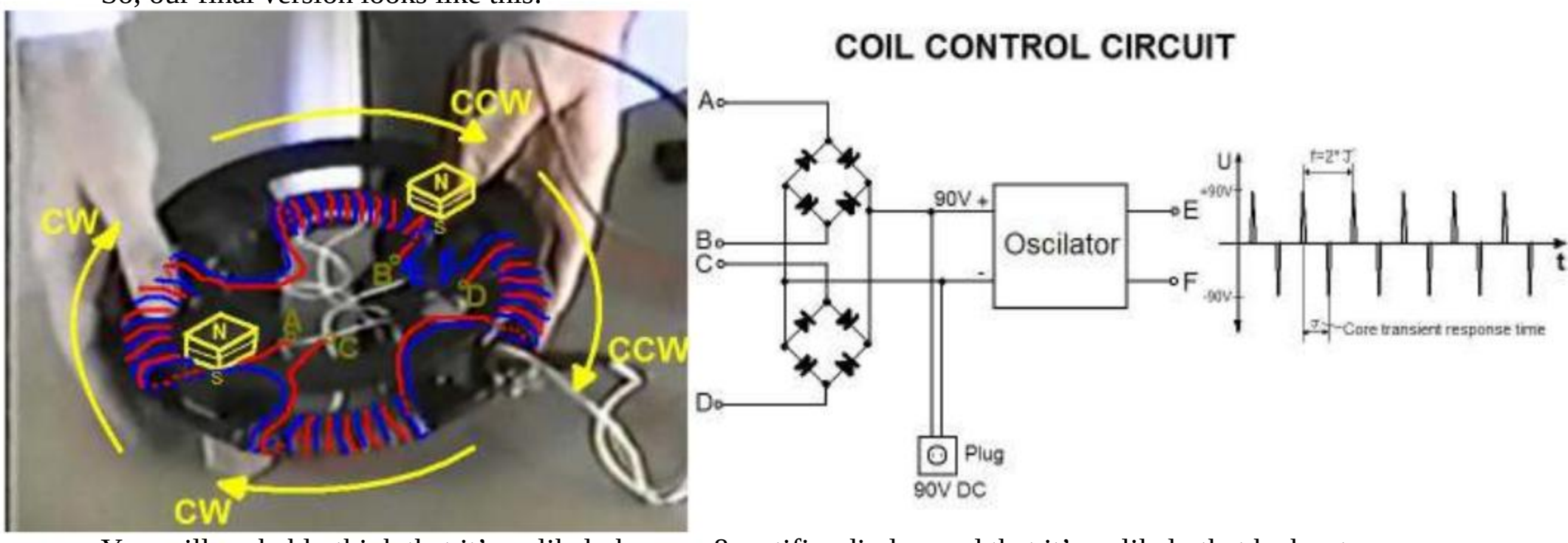
This will properly switch the magnetic flux!

This is an extremely important point and affects the suppositions of the internal wiring inside the TPU. How? It affects the magnetic flux vector orientation inside the coils. (There is a comment inserted on a rejected case TPU study)
This leads to:

TPU-MEG hybrid operation. An ultra-efficient "magnet switcher" (final-ultimate TPU version "debunked")



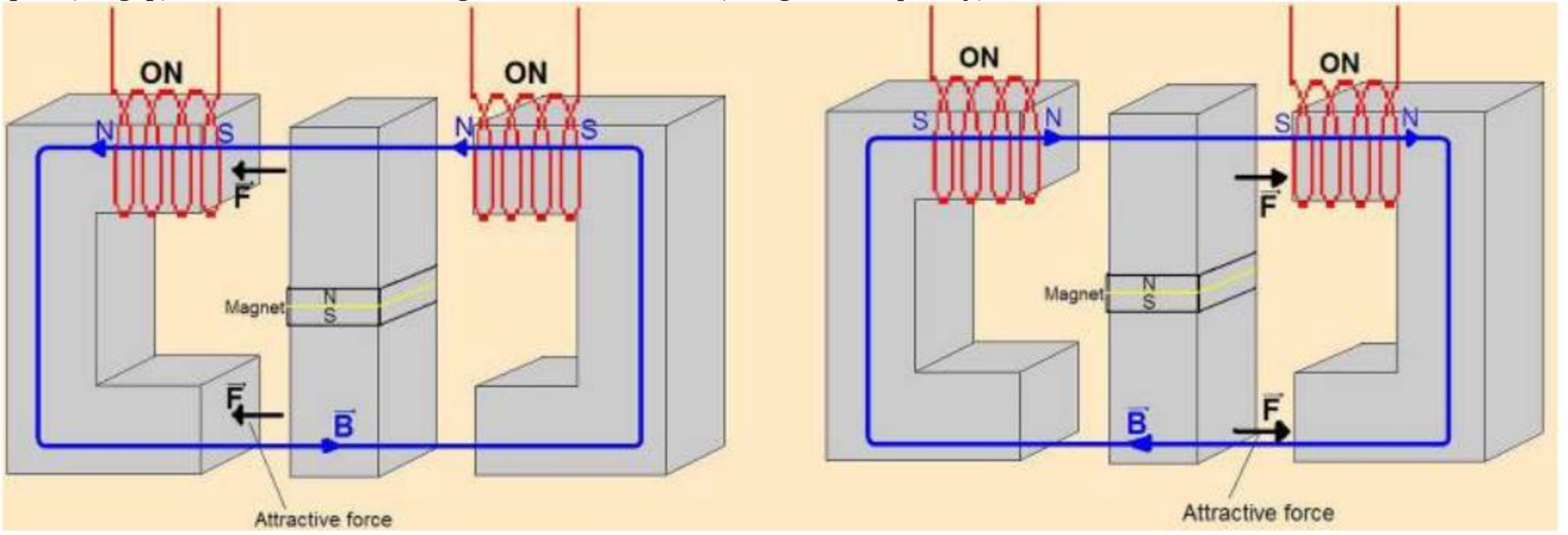
So, our final version looks like this:



You will probably think that it's unlikely he uses 8 rectifier diodes, and that it's unlikely that he has two secondaries, and I'm not saying that you are wrong, I'm just saying that if I had to bet on a working principle, I will bet

on this one. The Oscillator is a “both ways” square wave (bipolar square wave), a square wave with symmetrical shape that drives a “one shot” (sharp pulses) circuit. This will imply a some sort of a 4 transistors H bridge/half bridge one shot oscillator.
He can’t unite the two secondaries into one, because we are dealing with a bi-faze system (two 180° out of phase signals) that can’t be combined, because one will drive the other, and that will interfere with the switching operation. Therefore they can only be combined after the AC signals are rectified. This apparently contradicts Steven Mark affirmation that his devices only produce DC, but again, I’m not 100% convinced that I’m right, I’m like 97% (with this final version). Based on the limited information available on the Steven Mark TPU, I don’t think that I can further increase this certainty percentage. ***Again, If I had to gamble, this is my final bet!***

The problem with this all these setups is that the central component, the magnet, won’t work and won’t do work! It’s flux remains static, even with all this “Leedskalnin-magnet-flux-capacitor-magnetic-memory-type-effect” or however you want to call it. The permanent magnet magnetic field is in its natural toroidal form, unperturbed, undisturbed, unchanged by any amount of discharged impulse power applied to the actuator coils! **The magnet field is JUST attracted to one side, and then to the other. That’s all there is to this device!!!** We can clearly show in a visible fashion how a magnet can be attracted to one side in a transformer and then to the other by providing a space(air gap) between the left and right side of the MEG (using low frequency).



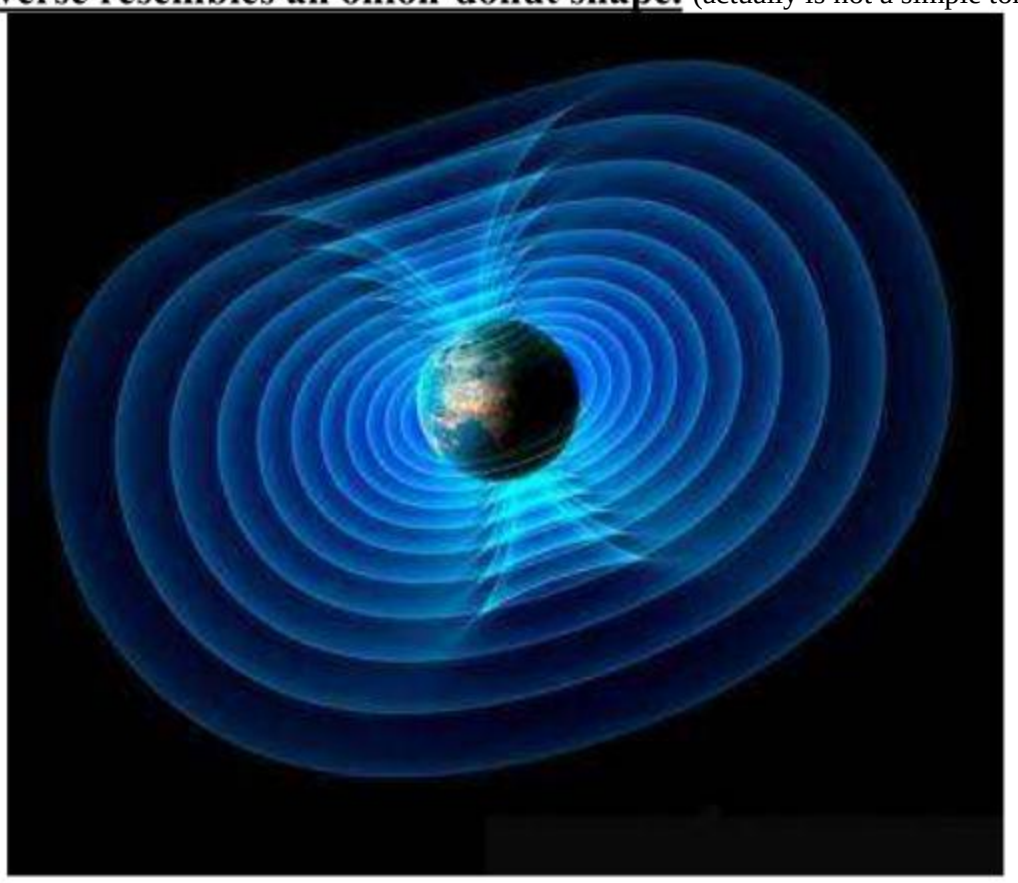
If the frequency is low enough, we can clearly see the central magnet “jumping” from the left to the right side. This apparent motion and “FLUX PATH SWITCHING” is the basis of all these solid state generators, but what is not apparent is that in reality NO WORK IS DONE BY THE MAGNET! It is just attracted! Nothing more! The magnetic flux lines from the magnet remains the same on the left as on the right side, just that on one instant they are enclosed in the core on one side, while on the other they are not. This might seem counter-intuitive but the point is that this “flux switching” is not work ! The only work done here, is the switching pulse!

In all the possible cases and configurations the magnetic field of the magnet/electromagnet can’t be deformed! That means that the magnetic field will always stay in a toroidal normal common shape, and it won’t magically reduce some of its flux density in one side, and then in the other. The magnet won’t do work! It won’t work! But why? That is the right question!

All this being considered, we can firmly say that **THE CENTRAL MAGNETS WE SEE IN THE TPU, MEG AND FLYNN SSG ARE NOT MAGNETS!!!**

When somebody tries to replicate these devices will certainly fail, because these magnets ARE NOT MAGNETS! if you could be brought in time face to face with these free energy technologies, and you happened to have similar identical brand new magnets with you, and you were allowed to change the magnets in these devices, with brand new ones, AT YOUR AMAZEMENT YOU WILL SEE THAT IT WON’T WORK ANYMORE! That is because these “magnets” that we see in TPU, MEG and Flynn SSG, what really powers them, ARE NOT REALLY MAGNETS! That is why nobody managed to replicate these relative simple technologies, and those who did, are not telling the whole truth!
You might say that this is insane! But it’s not! Ok, if these are not magnets, what the hell are they? They are something else and for the lack of other term let’s call them “**BROKEN MAGNETS**” (from the **“broken symmetry”** concept). They are not just simple magnets.

This is intensively described indirectly by Tom Bearden in his works and books when he talks about “broken symmetry”. **What is broken symmetry?** A broken symmetry the way I have come to understand it, (I might be wrong, but feel free to comment if you think better) is exactly what we are trying to achieve with one of our magnets. We say about a magnetic dipole that it has a ***broken symmetry*** when it’s normal natural toroidal shape is permanently or temporary distorted, changed or deformed. In other words, a simple magnet with a wired magnetic field (broken field). A broken symmetry is a deformation in the actual toroidal field of a dipole. I don’t know, and I don’t care about other types of dipoles. In our case we are only interested in magnetic dipoles (magnetic fields). Any magnetic dipole resembles the shape of the Created Universe, being the multilayered-nested-toroidal-fields. **In simple/brutal terms the entire created Universe resembles an onion-donut shape.** (actually is not a simple torus, is more like a double toroid model)



We can say that the Entire Universe is also finite and also infinite at the same time. This might seem absurd, confusing and contradictory, but the concept of finite and infinite are not antagonistic and are actually complementary. Infinite division/multiplication can only be defined in a finite space, and boundaries or finite space can only be defined if you have enclosed an infinity in it. The Entire Universe and the space-time in it, has a limit, a boundary, a shape, a certain finite size just like a layer of an onion. But the Entire Universe **is also infinite,** meaning that these layers go on forever like an infinite set of Matryoshka dolls. This is extensively discussed by Nassim Haramein in his Unified Field Theory model and is not the subject of this book. When we are able to create a temporary or permanent distortion/deformation in these multilayered-nested-toroidal fields, we say that we have broken them. We have broken the symmetry(toroid form) of the magnetic dipole.

This is what we must achieve if we want to successfully replicate the TPU, MEG or Flynn SSG. **We must find a way to brake the symmetry of these magnets!** “Attacking” them with an impulse, spike, kick or high-voltage-high-power spike won’t do it! The actuator field will just superimpose on the existing one, and it will not deform/distort/change the magnetic field in study.

So then, in order for a magnet to switch it’s flux and do work, it must be somehow “conditioned” to behave like this, and now we have reached a new country, and a new ground: Floyd Sparky Sweet Vacuum Triode Amplifier. Through the use of this technology we learn how to “condition” magnets to behave in the way we want, so that we use them in powering the TPU, MEG and Flynn SSG by actually really switching their magnetic circuit path.

---MAKING MUSIC---

OUR INSTRUMENT: THE MAGNETIC FIELD

Floyd Sparky Sweet Vacuum Triode Amplifier



UNLIKE OTHERS THINK about Sweet VTA, I don't believe it to have 3 coils, or 3 coils on all axes, (Ashley Gray version).

If we listen carefully at what Sparky explains to Bedini, we have to first hit the magnet with a certain unique frequency in order to bring it into MAGNETIC RESONANCE. When I first heard this, a light bulb went on in my head, having established a solid, firmly ground and connection between TPU, MEG, Flynn SSG and the other unrelated side of Kapanadze and Smith device!!! Magnetic resonance is what all these technologies have in common. Having all this is mind, this means that the TPU, MEG and Flynn SSG are more exquisite designs of magnetic resonance embodiments, where Kapanadze and Smith device have a more relative "simple" design. To stick to the basics, Smith device is like Kapanadze just that it doesn't have a core, (or Kapanadze is similar to Smith device, but it addition it has a core).

This means that all these devices MEG, TPU and Flynn SSG are exquisite embodiments **NOT of magnet switcher** but of this "magnetic resonance" effect. Magnetic resonance IS THE KEY TO FREE ENERGY.

What on God name is this "Magnetic resonance" ??? I don't remember having learned it in school, high school nor college. The only thing it comes to mind is resonance in LC circuits and resonance energy transfer in air core transformers(Tesla Coil). So what is this "magnetic resonance" if what I know about resonance is actually "electric resonance"? Having so little research about it, we have to cherish the little we have. We learn that this is very old technology! Even a century old! Then why the hell don't we find it in text books? That is a good question.

In replicating the VTA, I have come to realize something astonishing, that the magnetic field of a magnet or a coil starts to vibrate at a specific frequency, just like Sparky is indeed pointing out. I stand my ground and reject Floyd Sweet explanation of WHY AND HOW HIS DEVICE WORKS. First thing that I find myself in contradiction with him, is the so called **"magnetic domains"** and "nuclei of the atoms". I think that's wrong and don't apply to this case. First of all "magnetic domains" is nothing more than just a theory in explaining the magnetism of Ferro-magnetic metals. We imagine that a piece of metal is constituted from very little tiny magnets, separated into "domains" which are imaginary boundaries between these regions in the metal, which have a certain residual random oriented magnetism. Then we believe that when we add up all these magnetic field orientation vectors of the tiny regions in the metal, they add up to 0, and thus we say that the metal is NOT MAGNETIZED. If we put this metal in a strong magnetic field, most of these regions (domains) (consider them like countries) will orient themselves according to this "wind" according to this field direction. When we shut down the external field, we see that some of these domains remained oriented in the direction of the field, thus we say the metal HAS BECAME MAGNETIZED.

Although I don't reject this conventional theory of magnetism, we must admit that is JUST A THEORY. I'm not saying that is wrong, and I'm not saying that is correct either. I'm saying that IT HELPS US in understanding our world, universe and magnetism. Its helps, that's all it does. But using it to explain the VTA I think we are overstretching a little bit. I think it's wrong to say that these domains have a resonant frequency. More likely the entire structure has a resonant frequency (all the domains together, and not by themselves).

Second of all the resonant frequency of the magnet, which in Sweet case is around 12,5Hz is not INSIDE THE MAGNET but is OUTSIDE OF IT! It's not the magnetic resonance inside the magnet, IT'S THE MAGNETIC RESONANCE OUTSIDE THE MAGNET. **IS THE MAGNETIC RESONANCE OF THE FIELD!!!**

This is what we have to understand if we truly want to comprehend the alien concept of "magnetic resonance". If you have ever watched "Mythbusters" TV show, they have an episode on testing the myth of "Tesla earthquake machine". In that episode(see it here) when they are planning for large scale experiment with a bridge, they suddenly realize the seriousness and gravity of this situation(click link)



A partial transcript of the experiment:

"All of a sudden, this myth is giving Adam and Jamie, a good vibe, and it's not the traffic because that's on a completely separate bridge.



Adam: It totally feels like the hole structure is ringing to that Hertz. [...]

But the best is yet to come. After some more tuning, they find a sweet spot (sub-harmonic a.n.)

Jamie: Oh my God. It feels like a big semi-trailer truck is rolling right by us right now!

Adam: And that's only 6 pounds of weight moving 25 times per second!

Jamie: It actually makes me a little concerned, believe it or not.

Adam: I'm totally stunned come out here and find this thing vibrating at the correct frequency to be felt hundreds of feet away from the source. That is totally amazing. Did not expected that!

Jamie: We were ramming the same weight in the same kind of amplitude of vibration through the hole range of frequencies. And yeah, you know there is a little vibration, then I ***hit that one spot***, and all of a sudden is like hold on, *this is different! Something different was going on with that exact frequency*. And, as a result of that specific frequency, *that specific tone that we are getting, this entire bridge is vibrating.*

Jamie: Yeah, you can see it. It's over a hundred feet away.

Adam: Dude, that's six pounds!

Jamie: I now!

Adam: That's...I mean...I'm a little spooked!

It's official. We have two spooked Mythbusters and some unexpected results on our hands."

(Mythbusters "*Earthquake machine" episode 60 in series/71 overall, season 2006, air date: August 30*)

This is after they see the destructive effect resonance has on a long iron bar in their small scale experiment in the shop(link here).



I believe that an extremely eloquent example in this case is the collapse of Tacoma Bridge in 1940.



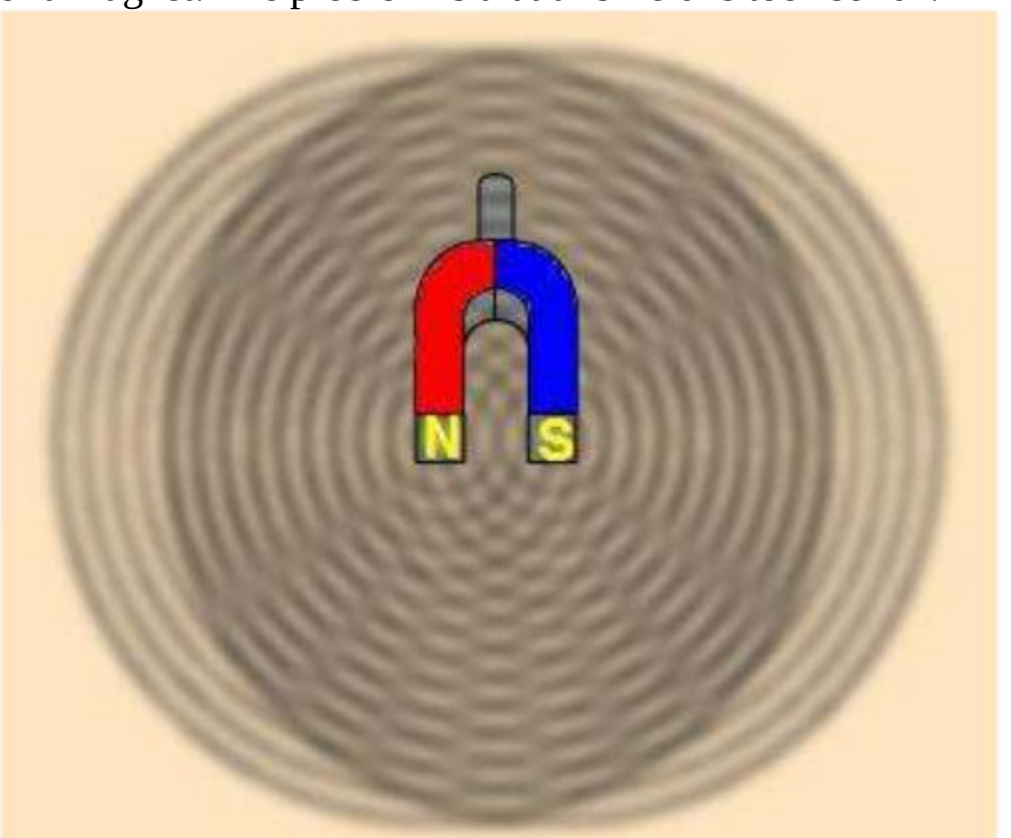
It was one of the longest suspension bridges in the world. Just after four months since opening, on 7 November 1940 at 10:00, the bridge enter in self-oscillations which were maintained by a consistent wind of 42 mph.

The self-oscillations were established at the fundamental resonant frequency of the bridge in traversal direction (5 seconds period - 0.2Hz). Because it couldn’t vibrate longitudinally, up and down, it enter in vibration in a torsional mode.

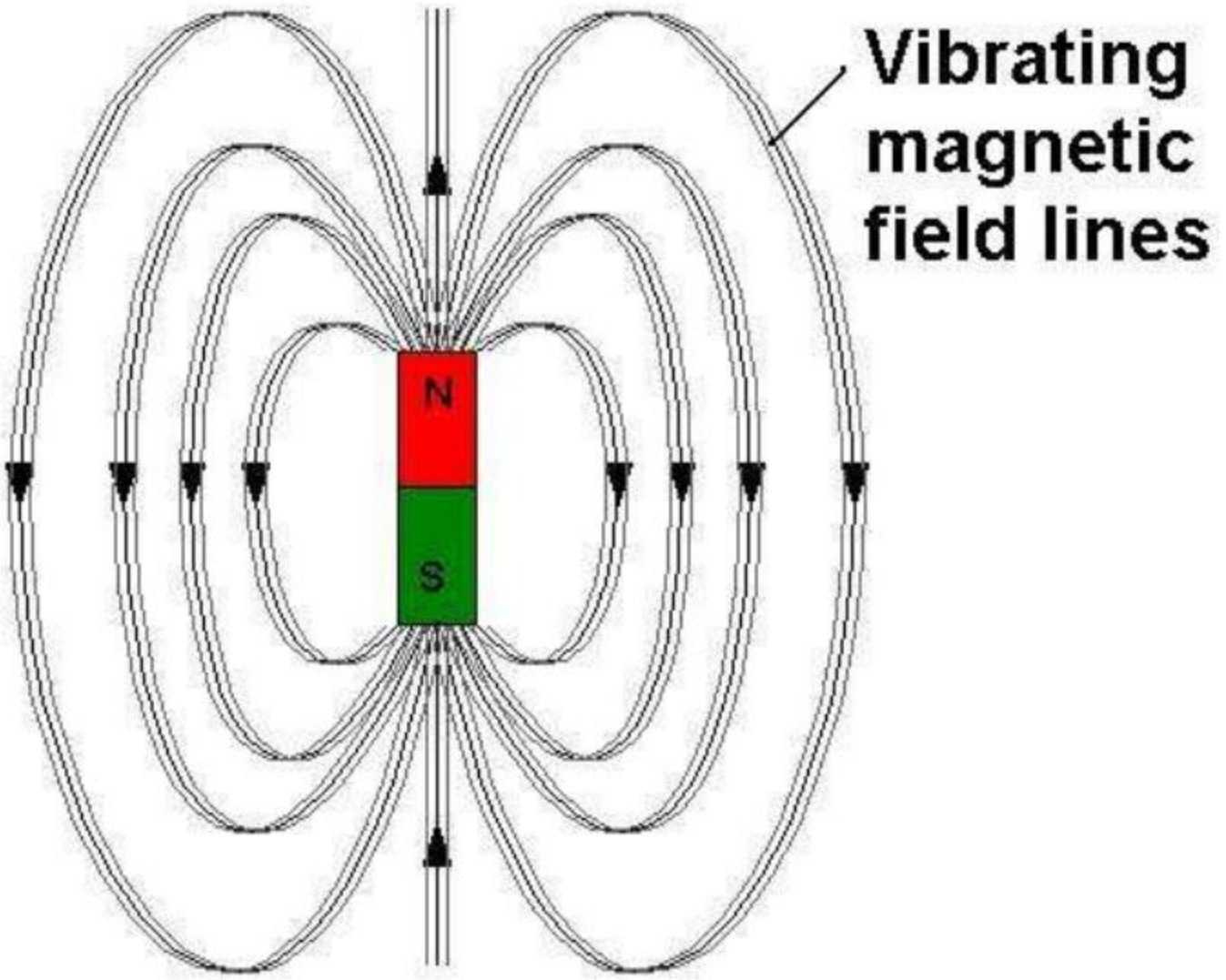




The lesson we have to take from this is that all mass in the universe has a resonant frequency. Every object has a resonant frequency; either is a string, a glass, an iron bar or a bridge. This might be mind-boggling but the magnetic field of a coil or a magnet is no exception! This too has a resonant frequency. This means that the **MAGNETIC FIELD** in a toroidal form from a coil or a magnet **BEHAVES LIKE A MASS,** meaning it will oscillate back and forth, it will vibrate if you hit it with a certain beat frequency. The idea that a magnetic field has a mass, behaving like an “invisible object” is astonishing, and further give strength to the failed experiments in switching the field of a magnet. The problem is that this field is too “solid”.



A more accurate visual representation of **MAGNETIC RESONANCE**

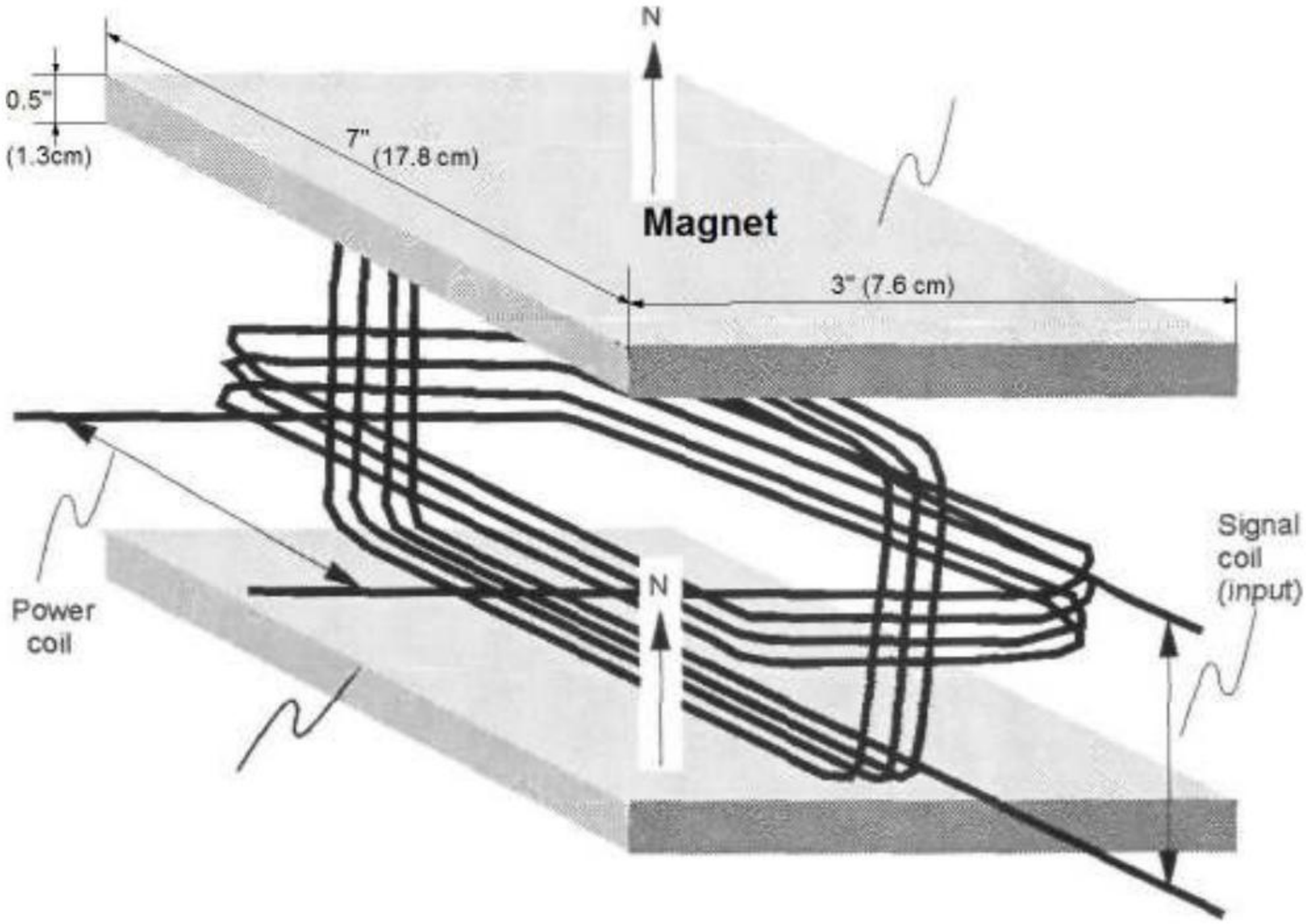


The idea that arises is that somehow, by bringing the mass of a magnetic field in a “mechanical” resonant vibration oscillations it will somehow “fluidizes” the field, making it more susceptible to “poking” or “kicking it”. If you like, let’s imagine the magnetic field lines of a magnet made of glass (good choice, transparent - invisible). Then if we bring the magnetic field in “mechanical” resonance then these magnetic field lines are now transformed in to jelly. If we pinch the jelly with a pencil, the response of it will cause more energy out than we used to pinch it with a pencil. Then this “jelly type magnetic field” will be more likely to be distorted by a small spike like in Kapanadze, Smith device, Steven TPU, Bearden MEG, Flynn SSG, Sweet VTA, generating a lot more energy than we have used to “pinch it”. At least this is one way of visualizing.

Any system attains maximum amplitude only when it is allowed to vibrate at its natural frequency. It’s like when a heavy truck passes near your house or apartment and the windows start to vibrate. If the oscillations are high in amplitude, and the frequency is exactly on the resonant frequency of the medium, in our case the glass window, and we bring the window to a violent mechanical oscillation stress, then if we just touch the glass with our finger, it will immediately break. The same must be the case with our magnet. **First step towards braking a magnet symmetrical field is by bringing it in MAGNETIC RESONANCE!**

The most likely operation principle of Floyd Sparky Sweet VTA

An **actual exact authentic real representation** of the VTA is made by Tom Bearden in his book “Energy from the vacuum - concepts and principles” page 384 figure 6.5 entitled : “Sweet vacuum triode amplifier (VTA) construction” gives extreme clarity and further evidence to support this most likely operation principle:

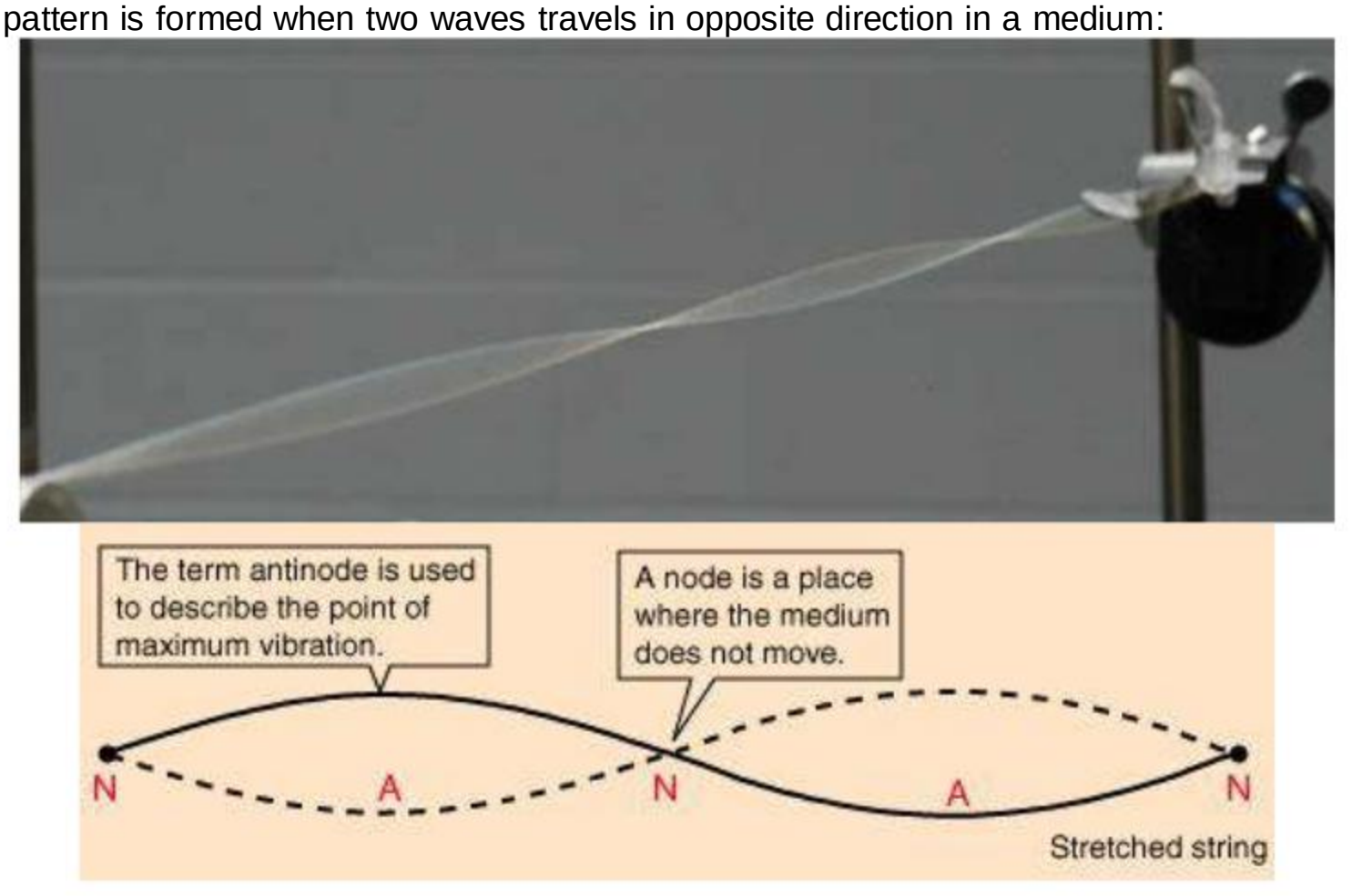


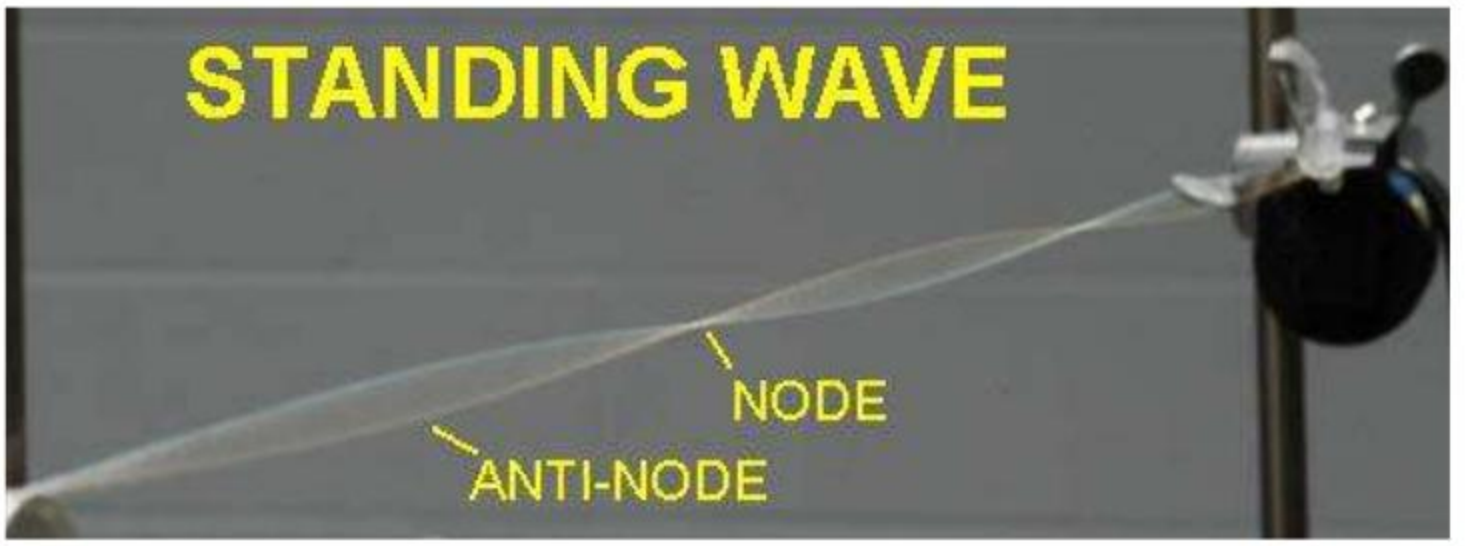
Ask yourself, if we were able to extract the energy from these vibrations in the magnetic field of the magnet, it should be in theory a lot more than we used to start them. So why should we use two magnets in an overunity device, like we see in the Sweet VTA? What's the point in using two magnets?

The most likely operation principle of the VTA is accomplished by approaching two identical magnets close together, then we make their magnetic fields vibrate, so that between them, (in the air gap between them) a

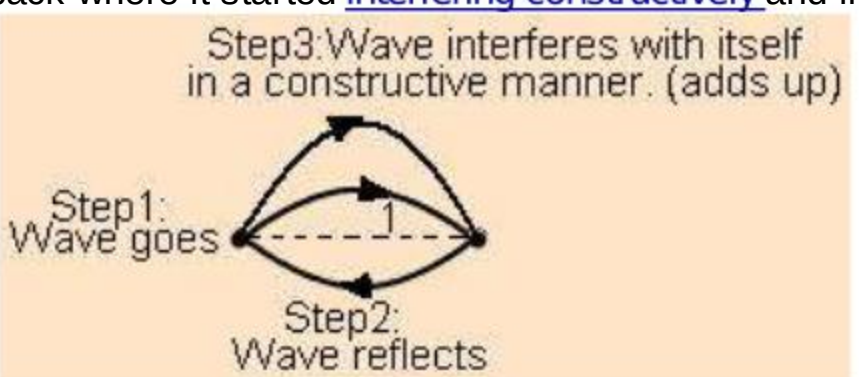
STANDING WAVE IS FORMED.

A standing wave is a wave that remains in a constant position characterized by nodes and anti-nodes. In a node the wave remains static, and in the anti-nodes the wave reaches its maximum amplitude. A standing wave (example link here) pattern is formed when two waves travels in opposite direction in a medium:



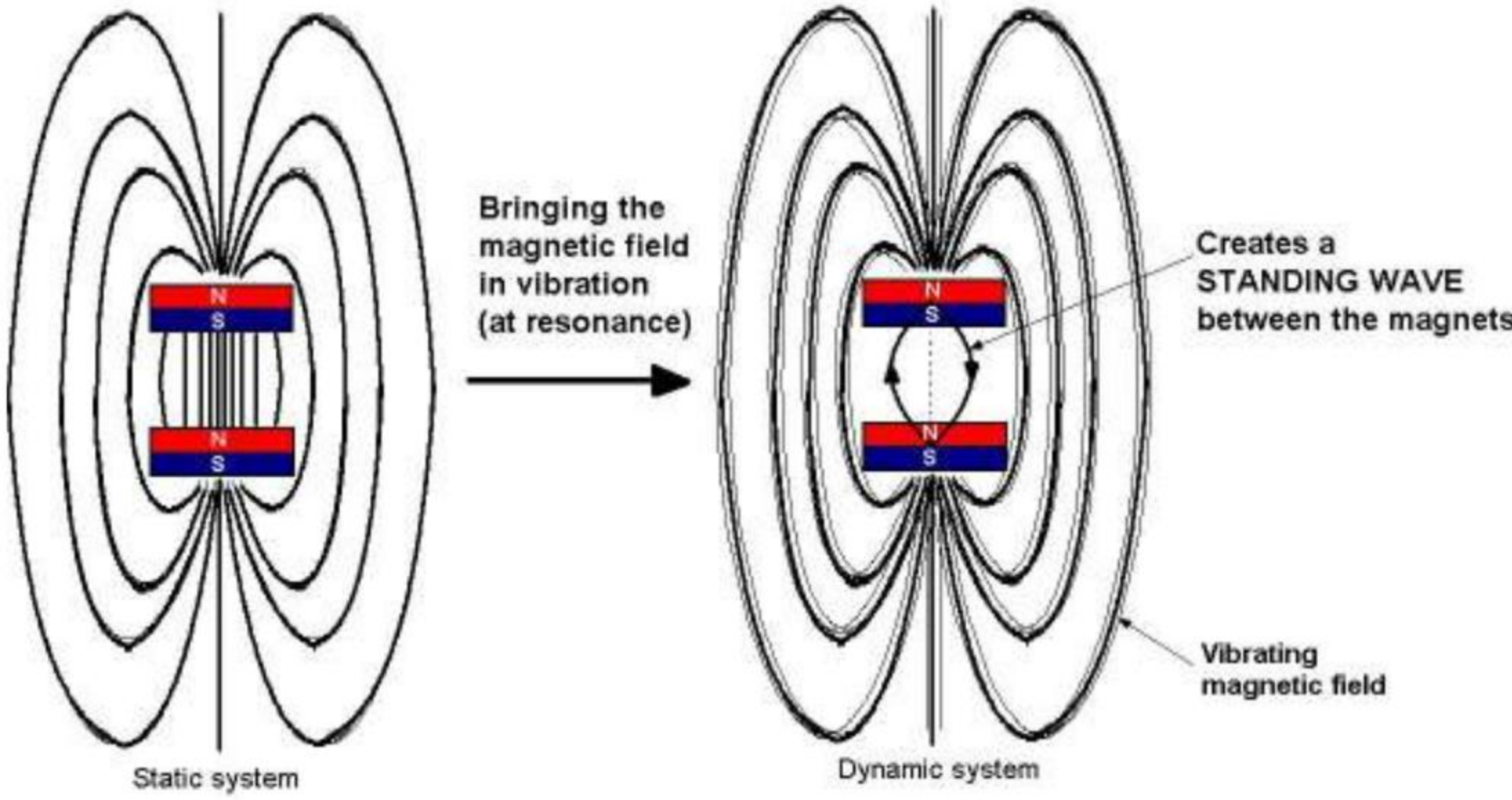


In a simpler case, we can have only one wave creating a standing waves interference pattern with itself, if it's reflected at one end, and then it goes back where it started interfering constructively and in phase with itself:



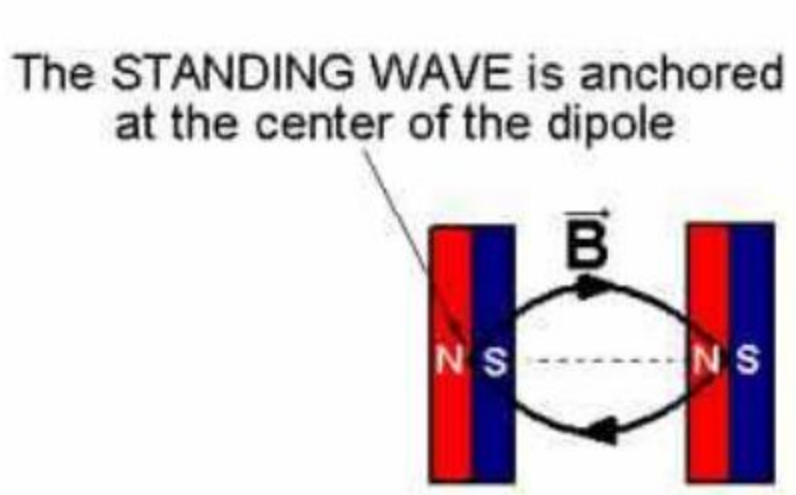
The point here is to bring the magnetic field lines B in a "string" like fashion resonance.

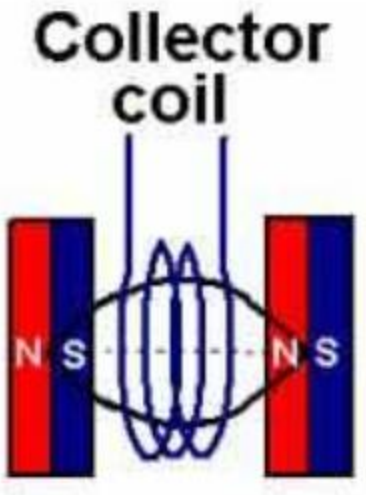
A single frequency wave in a string takes the form of a traveling sinewave. The reflected wave from the end of the string undergoes a 180° phase change upon reflection, and adds to the incoming wave. The constructive interference leads to a standing wave.

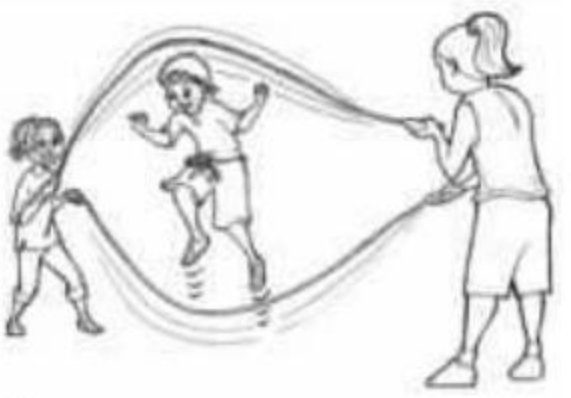


Actually there are many standing waves created between the magnets, and their number equals the number of field lines coming out of the N pole into the S pole, but for simplicity reasons we are representing only one. Actually these standing sine-waves are vortexes in 3D space as any other sine-waves out there. In the entire universe there is no sine-wave pattern in existence! A sine-wave is actually a 2D representation of a 3D entity. *This type of distortion is what happens when you try to visualize the dynamics of Creation on the surface screen of an oscilloscope.* The Universe just doesn't work that way. Sadly for many people, what I've just said won't make much sense. So disregard what I have just said, because it will probably be confusing and actually is not very relevant in our case (in any other case is very important), it's just some food for thought.

This standing wave acts like a moving magnet between the fixed magnets.

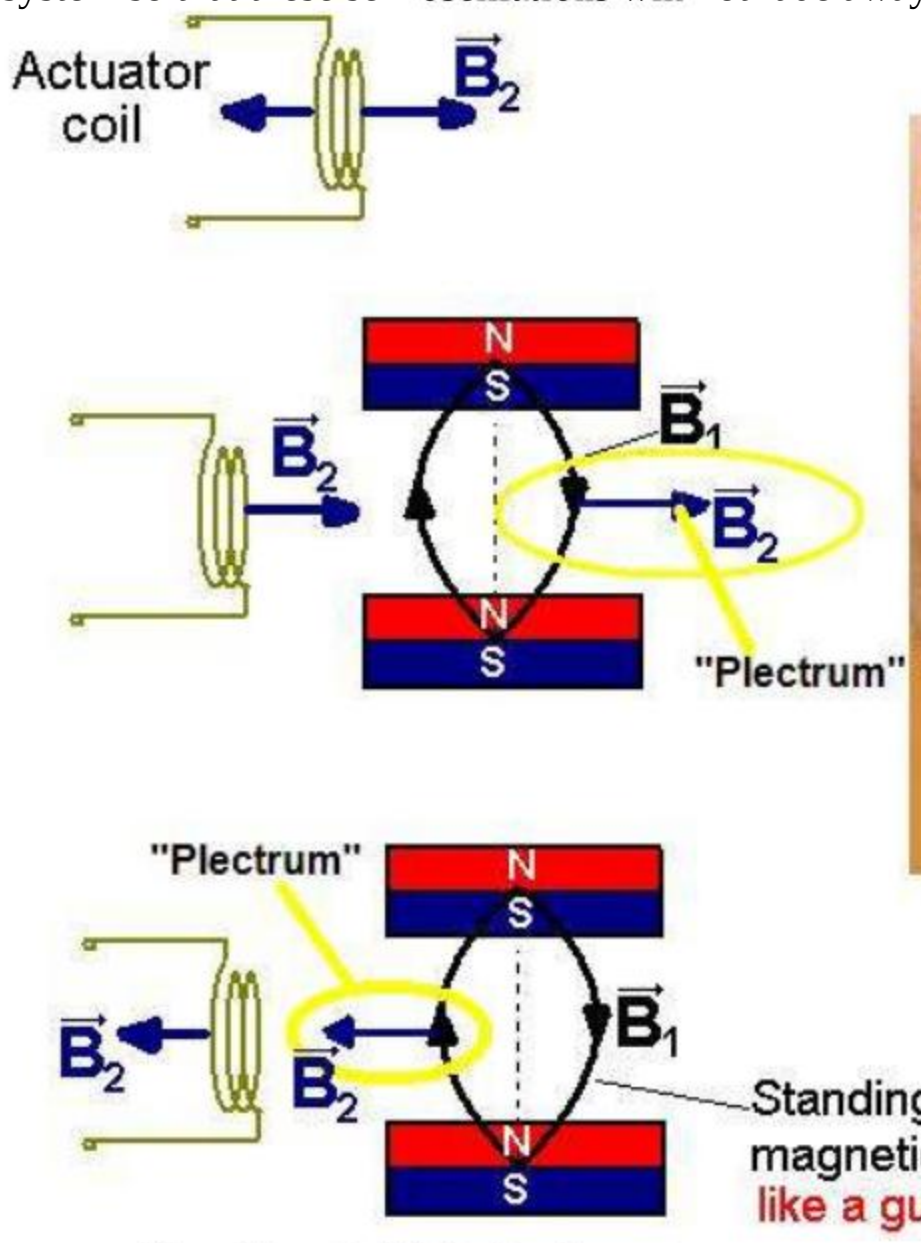


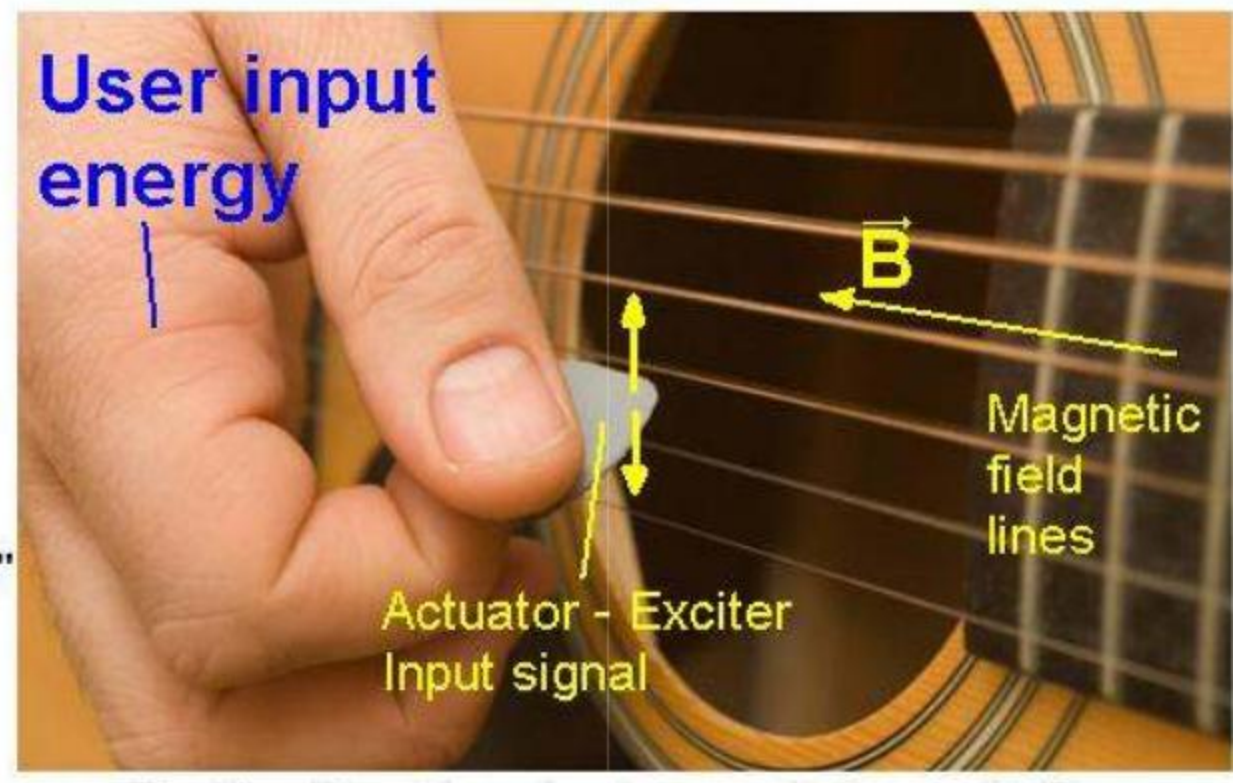




When you look at this first you might notice that the collector coil will not "collect" anything. I agree with you. It is a conceptual representation of a collector coil. Actually nothing will be induced in the coil, even if we have the standing wave formed, kicking and screaming. The reason why, is because $d\Phi / dt$ will not change in our surface area delimited by the coil. In other words if the flux is changing only inside the coil, nothing will be induced. According to the law of Electromagnetic induction, and not to upset Lord Faraday, the flux that cuts through a area of our collector coil, must change over time, so if we encompass all the motion of the wave within our coil, noting will be changing over time per total. The net change will be zero. It is like I have a let's say a 50cm diameter coil, and an extremely powerful 10 cm magnet inside it. Then I rotate the magnet, or wave it, or oscillate it, or vibrate it or whatever motion you like, as long as you're not flipping it, and you do this ONLY INSIDE the coil, nothing will happen. Nothing will be induced in the coil. So the magnetic flux must cut through the surface area of a turn in our coil, or the flux must *change in value or intensity* over time in our surface area, for a current to be induced in the collector coil. The solution for this problem even if it's not very obvious, it's quite simple. All we need to do is to segment the collector coil in two halves or more. We need to discriminate or separate the circular motion of the standing wave. If you can imagine a cross-section plane between the magnets and parallel with them, then the standing wave will project upon this plane a circle. So by segmenting this circle in at least two sectors that each will become the surface of area of a turn in our new collector coil design.

Another thing you can say about the above picture is that when you stress the oscillations by a load they will eventually die out and fade away. And I say to you, you are right and correct. I agree with you. But what we can do, is add another coil, perpendicular to the collector coil, which purpose will be to continuously excite or add energy to the system so that these self-oscillations will not fade away so easily under load or "stressed".

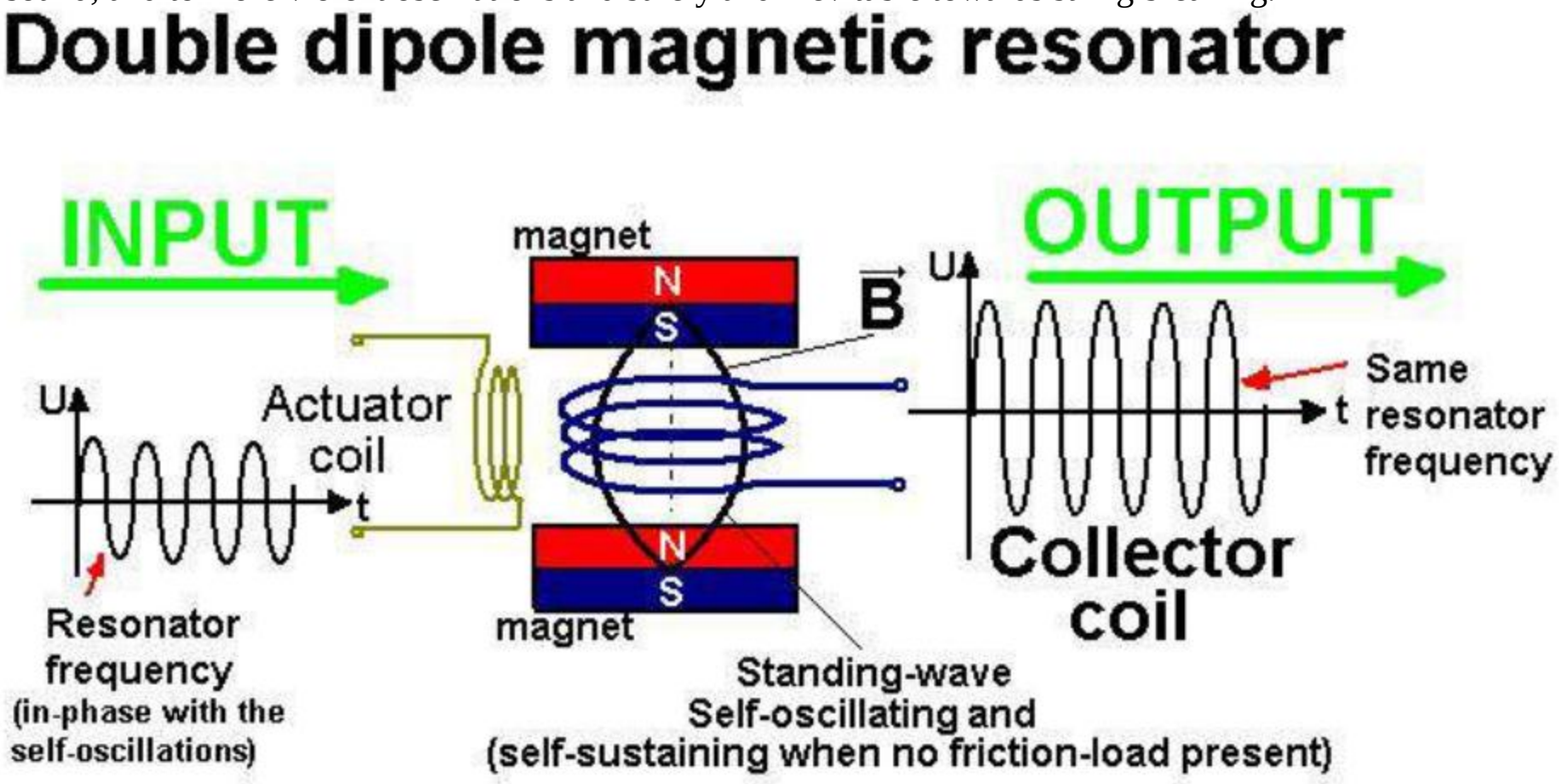


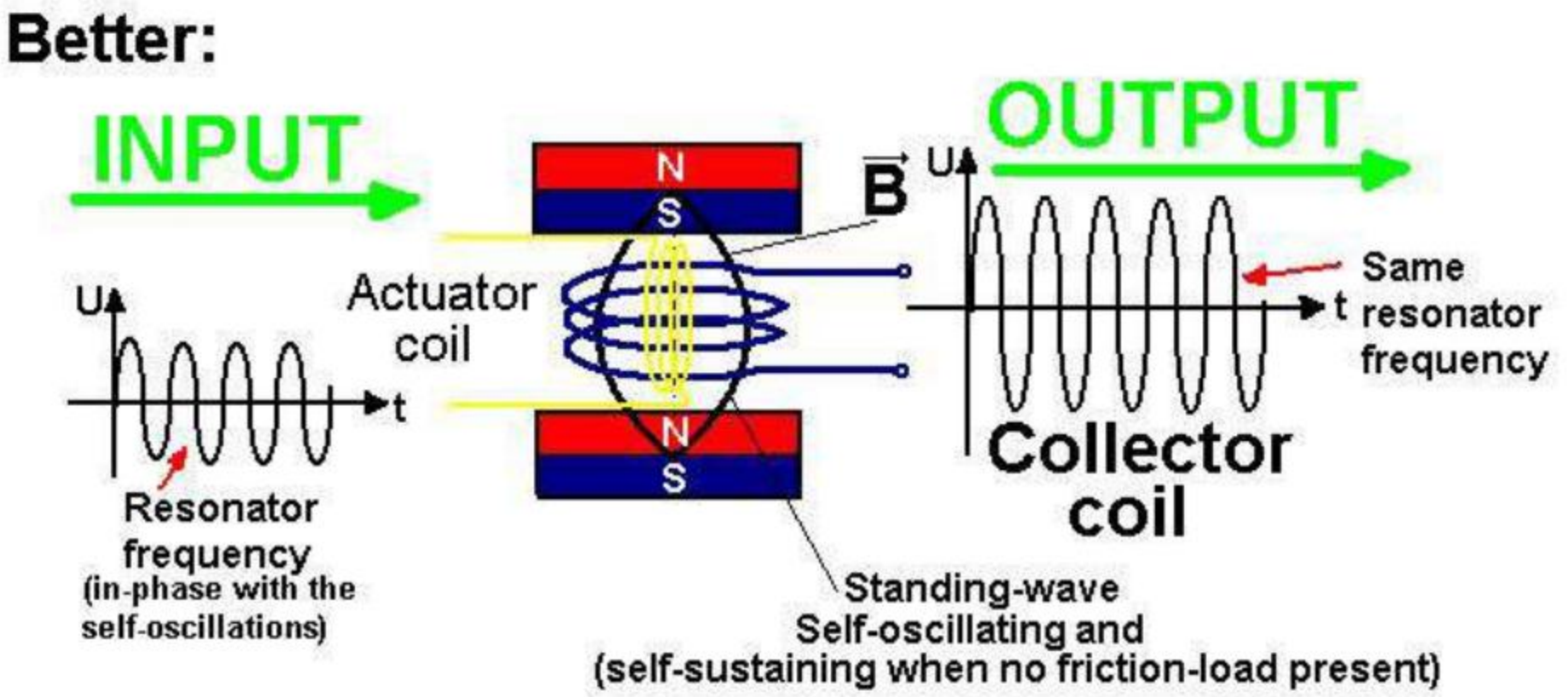


Exciting the strings in-phase with the oscillations

We will excite/hit/strike these standing waves vibrating B_1 field lines with the field B_2 like a guitarist is striking the strings of a guitar with his pick or plectrum, but we will have to do it in phase with the oscillations in the system.

This is impossible to do by hand on a guitar, but if it were possible by a mechanical means, it will lead to a louder and louder sound, and to more violent oscillations and surely and inevitable towards string breaking.



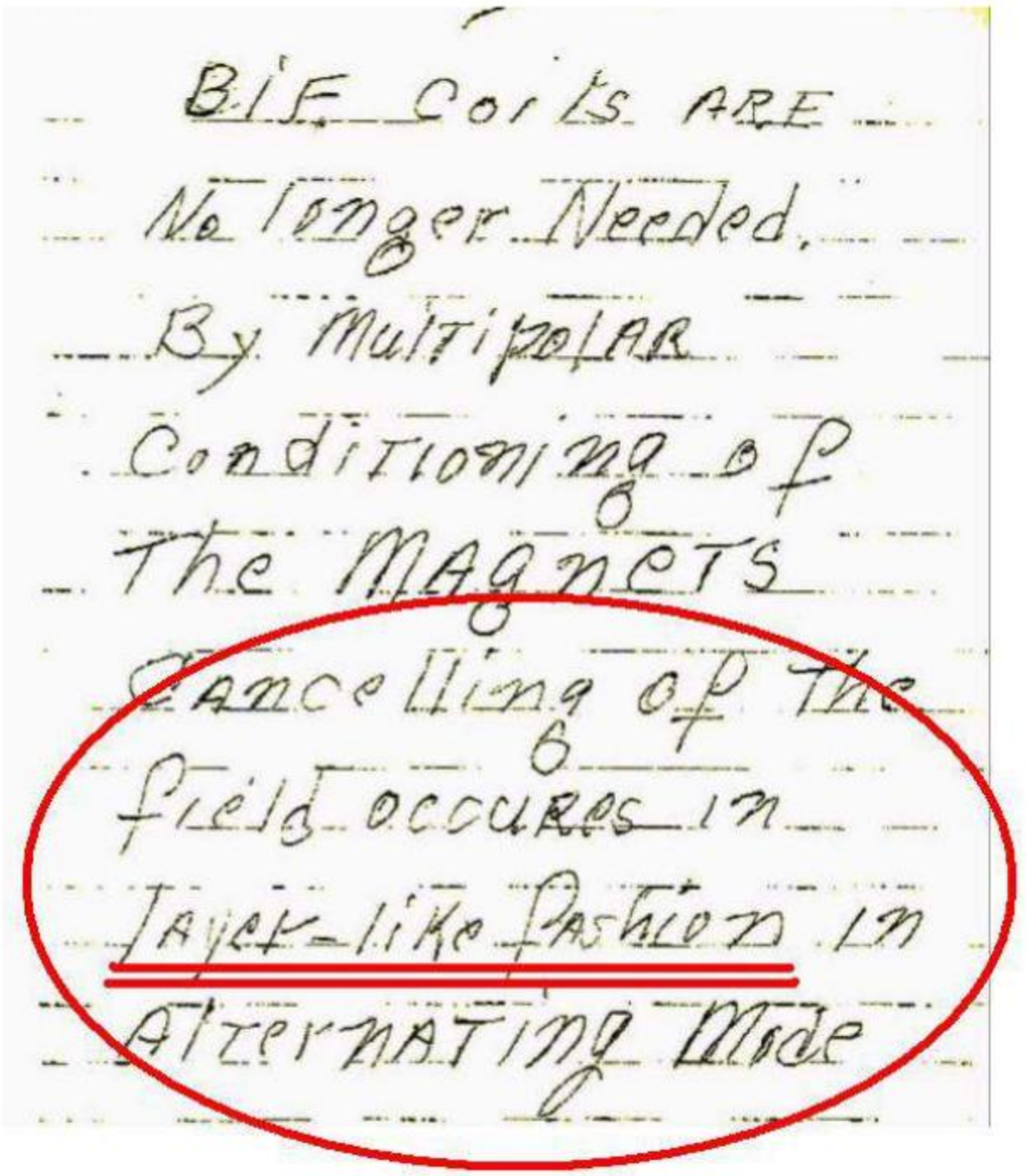


The actuator/exciter/input coil is only needed when a heavy load is connected at the output.

And you might also think that the input energy will increase proportionally with the extracted energy at the output, and you are right. I agree again. But there is another “but” here. You see we are dealing here with a resonator, so therefore each input signal will be in phase with the energy already oscillating in the system, and therefore the oscillations being self-powered by their nature will add up and increase “exponentially” compared with a more “linear” loading at the output.

Isn’t it apparent by now? **If you are trying to generate electricity with magnets without moving them in a solid state generator, then we will put the magnets in a fixed place and MOVE THEIR FIELD in relation to a collector coil!** That movement is done by magnetic resonance, meaning that we hit the field with an input pulse at the resonant frequency of the field.

We could create many nodes and anti-nodes between the magnets but that would imply that we have to build a different collector (power) coil for each anti-node, or change the winding direction after each node.(Comment on 01.01.2012 I don’t think that to be correct, because this will mean that after each anti-node the magnetic polarity changes in respect to the middle line where the node is) :


BIE Coils ARE
No longer Needed.
By Multipolar
Conditioning of
The MAGNETS
Canceling of the
field occures in
layer-like fashion in
Alternating Mode

Actual Floyd Sweet handwriting, his own words.

I believe this is what Sweet meant by the ***"canceling the field in layer-like fashion in alternating mode"***. These layers of alternating magnetic poles(multi-polar) are created in the alternating anti-nodes of the standing wave, and the canceling occurs in the nodes.

Again for simplicity reasons let's stick to only one anti-node with the two nodes created exactly in the middle of the magnetic dipoles (exactly in the geometric center of the magnet itself - that is if the material of the magnet is precisely and symmetrically magnetized in respect to its shape). This is the **first harmonic (the fundamental).**

The two main crucial conditions in creating a standing wave between the fixed magnets of the VTA:

The frequency of the actuator (exciter) or input signal that hits the magnetic field of the system. Preferably this frequency should be generated in a coil situated in a symmetrical fashion in respect to the magnetic field of the system. The best amplitudes of vibrations are to be expected if we use a sinewave frequency for the actuator coil (input), but any other type of signal should work.

Also this vibration must self resonate as much as possible, through the self-oscillations in the magnet. To express myself in other simpler terms, consider yourself a clay/ceramic worker making mugs, glasses, cups and bowls. Try to build such a mug out of ceramic or clay so that when you hit it with a fork or a knife or whatever, it will make a sound that will last as much as possible. When you hit a cup/glass/mug/bowl with something it will make a sound. That sound is the resonant frequency of the system.



Breaking glasses just with your voice or a speaker using this resonant frequency was very well demonstrated and confirmed by the Mythbusters. Now what we are interested here is to **prolong the sound** that our glass/cup/mug/bowl makes when hit, as much as possible (JUST LIKE IN THE Singing bowls (also known as Tibetan Singing Bowls, ring gongs, Himalayan bowls or suzu gongs)



Antique Old Tibetan singing bowl is exactly like a Sweet VTA conditioned magnet

(An ordinary magnet is like an ordinary cup/mug/glass/bowl
but a Sweet VTA magnet is exactly like a Tibetan singing bowl)
This is the difference between a VTA magnet and an ordinary magnet.

The antique old Tibetan singing bowl is the most apparent/simple/unsophisticated/ordinary/common man-made OVERUNITY device. More energy coming out than put in. More energy coming out in the form of self-oscillations than the energy that it took to hit it. It doesn't even have to be hit, just slightly touched and it will sing, if it's properly constructed (made by hand).

This is what I mean when I say "self-oscillations" . Why make the sound last longer? Because we are interested in hitting/touching the glass/cup/mug/bowl as rare as possible and not to use/expend to much energy in the "hitting/touching" process compared to the energy that we will extract from the self-oscillations in this glass/cup/mug/bowl.

Why do I say Overunity? You can say that if you were able to "stress" these sound waves, and extract all their energy from them, then they will be instantly silenced. This is correct, but for this bowl to do work, it will have to be constantly slightly and gently hit/struck/touched in-phase with the self-oscillating resonant frequency so that a constructive interference pattern is created so that the *natural self-oscillations will not fade away under a load.*

Not every glass/cup/mug/bowl sings in self-oscillations at its resonant frequency, therefore not every magnet will be a "singing" magnet capable of maintaining its oscillations once struck or hit. This is also backed up by Tom Bearden words in his book, I quote:

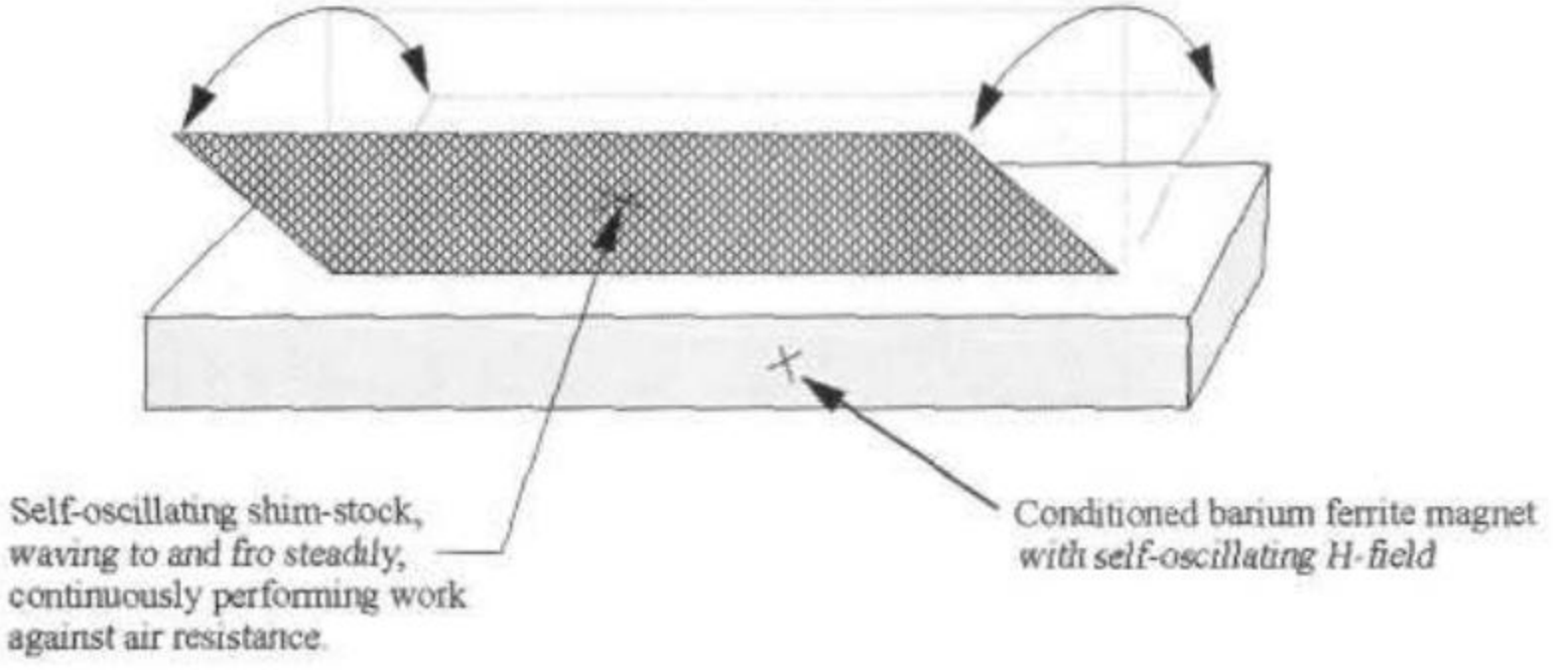
"[...] the magnet was useless because it would not "hold" the activation and retain it. Magnets whose magnetic field variation did not exceed 10% were ideal. So Sweet only found about 1 in 10 or even 1 in 30 magnets that would retain the self-oscillation state when initiated. " ("Energy from the vacuum - concepts and principles" page 309, paragraph 1)

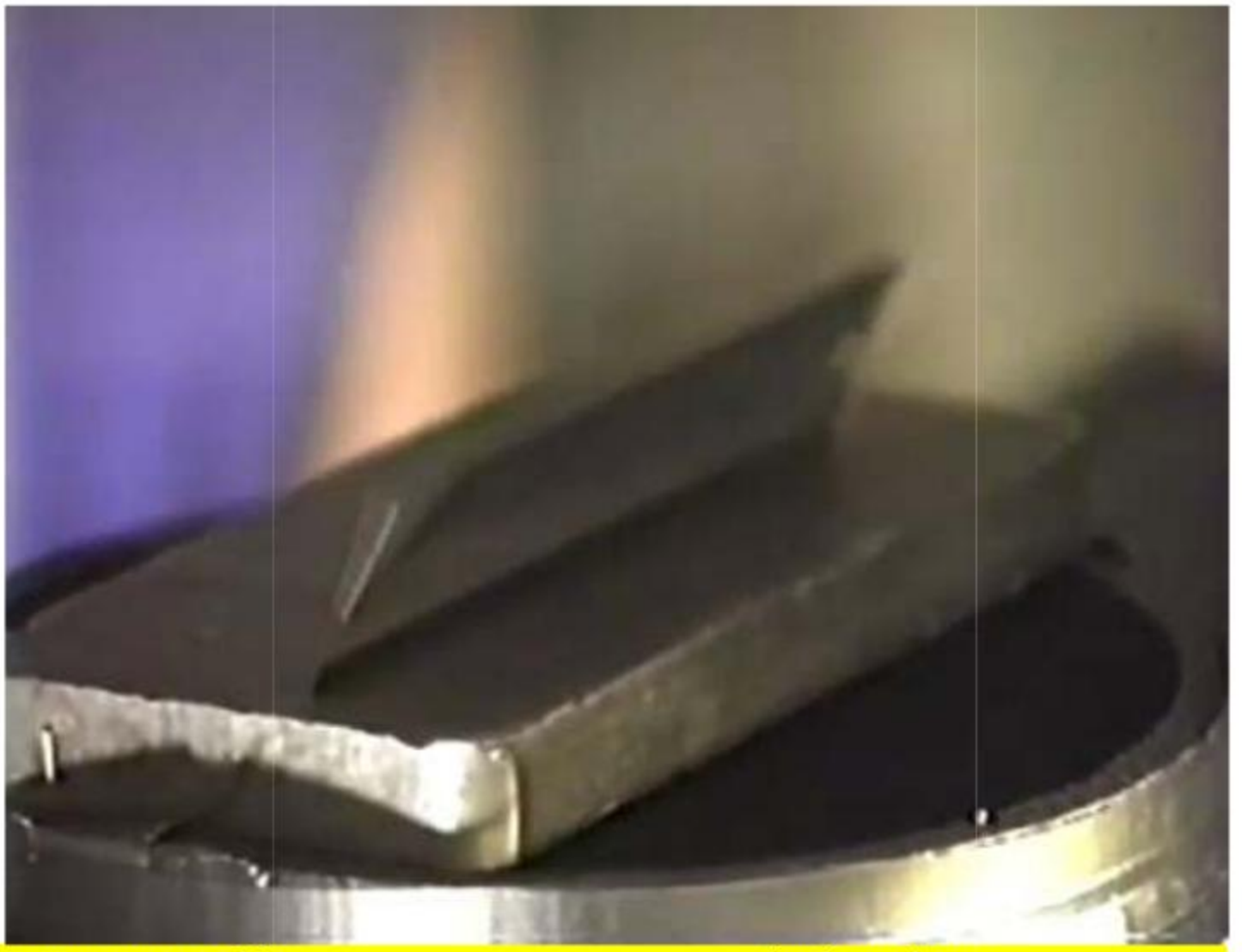
But fortunately unlike the glasses/cups/mugs or bowls, the magnet can be "conditioned" or "remolded" or "remade" or "re-beaked" or to be more precise *"re-magnetized"* so that it will hold the "singing" self-oscillation longer once struck. **This is the "conditioning" phase we are after.** I believe it to be a special re-magnetizing process using the resonant frequency of the magnet/field using a very strange extremely unusual and unique re-magnetization process using sinewave feed to the coil. A re-magnetization in both direction, not just one, so that a "shear" is created. Therefore, our magnet will have a more dynamic field, rather than a static one, in theory anyway. This theory is an educated guess, and partially backed up by Tom Bearden, I quote:

"That fact can be used, e.g., to create magnets whose fields appear normal, but which deviate from the normal behavior of ordinary magnets, and which produce anomalies in their magnetic fields." ("Energy from the vacuum - concepts and principles" page 363, paragraph 1)

It's not a dynamic field, forever or perpetually, it just the self-oscillation of the magnetic field. It will **eventually fade away,** but the process can be restarted with yet another hit/struck/touched/spike/input signal. Because this field doesn't make the subject to any type of friction, these self-oscillations in the magnetic field will in theory last a lot longer than the sound waves oscillations in the Tibetan bowl which are subject to friction by moving the air back and forth.

To determine the resonant frequency of a magnet/magnetic field we use a thin razor blade placed in unstable equilibrium on top of a magnet:





These oscillations are reported by Tom Bearden to have happened by themselves (self-oscillating):

"I also locked up one of his specially conditioned magnets for 24 hours, with a piece of shim stock sitting on the flat of the magnet and waving to and fro continuously, steadily performing work by moving air. When I opened the lock the next day, the shim stock was still there on the magnet and oscillating, having continuously done work against the air resistance for 24 hours with absolutely no energy input by the operator. " ("Energy from the vacuum - concepts and principles" page 307, paragraph 1)

This is exactly like the sound keeps going in a Tibetan singing bowl!

The air-gap or the distance between the magnets. This air-gap must be extremely and precisely well calculated in order for the standing wave to be formed. This is done using the formula:

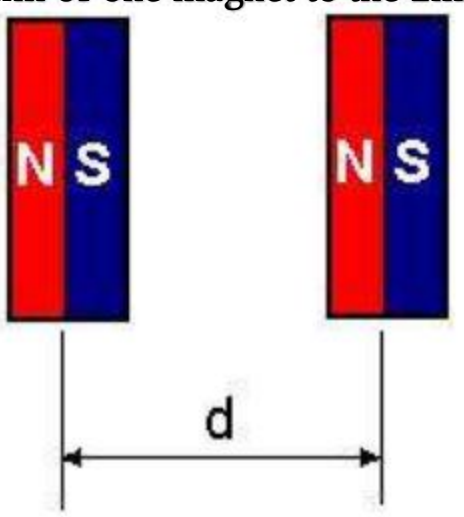
$$d[m] = \frac{1}{2 * f_{resonance}[Hz]}$$

Where:

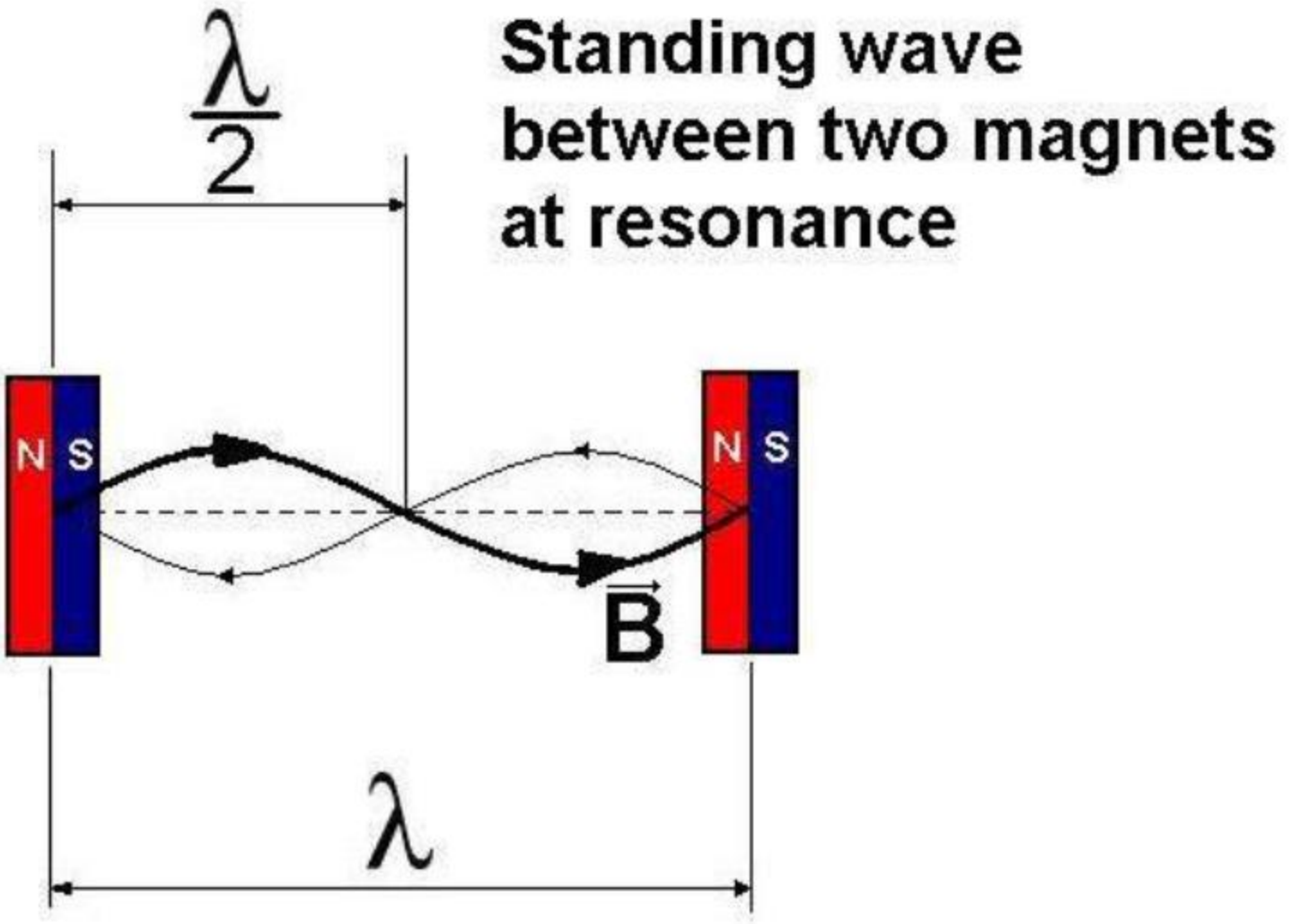
d-distance between the magnets expressed in meters;

$f_{resonance}$ -is the resonant frequency of the magnet/magnetic field expressed in Hertz.

Another very important point is that this distance is not the actual distance between the magnets but is the distance between the centers of the two magnetic dipoles. Considering that the material of the magnet was magnetized in a symmetrical, exact, correct and precise fashion in regards to the shape of the magnet, the center of the magnetic dipole should be in the geometric center of the magnet form/shape. For example, if we use two flat 4mm thick magnets, we must calculate this distance from the center (2mm of one magnet to the 2mm of the other magnet):

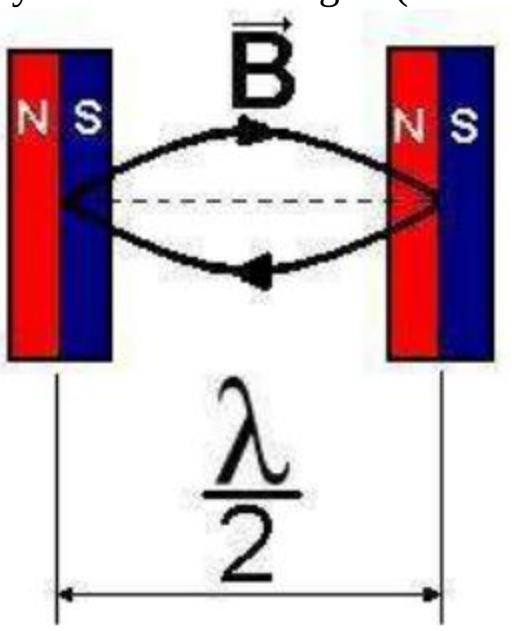


This air-gap must be an integer number of a multiple of the half the wavelength of the resonant frequency: (harmonics of the resonant frequency)



This is the second harmonic (tree nodes-1). This picture very interestingly seems to be “in line” with the ambiguous words of Maurice (an associate of Sweet) regarding the “**Floyd figure eight design** (flux flow)”

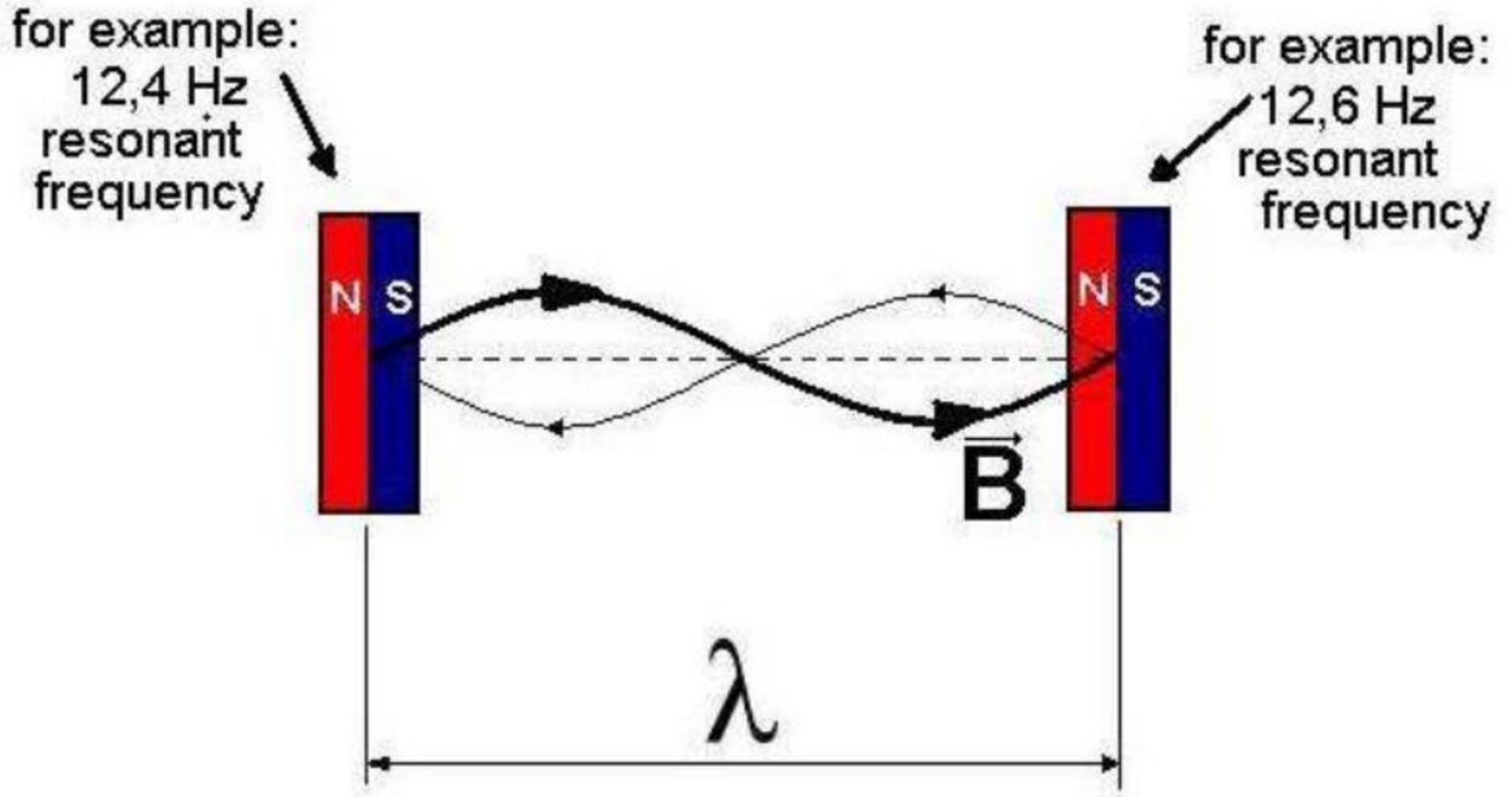
But what we are interested is to create only half the wavelength: (The Fundamental)



Why only half? Because if we generate the exact fundamental resonant frequency using it’s wavelength as the gap, we will have a balanced symmetrical waving magnetic field line. One up and one down. One half of the sinewave in a direction, the other in the opposite direction. The work done by one anti-node will cancel the work done by the other anti-node. This operation leads to another VTA secret which is that we must generate an **uneven number of anti-nodes in the standing wave between the magnets.** (or an even number of nodes)

If we carefully listen to what very few things Sparky is pointing out, few things but of an extreme importance, we find out that after determining the resonant frequency of a magnet, that first each magnet has a slightly different resonant frequency, and second, when we bring to identical magnets closer to each other, their fields gets mingled, and the natural resonance frequency will be an average of the two:

Standing wave between two magnets at resonance



$$\text{A standing wave is formed only when } \lambda = \frac{1}{\frac{12.4+12.6}{2}} = \frac{1}{12.5} = 8\text{cm} = 3.1 \text{ inch}$$

A partial transcript of Tom Bearden video of Sparky saying just this:

"[...]Sweet: You have to take two magnets now. Right?

Find out first what that...

Bedini: Hole is? (most likely referring to the air-gap a.n.)

Sweet: No, no. Find out first what the frequency is. The natural frequency. The **magnetic resonant frequency**.

Bedini: With the Iron bar, yeah.

Sweet: Find out what that is. Right:? Then, I just took the two magnets, found what the maxim is, and I put them together like this.

[...]

Sweet: Then I found what the frequency was. Now what it will do, what will do, **it will average out the God damn frequency, God damn resonant frequency in this one and that one.**

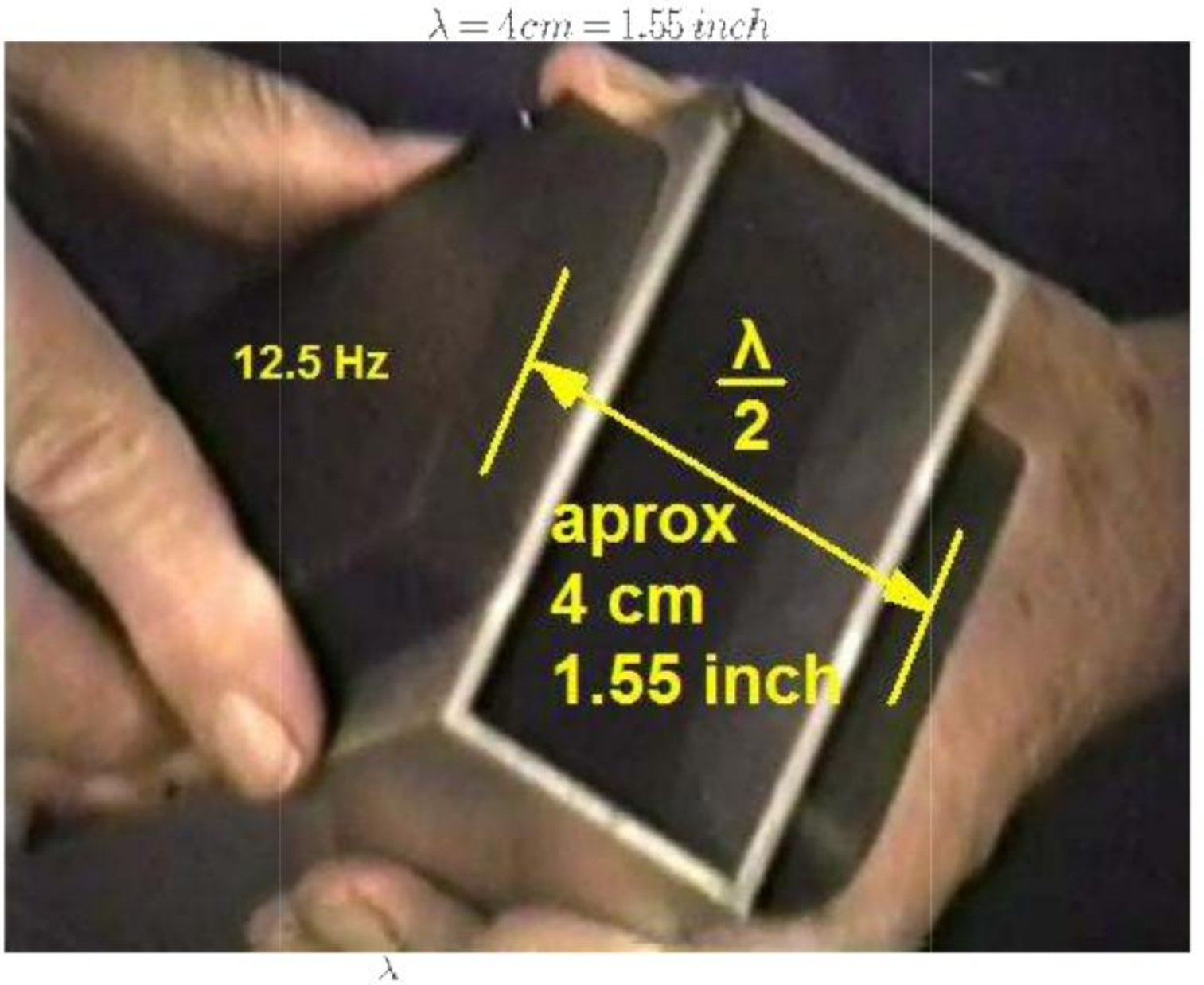
Bedini: Right

Sweet: It will average it out. Right? [...]"

If we carefully analyze the videotape, and listen to what they are saying, we will understand that Sweet actually tried to explain to Tom Bearden and John Bedini the working principle prior to the recording of the video. This is an obvious rational deduction, based on the pre-indoctrinated/pre-fabricated answers (wrong answers) given especially by Bedini to Sweet when he is trying to finish his sentences. This only leads to the conclusion that fortunately for us, they most likely had a prior conversations about the working principle of operation behind the VTA and the conditioner/conditioning of the magnets, prior to the videotaping. It is fortunately for us, because these "finishing the sentences" wrong answers, gives us clues and deeper insights on how the VTA really works. Tanks to Bedini wrong answer "Hole is?" we can say with extreme conviction that the air-gap is indeed extremely important, and as presented above, without the proper determination of it, the standing wave will not form. Another point we must not ignore, is the answer "With the iron bar, yeah" also made by Bedini. I'm not fully convinced, but I think he is referring either in replicating the VTA effect in a transformer, where determining the iron-bar-core magnetic resonant frequency is crucial for the operation(comment on 04.02.2012 this could also be more likely), or most likely his is referring to another not so obvious conditioning secret, in using a coil with an iron-bar core for the re-conditioning (re-magnetizing) to increase the flux density and facilitate an easier re-magnetization. Thus the resonant magnetic frequency will change because we have added an additional mass that captures and distorts the magnetic field, changing the resonant frequency of the system. Thus an additional determination of the magnetic resonance of the iron bar will be required.

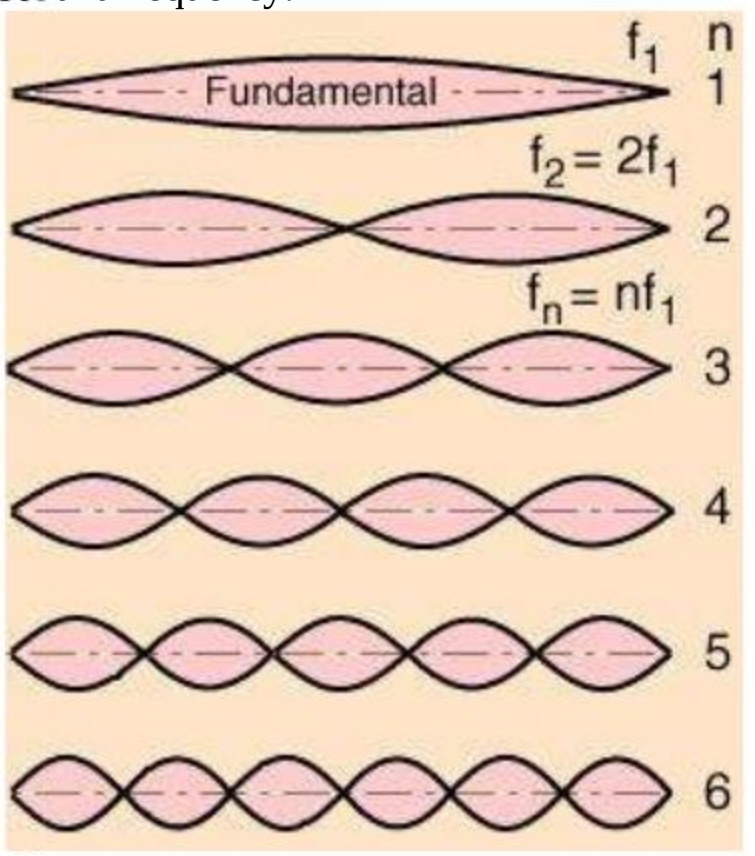
The fact that Sparky Sweet is swearing and not only that he is swearing twice, denotes to me that most likely he was somehow "traumatized" and extremely annoyed and frustrated by not finding the right maximum amplitudes at the calculated resonant frequency when he was in his early development with the VTA. He probably tried very hard, and did a lot of testing, and failed a lot, and finally realized that it was an average of the two.

Enough with this psychology crap, and back to our VTA. Again, we have to point out the fact that we must have an uneven number of anti-nodes in the standing wave, therefore our air-gap must be half the wavelength of the fundamental frequency (for best amplitudes in the anti-node).



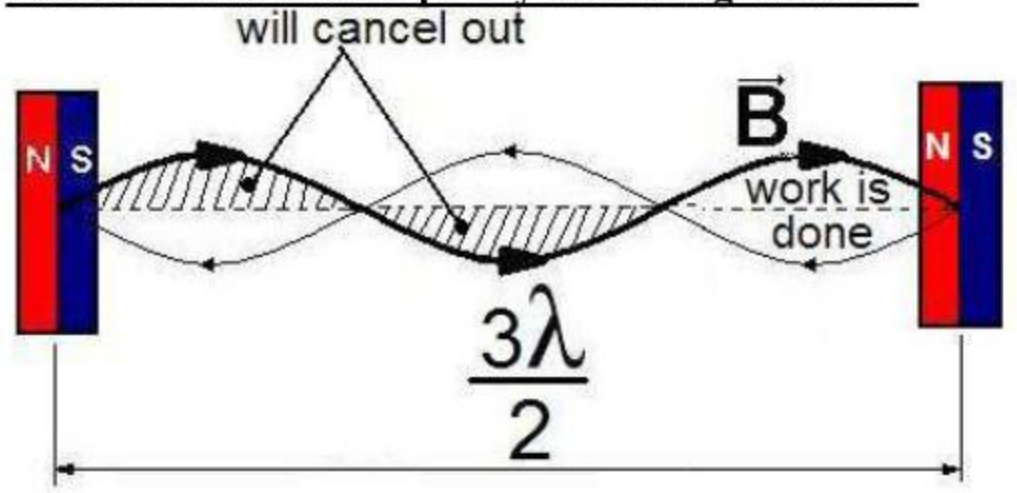
Using, integer multiples of the $\frac{\lambda}{2}$ will still work, but the amplitudes of the oscillations in the anti-nodes will be slightly lower.

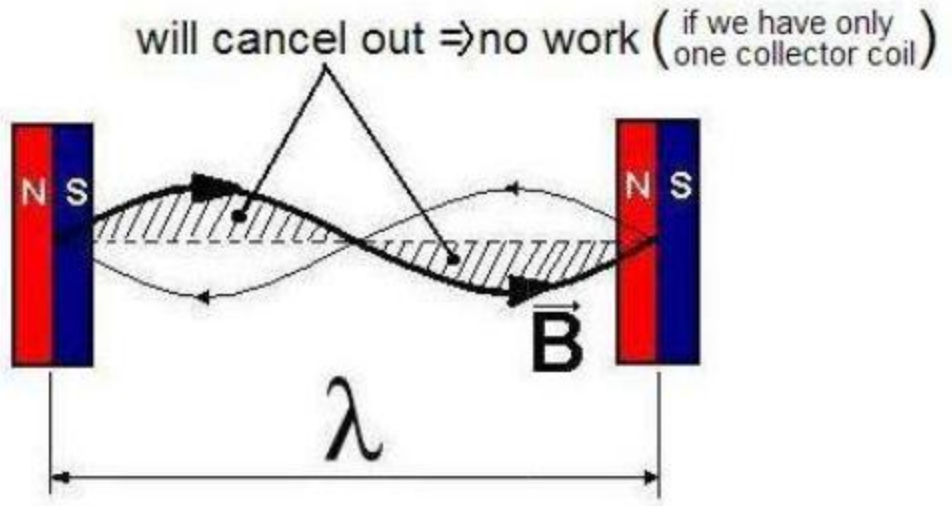
Again, I find myself in contradiction with what is commonly known in Floyd Sweet VTA about the liberty to use any frequency you want in conditioning the magnet. I find that difficult to believe, for mainly two major reasons. I am strongly convinced that VTA works by generating a standing wave between the magnets, therefore you can't use any frequency you want, because the standing wave won't be generated. It is generated only at the resonant fundamental frequency and the harmonics of the resonant frequency:

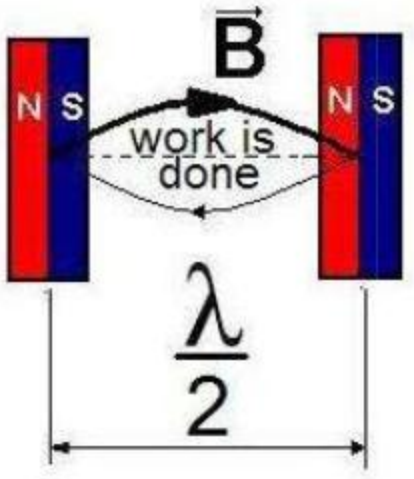


This means that the input signal in the actuator/exciter coil must be the fundamental frequency or a sub-harmonic of the fundamental. Second of all, considering the fact that only an uneven number of anti-nodes will do work and generate power in the collector/power coil, we will again be constrain to use only an odd number for the sub-harmonics of the resonant frequency. **This means that we can't use any frequency we want! We must only use the**

fundamental or the 3rd sub-harmonic or the 5th sub-harmonic or the 7th sub-harmonic or the 9th sub-harmonic **etc. of the resonant frequency of the magnetic field.**





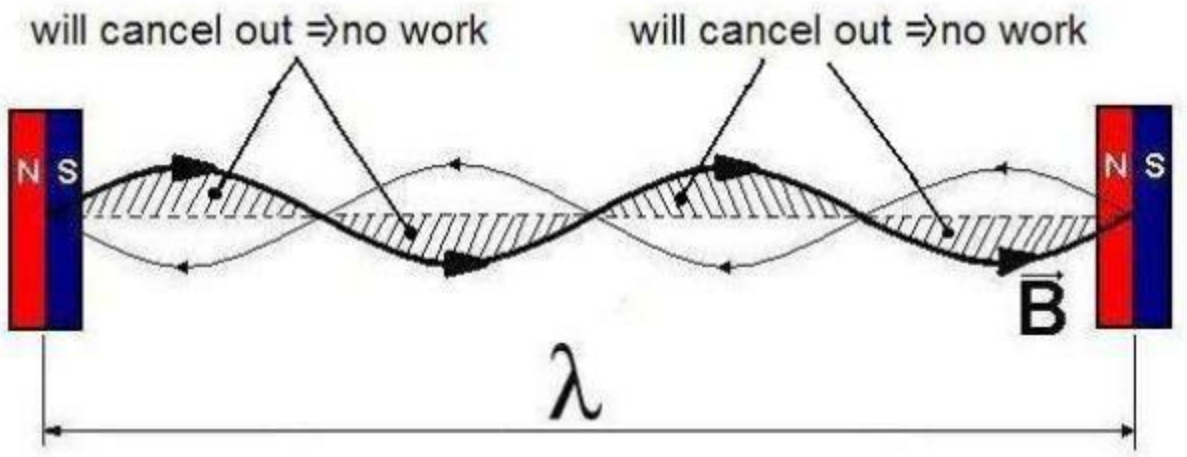


Using the fundamental resonant frequency

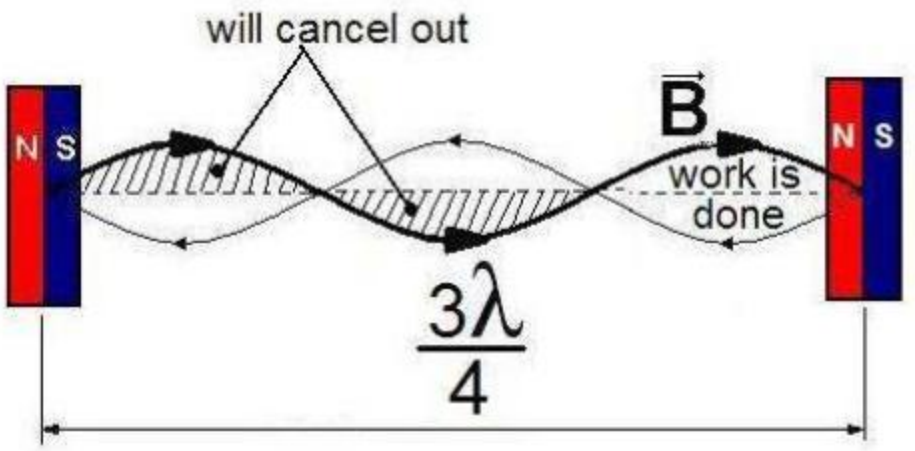
In this case if the magnets resonant frequency is 1**2.5Hz we will hit the magnets w**ith a 12.5Hz signal input in **the actuator/exciter coil. Thus for a stand**ing wave pattern to be formed, the air-**gap must b**e 4cm, 8cm or 12cm.

In theory we co**uld use any mult**iple of $\frac{\lambda}{2}$ **but in practice, the magnetic coupling b**etween the two poles will **become too weak thus the amplitude of t**he waves will be also weak.

A:

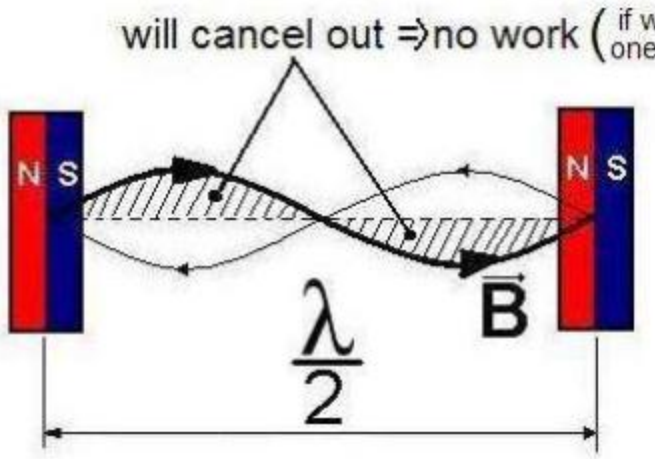


B:

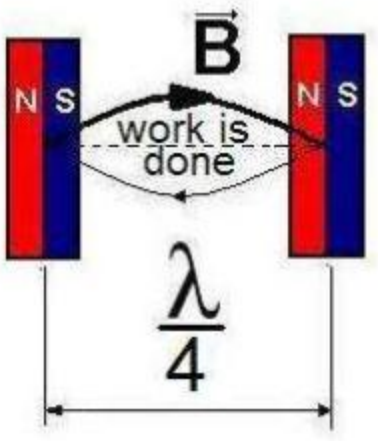


Using the second harmonic to hit the magnets

C:



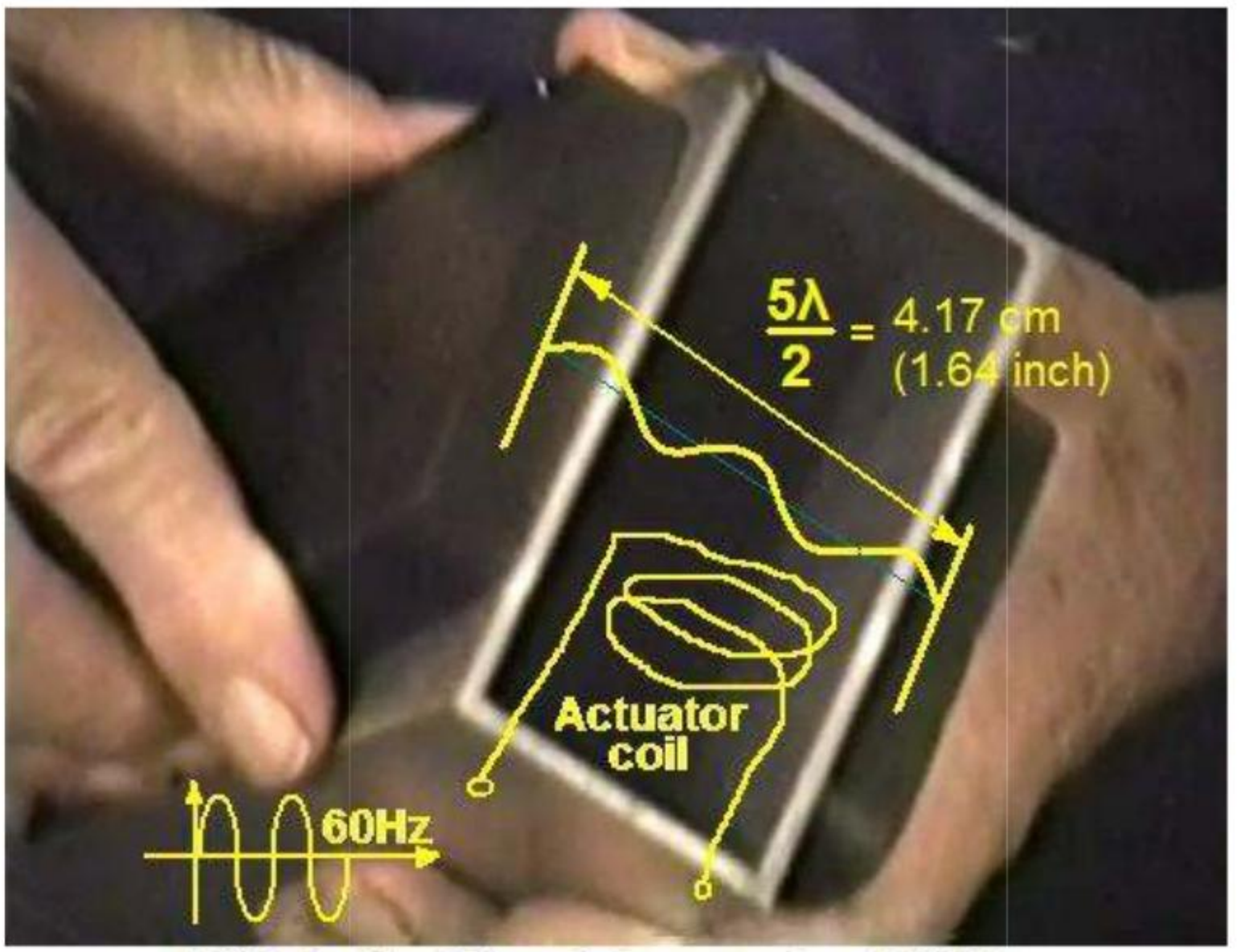
D:



Again, in this case, if the fundamental natural mag**netic resonance of the system (**the two coupled magnets**)** is **12.5Hz and in this case, we choose to hit** them or a**ctuate them or excite them with a 25Hz** frequency (second harmonic) **then for a standing wave to be formed th**e distance **between them should be: A: 8cm, B: 6**cm C: 4cm and D: 2cm. The λ in this case is not the λ **of the 25Hz but** is the fundamental wavelength.

This can go on forever. Let's focus on the actual operation chosen by Sweet:





60Hz is the 5th sub-harmonic of 12Hz

We do know that the magnetic resonance of the magnet**s is around 12Hz. We do k**now that he is using a 60Hz **sinewave input signal. Thus he is using t**he 5th har**monic. This means that the wavelength** for our standing wave to be **formed when the system is hit with this** frequency must be:

$$\lambda = \frac{1}{60Hz} = 0.0167\text{m}$$

Considering that he must use an odd number of anti-nodes, the **distance between** the magnets should be:

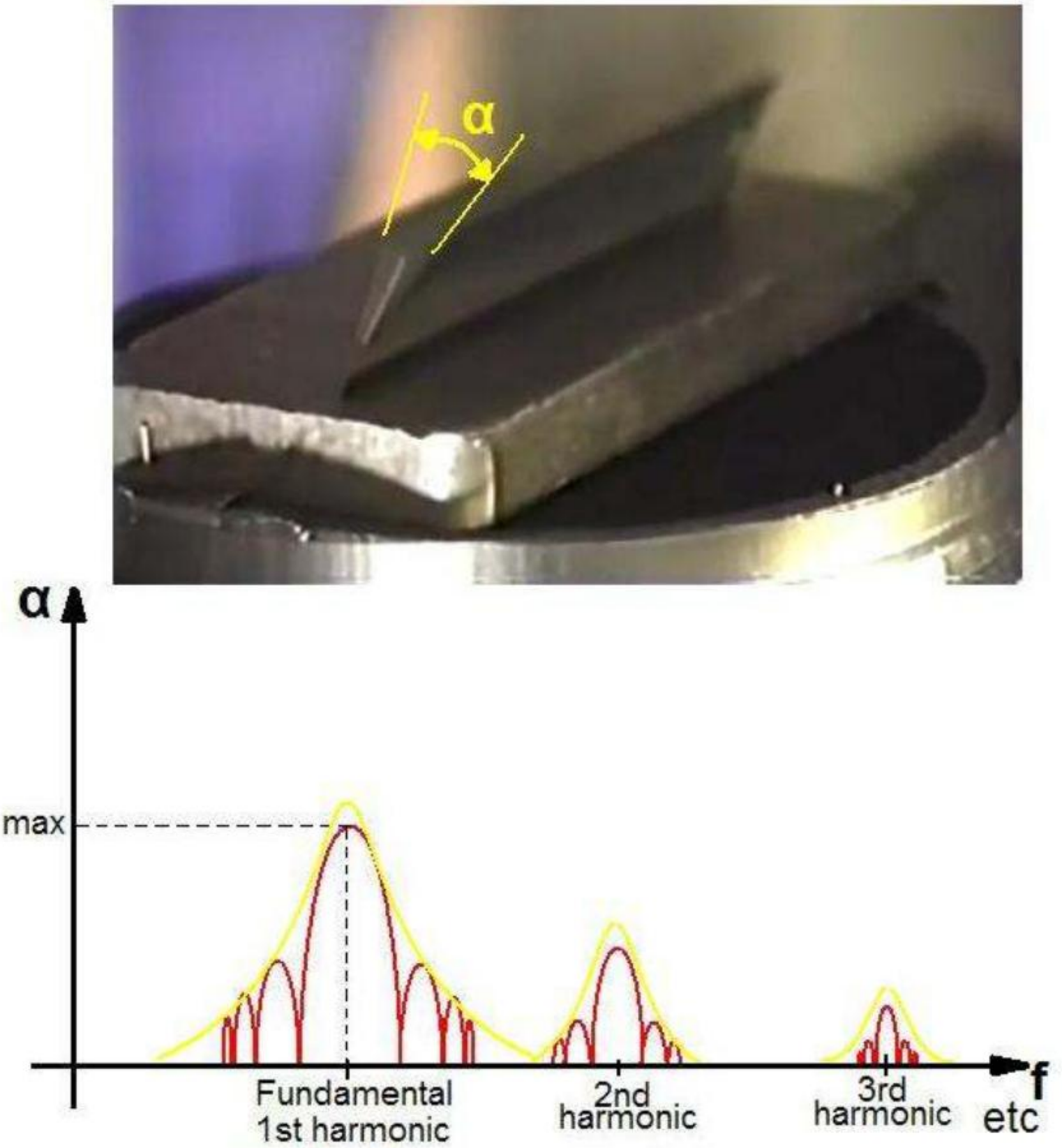
1 anti-node: $\frac{\lambda}{2}$ $\frac{0.0167}{2}$ $0.0084\,m$ $8.4\,mm$

3 anti-**nodes:** $\frac{3\lambda}{2}$ $\frac{3*0.0167}{2}$ $\frac{0.05}{2}$ $0.025m$ $2.5\,cm$

5 anti-nodes: $\frac{5\lambda}{2}$ $\frac{5*0.0167}{2}$ $\frac{0.0835}{2}$ $0.0417m$ $4.17\,cm$ **(most likely)**

Ways to express and visualize MAGNETIC RESONANCE

IN A MAGNET: One way to directly observe magnetic **resonance a**nd the vibrating magnetic field is the Floyd **Sparky Sweet thin blade me**thod:



Additional points and peaks are introduced because of the noise of the system. Any of these smaller peaks must not be confused as resonant frequency in the case when full picture is not visible. Therefore a full sweep at Extreme Low Frequency (especially between 9-30 Hz) is a must.

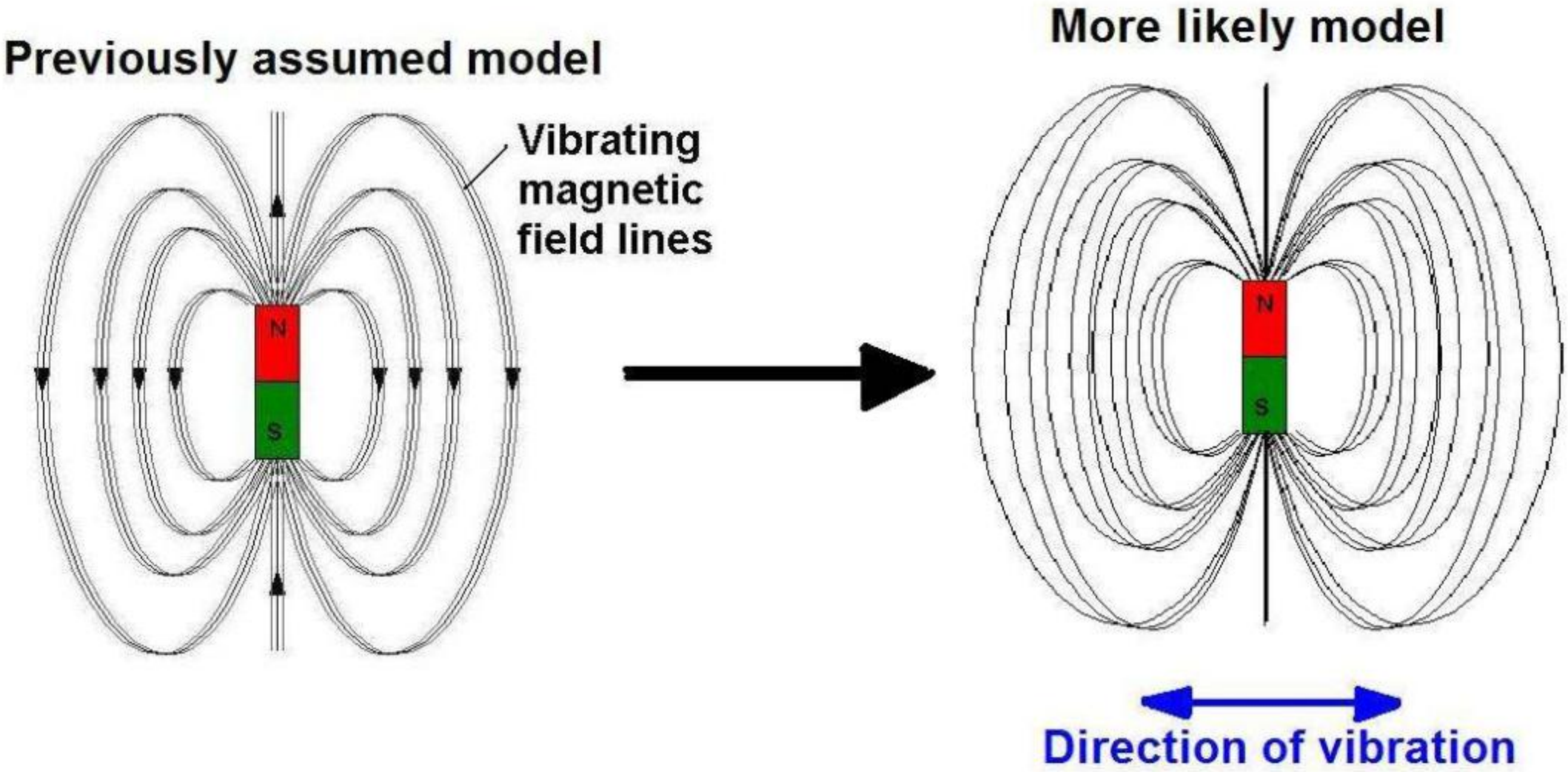
We should point out here again the uneducated words of Maurice, probably not his own:

“He had a small piece of metal that was standing on the top of the magnet at a 45 degree angle. As I recall, he claimed that the 45 degree angle was needed in the treatment of the magnet so that it could capture Scalar waves.”

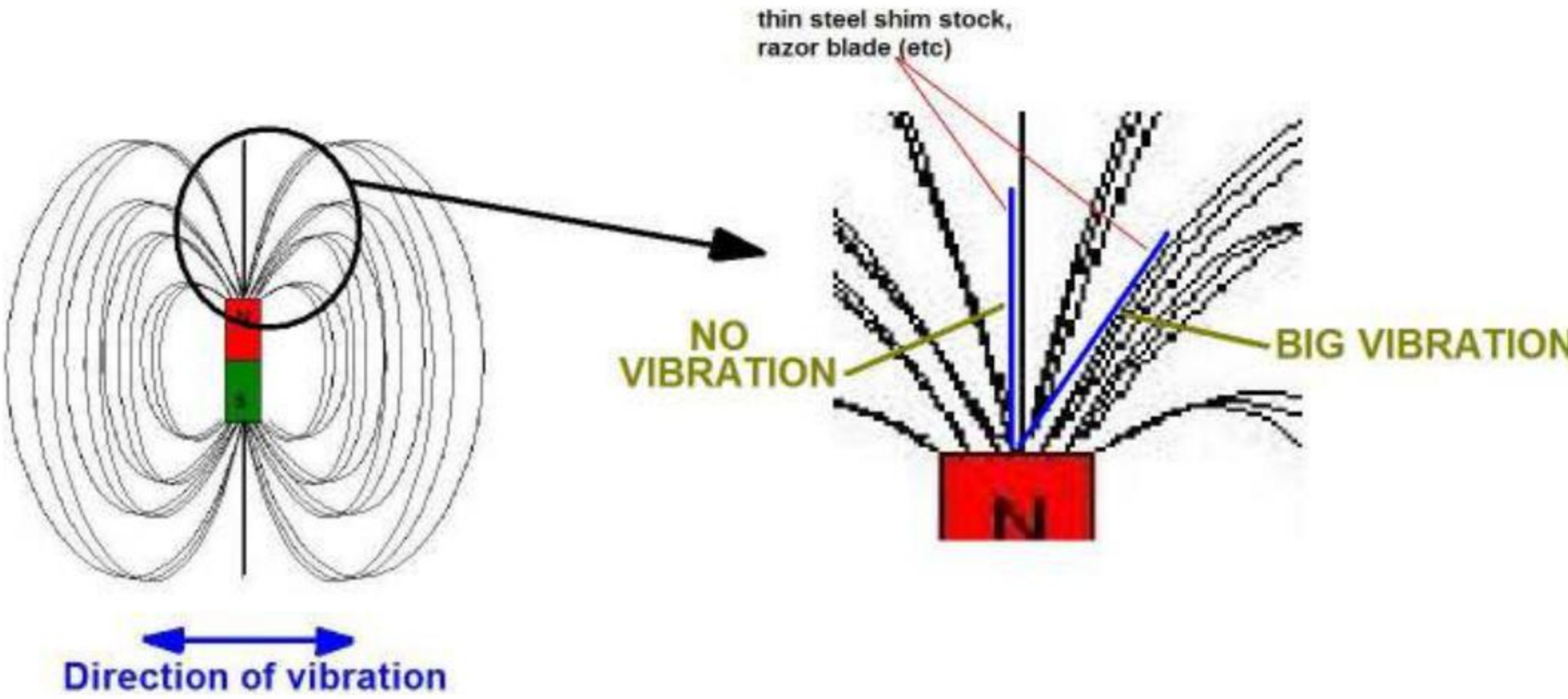
I hate fancy expression. I hate so much these people ho HIDE BEHIND FANCY EXTRAVAGANT EXPRESSIONS! Why do they do that? Are they too lazy to express the exact principle of operation from the traditional, conventional point of view? Why? Why do they have to make things complicated? Why do we have to use complicated terms? Why? So that people won't understand, and consider them smart? Is that it? This is insane, wrong, and evil! Why are people like this? Why?

Can't they just cut the crap, and bluntly say what is really going on, with no secret, and nothing kept hidden?

VIBRATING MAGNETIC FIELD MODEL



Thus:



What I truly want to say to all these people that upsets me are the words of Walter Lewin:

"The hidden beauty is the beauty of understanding, it's the beauty of knowledge. And it's your task, your task as teachers, and my task as a teacher to get that beauty across, in fact not only your task, this is your OBLIGATION.

Knowledge does not narrow. Knowledge only adds. And without knowledge many experiences in life remain very narrow and very shallow". *(link here)*

Another way we could make evident the vibrating magnetic field, is by using a small part of a straight pin so that it has a small enough weight to be supported in a slightly vertical position by the magnetic field alone. You must have played as a child with magnets and straight pins under the kitchen table in trying to place the pins in a straight vertical position. This is what we are trying to achieve here too. The sharp head ideally should be placed in contact with the magnet, as a small contact joint is the most important in seeing the vibrations. However, due to these vibrations, the small contact joint between the tip of the pin and the surface of the magnet, will make the pin eventually slip away and fall from its slightly bent position. A solution to this is by placing a piece of glass in between the magnet and the pin

that has a small made hole in it. Thus the sharp head will find it difficult to move due to the concave cavity and roughness of the surface.



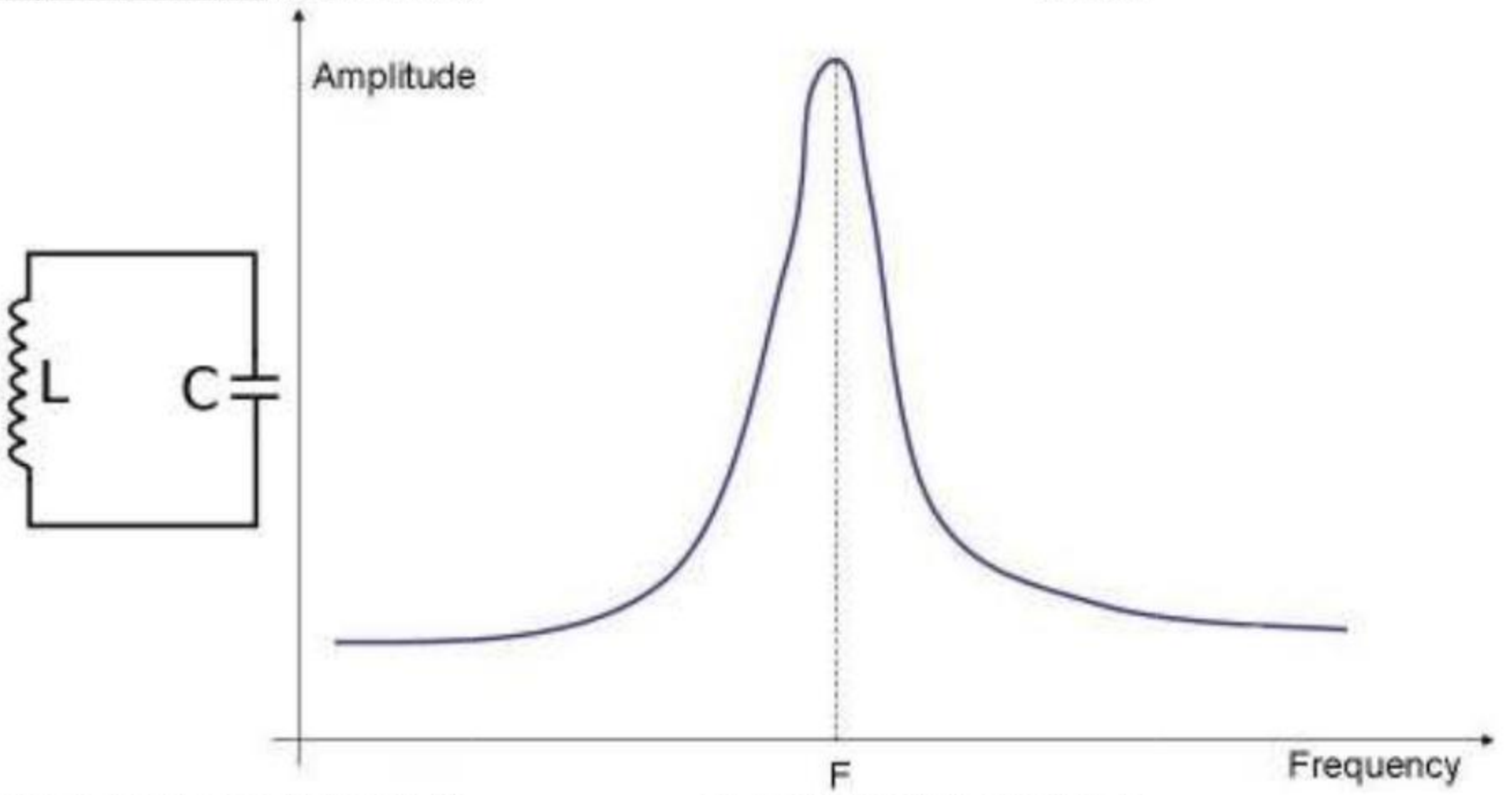


Use your fingers and a tooth-pick/match to reposition the pin:

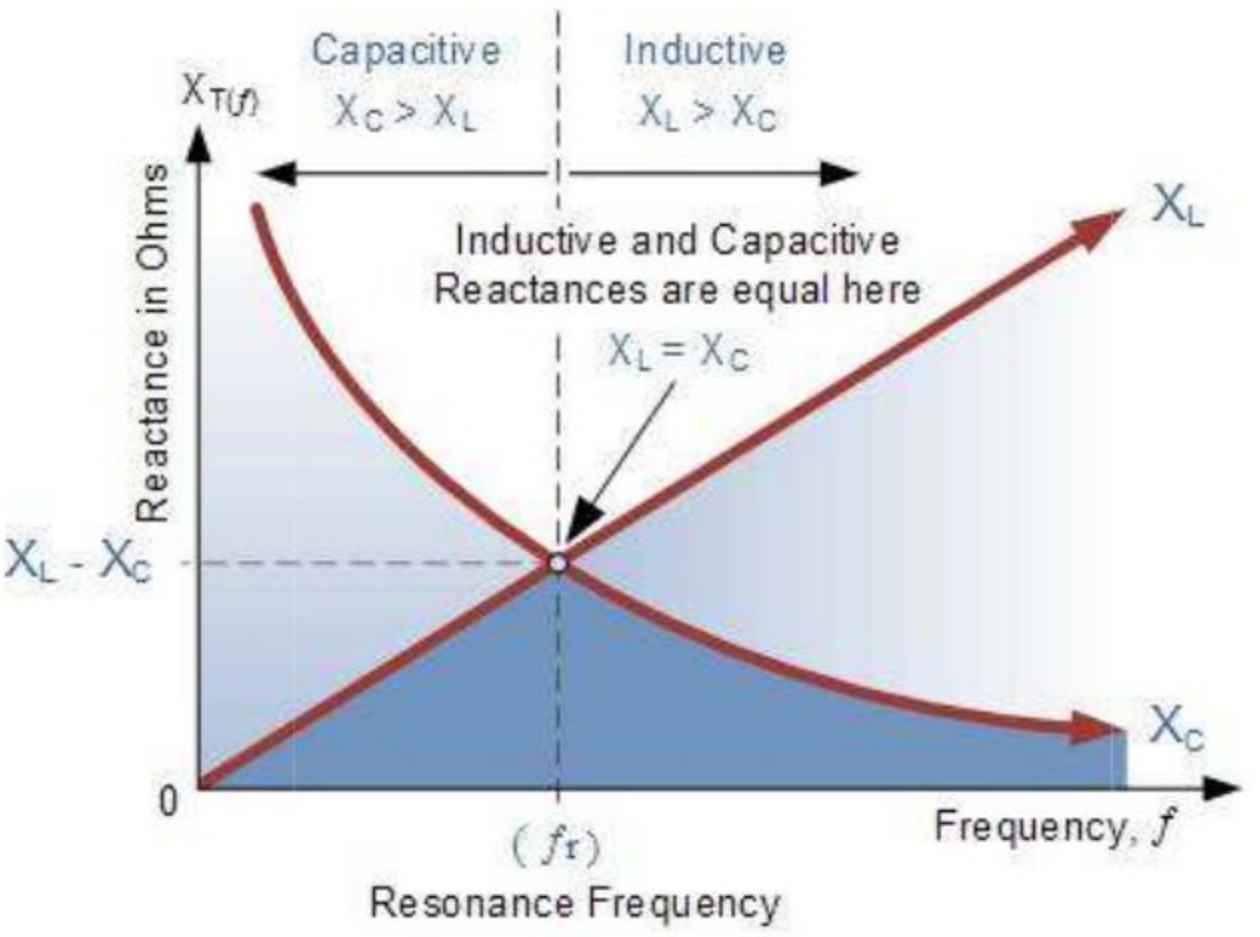


If the pin doesn't stay in a straight/oblique position, try to cut it shorter and make sure it light enough to be sustained by the field and/or try to place additional non-ferrous spacers between the magnet and the glass. Make sure that such spacers are not diamagnetic.

IN A COIL: Magnetic resonance for an air-core coil behaves differently than in a magnet. Differently how? It is a different story because this time the **magnetic resonance is intimately connected to the LC resonant frequency of the circuit.** We are looking at the LC resonant frequency and self-oscillations damping time.



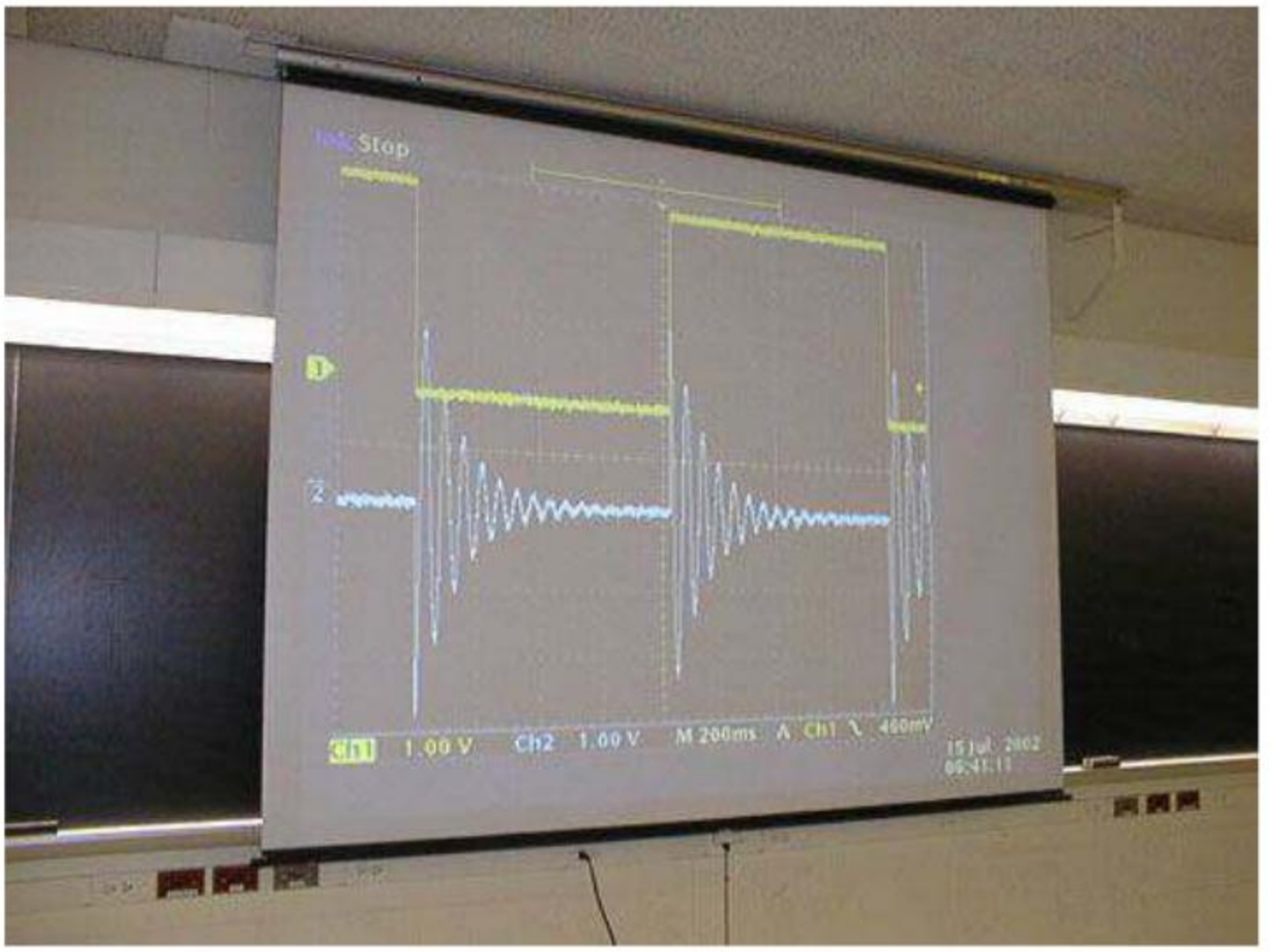
The frequency of the oscillatory voltage depends upon the value of the inductance and capacitance in the LC tank circuit. We now know that for resonance to occur in the tank circuit, there must be a frequency point were the value of X_C, the capacitive reactance is the same as the value of X_L, the inductive reactance ($X_L = X_C$) and which will therefore cancel out each other out leaving only the DC resistance in the circuit to oppose the flow of current.

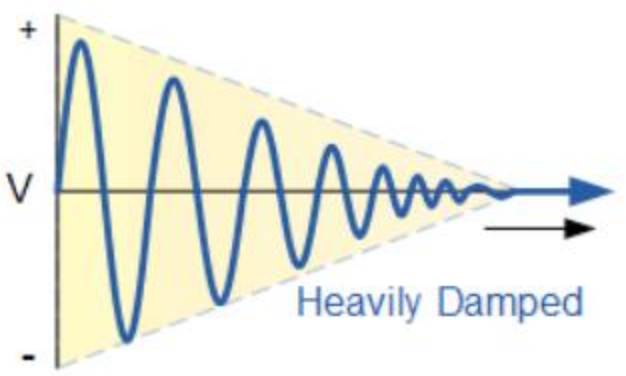


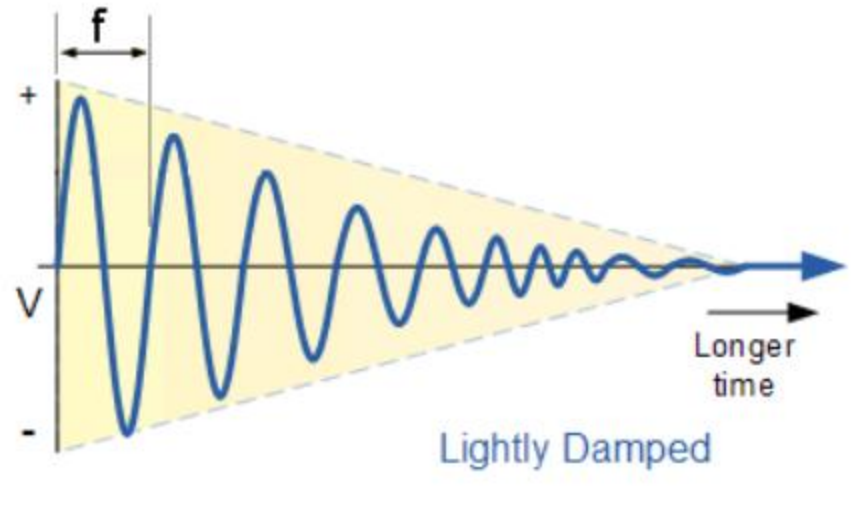
Resonant frequency of an LC oscillator can be determined using the formula:

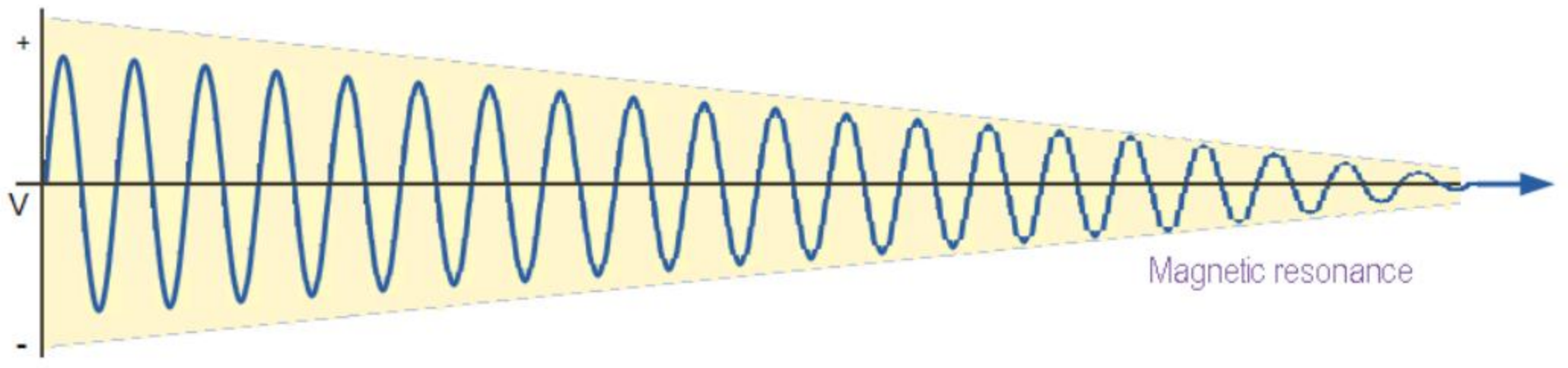
$$f_T = \frac{1}{2\pi\sqrt{LC}}$$

LC Resonant frequency can also be determined by **ringing** the circuit:


Stop
1.00 V
Ch2
1.00 V
M 200ms
A Ch1
460mV
15 Jul 2002


+
V
-
Heavily Damped


f
+
V
-
Longer
time
Lightly Damped

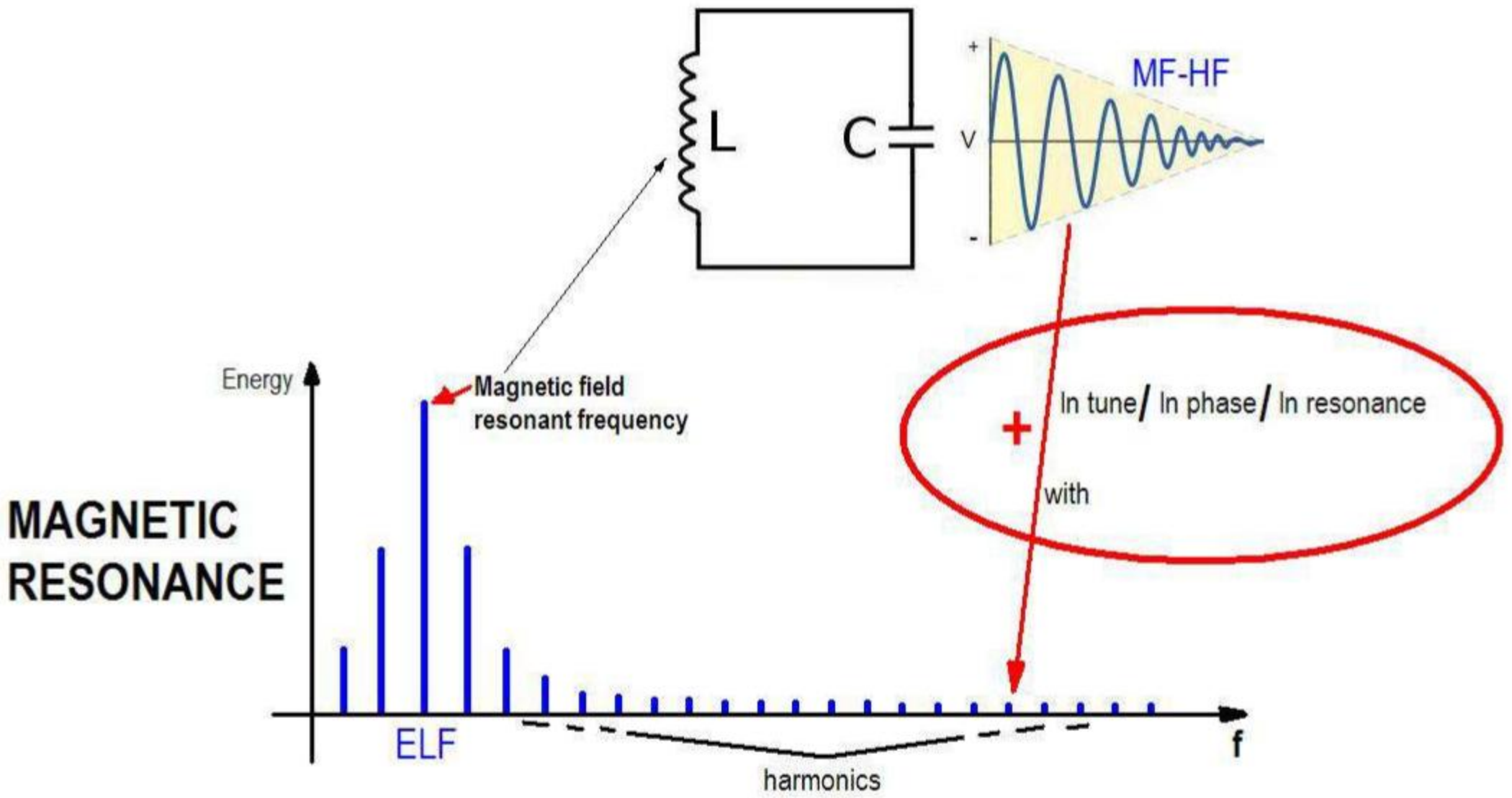

+
V
-
Magnetic resonance

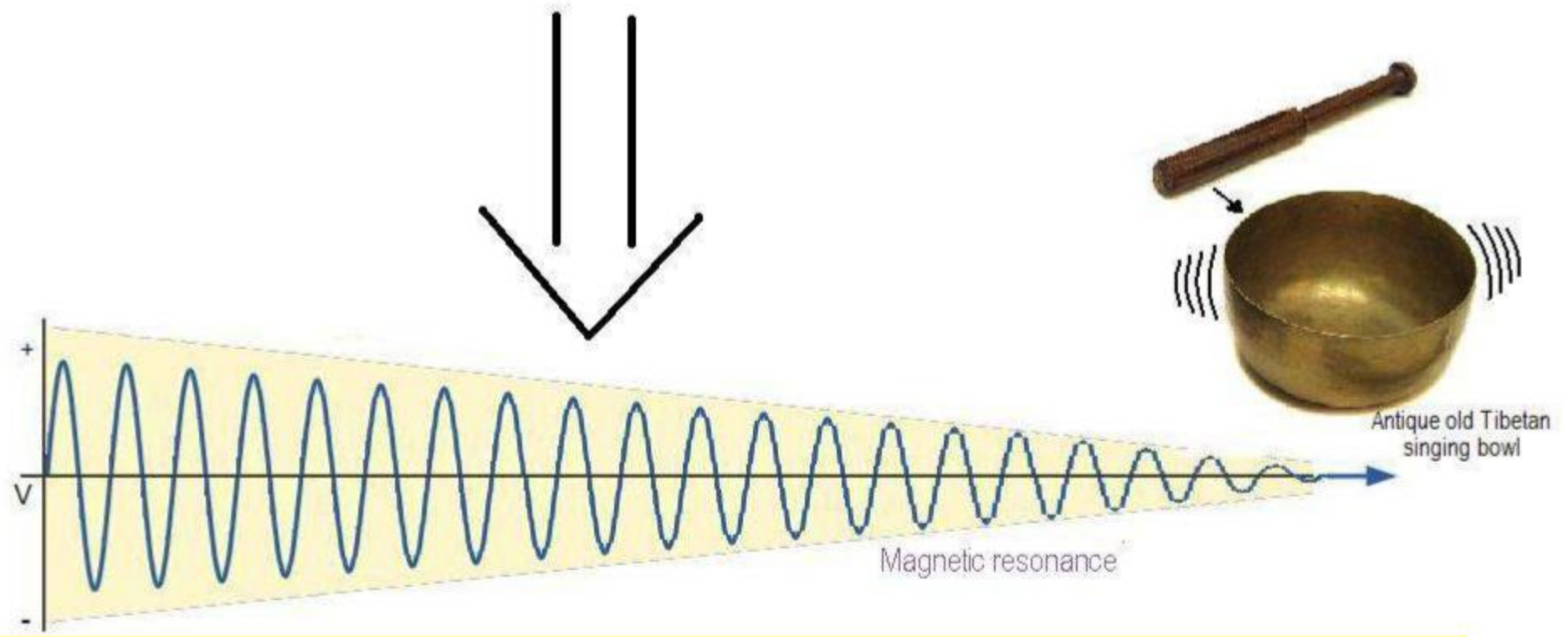




The reason for this extremely lightly damped oscillations occurrence is that the natural common LC oscillations in the tank circuit will be in tune with a sub-harmonic of the not-so-obvious magnetic field frequency (the magnetic field has mass, remember?)

Even if you object, saying that I'm wrong and that any LC natural oscillations are damped by an exponential decay, and what we can see in the above picture is utter nonsense! I will respond to you, saying that you are right but you are also wrong. NOT ALL plain simple LC CIRCUIT HAVE EXPONENTIAL DECAY OSCILLATIONS! Again you might think that I'm insane, but just trust me when I say that there are some LC circuits that exhibit a high Q, and their oscillations are not damped in an exponential decay. There are some coils geometries that creates a spinning magnetic field. The magnetic field has mass, so it will have an inertia. If the natural LC oscillations are in-tune with the spinning magnetic field, then this magnetic spin will create an induced EMF in the circuit and thus our oscillations will not fade away exponentially and it will behave like a high Q LC resonator.



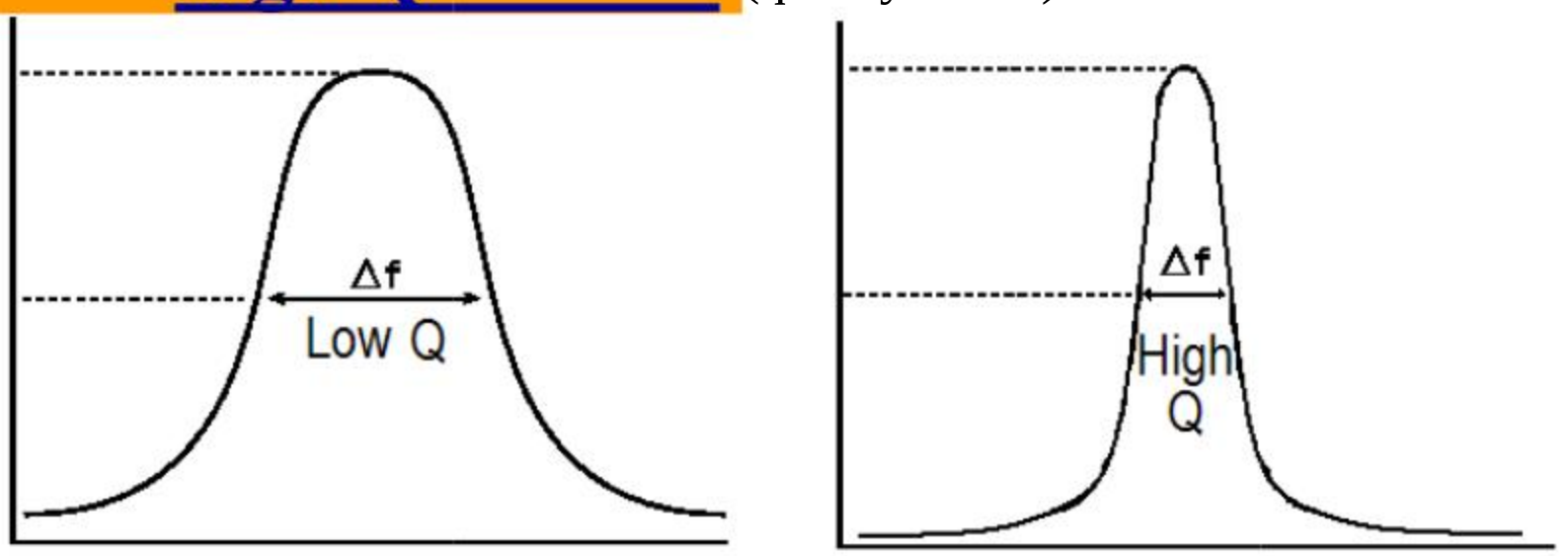


The condition for the natural self-oscillations to occur in an LC oscillator resonator circuit is that **the Capacitive and Inductive reactance must be set** on a harmonic of the fundamental resonant **frequency of the magnetic field created by the coil** L. Thus we say "The circuit works in magnetic resonance" or in other terms: "The natural LC oscillations are in resonance with the magnetic field"

Each time the field builds up and collapses in the coil L, it will happen in tune with a harmonic of the fundamental frequency of its magnetic field.

This setting/tuning/adjusting or controlling by varying the inductive and capacitive reactance will be extremely difficult. Why? Keep in mind that the fundamental natural resonant frequency of a magnetic field at its peak amplitude is expressed by even two decimals for its particular frequency. Meaning that the correct fundamental, first harmonic,

natural magnetic resonant frequency of a magnetic field will be for example 15.43 Hz. **If** you hit this field with 15.6 Hz it will not work! You are too off! **You won't get the maximum effect and maximum amp**litude. This is because the natural magnetic resonant frequency of a magnetic field has a **high Q factor!** (quality factor)



And remember this is for the **fundamental frequency, and when you go higher wit**h the harmonics, it will be even more difficult to tune it.

Let's quote Mythbusters Tesla Earthquake machine epi**sode commentary voice a**bout the tuning on the **fundamental resonant frequency of an iro**n bar:



"With a computer control

ACCURACY

OF ONE HUNDREDS OF A *HERTZ,* ***something Tesla could only dream of,***

they are having much more success fine tuning Grant's all most frictionless motor to the steel bar natural frequency".
(*Mythbusters "Earthquake machine" episode 60 in series/71 overall, season 2006, air date: August 30*)

I deliberately wrote in such big letters, because I don't actually think anyone could tune to magnetic resonance with a standard signal generator. **Consider this well, and think this through how you can achieve such accuracy to reach magnetic resonance!**

Additional insights on the TPU, MEG, and Flynn SSG devices.

I know that I said that all these devices are based on the same principle **-magnet switchers-**, and then I added that they all are sophisticated **embodiments of magnetic resonance** principle. All this is correct, but now I will add another descriptive argument about them, and that is **they are actually "magnets in self-oscillation" actuated slightly from time to time** (in phase with the oscillations-comment on 20.02.2012 - actually more like a 45 to 90 degree phase shift) by small kicks to keep the self-oscillations going. Therefore is not the actuator/exciter or input coil that cause the magnet to switch path, but in fact this **switching happens by itself**, and if no load is put to stress this flux, (that is when this flux is switching by itself, with no additional input) if no load is connected to these solid state generators, these self-oscillations will keep going for a while even with no input by the user, just like a Sweet VTA magnet that oscillated a thin blade on top of it for more than 24 hours just by itself, with nothing attached to it, locked in a cabinet by Tom Bearden.

Considering all the insights until now, we can say with a highly degree of certainty that the TPU, MEG and Flynn SSG are actually **a means to achieve an end,** a way to harness the self-oscillations that are set in a special "conditioned" (re-magnetized) magnet. The devices construction means nothing. The construction details are useless, if we don't understand the principle of operation. The devices by themselves are garbage, junk. They mean nothing. What we are actually doing is to harness, or to extract energy from the self-oscillations set in a special re-magnetized magnet. Again, by self-oscillations I mean the ability of a special magnet to vibrate(oscillate) it's own magnetic field. Such oscillations if they are properly set in a magnet, will not suffer from friction or any resistance whatsoever. However, when we will try to capture the energy from these oscillations, and force them to do work, they

will inevitably stop. Unless...we actuate them/excite them with an input signal kick in phase with the self-oscillations in the magnet, so that they will not fade away. Then the energy captured from these oscillations will be greater than the input kick. This is what TPU, MEG, VTA and Flynn solid state generator are doing, they are just capturing this self-oscillations energy set in a magnet. We can of course use any harmonic of the fundamental natural resonant frequency to keep the self-oscillations going.

Yeah, but how is this special magnet realized? How do we condition a magnet? How do we set self-oscillations in a magnet? How do we condition a magnet to behave like this? How do we brake a magnet symmetrical field?

The answer: Resonance! Remember the DESTRUCTIVE EFFECT THAT RESONANCE HAS ON SOLIDS? If not, again I recommend watching Mythbusters episode on Tesla Earthquake machine. Now remember from physics that by solids, we should actually understand "mass". The magnetic field has mass, thus has a resonant frequency. Now I will give you an answer by asking you a question: Why do you think it's called BROKEN SYMMETRY?

Ring any bell?

By braking the magnet symmetrical field using it's resonant fundamental natural frequency, the oscillations we used to brake it will keep going for a while, after everything is stopped. If we have used enough power and flux density, the magnet will re-magnetize in this DYNAMIC fashion. This is what we have to understand by "conditioning the magnet".

Considering all of these, the fact that Steven Mark took the magnets, oh...sorry...took the "broken magnets" (special magnets) apart from the TPU, when it wasn't working, gives further credibility to everything said until now. I understand that he used slots for the special magnets, because they will eventually demagnetize and he wanted access to replace them, but he could have left them in their slots, right? Why didn't he do that? The most likely reason, supports all these deductions and is the fact that the TPU core acts like a "load" or friction for these self-oscillations in the magnet, due to eddy currents. If this idea is correct, and most likely is, then if we leave the special conditioned broken magnet in the device (MEG, TPU or Flynn SSG) for too long, the self-oscillations will stop, and eventually the magnet will not self-oscillate at all. Remember, that when in operation the self-oscillations are maintained, and nourished so they will not stop, no matter what. But leaving the self-oscillations to do work, without properly exiting them will most surely lead, after some time, to the restoring of the magnet balance and equilibrium and thus becoming an ordinary magnet.

Insights regarding VTA: From studying the VTA, we can pretty much understand the reasons why Sweet choose those huge magnets, for two main major factors:

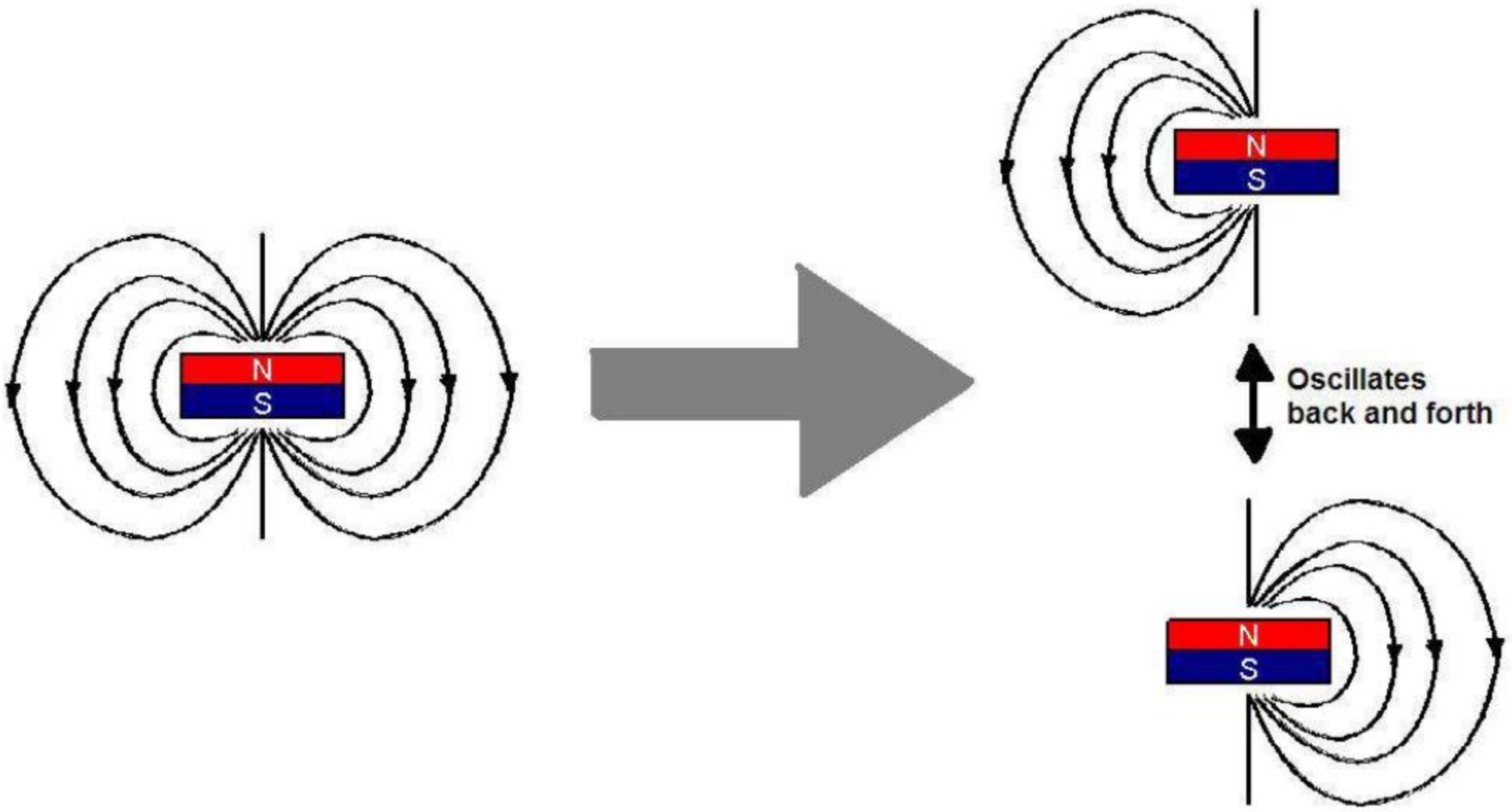
1. The Bigger the field, the lower the fundamental resonant frequency. At the lower fundamental resonant **magnetic field frequency the Q factor is reduced.** Thus we don't need high accuracy to pin-point the exact fundamental frequency.

2. He wanted to use to lowest sub-harmonic possible to the magnetic field resonance, because he wanted to extract at the output an exact 60Hz sinewave, so that not to complicate further the design using an inverter. The closer you get to the fundamental frequency with the actuator frequency the better the amplitude, and the higher the output power. Therefore, if he had used let's say the third harmonic of a fundamental frequency of a 20Hz magnet, then such a magnetic field will be to small, and thus to low output power. He then realized that the next closest harmonic he could use was the 5th. Thus the 5th harmonic of a fundamental frequency of a magnetic field, leads to a 12Hz fundamental resonant frequency. So he had to find a magnet that has a fundamental resonant magnetic field frequency of 12Hz, and that's a BIG magnet!

CONDITIONING THE MAGNETS. (Re-magnetization process)

I know I said, that the "magnetic domains" Sweet explanation for the inner operation of the VTA was wrong, but I find myself, in an awkward position when I may have to take back those words. But I still think that it's not correct, but it's also not wrong either. More likely is an inaccurate/inadequate/superficial approximation of reality. These self-oscillations **for a lack of a better understanding of magnetism, and the special dynamic re-magnetization process,** I am starting to understand why Sweet used this theory to explain his device. We are finding ourselves here, on an uncharted land, and that is the fact that "magnetic domains" are found in two major categories: **static magnetic domains,** and **dynamic magnetic domains.** Seems absurd, I know, but bear with me.

From the Radus boots, to MEG, and Flynn devices, we are taught that a magnet can switch its preferred flux path:

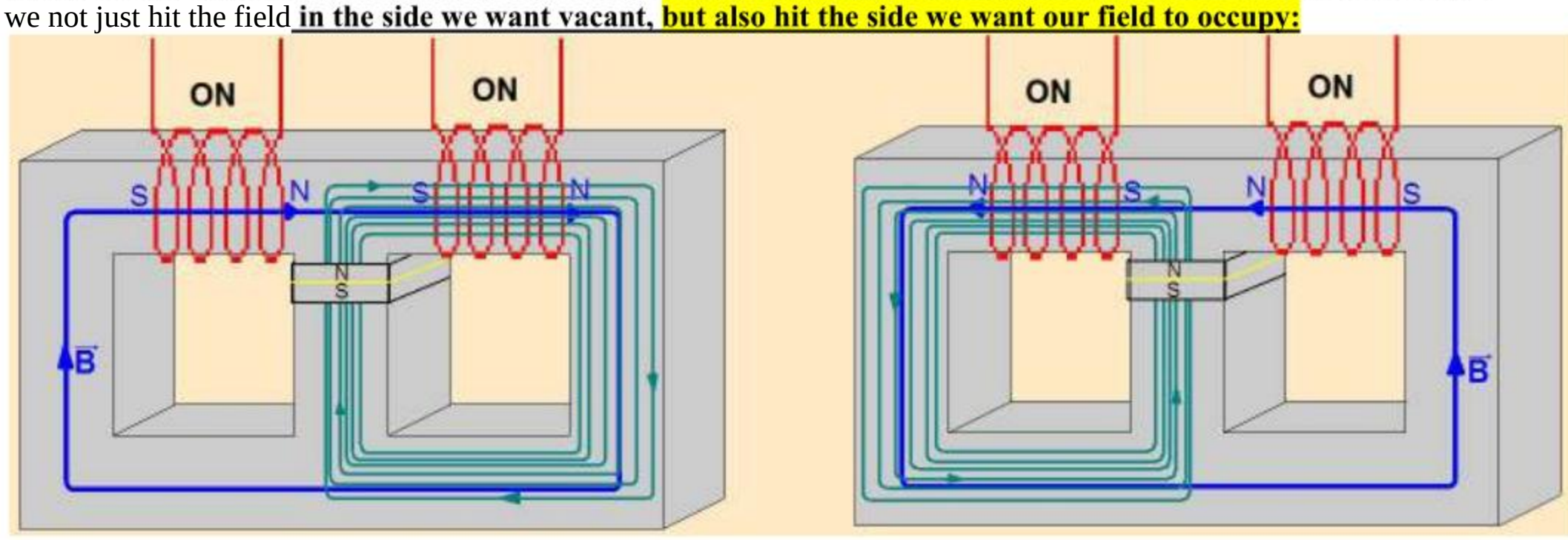


Magnet with a static magnetic field

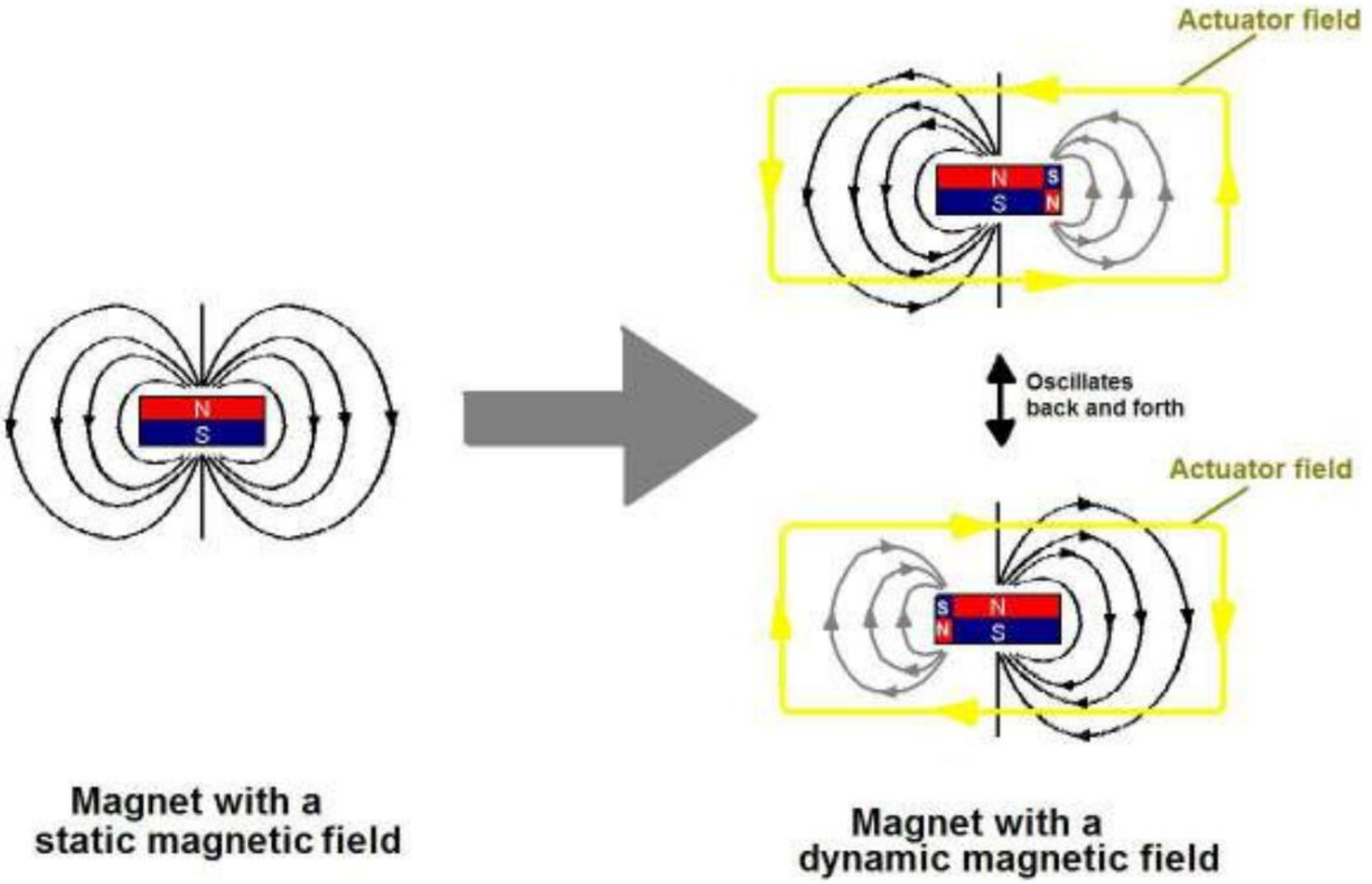
Magnet with a dynamic magnetic field

(These self-oscillations are weak, but consistent. If they are put under load, friction, stress or resistance they quickly fade away permanently (non-irreversible). The self-oscillations can be restarted with a small input magnetic field (hitting them). Such a small magnetic field can be from a coil (inside the TPU) or from another magnet.)

Right, this is known and understood, but remember that this switching of the magnetic field happens more efficiently if we not just hit the field **in the side we want vacant, but also hit the side we want our field to occupy:**



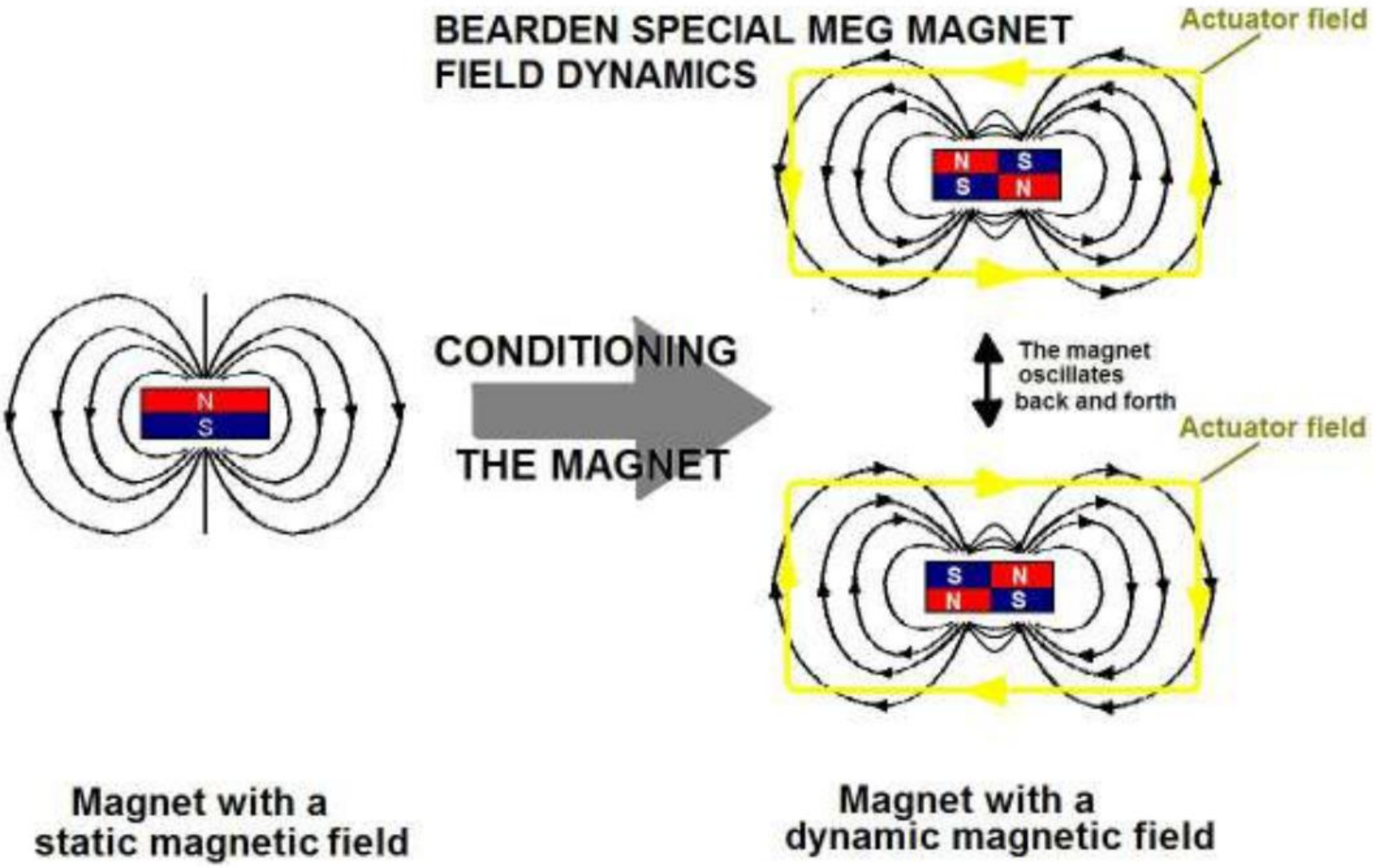
This changes our previously assumed model like this:



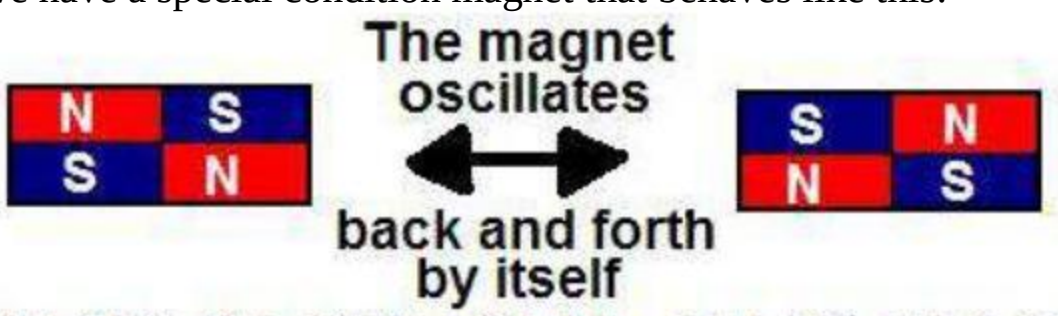
(These self-oscillations are weak, but consistent. If they are put under load, friction, stress or resistance they quickly fade away permanently (non-irreversible). The self-oscillations can be restarted with a small input magnetic field (hitting them). Such a small magnetic field can be from a coil (inside the TPU) or from another magnet.)

We should not ignore the fact that additional poles will be formed in the re-magnetization process. Thus the **“vacant side of 0 magnetic flux” is not 0 after all!**

After we have made room in our minds for this new idea, then we realize that there is no reason, for the magnetic fields created in one side and the other to be unequal, and we reach a more close to reality conclusion:



So in conclusion we have a special condition magnet that behaves like this:



(These self-oscillations are weak, but consistent. If they are put under load, friction, stress or resistance they quickly fade away permanently (non-irreversible). The self-oscillations can be restarted with a small input magnetic field (hitting them). Such a small magnetic field can be from a coil (inside the TPU) or from another magnet.)

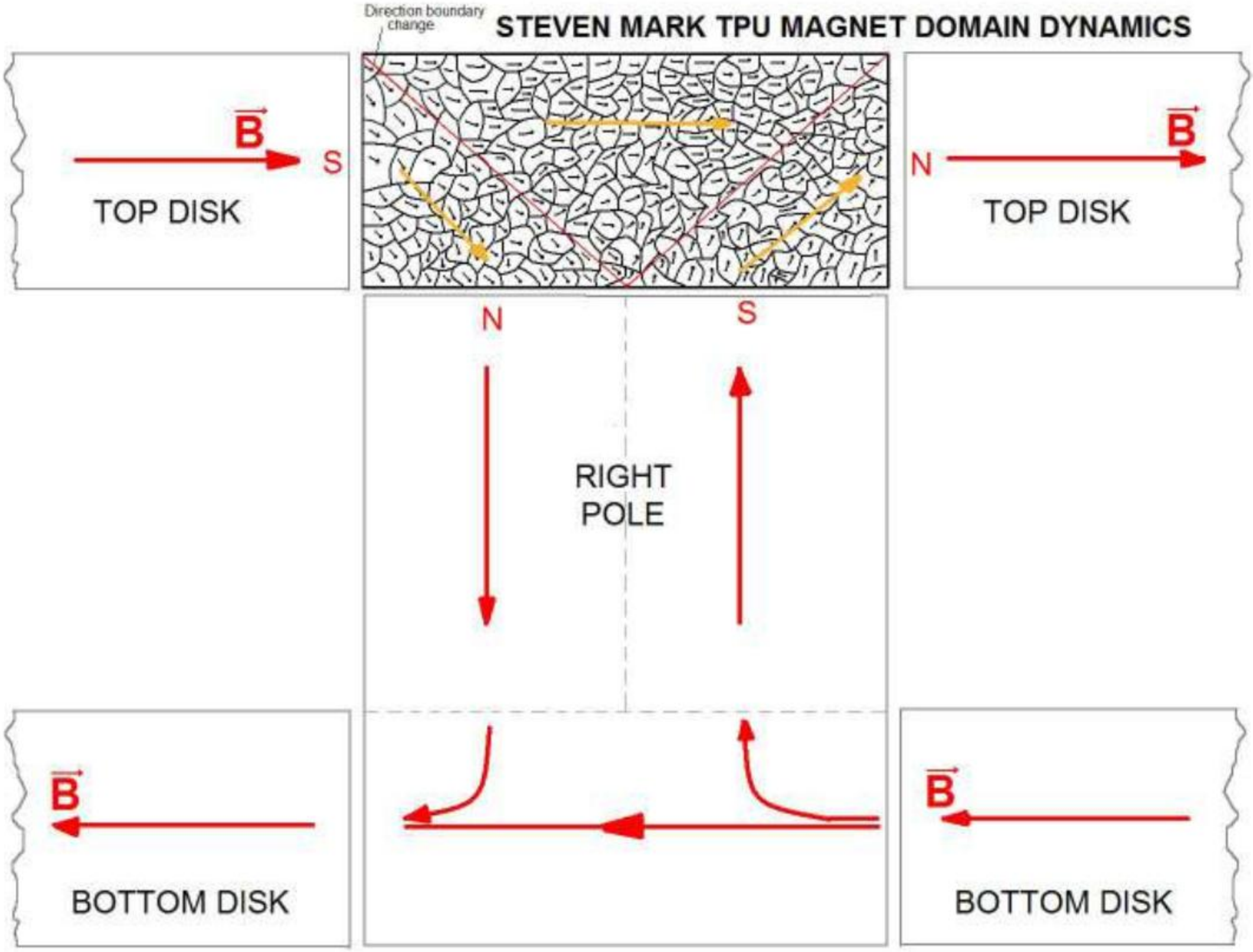
An obvious practical question now arises: How on earth are we going to re-magnetize a magnet in such arrangement? If it's not obvious by now, the answer is simple and right in your face. **We magnetize/re-magnetize the magnets in the device itself!** Just where they are and where they will continue to be after the conditioning!

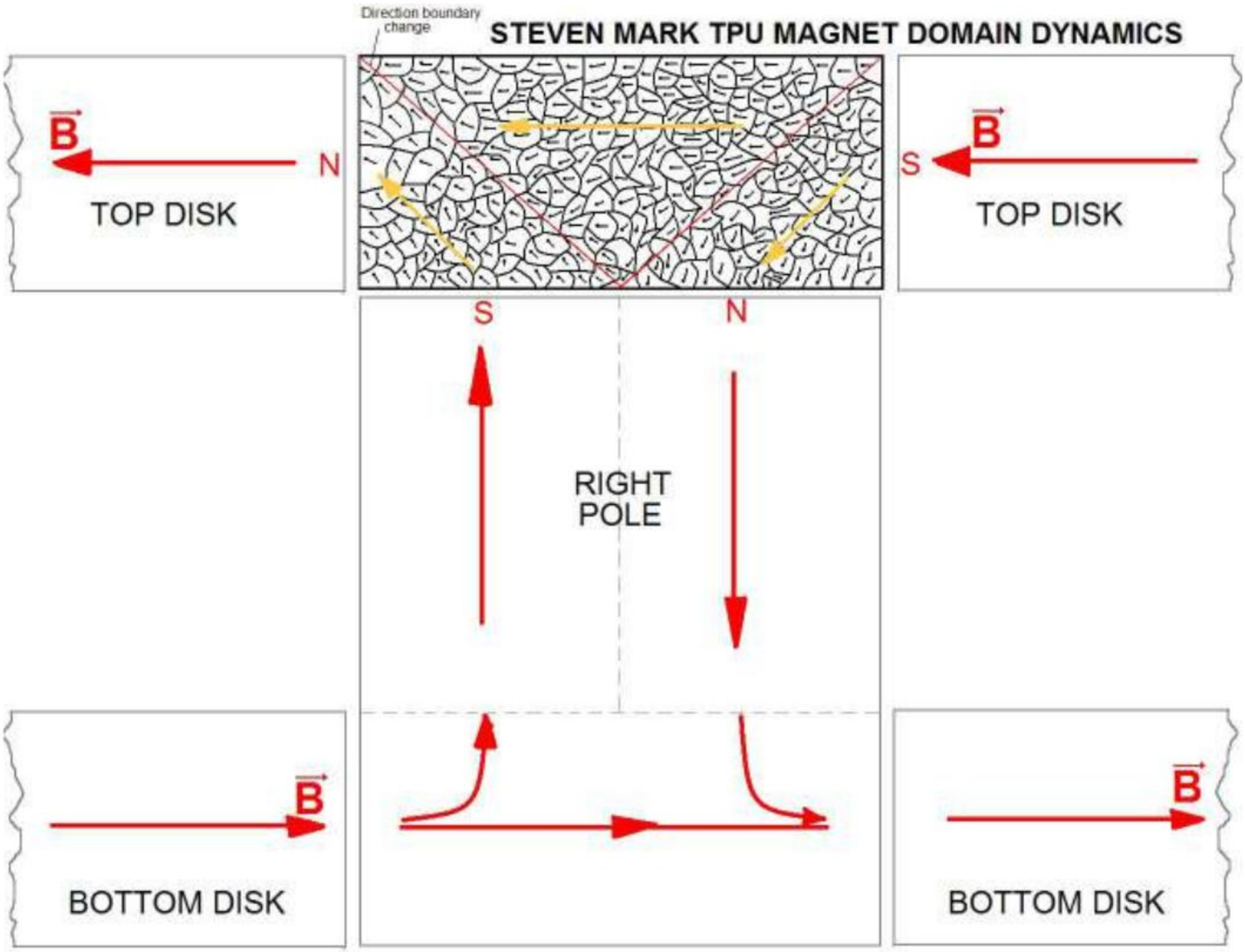
MAGNETIC DOMAINS DYNAMICS

The magnetic domains dynamics producing the self-oscillating magnetic field of a magnet is definitely unexplored land. For the self-oscillations to occur, the magnet must be magnetized in a powerful sinewave(ideal) (or square wave) alternating magnetic field, in the manner presented above.

In Steven Mark TPU, magnetic domains dynamics in his magnets are like this:

STEVEN MARK TPU MAGNET DOMAIN DYNAMICS

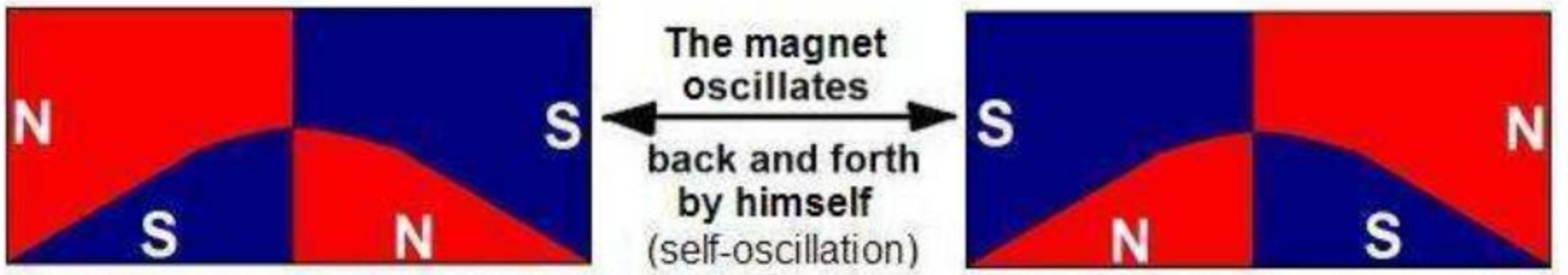




Remember, without a proper understanding of "Magnetic resonance" concept, the "magnetic domains dynamics" won't make any sense!

This is because, the dynamics only happens at magnetic resonance! The dynamic 180° self re-orientation of the magnetic domains has to happen at a rate/beat/frequency in tune with the resonance of the field created by them!

All things considered, our TPU magnets should look like this:

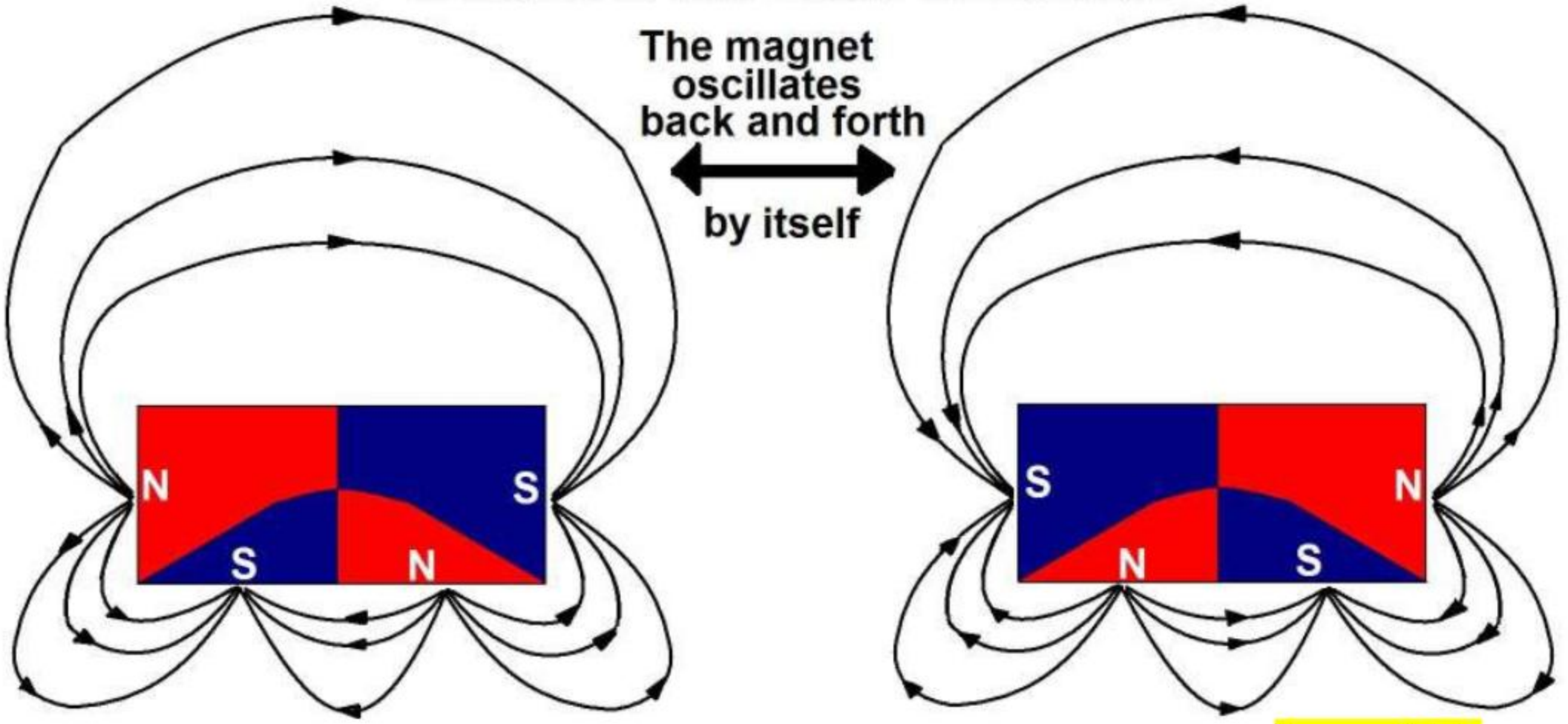


STEVEN MARK SPECIAL TPU MAGNET

(These self-oscillations are weak, but consistent. If they are put under load, friction, stress or resistance they quickly fade away permanently (non-irreversible). The self-oscillations can be restarted with a small input magnetic field (hitting them). Such a small magnetic field can be from a coil (inside the TPU) or from another magnet.)

And their special magnetic field conditioned for self-oscillations would look something like this (when they are taken apart from the device):

STEVEN MARK TPU MAGNET FIELD LINES ORIENTATION WHEN IT IS TAKEN APART FROM THE DEVICE

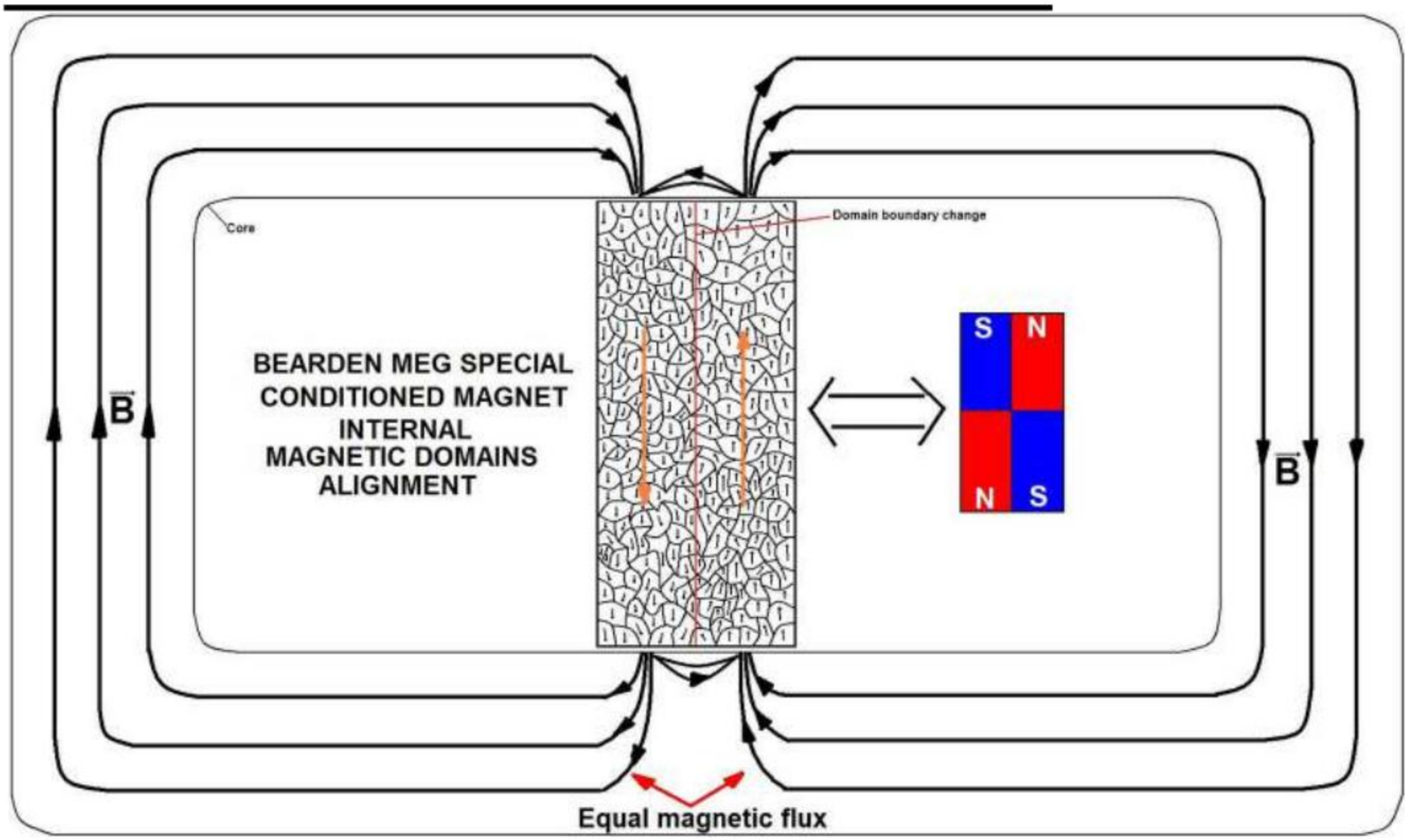


These self-oscillations are weak, but consistent. If they are put under load, friction, stress or resistance **they quickly fade away** permanently (non-irreversible). **The self-oscillations can be restarted with a small input magnetic field** ("hitting" them). Such a small magnetic field can be from a coil (inside the TPU) or from another magnet.

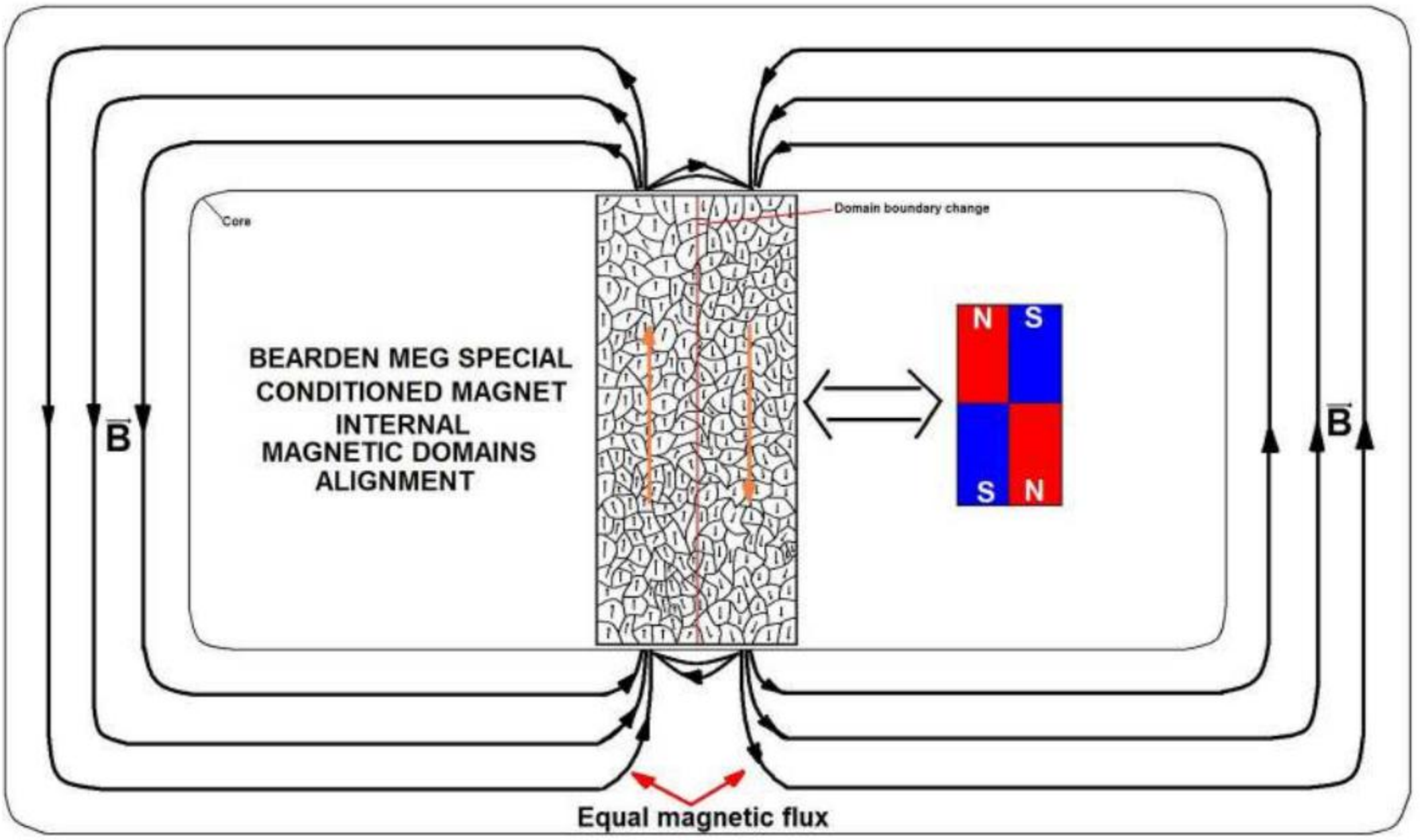
THIS GIVES FULL CREDIT AND AUTHENTICITY TO THE SITUATION WHERE STEVEN MARK STARTS ONE OF HIS TPU LIKE DEVICE JUST BY

WAVING A MAGNET NEAR IT!!!

MEG MAGNET DOMAIN DYNAMICS



Magnet oscillates back and forth between these states (self-oscillation)

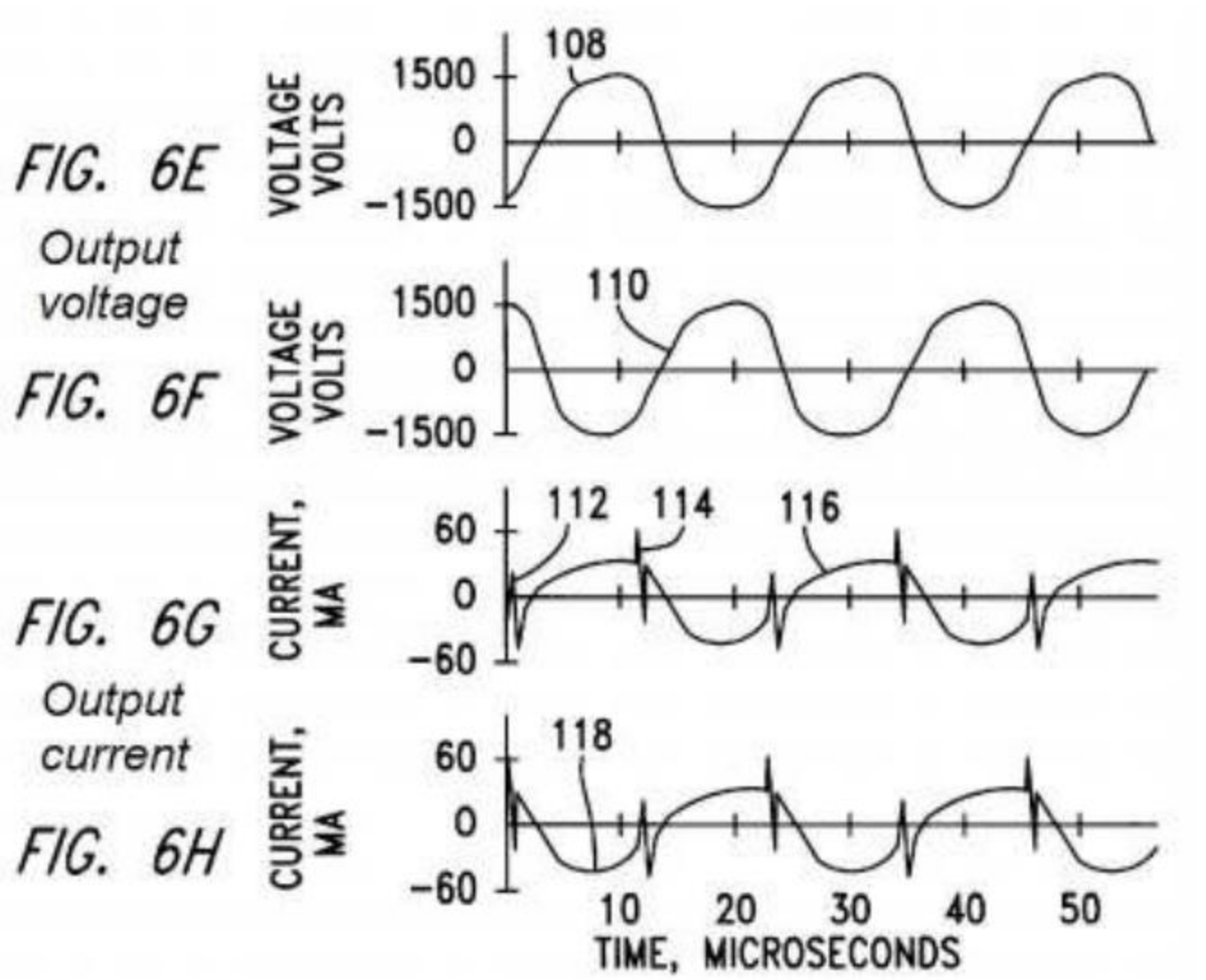


(These self-oscillations are weak, but consistent. If they are put under load, friction, stress or resistance they quickly fade away permanently (non-irreversible). The self-oscillations can be restarted with a small input magnetic field (hitting them). Such a small magnetic field can be from a coil (inside the TPU) or from another magnet.)

Don't even think or consider replacing the central magnet with two identical magnets put together in opposition. First it's silly, and second if you had that thought passed through your mind, then it's clear that you haven't understood the self-oscillations in the magnet. It's not two magnets. It's only one magnet that self-oscillates behaving like two magnets joined together at an instant.

MORE INSIGHT ON MEG INNER OPERATION PRINCIPLE

If you think about it well, you will come to realize that **in order for the MEG to generate a sinusoidal output, SOMETHING MUST BE SPINNING!!!**

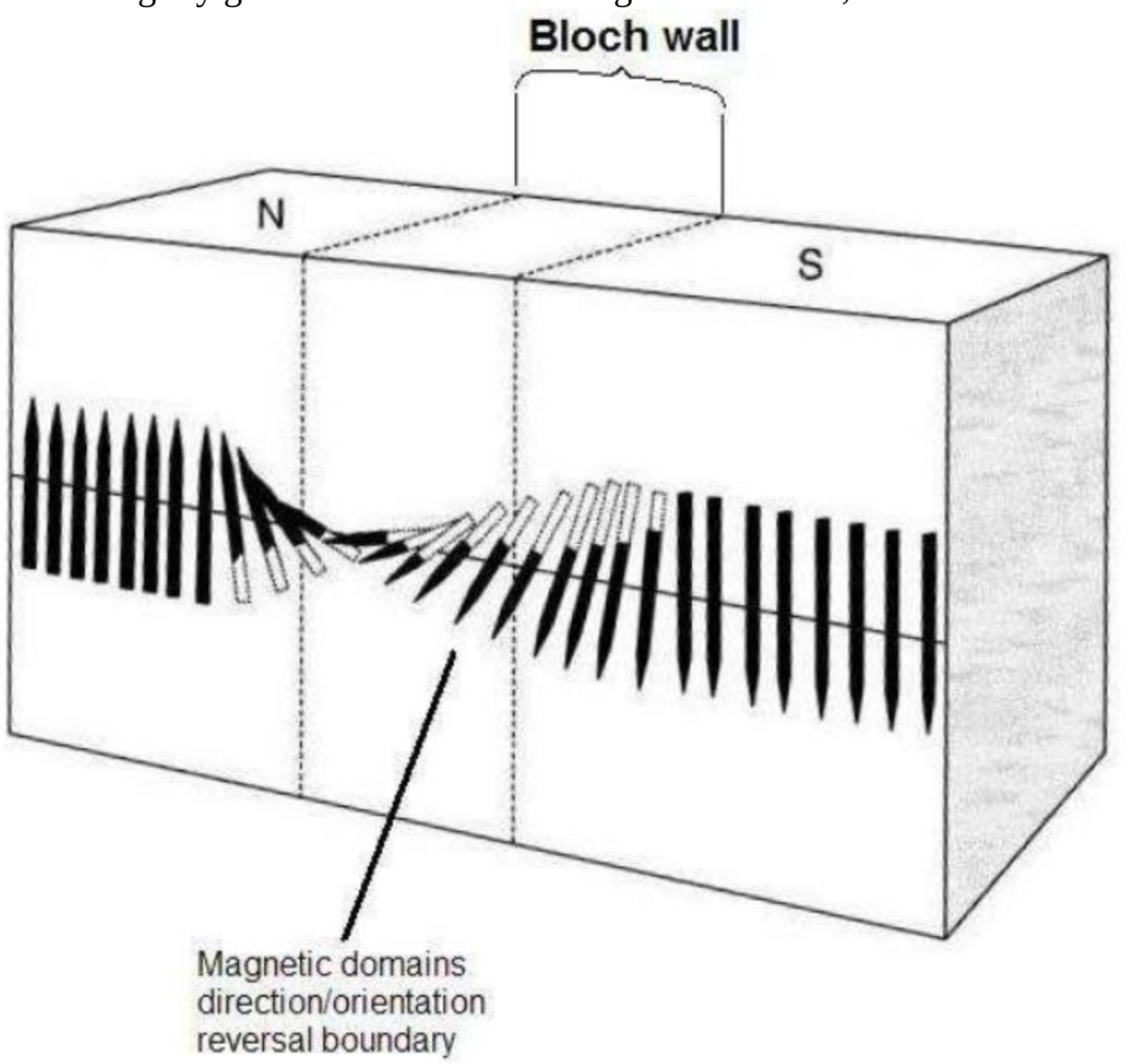


(US Patent nr 6362718 MEG sheet 3 of 5)

So what is it? The answer is the magnetic domains in the magnet! You might say: Ok.... But how can this be? And this is where things start to go very complicated, but I will try to make it as simple as I can.

First I will like to add that there is nothing like Solid State Generators in the Entire Universe. The usage of the term “Solid State Generators” is flawed for two main reasons> First, There is nothing “Solid” in this Entire Created Universe! What we define “solid” is something made out of atoms, that are made of guess what! Empty Space! The Atom is 99,99% Empty Space! Research this on your own, because I’m not going to insist on it too much. Second the term “Solid State” implies no moving parts. But in order for the Generator to do work, SOMETHING MUST BE MOVING! Because you can’t generate movement out of something that is not moving! Everything in Creation is moving! EVERYTHING! Therefore Something IS MOVING in all these generators, but WE JUST CAN’T SEE IT! Either it’s too small (magnetic domains) or is invisible (magnetic field). Therefore the use of “SOLID STATE GENERATORS” IS INAPPROPRIATE, but for the sake of argument, and that many people are used to this term, and this notion, and it is pinned down into our vocabulary, we must use it further on.

We must realize that the term that I used as “Domain Boundary change” is not so academic. A more accurate and correct term for it is “Bloch wall”. Now this “Bloch wall” is not an ABRUPT change or an abrupt reversal of orientation! It is a slightly gentle transition in the magnetic domains, like so:

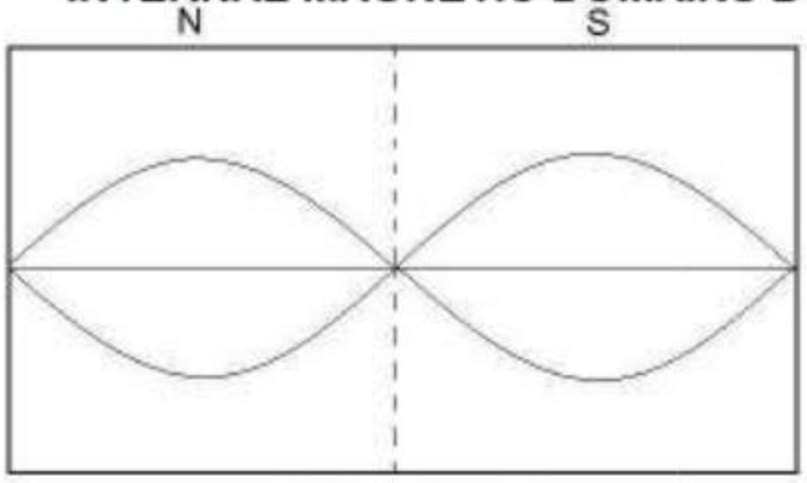


(Magnetism and Magnetic Resonance in Solids - A.P. Guimaraes, Page 134, Figure 5.12)

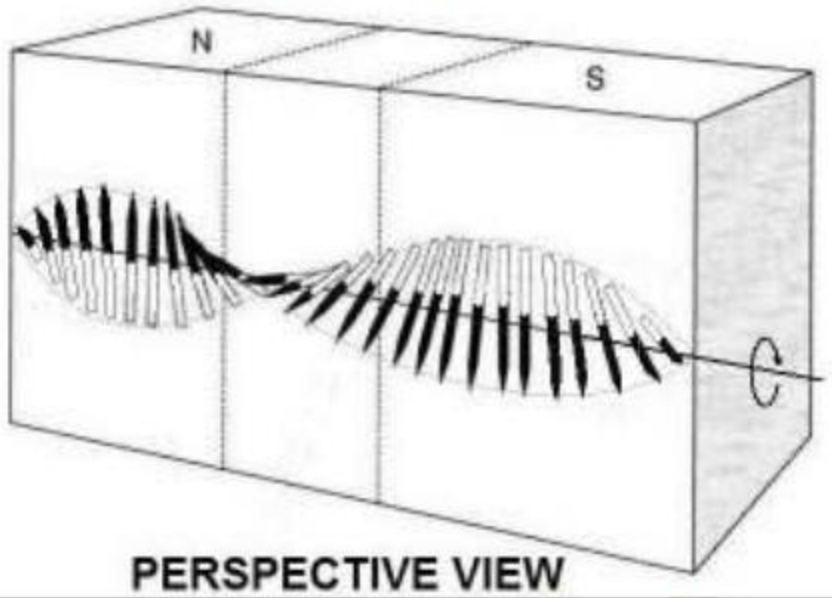
You remember now, that I said that there are no sine waves in the entire Universe? This is another case, out of countless cases, were this is proven to be right. It more resembles a vortex or helix, doesn't it? Again, Universe doesn’t work on the surface screen of an oscilloscope! A sinewave is a distortion! It’s like a shadow of something out of Creation. You can’t look at a man’s shadow, and say that it’s a man! The shadow is nothing! The person who cast it is real! The same with sine waves! They are shadows (2D distorted representations) of a complex 3D vortex/helix entity.

In our MEG case, the above picture is still not accurate. What happens is that a wave is formed between the walls of the magnet (like a standing wave):

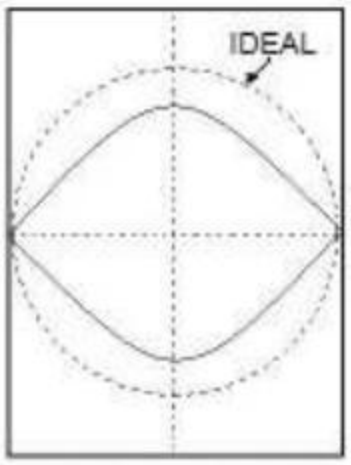
INTERNAL MAGNETIC DOMAINS DYNAMICS IN BEARDEN MOTIONLESS ENERGY GENERATOR



FRONT VIEW



PERSPECTIVE VIEW



SIDE VIEW

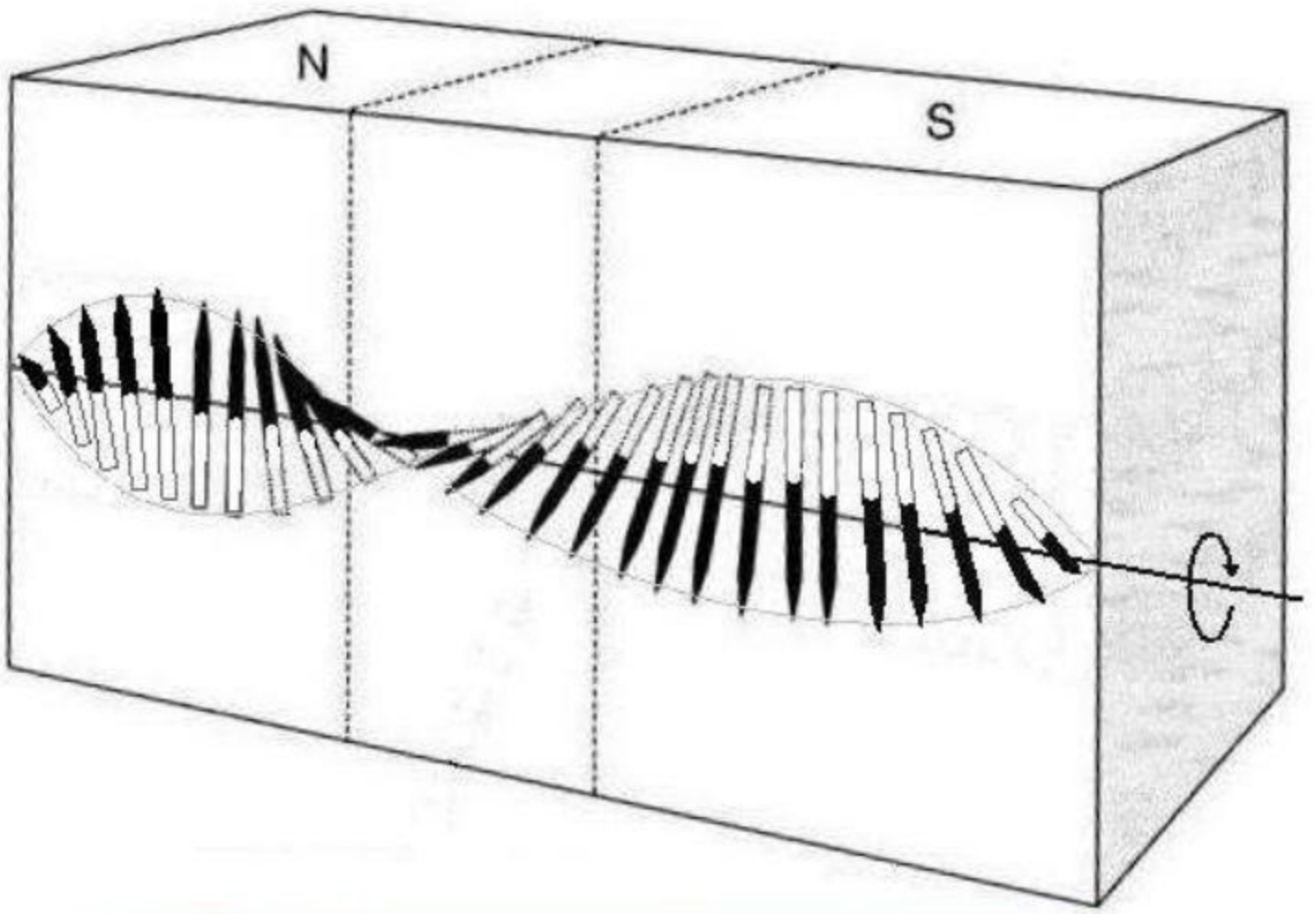


I said it is LIKE **a standing wave**, because it is not, in spite the fa**ct that it may loo**k like, and we might think that **way. From the picture above of a standin**g wave in a **string, we should remember the equa**tion for a standing wave:

$$y = 2y_0 cos(\omega t) sin(kl)$$

So, our equation becomes 0 for certain values of frequency (ω)**. In those moments, a nod**e is formed. In such a point **nothing is moving. Our wave stands still** in that pa**rticular spot. This is however not true f**or our case, because in the Bloch wall region, we **don't have a node**. So this is not a standing wave.

How this looks like is for example like a drill bit, or like one helix of DNA:

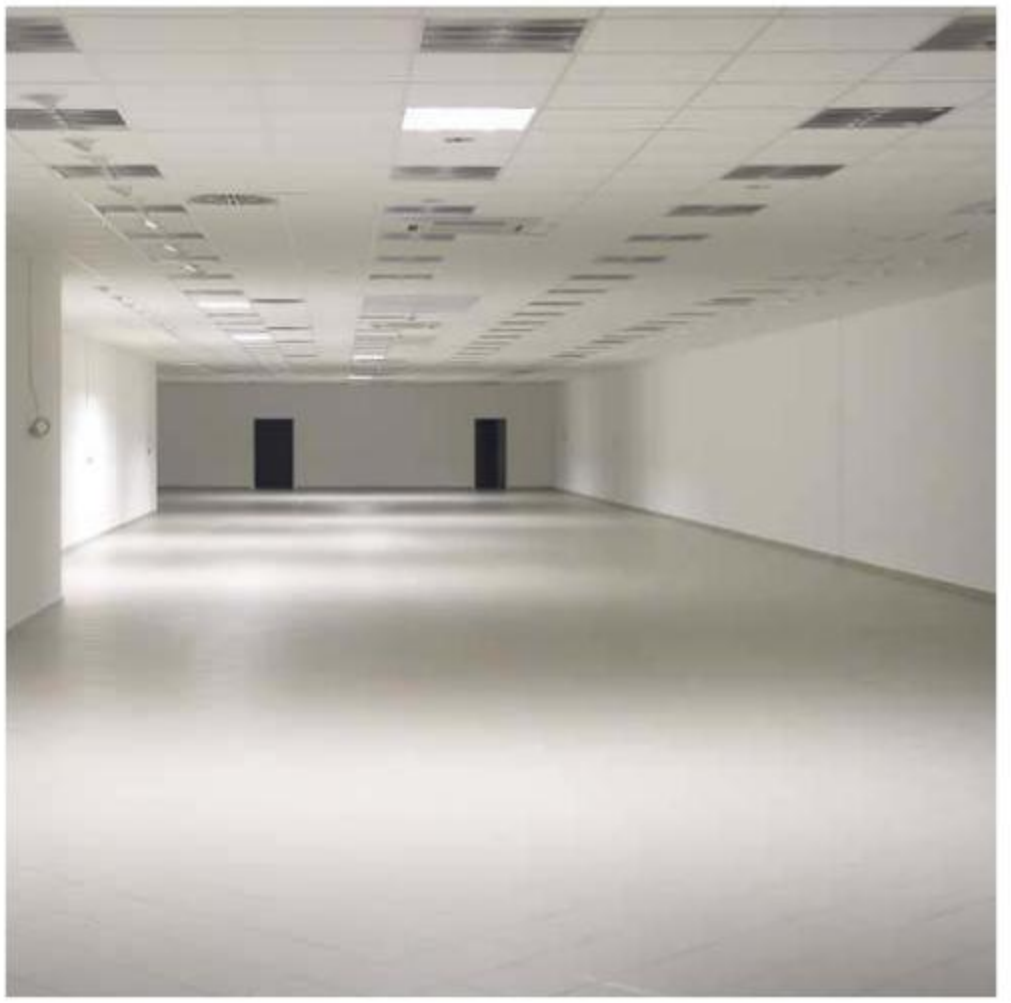






This spin once established is self sustaining. It's like the north pole is always chasing the south pole. Because we have almost no friction, **these self-sustaining self-oscillations established in the magnetic domains will spin indefinitely** again, as long as we don't introduce friction. If we introduce friction, by capturing this outside spinning magnetic field with a coil, then this coil due to BEMF, will slow down the "internal engine". Therefore we must apply a small external input kick that will maintain them. This internal engine in the magnets is what drives the MEG, TPU, and Flynn SSG. Not exactly the same with VTA though. In the VTA this same engine is established also in the air-gap between the magnets. How will this be Overunity? Remember that this spin has a huge inertia, just like the mass heavy weight we see in other free energy motors. Once started if you hit this spin (just pinch it) at the right exact time (in resonance) it will do a lot more work than we are putting in.

Another thing that we must understand here is the fact that our magnet acts like a sound cavity. Just like when you are shouting in a completely empty apartment.

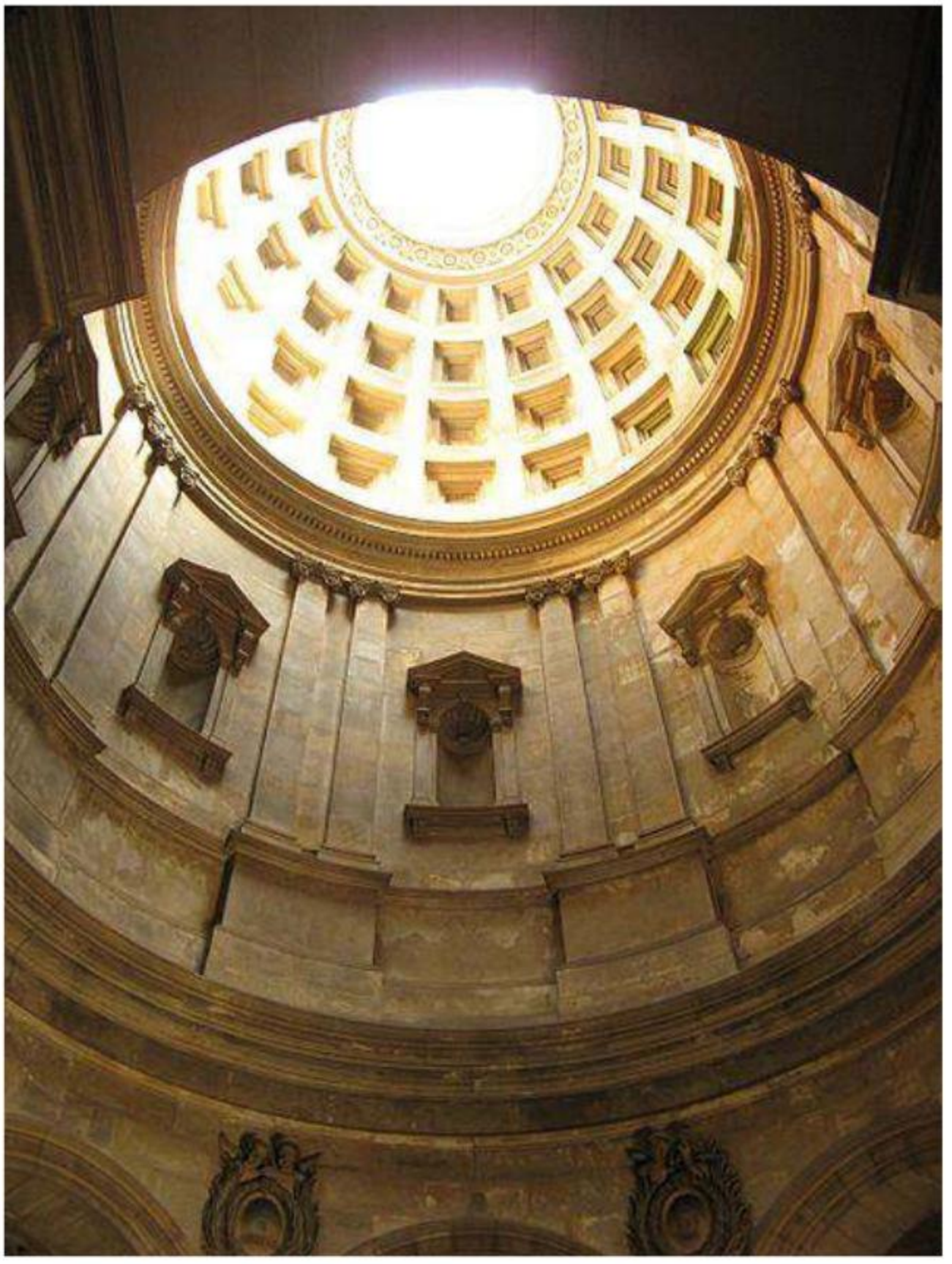


You hear an echo. It is exactly what we seek here. A constructive interference pattern between the outside applied magnetic field and the reflected (echo) wave established in the magnet.

It’s like the exact opposite of anechoic chambers!

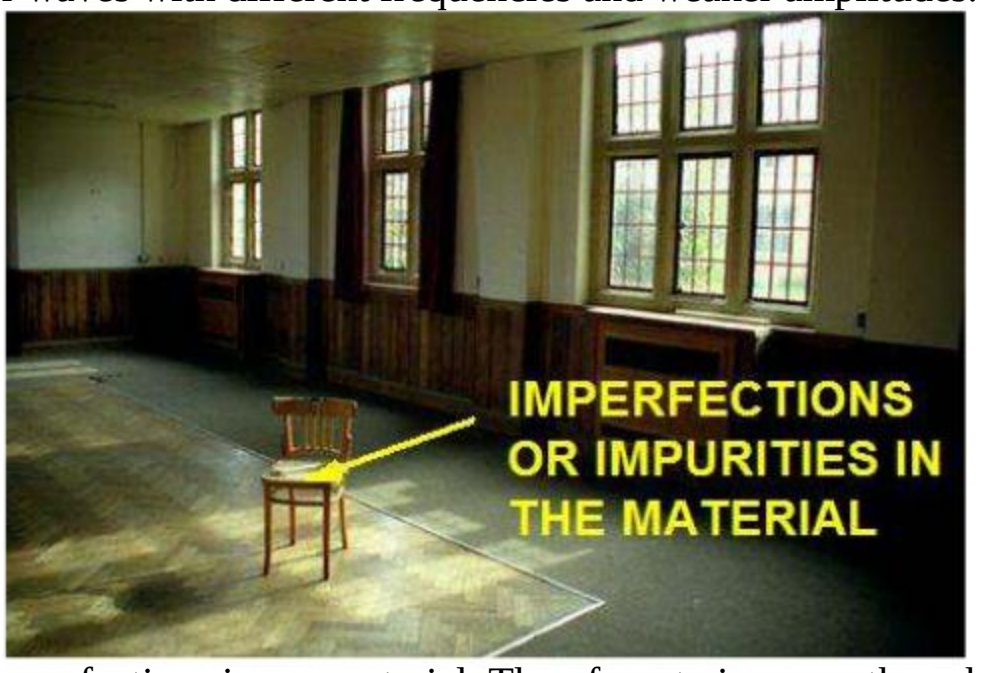


We seek quite the opposite! Therefore more like an echo chamber.



(Hamilton Mausoleum)

In a room, once you bring objects in that room, like a sofa, a table, a chair, a bed etc, that echo that was first there is gone! No more echo! That’s what we might think, but the echo, is still there, is just there are many things in the way, that disperse it into many other waves with different frequencies and weaker amplitudes.



Household object are like imperfections in our material. Therefore, to improve the echo, we must use perfect magnets, no scratches, no cracks, no visible surface defects. As for the inside...hope you are lucky. If not use another magnet, demagnetize it, and start again, and again. until you find the perfect “chamber” that sustains the echo for longer periods.

Interesting how this relates to bigger and bigger temples, churches and cathedrals...



...maybe the architects knew something. The bigger the better is capable to amplify ELF. Exactly the opposite like in standard modern sound amplifiers! The amplification cuts off with frequency! Maybe they knew how to design, and build cathedrals, at specific dimensions, to act as sound amplifiers for many frequencies, so that will operate like a modern electronic sound amplifier. But instead of something that electronics engineers know as self-oscillations which they try to avoid in designing an amplifier, the builders of churches new that this “self-oscillations” is exactly what they want! The bigger the echo the better “God” resides in it! Maybe they knew that by designing cathedrals with specific build in constants, specific ratios between walls and chambers, and special design and so on, then all these things will amplify through the echo being in constructive interference with the voice of the singer or chorus. To amplify the feedback echo sound received in the 3D stereoscopic human ear when is chanting the sacred name of God! To bring the initiate closer to self-resonance as possible! Damn! They were really smart! Wonder what other secrets of this lost art they hold. This will make churches and cathedrals from this point of view, more like “initiation chambers” like the ancient pyramids! Of course from this point of view, this will mean that the churches were never meant to be full with people or objects. One person at a time. Bringing a person much closer to God, Literally! Not the hole mob at once.

Oh, Sorry for that, I went a little bit off topic here, I apologize for my tendency to be carried out by these thoughts.

Another insight we should have in mind is the magical legendary

Singing rod

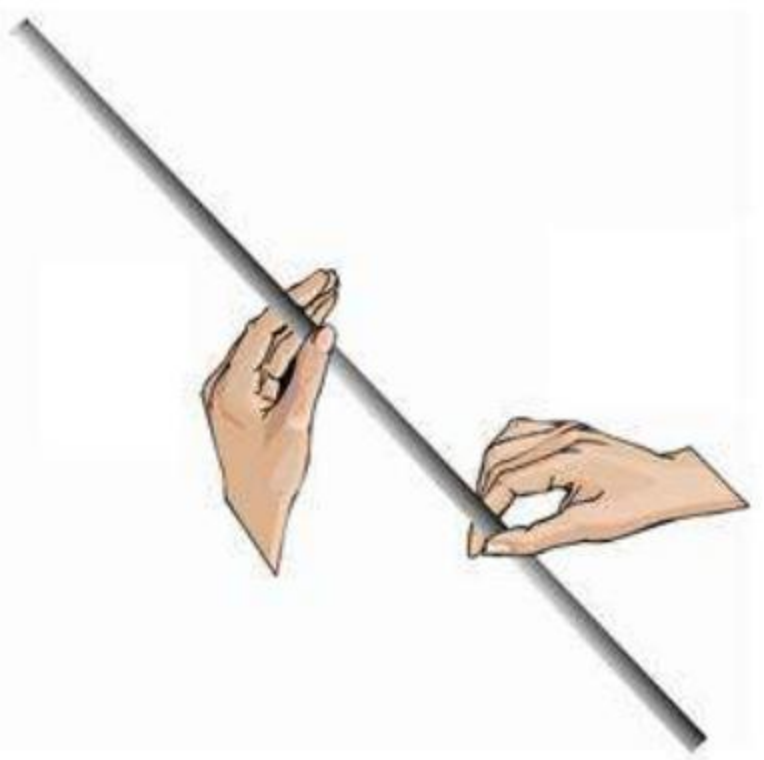


Ian B Dunne demonstrating the singing rod at Southampton University during National Science Week 2010

(See link here)



Legend has it that the song of the singing rod summons the Physics Fairy. She has been known to guide kids through physics problems and experiments. It is thought that the physics fairy inspired a young patent clerk in 1905 to imagine what it would be like to ride on a beam of light. He then developed a very special theory that changed the world of physics.



If you hear for the first time the Singing Rod, then you too will be "inspired by the fairy" to think:

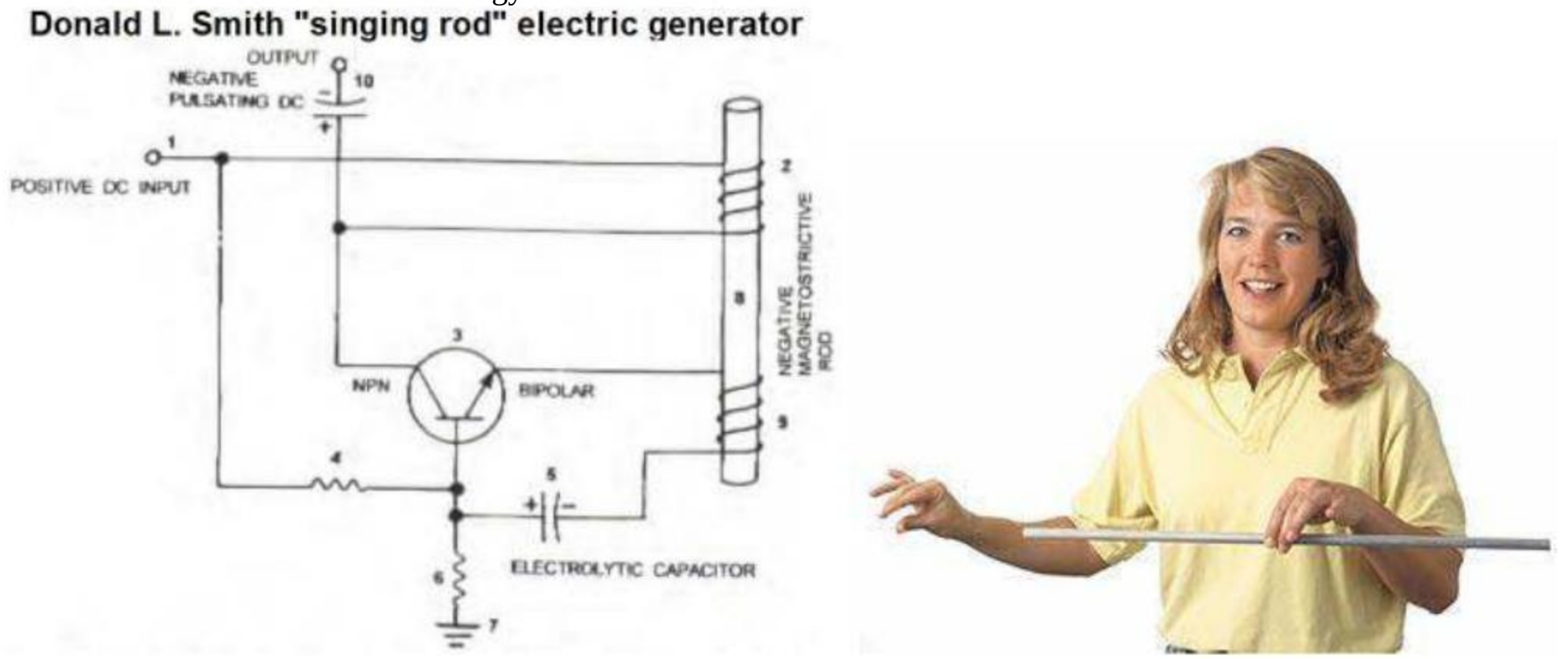
"Look, can't you see? Or better said, can't you hear? That the total Energy Output in Work per unit time done by the singing rod is far greater than of the input? Are we all blind and deaf? Isn't this another extremely obvious and speaks for itself case of overunity and energy gain/amplification? Are we all that blind and deaf? Can't we have a little bit of vision and see that this can be a free-energy device?

I will say to you, my friend, you are right, but you must also realize and wake up to the reality that someone else beat you to it. This has already been done, we just don't know it, and we are not aware of it. This is true, the singing rod can become a free-energy overunity electric generator. We must realize that **there is nothing left in this world to be invented!** I think a great man said this in the past, and it's true . He was highly criticized and ridiculed for it and any sane man will think he was nuts when he said it. We all heard him, but we just didn't really understood what he meant. Everything there is in the entire Universe has already been invented!!! It just haven't been DISCOVERED yet. Everything you can imagine in the entire Universe has already been invented by the Infinite Intelligence that Created all Existence. If you can imagine in your head something out of a Sci-Fi movie, than a Higher Intelligence than yours already imagined it before you, and probably put it into practice to see how it works out in this vast enormous Universe, in a far distant galaxy were no human telescope has gazed yet. Everything you can imagine, any device, any technology, any prototype, any design, everything! Everything! Everything you can imagine has already been invented. Everything! We just didn't discover how to do it yet. We just have to discover it and bring it to light again! Nikola Tesla realized this (his father was a priest), and this is why he never liked people saying about him that he

is an inventor. He always said about himself that he is a DISCOVERER! Think about that for a minute! It is more than a miss-used word!

When you have read what I just said, you might say that I'm a fool, and I should listen to Nobel Prize winner Ivar Giaever when he told the 2008 Beijing Nobel Laureates Forum that "Nothing left to discover, a world to invent". You might say that this is a contradiction. I say different. It is not. My friend, please listen, and bear with me. The apparent contradiction is not the problem here, is the limit of our vocabulary and the limit of our words we have available to use IN ORDER TO EXPRESS OUR IDEAS . We are expressing different ideas and thoughts through the same words that apparently contradict each other, but the unspoken ideas behind the messages are not in contradiction.

If you have just discovered the singing rod, then you must realize that others discovered it before you. We have to admit that the singing rod most likely inspired Donald L Smith to build his free energy bar resonant transformer described in his book Resonance Energy Methods:



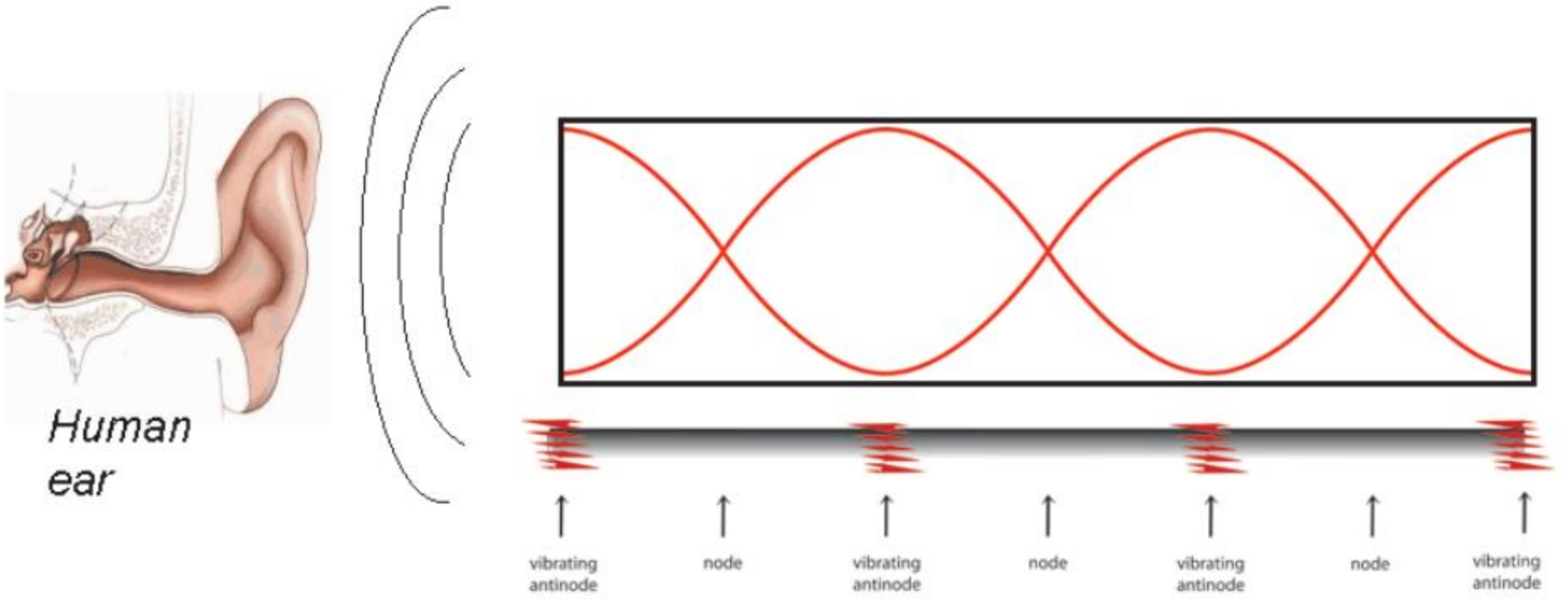
(picture from the book "Resonance Energy Methods" by Donald L Smith page 31)

Let's quote Donald Smith:

"*Magnetostriction* oscillators work by magnetic resonance in a rod of *magnetostriction* material. This rod serves two purposes, it vibrates at frequency of resonance oscillation, and becomes the feedback transformer. Frequency is determined by items 4,5,6 and 8. The diameter, length and volume of the rod and output windings determine the output. Item 2 provides feed back into the system. Negative magnetic character of item 8 plus the windings 2 in reaction to the magnetic flux field provided by 9, increases (amplifies - magnifies) the output. Magnetic permeability is the counterpart of negative resistance. Resonate with negative magnetic resistance it pumps energy from the Earth's ambient background. Magnetic permeability is the ratio of flux density (Earth B field) to the magnetizing force (H) in oersteds. Magnetostrictive materials are piezoelectric in character, have very high resistivity to electrical current flow. Examples are: Permealloy Negative Magnetic Permeability > 80000, Sendust 30000-120000, Metglas 200.000, Iron with 34% Cobalt 13000, New Technology 1000000"

So how does the singing rod work? What's the catch? What the trick?

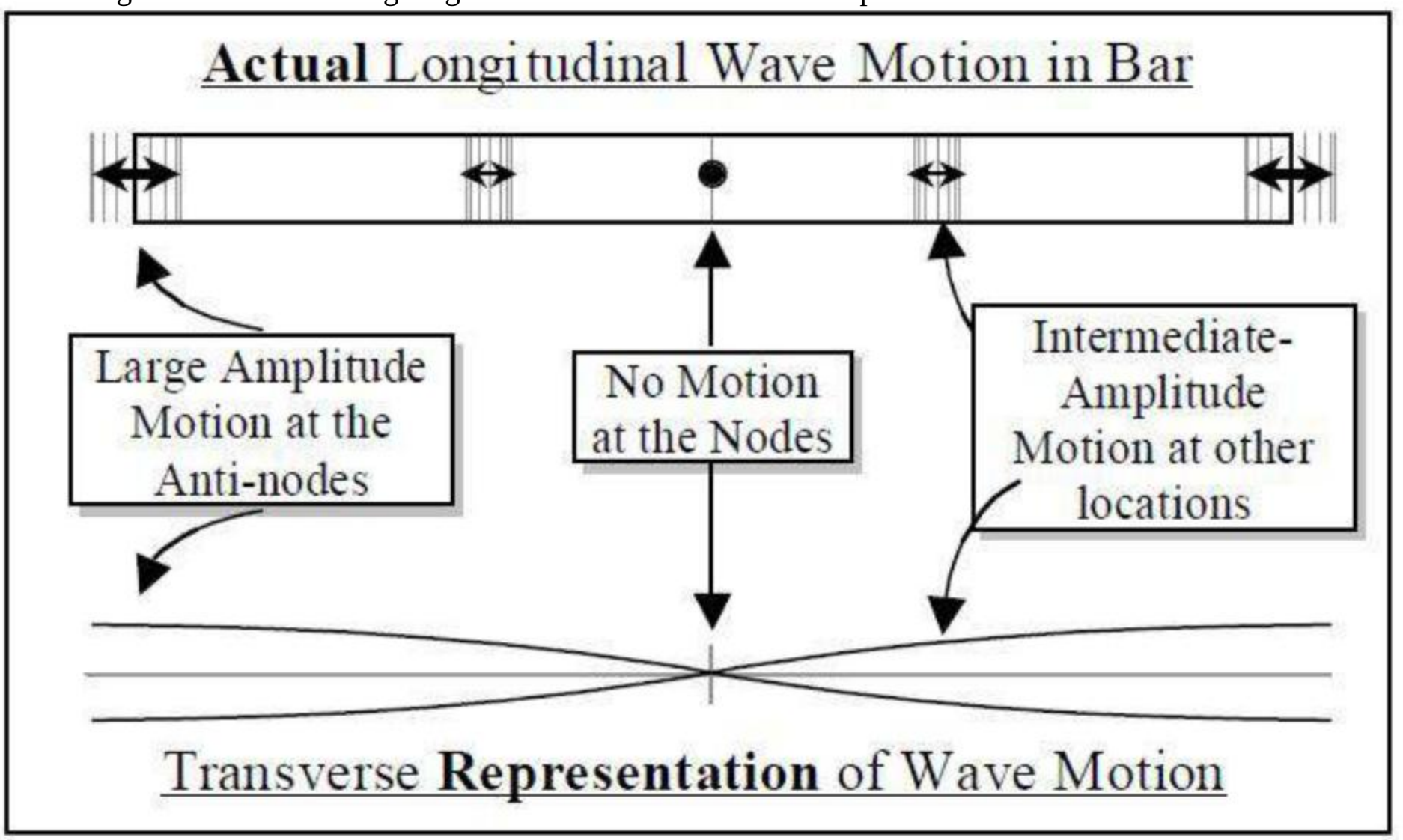
The secret is that the rod acts like a sound cavity. Imagine it like a hollow room were you shout and hear your echo. Almost the same here. Here stroking the rod with sticky fingers creates longitudinal waves in the bar, meaning that waves are produced which travel along the length of the rod.



The waves that are traveling to the end of the rod transmit their vibrations to the surrounding air molecules since a rod will always have anti-nodes at its ends, and some of them are reflected going in the opposite direction thus constructively interfering with the waves already established. Thus a standing wave pattern is established in the rod. That is why it is capable of generating only one tone. Because of its length. You want a different note, you have to cut it shorter or just hold it in a different place, and start again.

And of course as it always happens with all these free-energy inventors, they always, always, always NOT share everything with the listener or reader. In the Donald Smith free-energy resonant rod transformer, what he happens to "accidentally" omit is that the coils 2 and 9 must be placed at specific places along the length of the bar, in order to position them on anti-nodes were all the "magic" happens. Highest magnetostriction is in the anti-nodes of the standing wave pattern established in the rod. In the nodes there is no magnetic domains movement therefore no magnetostriction, therefore no electromagnetic induction. LOL! pretty logic isn't it? I just hate when people happen to omit the most important aspect of their invention, don't you?

Although the waves in the singing rod are longitudinal, they are more easily represented by showing a transverse standing wave. The following diagram shows how the motion is represented.

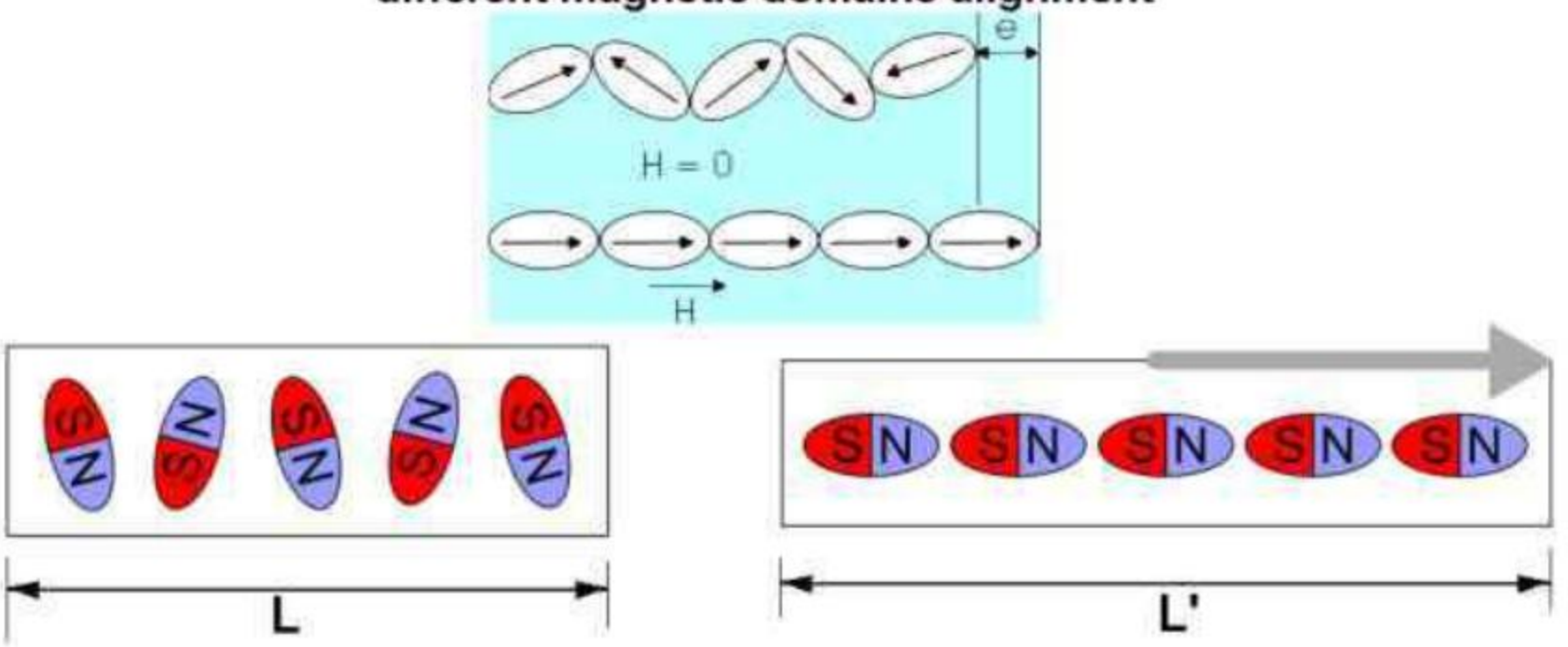


Simple experiment (click link here) that proves the actual longitudinal wave generation in the singing rod:



Now if you think that this is an easy cheap way of producing free energy, Think again! First of all, the singing rod is made out of pure aluminum with extremely low impurities in the material itself. Second if we want to generate electricity out of this standing wave pattern that is formed inside, aluminum is not a magnetostrictive material, because it has no magnetic permeability whatsoever. Therefore we need a special alloy material that has both high magnetostriction and high permeability so that the actuator is a magnetic field instead of our fingers. This material is hard to find since all most common cores we use today in transformers are design specifically to minimize magnetostriction.

Magnetostriction illustration as a difference in size of the material due to different magnetic domains alignment



Singing rods are usually used to create Friction Harps like we see here.

THE RE-MAGNETIZING PROCESS (CONDITIONING THE MAGNETS)

I don't really like it, but I'm going to quote Floyd associate Maurice again:

"A side note is that Floyd delighted in telling people, when they asked how he treated his magnets, they should get the magnets real hot first. This apparently "screwed up" the magnetism and he enjoyed doing this for some weird reason!"

Crap, crap and again crap. What is really going on here is:

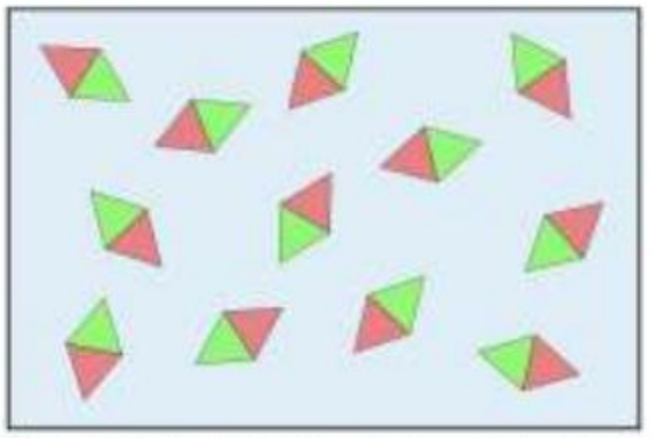
In order to re-magnetize/magnetize a magnet or a material, we must take into account, "resetting"(demagnetizing) making it virgin again, or erasing it's magnetic history/memory first.

This is done by heating the magnet above the Curie temperature which is:

310-400°C for Neodymium magnets;

700-860°C for Alnico magnets;

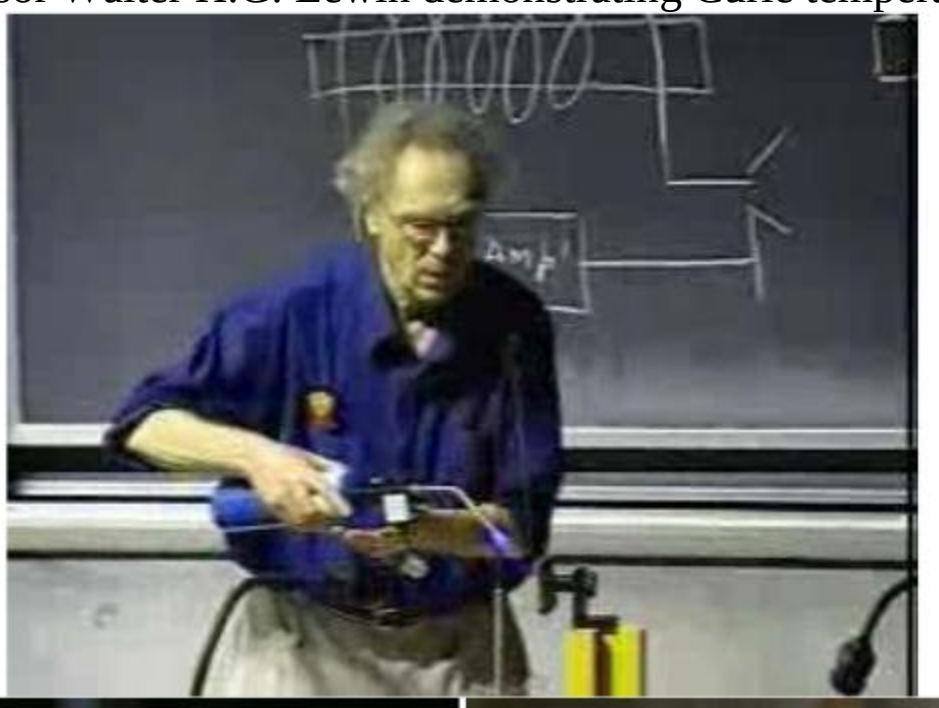
720-800°C for Sm-Co (Samarium-Cobalt/rare-earth) magnets;
450°C for Sr-Ferrite (Strontium-Ferrite) magnets. (data collected from here)

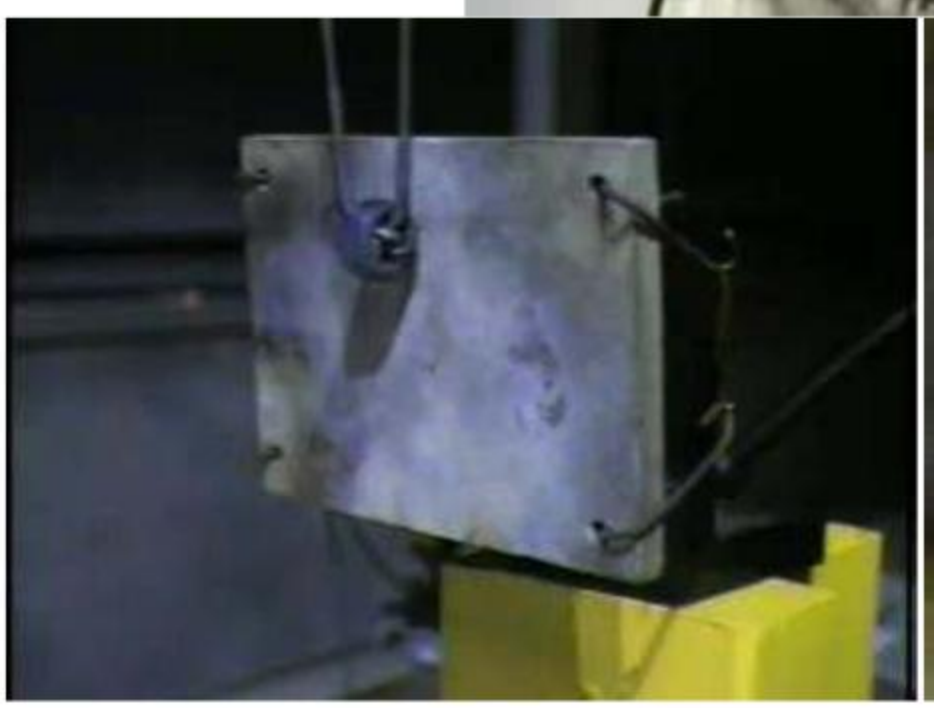


Above the Curie temperature, the magnetic spins are randomly aligned unless a magnetic field is applied.



Professor Walter H.G. Lewin demonstrating Curie temperature:

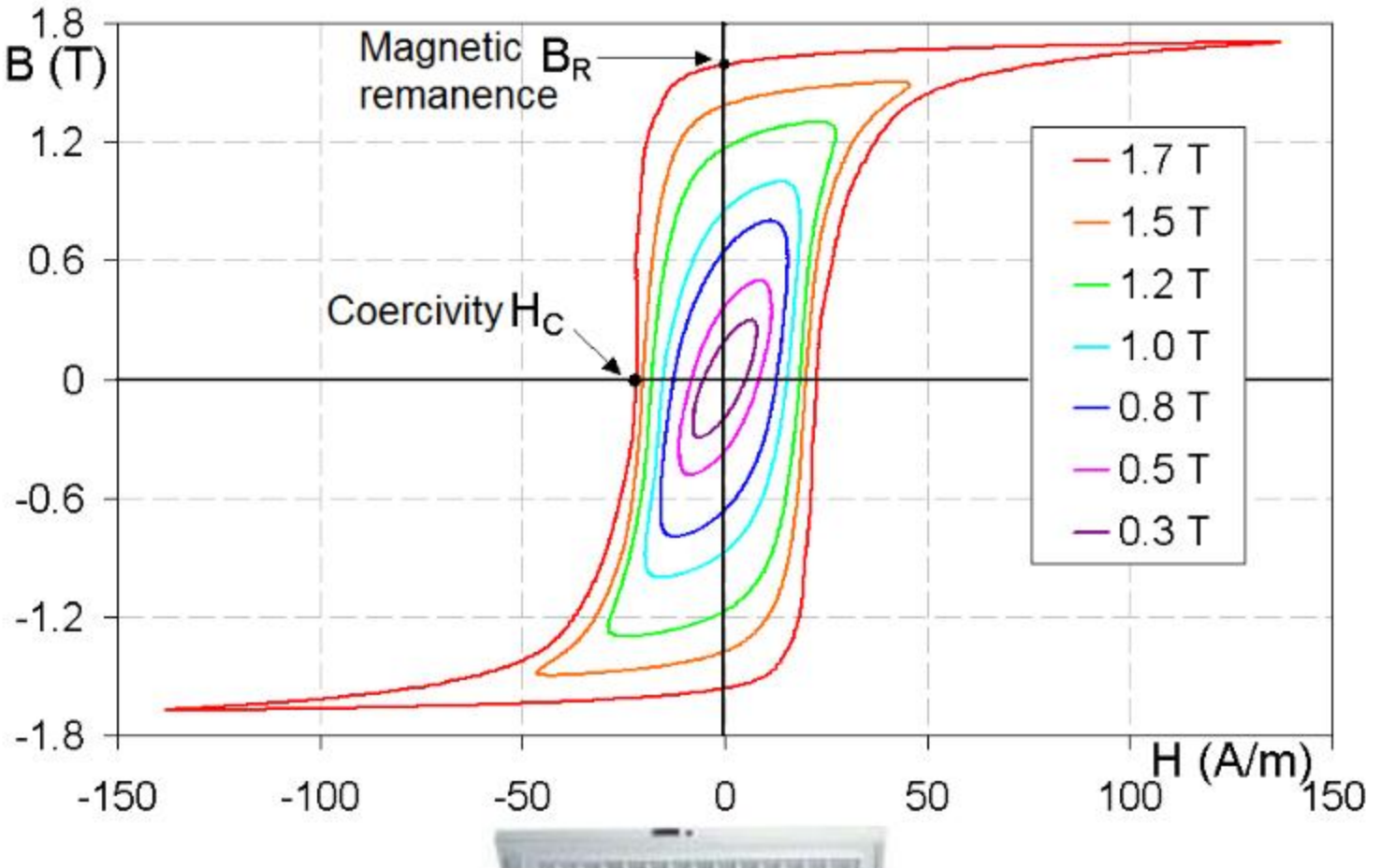






Even if Walter Lewin shows here how a nut loses its magnetic properties above Curie temperature, this also applies to magnets and heat treatment of the material of a permanent magnet.

The molecular motion done by the heat destroys the alignment of the magnetic domains. This always removes all trace of magnetization. This “resetting” also ensures a stronger “hold” of the magnetism. However we still need to use the same amount of power (ampere/meter or Oersted) for the magnetization process. Another way is to place the magnet in an alternating magnetic field with an intensity above the material's coercivity and then either slowly drawing the magnet out or slowly decreasing the magnetic field to zero.



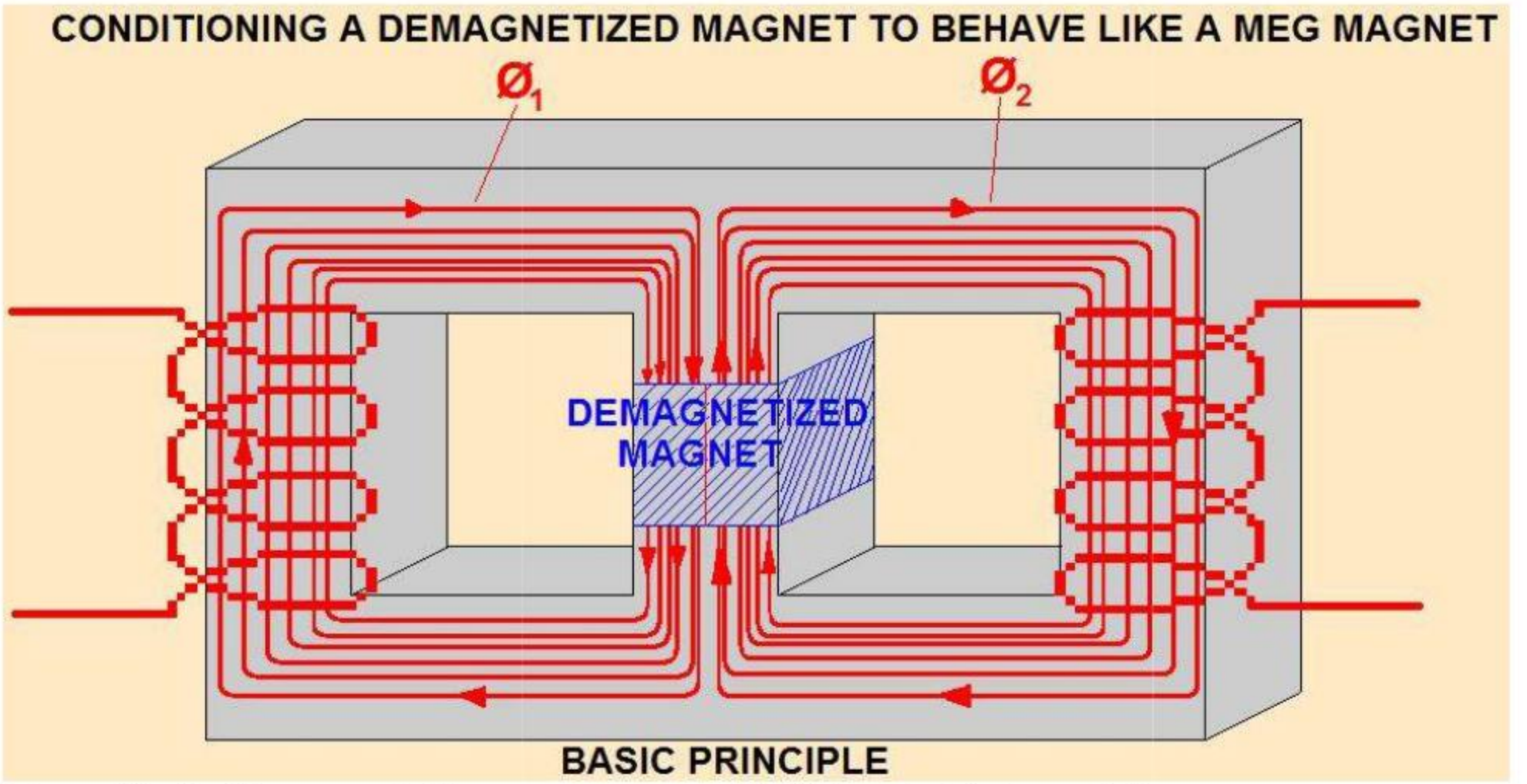


After we have "reset" a magnet by overheating it above Curie point, we need to let it cool down. Now it is no longer a magnet. After it has cooled down we must place it in a freezer, because the lower the temperature, the lower the thermal agitations *(Johnson-Nyquist noise)* in the material, so it will be more easily to re-magnetize it *(increasing magnetic susceptibility).*

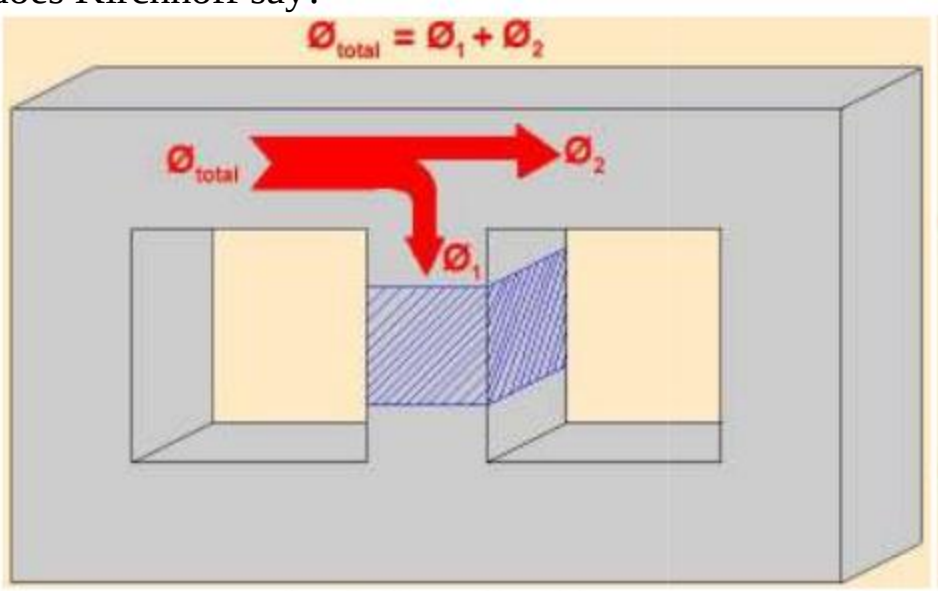
Another thing I feel compelled to share about MEG, TPU and Flynn SSG is that it is very unlikely to special re-magnetize the magnet in the device itself in this dynamic fashion, in spite the fact that we will tend to think that way as I previously though. The reason why we won't have success, is that, the **magnetic flux MUST set up THROUGH the magnet!**

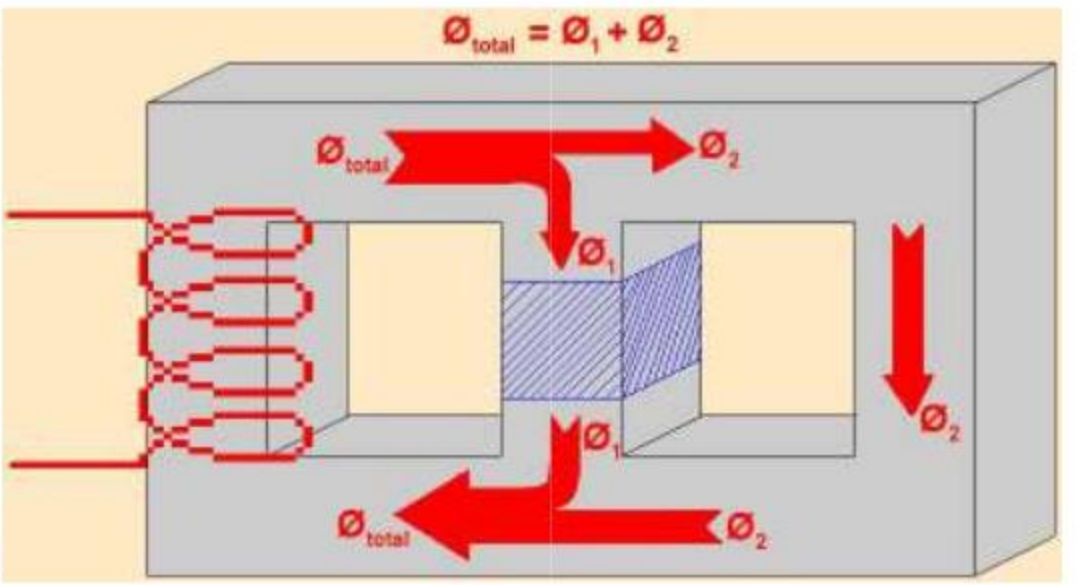
Although Kirchhoff first rule for magnetic currents dictates that a magnetic flux will be established through the core and also through the magnet (the sum of magnetic fluxes into any node is always zero), I say to you, that the ratio of the two currents is not right! We need more of the flux crated to be established through the magnet, rather than going further to the core and closing with the other flux from the other coil. All this means that the core shape must be different from the one in the MEG patent and the one in the TPU device! Thus we will need to design another core(transformer) to condition the magnets.

This is how we thought we would create a MEG dynamic magnet:



But pour Kirchhoff turns over in his grave when he **sees this! So to make him happy, let's** correct this setup. So what does Kirchhoff say?

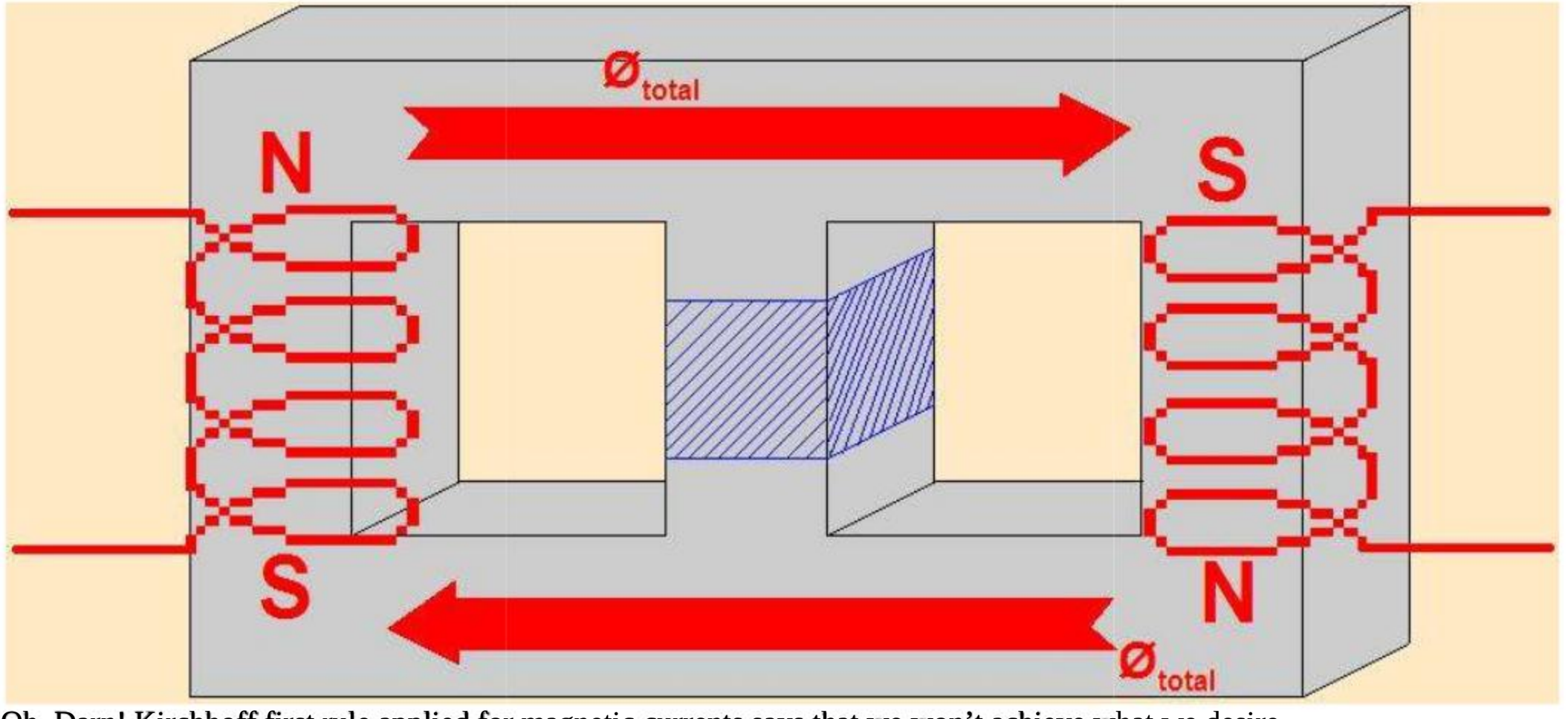




But we are powering both coils at the same time, so:

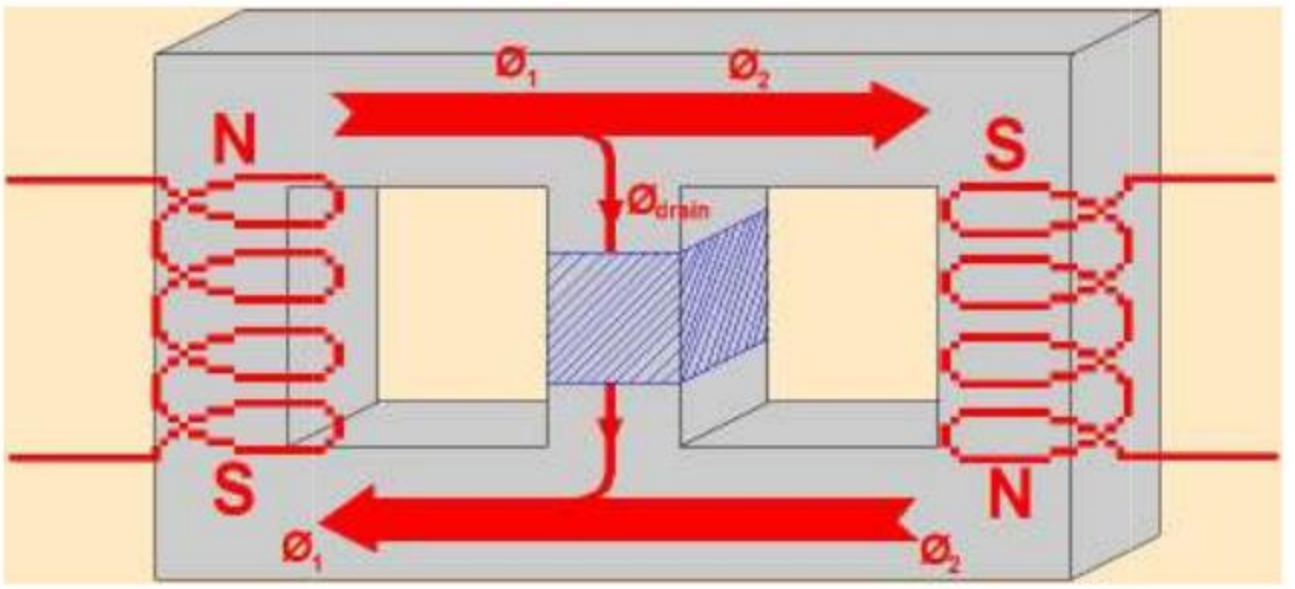
$$\Phi_{total} = \Phi_2$$ (must be the same)

therefore:

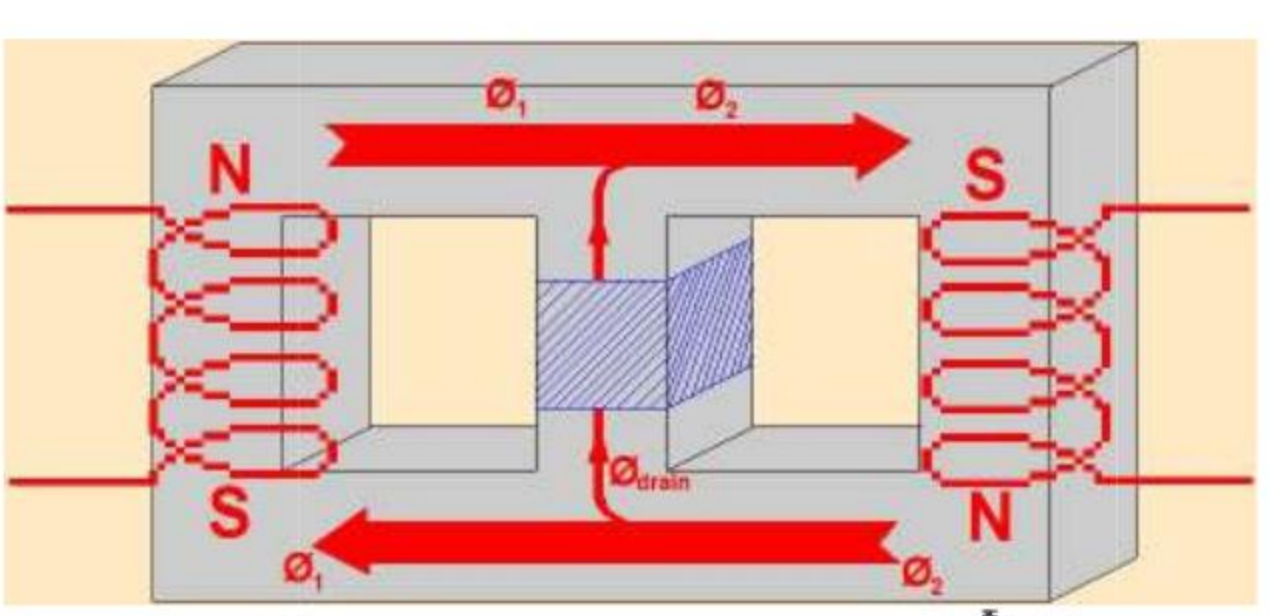


Oh, Darn! Kirchhoff first rule applied for magnetic **currents says that we won't achieve w**hat we desire.

But not necessary. The flux through our demagnetized magnet will still set up:
Like so:
Case 1:



Or like so:
Case 2:



Both of these configurations are true at the same time, but for this orientation of Φ_{total} we have two possible Φ_{drain} configurations in opposition. Thus Φ_{drain} will not set up because it has **no preference of** direction.

In the case 1:

$$\Phi_1 = \Phi_{drain} + \Phi_2 \Rightarrow \Phi_1 \neq \Phi_2$$

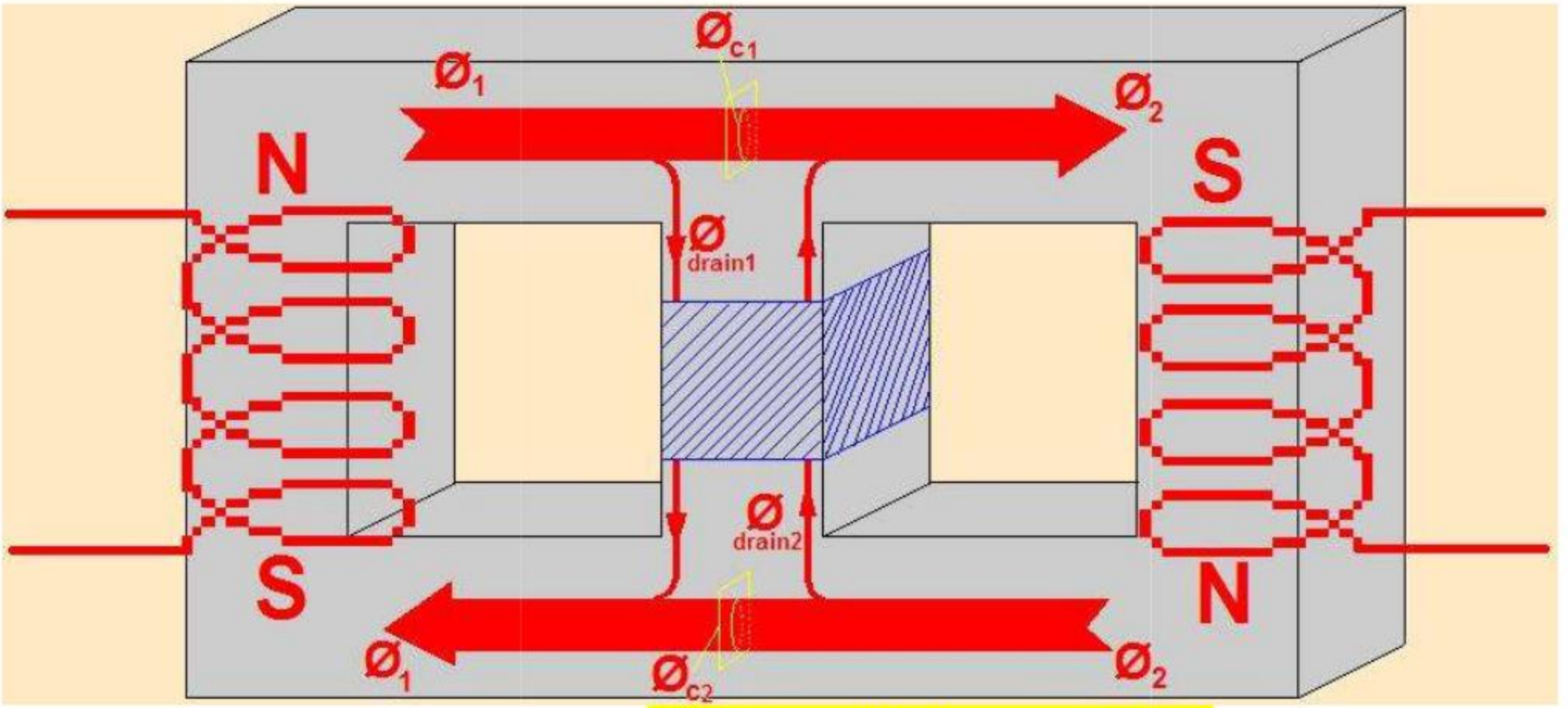
But this is not true since both coils are the same, **same number of windings, same** applied voltage, same current **through them, identical windings, fired** together, t**hey should have the same magnetic flux**.

In case 2:

$$\Phi_2 = \Phi_{drain} + \Phi_1 \Rightarrow \Phi_2 \neq \Phi_1$$

Again, just like case 1. This is not possible. Now **when the coils fire in the opposi**te direction, we will reach the same conclusion. Thus Φ_{drain} **will not** set up in any case.

What we seek is to set up Φ in **both** direction at the same time:



This is what we are after. However as we can see, **it is not an effective magnetizer,** because most of the flux is not circulating through the magnet:

$$\Phi_1 = \Phi_{c1} + \Phi_{drain1}$$
$$\Phi_2 = \Phi_{c2} + \Phi_{drain2}$$
$$\Phi_1 = \Phi_2$$
$$\Phi_{drain1} = \Phi_{drain2}$$
$$\Phi_{c1} = \Phi_{c2}$$

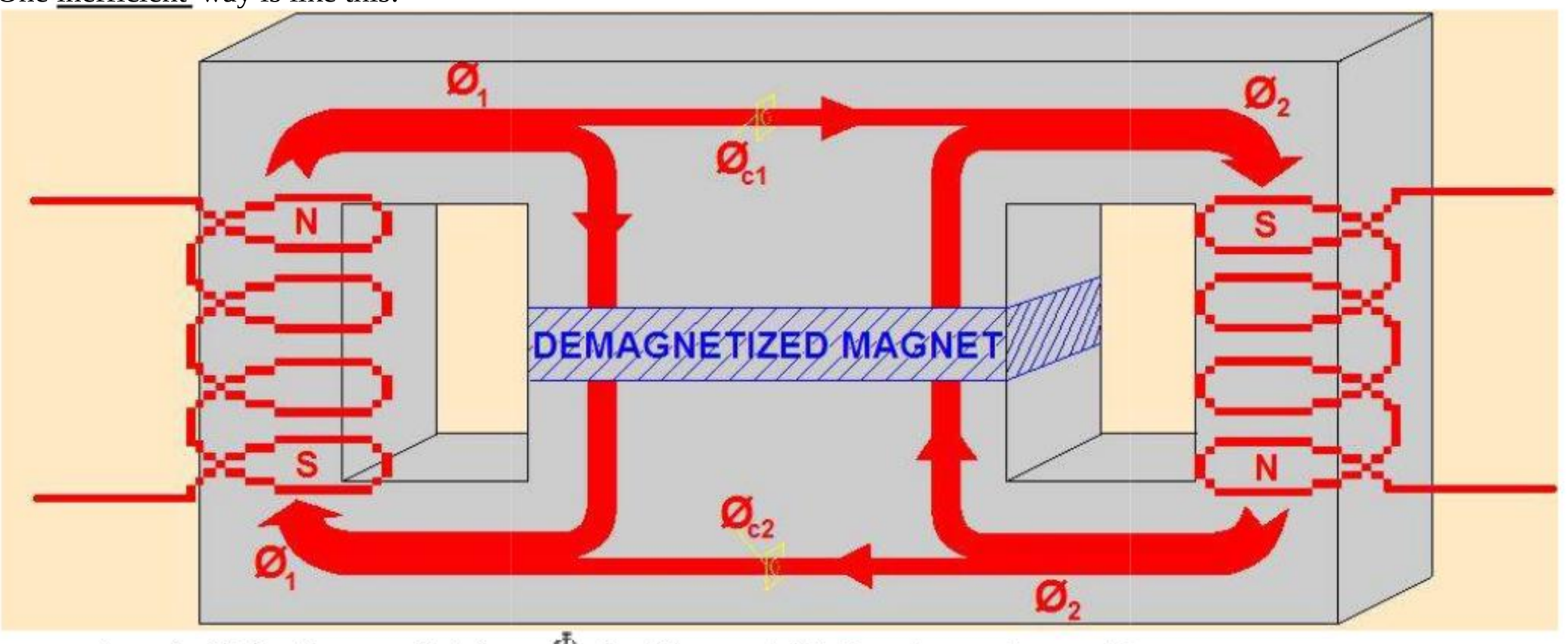
The problem we are facing is minimizing Φ_c component of the equation so that:

$$\Phi_1 \simeq \Phi_{drain1}$$
$$\Phi_2 \simeq \Phi_{drain2}$$

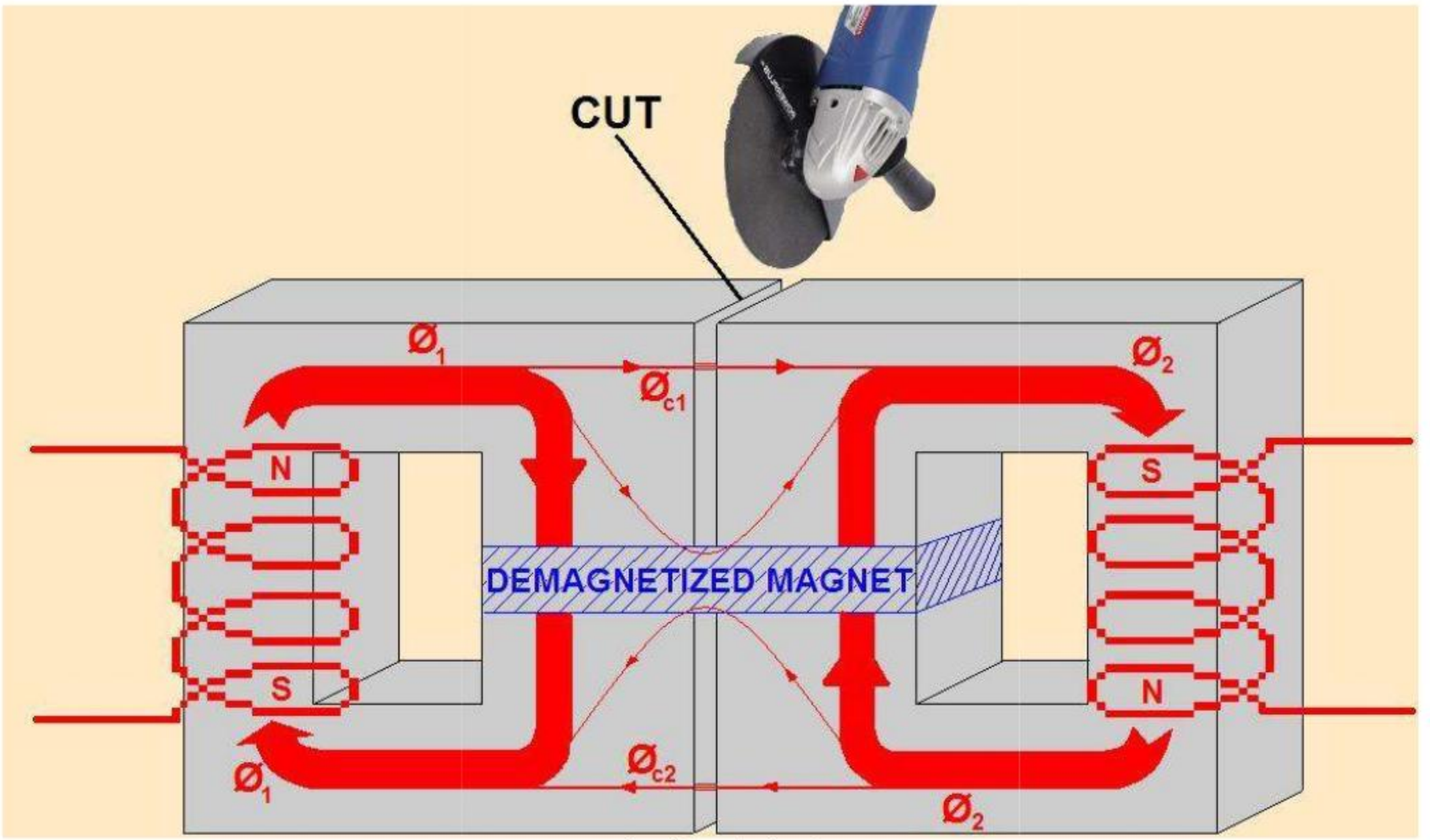
Meaning that most of the flux **cr**eated **by the coils we want it to go through the ce**nter part of the transformer were the demagnetized magnet is.

Now, how do we reduce the Φ_c**? The answer is that we definitely must redesign** the core, to accommodate the circul**ation of the flux more through the m**agnet. How?

One inefficient way is like this:

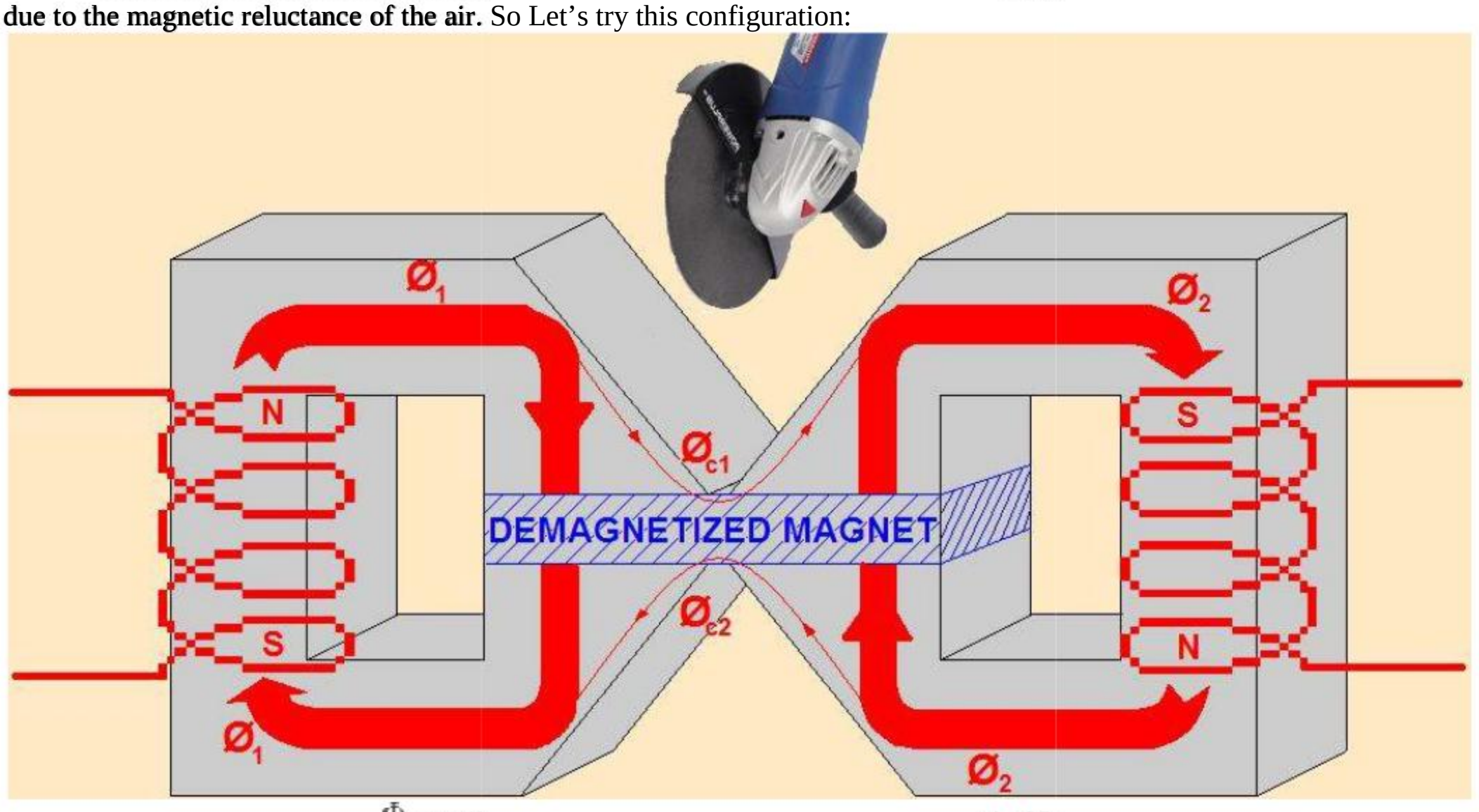


I say inefficient because that damn Φ_c is still present. We have to somehow **cut it**... That's it! Let's cut the core **there! Great idea! Now we have this con**figuration:

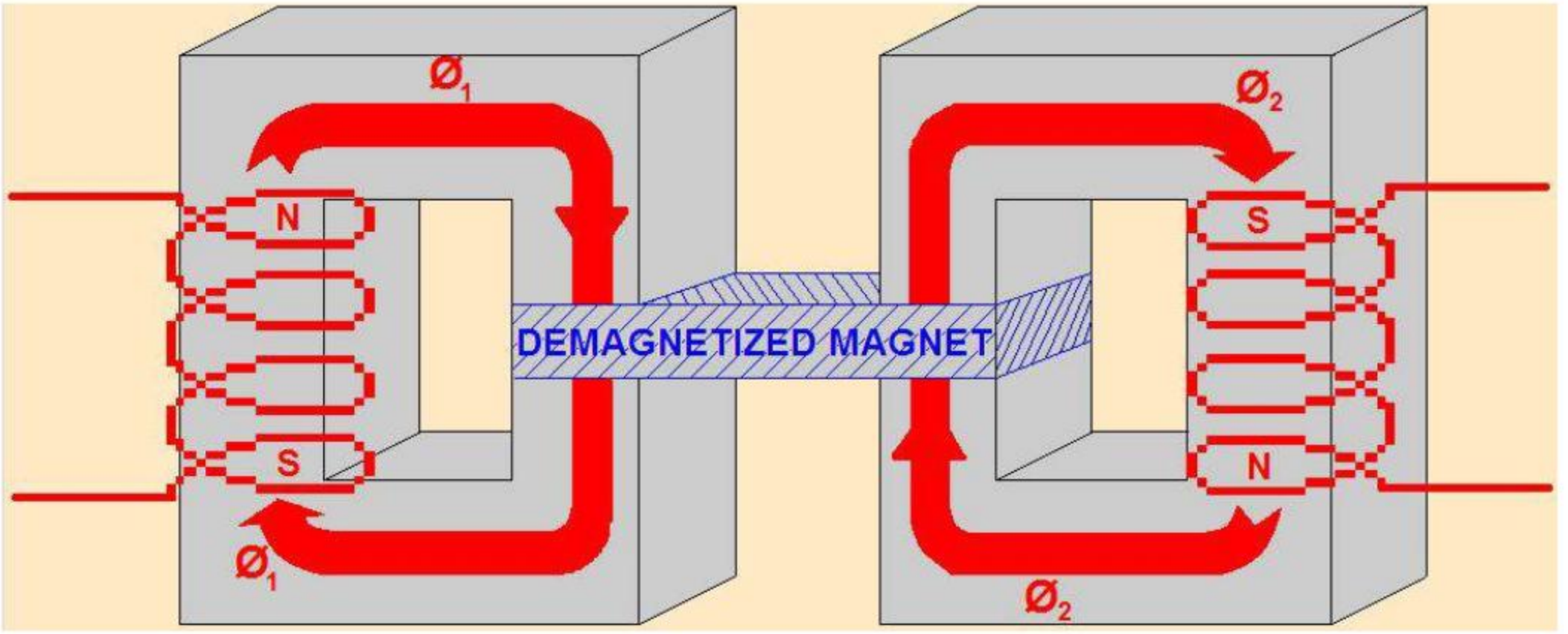


Hm...**seems we do have an impro**vement, but $\Phi_C \cdot (\Phi_{c1} + \Phi_{c2})$ **is not completely** gone. It seems that the cut we have just done, acts like an air-**gap in the** core. It still let's some flux go throug**h... Also th**ere is an additional closing **through the magnet in a wrong fashion...This damn flux...It wants to stick in wrong places**!

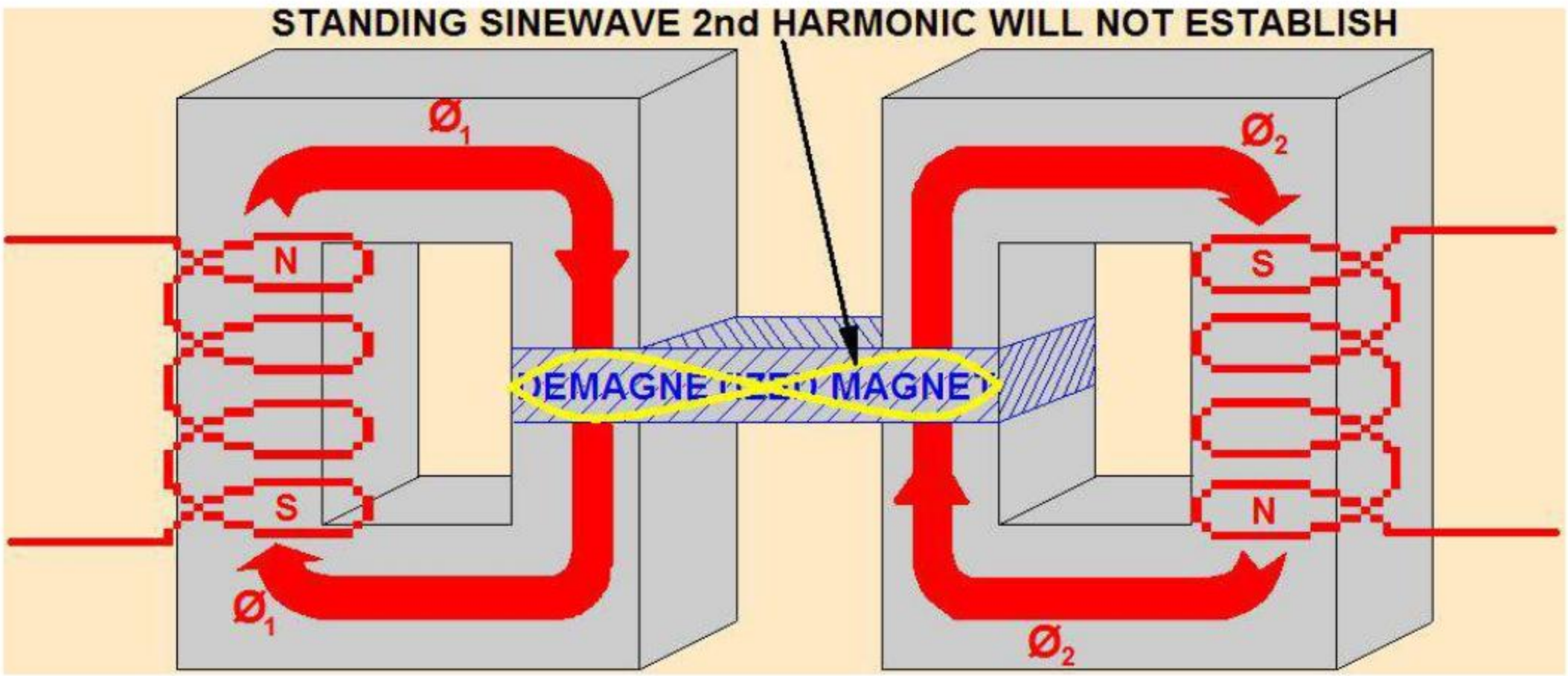
Ok, then. So let's increase the air-gap, so that there is no possible way for Φ_C **to** jump across so great distances **due to the magnetic reluctance of the air.** So Let's try this configuration:



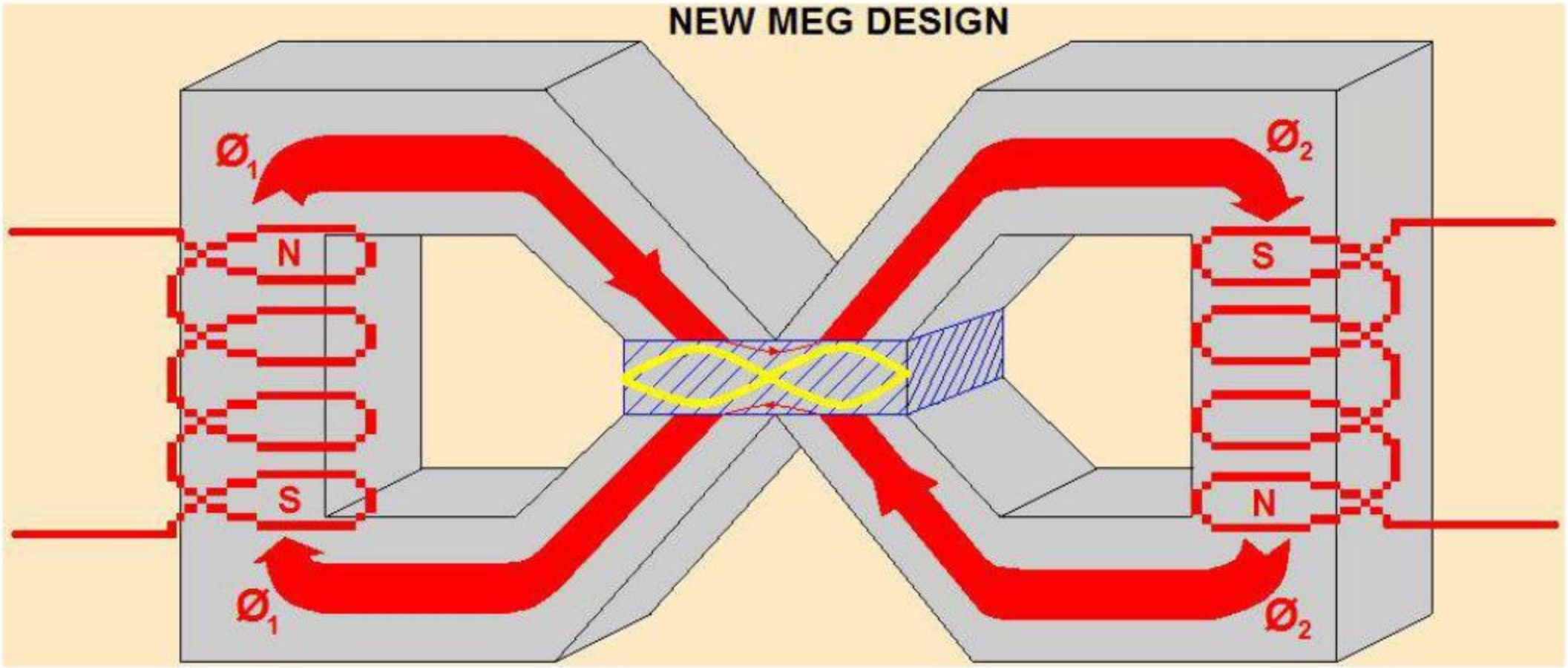
Pfiu...After a lot of cutting, our Φ_C **is stil**l present, but it has finally became negligi**ble. No**w, when we are looking at the **above picture, we might ask ourselves, w**hy have we **done so much labor in cutting and re**designing, when we could have used this configuration:



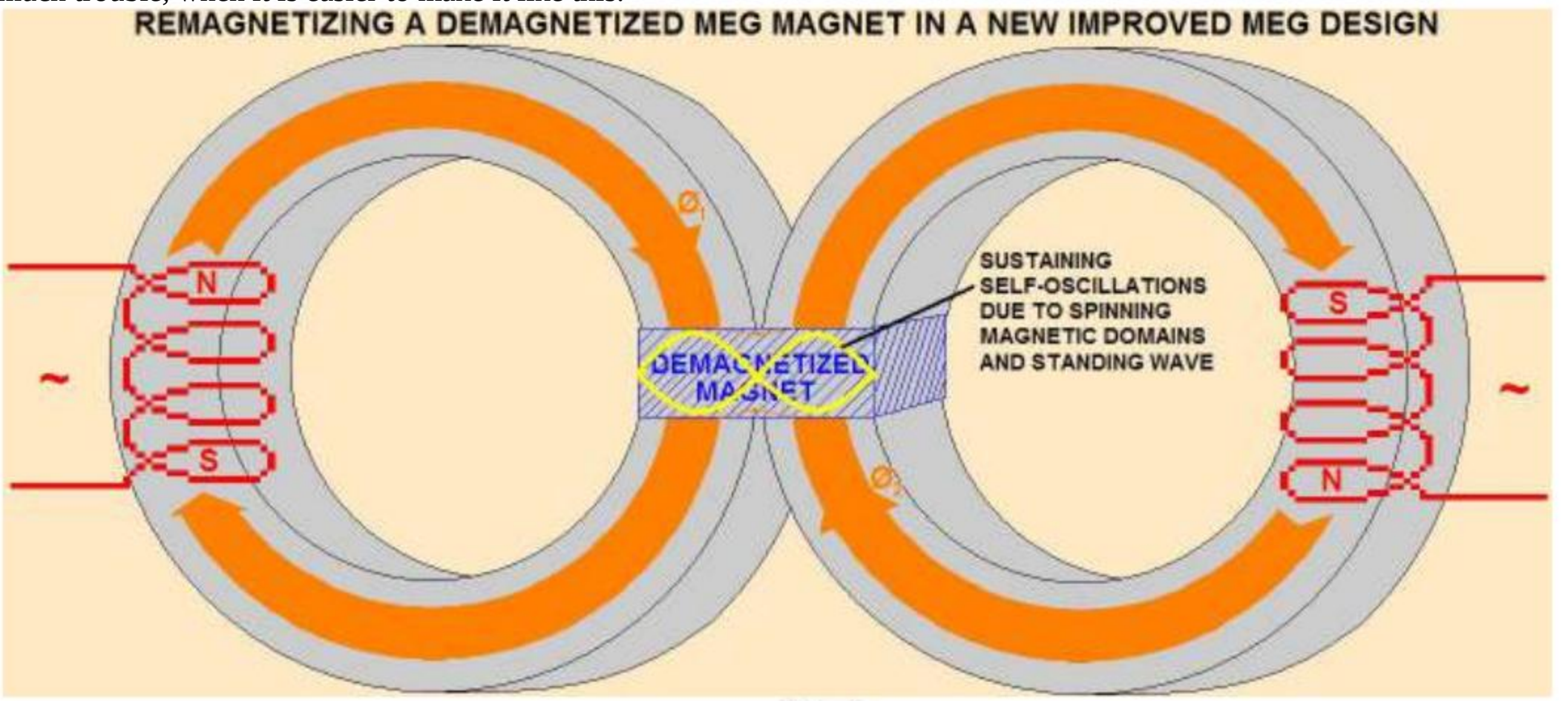
However, in both cases we would find out, that still it won't work! The problem lies, as I have stated before, in the magnet. The problem is that the standing wave (3D vortex) is not formed in the magnet if we use the second harmonic. It could work on higher harmonics tough, but there is no point in doing that yet. For now, let's concentrate in achieving the lowest harmonic possible. We have two magnetic paths, so we need two oscillating anti-nodes in anti-phase:

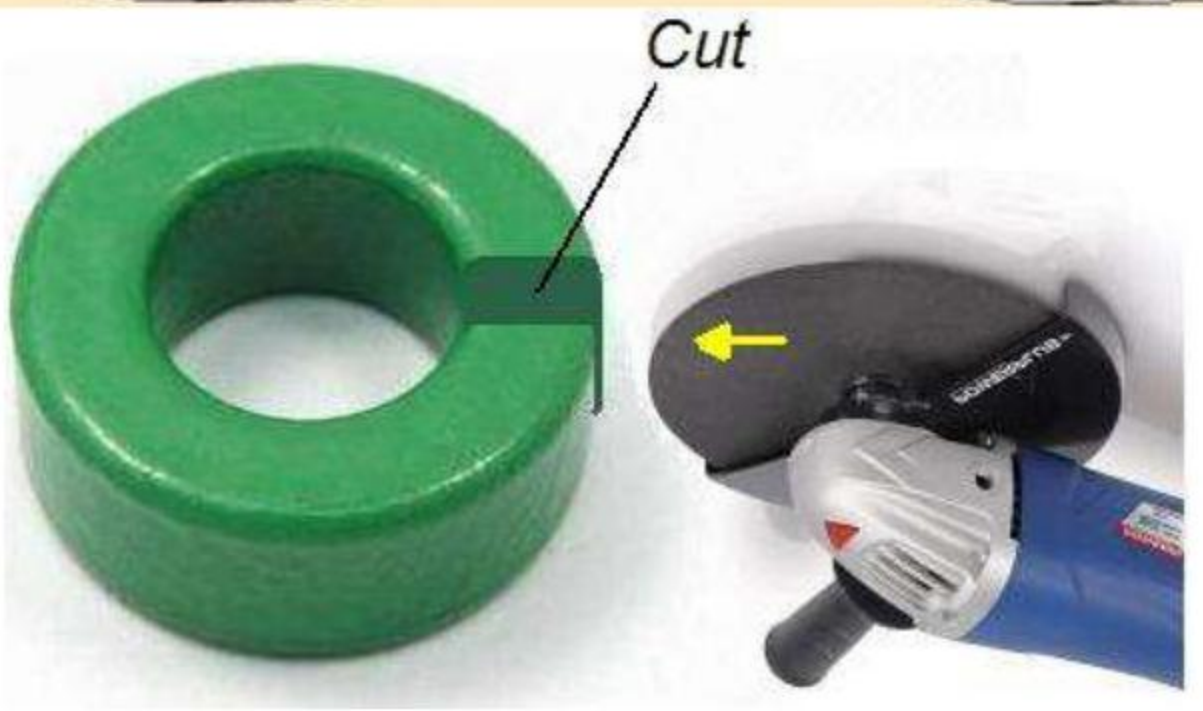


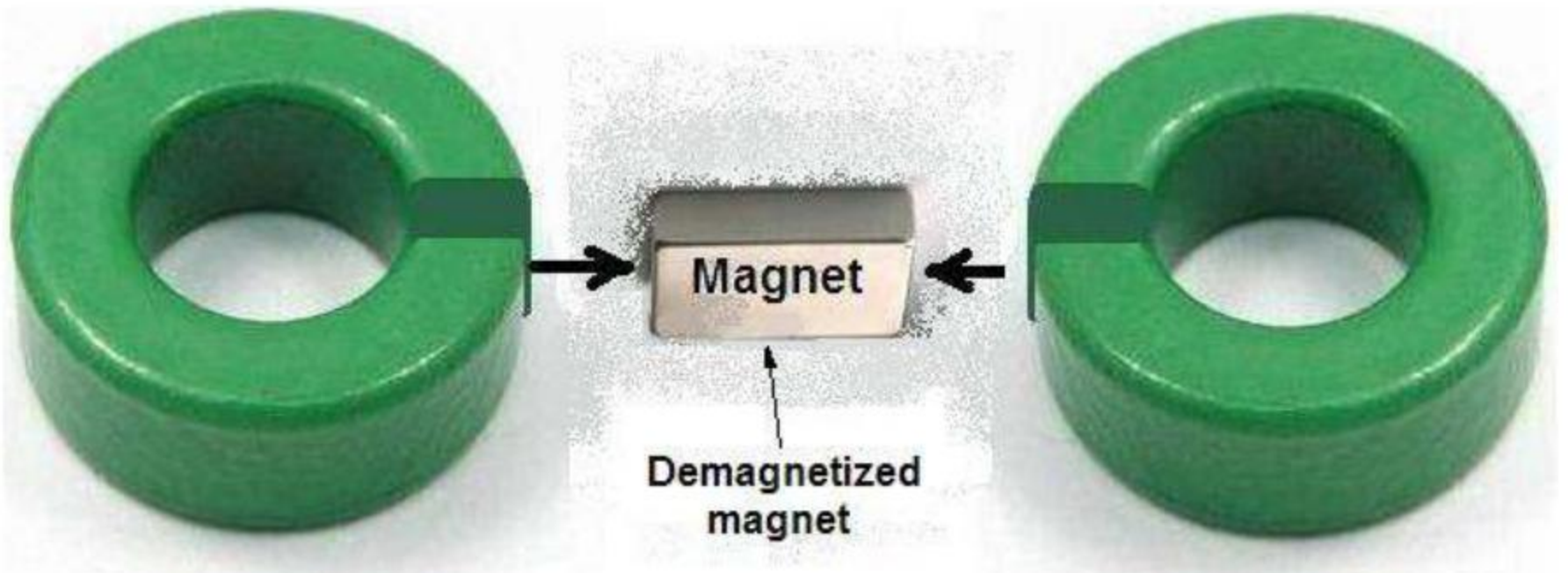
Fine! Then this must work:



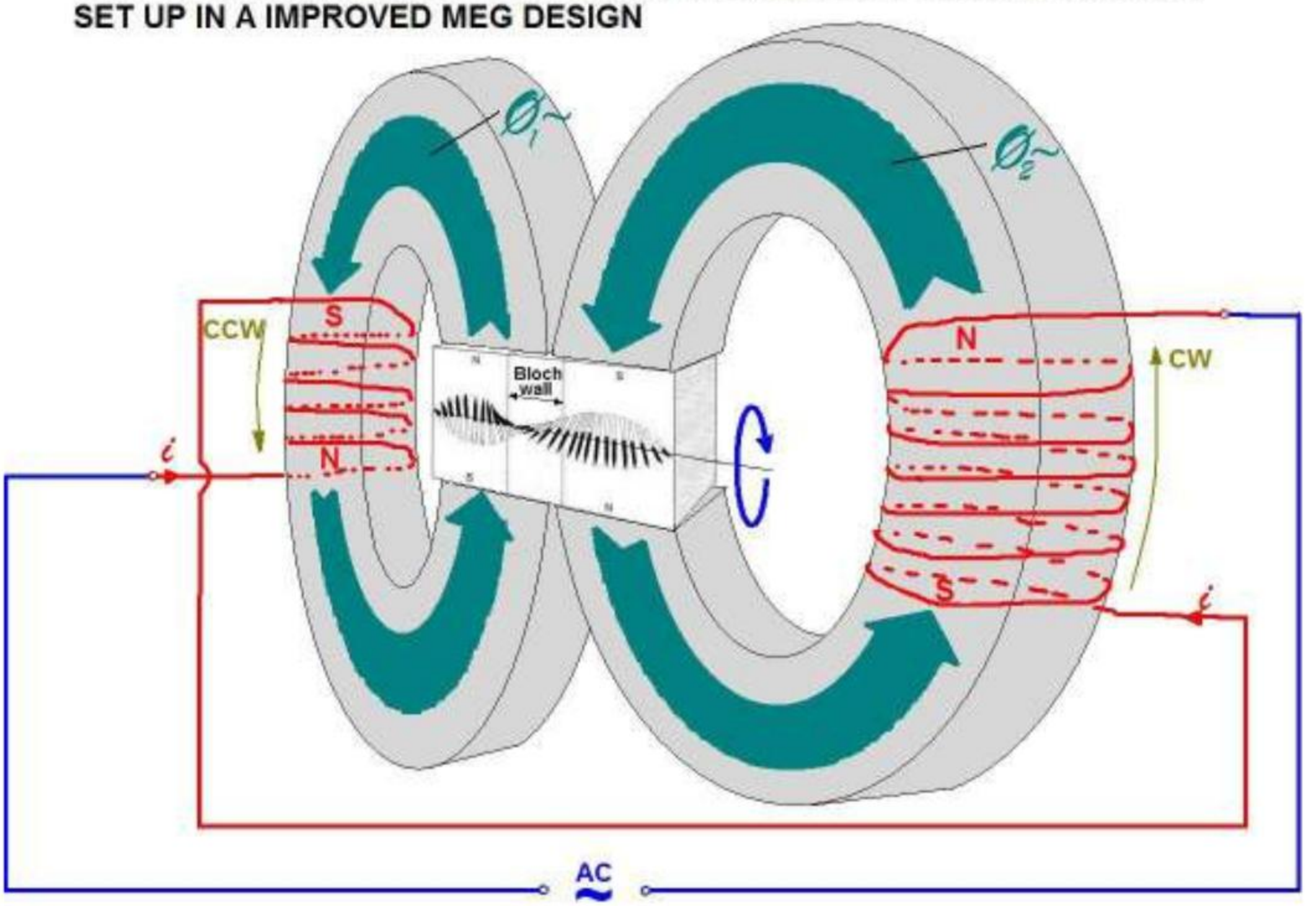
Yes, this should work better, however...only one more thing should be added to improve the design. What now? In the technological process of constructing the core of this new MEG design, one should realize that, why go to so much trouble, when it is easier to make it like this:



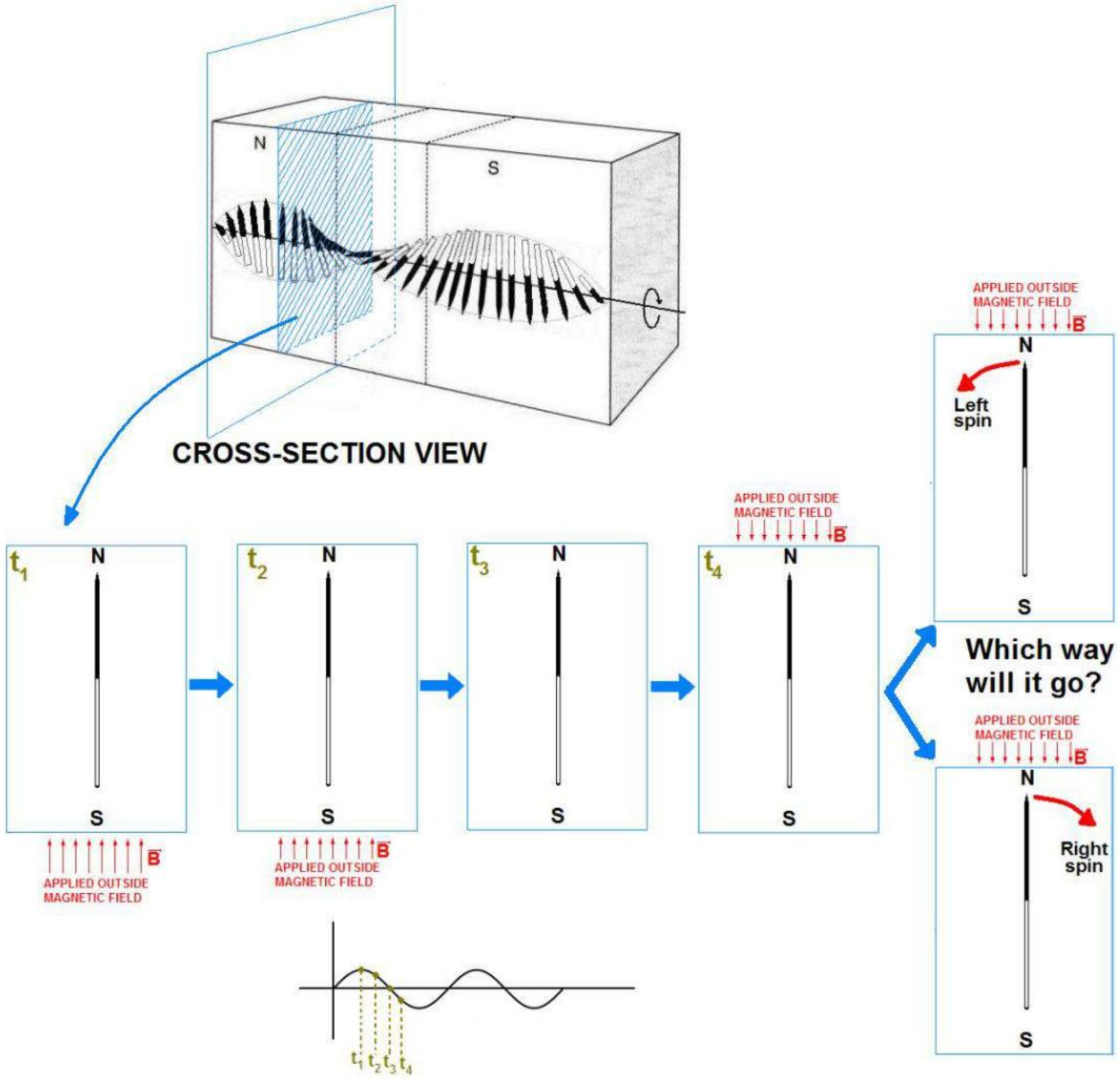




SELF-SUSTAINING MAGNETIC DOMAINS DYNAMICS IN THE MEG MAGNET SET UP IN A IMPROVED MEG DESIGN



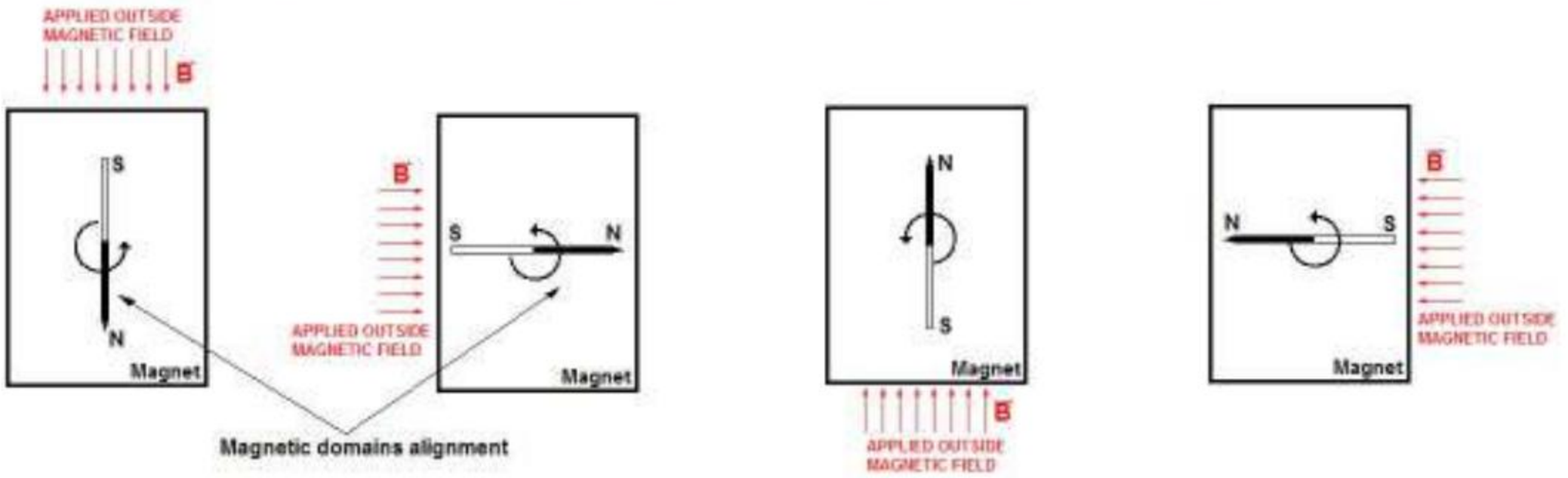
All this is nice, but a new problem arises. This problem lies in the rotation of the magnetic domains. In the re-magnetization process, when the reversed flux is established, the oriented magnetic domain have two possibilities of spinning: to the left, or to the right. Like in this following picture:



What we need is a small additional kick to set up the desired direction of spin. You might think that if we align to the magnetic field of the earth, the spin will be dictated by the earth magnetic field lines. That is true only for a 180° spin, but when it goes down, the magnetic field lines of the earth must reverse direction to support the premature birth of this spin. Therefore it will still not spin. So what we need, are another 90° additional actuator coils, with a sinewave signal 90° out of phase with the power coils. Notice that I said “actuator” coils. This means that it is not necessary for these additional coils to have a powerful field for the magnetization process. It is at least sufficient that they provide like a “drive way sign”, just setting up a direction of spin, that is all.

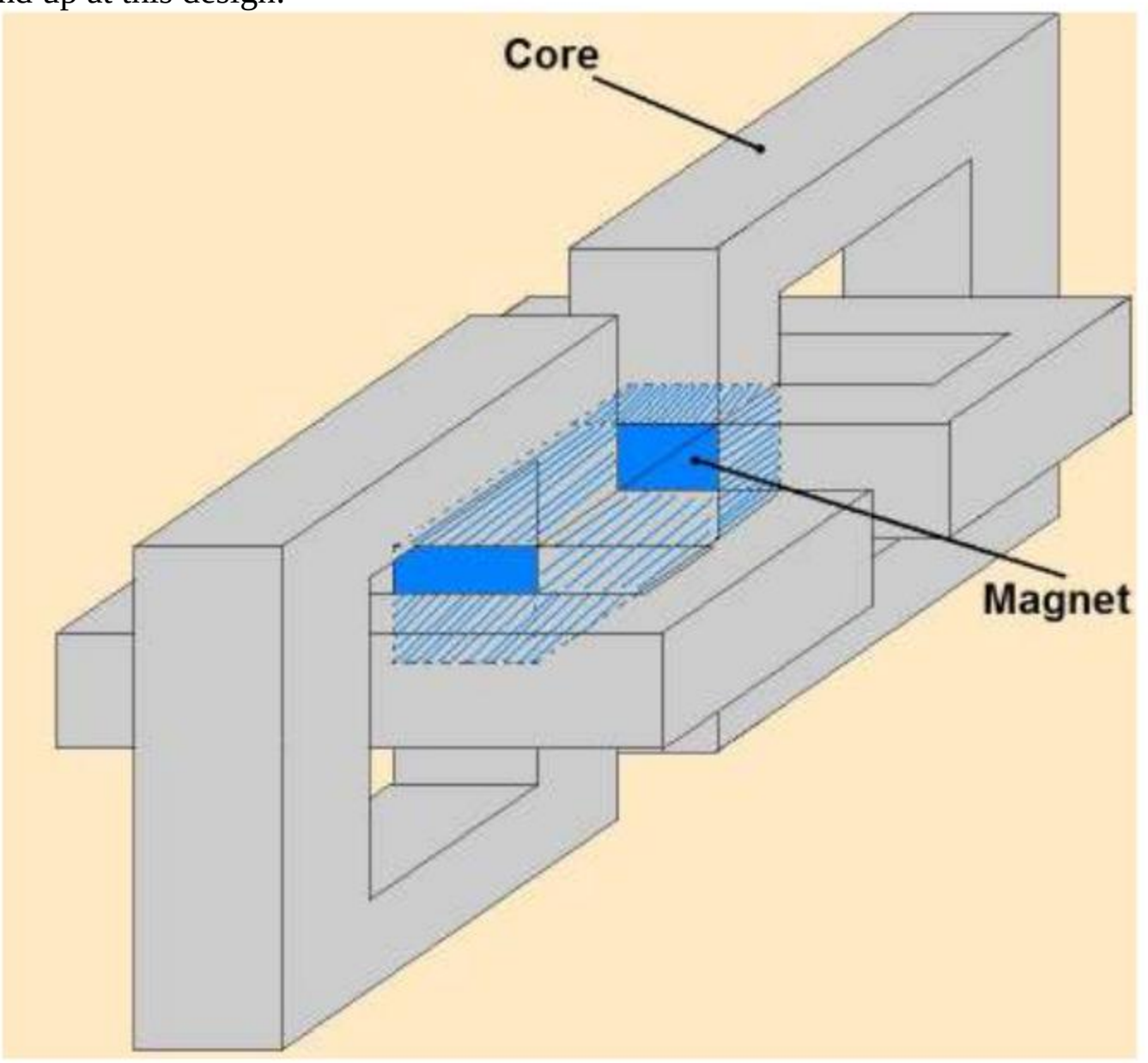
With out an additional coils to provide a direction of spin, we won’t set up the “Bloch wall” correctly and all we will get will be excess energy from the **Barkhausen jumps** in the magnetic domains, which are the random jumps of the magnetic domains to re-align themselves with the new magnetic flux that happens to come in reversed direction. Therefore there is nothing guiding this sudden jumping of the magnetic domains alignment, so there will be no spin. In a cross-section plane through the magnet some domains will spin left to align to the 180° reversed applied magnetic field, others will spin right. Nothing will tell them otherwise, unless we impose a direction of spin, a transition phase between the 180° poles.

So, the solution is simple. We will also hit the magnet at 90° angle in respect with the magnetizing B vector like so:



Now we have eliminated the random Barkhausen jumps in the magnetic domains. I repeat, we are not after that. We don't need sudden jumps of magnetic domains to align themselves with an external field, WE ARE AFTER A SOFT SPIN at magnetic resonance.

So we will end up at this design:





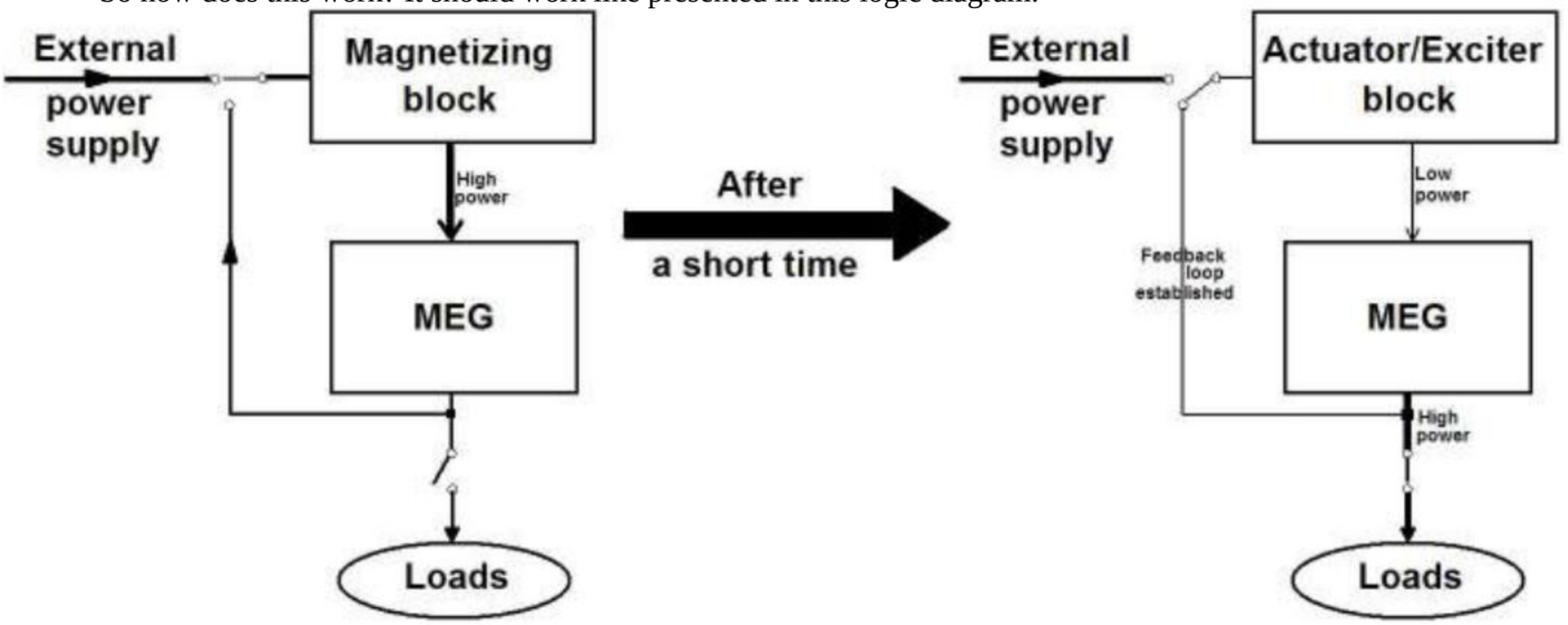
Now, we have four coils and two options. Our first option is to use a two-phase 90° phase shifted system of magnetizing, or we could use four BIFILAR coils with four mosfet transistors triggered sequentially.

In the first case we have to have in mind that we need a very powerful signal capable of at least 50W depending of the size of the demagnetized magnet you are trying to condition. Also you need a very accurate, stable, and precise generator for such a wave. One solution for this case is to carefully use you **power amplifier** from your speakers and generate a stereo precise sinewave, where **one channel is phase shifted from the other sinewave with 90°.** The computer will be able to generate such distinct waves on the left and right channel independently and have a sufficient accuracy to establish self-oscillations at a very high Q magnetic resonant frequency with a high enough power to re-magnetize a small magnet. It is much more convenient to do it this way, although YOU MUST BE VERY CAREFULLY TO ACCURATELY ADJUST AND CALIBRATE THE OUTPUT IMPEDANCE OF YOUR POWER AMPLIFIER WITH THE INPUT IMPEDANCE OF THE COILS IN YOUR MAGNETIZER. So if you don't know how to do that, it is actually very easy, in spite the fact it doesn't sound that way. You just unplug a speaker from your stereo power amplifier, measure it with an ohm-meter the resistance of your speaker, and make sure that the magnetizing coil that you attach instead of your speaker will have the same resistance. If it's lower make sure that you don't burn your amplifier output stage, and if it higher you won't have to much output power in your magnetizer. You should consult the amplifier manufacturer manual to see the minimum allowed impedance at the output from the amplifier. This an important parameter especially if the amplifier was bought separated from the speakers.

In the second case we need four bifilar coils, meaning a total of eight coils. Two for the left toroid, two for the right toroid, two for the left additional pole, and final two for the right additional pole. We need bifilar, because we will hit the mosfet that turns on current through one wire of a bifilar winding in a direction and then hit the second wire of the same bifilar winding in the opposite direction. So what we have is actually a 8 pole magnetic engine running here. 4 magnetic poles on the left side and 4 magnetic poles on the right side of the magnet. The rotor is the magnetic domains in the demagnetized magnet, which is now conditioned/re-magnetized to have a dynamic magnetic domains spin by the use of these 8 poles. The Bloch wall in our case is not a real "wall" is more like a region. We are dealing here with a ***spinning Bloch wall*** a spinning Bloch region half the size of the magnet (from the middle of the left side to the middle of the right side of the magnet).

The wire gauge does not necessary need to be calibrated for the power requirements, because it only works at full power for a brief period of time (a few seconds - magnetizing mode), and then it will enter in excitation mode (or actuator mode) consuming less power.

So how does this work? It should work like presented in this logic diagram:



There are two possibilities. One is that the Magnetizing block in the first stage is different from the Actuator/Exciter block in the second phase (They are not the same logical block - for example in the real world magnetizing coils are apart from the actuator coils). And the second possibility is that they are the same logical block but works with two functions in the two distinct stages, which is what I'm going to focus on. This means that the actuator coils in my design will also act as the power magnetizing coils in the first stage of operation.

-As I said they don't have to be a high wire gauge, because the magnetizing phase lasts for few seconds.

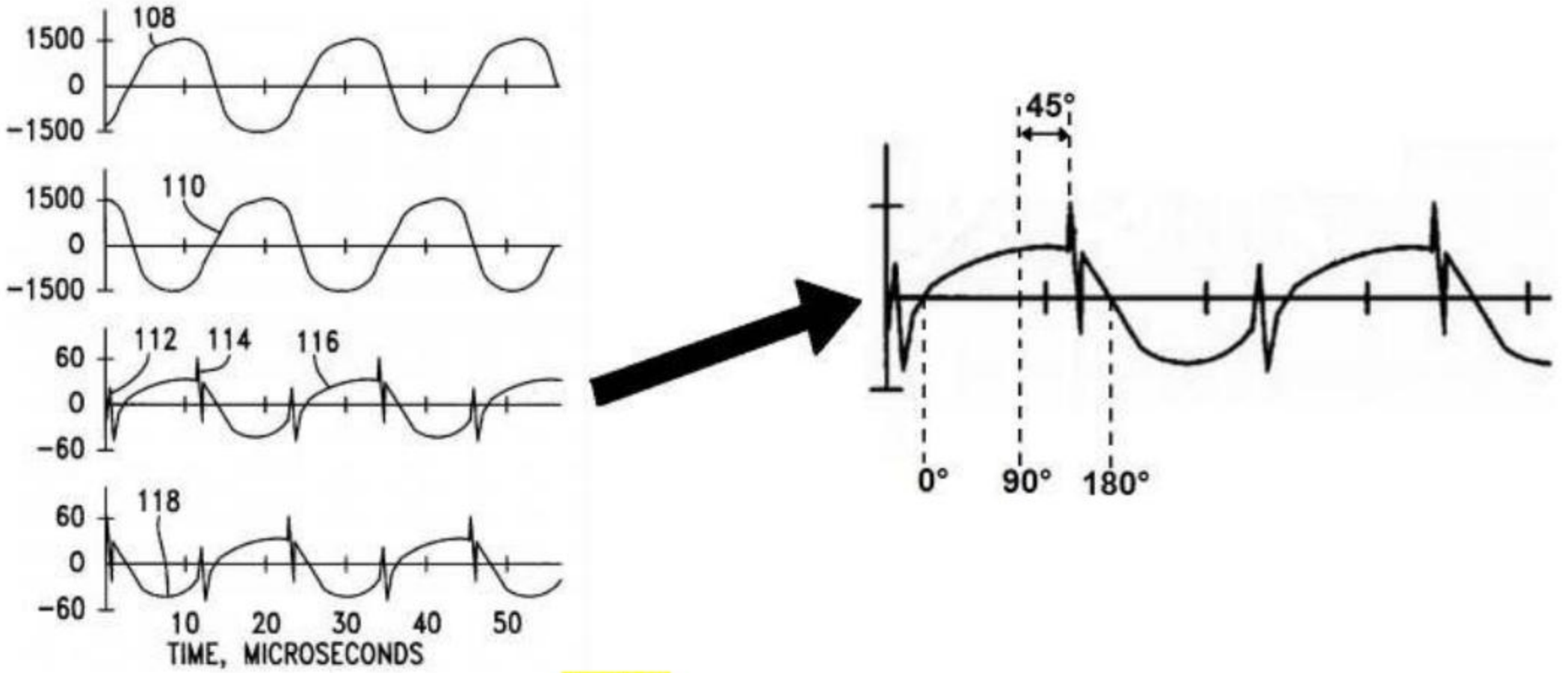
-You might say, yeah, but you have to magnetize each time you are changing the frequency. So what do you do if you want to sweep frequencies to find resonance?

-Simple, I just work with it like nothing is wrong, and if it gets hot, I wait for it to cool down and resume the sweep. -Yeah, but doesn't that take a lot of time until you find resonance?

-True, but I'm only doing that with the prototype version. Then after I find out what exactly determines the resonant frequency, in the next versions I will be able to tune it to that exact frequency from the start. I have a feeling that the magnetic resonant frequency of the magnetic domains spin is directly proportional to the length of the magnet multiplied by a constant (a relative permeability if you may which is determined by the alloy composition of a particular type of magnet - the logic in that is that the speed/velocity of a wave is different depending on which medium is traveling). So that unknown constant is what I'm after to prove, demonstrate and calculate.

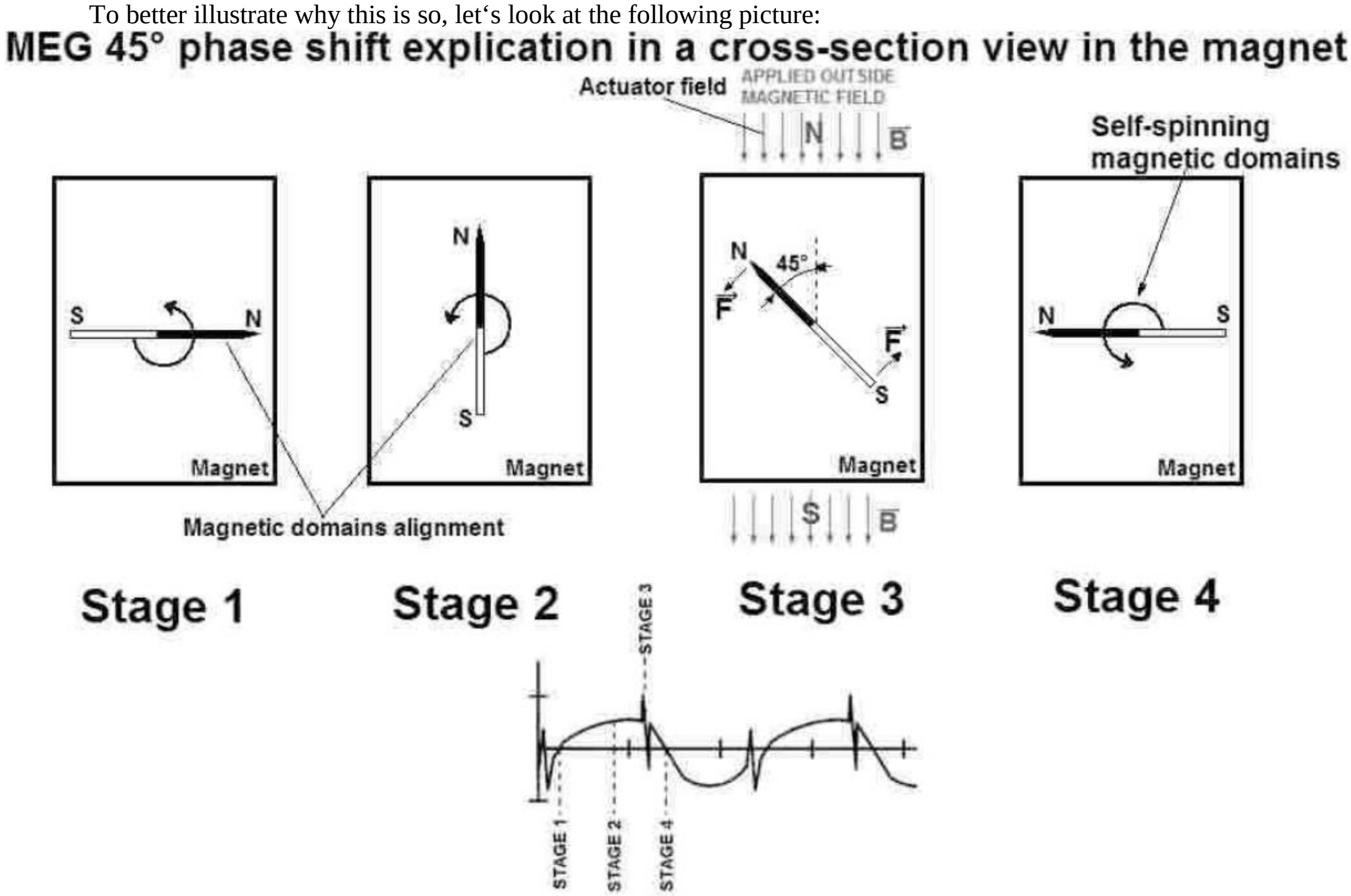
Another problem we are facing is the shot time we have to wait between the magnetizing and actuator/exciter stages in our design.

If we take a closer look at the Tom Bearden MEG output signals in the patent file, we might notice something interesting:



So, why isn't he kicking the magnet ***in phase*** with the sinewave produces by the spinning magnetic domains? What we actually see here, is a ***45° phase shift*** between the actual spin inside the magnet and the applied actuator/exciter kicks/pulses.

To better illustrate why this is so, let's look at the following picture:



Now we know why the 45° phase shift is so important in the operation of the MEG. We can say that the repulsing force F in stage 3 is what maintains the momentum of the spinning magnetic domains.

I will concentrate in 4 bifilar coils which will be driven by four Mosfet transistors in sequential mode. But wait a second, let's not rush into this thing yet, let's think this through. Ok. What are we going to do?

-First we are going to drive the mosfets at full power to magnetize the demagnetized magnet and establish a spin at a particular frequency. Ok

-Second we will lower the power that the mosfets will switch on the coils, so now we are just exciting/actuating the spin.

-Ok. But we have to implement the waiting period, a pause, a short time, a sleep time, a delay time between changing the operation mode from magnetizing to actuating/exciting.

-Ok. Fine. We can do that by inserting a pause, a mute time, a transition blank state between the phases in the signal output by our computer control square wave generator.

-Ok. So we will implement the 45° phase shift by waiting?

-Yes.

-So we can't implement this waiting using a standard signal generator?

-Well, in theory you can, but you will need a triggering of your function/signal generator by an additional triggering coil/sensor mounted 45° on the magnet in the device.

-What other options are there? Is there a more simpler way?

-We must understand that we can't just magnetize the magnet for 5 seconds, turn off everything, count to 3 in our head, and turn on the actuator/exciter signal. It won't work that way!

-Why? That's the most simple way to do it, isn't it?

-No, because the pause/delay/waiting period/sleep time is directly determined by the frequency you are using. So if we are using 500 Hz switching in our magnet, then the waiting period is T/8 (360/8≡45) which in our case is:

$$f - 500\,Hz \rightarrow T - \frac{1}{f} - \frac{1}{500} - 0{,}002s - 2ms$$

this means that you will have to wait:

$$\frac{2ms}{8} = 250\mu s$$

Can you count $250\,\mu s$ in your head and turn the actuator signal?

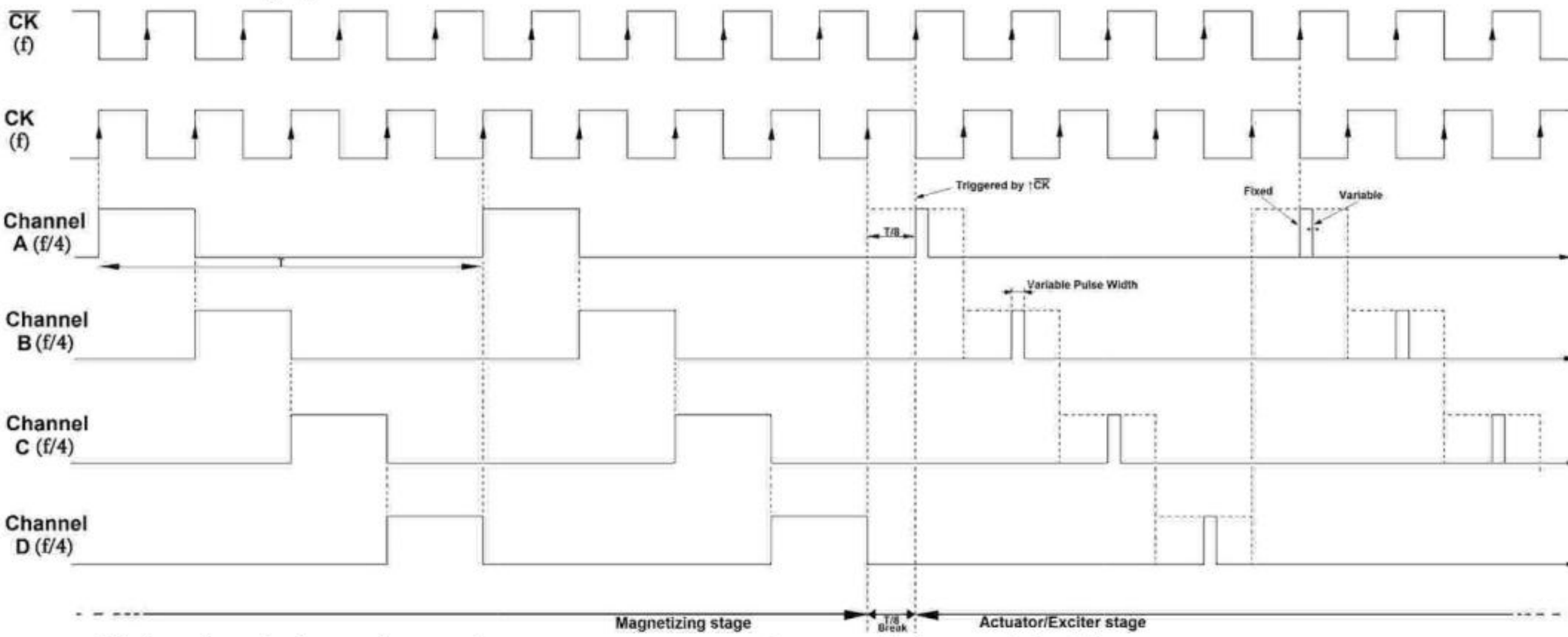
-No. But surely you will get a timing right with a bit of luck...

-No.No.No. This is insane! You can't think that way! Of course if you lucky hit a multiple of $250\,\mu s$ in your delay, maybe. But we are dealing here with an extremely accurate timing. If you wait for example 7 time longer than that you will counteract the spin! If you wait instead of $250\,\mu s$, 1,75ms then you have a 270° phase shift between the actual established spin and the actuator kicks/spikes/pulses/one shots. Then your kicks will stop the spin! This is insane!

-So then, what is the most simple solution?

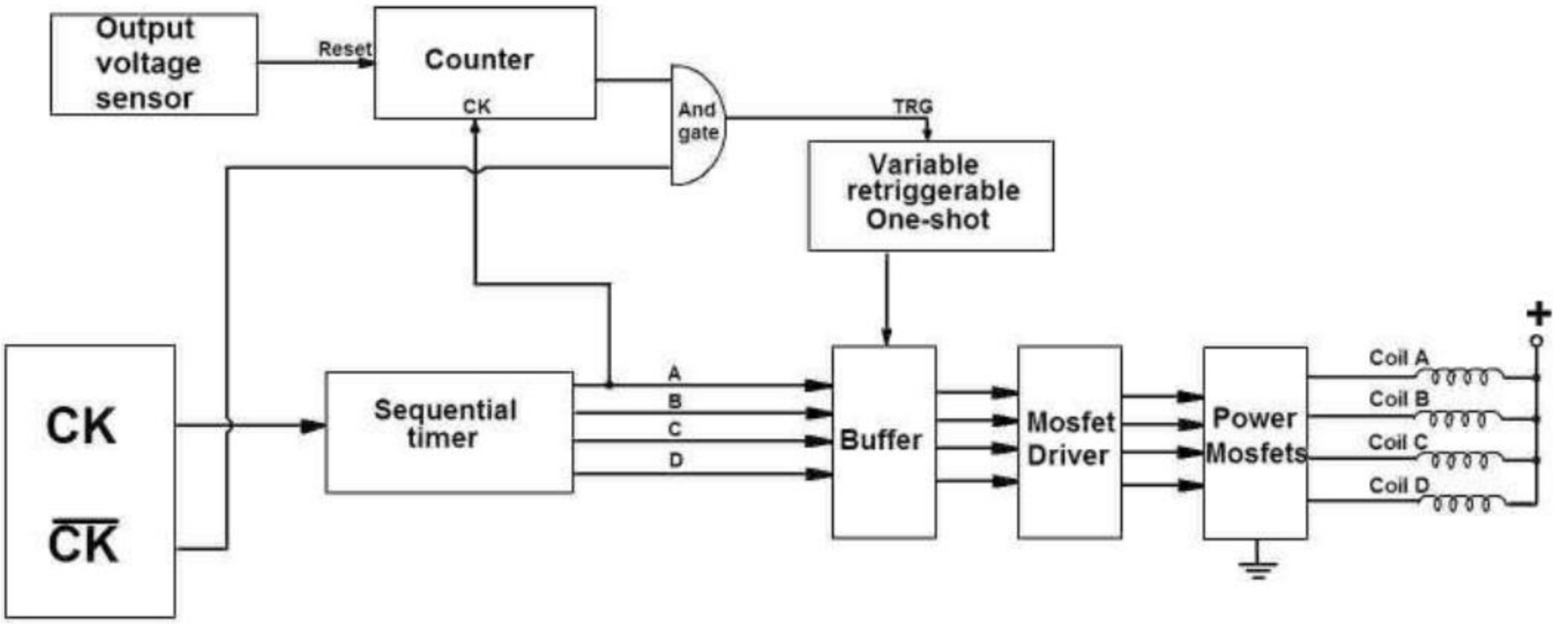
-The most simple solution I can think of is that the pause/sleep/delay time must be computer controlled or in the case of mosfets driving the device we have to use accurate CMOS/TTL logic IC behind the gates of the mosfets.

-So our timing signals should look like this:



Timing signals above show only two complete cycles in magnetizing mode but there can be more than two, as long as the total magnetizing time won't exceed few seconds.

The diagram in logic blocks of the control circuit:



SIMPLIFYING FURTHER THE MEG DESIGN

First of all, I will like to add a obvious inconvenience. Why should I use the term MEG? Don't we all agree that is just a brand, even if it comes from "Motionless Electromagnetic Generator"? Why not call the device for what it truly is? Why hide the truth? Why not bluntly tell everything, and lay all our cards on the table?

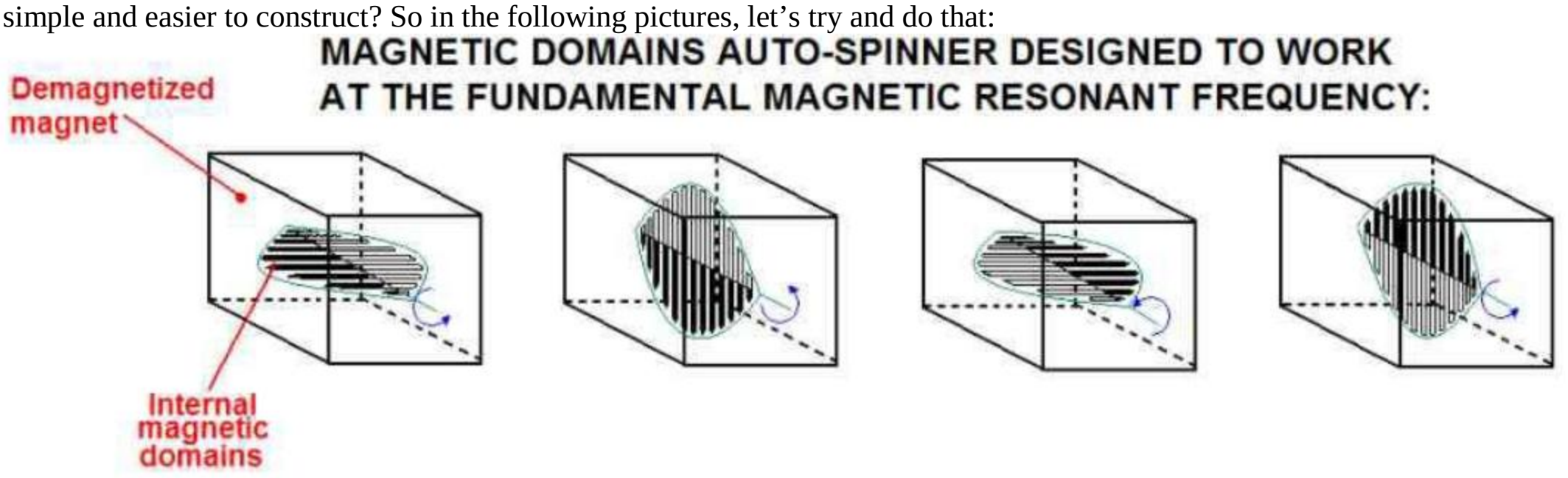
"MEG" IS JUST A BRAND

NEW "MEG" DEVICE TITLE =

MAGNETIC DOMAINS AUTO-SPINNER (MDAS) :D

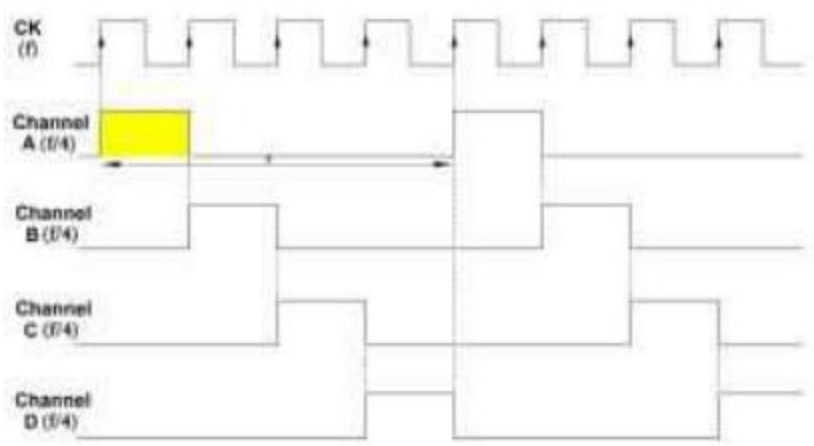
Sounds better, doesn't it? :))

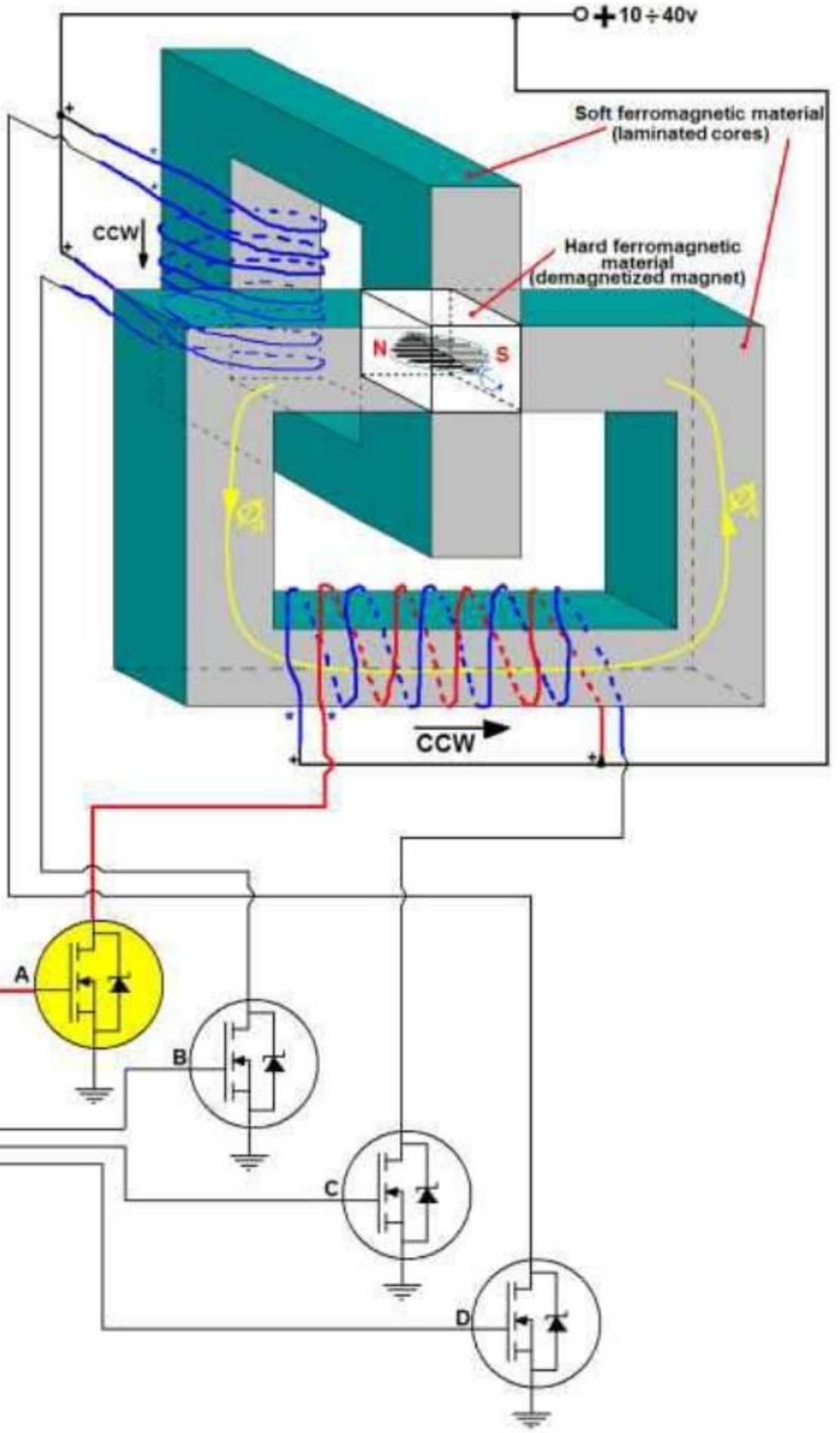
When we take a step back and analyze what is really happening in the MEG(MDAS) magnet, of course we all know by now that the MEG-MDAS design is just a means to extract the work done by the ***self-spinning-self-sustaining-Bloch-region*** in the magnet. We may not see the hole forest because of the trees if you know what I mean. So let's take this step back and look at the hole forest, the whole picture. What are we doing in a MEG magnet? We are trying to establish the second harmonic magnetic resonant natural inherent high Q frequency in a demagnetized magnet, in order to establish a self-sustaining self-spinning magnetic domain dynamics at magnetic resonance. Phiu! That sounds heavy. But why the second harmonic? Why not try to establish the fundamental? Won't that be more simple and easier to construct? So in the following pictures, let's try and do that:



Hysteresis annihilator v1.0

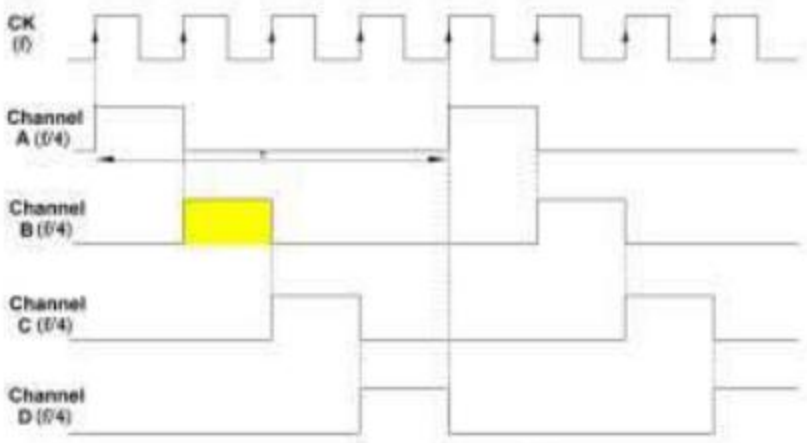
Activation phase 1





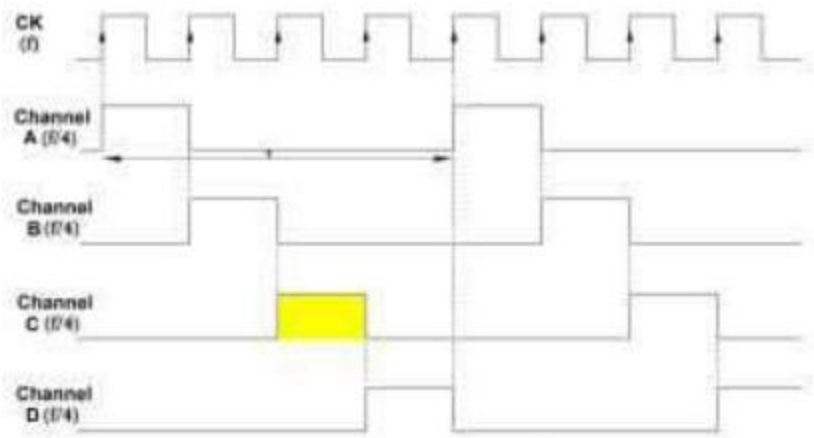
Hysteresis annihilator v1.0

Activation phase 2



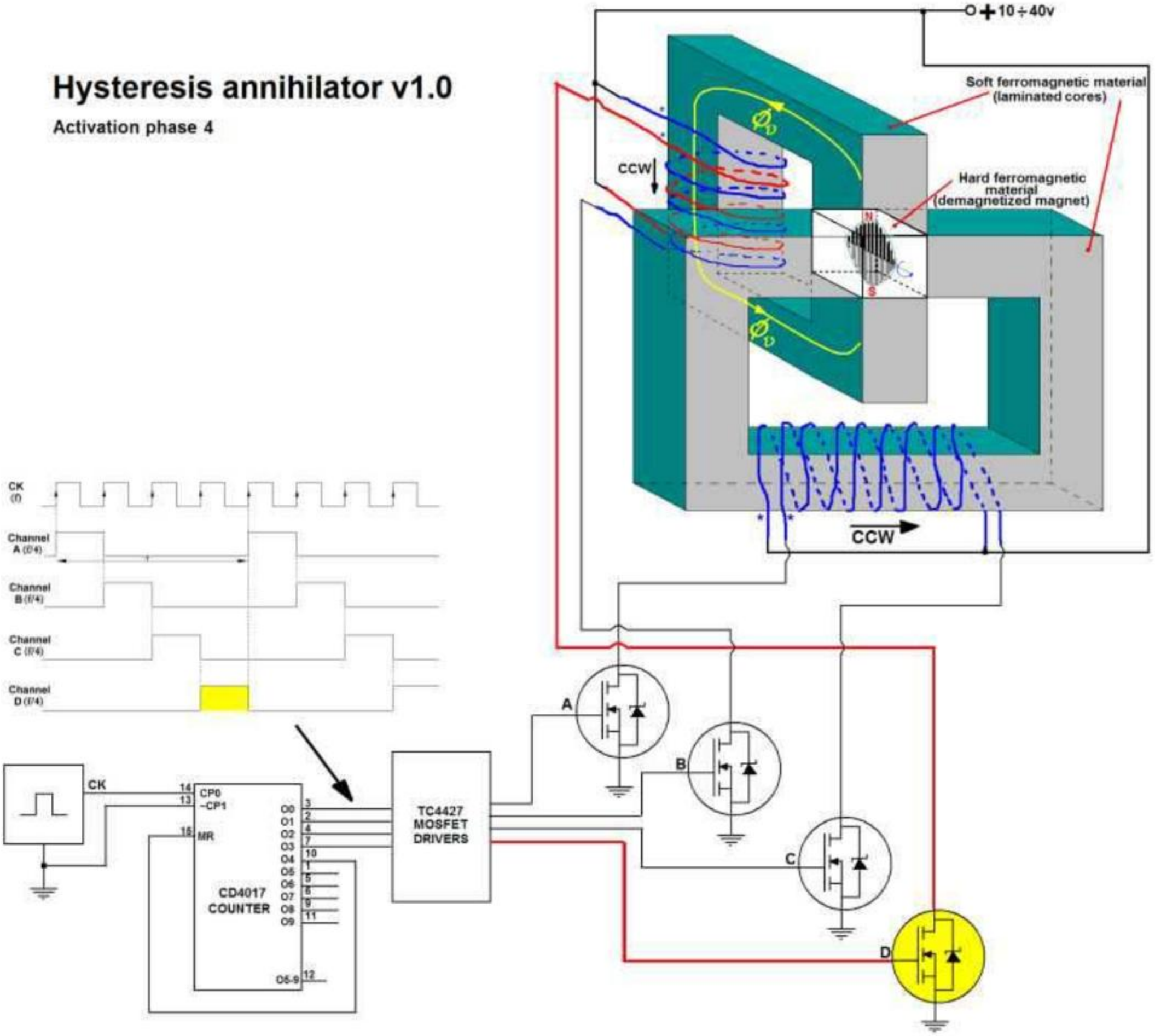
Hysteresis annihilator v1.0

Activation phase 3



Hysteresis annihilator v1.0

Activation phase 4



Now, what has to happen, is that we must find magnetic resonance. We must tune to the magnetic resonance. We must set the device operation to this specific frequency.

-What is this frequency?

-It is the frequency of the spin.

-What spin? What are you talking about?

-The spin of the magnetic domains of course.

-What spin? What domains? Are you stupid? How can you say Hysteresis annihilator? Are you crazy? Any ferromagnetic material is subject to hysteresis! Who the hell do you think you are saying something like this? Are you out of your mind? Do you even know what you are saying? Do you even know what hysteresis is?

-Ok. Listen man. First I will say that I'm nobody. I'm irrelevant. It is this technology that is important...

-Yeah, a technology full of shit, that doesn't even work!

-Please let me finish. Once you fully understand hysteresis, then you can transcend it, or overcome it by implementing a different design.

-"Transcend"? Are you kidding me? I mean, do you even listen to yourself? What do you think we are talking about here? Spirituality? "Transcend"? Really? What's next? Ascend to a higher plane of existence? Come on! Give me a break!

-Please, just give me a chance to explain myself...

-Fine. But let me tell you that, you are a very crazy and insane person.

-Ok. Fine. Please, just bear with me, and if you can't take this seriously, then you could take all this book, as a comic book if you like. I don't mind. I'm sure that all this information will resonate with somebody out-there...

(This self-criticism is intended to be amusing to the reader. It is not intended to be taken seriously. From a psychological point of view is regarded as *healthy and necessary* for learning as long as it's not excessive).

"One should never criticize his own work except in a fresh and hopeful mood. The self-criticism of a tired mind is suicide." - Charles Horton Cooley

Ok. First let me explain to you how I understand hysteresis.

First of all hysteresis is a phenomena that happens when we are trying to magnetize and demagnetize a ferromagnetic material. OK? Are you cool with that? Do you agree? Ok. This process of magnetization/demagnetization happens by applying a 180 reversed field, (a field in the opposite direction). But you must understand that we are not **trying to demagnetize the core!** This is the thing that you must get you head around. We are not demagnetizing the core! You see, when you first apply a field in one direction, then the magnetic domains in the ferromagnetic material will align to that field. Ok. We all know that. But then we are trying to apply the same outside field, with the same intensity in the reversed direction, what we will notice that this time, not all the domains have aligned themselves with this new field. Those that didn't align to this reversed field, have remained in the first original direction. It's like a history or like the domains are lagging behind. We can of course force the remaining domains to align to this new field by increasing its strength. We can say about the material that it is "deficient" . We must call this behavior of the domains in a way. Hmm...we will not find a word in English language, but we will import a work from Greek. Believe it or not the Greeks have a word that perfectly describes what is happening with our piece of metal. The word is "hysteresis".

Ok. Now this is what hysteresis is. It's a memory effect of the domains. They remain magnetized in the last direction they were affected by an external field. ***Hysteresis=The domains like to keep a history.*** We must add another important aspect of Barkhausen effect that is intimately connected with hysteresis. To put it in simpler terms, the Barkhausen jumps are sudden alignment of the internal domains with an outside field typically in the opposite direction. I like to call it chaotic transition from one direction to the other. Why do I say chaotic? Well, because if you can imagine, that some of the domains will make sudden spin or transition to the right to align to the opposite field, while others will sudden spin to the left. This is chaos. No wonder we get Barkhausen jumps. I hope you will reach the same conclusion like me, that **Barkhausen effect and hysteresis are the main enemies in a core of a free energy transformer or generator.**

Once you truly understand hysteresis and Barkhausen effect, you will come to realize that the internal domains of any ferromagnetic material, ***want to spin***. They don't like to be hit in one direction, and then in the opposite direction. So why not let them spin? If that's what they want...let's give them what they want then...

Now, another secret of this device is that once we operate it in this fashion, and if we use sufficient power to exceed the magnetic saturation of the central demagnetized magnet, then the domains will continue to spin for a few seconds even after we have stopped everything. ***This is what we are after***. If we don't use sufficient power then this spin will easily break down. Remember that we are also dealing with a magnetizer, not only a transformer. We can now say that we have finally established self-oscillations in a transformer. Something that is close to impossible in a regular transformer, where the domains are hit in 180° fashion. So good luck in trying to get self-oscillations in a regular transformer. I recommend playing the lottery, because you will have a lot more chances of success.

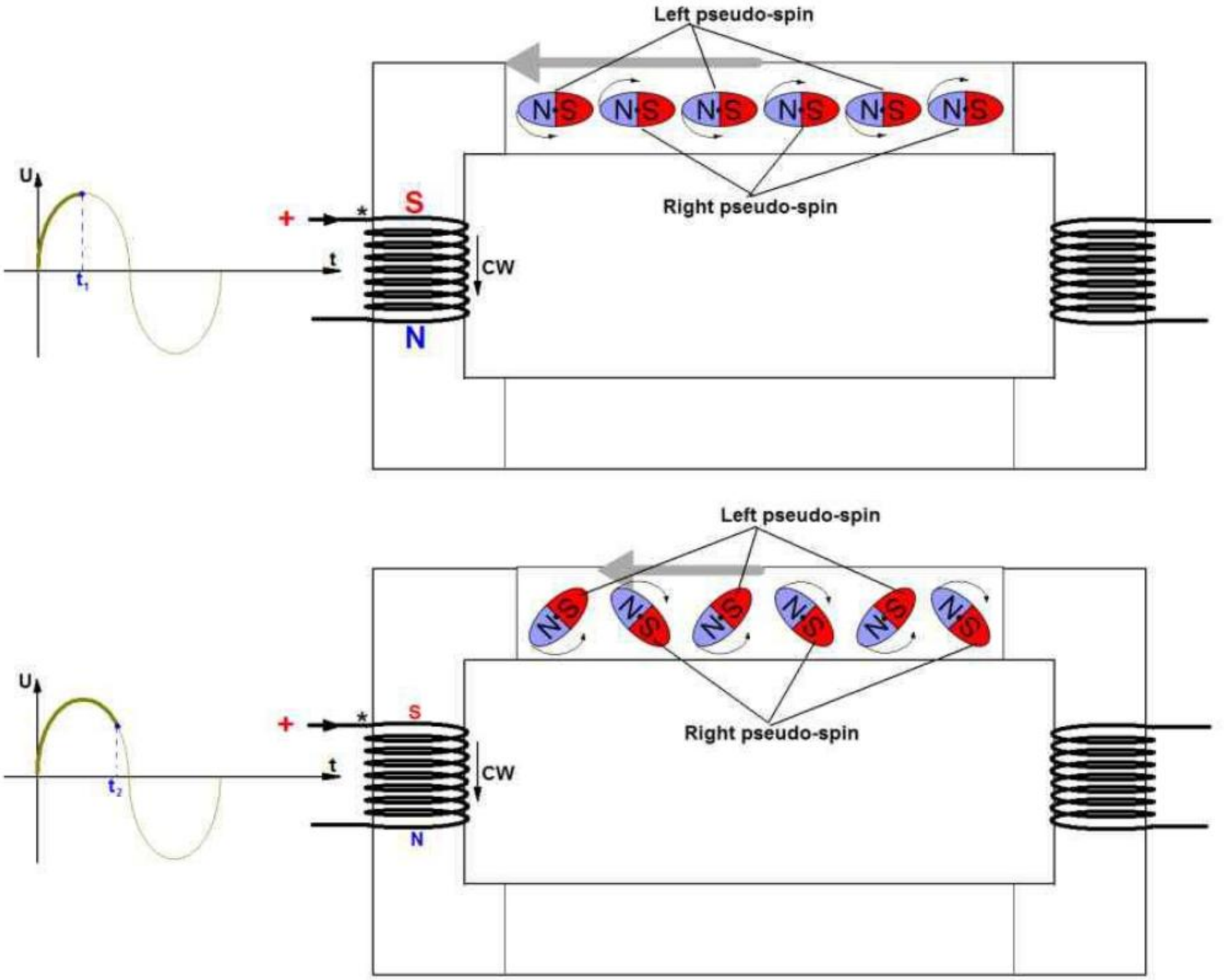
If we hit the domains in this 90° fashion, then the only thing remaining to do is to find the natural spin rate(frequency) of this rotation. Determine what is the exact frequency of this spin (once is established). Then we can proudly say, we are tuning to magnetic resonance.

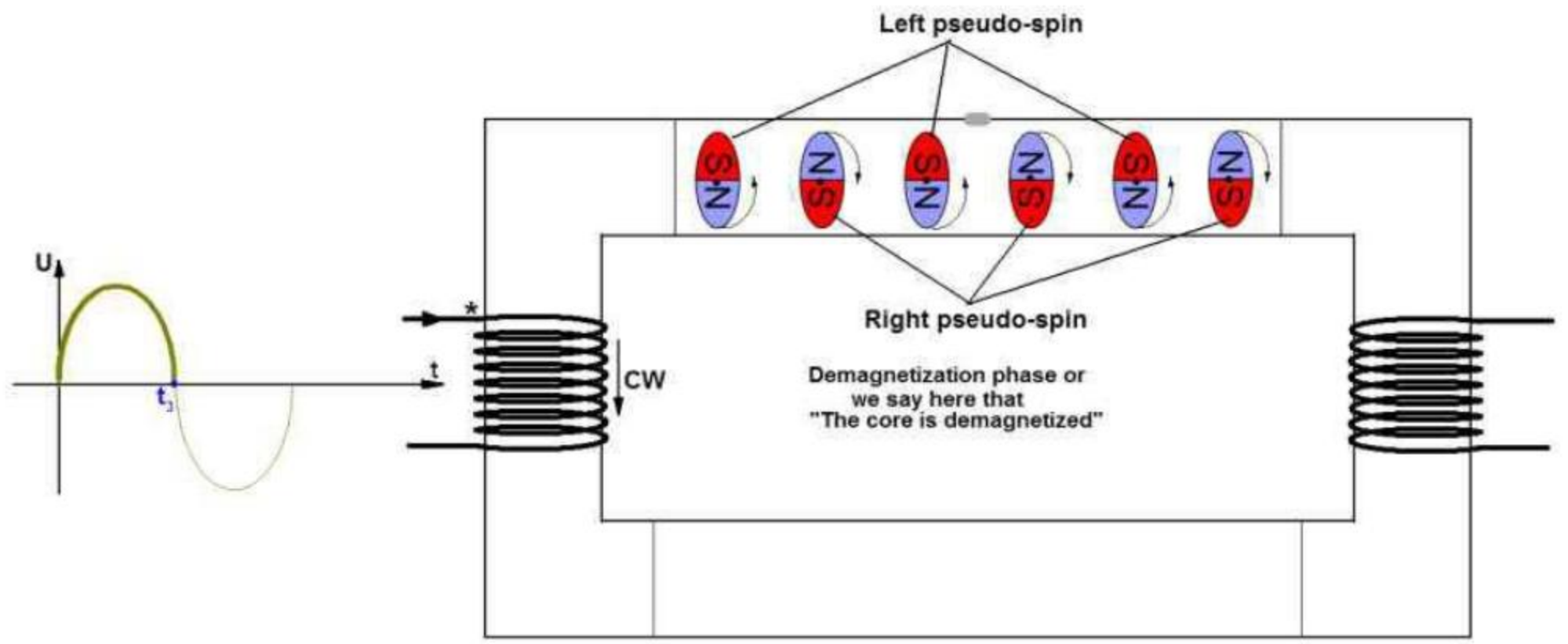
Letting the magnetic domains in a ferromagnetic material to do all the work for us, we should extract overunity energy, and we only have to hit them at specific intervals, just like the child on a swing analogy with a little bit of energy. Thus we have free energy. All the energy is provided by the magnet. Oh...sorry...by the demagnetized magnet....oh...I'm still not accurate....let me rephrase.....All the energy is provided by the magnetic domains in the ferromagnetic material. Still doesn't sound right. Let me rephrase: all the energy is provided by the spinning magnetic domains in the metal. I'm still not satisfied with this statement, so let me rephrase again:

All the energy is provided by the self-sustaining/self-spin of the magnetic domains in the hard ferromagnetic material.

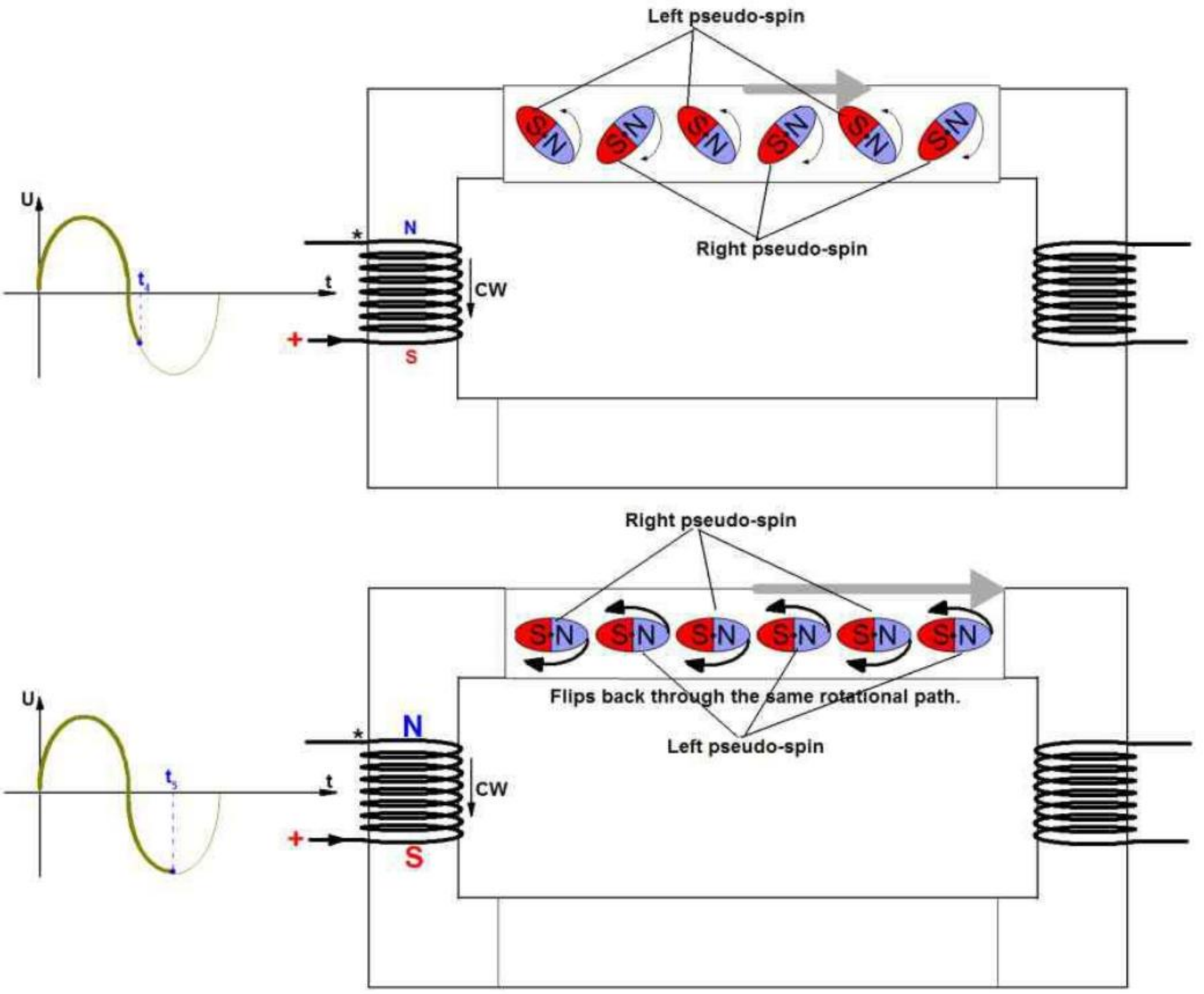
Phiu....Ok. I'm done. Now it sounds better.

The 180° direction re-alignment as a pseudo-spin in a common ferromagnetic core material





The 180° direction re-alignment as a pseudo-spin in a common ferromagnetic core material



Please, don't be hard on me saying that I'm wrong in the above pictures. I know. I know. Forgive me. I know. The magnetic domains movement is 90° phase shifted from the applied signal to the input coil of our transformer. But

for all intends and purposes, this is just an illustration design to explain the false-spin 180°-re-alignment-flip process of a ferromagnetic material in the hysteresis process. So forgive me because I'm not extremely accurate. You get the picture.

As we can see, in a common transformer core the magnetic domains in the ferromagnetic material don't have a spin, they have more like a 180°-re-alignment-flip. So they flip. The domains don't spin. It's a FLIP not a SPIN. Half of them spin to the right, while the other half spin to the left. This is NOT what we want. This is NOT what we seek. This is what we must prevent. This is the exact opposite of what we are trying to accomplish.

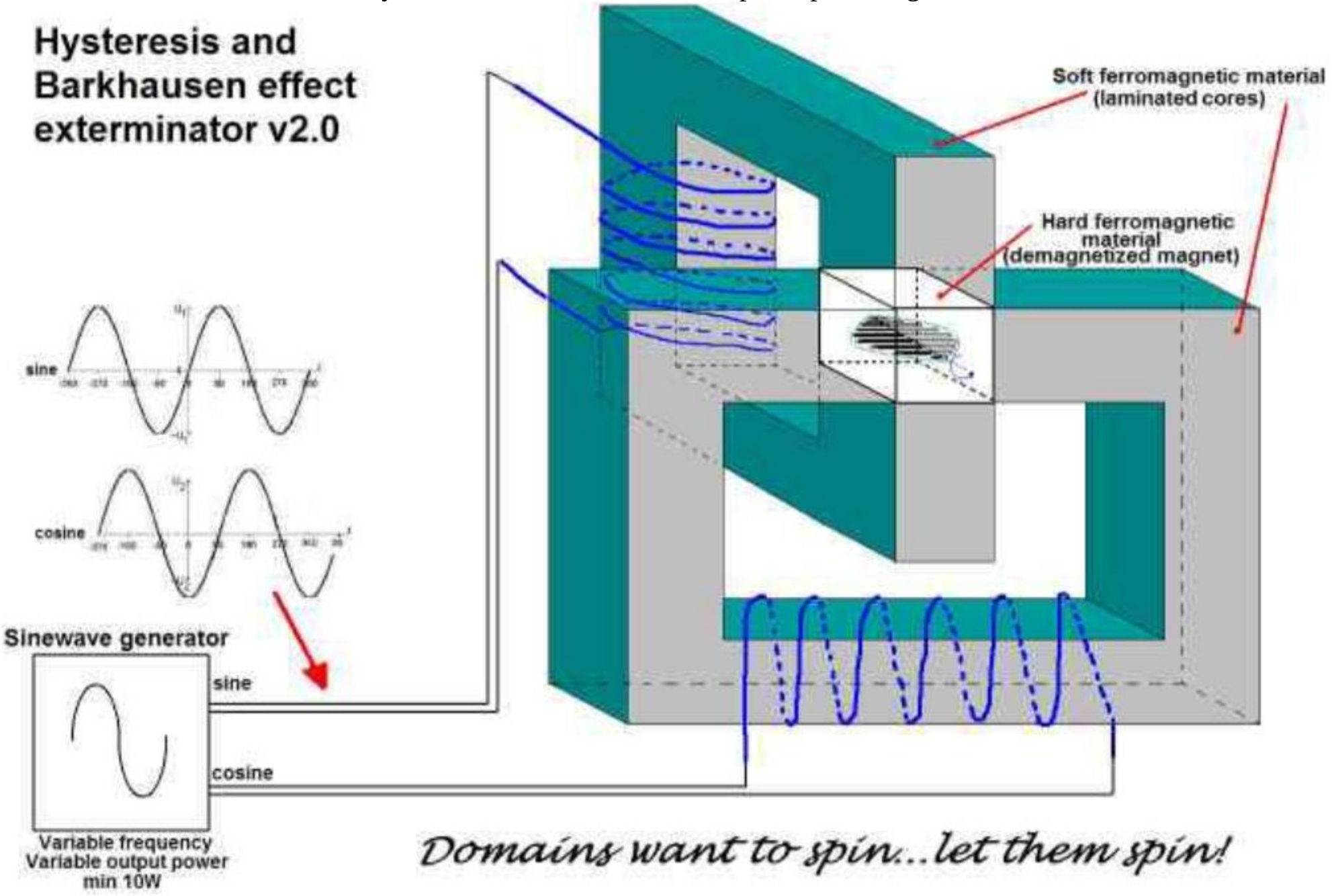
Of course, you could say that at a point when the current reverses direction, the domains could in theory continue their original set spin direction, and thus we can in theory establish a self-sustaining-self-spin.

My response to you is that, my friend, as I stated, I also have personally a chance of winning the lottery if I play. That is in theory. In theory everybody has a chance of winning the lottery, IN THEORY.

But reality has a total different story to tell, so we must open our eyes and see that the probability of establishing a domain spin by 180 phasor difference magnetization is close to impossible. So good luck in trying to establish such a spin.

Therefore we must change our approach and magnetize the core or magnetic domains in less than 180° directions, like a four stages 90° phasor difference in magnetization.

We could also drive the MDAS-Hysteresis annihilator with a two phase power signal like this:



This time, we also eliminate Barkhausen jumps from our device, because we have a more smother spin than in the previous version, where we had activation stages. Depending on the accessibility of materials, one can build any of the prototypes. Driving the device with sinewaves instead of square wave is better, but we also have to acknowledge that we need a two channel sinewave generator capable of driving high loads.

So, at first we drive it with high power, like we are trying to magnetize the central hard ferromagnetic material, then after a few seconds we lower the driving signals. It’s like a big heavy wheel that at first we must put a lot of energy to make it spin, but once it has gained sufficient speed, we just have to pinch it from time to time. In our case, we can’t just “pinch” the established spin whenever we want. If we hit the coils, and create a field that opposes the established spin, then we have stopped it. What we need is to “pinch” the spin or the established rotation out of phase with it. In MEG we see a 45° phase shift, but in theory we can use any phase shift between 1 and 90°.



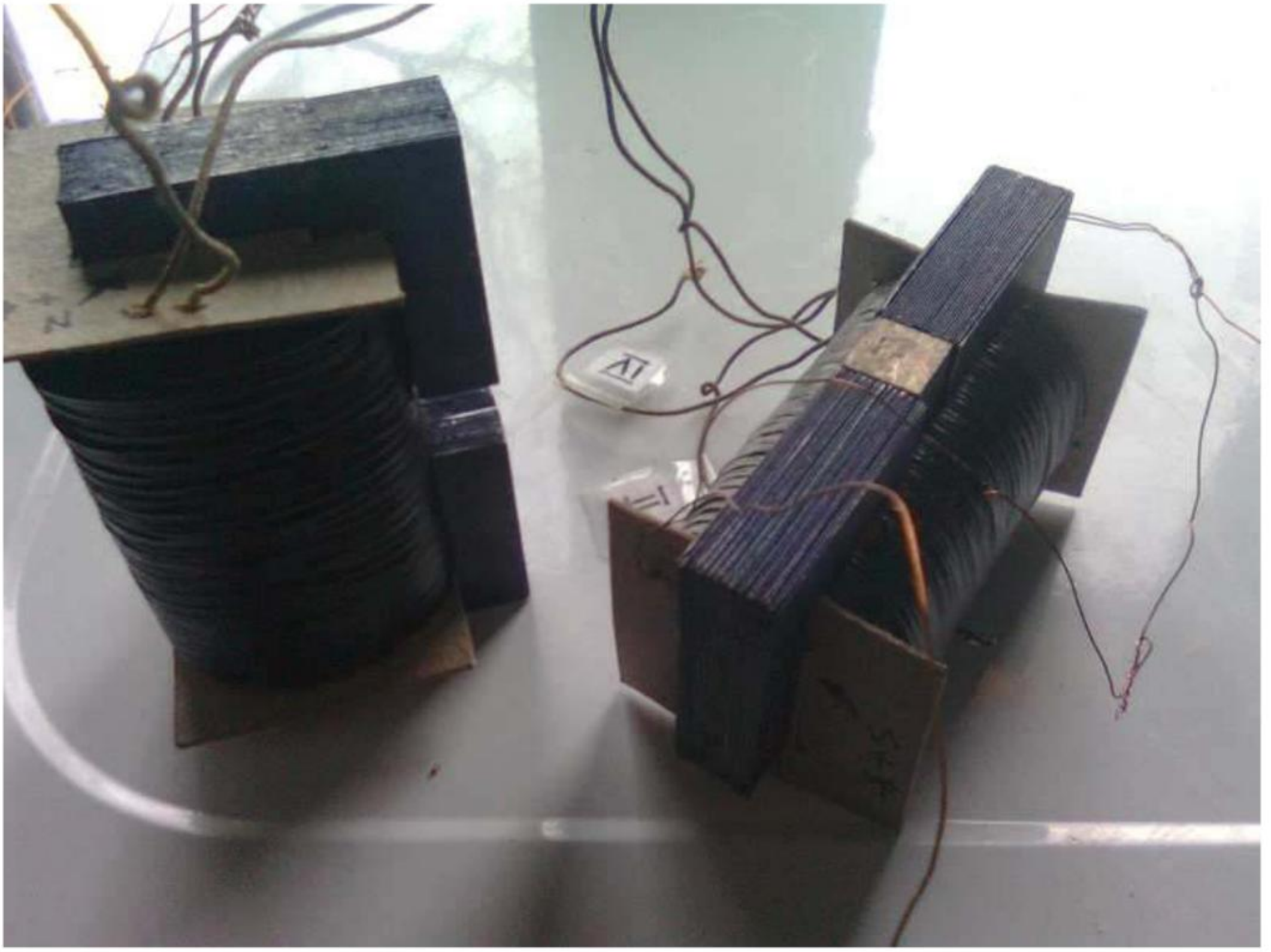


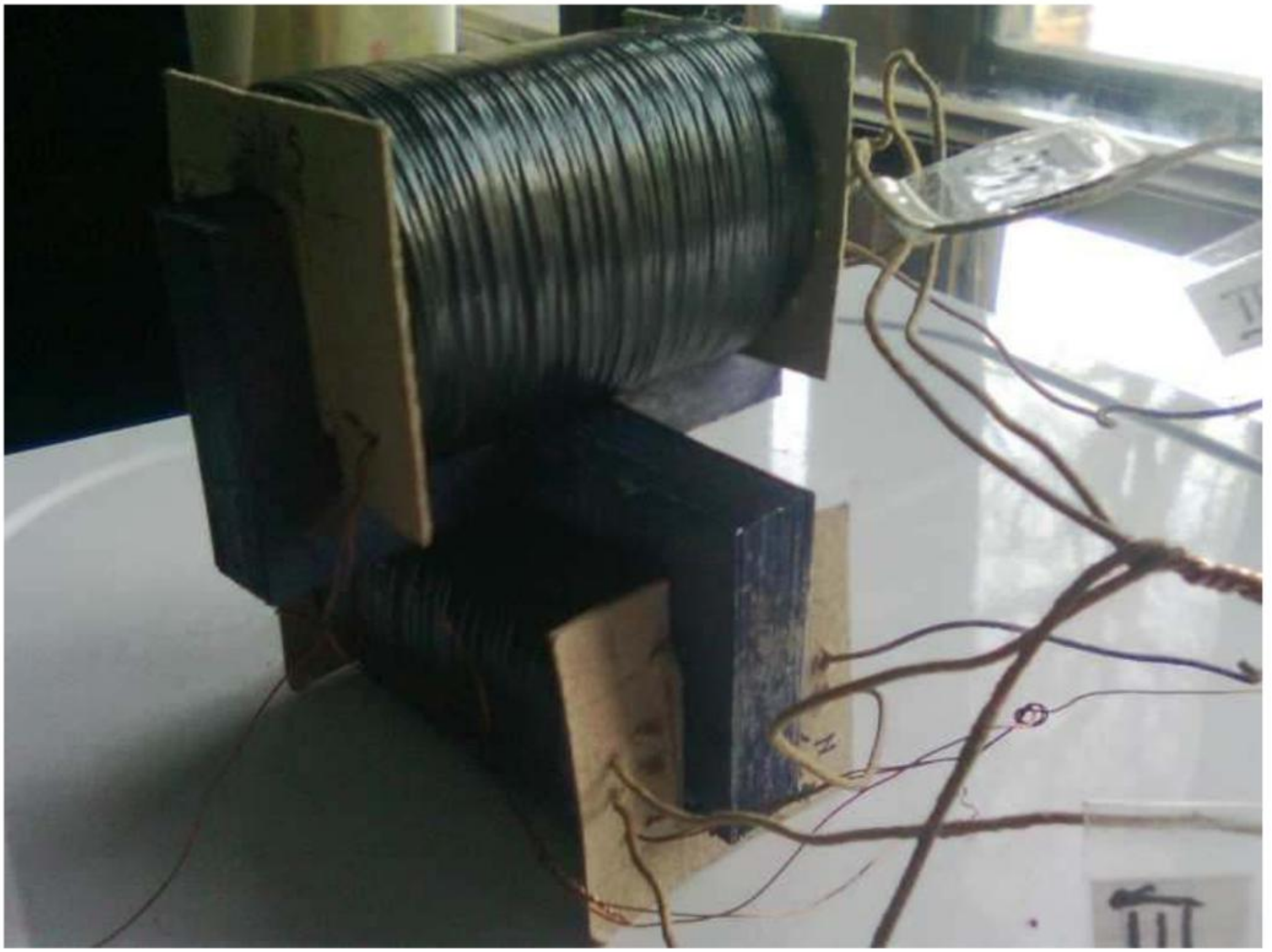






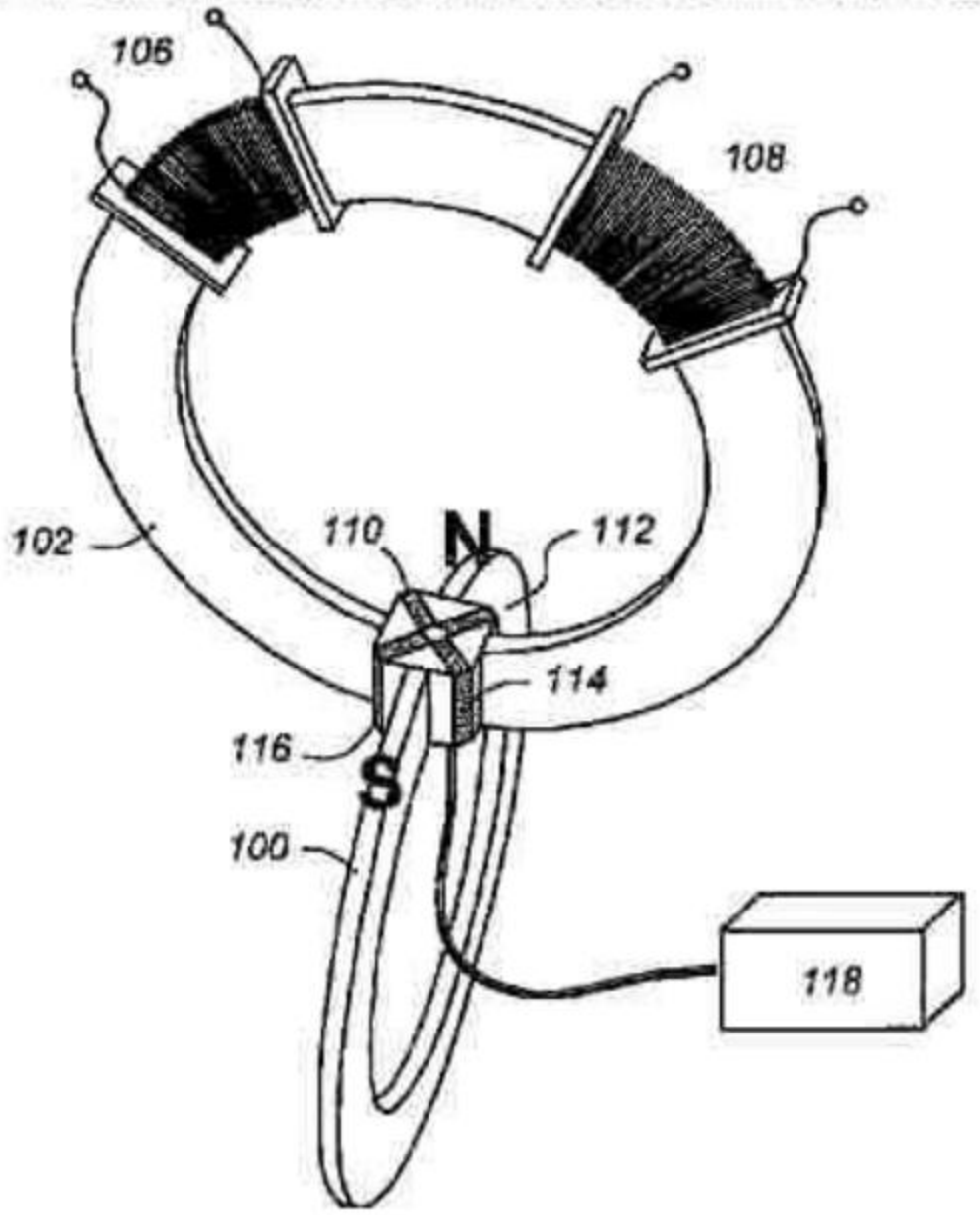

Demagnetized
magnet





Now, this design brings back memories of a similar free energy electric generator by Theodore Annis and Patrick Eberly in patent US 2007/0242406 (20090096219):

Theodore Annis - Single magnetic flux path electric generator (US 2007/0242408)



Darn! I told you if you think that you have come up with an original idea, think again . You might discover that it has already been discovered by others before you. (Note that I used the term "discover" and not "invented").

Although this device works in a different manner than the one I'm describing, it is still a remarkable resemblance. This device is yet another offspring of the grandfather "Radus boots" and a cousin of MEG. Uff...Free energy family...it's a BIG family!

Connection between Annis&Eberly generator and Steven Mark TPU

Hold on to something when you read this:

Annis&Eberly generator works the same way as the TPU!

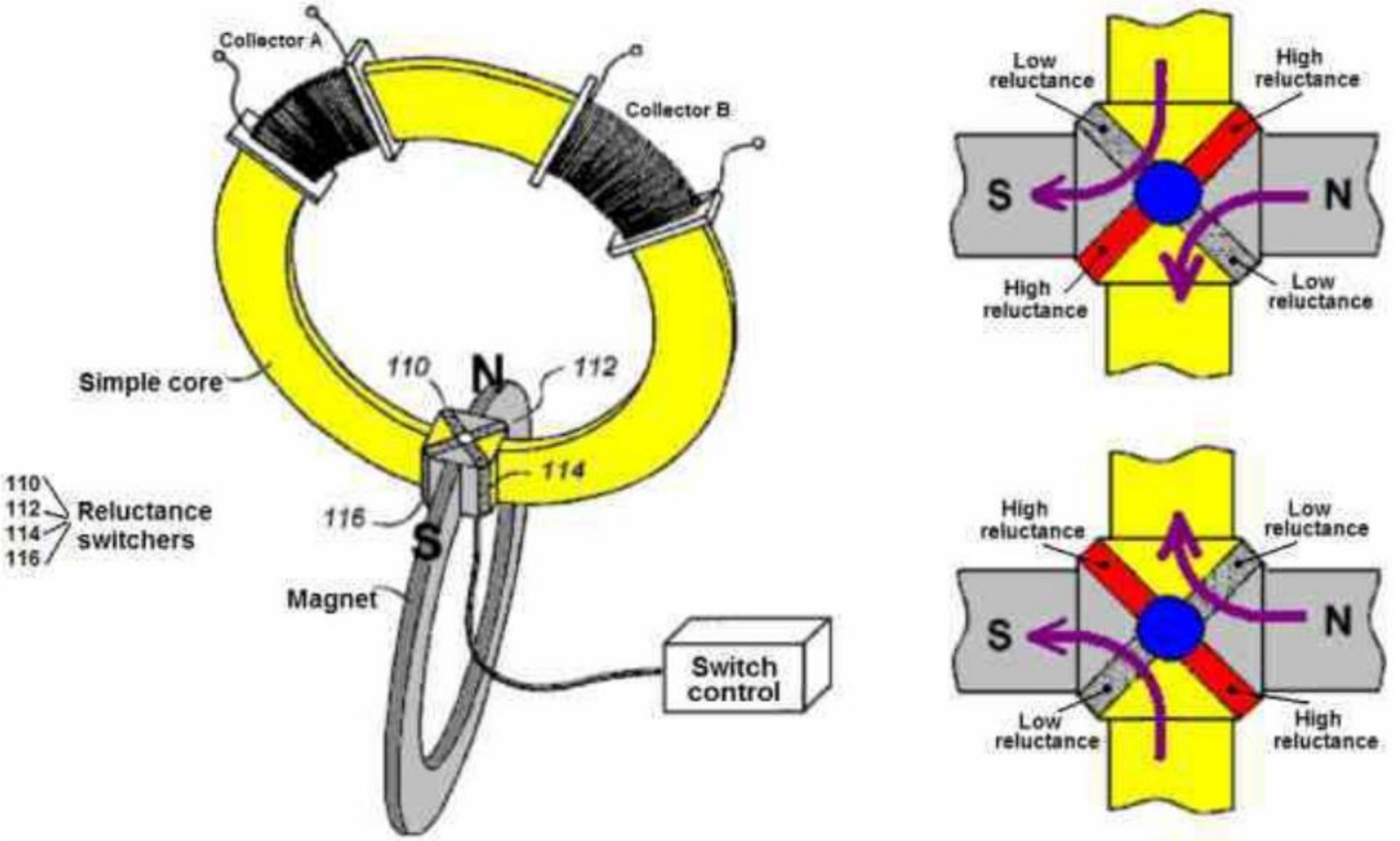
This is insane! I am insane! How on earth can I make such a connection? Am I in my right mind? How can I say something like this? What am I thinking? Can't everybody see the **obvious constructive difference?** How dare I say it works the same way? What the hell am I talking about here?

Really?

Really!

Let's take it apart piece by piece. Bear with my insanity for a little while. If not, just amuse yourself with my fantasies. Or not?

Ok. How does it work?



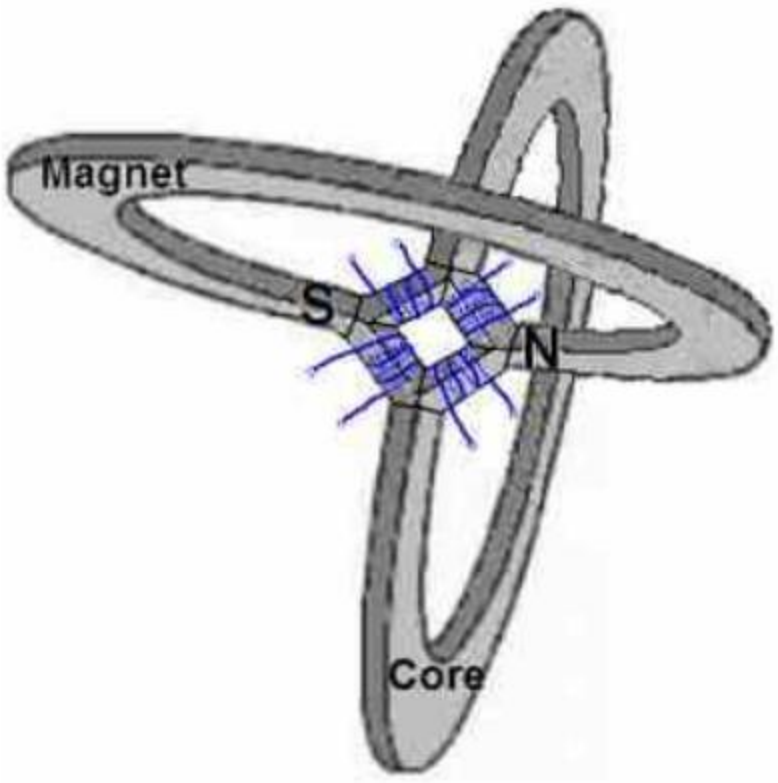
Ok. Don’t be hard on me, saying that I have the cores interpreted in a wrong fashion from the one described in the patent. That what I say to be the core is the magnet and vice versa. You know what? It doesn't matter! The basic idea is that one ring is a magnet, while the other is a simple core. That’s it! End of story.

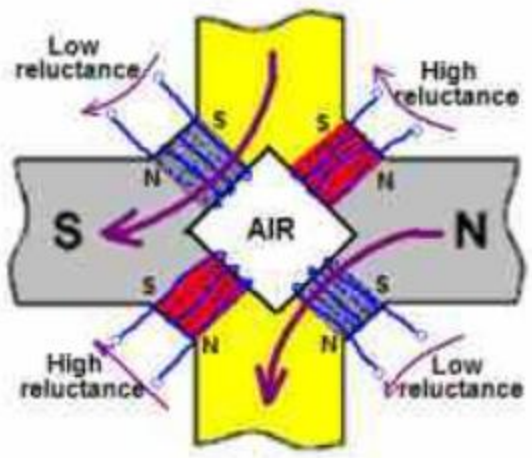
So, we are dealing with yet another “magnet switcher” that I put my hand on fire that it doesn’t work. But hey, maybe these free energy inventors all know something that I don’t. Maybe....Maybe they all agree somehow not to share the main ingredient, main magical central secret...who can know? But hey, if you feel drawn to this garbage like me, then go ahead and replicate this shit, I’m not going to stop you. I’m just saying, don’t waste your time like I did. Learn from my mistakes.

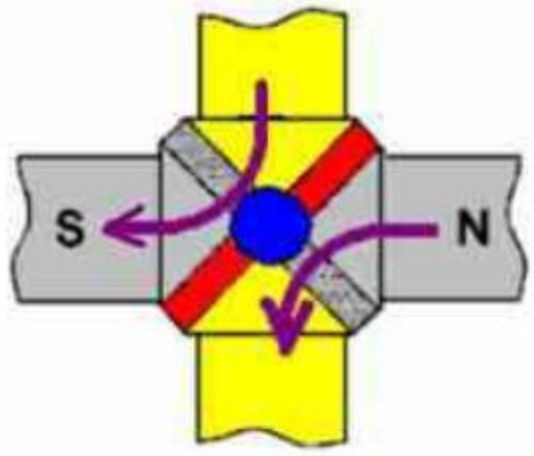
What is special in this design? Hmm...let’s think...The central reluctance switcher seems interesting...but it sounds too vague. Let’s take it apart! How can such a reluctance switch be easily implemented? The most easy way to implement such a 4 way magnetic reluctance switcher is by using 4 coils.

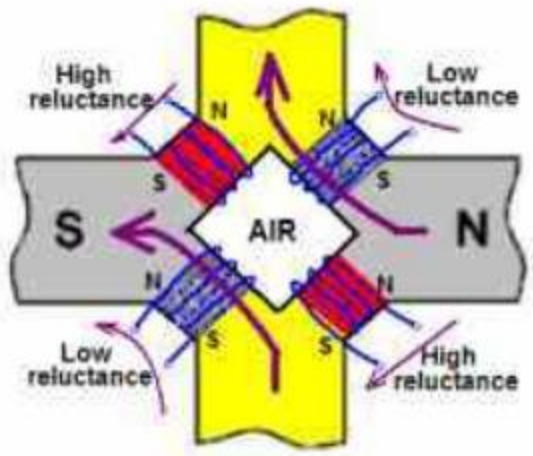
Let’s allow us to change the basic design to implement the reluctance switch like this:

Annis&Eberly generator same as Steven Mark TPU. Same meat different gravy.

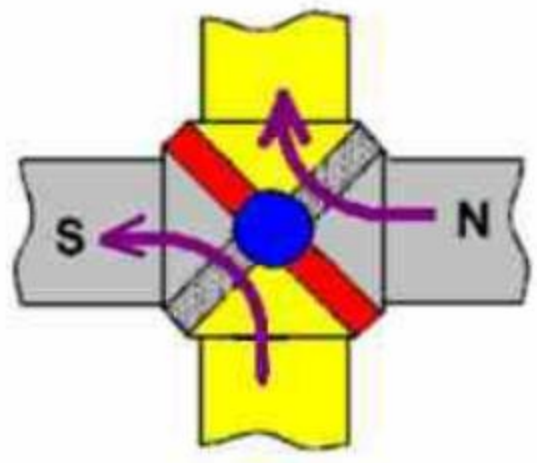








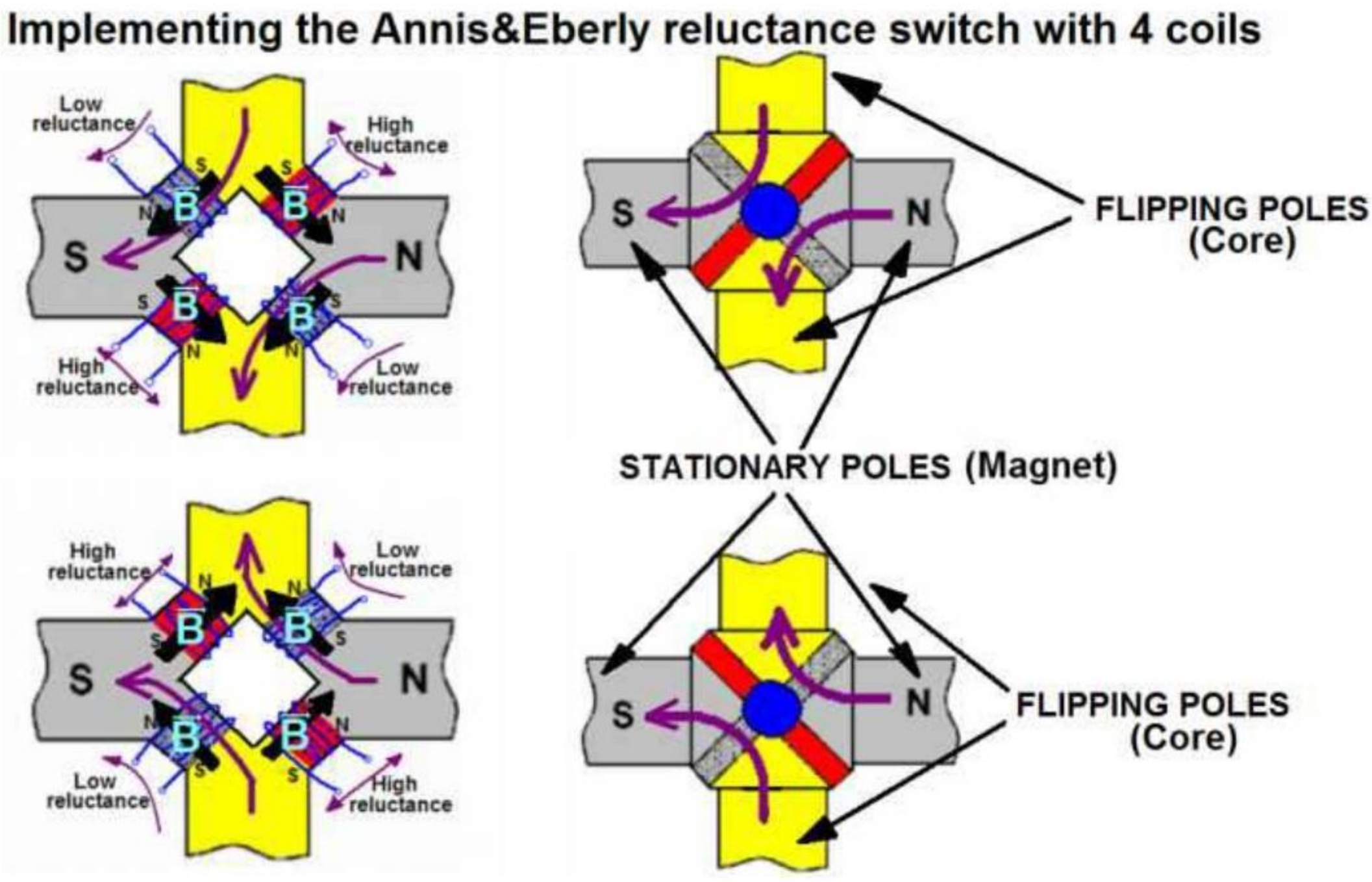
Implementing the reluctance switch with 4 coils



One(Single) magnetic flux path switcher.

Are we clear until now? Is everything acceptable?

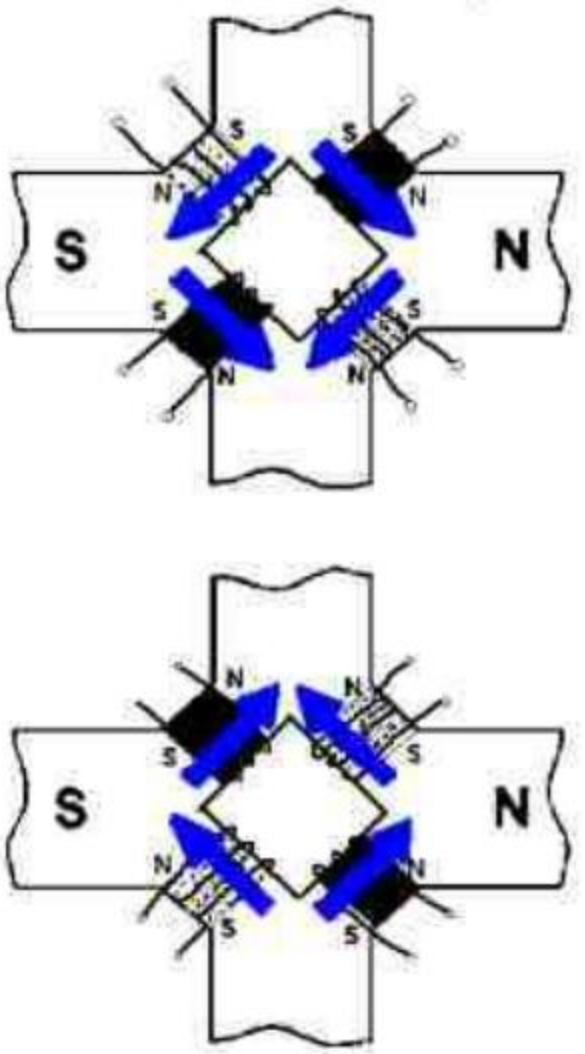
Ok. How does these four coils fire in order to switch the magnetic flux in the way described in the original patent? They fire like this:



Let me simplify it again for you, in case the above drawing is to complex:

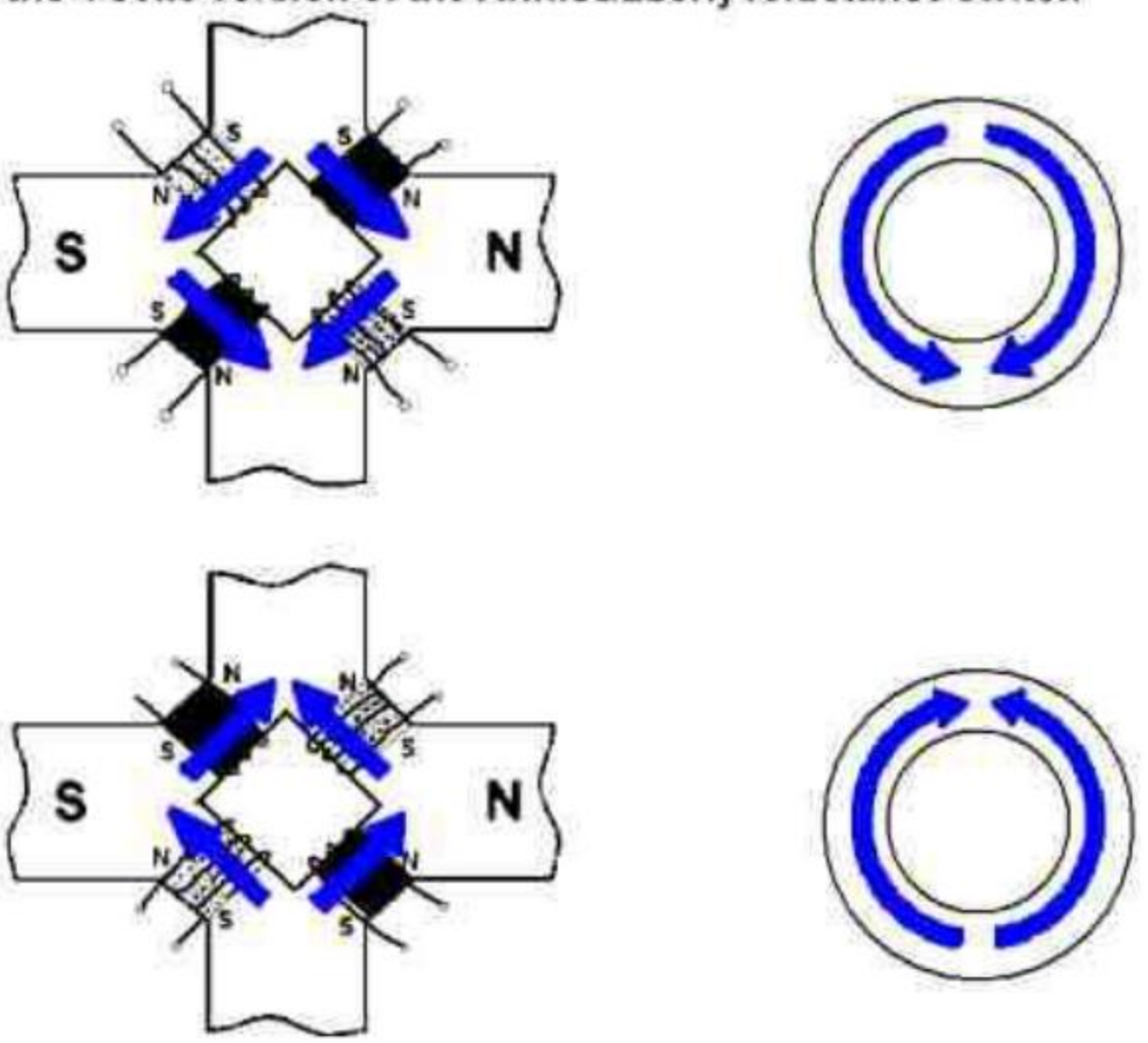
Here is what we are interested in:

Simplified visualization of the 4 magnetic flux vectors dynamics
in the 4 coils version of the Annis&Eberly reluctance switch



Hmm... looks familiar....where did we have seen this?.....hmm.....Yes! I know!....but wait...it can't be...

Simplified visualization of the 4 magnetic flux vectors dynamics
in the 4 coils version of the Annis&Eberly reluctance switch



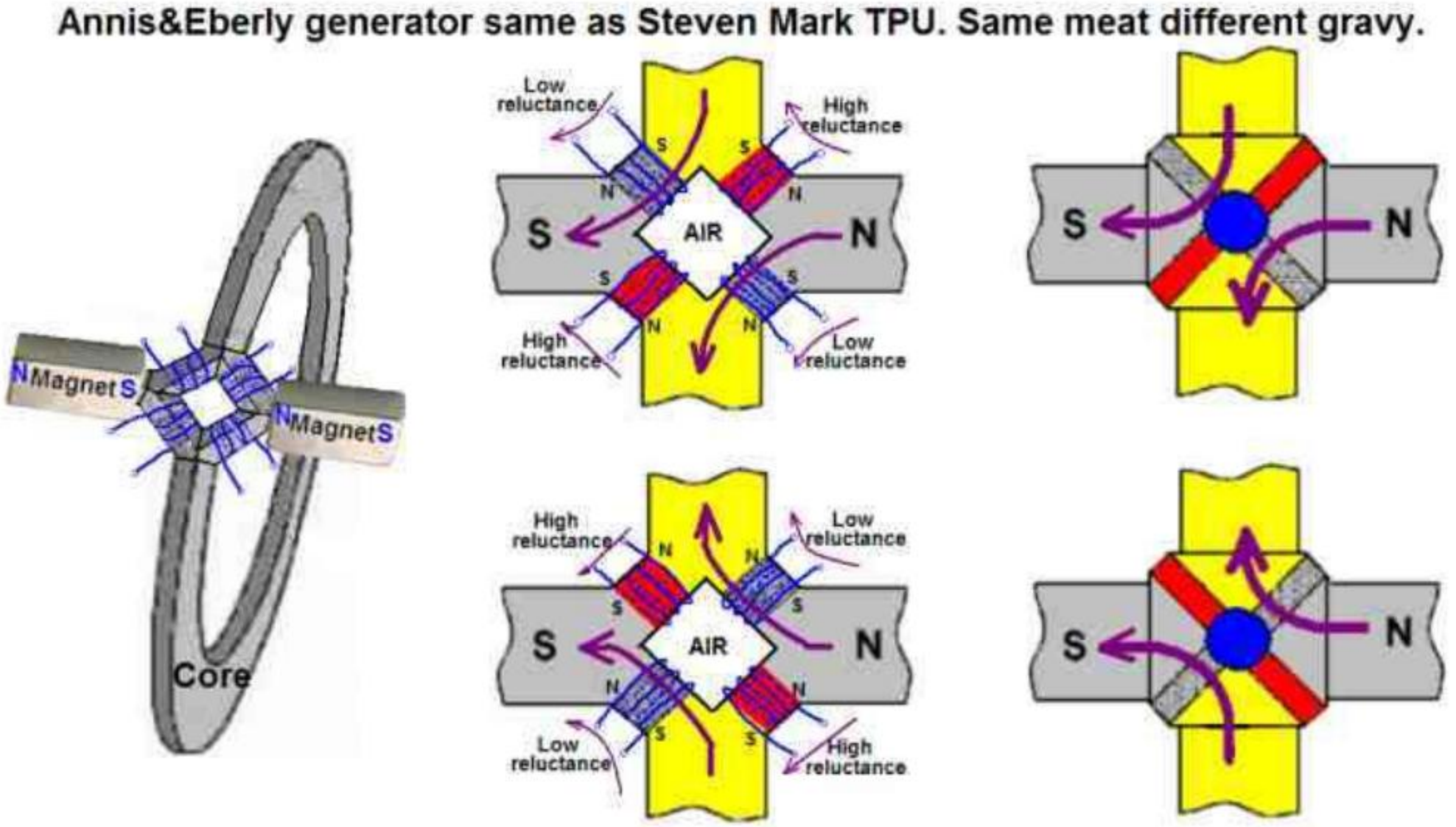
Or can it? Could it be a simple coincidence that the Annis&Eberly reluctance switch version implemented by four coils, works like TPU-MEG hybrid flux switcher? I think not! I don't care what you think, this is more than a coincidence! It's the same technology based on the flux gate! You might say> You are absurd! Are you blind to the obvious constructive difference? My response is, that my friend, it is you who doesn't see the big picture here. Bear with me, and have patience.

Let's go on and "improve" or "simplify" or "evolve" or however you want to express yourself, depending on the perspective you have on things. So let us continue.

Another question arises. Why use a ring magnet? Isn't that peculiar? It's kind of unheard of. Mainly ring magnets are found in speakers, but don't have longitudinal magnetization, and even if they had, we won't be able to cut one, considering how bridle they are.

You might think that this is not a problem, and that it can be easily be replaced by a simple standard core and just make an electromagnet out of it. Yeah, that's true, but let me come up with a different solution, much simpler, and low cost. It won't require the use of winding or an additional core.

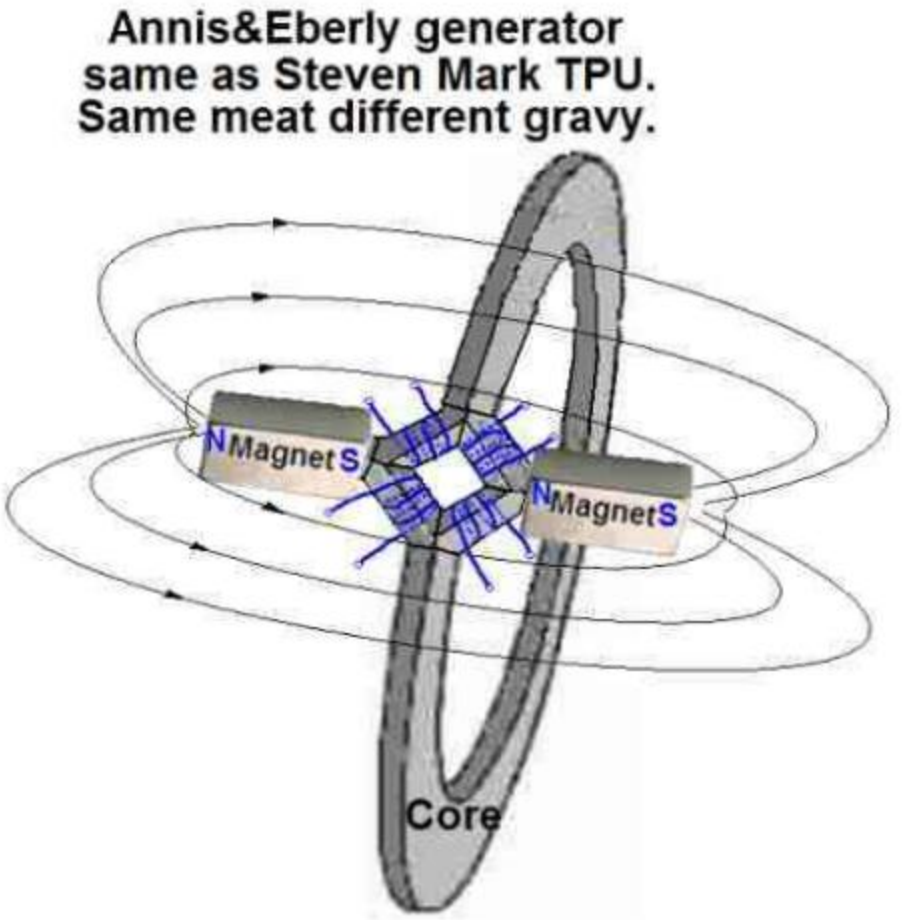
How about this:



Isn't it much more simpler this way? No more electromagnet, additional labor, windings, coils, cores. Simpler. Isn't it? I have just replaced the ring magnet with two magnets. Nothing has changed. Same operation principle. It works the same, doesn't it?

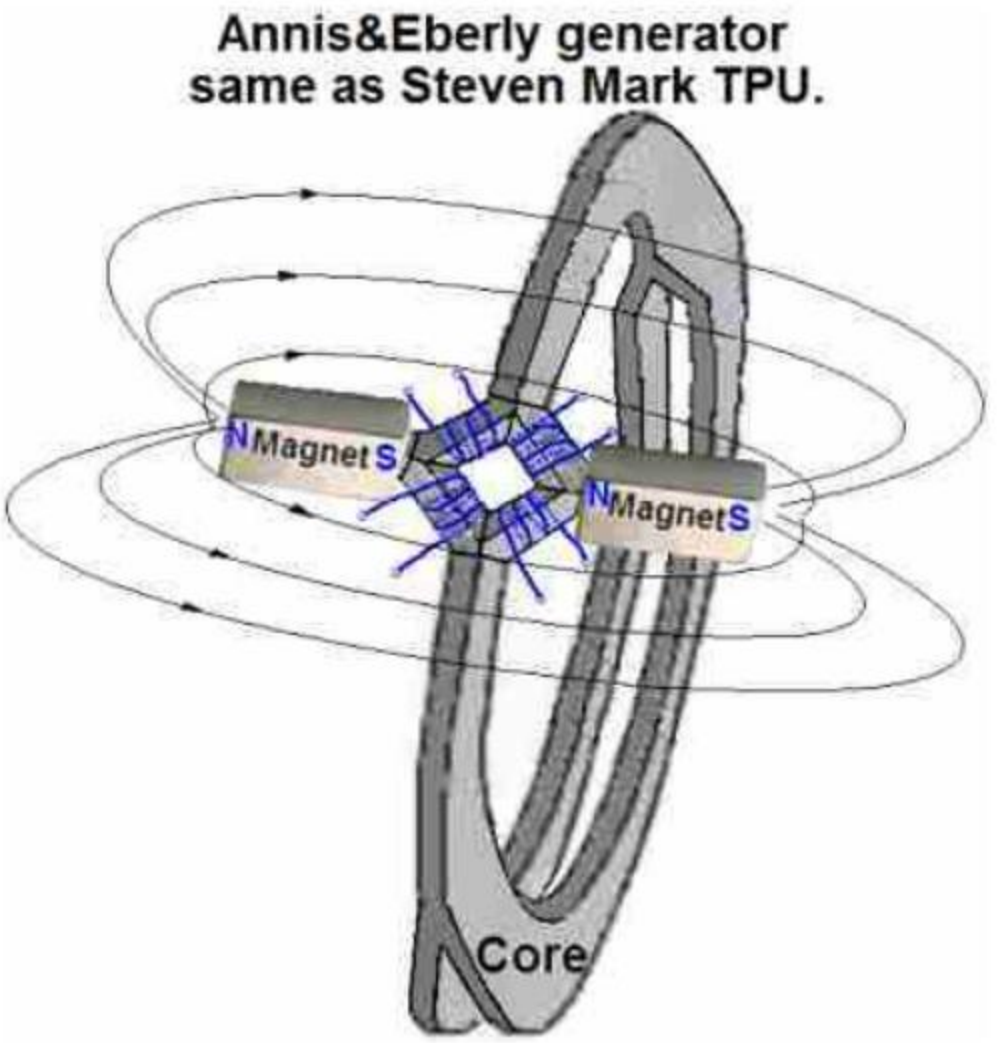
No let's continue "simplifying" it. I told you it depends on how you see things. You could for example take all this trip/journey the other way around. Start from the TPU and you will eventually end up at Annis&Eberly generator, and you will say this is much more simpler than the Steven Mark TPU. Fine! I won't disagree with you. Let it be your way. It works in both ways, however you want to look at it. That's not the problem here. "simplifying" the design "evolving" the design, "complicating" the design, they are just wording in expressing the idea that in fact we are dealing here with the same technology. Bear with me a little longer to prove to you that.

Now what we are forgetting/ignoring/missing (throughout this book I just put many words separated by character "/" so that you may choose the most appropriate word for you, the one that works best for you), ok, so what we are missing is this:

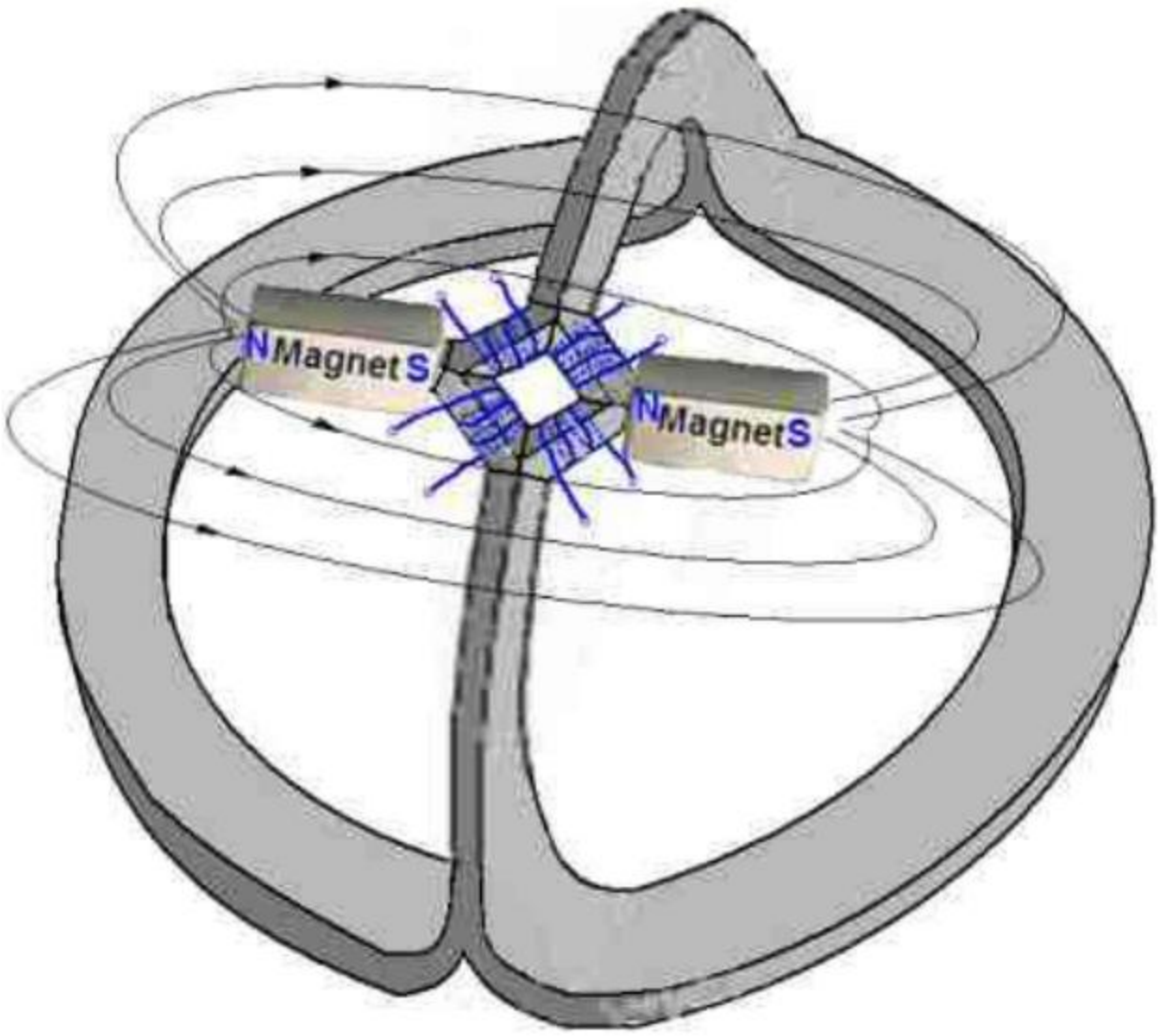


The return magnetic field lines of our magnets from the poles that we are not using are closing through the air. Hmm... that's not an efficient design...I mean, even if it works in overunity, you must agree that you are not using the whole story here. You are not using the whole magnetic flux of the permanent magnets. So you must agree that there is another improvement that must be done! So what is it?

First step I will do is that I will segment the core. It won't make too much sense why I do that. Yet! So bear with me a little longer:



Do we have a problem here? No. Nothing has changed in the operation. This is an acceptable modification, even if you don't see yet why I did it. So, if we don't have a problem, then this design should work too:



-What on Earth am I doing? And where the hell am I going with this?

-I told you to bear with me! Please! Just a little longer, we are almost there...

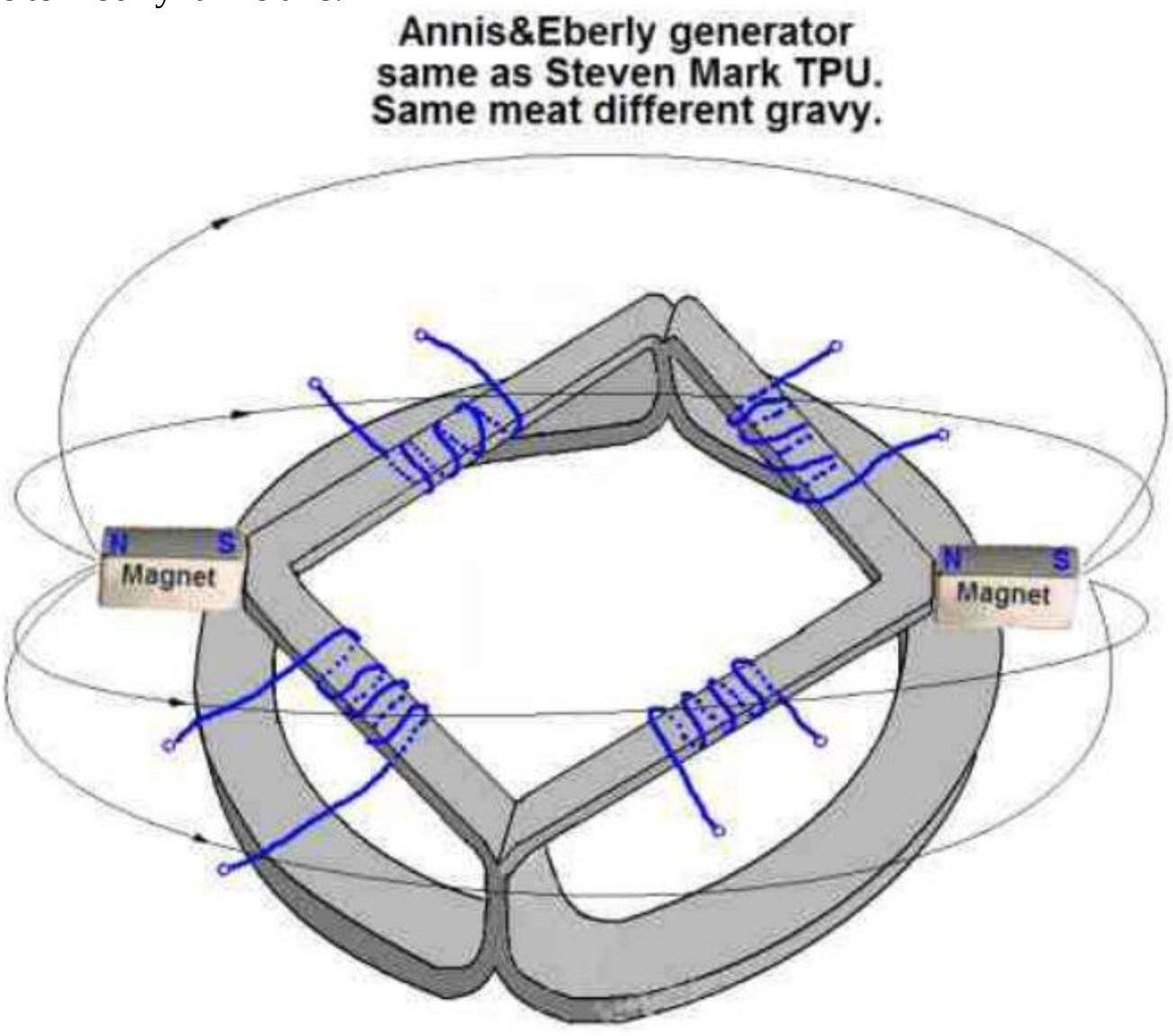
-Almost where? This is insane!!! You're crazy man! This is crackpot science. You're out of your mind!

-No!...No!...Please....wait!...if you can't take this seriously, then just amuse yourself with this joke of a device! Consider it entertainment for you...please...bear with me...

-Ok. Whatever men. This is silly!

-Is it?

Let's continue to modify it like this:

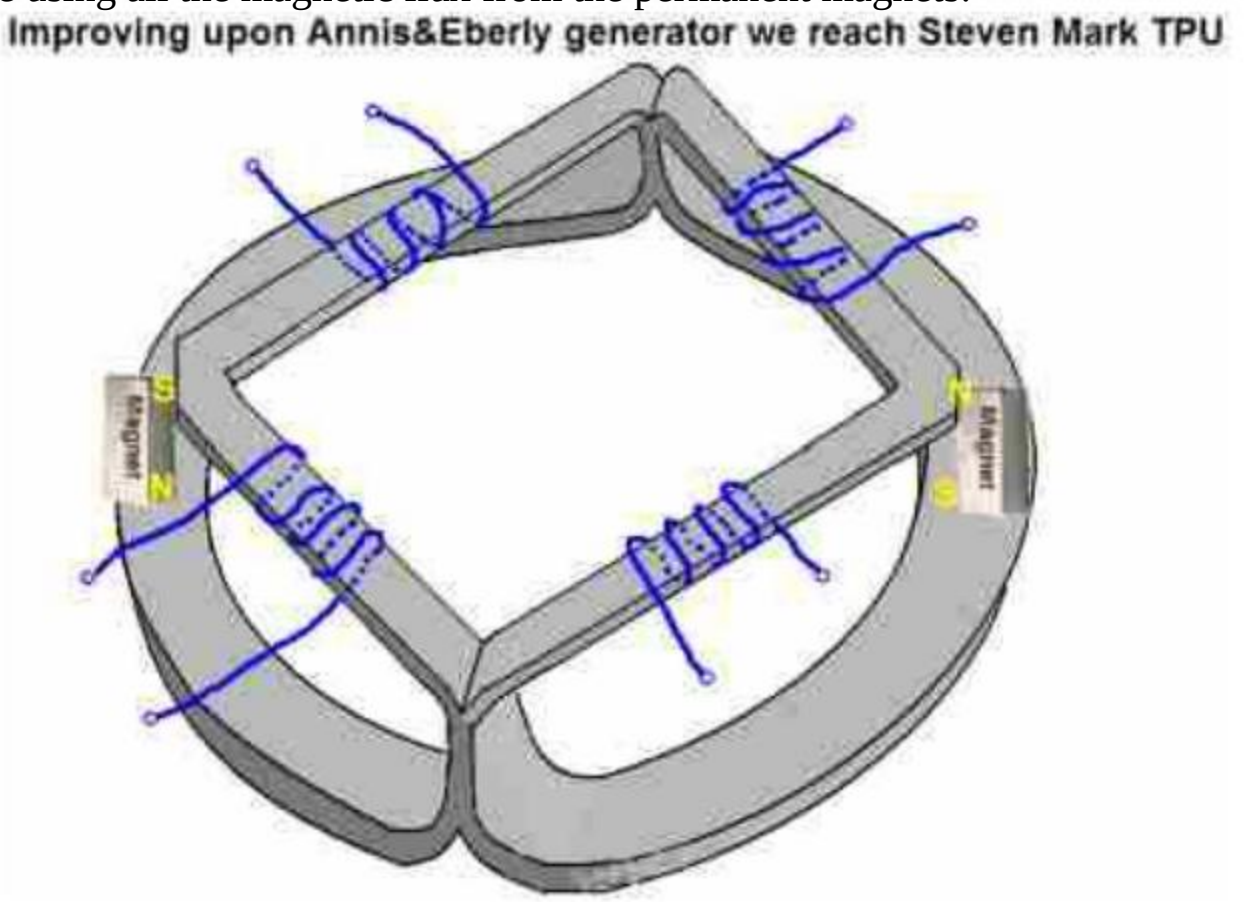


You might say:

-You can't do that!

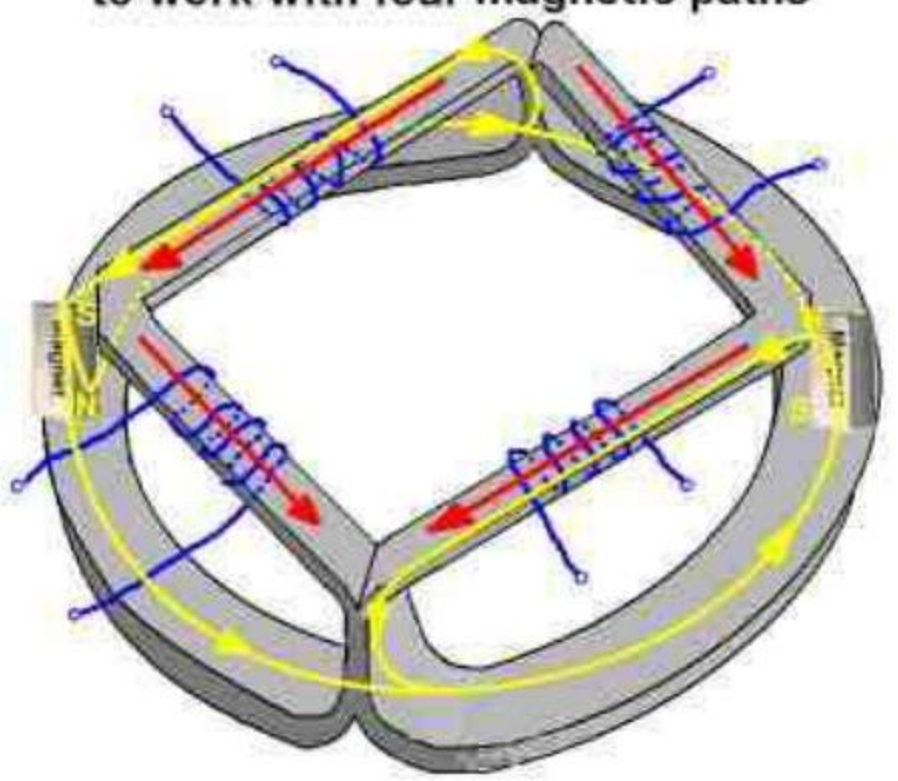
-What?
-That!
-What did I do?
-You can’t change the core of one device just for your sake to resemble the TPU. It’s insane! You can’t do that!
-Listen. What have I done? Trace back the steps that I did, and you will see that I haven’t done any major change in the original operation principle except changing the ring magnet with two magnets. That’s all. And we agree that this changes almost nothing in the operation of the device. The rest is the same. Same operation. Look into it again, if you don’t believe me. Just the design is slightly different! Same meat, different gravy!

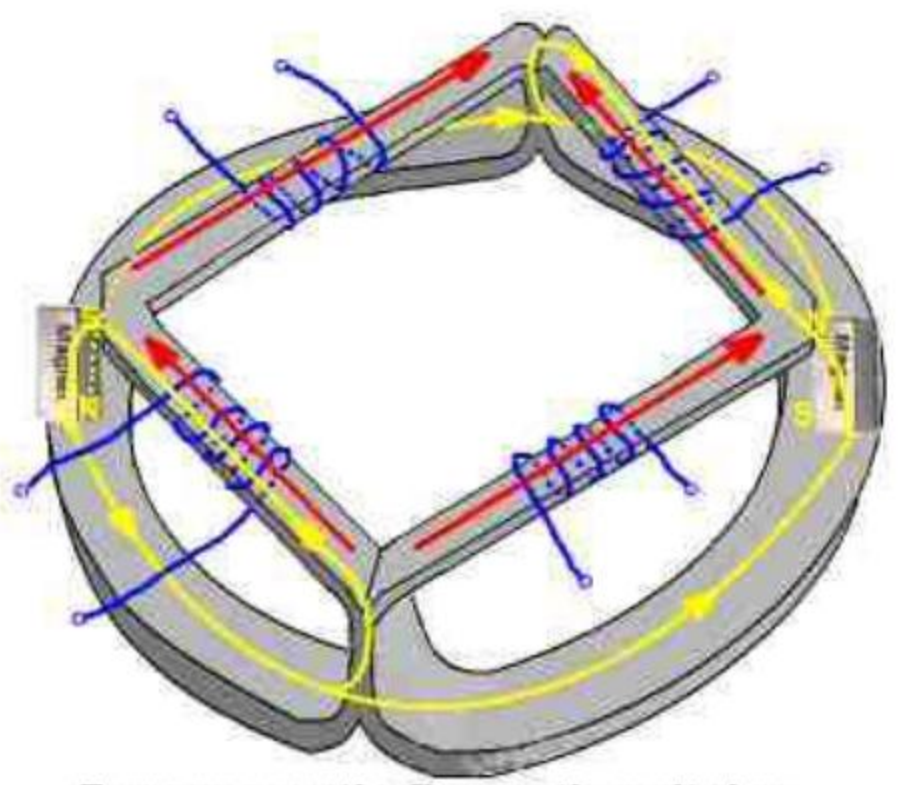
Now comes the big change, and you might not see this, but it is actually an improvement in the operation principle because we are using all the magnetic flux from the permanent magnets:



Rotating the magnets by 90°, allows them to couple with the flux path they are switching. Isn’t it more efficient? Think about it!

How about its operation now?





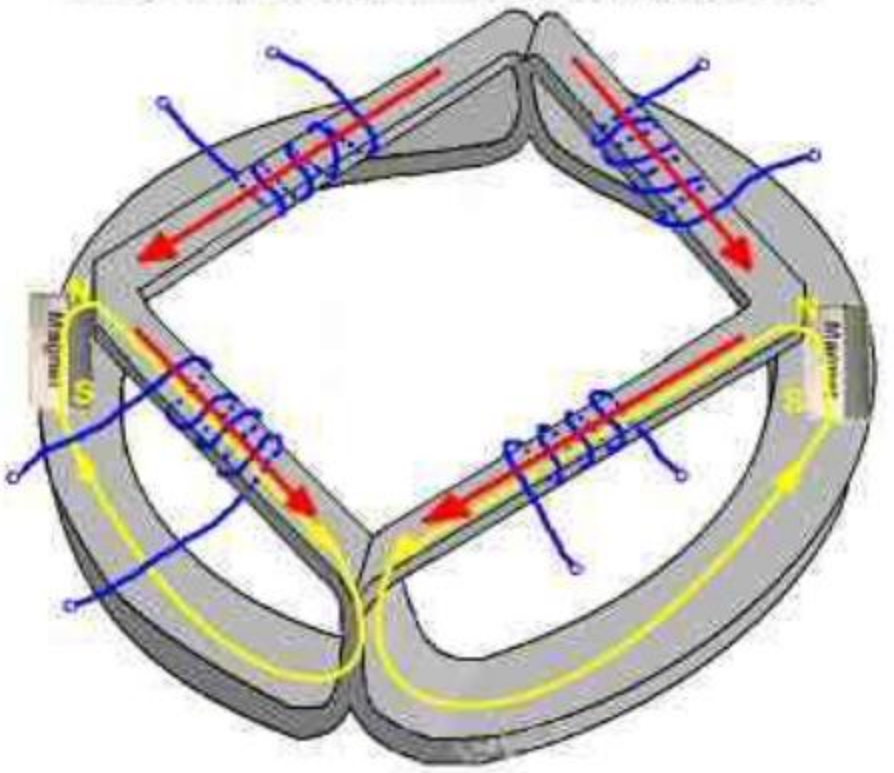
Then you might say, that just because I changed the design to look like the TPU, and replace the ring magnet with two magnets doesn't mean that it's has the same operation as TPU, or that we are dealing with the same technology. My response is that you are wrong. It is the same technology.

Again, you would say: No! You are mixing apples and oranges! This has nothing to do with TPU! You are mixing cabbages with the baskets. Don't you see, even the magnets are arranges differently, they are in reversed polarity than in the TPU design you had described. You don't make sense!

My response will be, my friend, again I say, that it is you ho doesn't see, that by this arrangement, in this polarity, it works by switching not only one flux path like in the original design, but four. When they are in repulsive mode, you just turn around one magnet, then it will work better, because the flux in one side of the device will be almost 0. So now we have not a single tiny difference between Annis TPU and Steven TPU.

(This self-criticism is intended to be amusing to the reader, at least for those who are not on the critic side. It is not intended to be taken seriously. From a *psychological point of view is regarded as healthy and necessary* for learning as long as it's not excessive).

It is still a simple 4 magnetic flux path switcher:



I told you that Annis generator is a cousin of the TPU! They have the same blood. They are in the same family. They are in the same technology family tree/group. Believe that. It's true! I just shown you their relationship. They are family.

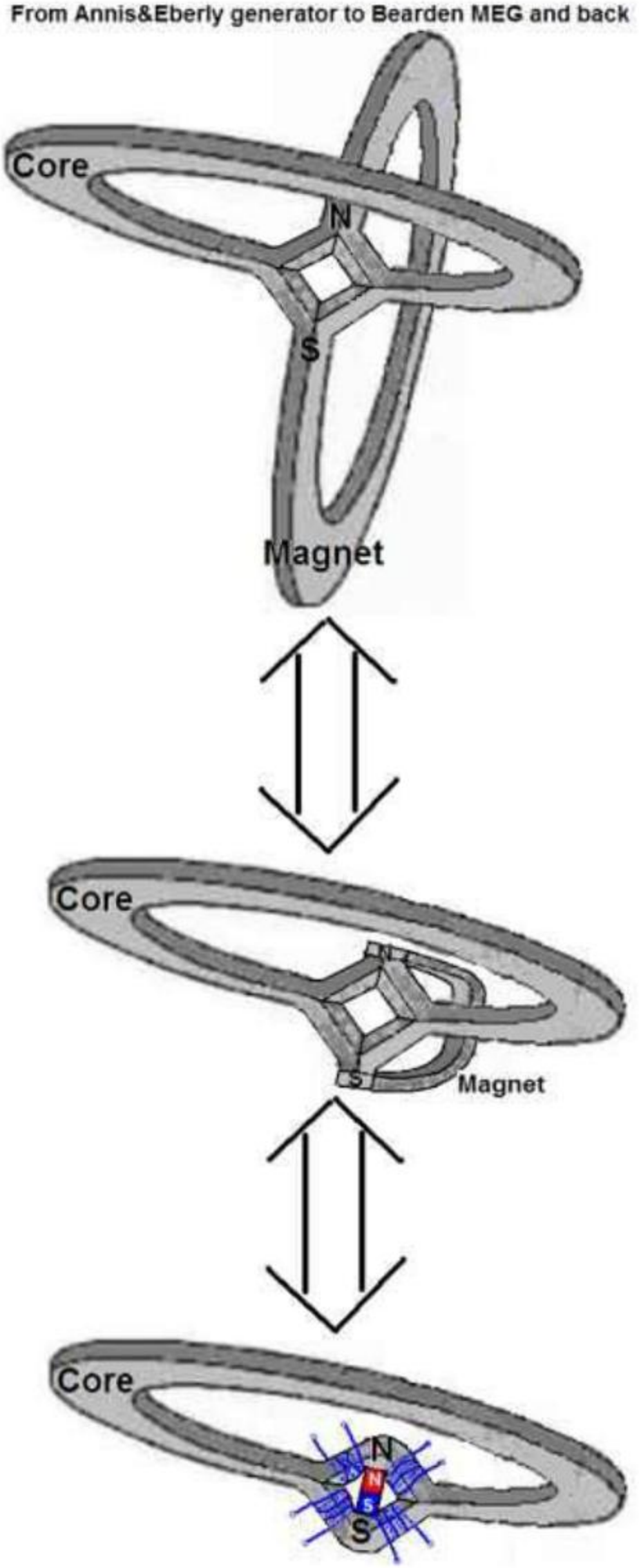
Imagine now that the last 12 pictures or so happened in my head in about 1 second or so. I visualized this shit in a flash (meaning an instant, not a flash of light like schizophrenic episodes... again wording....words are not important, is the meaning...please don't get me wrong...) I thought it might provide useful insight to others so I decided to share my vision. Don't get your hopes up. I still think it's garbage.

You might think that if we align the ferromagnetic domains in a side of the 4 way switch in one direction by powering a coil, the flux from the permanent magnet, won't go through there.....hmm.....false! Think about it! It seems logical but it's not! It is another magnet switcher junk that gives false hopes to people. Pile of rubbish.

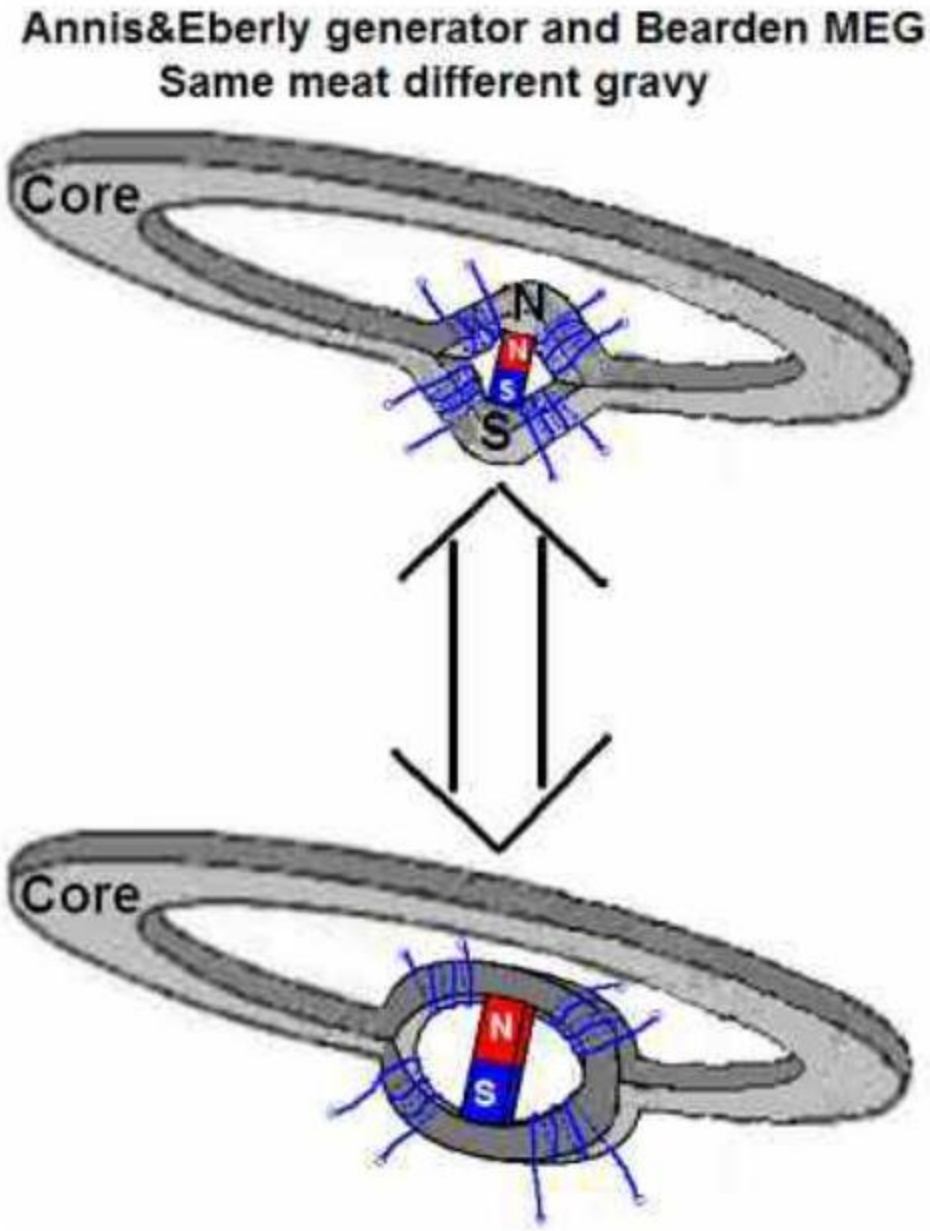
Connection between the Annis&Eberly generator and Bearden MEG

Let's start with alteration of the original design like this:

From Annis&Eberly generator to Bearden MEG and back



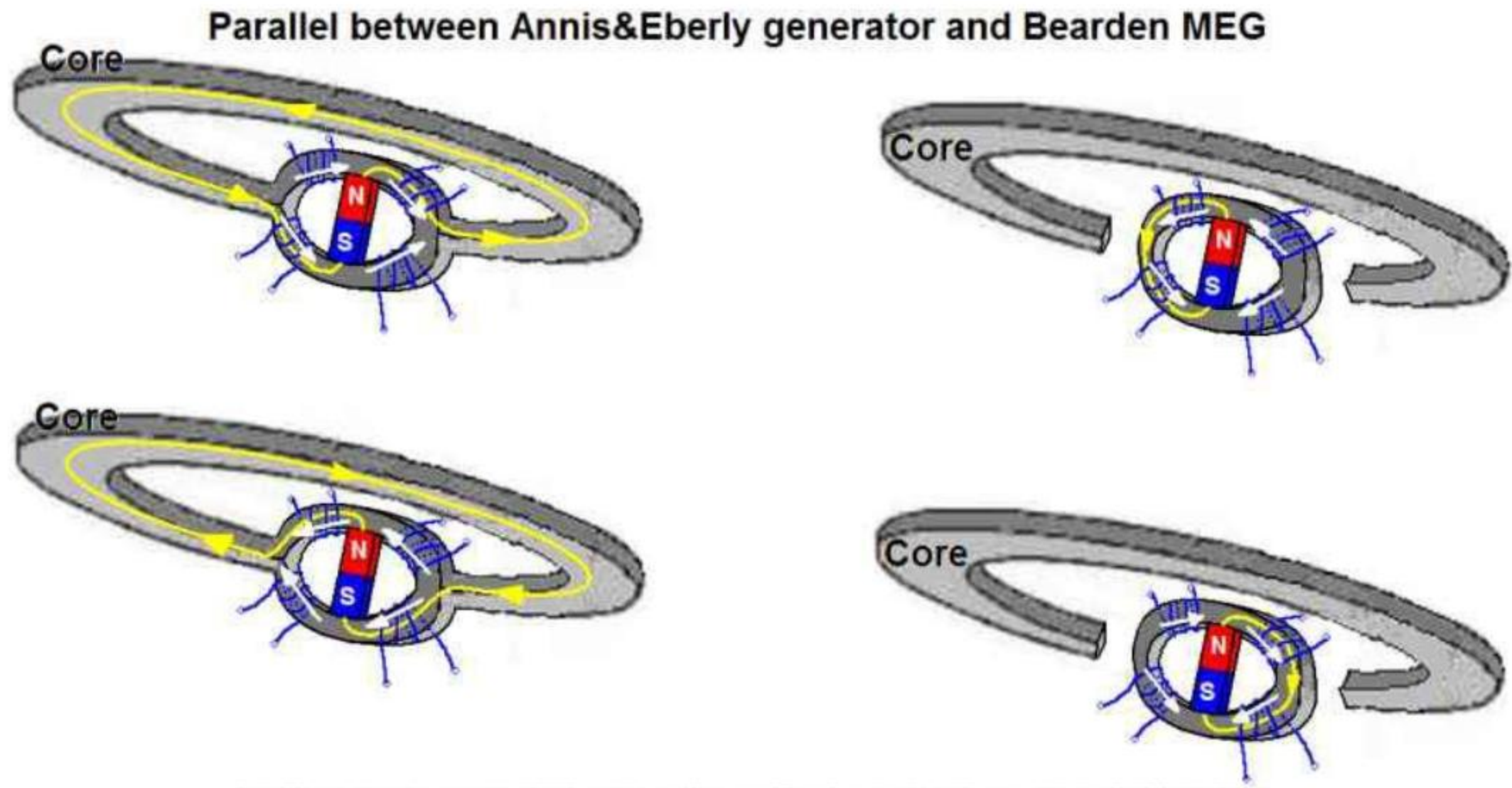
We could just place the ring magnet, inside the reluctance switcher with no effect in the operation of the device. You can easily guess where this is going:



Feels like I’m describing “My Preciousss!” of Sméagol from the Lord of the Rings trilogy or something...you know....

Anyhow....

How does it work?



Note that in the MEG, the flux from the coils don’t work quite the same way, but nevertheless you get the picture.

Another subject very important in our study of flux gate technology or magnet switchers technology, however you want to call it, is the

Naudin 2SGen

For those who didn't figure it out, it is very obvious that Naudin has discovered 2SGen while studying an Orbo stator. Regarding Orbo technology, I have nothing to say, except that it's a wonderful technology, I believe it to be very trustworthy, and real. However closer examination of the magnetic flux dynamics inside the motor, leaves us very disappointed by the week efficiency, and power generation. So the Orbo stator is key element in the motor. Further dissecting the stator toroid will lead us to the....2SGen.

I will not say anything more on Orbo motor, mainly because this book is centered on Solid State Generators and all free energy devices that have moving parts will not make the subject of the book. However I firmly believe that going beyond the basic Orbo technology towards a solid state version, we will inevitably reach the Rodin Coil, but that's a different story.

So, back on 2SGen. When I first saw 2SGen back in 2010, I knew immediately that it's SM TPU technology. So I confronted Naudin about it, and he firmly and strongly rejected my observation saying that 2SGen has nothing to do with Steven Mark TPU. Sad...I knew then, that I wasn't talking with a person with an open mind...

You see, the mind is like a parachute, it only works if it is open. I've heard Jordan Maxwell saying this quoting Anthony J. D´Angelo.

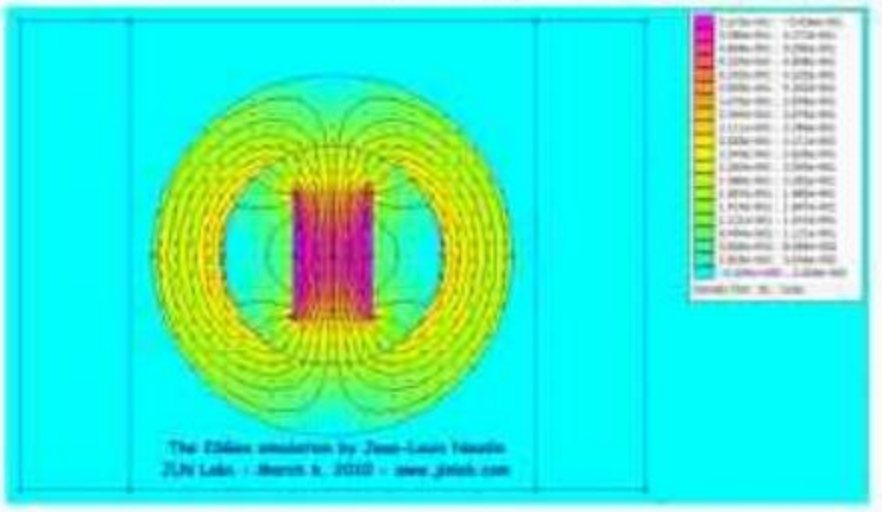
Let me prove it to you:

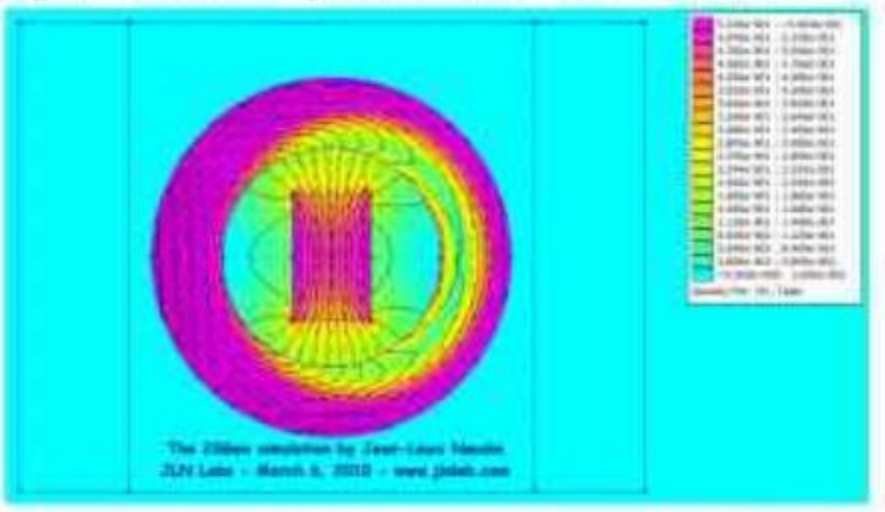


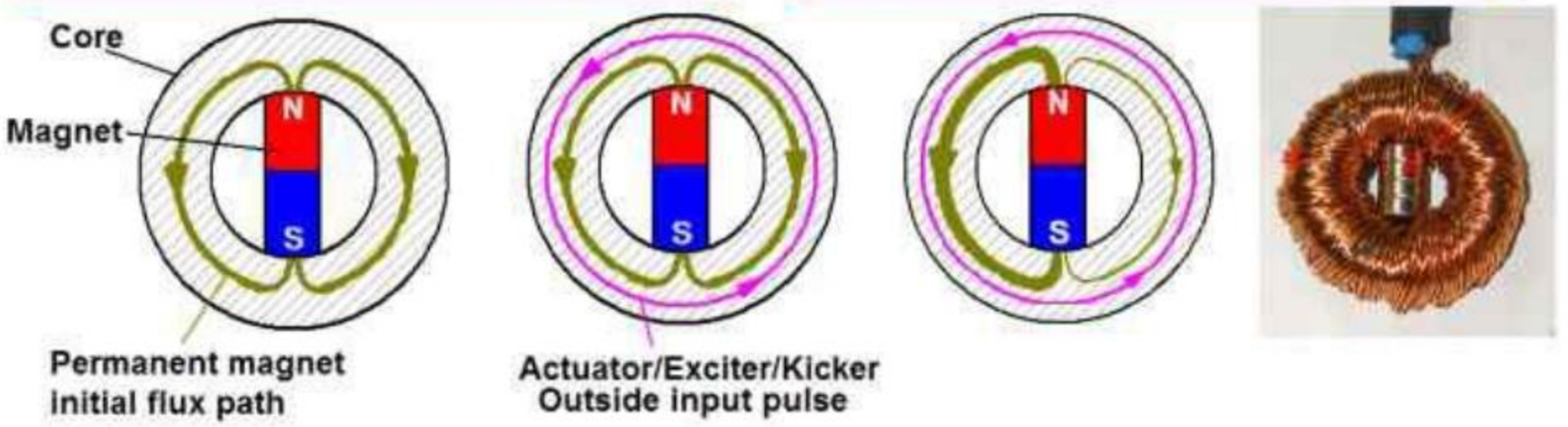


There is another saying that I can't put my finger on it, it goes something like this: **"You can direct a man to the burning flame, but you can't force him to see it"**. I think it's very appropriate in our case, don't you think?

2SGen - Yet another magnetic flux path switcher







If you may, let me be a little poetic and say:

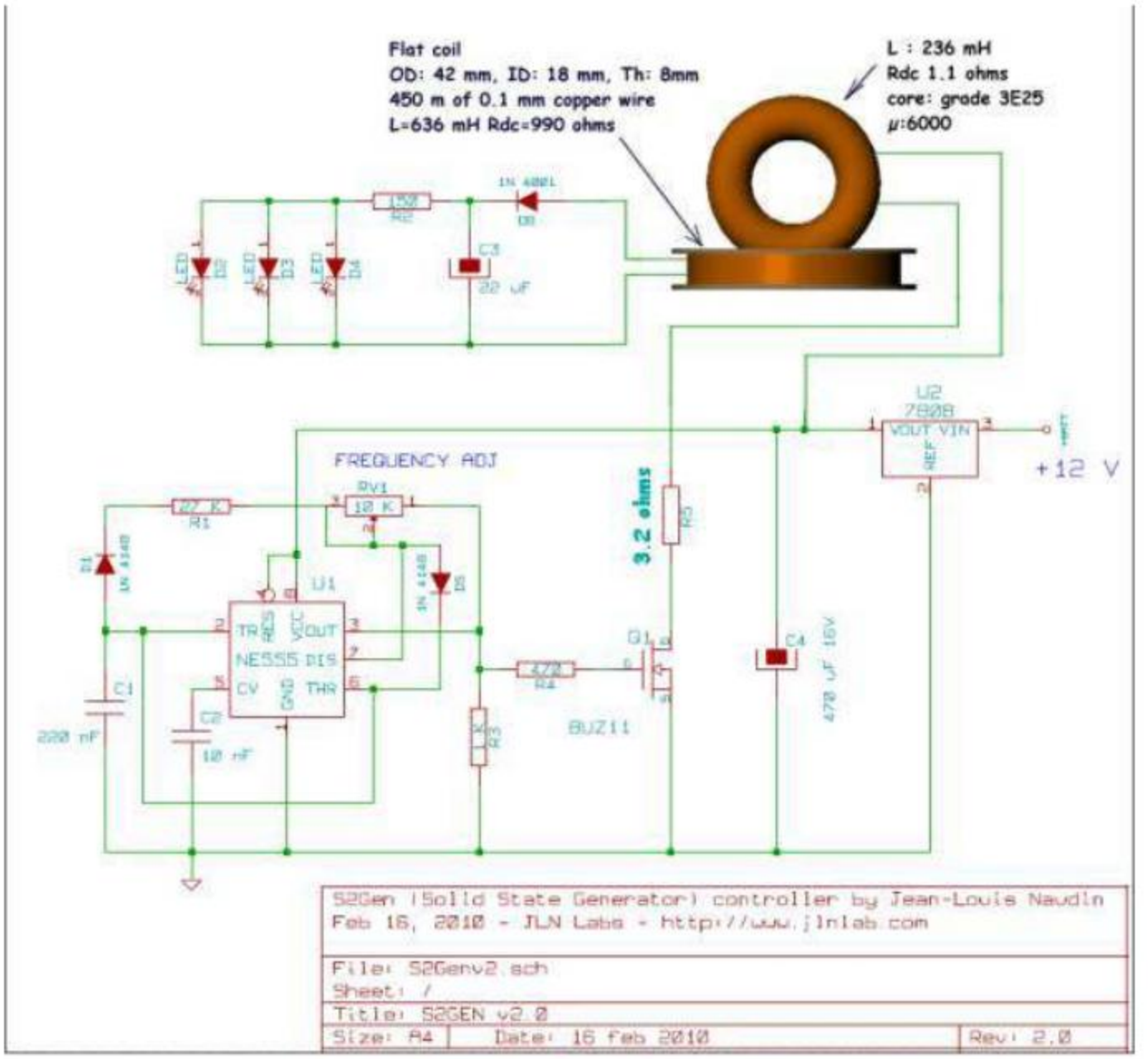
"In 2010 Mother MEG delivered with the help of Naudin a new born child: 2SGen. It's just a baby, it can't feed itself, but someday it will develop and reach maturity, and it will be able to feed itself. You will see."

What I mean by all this, is that if you don't see **the resemblance both in design and operation with MEG**, then it's clear that no matter how many illustrations you look at, you are like that blind person who refuses to acknowledge that there is a burning flame in front of him, even if he has burns on his hands from so many attempts to scope what's in front of him.

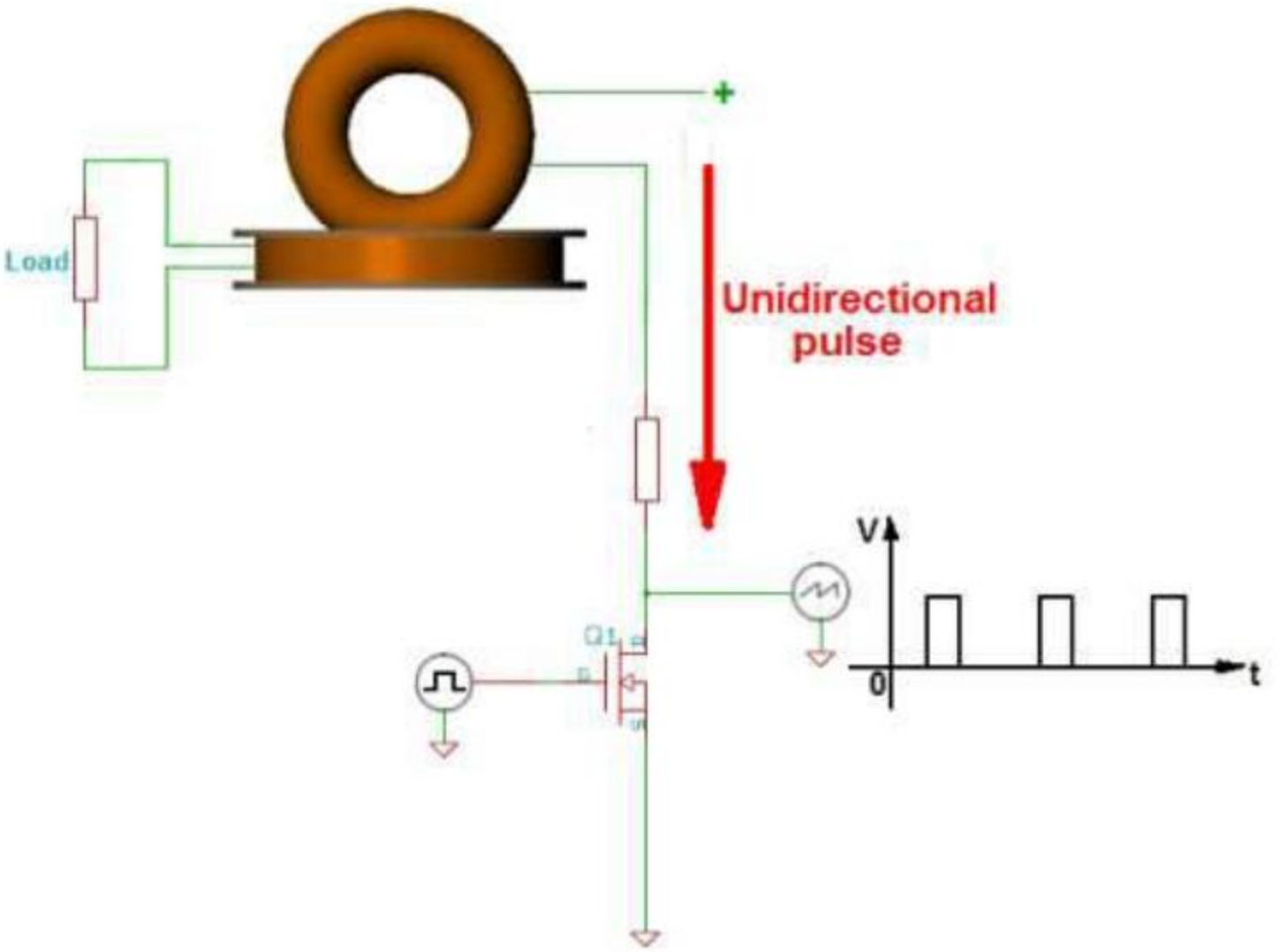
Going further and improving the 2SGen design by mimicking it's mother

First thing that the little toy 2SGen must learn from its mother is to walk properly.

We clearly see that 2SGen is more like crawling than walking:



Let me simplify the above schematic, in case it’s confusing, and to clearly see what am I talking about when I say “crawling”:



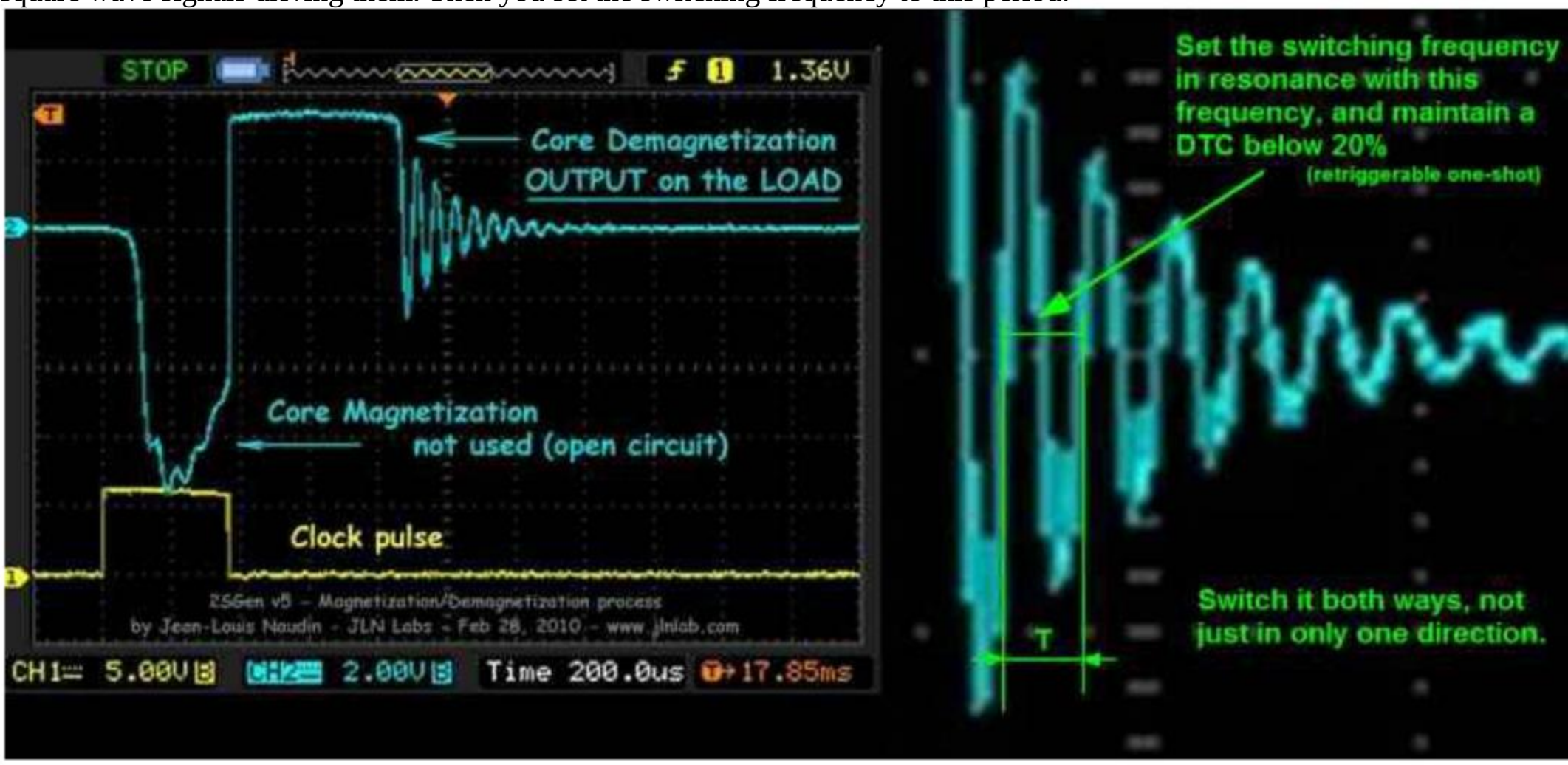
This is not very efficient. I mean, think about it for a while! If the FET transistor is switching the main coil so that a current if formed in only one direction, then why wouldn’t it work in the other direction too? Why not attack the primary coil with a both ways square wave (bipolar square wave), a square wave with symmetrical shape? Why not? Thus we reverse the process, so it will happen in the other direction too. This can be easily implemented with a bifilar coil, where they are powered by two MOSFET driven by two 180 phase shifted signals. One side of the toroid magnetizes while the other demagnetizes, and then the process reverses.

Just because I stay in one foot, doesn't mean I’m a mushroom. Just because he is firing the toroid in only one direction doesn't make 2SGen different from MEG.

However, there is a catch to this improvement. When the magnetic flux from the permanent magnet is redrawing from the left side in the above diagram it doesn't go straight to the center, but it follows a gently transition back to equilibrium. I have called this time period "*transient response time of the core"* back in the MEG study. Experienced readers will have to excuse my non-conventional, non-academic incorrect terminology I use to express what I mean. Ok shoot me for that. I'm guilty. If not, then don't be so hard on me! Ok? ...open mind...parachute...you know the story...

This frequency is mainly determined by the core type and the power of the magnet.

What has to be done is to switch the primary coil in both ways using a bifilar coil, with two 180 phase shifted square wave signals driving them. Then you set the switching frequency to this period:



No! No! No! You might say! You are crazy! Those oscillations are due to the inductance of the collector coil alone! Fine! Ok! I'm not against you! You are right. I'm not arguing with you. But at least think what exactly determines the inductance of the collector coil...and when you have found an answer, we will have this conversation again.

Another important aspect is that the primary/actuator/kicker/exciter coil will have to have the same resonance with the collector coil. This can be done by equal number of turns, or correcting/adjusting/tuning by increasing/decreasing capacitance in series/parallel with the coils.

Considering that Dtc will be below 20%, it is more correct to say that we power the coils with retriggerable one-shots than saying with square wave.

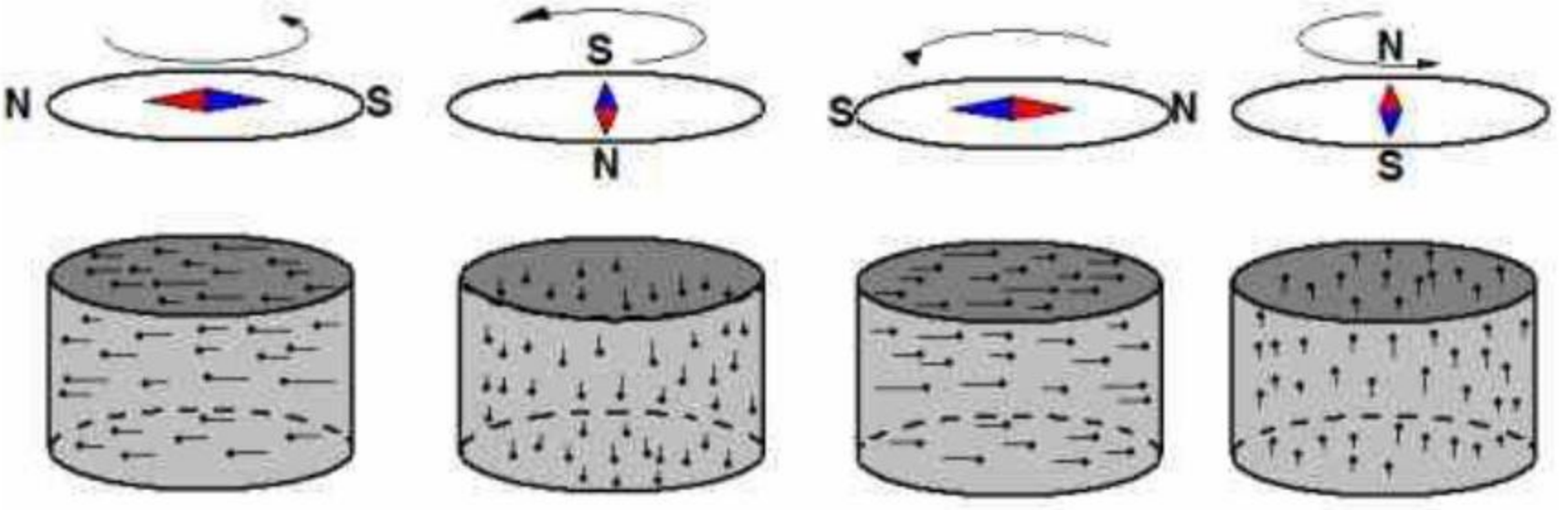
I just hate brands, or putting a brand on something you have discovered. I hate that. Don't you? Why 2SGen? If it were up to me, I would have called it "MEGDIV2" meaning MEG technology divided by 2. Half a MEG. Why not bluntly say what it truly is, rather than hiding behind a thin stick like in cartoons?

In order for the 2SGen to feed itself, we must establish self-oscillations in it (in the magnet) by bringing it in magnetic resonance. Self-oscillations are a byproduct of the spinning magnetic domains.

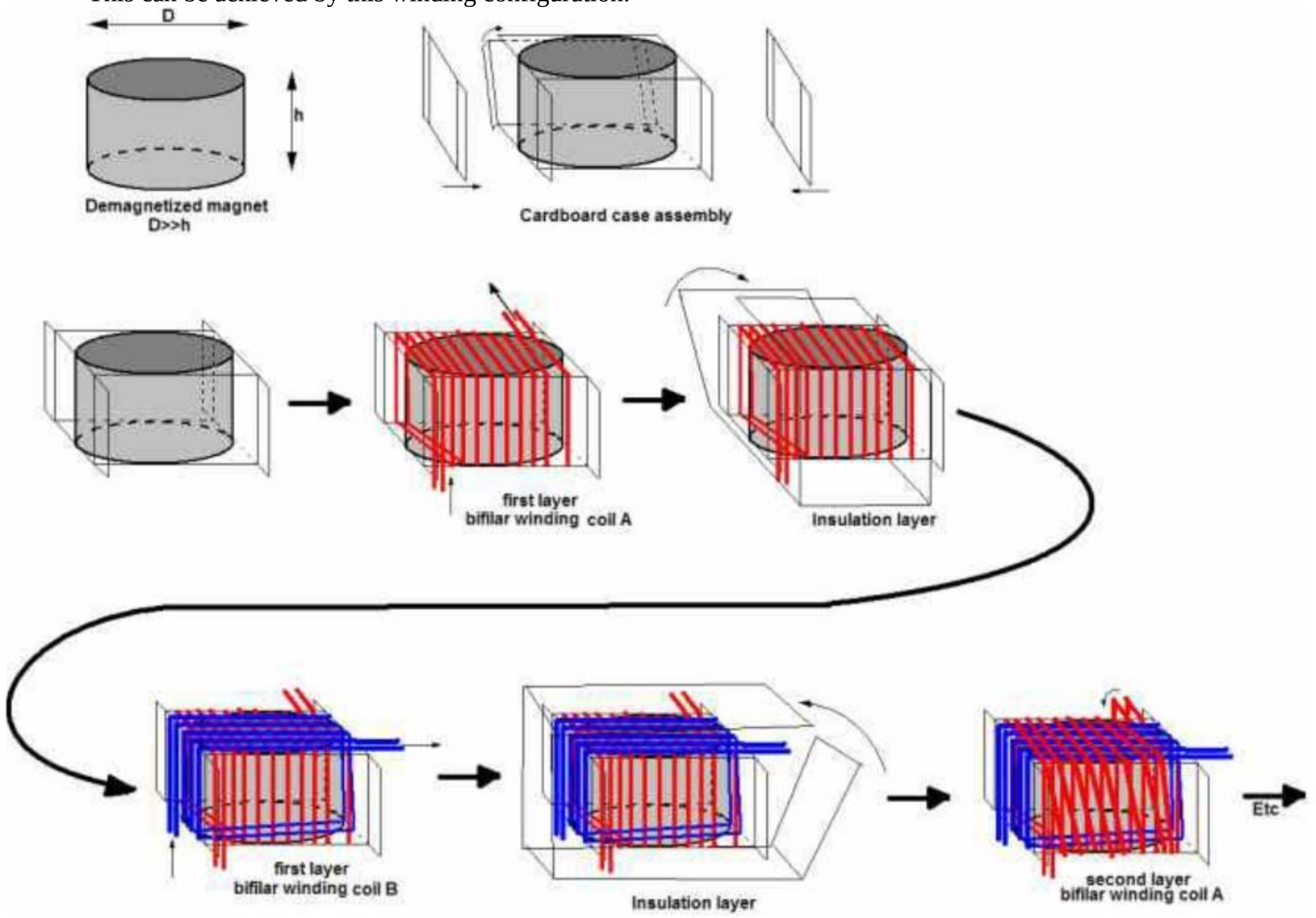
Different possible embodiments of magnetic domains spinners

Let us analyze how can we implement and establish domain spin in different materials. All of these devices that we are studying are hysteresis free and Barkhausen effect free. So let's try to eliminate the word "hysteresis" from our vocabulary. So what we are really doing is letting the domains work for us in their own rhythm, and not forced in slavery to work at the frequency WE WANT, or impose on them. So we must destroy and break everything we know about hysteresis by spinning the domains and not hitting them each time in 180° direction. Let's think this through. If the domains want to spin, what is the best geometry to create a spin? What is the easiest way this can be tested?

These are the right questions we must ask ourselves. Ok, then. Let's consider this particular design:



This can be achieved by this winding configuration:

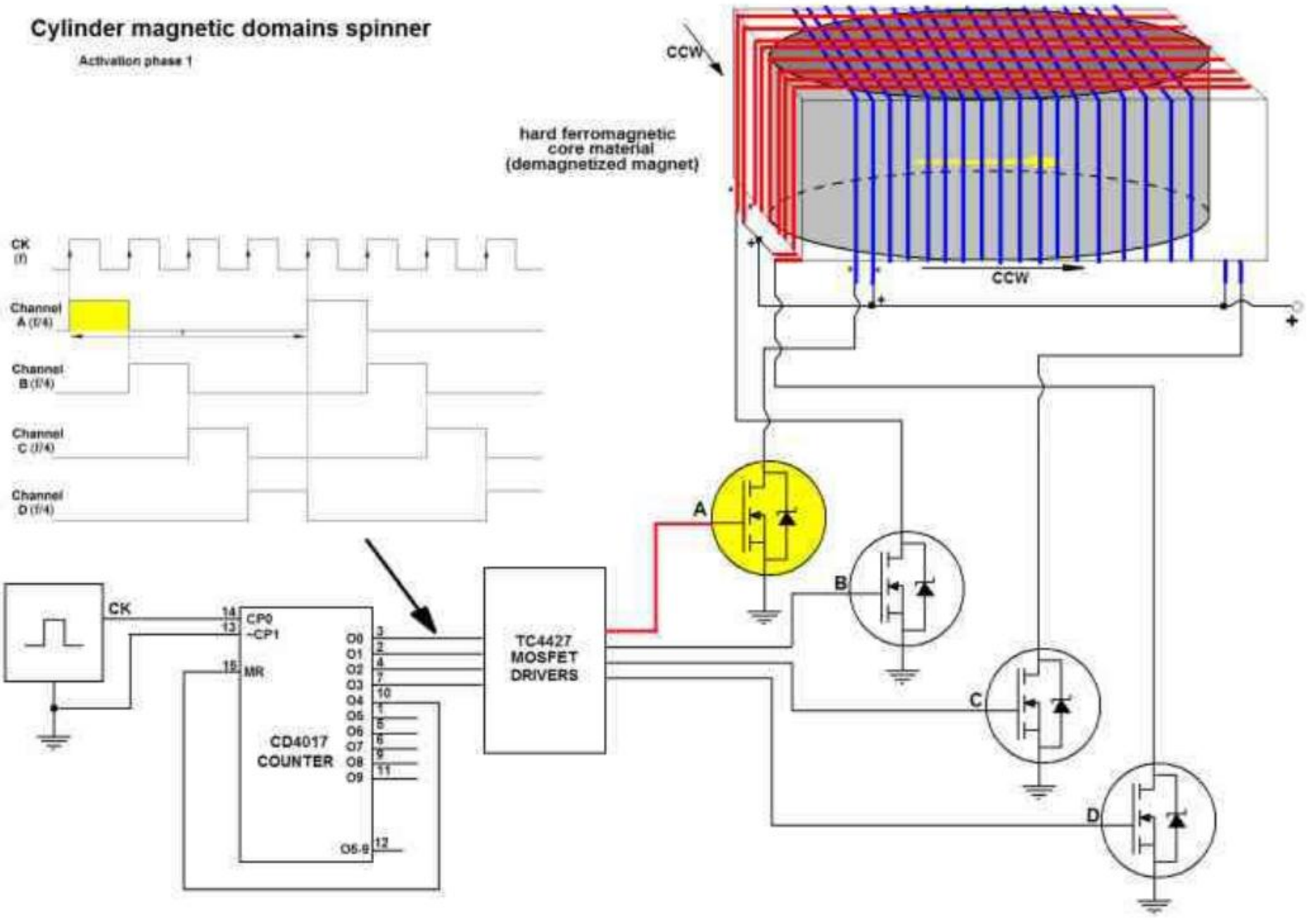


We must carefully choose the demagnetized cylinder magnet, so that the diameter would be larger than the height of the cylinder. This is because the overlapped interwoven layers will add up on the top and bottom of the cylinder faster than on the sides. So we must compensate for this by having our demagnetized cylinder magnet with a lower height than it's diameter.

We could fire it just like in the MDAS version of the Hysteresis annihilator using the same circuitry:

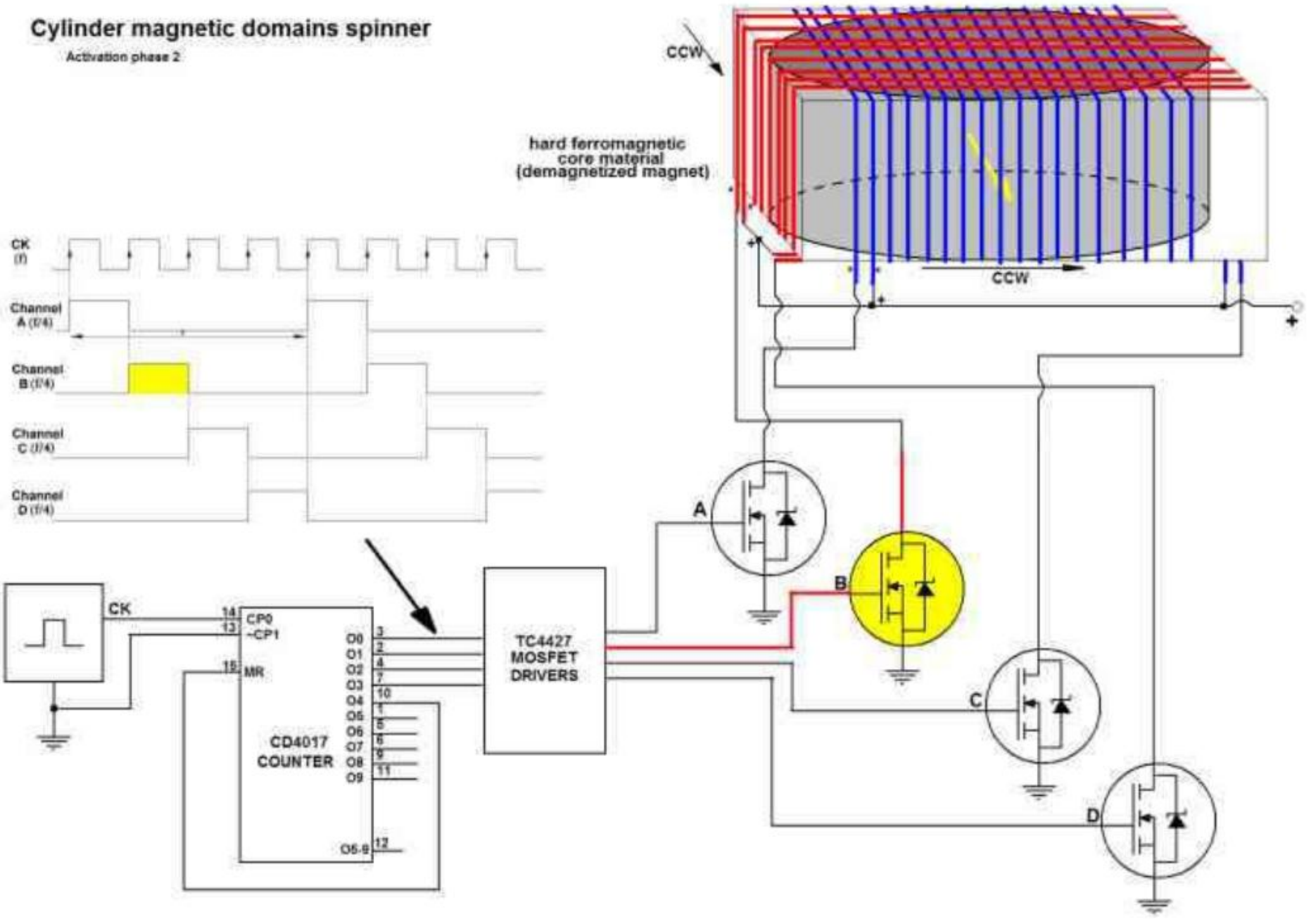
Cylinder magnetic domains spinner

Activation phase 1



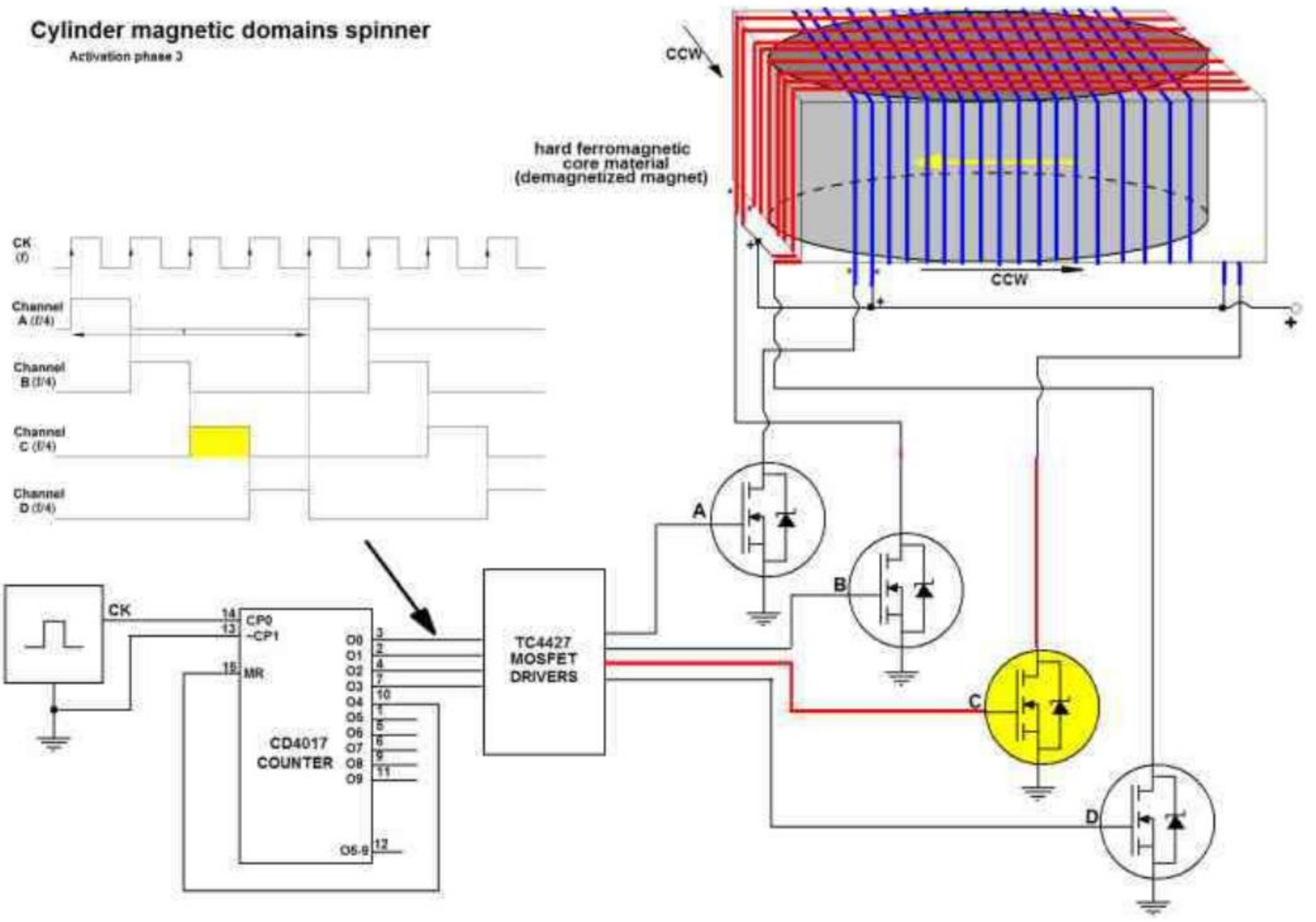
Cylinder magnetic domains spinner

Activation phase 2



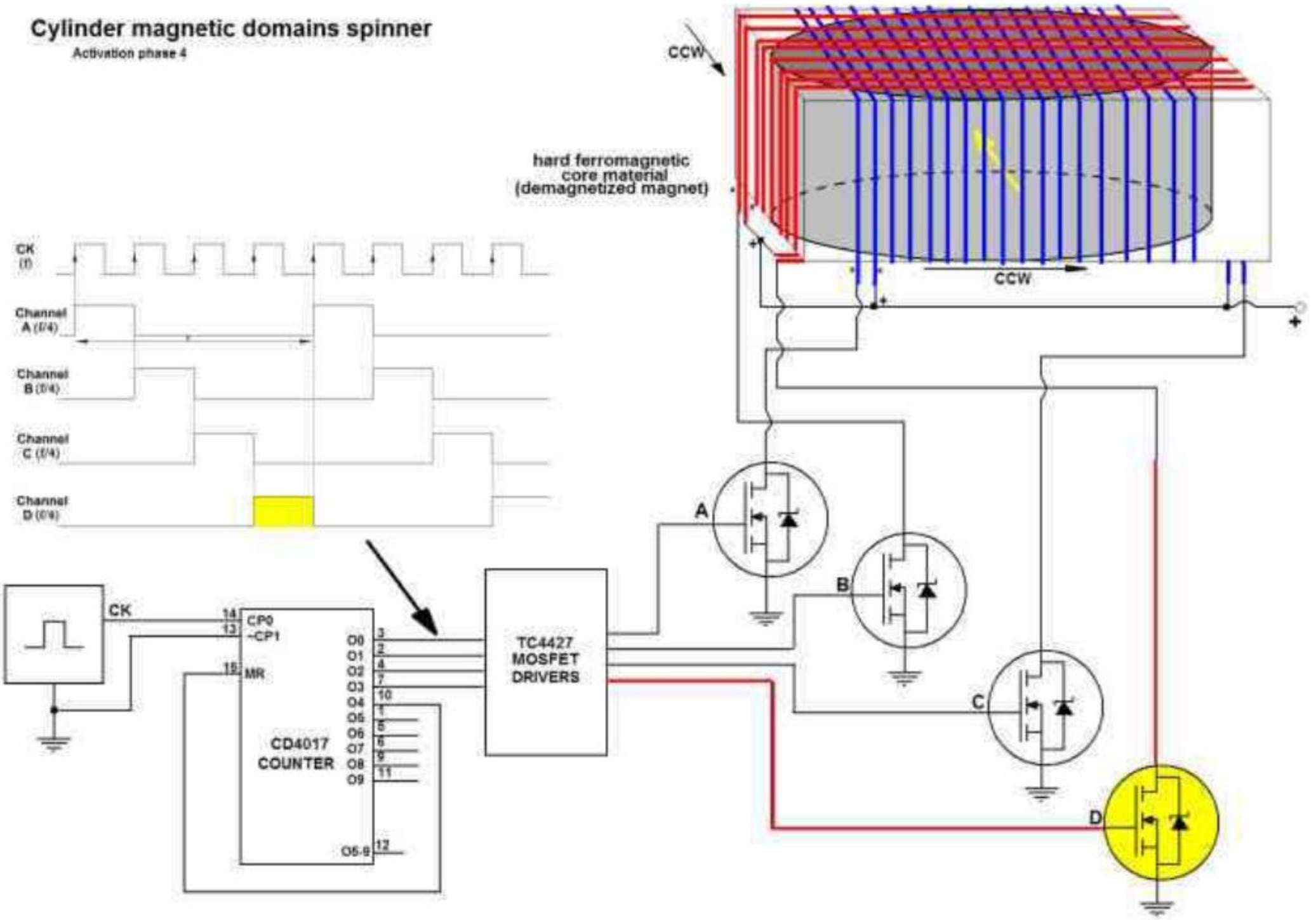
Cylinder magnetic domains spinner

Activation phase 3



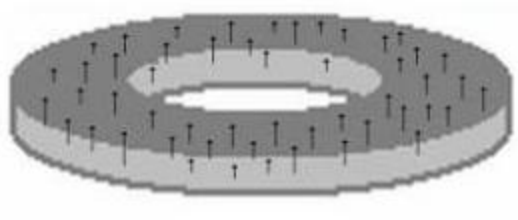
Cylinder magnetic domains spinner

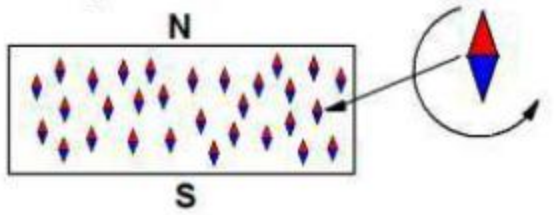
Activation phase 4

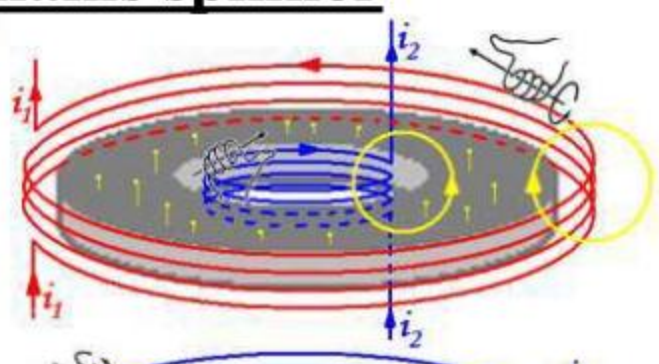


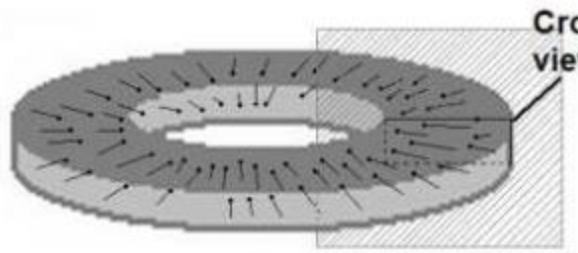
Demagnetized ring magnet internal magnetic domains spinner

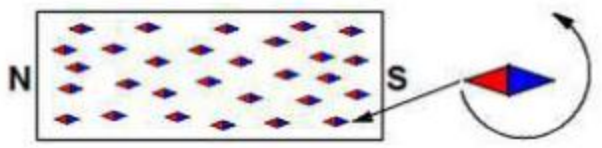
The only possible domain-spin that can be established in a demagnetized ring magnet without friction or interference between neighboring domains.

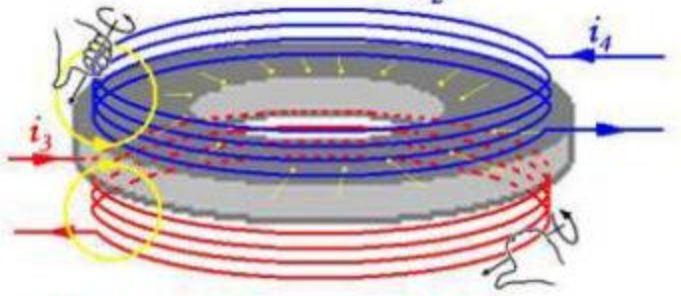


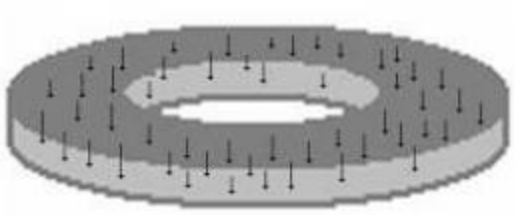


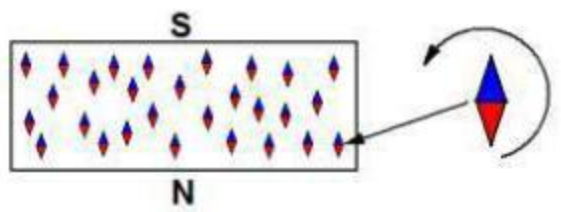


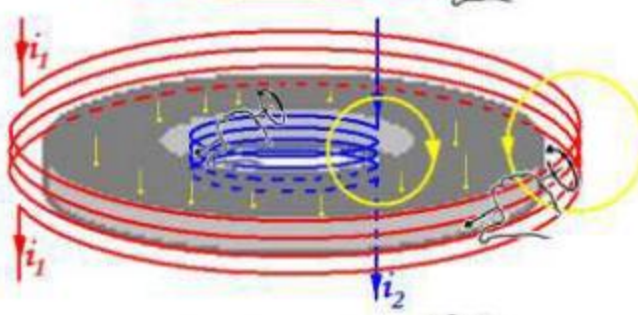


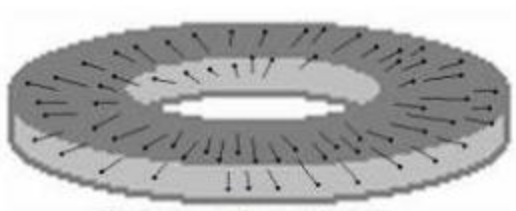


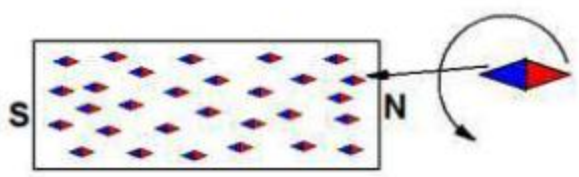


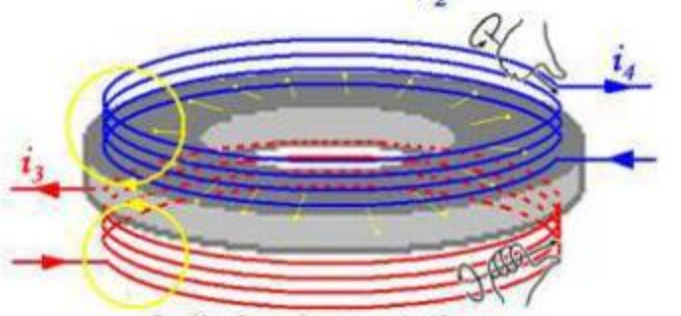












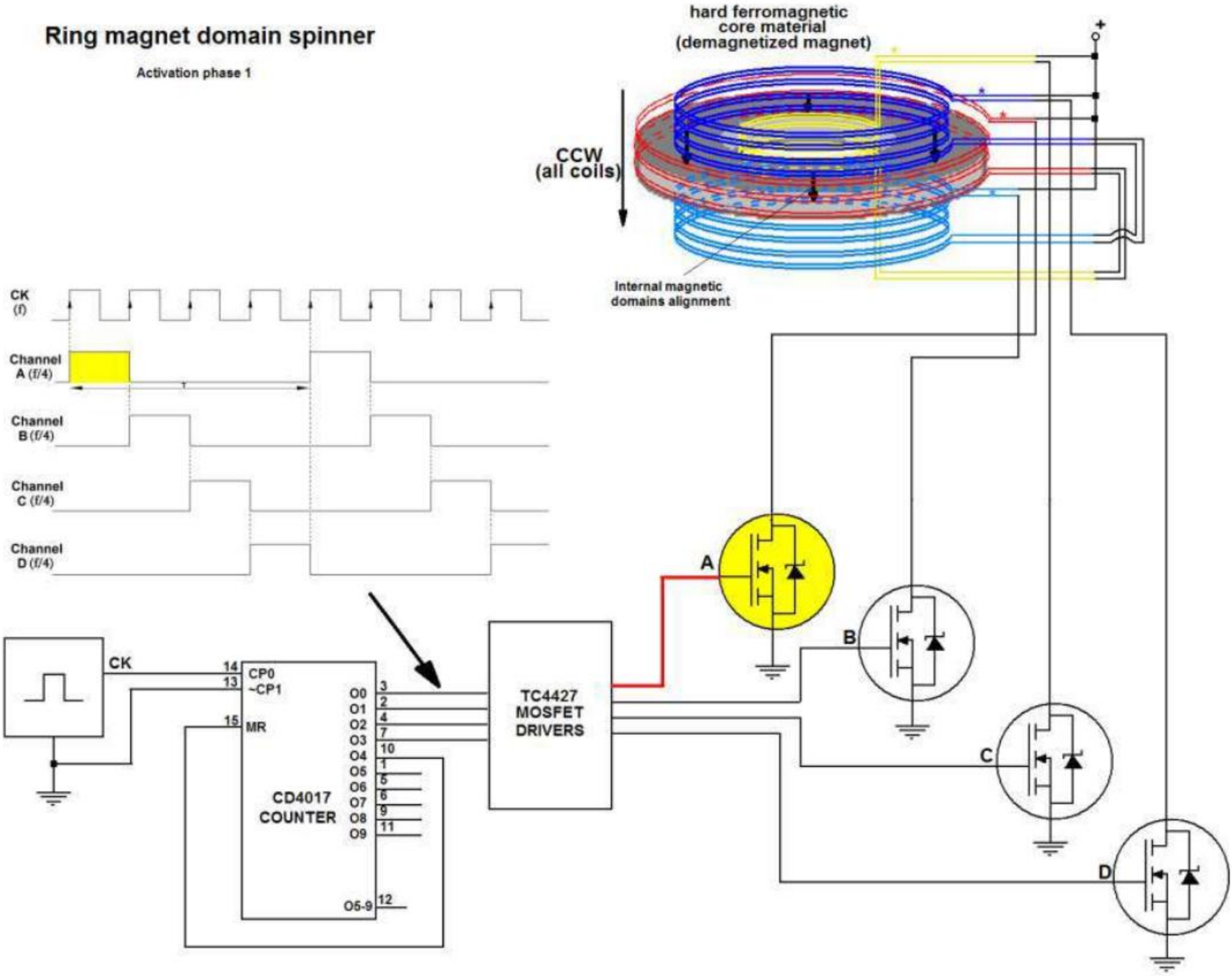
Perspective views

Cross-section views

Coils implementation

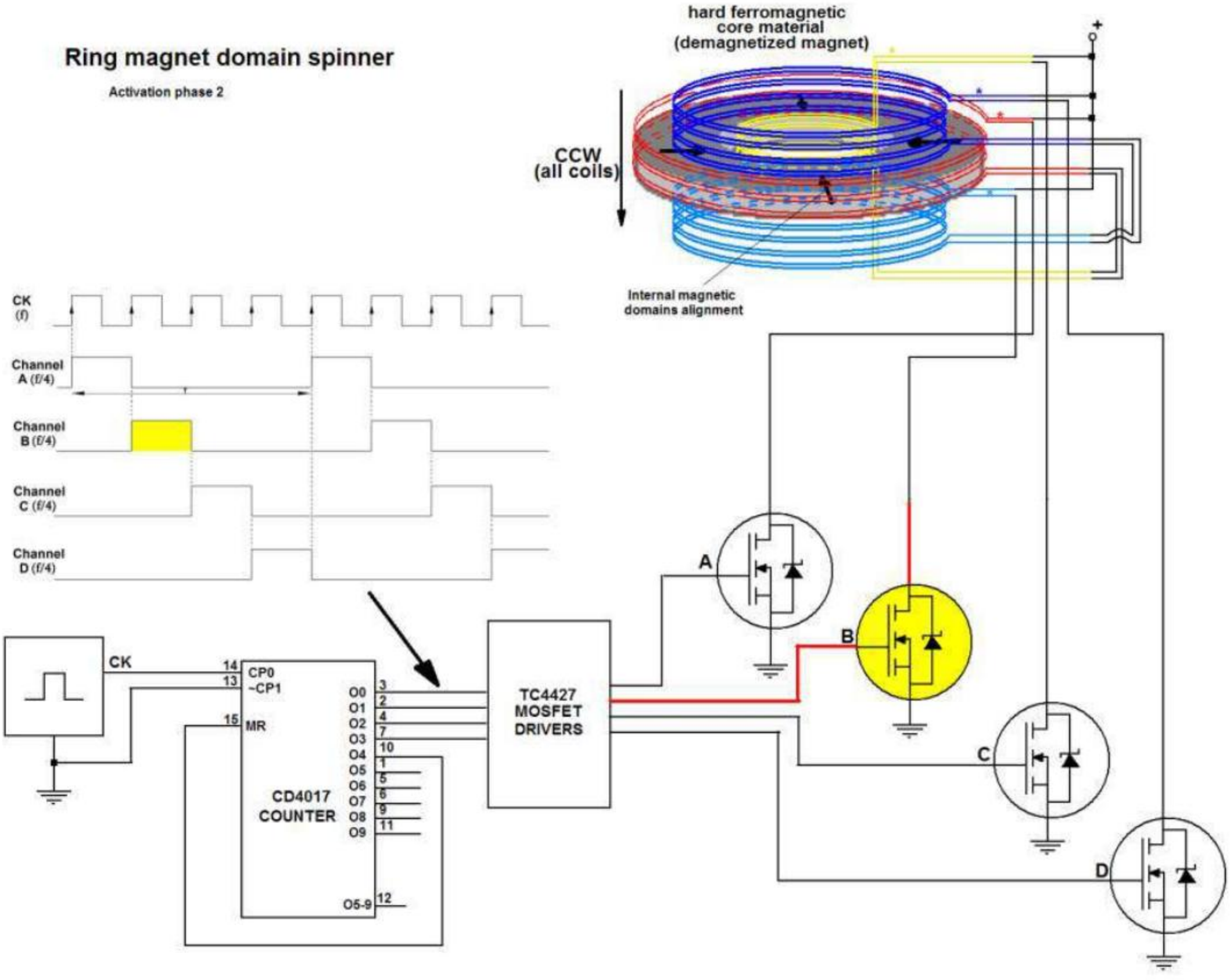
Ring magnet domain spinner

Activation phase 1



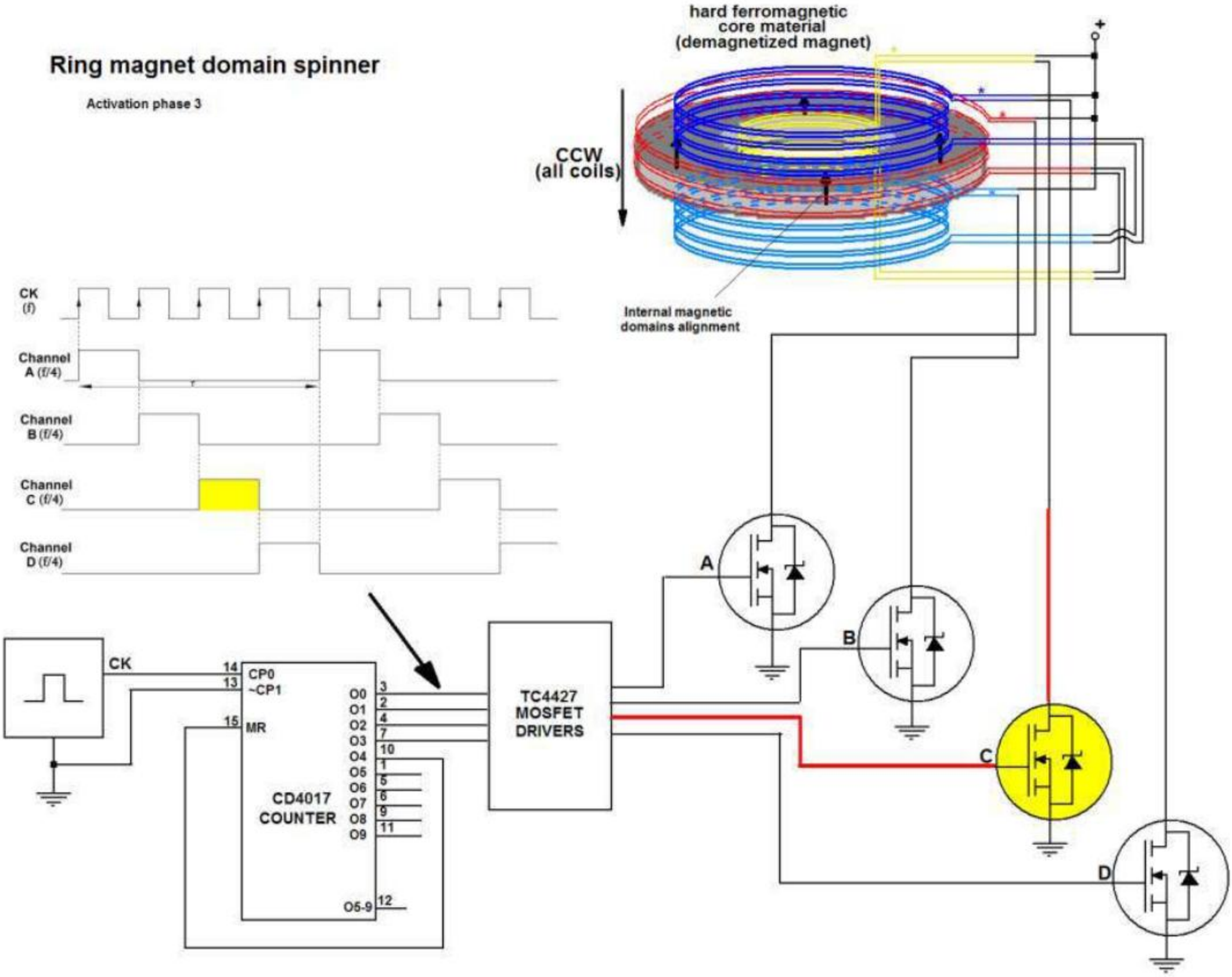
Ring magnet domain spinner

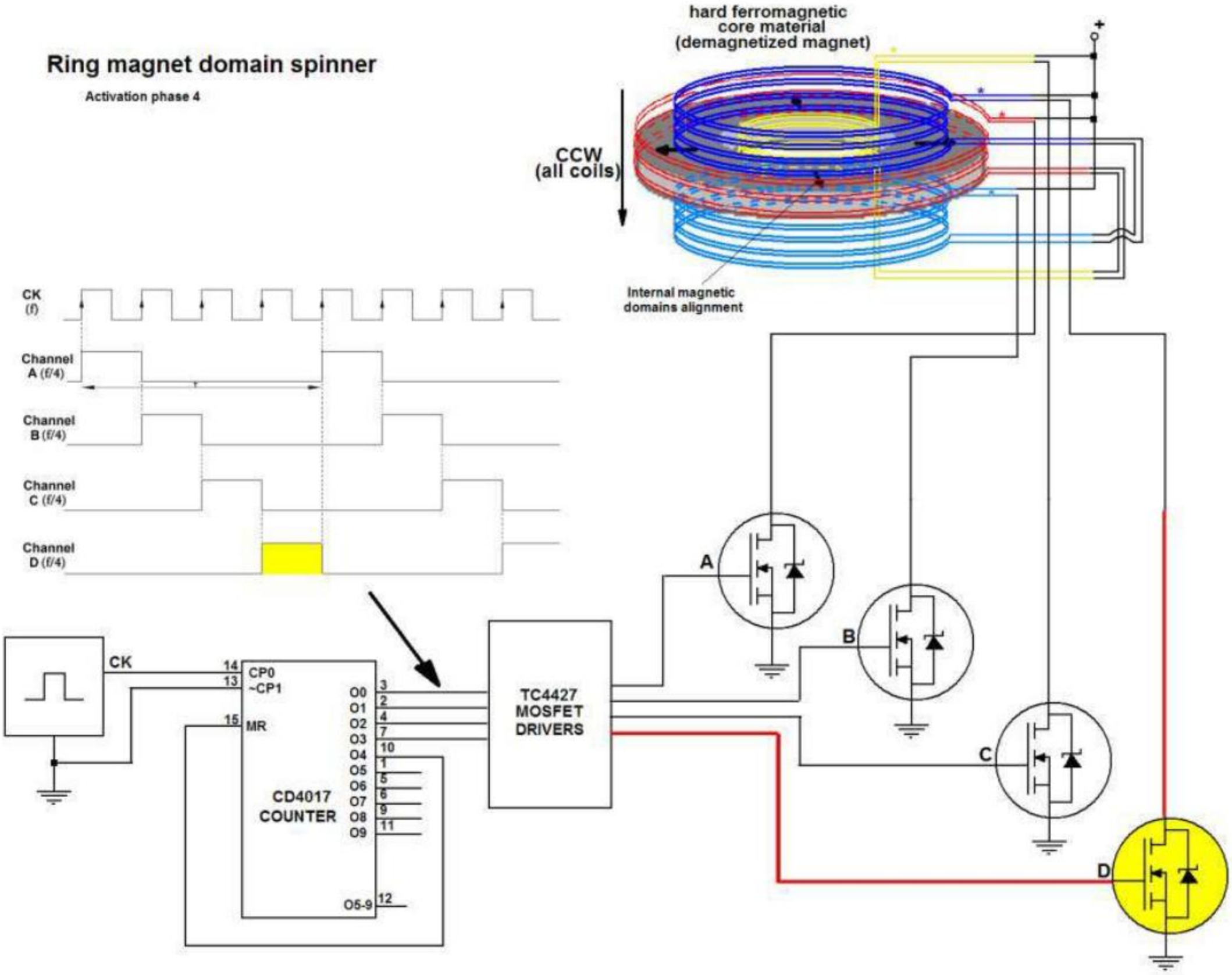
Activation phase 2



Ring magnet domain spinner

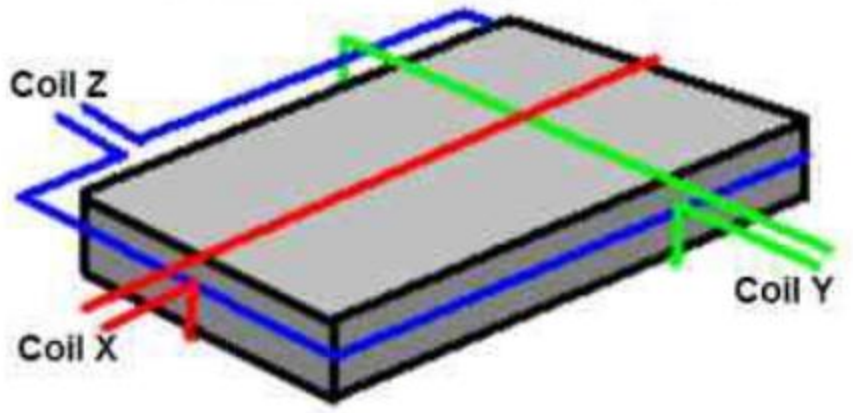
Activation phase 3





Further insights on the Floyd Sparky Sweet VTA magnetizer

Let’s further look into the VTA conditioning unit for the Sweet magnets:



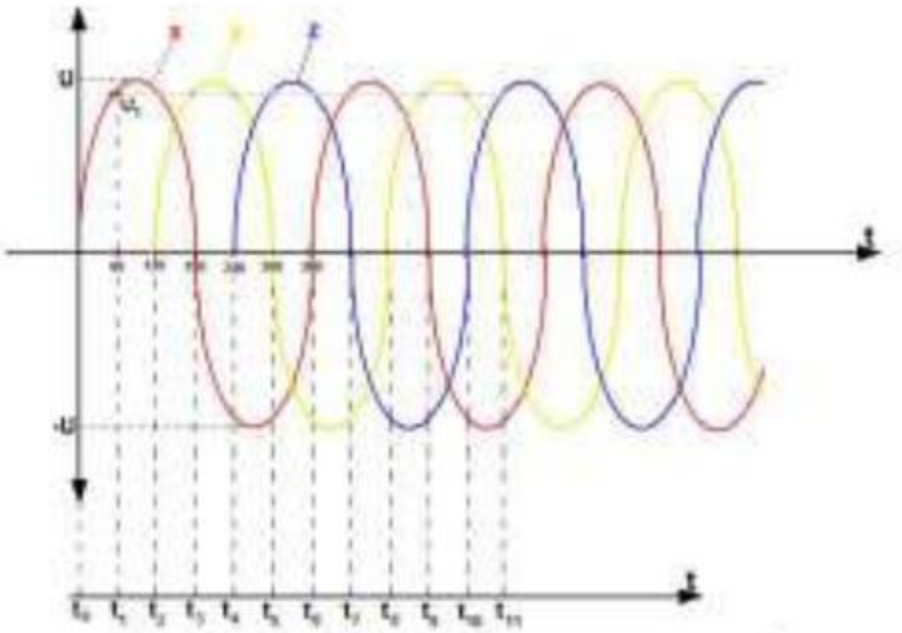
At first look at it, I was inclined to think that maybe somehow, he is driving the three coils with sinewaves with different phase shift between them, so that a somehow 3D geometric dynamic closed magnetic flux vector is formed. Maybe a 3D infinity symbol, or some-sort, or something exotic along these lines.

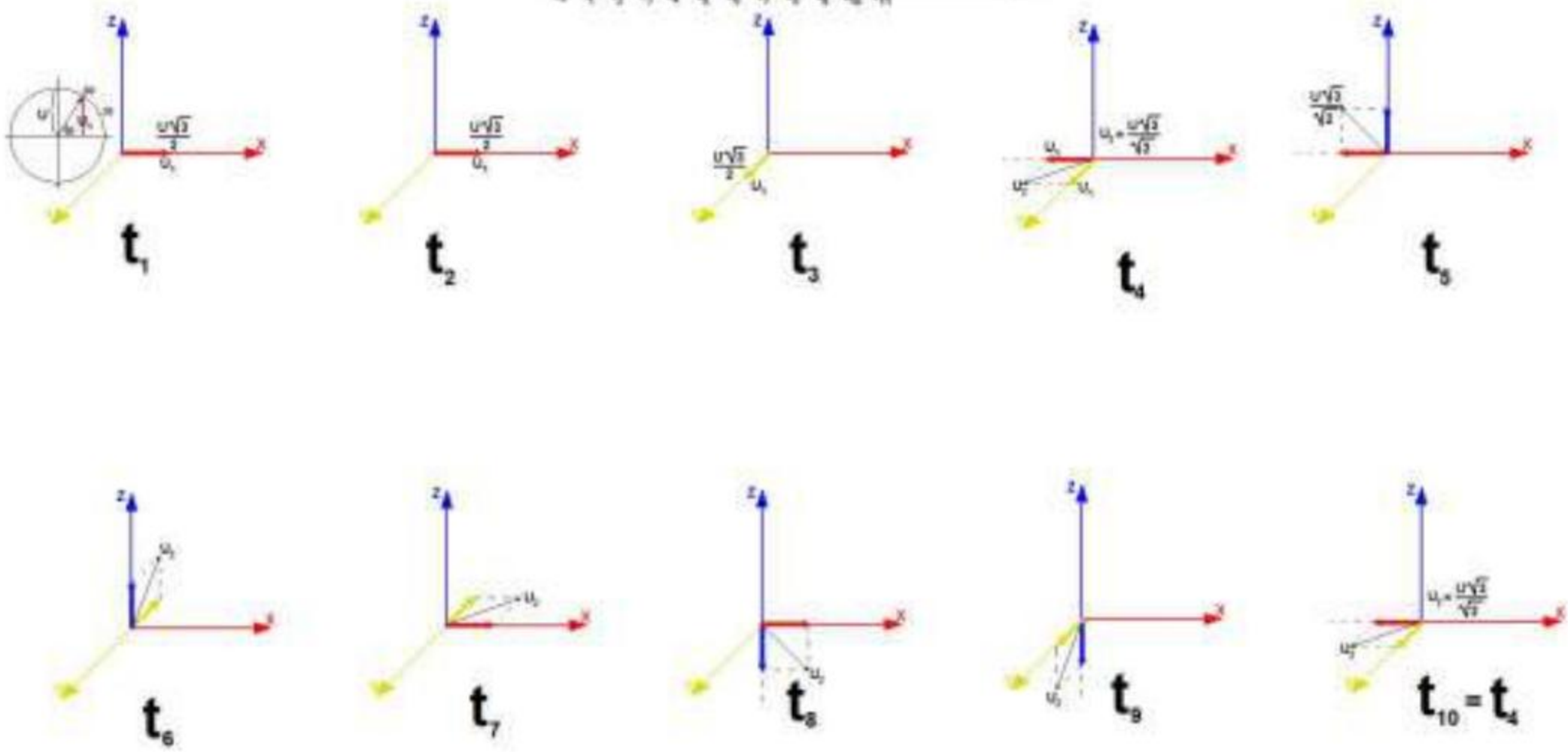
Then I said to myself, ok, let me start then with something simple, like what will happen the magnetic flux vector inside the demagnetized magnet created by all these coils working on 120° phase shifted sinewaves.

What will be created inside, if we power the coils in this manner?

Let’s see:

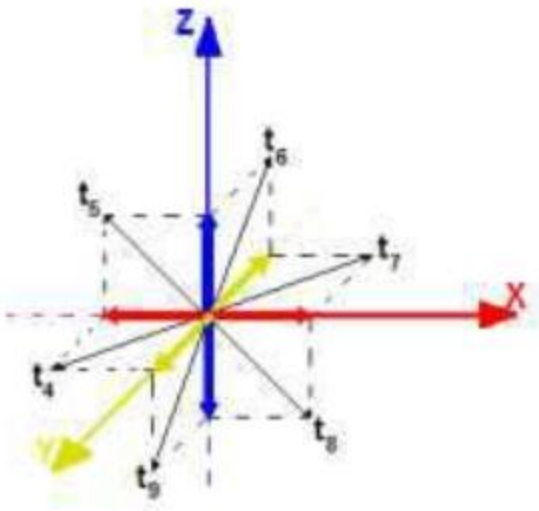
Spatial vectors orientation in a three-phase system



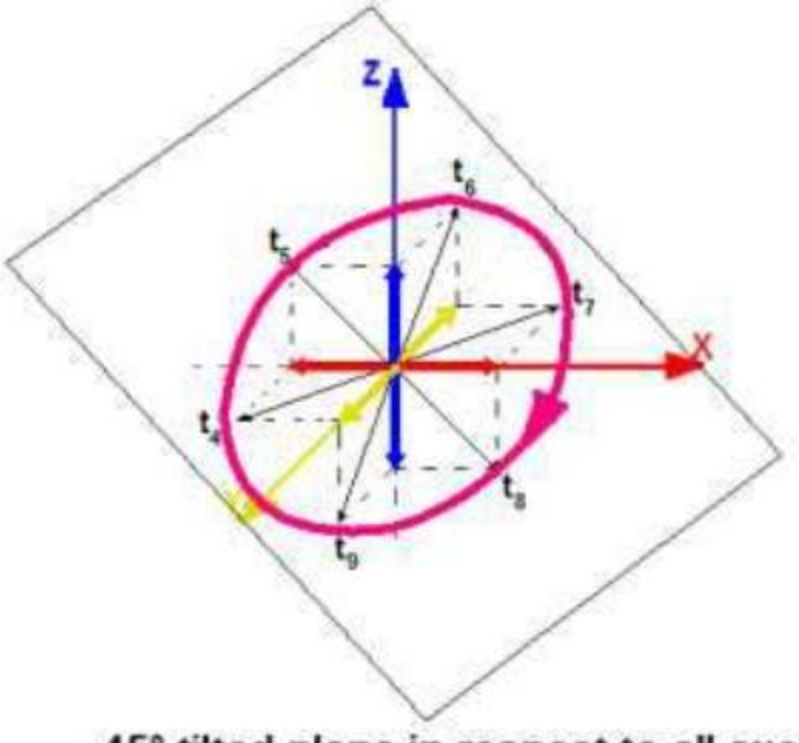


So a full dynamic of these vectors will look like this:

Spatial vectors dynamics in a three-phase system



All vectors sit on the same plane

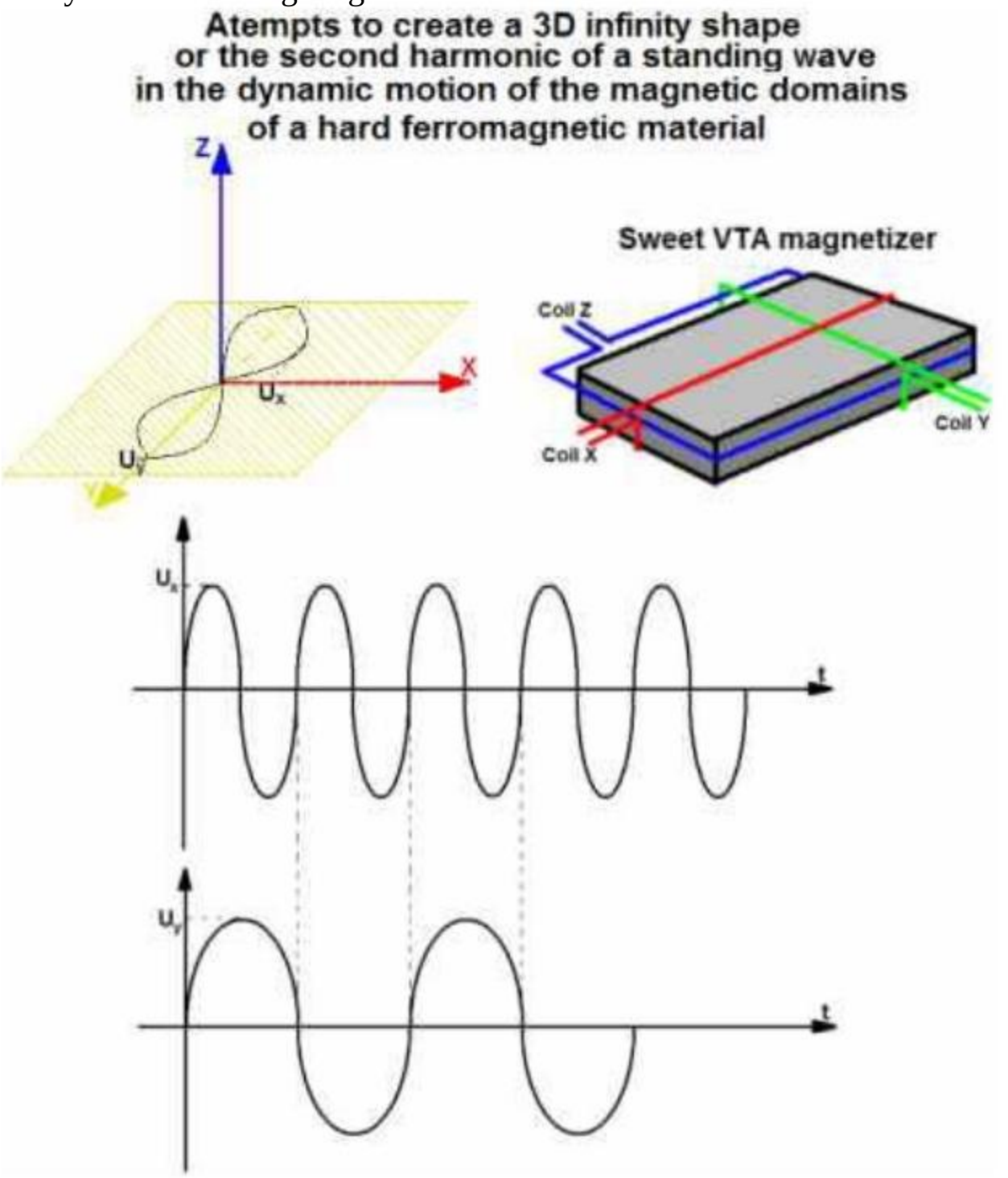


45° tilted plane in respect to all axes

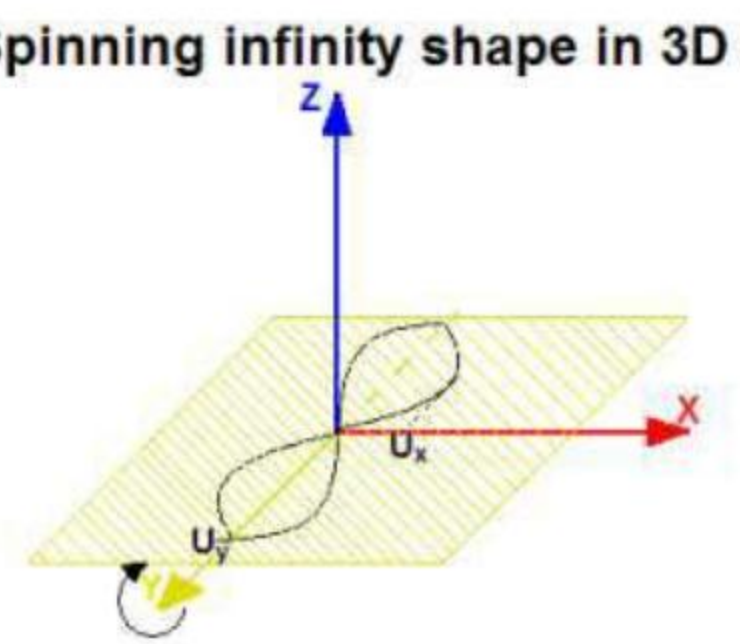
It can be easily visualized that all these 6 vectors sit on the same plane tilted 45° in respect to all axes. So this is not very exciting stuff for an experienced reader, so there's got to be much more going on in the VTA magnetizer than this. What could it be?

We do know a clue and an intimate secret about VTA inner workings from that guy with an idiot name “Maurice”, and that is the figure 8 of infinity. Of course almost anybody can guess that he is referring to the second harmonic of a standing wave, but where? how? in what place? between what and what?

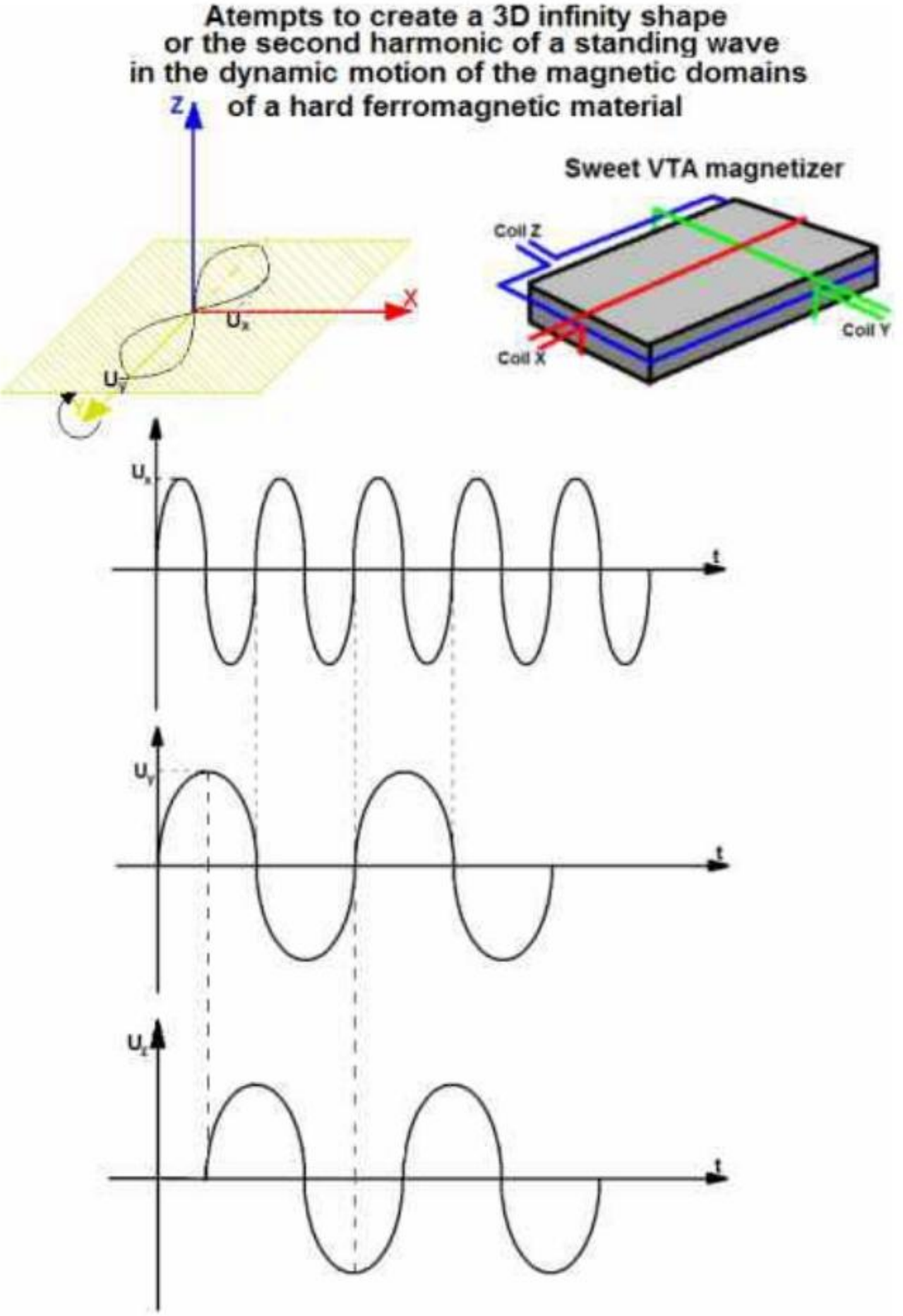
We might be tempted to think that Sweet is creating a 3D infinity 8 symbol inside a VTA magnet. Hmm...Interesting possibility. Worth investigating. Let’s see:



Yeah, but you have an infinity only in a plane. We want a 3D shape. So we want the shape to spin on y axis, like so:

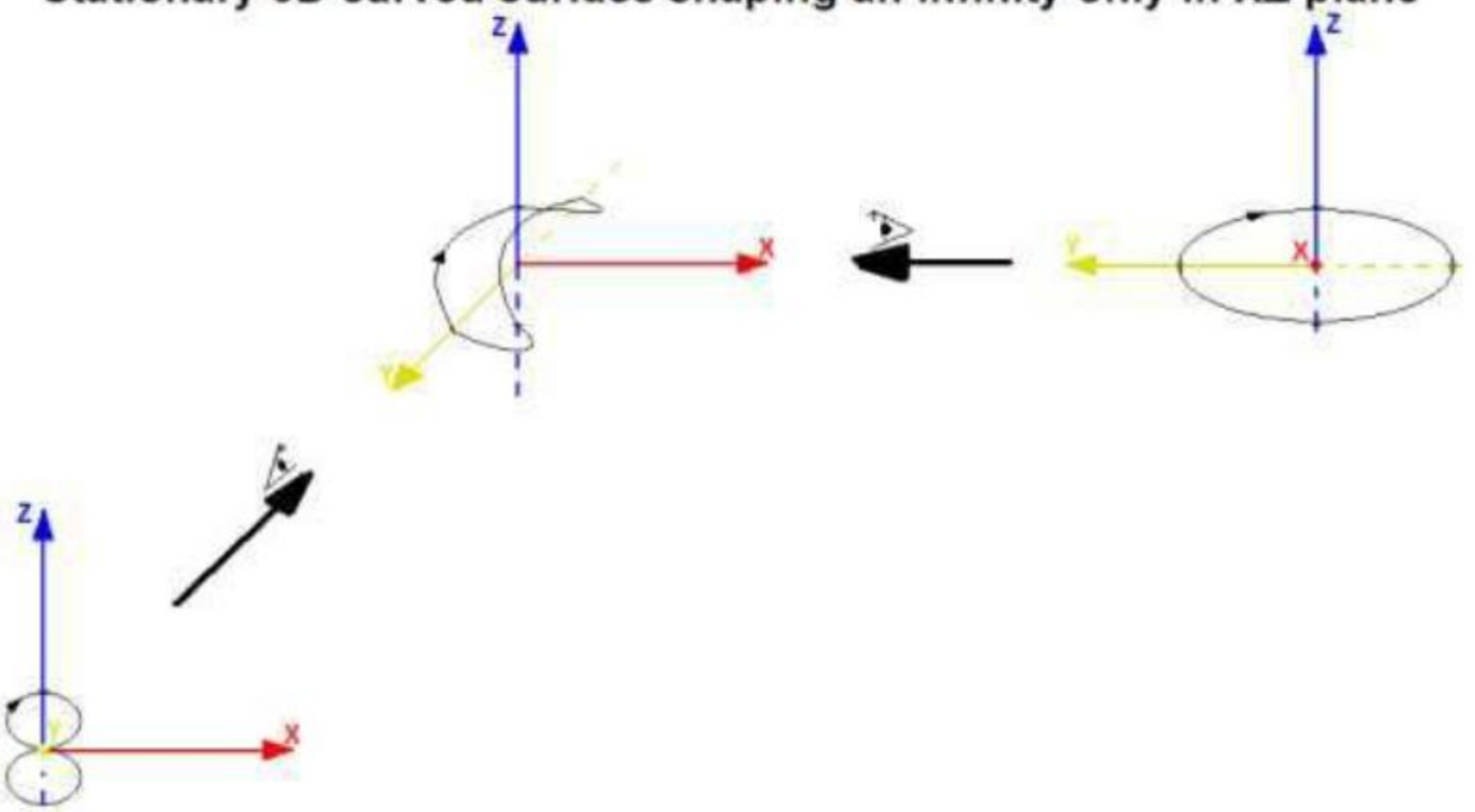


Ok. Ok. That shouldn’t be too hard...A 90° phase shift between y and z should in theory do it. Right? When y is off z is on, and vice versa... hmm... let’s see:



Nope. It won’t work. Sorry.
Why?

It’s a little difficult to visualize, but let me show you what happens with the magnetic field when you power the 3 axes coils with the signals you are describing:



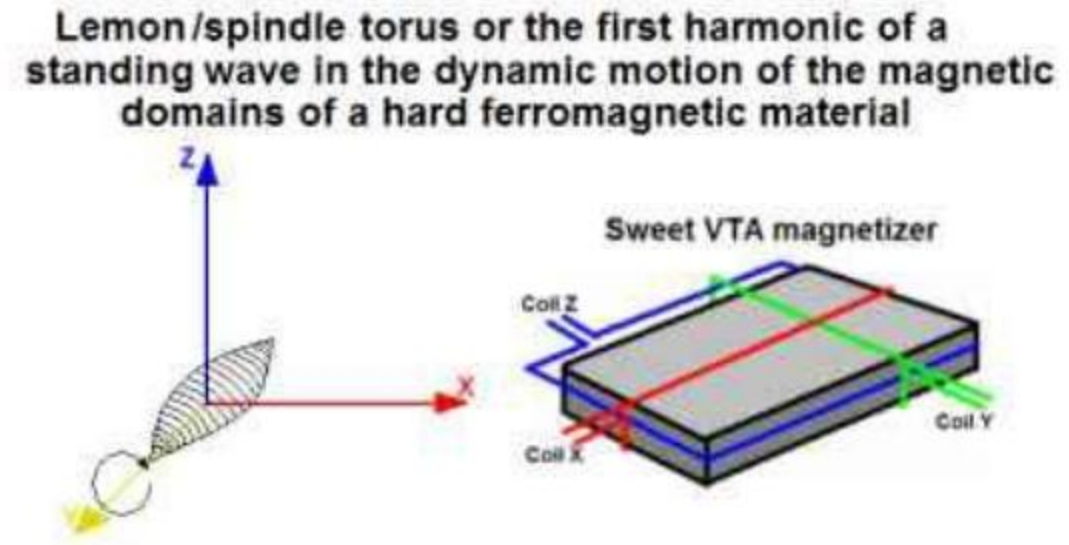
Darn! it is not a 3D infinity shape?

No.

So it is just a weird stupid surface, that doesn't change in time. It’s stationary. But I want a shape! I want a 3D infinity!

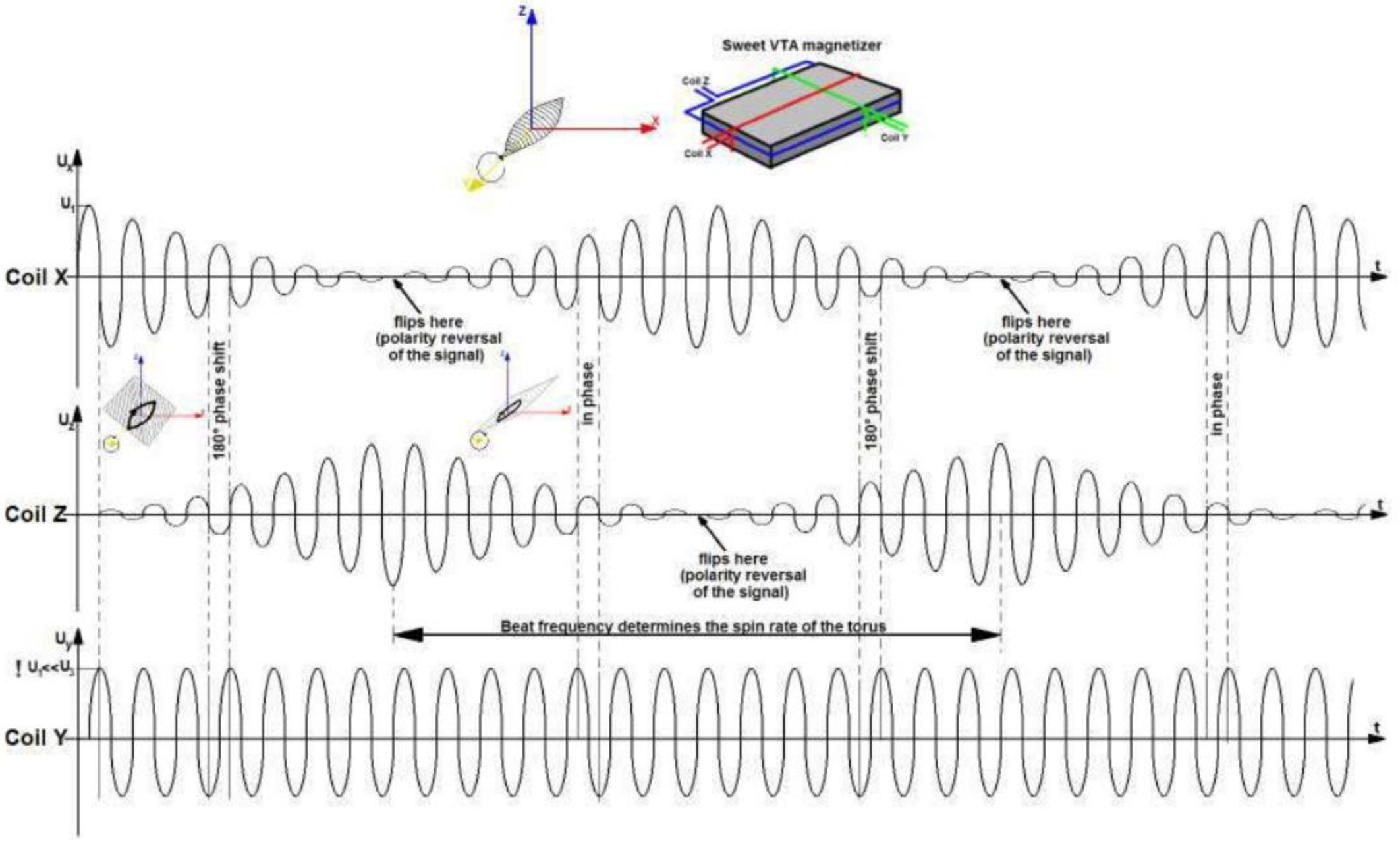
So how do I do it?

Why don’t you start with something more simple, like creating the first harmonic of a standing wave in the magnetic field? Why do you jump to something hard from the start? Start easy. Small steps.



Ok then in order to create something like this, we will need something along these lines:

Creating a lemon/spindle torus domain dynamic OR the first harmonic of a standing wave in the dynamic motion of the magnetic domains of a hard ferromagnetic material



Looking at the above picture, again you might say: There is a mistake in your illustration.

What now? I will say.

With the signals you are describing you will not create a lemon/spindle torus. It will be more like a rotating sphere. So bye bye standing wave.

Really?

Really!

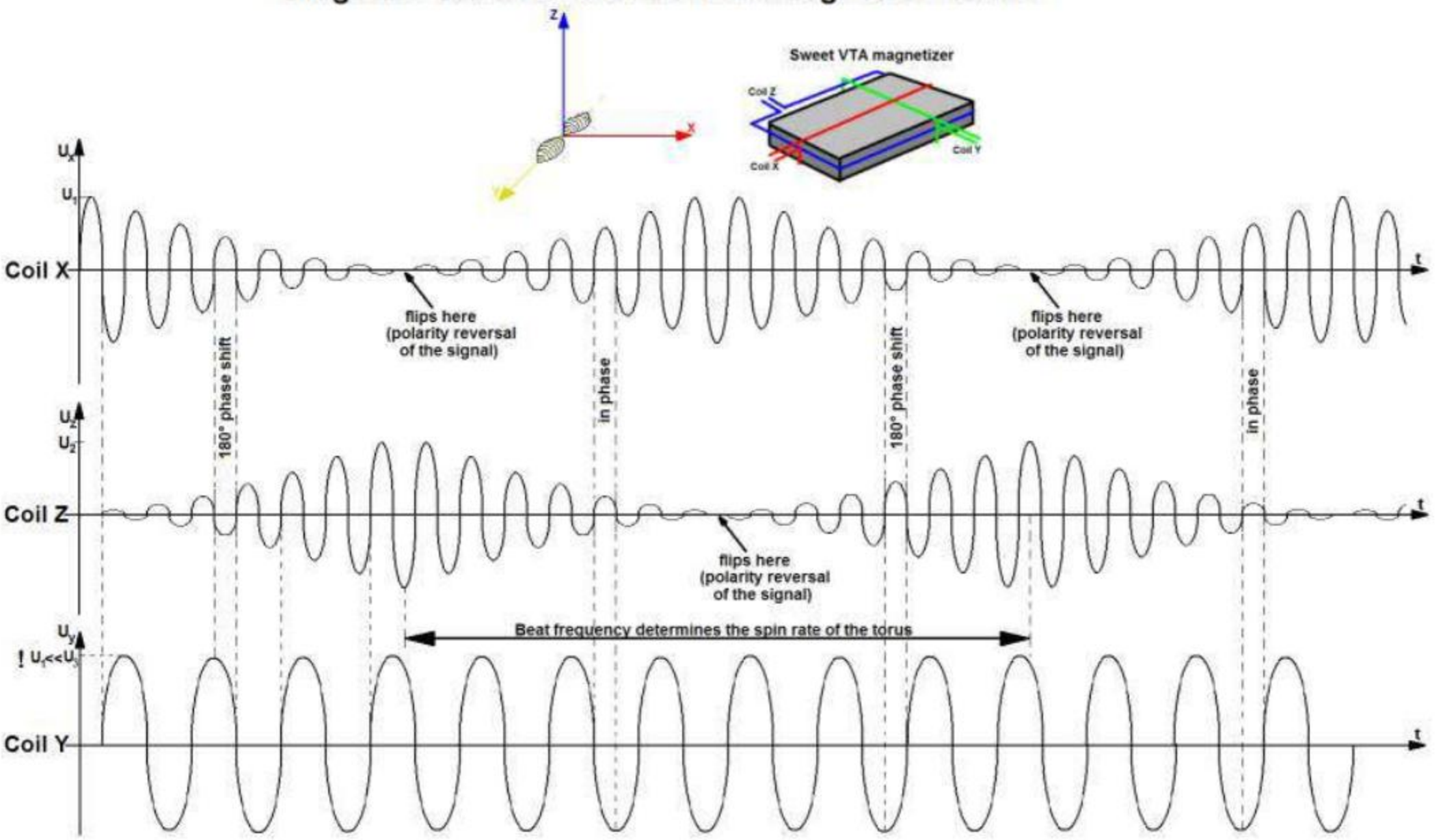
Well...Oh...Yeah...I know...I know...Yeah...Sorry about that...it's the amplitude of the signal applied to the coil Y, isn't it?

Yes, it is.

Well, in that case we must clearly state that the voltage/current/power/signal/amplitude/intensity (I'm referring to the same thing, so you pick the word you like), so this signal applied to coil Y must be larger/bigger/stronger/intense than the signals applied to coils X and Z. That's it. Problem solved.

Now, going back to our infinity symbol, we must apply the same weird signals kind of an amplitude modulation if you like, to coils X and Z, and the frequency on coil Y must be half the frequency applied to coils X and Z, and at the same time, larger in amplitude than X and Z too.

Creating a double lemon/spindle torus or a 3D infinity domains dynamic or the second harmonic of a standing wave in the dynamic motion of the magnetic domains of a hard ferromagnetic material



However, when we study all these configurations, it seems impractical. Why? Because a standing wave is formed naturally. Here it is imposed or forced. If we want to achieve results with something along these lines, then the amplitude of the signal applied to coil Y must somehow be in a direct proportional relationship with the physical dimension of the magnet in that axis, which is the length of our magnet in our case.

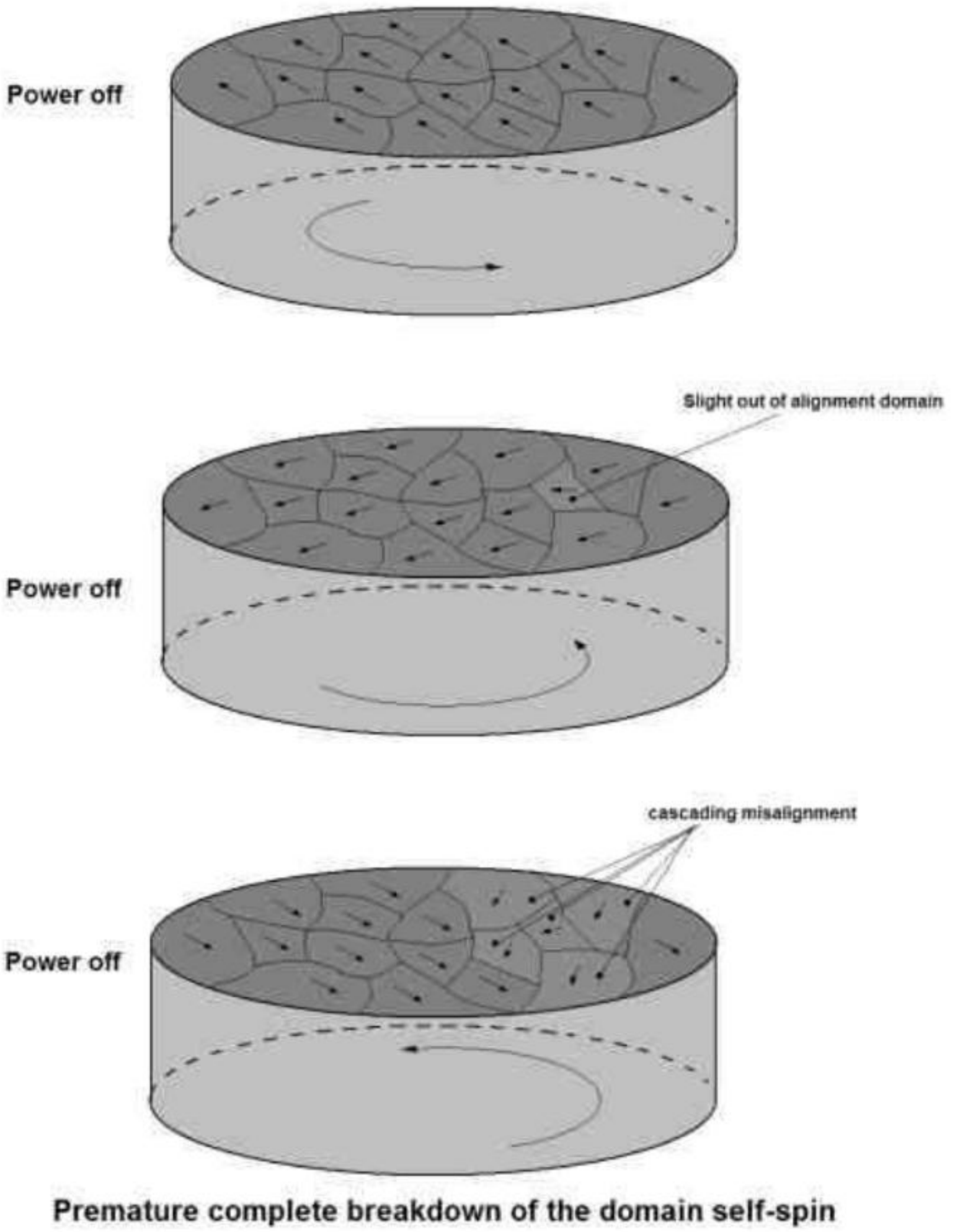
And still, there is another aspect. I believe that the sides/faces of the magnet on Y axis must be parallel one to the other.

But I think that the main problem with all these configurations as we will see is the instability of the self spin.

To find a possible answer to our problem, we will jump to a different partially related study, that will lead us back to where we started.

So let’s go.

If we carefully study and think about a demagnetized cylinder magnet (disk magnet) spinner, we will come to an interesting conclusion. Due to the size of the material and the long course a singular domain must “travel” to make a complete revolution, it won’t be easy to establish this spin. It will naturally break down. How? Well...simple. Imagine that at an instant, when the power is off, somehow all the domains must be aligned by themselves in a straight line or direction. This will be a very unstable equilibrium. Why? Because it is sufficient for only one single reluctant domain to get out of alignment that will make the rest of them to get out of alignment or established spin. Thus the spin will be extremely unstable and unable to sustain itself due to this reason.



When you look at this you might say:

-You are wrong in the above picture. It is completely erroneous.

-Why? I may ask.

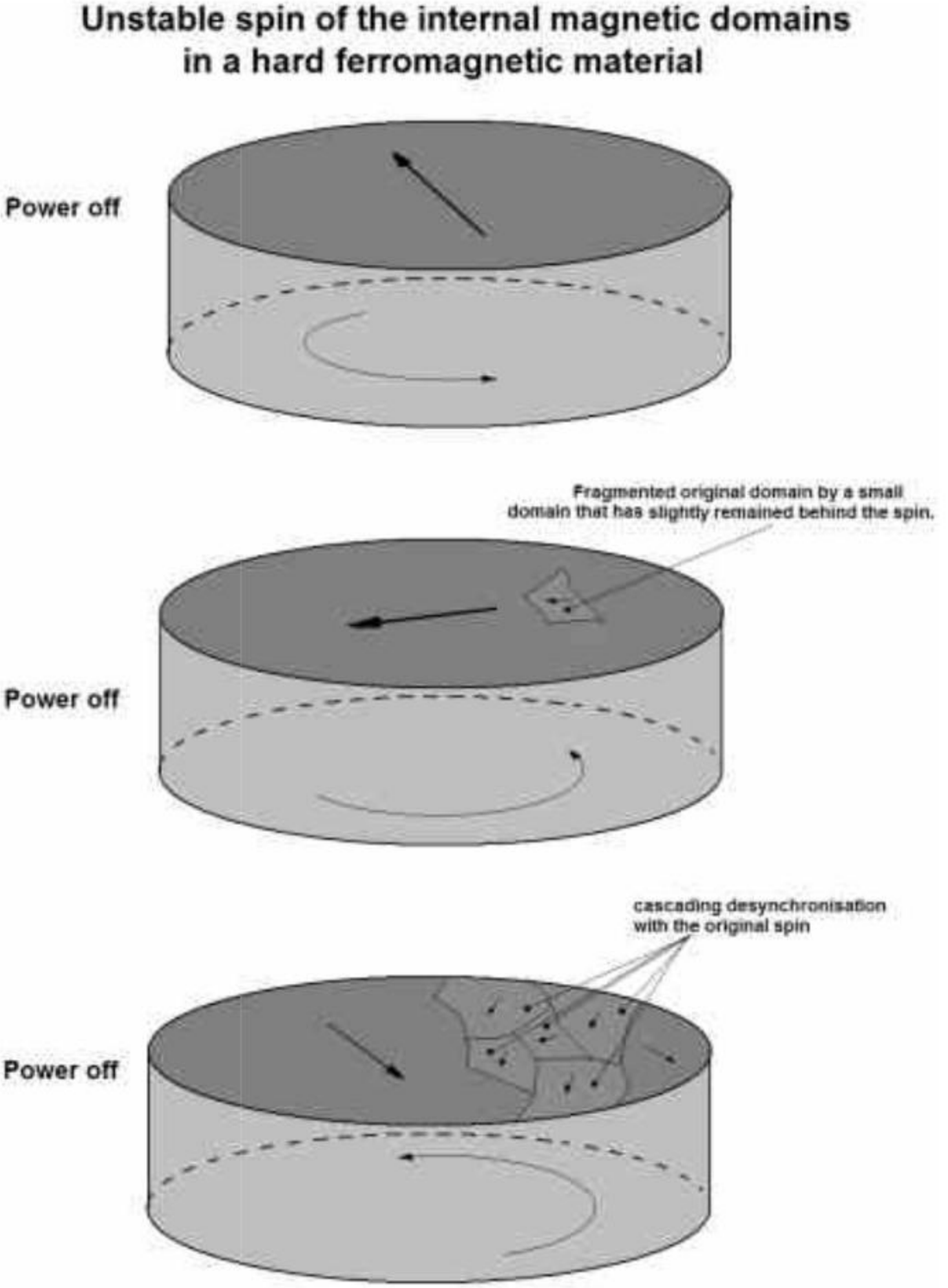
-Because the domain boundaries exist to delimit different regions with a ***different direction of magnetization.*** In your case all the domains are aligned in one direction. Therefore you don't have domains, you have **only one** domain which is extremely improbable and unrealistic.

-My response to you will be: You are right; I don't disagree with you this time. You are right. But you must understand that this is a conceptual representation.

-Conceptual...right I understand. But it is a wrong concept.

-Please let me finish. I don't disagree with you, because we are both right. If you don't like the above picture and you consider it to be wrong, then think that they are extremely tiny and small slight differences in magnetization direction, so that is why I still used so many boundaries and domains.

And if you still don't accept the above picture and you still consider it incorrect then let me make peace between us, with this following picture:



Premature complete breakdown of the domain self-spin

-Now this is a big problem. Isn't it?

-Yes it is.

-So how can this fragmentation of the original set up spin be avoided? How can we prolong the spin? We are interested in making the domains spin by themselves; we are interested in creating self-sustaining spin in the magnetic domains. How can we make the spin last longer?

-That is the right question.

-My guess is that somehow, the spin is "traveling" to much. It has too much friction. It is a too long course they have to take to complete a revolution.

-What do you mean? You don't make sense. What you are saying is determined by the radius of something. But the domains don't have a radius. You don't make sense.

-I know, I know, But bear with me. I can't find the correct words to describe what I want to say, but I believe a picture is worth a thousand words. I always liked books with a lot of pictures. I hated those that had small letters and no pictures. I know, very childish of me to say that, but I truly believe that one can UNDERSTAND a lot more from a picture than from words. And I know that some will disagree with me, saying that plain simple words stimulate the imagination of the reader and thus it helps him more than giving him your own vision of things. You have to let him imagine it for himself. I understand that. I accept that. I'm down with that. But it is not generally applicable. In my opinion this rule is valid for literature books and stories, and not for scientific and technical books.

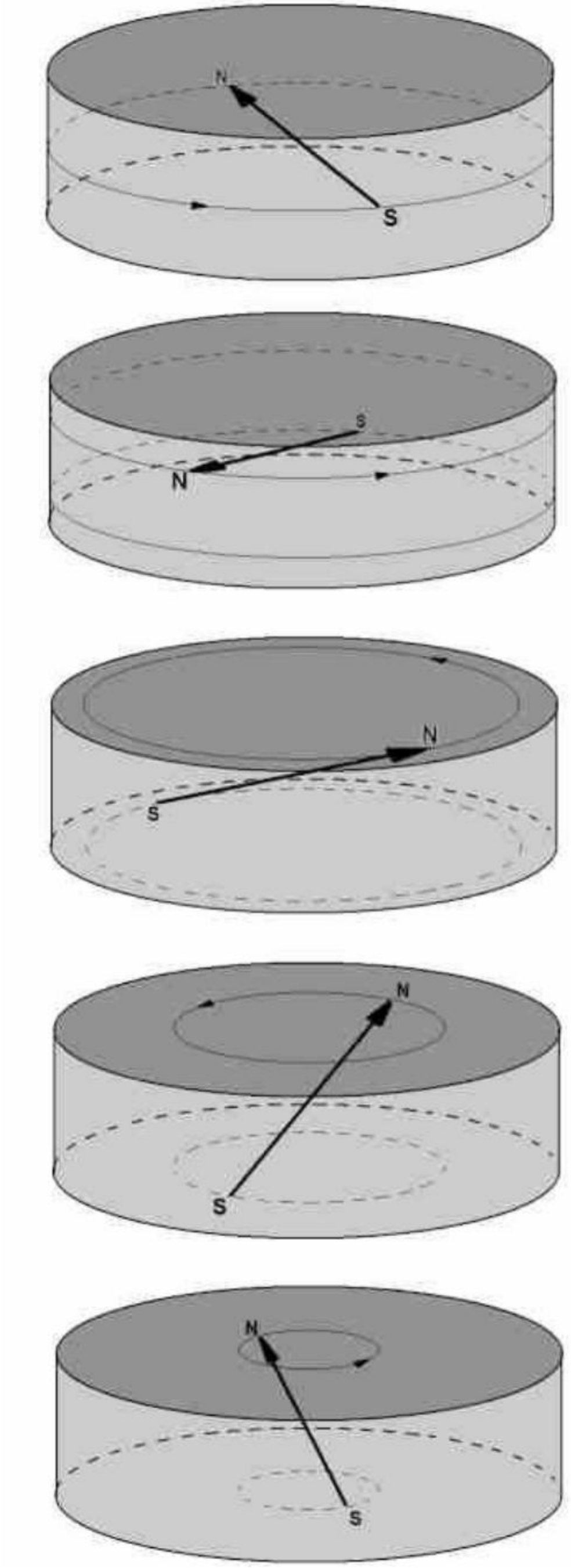
We do know that $\omega = 2\pi f$. So what we are trying to accomplish if you like is to increase the angular velocity ω of the spin but maintain the same frequency of the spin. We want more radians/second but at the same frequency.

So let me make myself clear with this following picture. What if we create a wobble instead of a spin? Isn't that a lot easier to maintain? Doesn't that sustains itself easier? Think about it!

Yeah, but how can we create such a wobble?

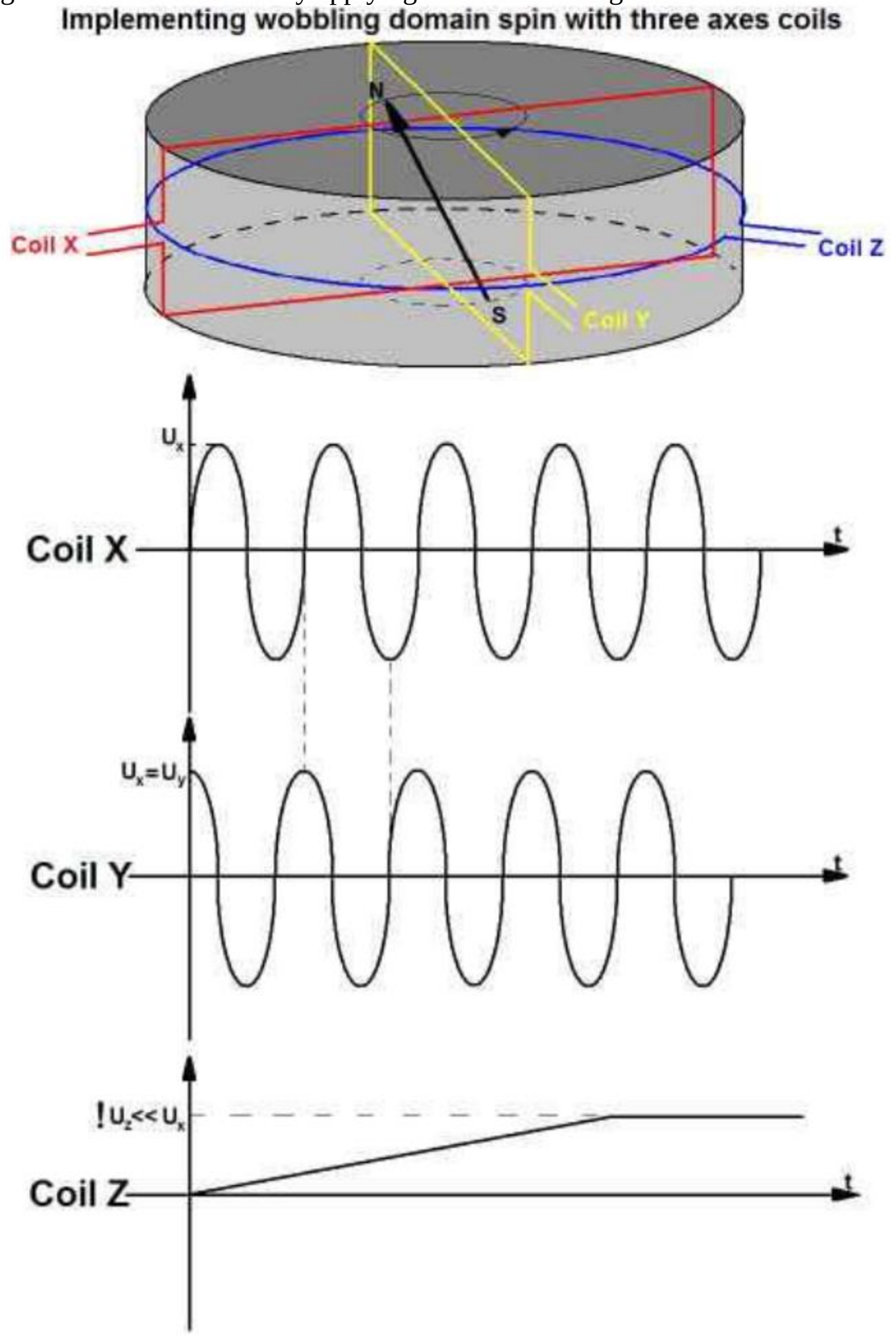
We could, if we do it like this:

Increasing spin stability by inducing a wobbling motion in the magnetic domains of a hard ferromagnetic material (demagnetized magnet)



Yeah, but this is just a theoretical concept, how can this be put in practical application?

This wobbling motion can be created by applying a slow increasing DC offset on the z axis of rotation:

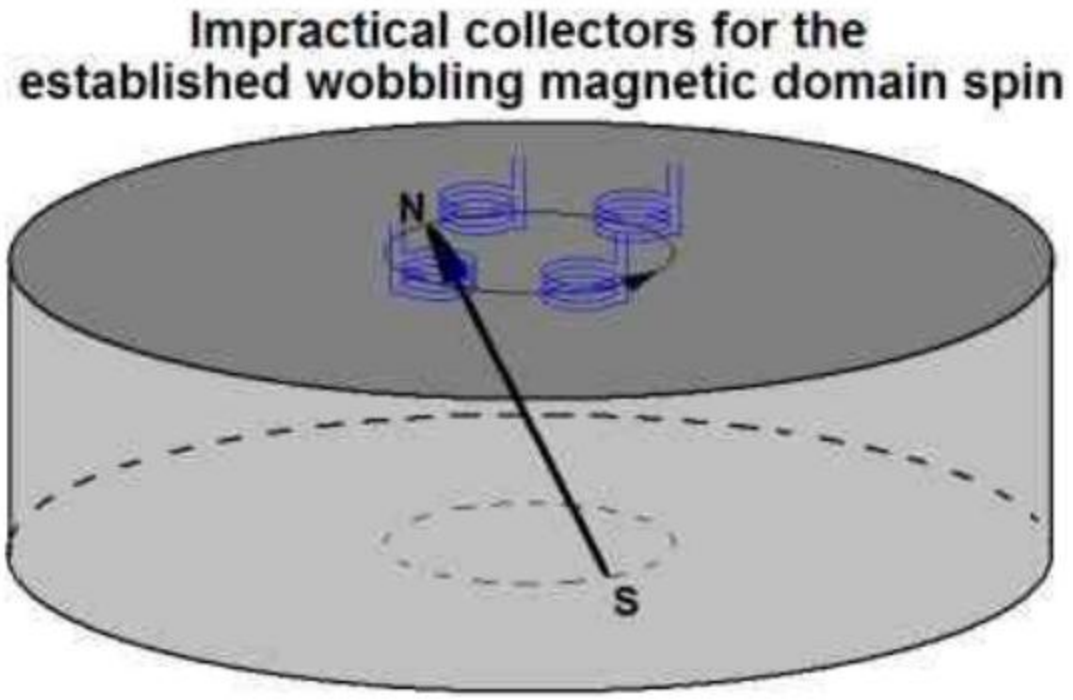


Of course the signal applied to the coil z must always be lower than the peak value of the sine/cosine value of the signal applied to coils X or Y. Otherwise this wobbling will be to small, and we will have created a static regular magnetization.

So we have solved the problem of the rapid desynchronization/destabilization of the spin by implementing a more stable wobbling spin motion of the magnetic domains. But now we have traded a problem with another. We have solved this, but another has arisen.

How on Earth are we going to tap into this wobbling motion? How can we collect this motion? How can we build a collector coil for this new wobbling motion?

You might be tempted to think along this lines:

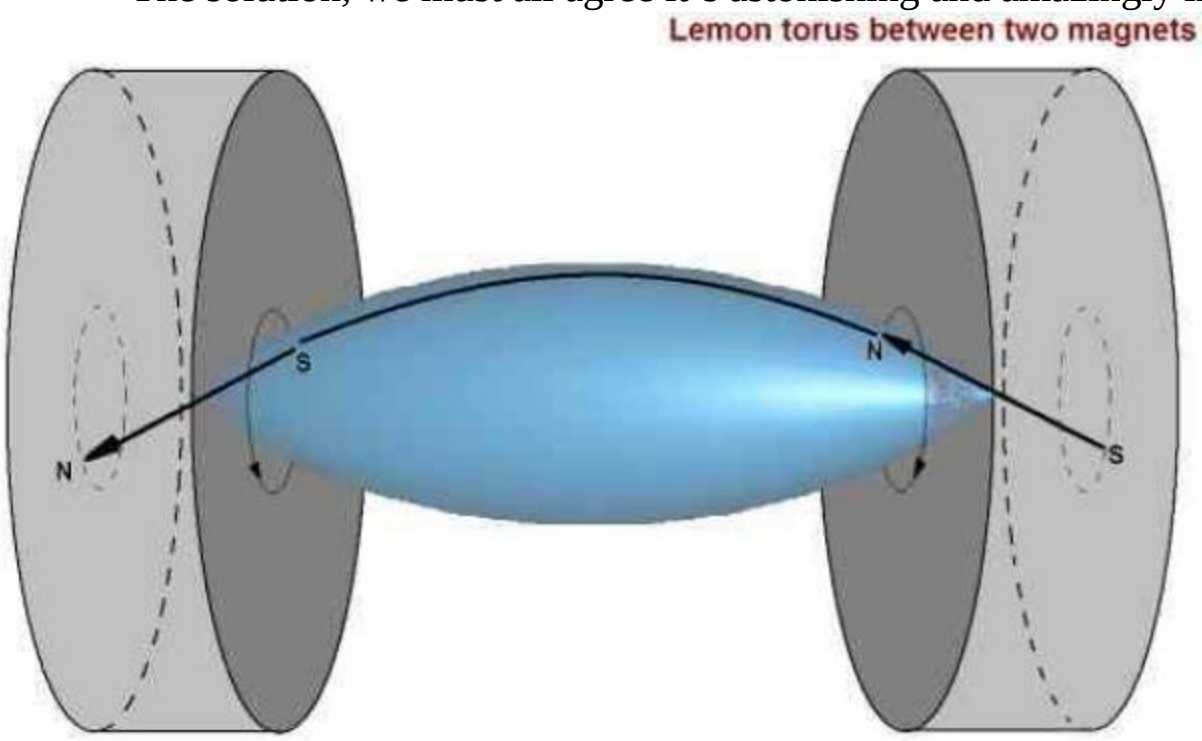


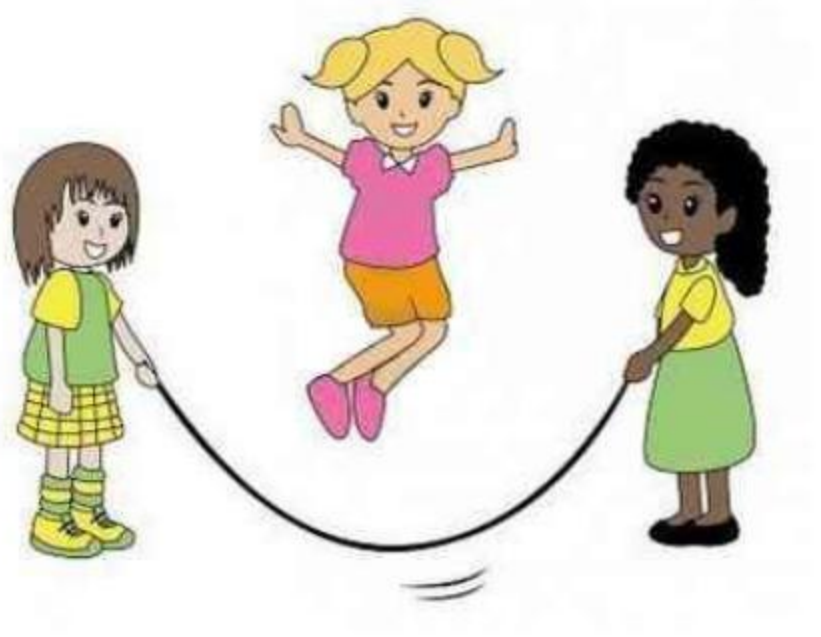
As we can see, this is an impractical solution, because if our wobbling is small in diameter then we won't have enough room to wind the collector coils.

So this is a very BIG PROBLEM . How can we design a collector coil for the established wobbling magnetic domains spin in a magnet?

Fortunately for us, we already have the answer , but we don't know that it is actually the solution to our problem. So let me break the ice for you, and tell you that *Floyd Sparky Sweet most likely thought about* ***all of this*** and *had come up with a solution* long before we have ever heard of free energy.

The solution, we must all agree it's astonishing and amazingly ingenious!





Now we have solved this problem to, but another raises up in its place. The problem is synchronization. Kids playing with a jump rope can easily synchronize, because they see the rope with their eyes and feel it in their hands, so they have a live feedback, and they are acting on that information they receive about the rope position subconsciously and they are always moving the rope in unison.

So what do we do? How do we solve this yet another problem?

In the case of our magnets, the wobbling domains spin of a magnet will not know what the other magnet spin is doing. Therefore desynchronizations will occur. This will cause a beat frequency to appear in the output of a collector coil. If you can imagine it will be like our device will work for 2 minutes, then it will stop for 2 minutes by itself, then it will start again by itself for another 2 minutes, and so on. This is insane, amusing and frustrating at the same time. Most likely Sweet stumbled upon this issue when he was designing his VTA.

And again, fortunately for us, we already have the answer. It is obvious for me that Sweet had this problem in his prototype VTA, and I bet my life that he was frustrated by this. What makes me think that? Remember he is swearing when we tries to explains to Bedini, that by approaching the two magnets together, I quote:

"[...] it will average out the God damn frequency, God damn resonant frequency in this one and that one" .

There is no other logical psychological reason behind his swearing besides the frustration he had when he experienced this beat frequency.

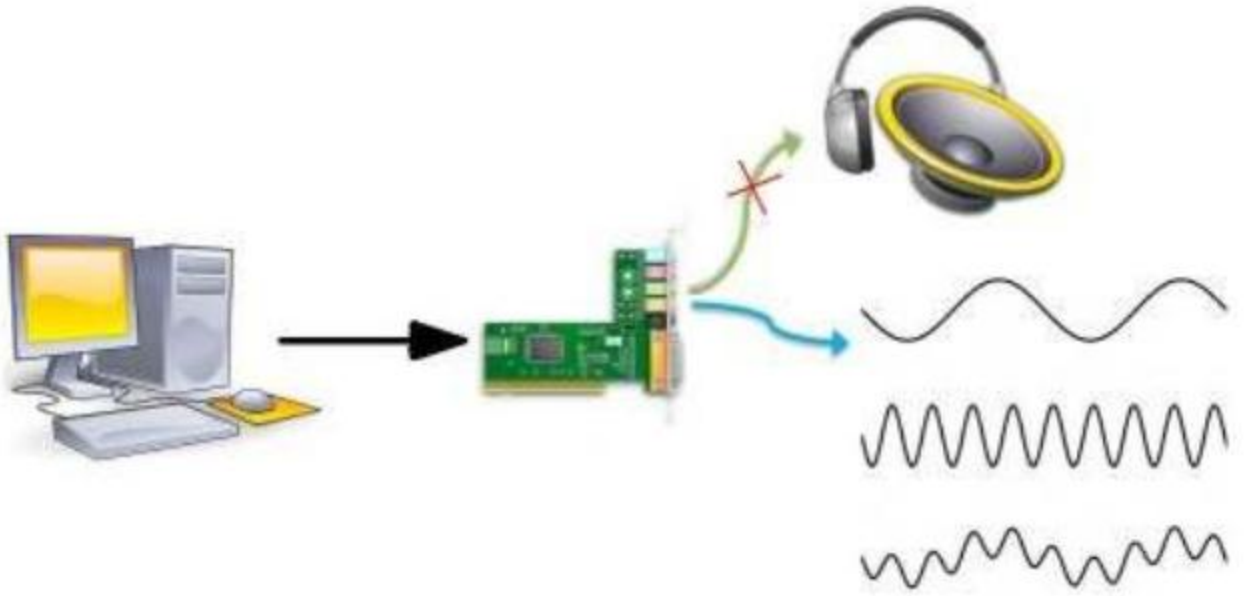
Think about it. If you have a beat frequency of 2 minutes, then it means that your period T will be 120 seconds. This means a beat frequency of 0,008 Hz or 8,3 mHz. This means that the first magnet had the natural resonant frequency at 12,512 Hz let's say and the other magnet had the natural magnetic resonant frequency at 12,520 Hz. For this reason a beat frequency of 2 minutes had to happen, due to the desynchronization of the two established wobbling domains spin in the VTA magnets.

So the answer and the solution to our problem is to create a wobbling domain spin in each magnet through a dynamic re-magnetization process for our demagnetized magnets, at precisely 12,516 Hz (average of the two for our given example). And this is why Sweet insists on FIRST accurately determining the natural magnetic resonant frequency of each particular magnet first thing first.

The reason for this, again, as I stated, is that you will have to know this frequency ***prior*** of the demagnetization process of the magnets (***prior*** of "screwing up" the magnetism by heating them above Curie point). And only after that determination, you know now at what frequency you should set up the wobbling domain spin so that it will be self-sustaining.

A cheap accessible approach to extreme accuracy signal generator (max 20KHz):

The most accessible approach I can imagine to generating signals with an **extreme accuracy** is only assisted by a computer. There may be other very sophisticated digital signal generators out-there that can have even .2 digits accuracy. But such devices are not so accessible.



Therefore, since almost anybody has access to a not so sophisticated personal computer, we can program it, and use it as a **high precision** signal generator.

How do we do that?

We will need:

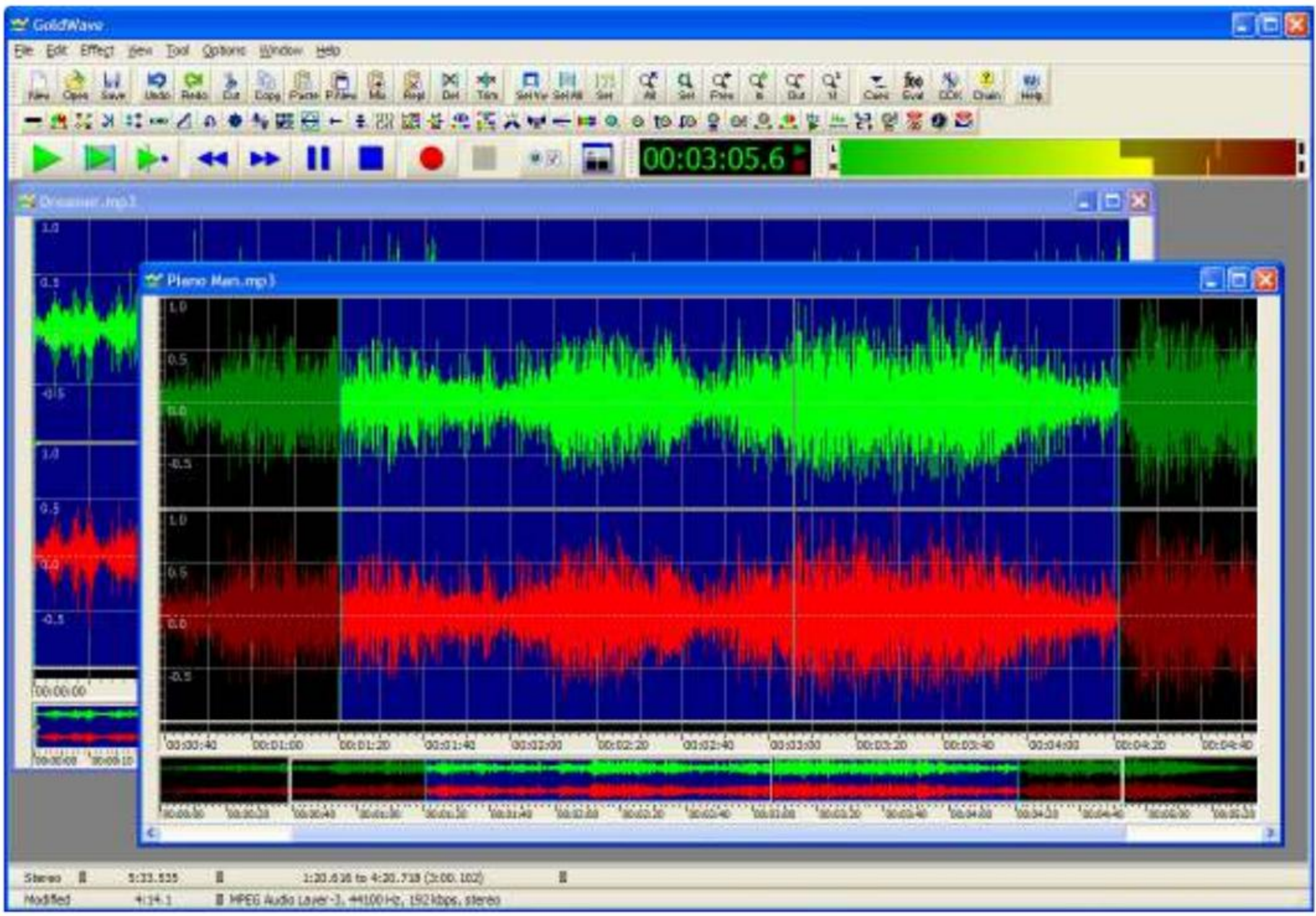
A: A personal computer with Windows 95/98/ME/NT/2000/XP/2003/VISTA or 7, 32 or 64 bit operating system;

B: A common sound card (Windows compatible 8/16/24 bit);

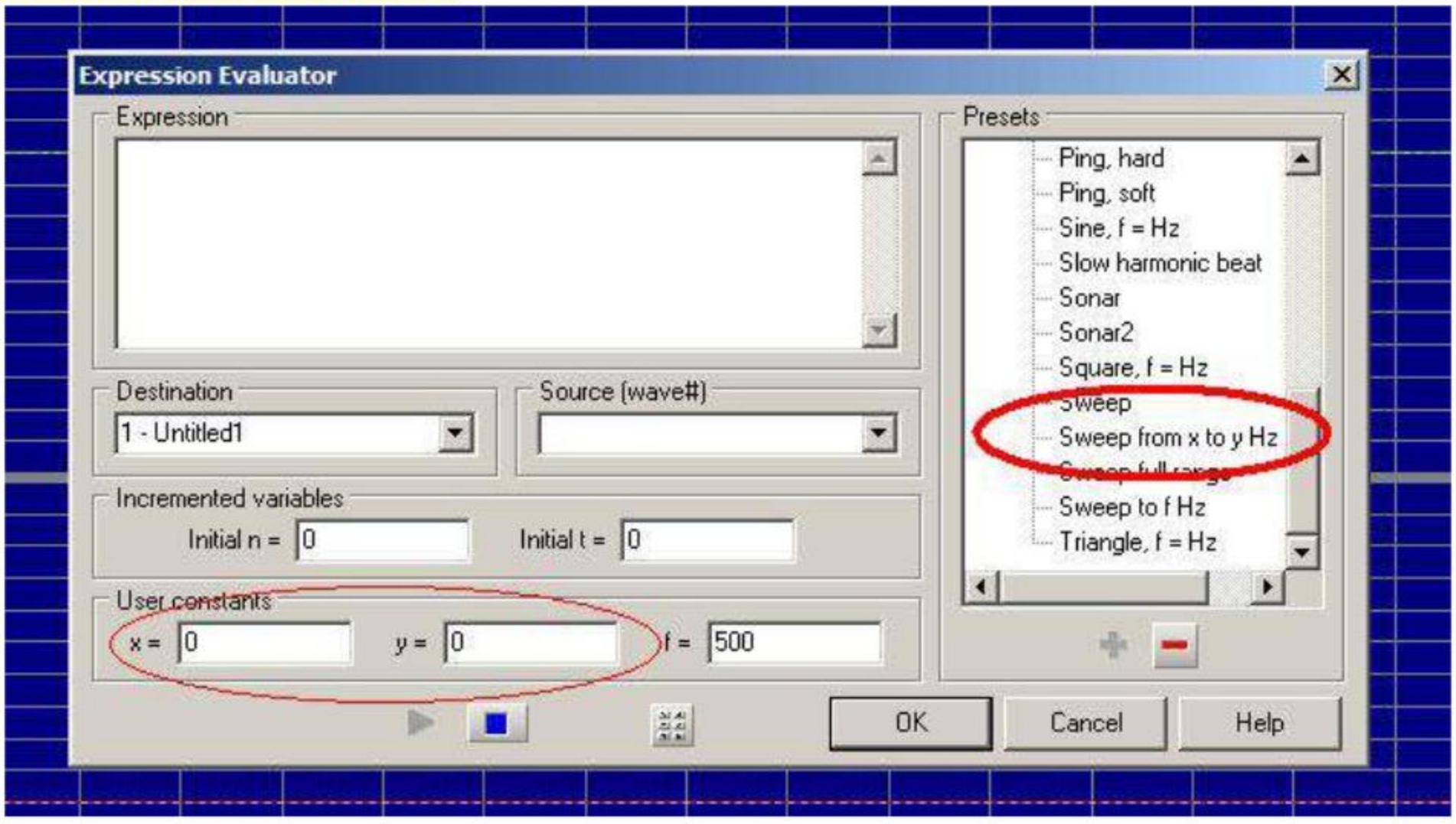
C: Install a software program called GoldWave ;

D: Any old Stereo speakers, at least 2W (we will break them, so don't use those which you are currently using unless you are careful, and you will have to assemble them back) NOTE: If you have a powerful stereo audio amplifier greater than 10W, you could use it with no concern of breaking something;

It is better to have a power amplifier, because the outputs to the speakers are equipped with plugs, so we could take those outputs and use them in any application we need. If we don't have a power amplifier we can take apart some old speakers, disassemble them, cut the wires from the amplifier circuit board that goes to the loudspeakers. You will have a total of 4 wires. Now find out what the ground is for both of the speakers and connect them together. Now we are left with only 3 output wires. This is kindergarten stuff for any researcher in this field of study. Plug the amplifier in the output jack of your sound-card. Start the GoldWave and there you have it!



This free fully-functional software can be downloaded for an evaluation period here, or use at your own risk a more cracked “pirated” version of the software here (torrent link). It has an extremely powerful tool to **evaluate any mathematical expression or function** and plot its value across time!



It has the ability to sweep a full range of frequencies from any x to any y in any time interval you wish. The precision of a wave can be programmed with x and y variables with .4 digits accuracy. That is an

accuracy of tens of thousands of a Hertz! This is only usable across long sounds-waves, That is if for example you **plot a sweep of a sinewave frequency from 12 to 14 Hz across one hour wav file length** of time (you will need lots of GB free space on your HDD).

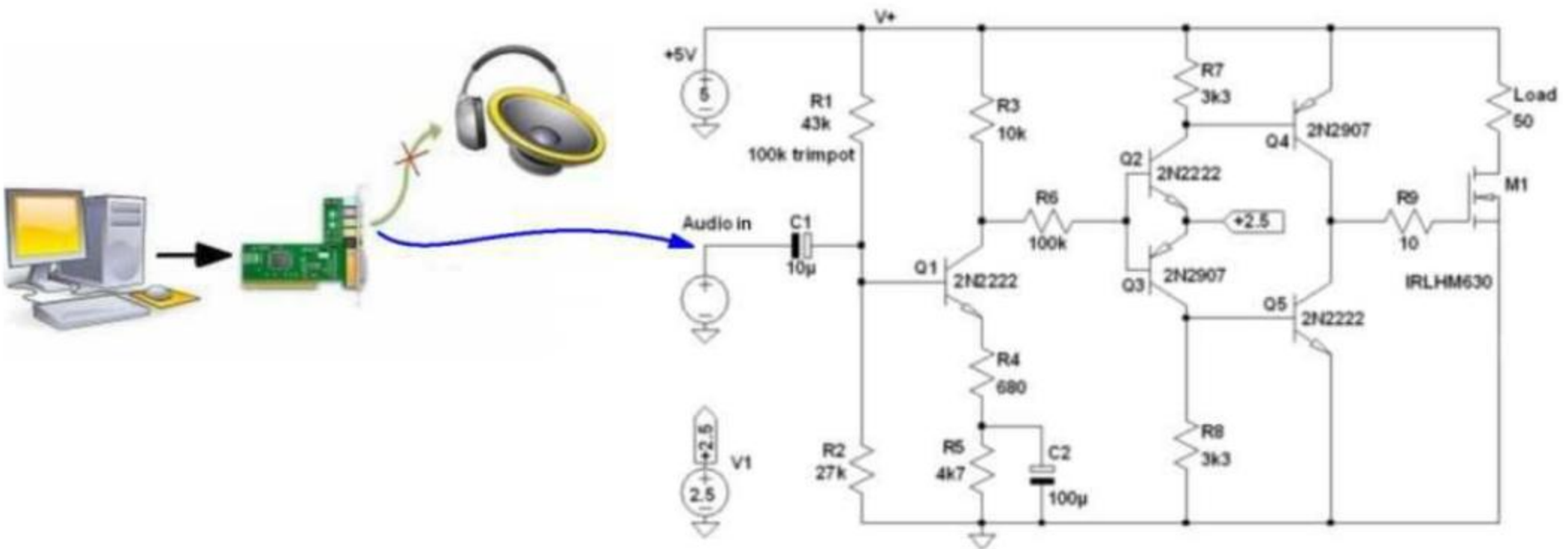
This will advance the frequency from 12 Hz towards 14 Hz with a step of 0.0005 Hz per second! (No I'm not! I'm not forgetting about frequency stability. I know. I know) Of course you won't be forced to wait an hour near your device, unless you want to be more accurate and determine more decimals for your resonant frequency(which is useful for higher harmonics), you can always skip ahead with one click of a mouse. The user interface is user-friendly that is if you know what you are doing or what you want to do.

System requirements: GoldWave requires a minimum 1.5GHz Pentium 4 (or compatible processor), a mouse, 256MB of RAM, 20MB of disk space, and a sound card. For best performance, a 2GHz or faster processor with 512MB of RAM or more is recommended. Windows 2000, XP, Vista, 7, or later is required. Older versions of Windows will not run recent versions of GoldWave, but you can install GoldWave v4.26 on those systems.

Don't be scared if these requirements are too high if you want to bring to life an old useless computer for this particular job. You could use older versions that require much less resources.

I could speak a lot on this program and create a tutorial for it, but that doesn't make the subject of this book. You can view tutorials on the web here, here, or here.

You could use something along these lines:



Here are some cool mathematical expressions that outputs different signals. Don't waste your time studying DSP so that you know how to build these expressions. I repeat, it's a waste of time. Maybe you will find all of this useful, which I doubt, but hey you may never know...

int(2*t*(((n/N/2)*(y-x))+x))%2*2-1
(((n/N/2)*(y-x))+x)

abs(int(2*t*f)%2*2)
abs(int(2*t*(((n/N/2)*(y-x))+x))%2*2)

SIMPLEST DUTY CYCLE:
1-limit(int(t%5))

another one shot: (1-(int(4*t*f)%2)*2)*(1-limit(int((2*t*f)%8)))
Coolest One shot: (1-(int(4*t*f)%2)*2)*(1-limit(int((2*t*f)%f)))
works in ELF: (1-(int(10*t*f)%2)*2)*(1-limit(int((5*t*f)%f)))
better switching at Higher f: (1-(int(15*t*f)%2)*2)*(1-limit(int((5*t*f)%f)))
frequency correction: (1-(int(3*t*f^2)%2)*2)*(1-limit(int((t*f^2)%f)))
where 8 is duty cycle 1/8

duty cycle %70

int(t*f)%3
int(2*t*(((n/N/2)*(y-x))+x)+1.5)%3
int(2*t*(((n/N/2)*(y-x))+x))%3

simple 180 phase shift square wave
int(2*t*(((n/N/2)*(y-x))+x))%2
int(2*t*(((n/N/2)*(y-x))+x)+1)%2

one shot: step(-int(t*f)%2) - step(-int(t*f+0.8)%2)
0.8 is 80% duty cycle
to sweep anything replace f with: (((n/N/2)*(y-x))+x)
meaning: step(-int(t*(((n/N/2)*(y-x))+x))%2) - step(-int(t*(((n/N/2)*(y-x))+x)+0.8)%2)

saw tooth: 1-t%1
duty cycle saw tooth: (t*step(-int(t)%2))%1
1*(step(-int(t)%2))-(t*step(-int(t)%2))%1

cool one shot saw tooth: (1-t%1)*step(t%2-1)+(-1+t%1)*step(1-t%2)
(1-t*f%1)*step(t*f%2-1)+(-1+t*f%1)*step(1-t*f%2)
sweep:
(1-t*(((n/N/2)*(y-x))+x)%1)*step(t*(((n/N/2)*(y-x))+x)%2-1)+(-1+t*(((n/N/2)*(y-x))+x)%1)*step(1-t*(((n/N/2)*(y-x))+x)%2)

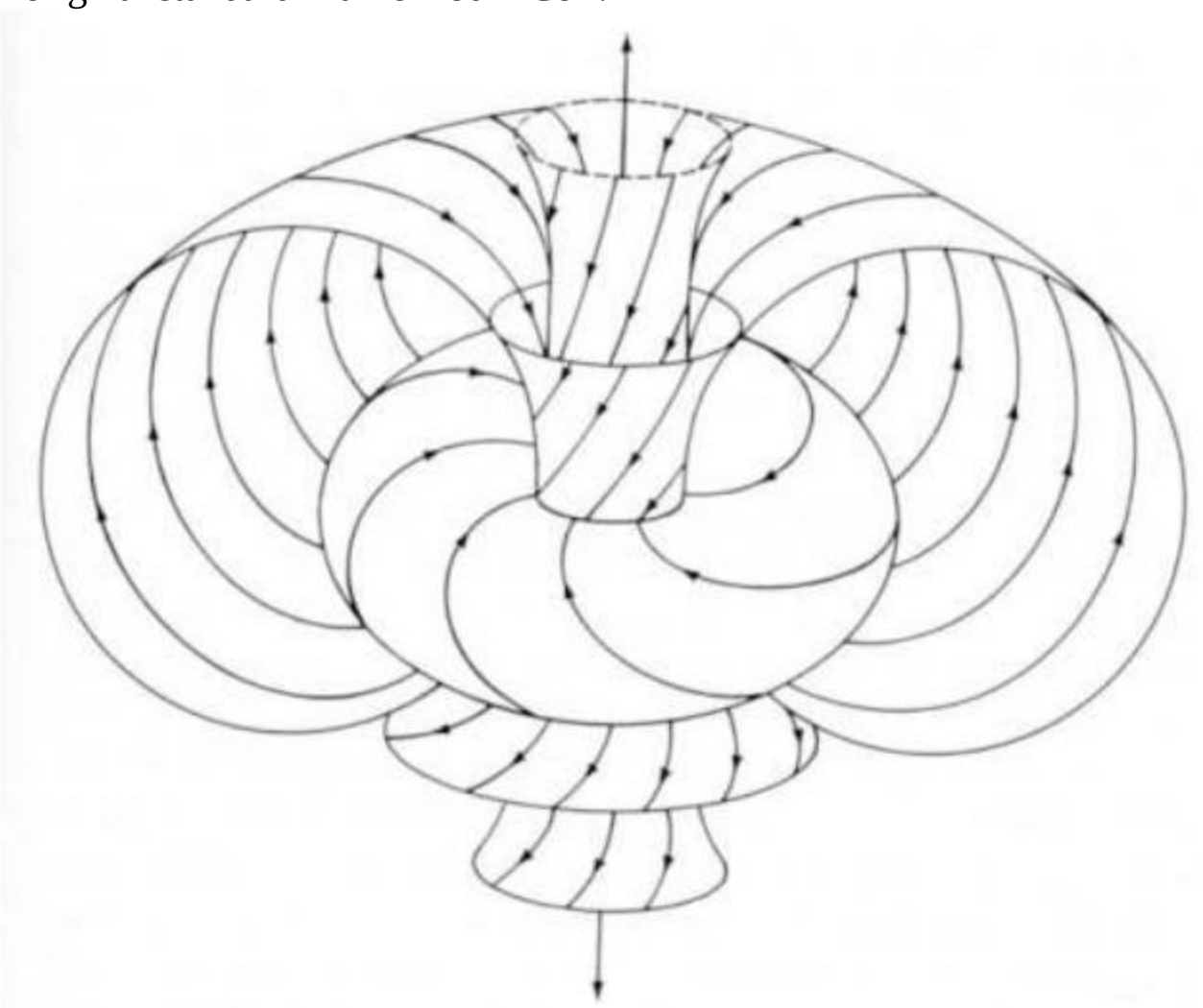
MEG v2 dual: abs(int(4*t*f)%2*2)
abs(int(4*t*(((n/N/2)*(y-x))+x))%2*2)
(1-2*t*f%1)*step(2*t*f%2-1)+(-1+2*t*f%1)*step(1-2*t*f%2)
(1-2*t*(((n/N/2)*(y-x))+x)%1)*step(2*t*(((n/N/2)*(y-x))+x)%2-1)+(-1+2*t*(((n/N/2)*(y-x))+x)%1)*step(1-2*t*(((n/N/2)*(y-x))+x)%2)

MEG v3 4 channel: (1-(int(3*t*f^2)%2)*2)*(1-limit(int((t*f^2)%f)))
etc

The Rodin Coil



_____The most accessible and easy way to tap into Zero Point Energy (whatever that means) using twisted *magnetic flux* generated inside an original standard Marko Rodin Coil:

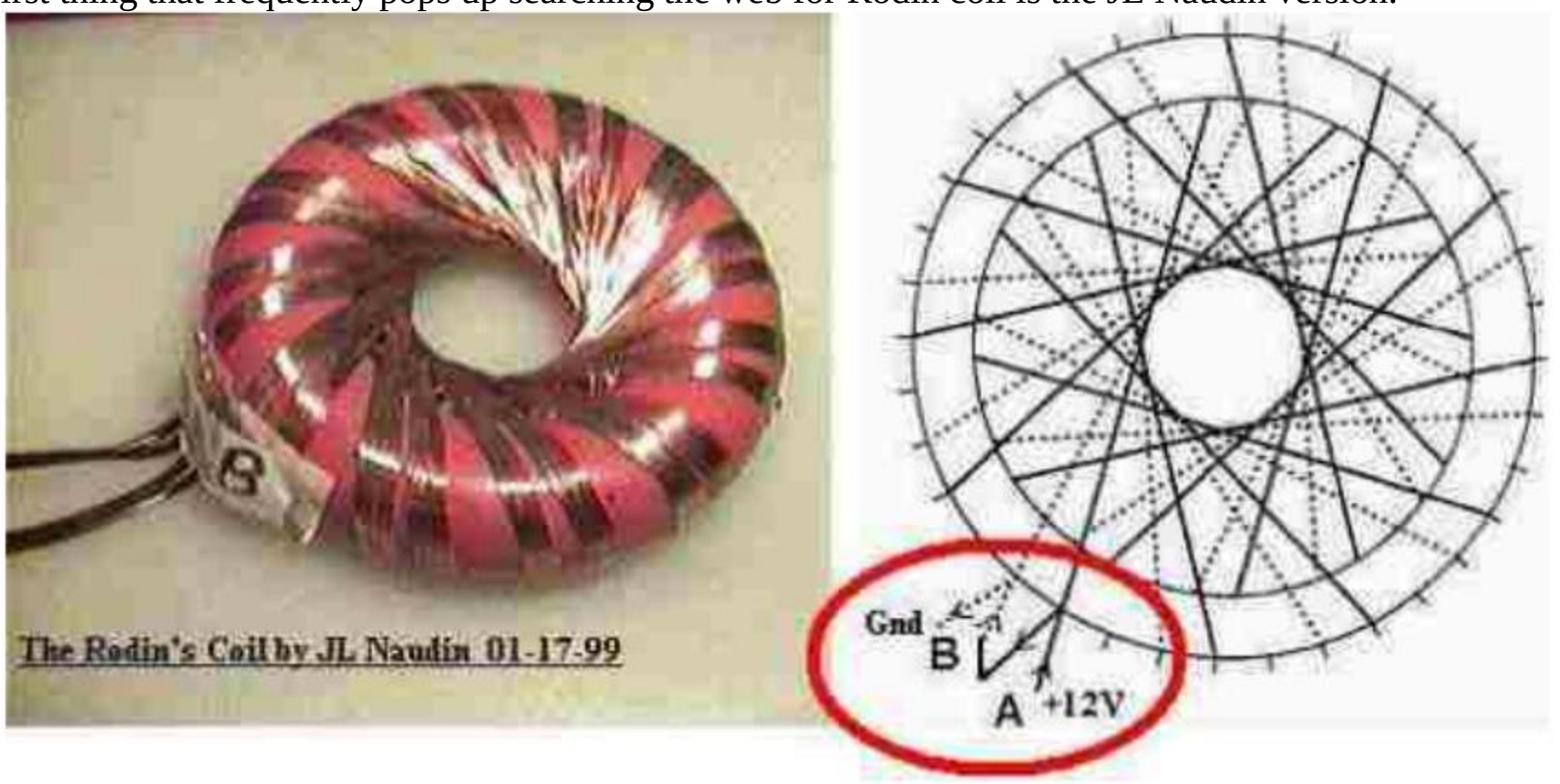


There are many ways in which to fire the Rodin coils. And I say that again. Many firing sequences. Many configurations. Many topologies. You can spin the field in various ways using the Rodin Coil.

If Sweet VTA worked with a lemon/spindle torus between the two magnets, the Rodin coil works with a torus too, but this time it's a donut torus.

Different firing sequences for the Rodin Coil

First thing that frequently pops up searching the web for Rodin coil is the JL Naudin version:



When I look at this, it makes me cry, and shout towards the sky. This is so sad! It makes me bitter just by looking at how he powers it. Naudin definitely was in a hurry to test it out, so he ignored all the firing sequence, control circuit, family groups, and all that. It's insane! Marko clearly said that we shouldn't try this (click here to hear Marko saying this)!

Quote:

" […]they are so separated from one another, than that's why one wire is on at a given time, because if both wires have the same family number group on at the same time, then this coil wouldn't work, it will have resistance ".
(YouTube movie clip 19/44 minute 0 second 49)

This clearly means we shouldn't try to power both wires/coils at the same time.

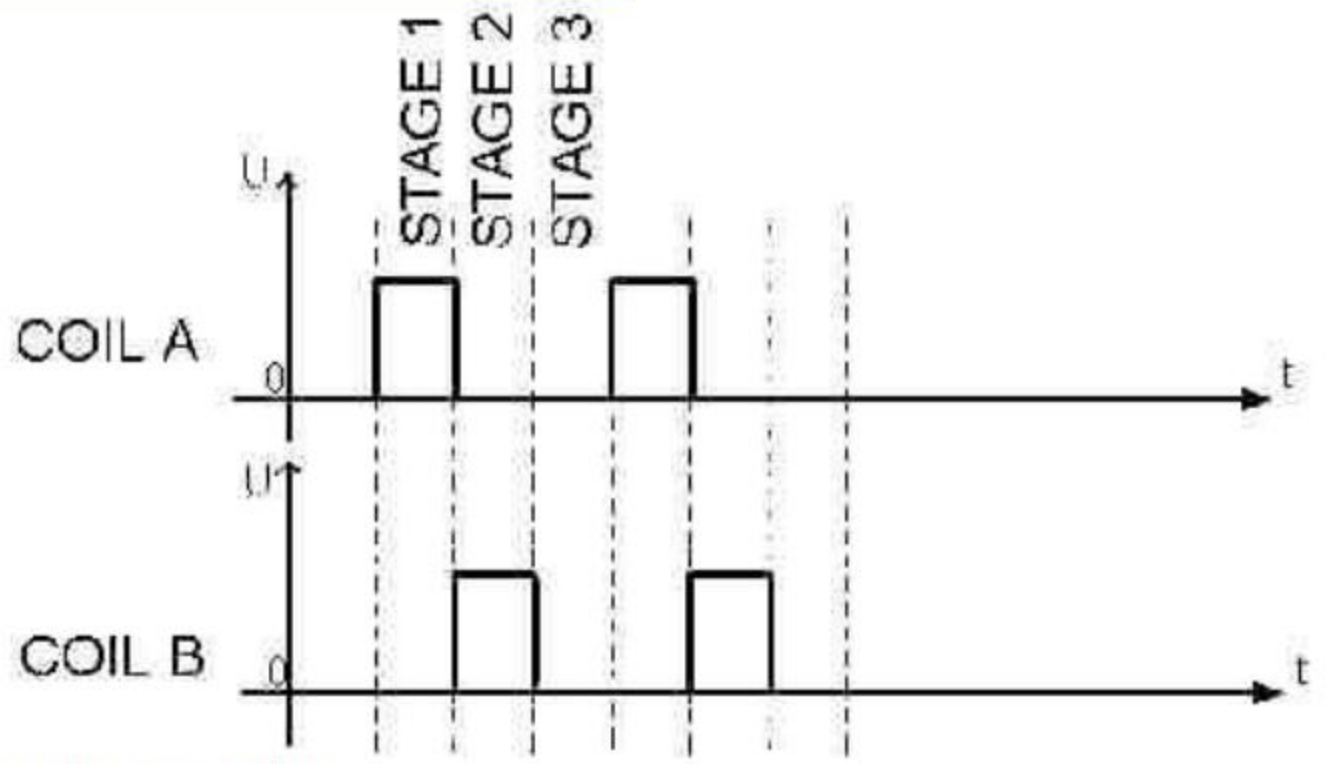
Maybe I'm wrong, but if I do, then let's analyze Marko words in more detail.

Right here in his own words he describes the signal that we have to use to power the coil. Let's quote him when he describes this signal:

"That one wire…there's two wires here. That one wire, ALL the positives are in one wire at a minute of the first stage. There's three stages. *It's a firing stage.* ***The first activation*** sequence of this coil, only the right wire is all positive (that's your 1,4,7). The second activation stage is all your left wire is all positive (is activated). And now the first family number group 1,4,7…the other wire is totally off.And then they're both off. None of them are positive, they're all neither positive, and the middle space in there becomes all positives (the 3,9,6)" (YouTube movie clip 18/44 minute 4 second 13)

So in my mind this is what he's describing:

We will call this the **<Standard firing sequence for the standard configuration Marko Rodin coil>**



But wait, later, on the same presentation, Marko describes a different type of activation sequence. Let me quote this particular conversation in case you didn't follow the link, and to make sure I understand it right:

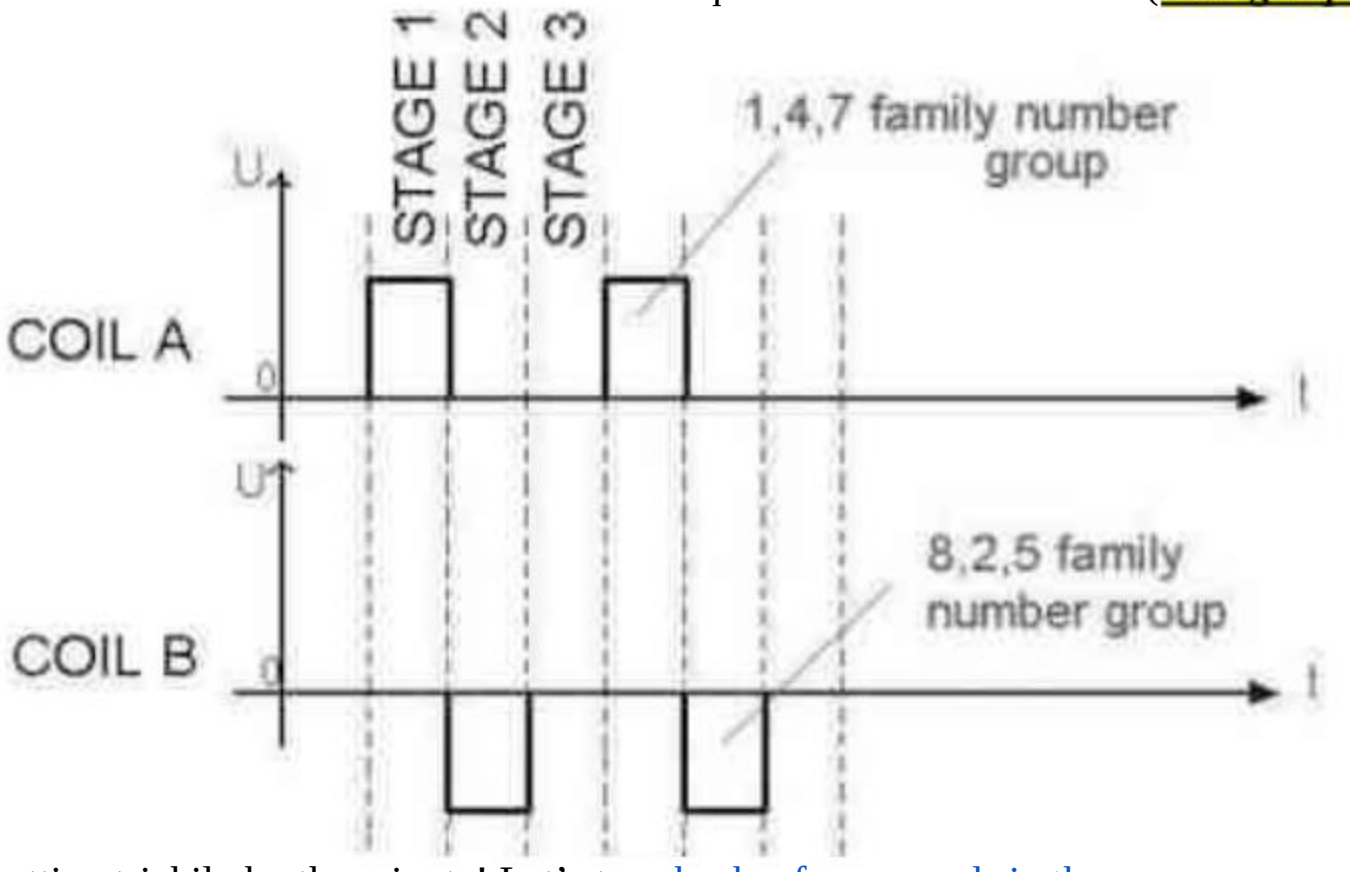
"[Charlie:]-So, you are saying the polarity switches when the current reverses its direction?

[Marko:]- [...] when it hits one wire the electricity goes in one way , when it hits the other wire it goes in the opposite direction."

In my mind by the word "wire" I understand "coil" right? So Marko answer to Charlie question will look like this:

-[...]when it hits one coil the electricity goes in one way , when it hits the other coil it goes in the opposite direction.

Now from his words can be deduced that the new activation sequence will look like this: (***Firing sequence version 2)***



But wait again! It's getting trickily by the minute! Let's turn back a few seconds in the same conversation, and analyze Marko words again. To me, this guy Charlie definitely knows how to put the right questions, but is the answers of Marko that are confusing):

"[Charlie:] 1,4 and 7 are ALWAYS POSITIVE ? (just like in my presented signal diagram above)

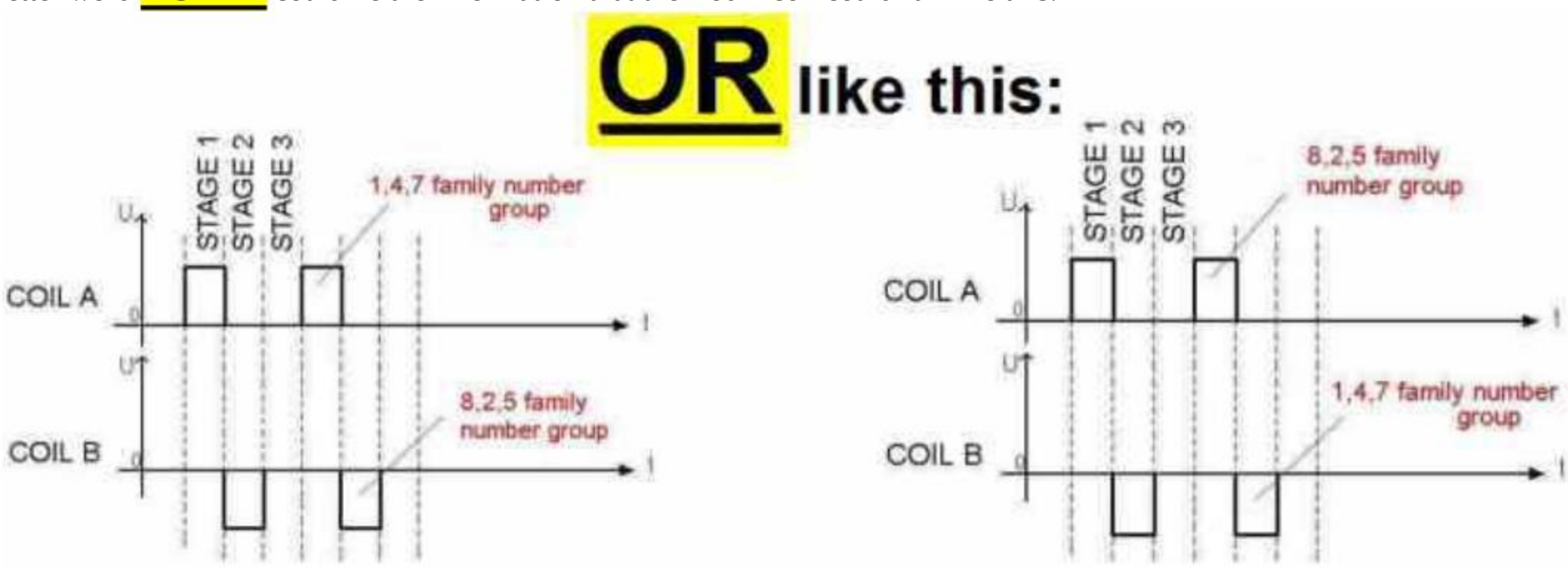
[Marko:] No. (Ups! It means that my firing sequence is not right)

[Marko:] 1,4,7 are always positive . . .

[Charlie:] Then they flip ? They reverse the polarity ? Is that what you mean ?

[Marko:] OR 1,4,7 are always negative." (YouTube movie clip 19/44 minute 0 second 10)

Ok, in that 2 letter word there "OR" may lie the key. In that 2 letter word "OR" may lie the information that the presented signal diagrams for the activation sequence of the Rodin coil may be correct. In that 2 letter word "OR" could lie the information that the Rodin coil could run like this:

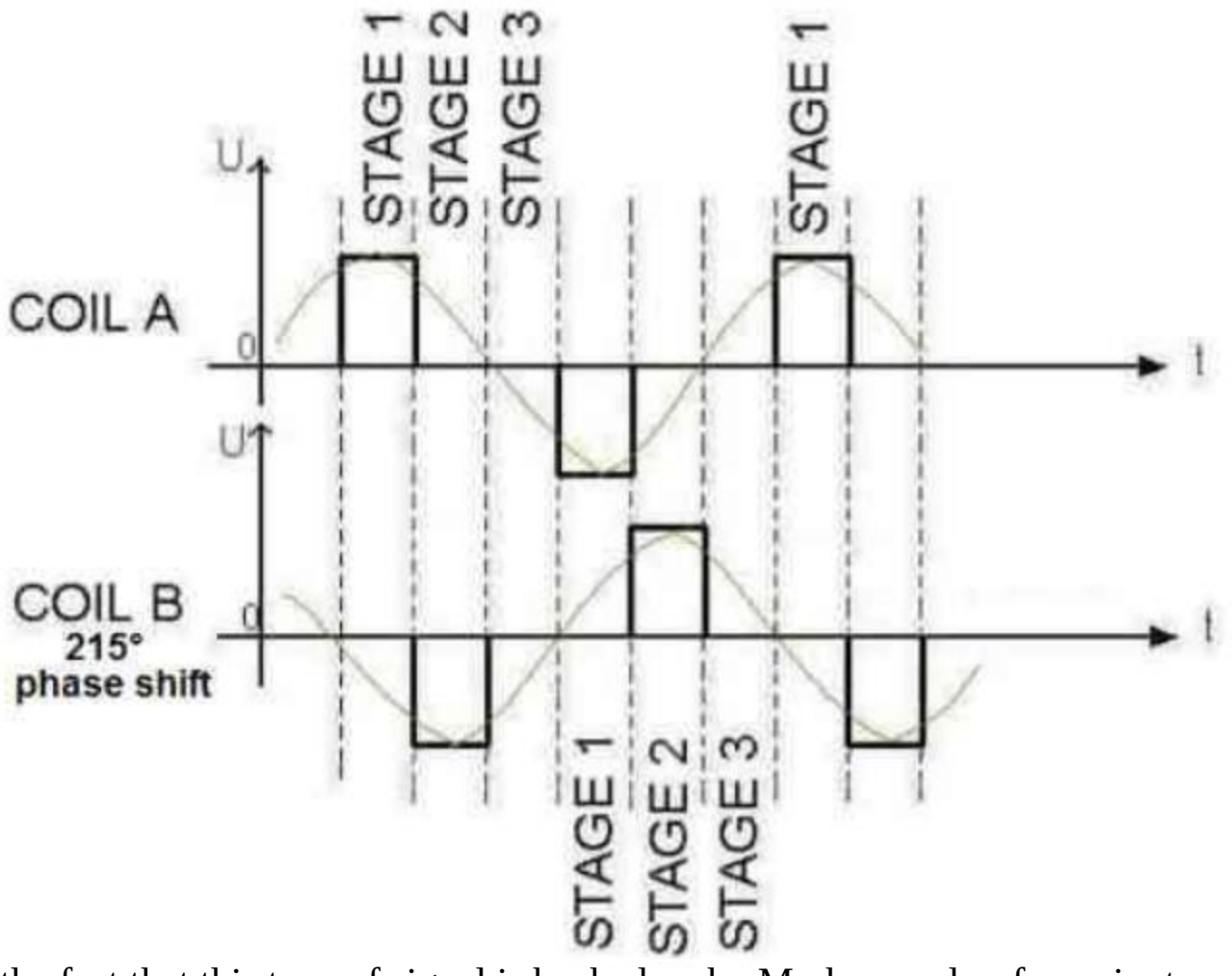


Same signal (firing sequence) but the wires are reversed. Same thing. No difference in operation. Only a conceptual difference. Same meat different gravy.

But wait again! Dear God! It's getting more confusing by the second! Let's continue the conversation:

"[Marko:] This coil here… the negative 1,4,7 are ALL on the wire that the positive 8,2,5 are on . You don't have…And the positive 8,2,5…and the positive 1,4,7 all have the negative 8,2,5 " *(YouTube movie clip 19/44 minute 0 second 30).*

This one's the nasty one. Can't figure out the head and tail of this one. It could describe this type of signal: (***Firing sequence version 3)***

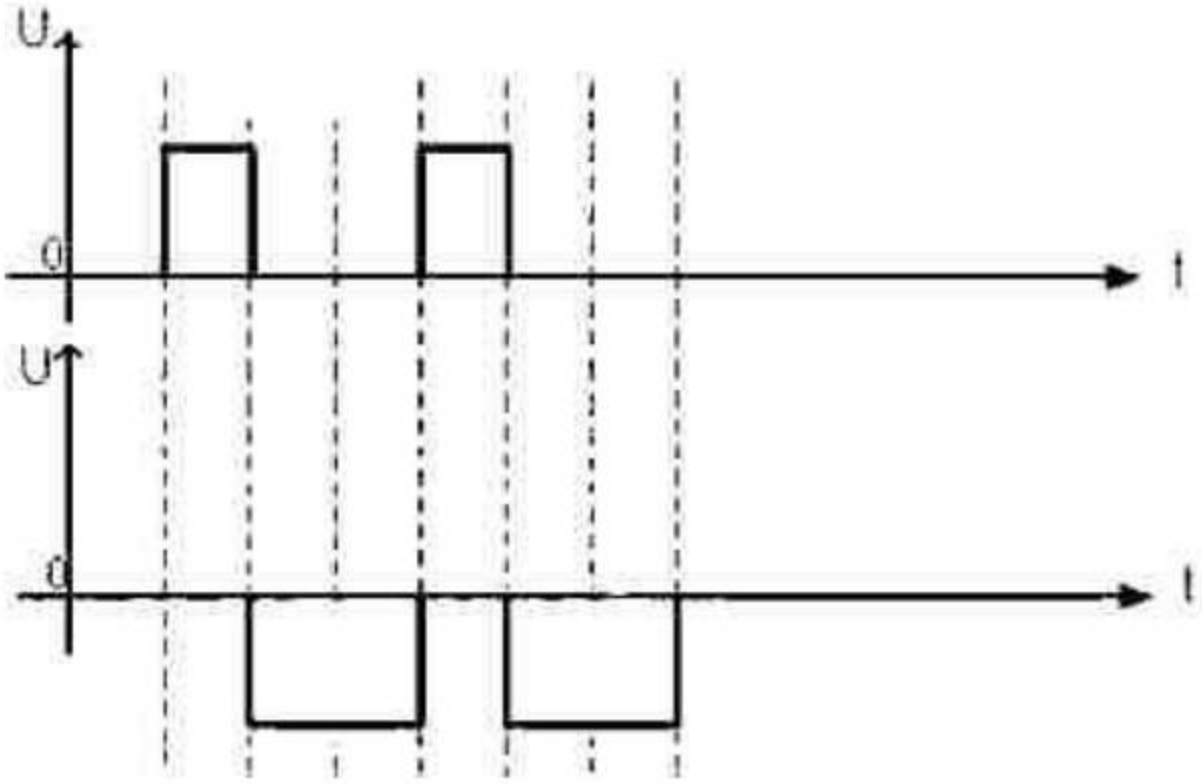


Considering the fact that this type of signal is backed up by Marko words a few minutes earlier in the presentation and I quote:

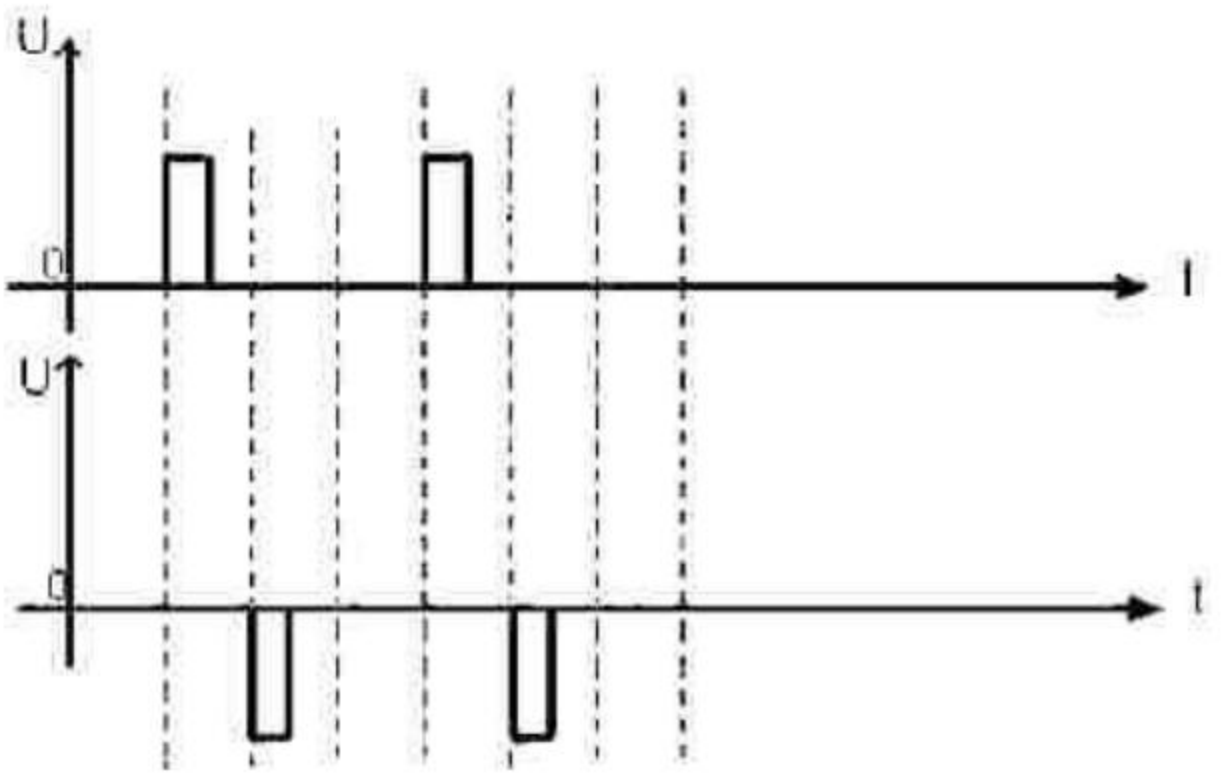
"The 1 and the 4 and the 7 are ALL positive at the same time , and the 2,8,5 they are all positive AND they are all negative at the same time. " *(YouTube movie clip 18/44 minute 3 second 54).*

That word “AND” firmly contradicts the later “OR” word. Either he’s not paying attention to what he is saying, or this guy doesn’t have any type of logic whatsoever. From the above quote, I understand that in the working condition, a specific coil (wire or family number group) is also positive AND also negative. It’s incredible confusing and insane, but nevertheless all this types of signals should be tested, considering the fact that if the first ones are the right ones, then they are extremely and incredible in simplicity.

All you need is the simplest electronic circuit ever, an astable multi-vibrator, in which the time constant of a state is the double of the other. It should look like this:



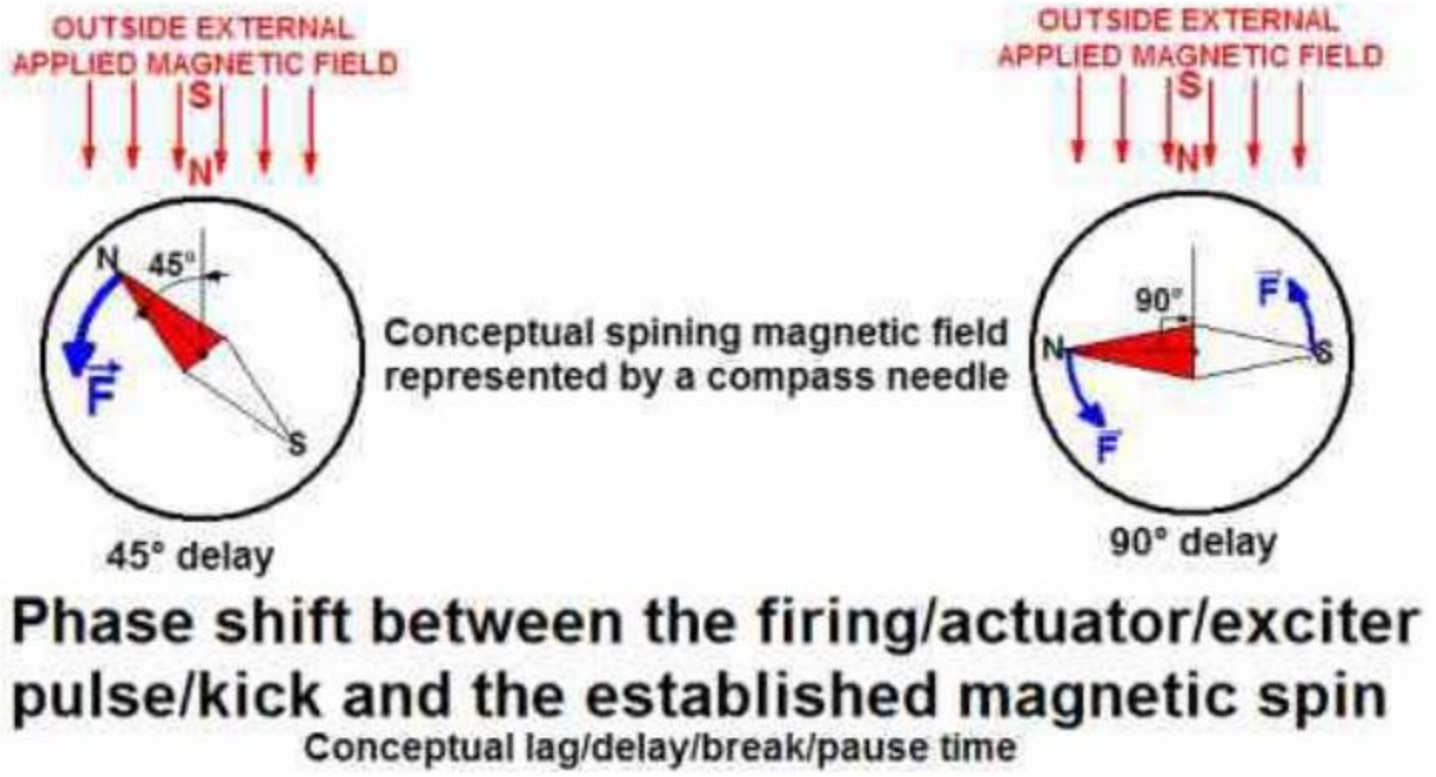
And then take the 2 outputs of the astable and put them through a variable one shot circuit, so the final signals will look like this:



If we study the standard firing sequence for the standard Rodin Coil, and think it through, we should reach an interesting conclusion.

If the Rodin coil spins its created magnetic field, and it does as we will see in future experiments, then this spin will have inertia (because it has mass, remember?). This is a very important aspect. What does this mean? It means that the imposed firing frequency will interfere with the established spin frequency. Sometimes will have constructive interference, and other times will have destructive interference. This means at certain frequencies the two frequencies will be in tune, and at other will not. This will also give a beat frequency. All of these are very subtle and can be easily passed by. For simplicity reasons, let’s consider firing the coils at the fundamental frequency of the established magnetic field spin.

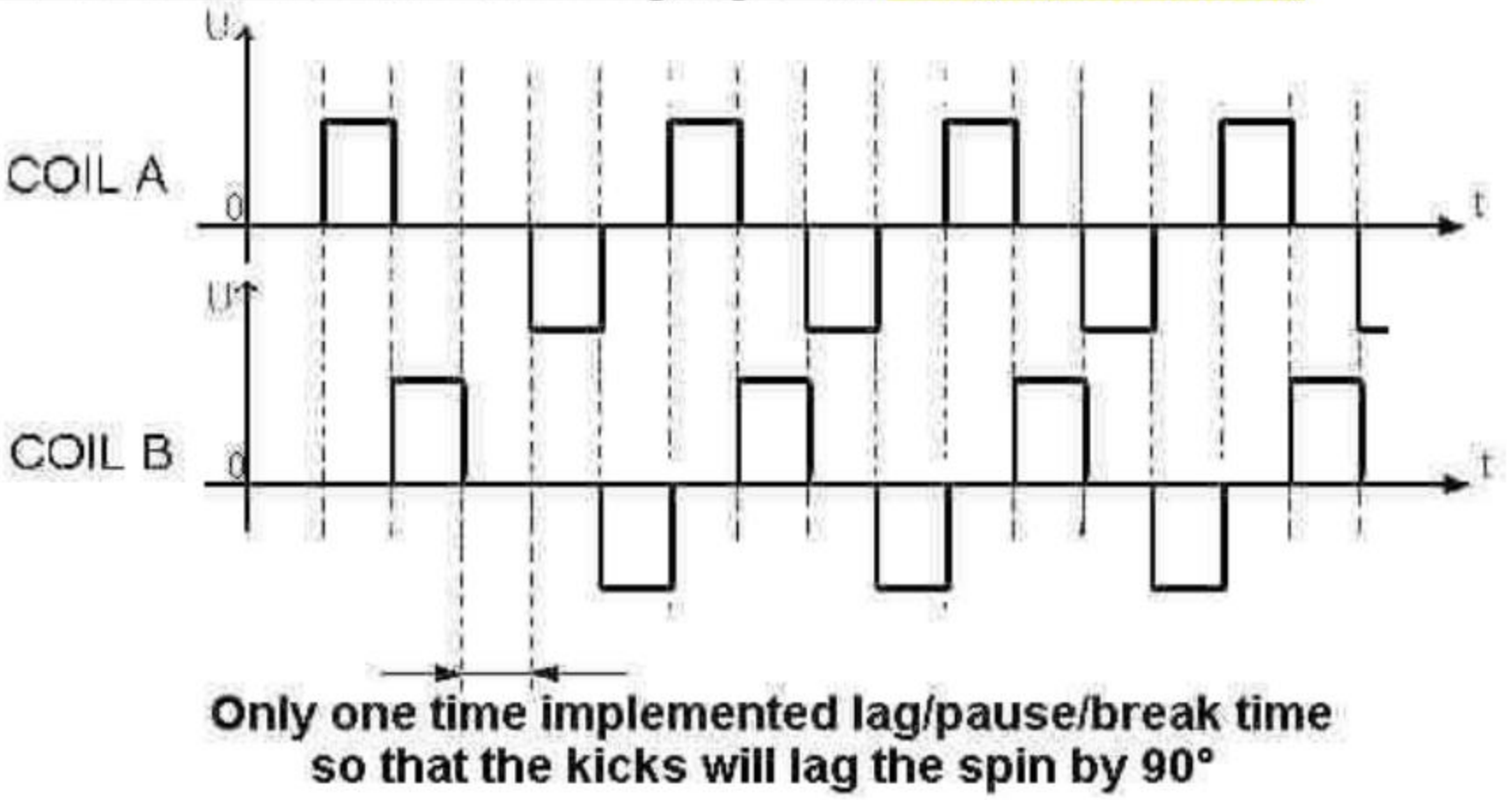
We know from the MEG study, the important 45° break/pause/delay between the spin and the firing/actuator/exciter pulse/kick. But think for a second, there is no reason why this delay shouldn’t be let’s say 90°! Even better than 45°, the 90° established phase shift between the spinning magnetic field and the actuator kicks will behave in a more efficient way because of the attracting and repulsive forces acting in tandem at the same time:



This lag/break/phase shift/transition time/pause/delay or whatever you want to call it, it is the actual reason behind the STAGE 3 in the Rodin coil firing sequence when all coils are completely off. It doesn't start with stage 3, the firing sequence starts by hitting let's say in one direction, then the other 90° offset, and then you are off, so that a 90° lag will be formed between the established spin(from the two previous stages) and the next following pulses.

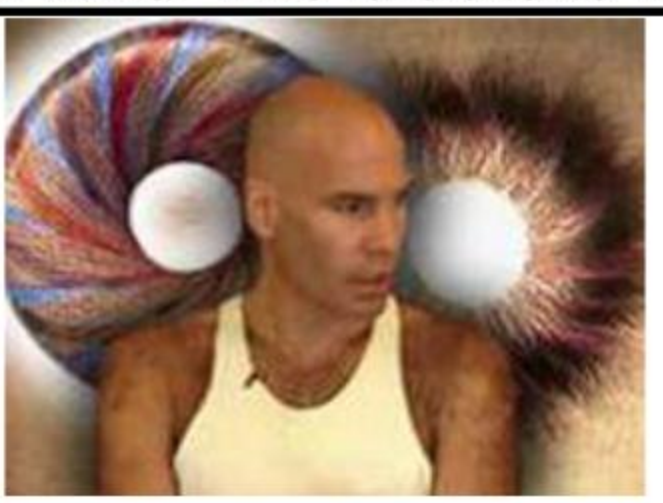
This will mean that this lag/break/phase shift/transition time/pause/delay or whatever you want to call it, will have to happen only once! Then you don't have it no more!

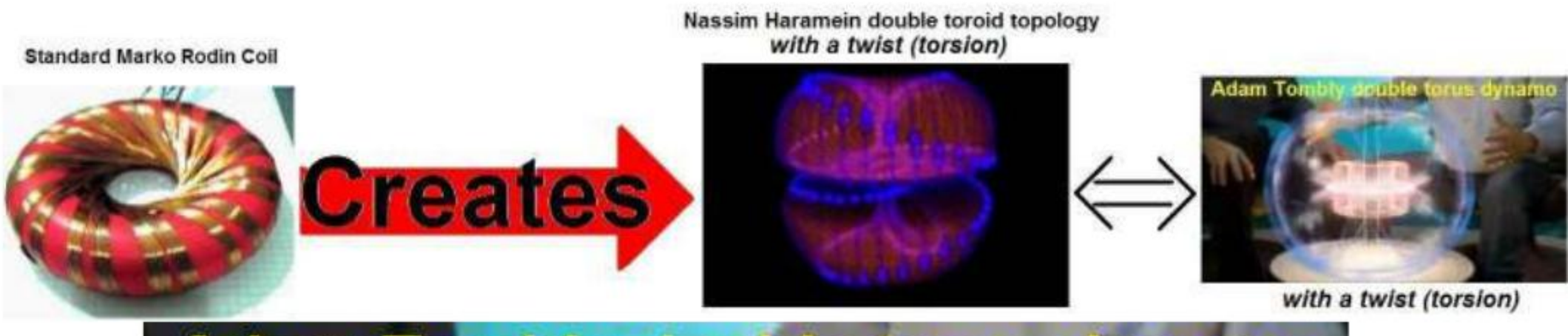
A hybrid variant of the Rodin coil firing sequence: (*Firing sequence version 4)*



If these pulses were sine-waves then they will be 90° phase shifted, but since we can't implement such a phase shift with pulsed direct current (PDC) sequential pulses will have to suffice.

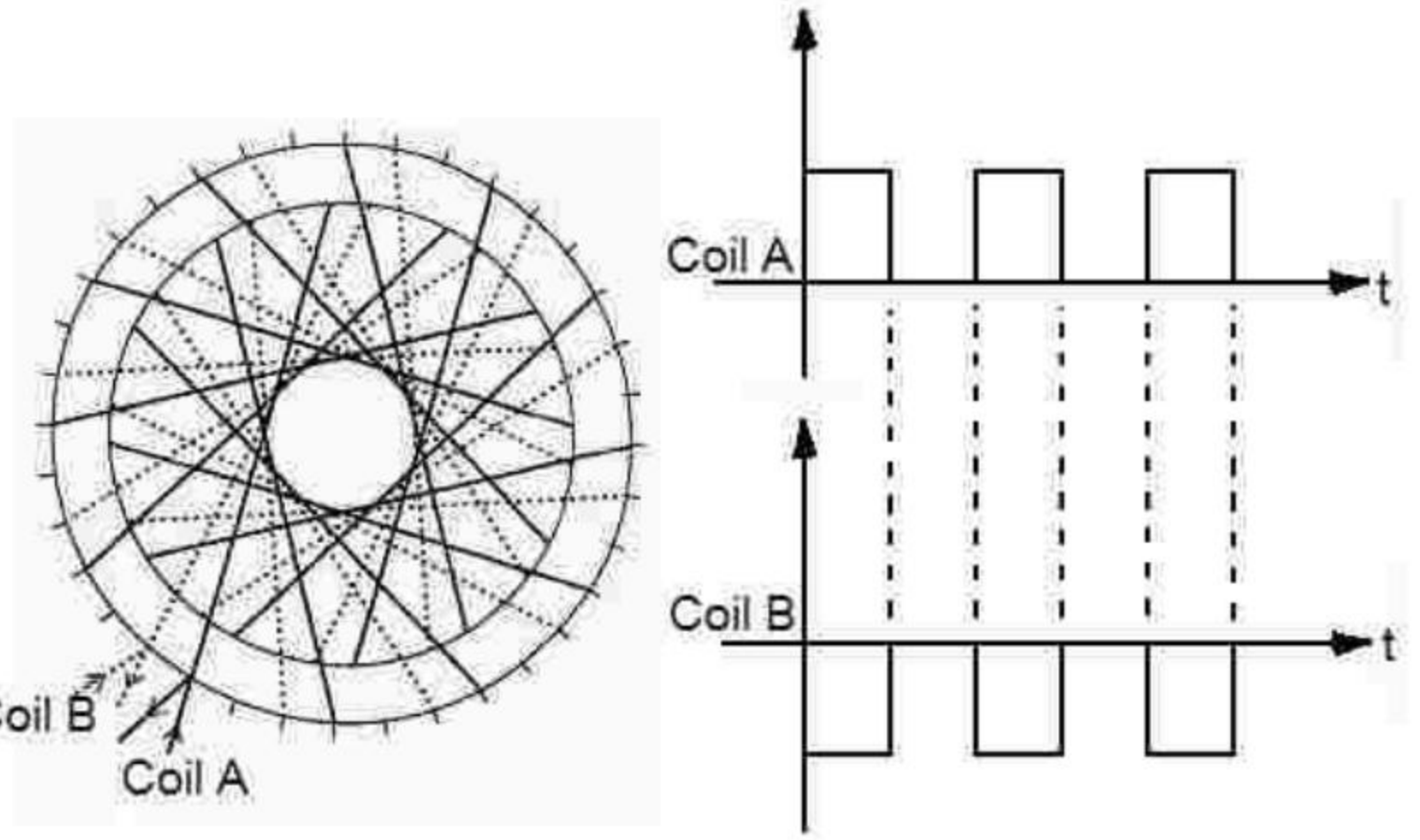
The Rodin coil and the double torus topology







This only happens when we create a “shear” between the two coils standard Rodin coils, by driving them with a non-standard firing sequence, consisting of two opposite currents like so:

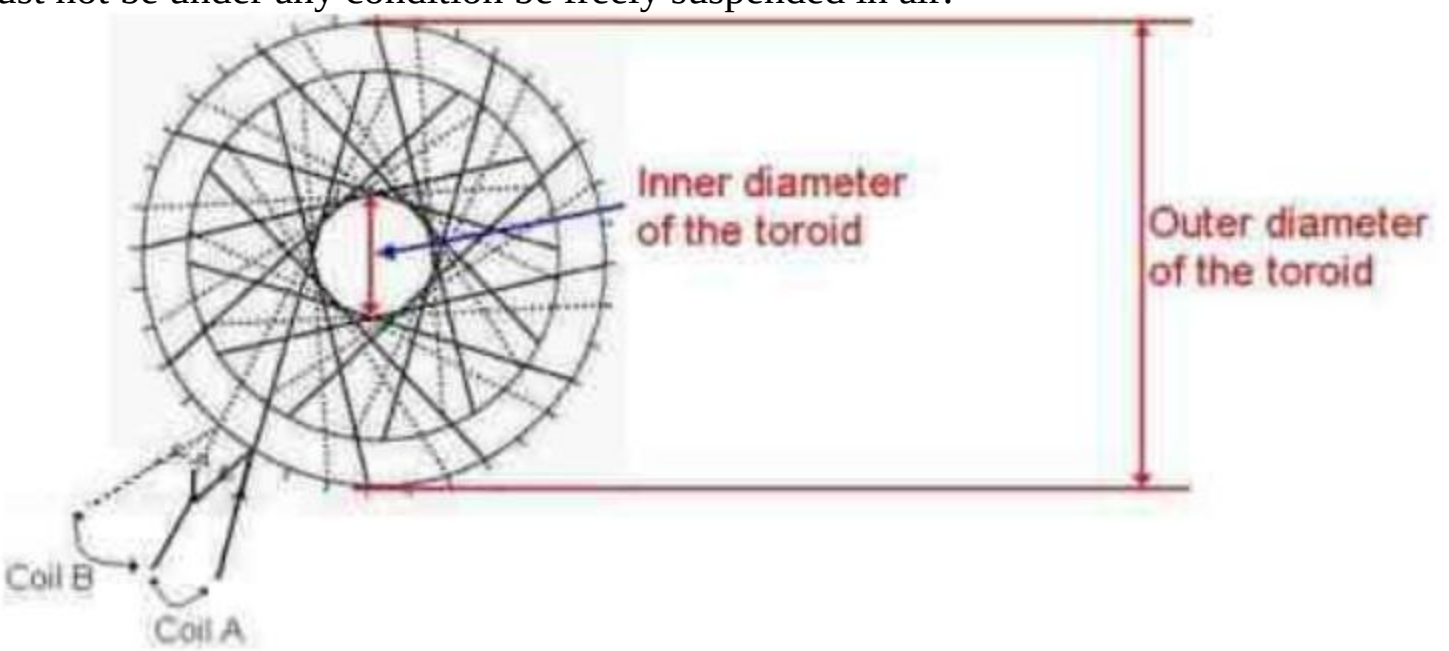


The field configuration for one standard Rodin coil is difficult to visualize, nevertheless for two running in opposition, but after some brain squeezing, 3D mental imagination and over-burning your third eye chakra by applying right hand rule along the Rodin wires, you will come to realize that indeed the field configuration is exactly like Nassim Haramein double torus and Adam Trombly double toroid dynamo

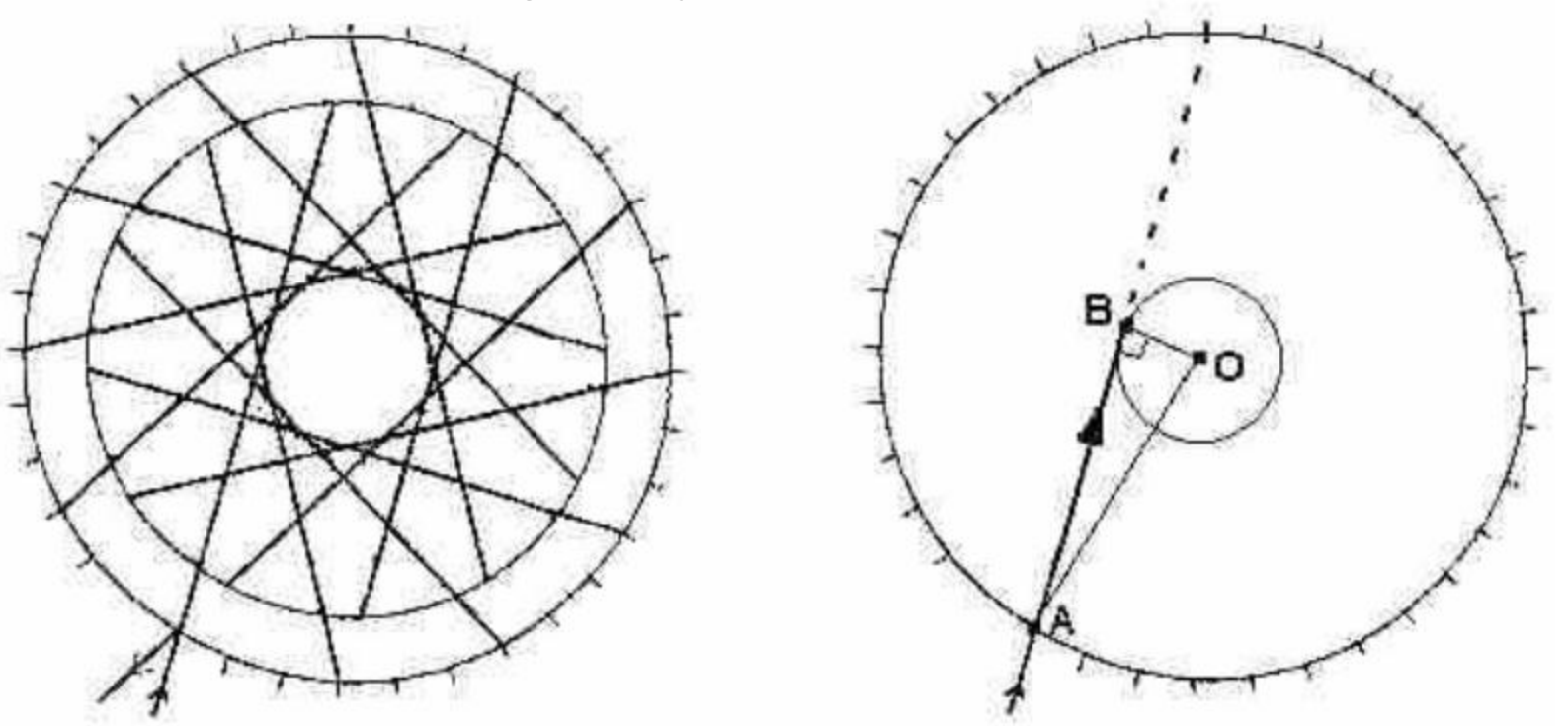
The magnetic field always follows the wires at 90° in respect to them, so the Marko Rodin standard coil magnetic field configuration is exactly like the non-standard “to the right” Rodin winding.

An additional insight is the extremely crucial winding detail regarding the inner laying down the wires. It is imperative the wires at the center don’t get mixed and jumbled together, because otherwise the twelve equatorial magnetic flux vectors going in/out will not form! In order to achieve an ordering and neatly lay down the wires, first

they must **always be on the surface of the toroid.** I repeat. It is imperative that the wires are always laid down on the surface of the toroid. Especially at the center, where all the magic happens. They must not be under any condition be freely suspended in air.

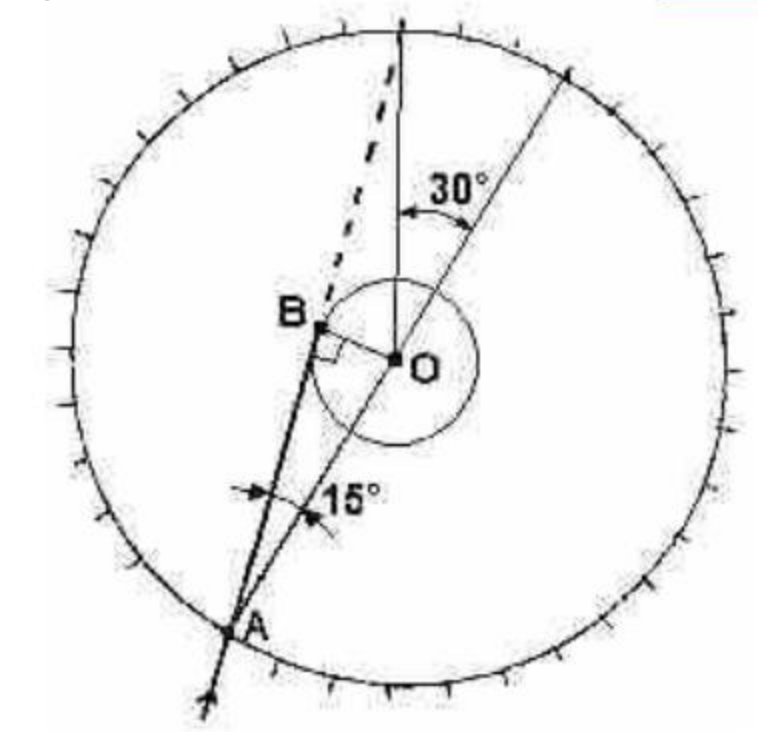


To achieve this, we must do some trigonometry lessons:

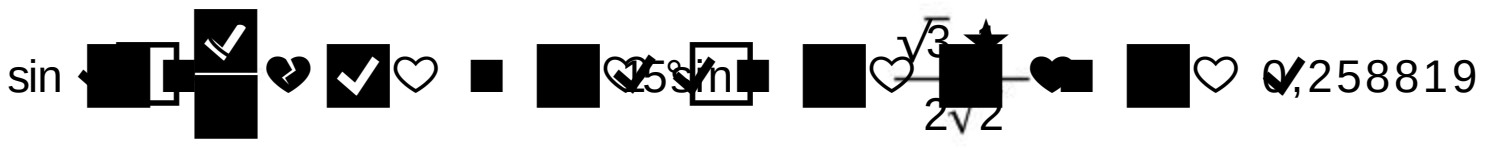


In the above drawing we will start as if we know the outer radius of the torus(AO) and we must set our goal to determine the exact inner center radius (BO). This segment can be determined from the right angle triangle ABO.

First we must determine the angle A. It can be determined from the Inscribed angle theorem:



Then we apply a simple trigonometric function in our triangle ABO and we get:



We have determined exactly what we wanted. **If we know the inner circle, then we divide it by 0,259 and we get the outer radius of a perfect Rodin torus**. Or if we know the outer diameter(radius) we can determine what the inner radius should be by multiplying with 0,259 so that the wires are not suspended in air in the center, and are neatly ***laid down on the surface*** of the torus always and ever.

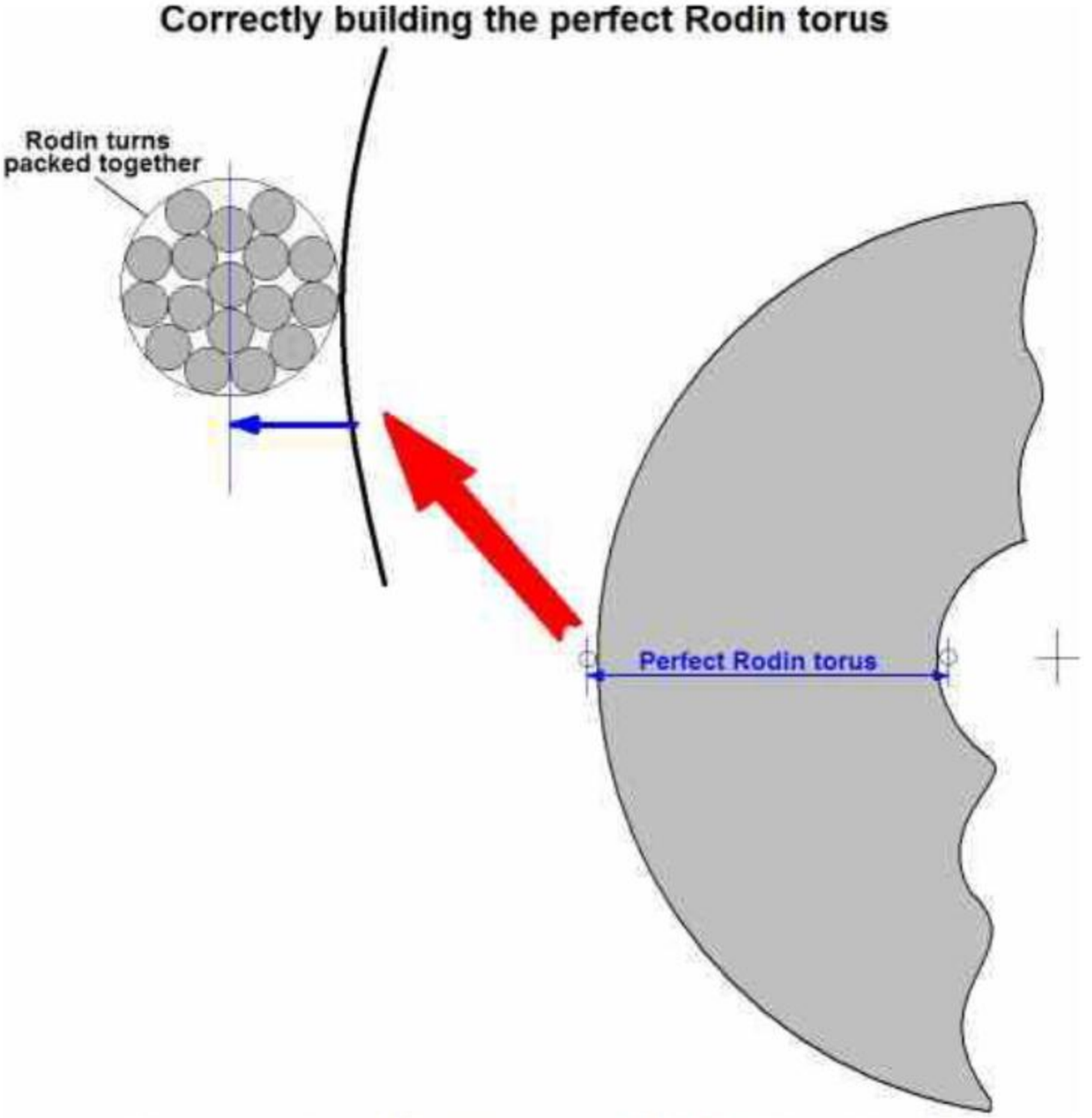
-How does this help us in practical applications? How can this be put into practice?

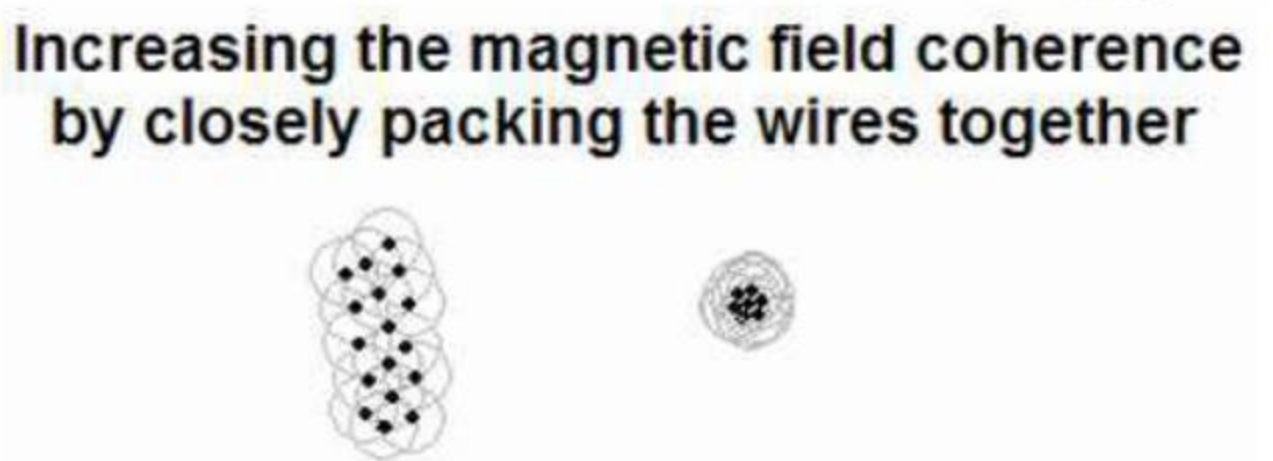
-Simple. You don't have to create a torus from scratch to satisfy this condition. It is sufficient to modify the torus that you have. You lower the inner radius, or increase the outer one, to satisfy this condition. This can be done by adding layers of paper along the inner circumference or on the outside, depending on the case. You can use thick electrical tape, silicon adhesive, window insulation kit or whatever you find accessible to you, as long as your torus cross-section always remains a circle.

Also make sure that you take into account the inner diameter to be larger than the formula dictates to accommodate for the winding. We don't seek that the wires inside the hole to be situated on the surface dictated by the rigid formula above. You must account for the total diameter of the bunch of wires for one winding. So for example if you are using 20 full turns... We will consider ***a full turn to be a complete winding of the 12 poles***, meaning the pole where you start, and when you have reached again at this pole we will call it a full turn. If you like consider ***a full Rodin turn = 12*small Rodin turns***. Whatever makes you feel comfortable.



So let's say you have 20 full Rodin turns and by applying the Koebe–Andreev–Thurston theorem (sounds fancy, doesn't it?) or in other words a hexagonal lattice of the bee's honeycomb packaging method (theoretical minimum packaging diameter allowed for a bunch of wires) you will end up with let's say 4 mm total diameter of one winding created from all these 20 full Rodin turns. It sounds complex, but it's not. Complex is when you are dealing with spherical packaging. So let's be thankful that we are dealing only with circles and a plane. It is a simple hexagonal cylinder packing problem. OK, now, you start by accurately calculating the inner radius and the outer radius, then you make the inner radius 2 mm bigger (so that the center of the total bunch of 20 wires sits nice on the perfect inner surface/inner radius calculated previously)





The turns in a coils, must be closely packed together because we want the field to be more coherent and uniform around all the bunch of wires.

Packing Rodin turns together around the inner hole circumference of a perfect Rodin torus

Circles in circles

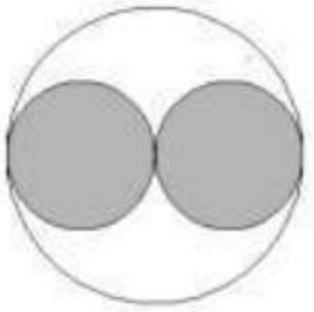
The following pictures show n unit circles packed inside the smallest known circle (of radius r).

1.



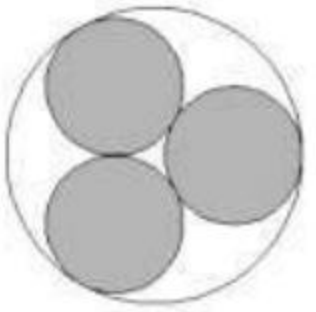
r = 1
Trivial.

2.



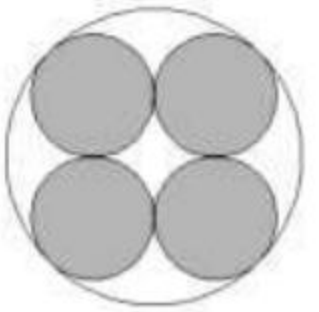
r = 2
Trivial.

3.



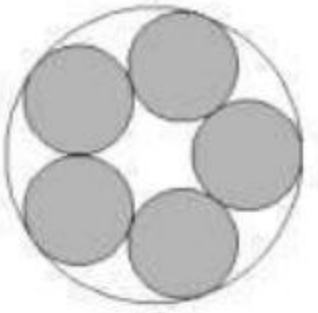
r = 1 + 2 / √3 = 2.154+
Trivial.

4.



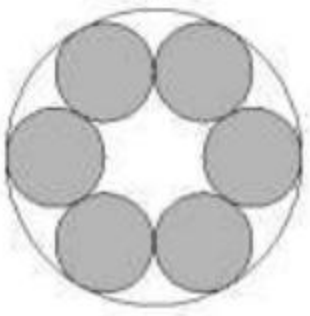
r = 1 + √2 = 2.414+
Trivial.

5.



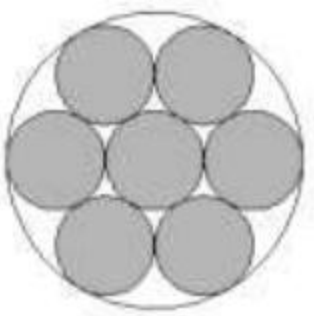
r = 2.701+
Proved by Graham in 1968.

6.



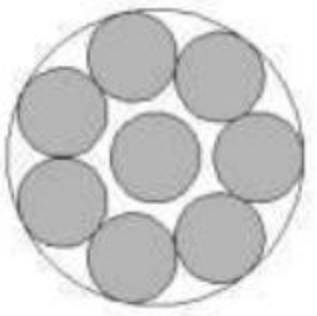
r = 3
Proved by Graham in 1968.

7.



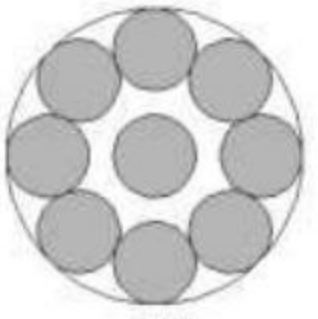
r = 3
Proved by Graham in 1968.

8.



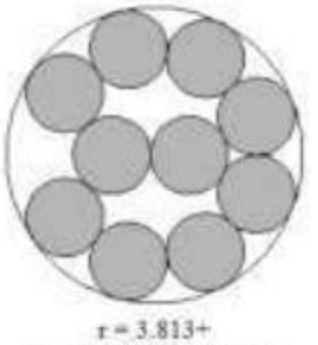
r = 3.304+
Proved by Braaksma in 1963.

9.



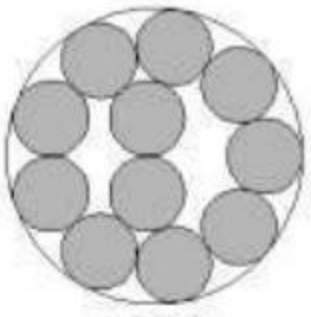
r = 3.613+
Proved by Pirl in 1969.

10.



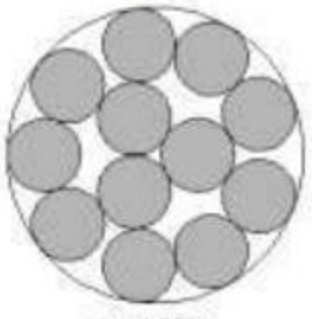
r = 3.813+
Proved by Pirl in 1969.

11.



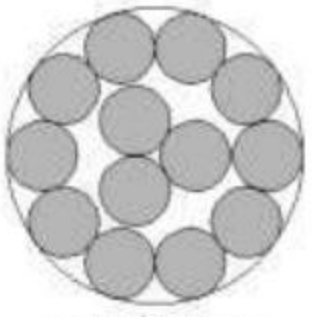
r = 3.923+
Proved by Melissen in 1994.

12.



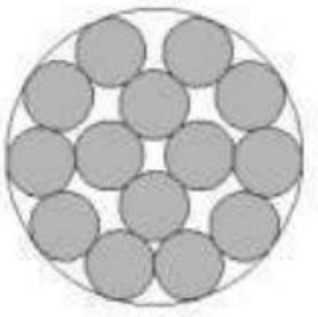
r = 4.029+
Found by Kravitz in 1967.

13.



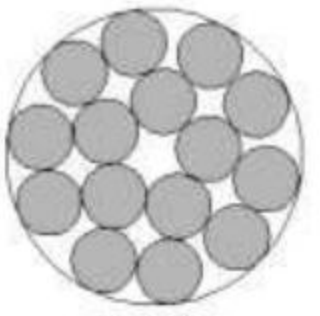
r = 2 + √5 = 4.236+
Found by Kravitz in 1967.

14.



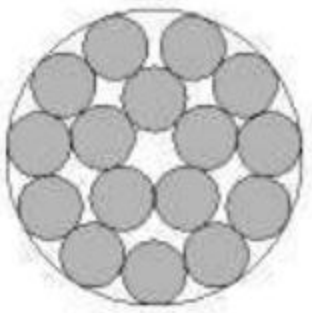
r = 4.328+
Found by Goldberg in 1971.

15.



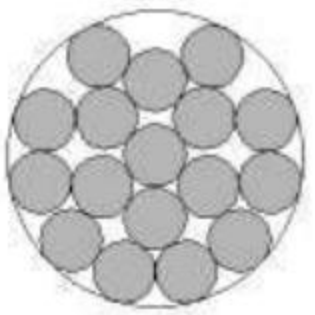
r = 4.521+
Found by Kravitz in 1967.

16.



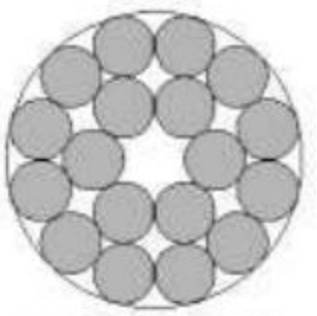
r = 4.615+
Found by Goldberg in 1971.

17.



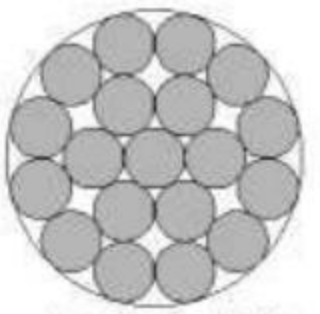
r = 4.792+
Found by Reis in 1975.

18.



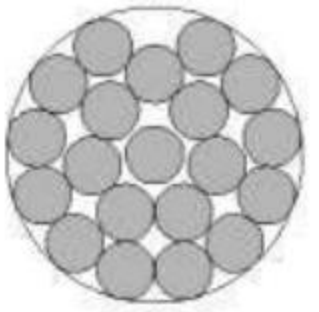
r = 1 + √2 + √6 = 4.863+
Found by Kravitz in 1967.

19.



r = 1 + √2 + √6 = 4.863+
Found by Kravitz in 1967.

20.



r = 5.122+
Found by Goldberg in 1971.

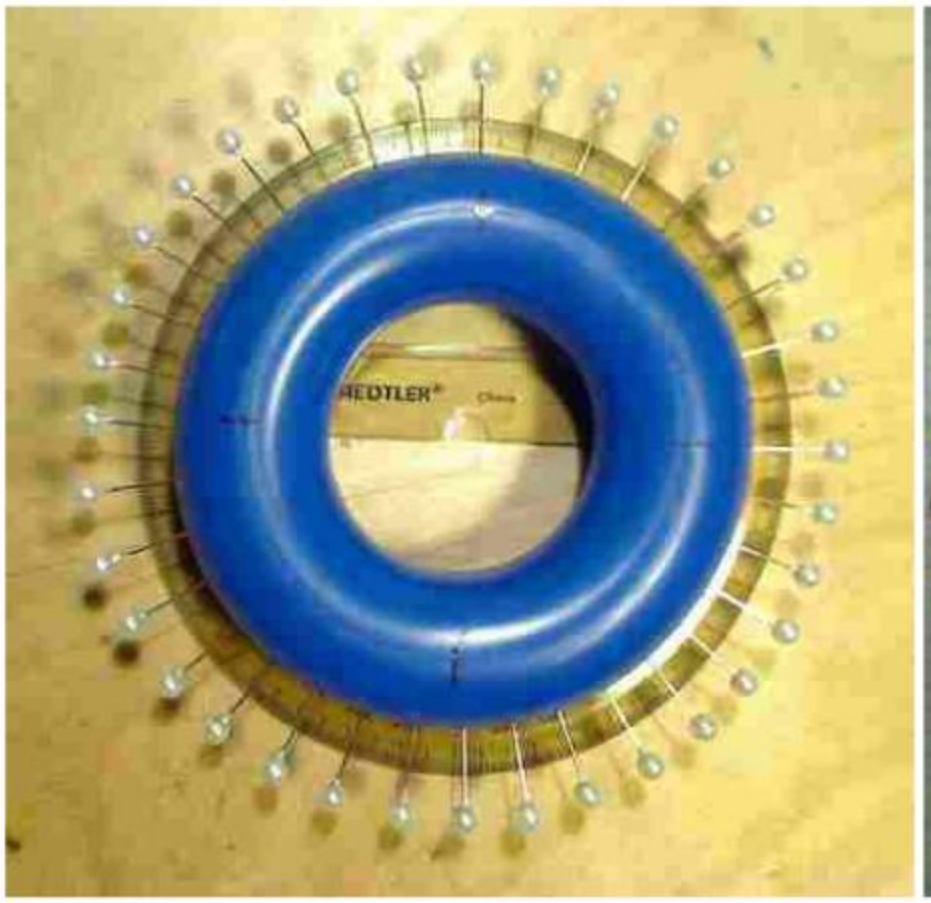
The best way to accurately determine how thick a bunch of wires will be is to follow this link, and for example if you have a 0.5mm thick wire and 15 turns then your total minimum radius occupied by the wires packed together will be 0.5*4.521=2.2605mm.

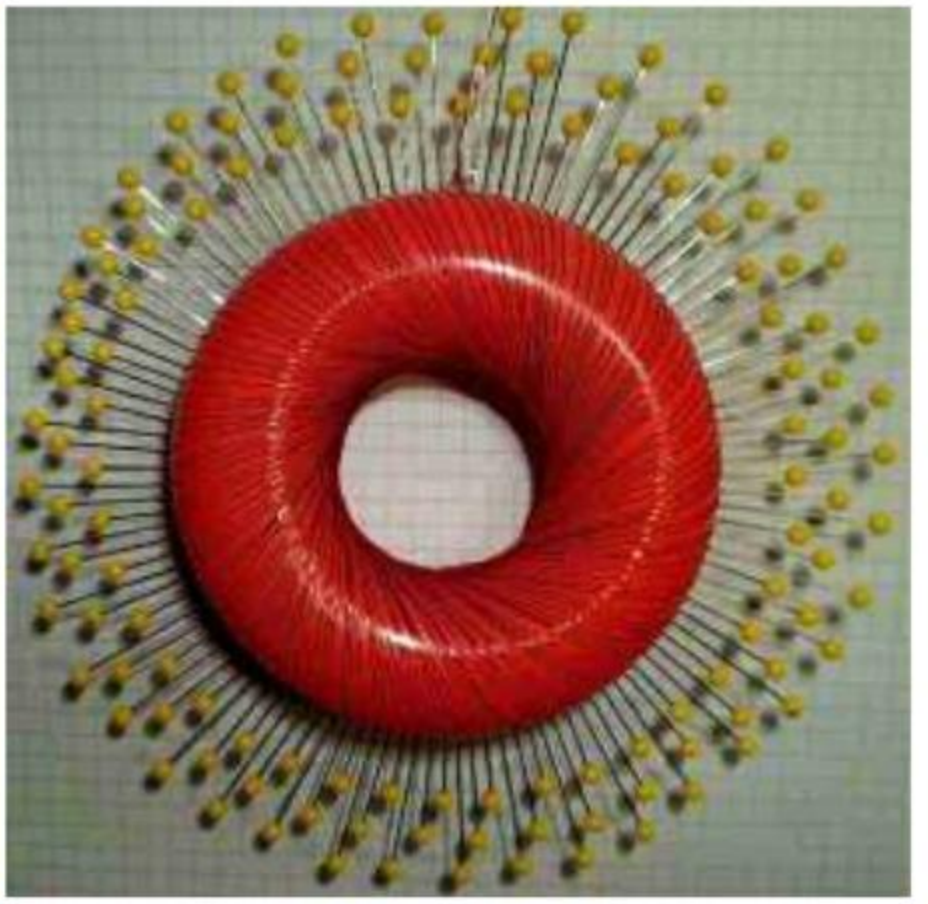
N	ratio	N	ratio	N	ratio	N	ratio
1	1	50	7,9475153	99	11,033141	148	13,386939
2	2	51	8,027507	100	11,08215	149	13,435549
3	2,1547005	52	8,0847172	101	11,146934	150	13,460806
4	2,4142136	53	8,1795828	102	11,196863	151	13,476192
5	2,7013016	54	8,2039824	103	11,265144	152	13,531758
6	3	55	8,2111026	104	11,317659	153	13,591537
7	3	56	8,3835299	105	11,36266	154	13,637419

8	3,3047649	57	8,4471847	106	11,421834	155	13,673709
9	3,6131259	58	8,5245538	107	11,472052	156	13,7196
10	3,8130256	59	8,5925	108	11,524016	157	13,772992
11	3,9238044	60	8,6462198	109	11,562119	158	13,823226
12	4,0296019	61	8,6612976	110	11,616862	159	13,864194
13	4,236068	62	8,8297654	111	11,662811	160	13,920539
14	4,3284286	63	8,8923515	112	11,705275	161	13,9694
15	4,521357	64	8,9619711	113	11,747528	162	14,011329
16	4,6154256	65	9,0173973	114	11,795173	163	14,06962
17	4,7920337	66	9,0962794	115	11,839474	164	14,1107
18	4,8637033	67	9,1689719	116	11,896705	165	14,144339
19	4,8637033	68	9,2297737	117	11,943476	166	14,185678
20	5,1223207	69	9,2697613	118	11,985551	167	14,220394
21	5,2523175	70	9,3456532	119	12,042334	168	14,259536
22	5,439719	71	9,4157969	120	12,085212	169	14,295358
23	5,5452042	72	9,4738909	121	12,124803	170	14,33155
24	5,6516611	73	9,5403462	122	12,204375	171	14,367661
25	5,7528243	74	9,5892328	123	12,2764	172	14,416776
26	5,8281765	75	9,6720296	124	12,321708	173	14,451341
27	5,9063978	76	9,7295968	125	12,368225	174	14,492849
28	6,0149381	77	9,7989119	126	12,417464	175	14,536541
29	6,1385979	78	9,8577099	127	12,46155	176	14,574136
30	6,1977411	79	9,9050635	128	12,50231	177	14,617194
31	6,2915026	80	9,9681518	129	12,553718	178	14,658911
32	6,429463	81	10,010864	130	12,602319	179	14,702293
33	6,4867031	82	10,050824	131	12,64962	180	14,742878
34	6,6109571	83	10,116858	132	12,687437	181	14,78083
35	6,6971711	84	10,149531	133	12,735273	182	14,818931
36	6,7467538	85	10,163111	134	12,771446	183	14,869399
37	6,7587705	86	10,298701	135	12,814255	184	14,905473
38	6,961887	87	10,363209	136	12,86576	185	14,938145
39	7,0578842	88	10,432338	137	12,914725	186	14,961186
40	7,1238464	89	10,500492	138	12,962703	187	14,98927
41	7,2600123	90	10,546069	139	13,008987	188	15,028785
42	7,3467964	91	10,566772	140	13,061097	189	15,069681
43	7,4199449	92	10,684646	141	13,107255	190	15,103602
44	7,4980367	93	10,733353	142	13,146412	191	15,142358
45	7,5729123	94	10,778032	143	13,197401	192	15,169435
46	7,6501799	95	10,840205	144	13,247789	193	15,199374
47	7,7241701	96	10,883203	145	13,276669	194	15,249754
48	7,7912714	97	10,93859	146	13,331234	195	15,287172
49	7,886871	98	10,979383	147	13,357112	196	15,32308

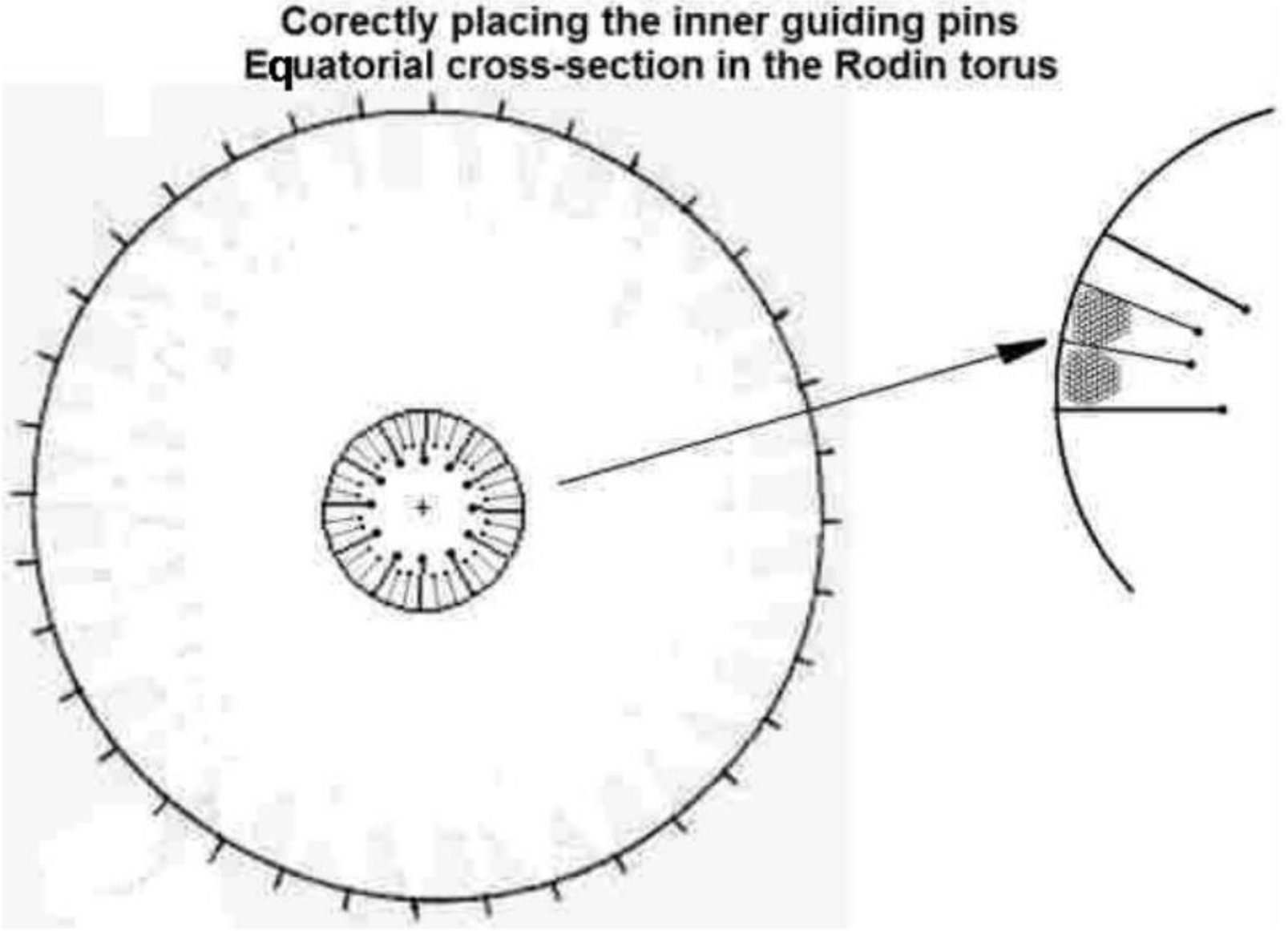
You multiply your wire diameter by the radius given in the table. How can I put this in much more simpler terms than this?

Then the second important aspect of inner order of the Rodin coil, is to place pins in the inside, not on the outside!





Jesus! So many pins...we will soon run out of pins if we continue on these lines. When will these Rodin coil builders realize that is not the outside arrangement of the windings as important as is the inner arrangement? When?

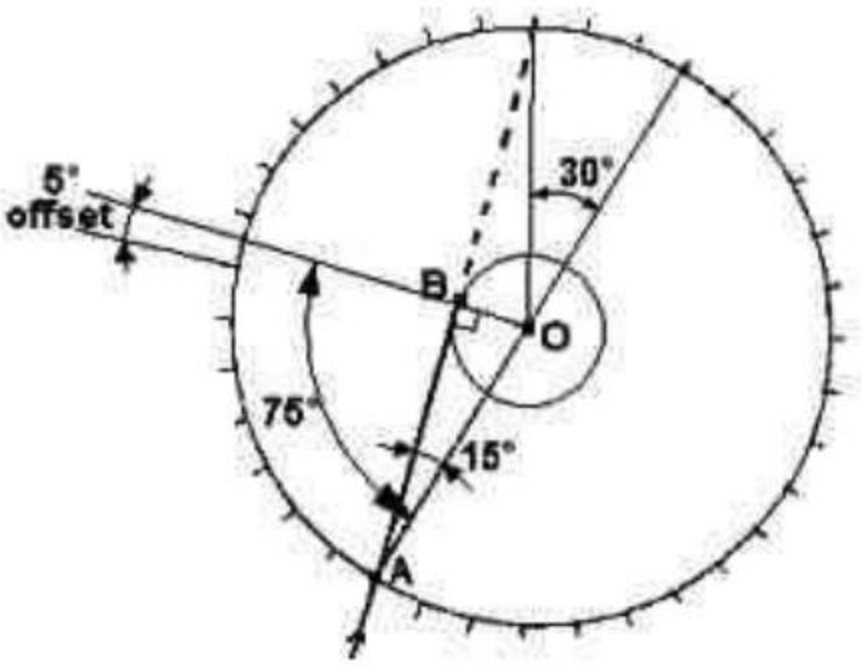


This is why we need a perfect torus like described above, so that the wires going through the hole will ***always sit on the surface*** of the torus.

When you look at the above picture, you might say, that it is incorrect.

Why? I may ask. Wait! Don't tell me. I know....

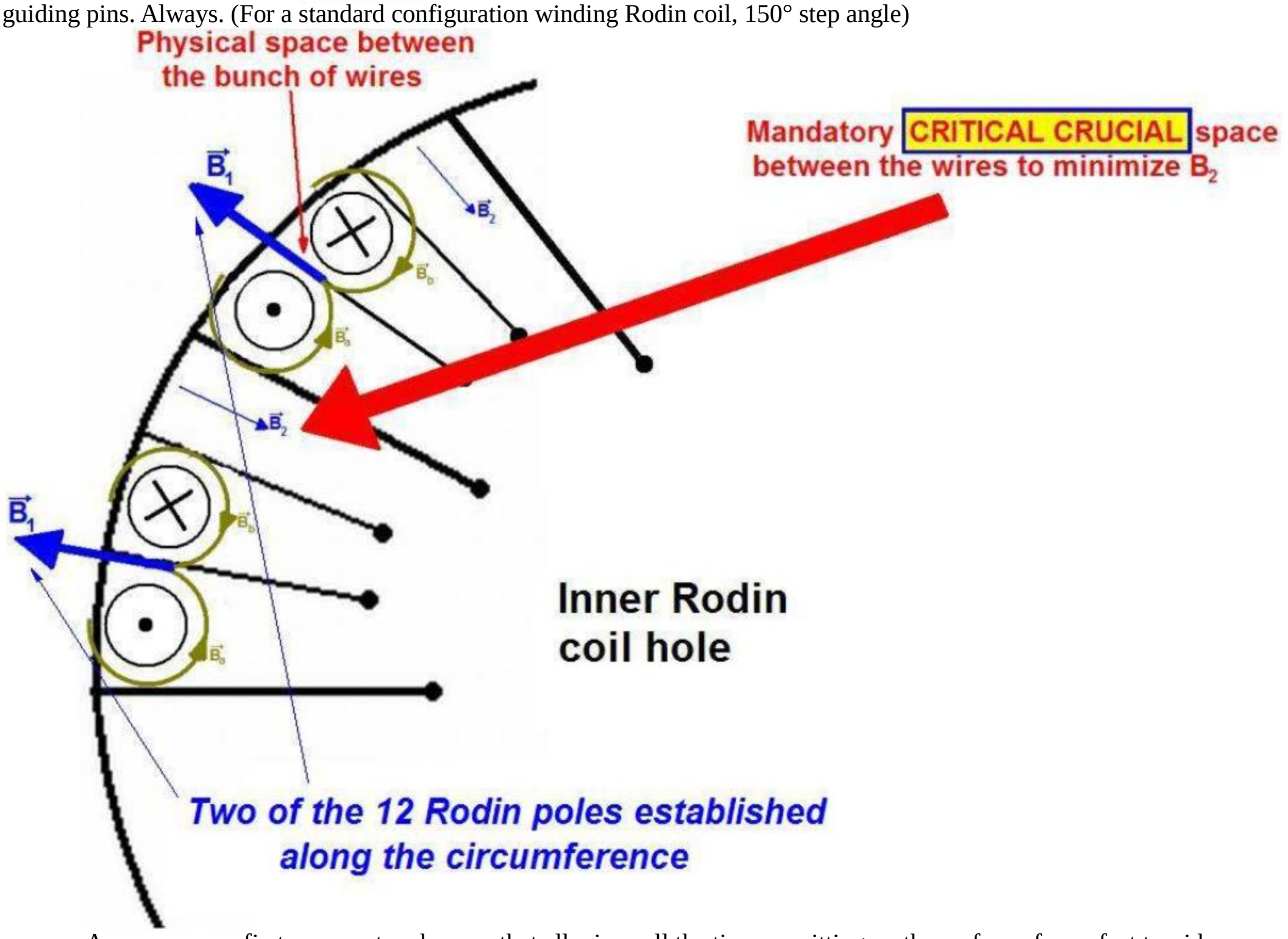
Let's analyze again our ABO right angle triangle in the equatorial cross-section plane of a Rodin donut torus:



The problem is that the inner guiding pins are not on the same lines as the outer pins. The reason is because our ABO triangle has the right angle at point B, and not point O as we might be tempted to think. Therefore the line BO will not be on the same lines as the outer guiding pins. It has an angle that can be determined using elementary trigonometry.

✔ ■□■ ✔ 180° ♡ 90° ♡ 15° ✔ 75°

So, either you wind from an outside guiding pin to another outside guiding pin (pin to pin) or you lay down the wires between the pins, there ***will always*** and must always be a 5° offset between the inner guiding pins and outer guiding pins. Always. (For a standard configuration winding Rodin coil, 150° step angle)



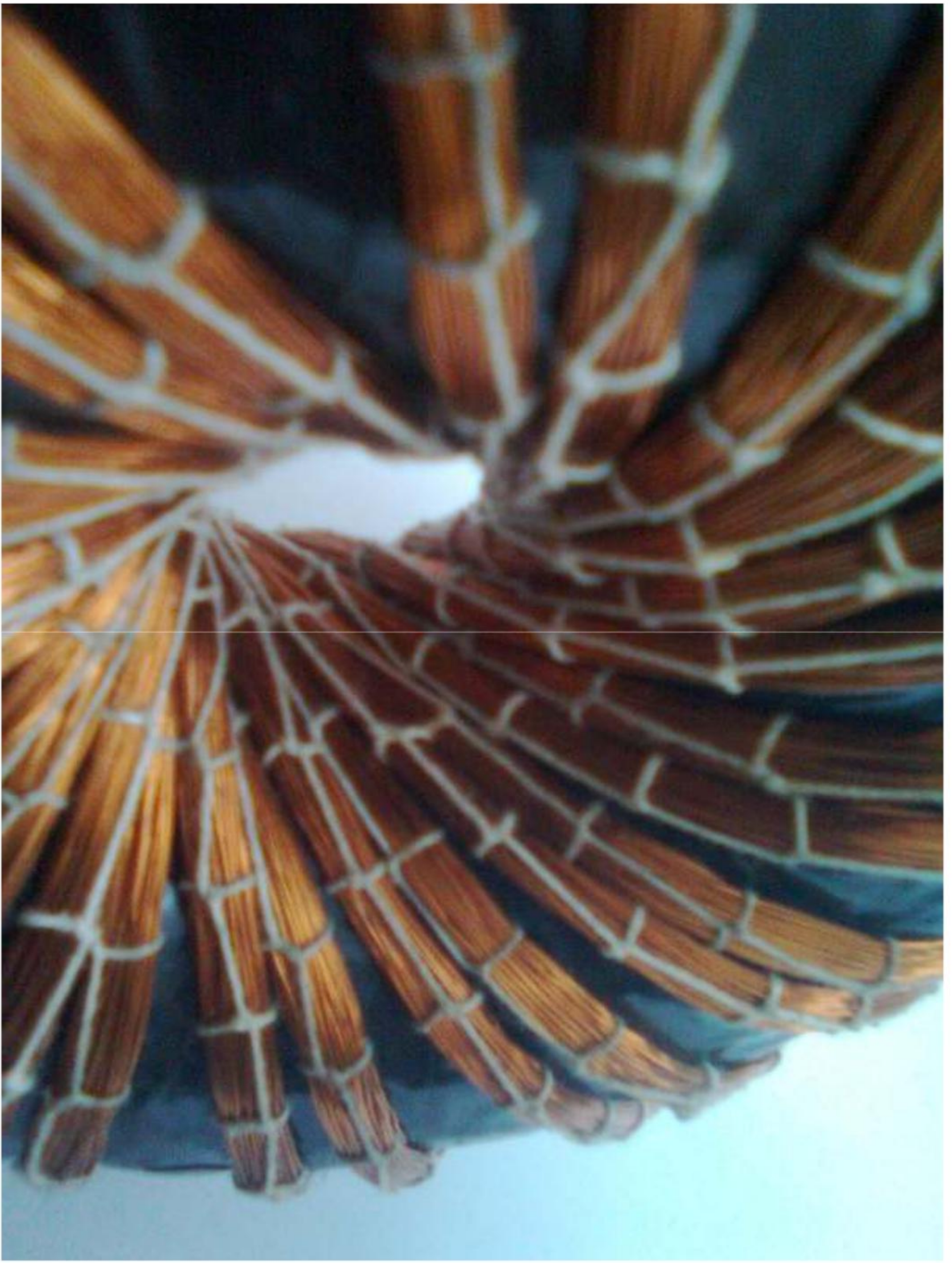
As we can see, first, we must make sure that all wires, all the time are sitting on the surface of a perfect toroid. Second, place guiding pins inside the hole of the torus, not to mingle the wires together. Third make absolutely sure, that there is the mandatory crucial critical empty space between the wires (band 3 no-winding). This is imperative! It is crucial! It is extremely important! What's the point in respecting this empty space on the outside if in the inside hole, all wires are mingled together? This is insane! This is no Rodin Coil! This will not work! Forget about it! If you don't create and respect the empty space between the wires in the inner hole of a Rodin Coil, you have nothing! No Rodin Coil, No nothing! Nothing! If you don't create this space, forget about it! You're lost! You have nothing! It is

imperative, crucial and critical to implement this empty space between the wires! Crucial! If you don't put this in your head, then you can forget everything about Rodin coils! Nothing matters the most, as this critical empty space between the wires, that must be extremely neatly arranged in the inside. Forget the outside! The outside arrangement is not as important as the inside! If you haven't clearly delimited the wires correctly, then you have nothing. Junk, that's what it is. Useless. Piece of crap. This space is crucial in designing the Rodin Coil, and yet I haven't seen anywhere on the web this to be underlined! Nowhere! Where are all these people thinking? Where is their head? Where is their mind? This critical empty gap between the wires is not very, is extremely important in minimizing the return flux path created by the wires. We need the flux vectors on the equatorial plane between the double torus, to flow in between the wires. We don't want them to quickly return around the wire! Don't you see? It is imperative to respect this, otherwise you have created nothing!

If you correctly visualize the magnetic flux vectors created by the two Rodin coils running in opposition, you will immediately see another crucial/critical purpose for this third band empty space. You will see that always if the equatorial magnetic flux vectors are going away from the center, then moving away from the equator the flux vectors will always point to the inside of the torus. When you will correctly visualize this, then you will immediately jump to the conclusion of a magnetic monopole. But hold your thoughts a little longer, because appearances can be miss-leading. Don't quickly jump to the conclusion that the Rodin Coil creates magnetic monopole, as others did. This is wrong. Rodin Coil has nothing to do with monopoles. Fine, if you don't agree, then just like I did, over-burn you third eye chakra in imagining the real actual magnetic field created by the Rodin Coil. Then we will continue our conversation, and see who is right.

So the **flux vectors will always point to the inside of the material of the torus, regardless where you are on the surface (for this particular firing method)**. Now it is ***imperative*** to ask yourself: Wait a second if it goes inside the material of the torus, then it must come out, doesn't it? Where does it come out to close itself? It comes out through this empty 3 band with no wire on it! Don't you see? Cut the vortex mathematics crap about the true meaning of this empty 693 invisible energy shit, and see it for what it really is! It provides a space for the return flux path of the magnetic "shear" created by the two coils fired in opposition. And keep in mind that all this is twisted! Maybe the most difficult thing you can imagine! I have to admit, I never was able and even now to completely see it in mind eye like Tesla when he imagined devices in great detail in his mind eye, but I can see it in pieces and fragments for short periods of time. By applying the symmetry argument to these imagined pieces you can pretty much figure out the entire picture/torus dynamics.

Using sewing string to keep the wires of each winding separated one from the other:



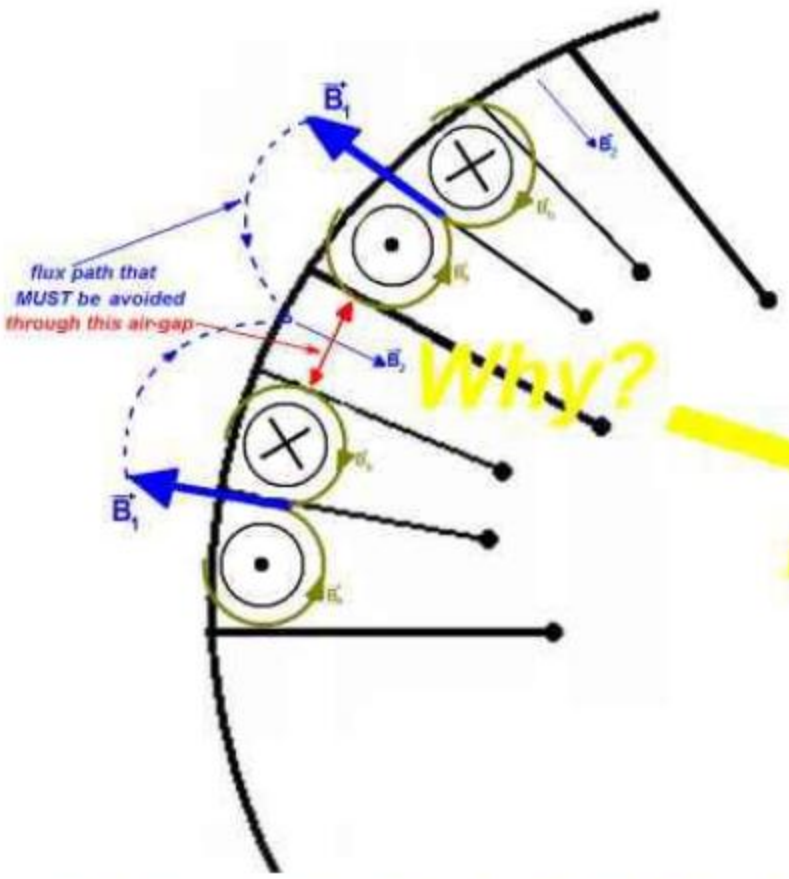
I know I was a little arrogant previously, but what you see in this picture is not the best of what I can do. I know I did a lot of fuss over the empty space between the wires at the center, but if I have to evaluate what I did in the previous picture, from a scale from 1 to 10, it barley makes it a 5.



Rodin Coil, Spira mirabilis and Jacob Bernoulli

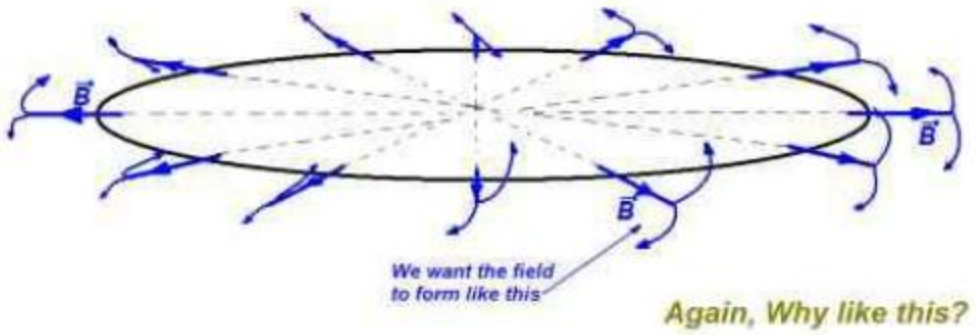
Spira mirabilis , Latin for "miraculous spiral", is another name for the logarithmic spiral - equiangular spiral. Although this curve had already been named by other mathematicians, the specific name ("miraculous" or "marvelous" spiral) was given to this curve by Jacob Bernoulli, because he was fascinated by one of its unique mathematical properties: the size of the spiral increases but its shape is unaltered with each successive curve, a property known as self-similarity. Possibly as a result of this unique property, the spira mirabilis has evolved in nature, appearing in certain growing forms such as nautilus shells and sunflower heads. Jakob Bernoulli wanted such a spiral engraved on his headstone along with the phrase "Eadem mutata resurgo" ("Although changed, I shall arise the same."), but, by error, an Archimedean spiral was placed there instead.

Cut from Wikipedia article *logarithmic spiral.*



Because

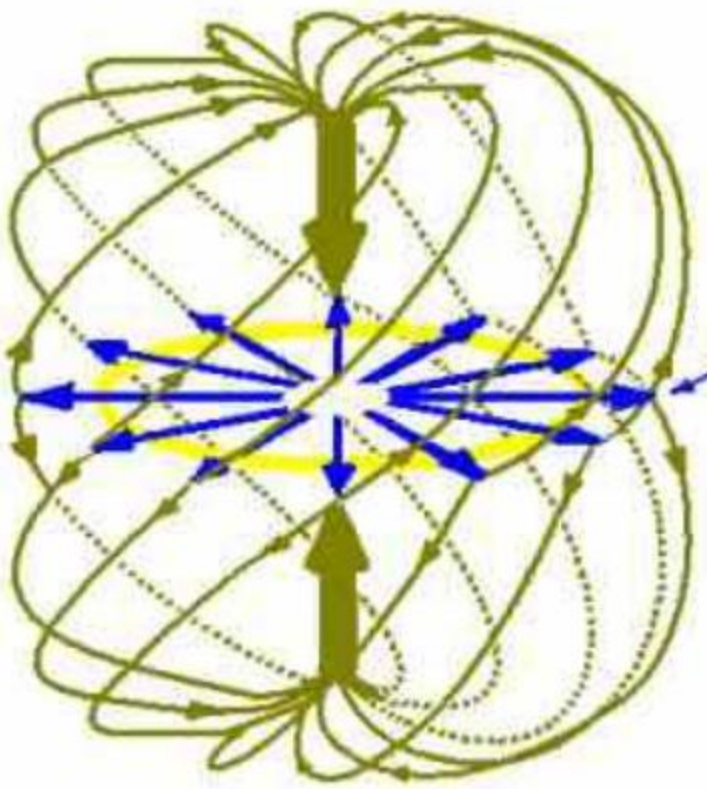
Perspective view of the ecuatorial plane flux vectors in a Rodin torus



Again, Why like this?

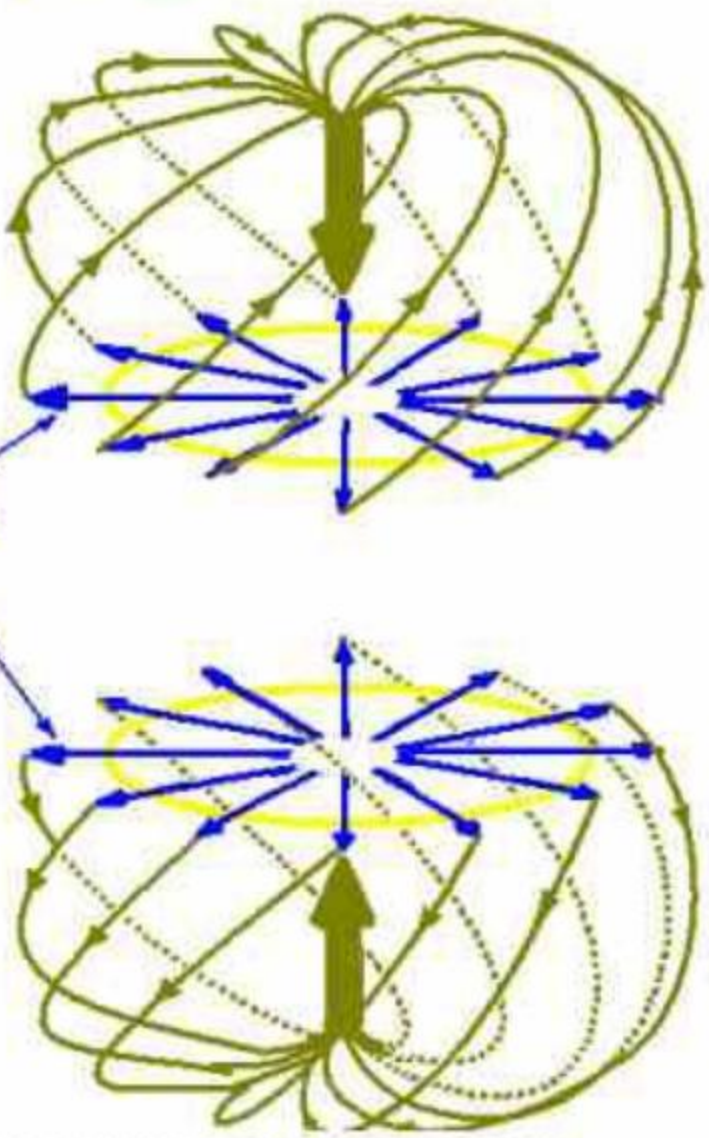
Standard 12 Rodin poles coil configuration

Because this field configuration will have to form



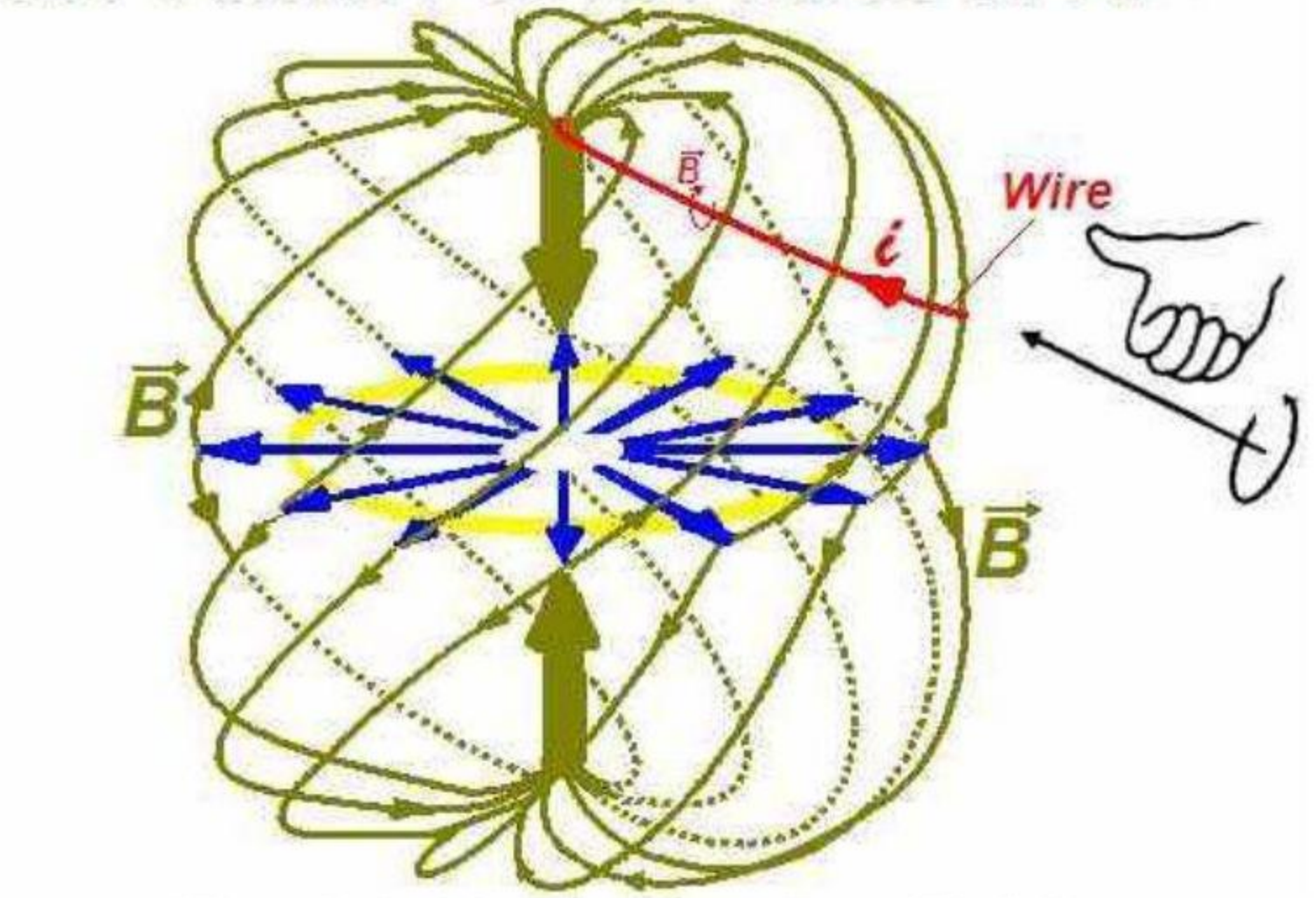
Rodin Field topology double torus torsion field

The 12 Rodin flux vector poles



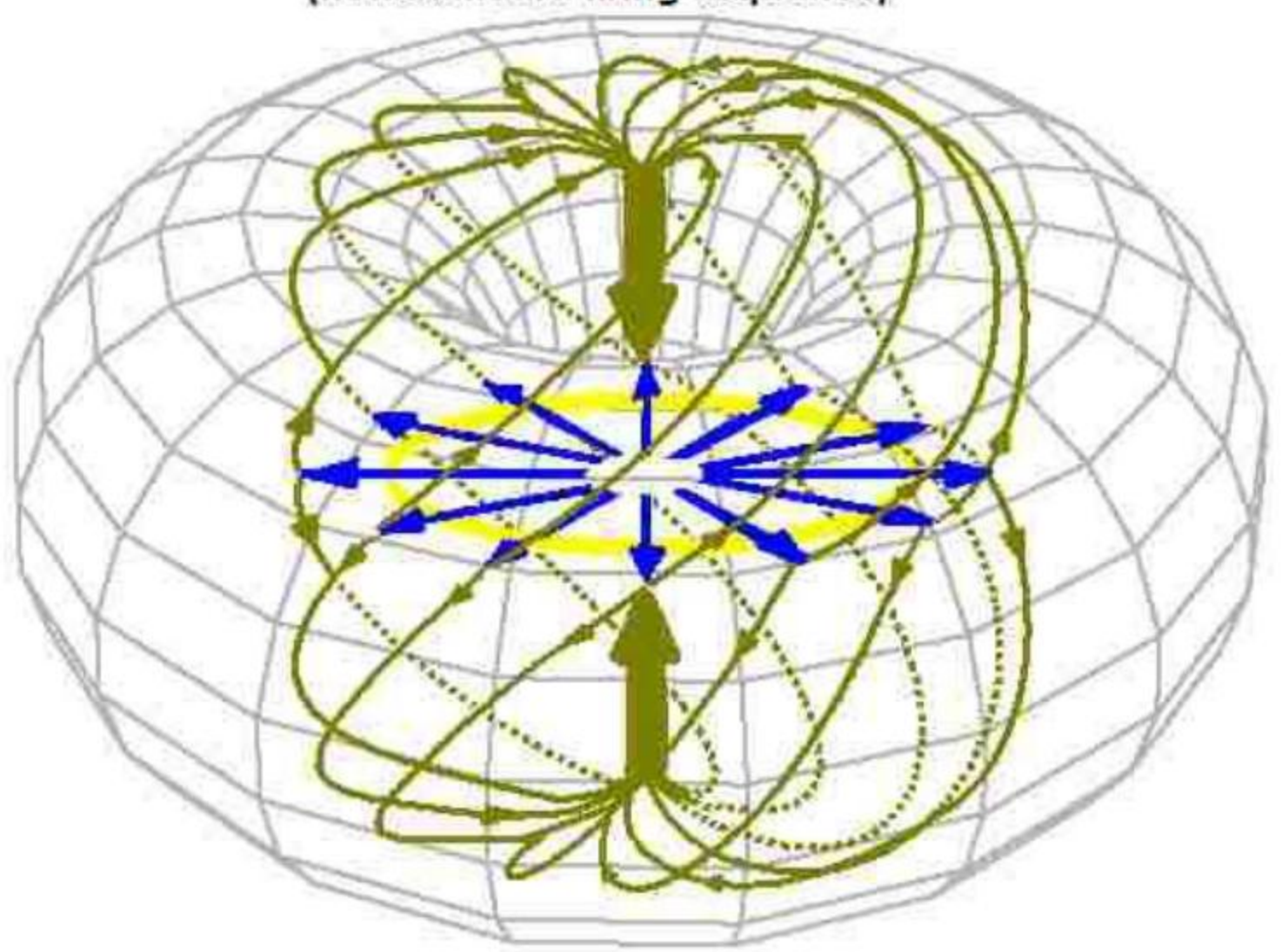
A segmented, more clear representation of the two torsion fields

Rodin field skims the surface of the wires at 90°



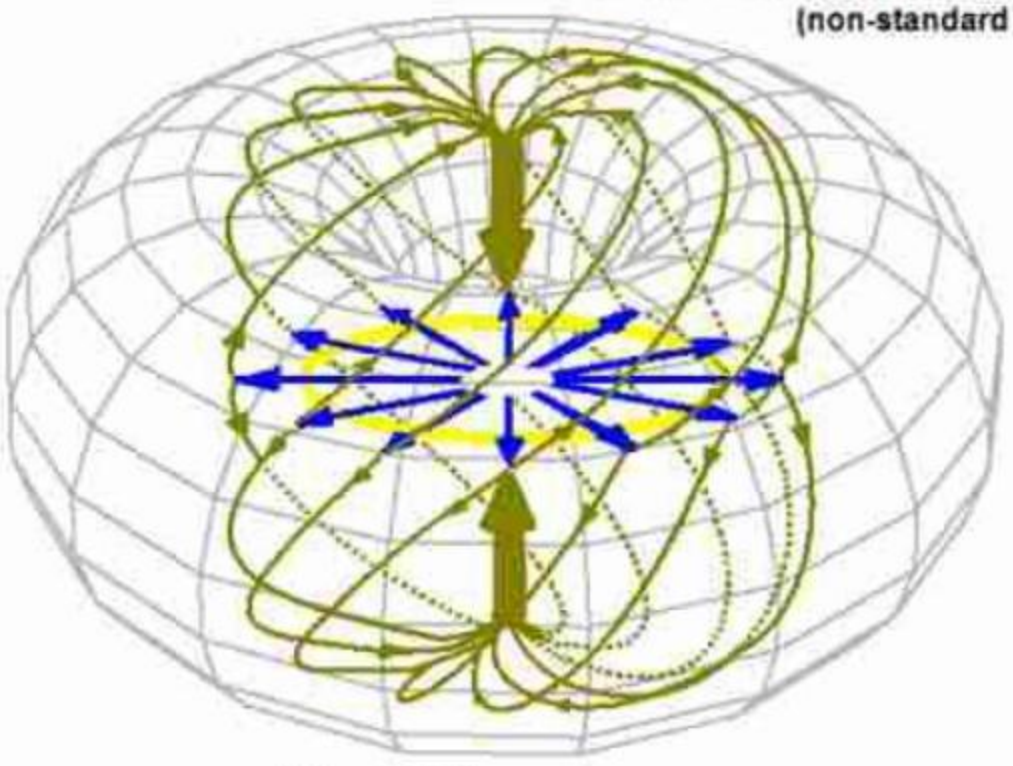
Double torus torsion field created inside a standard Rodin coil

(non-standard firing sequence)

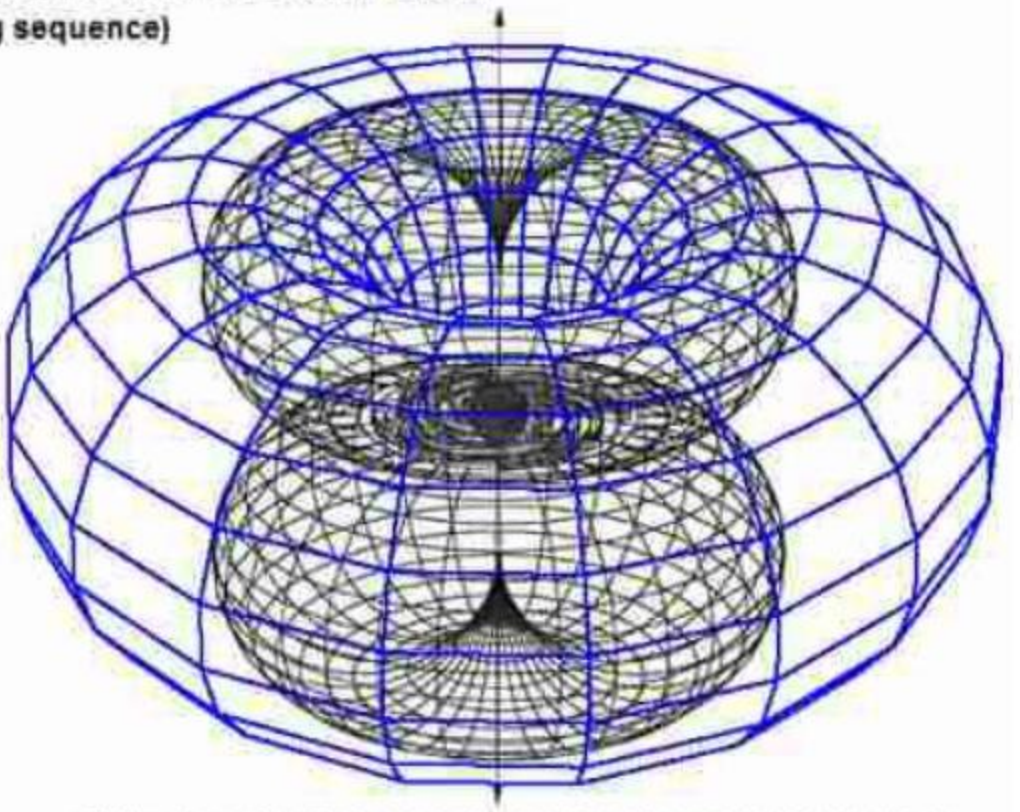


Double torus torsion field created inside a standard Rodin coil

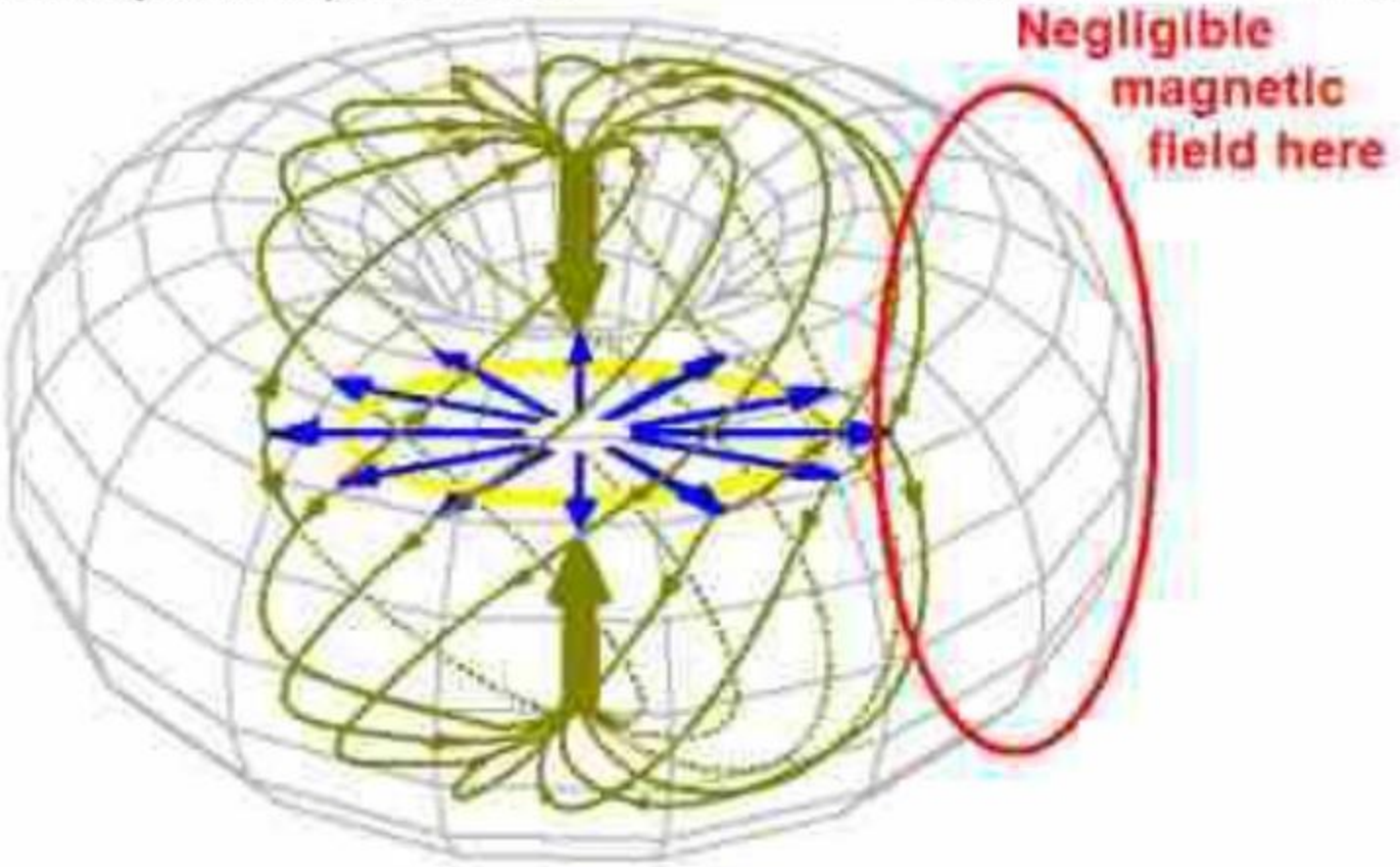
(non-standard firing sequence)

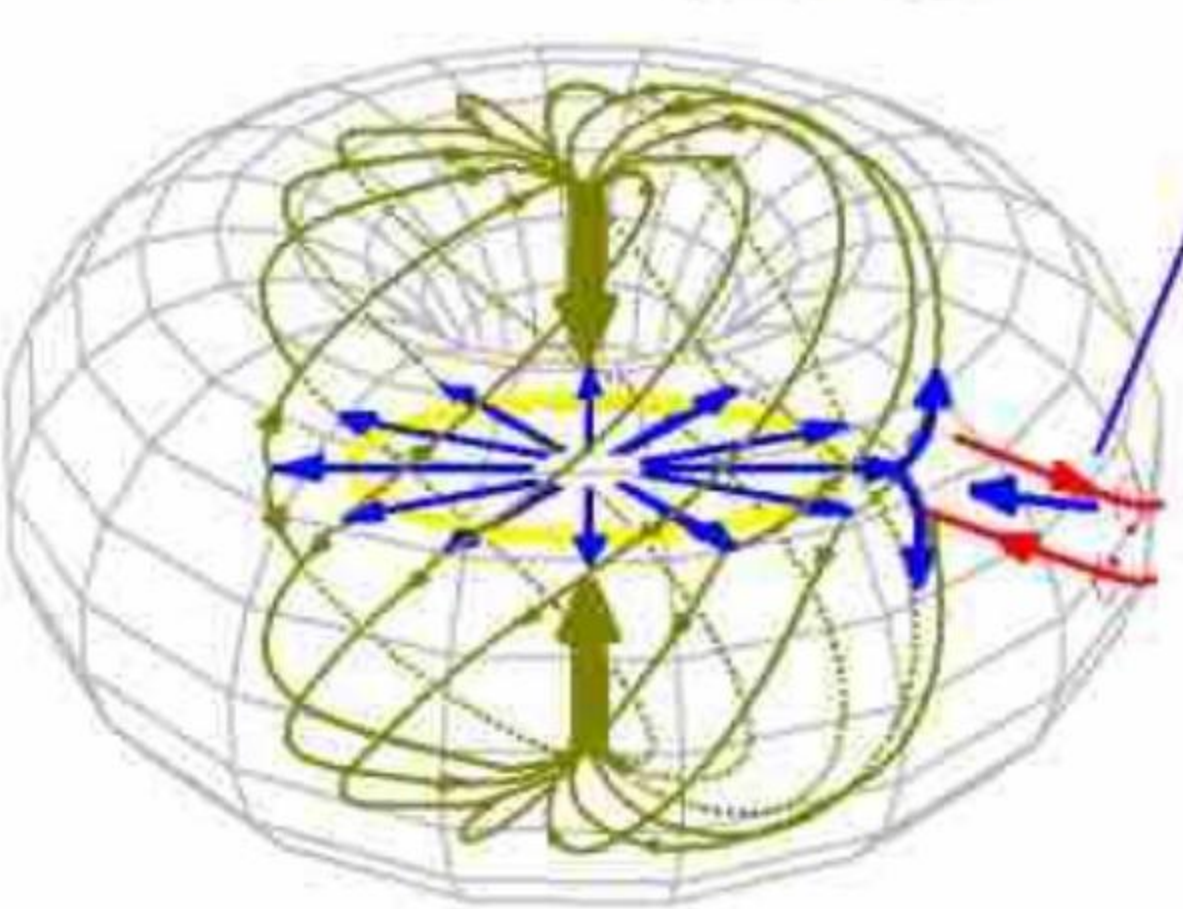


Flux field vectors
torsional dynamic representation



Simple wireframe conceptual reprezentation





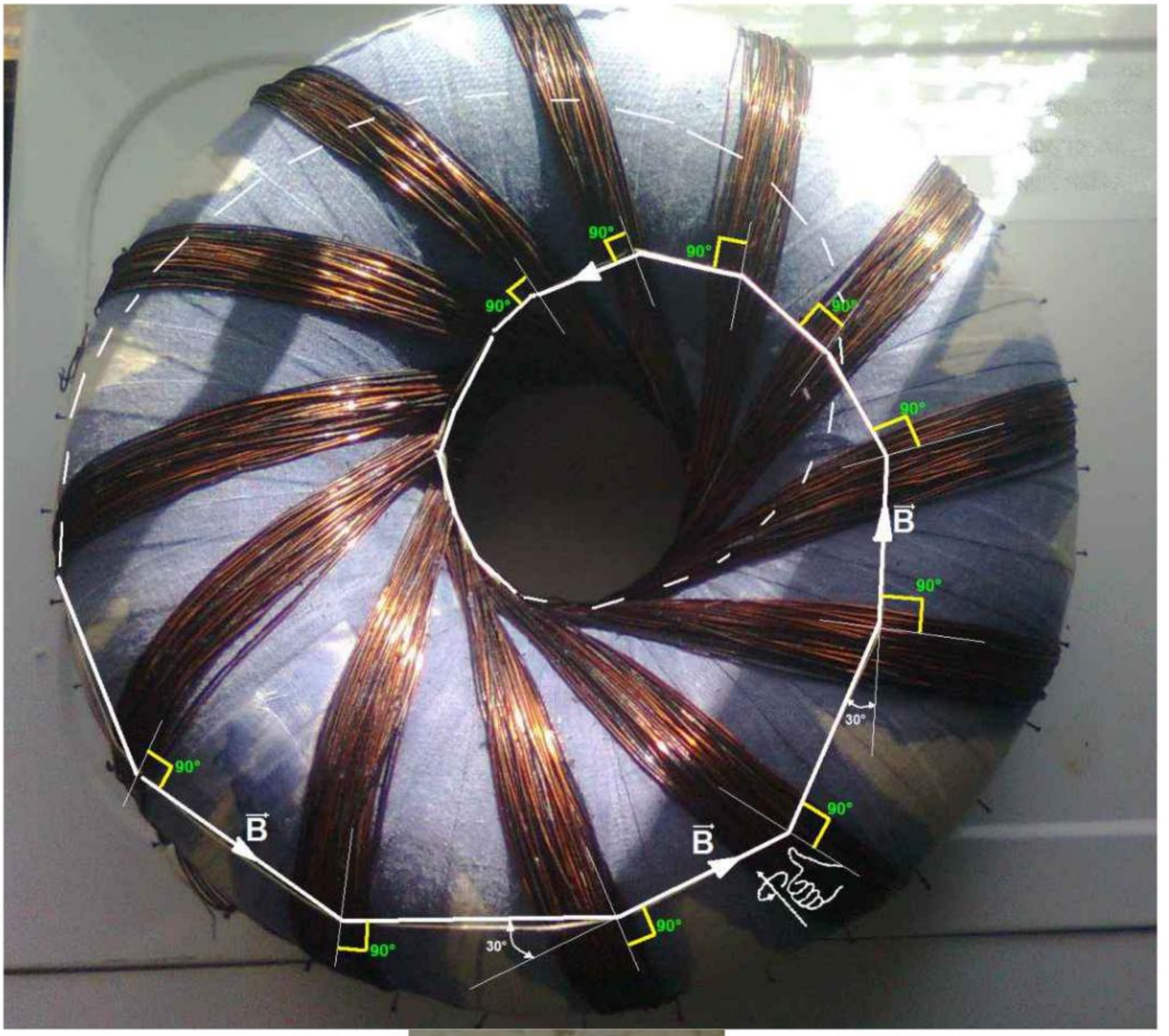
I must also add another important point. The equatorial flux vectors are represented in a simplified version here. They are actually only touching tangentially the equatorial plane.



Almost forgot to mention, a very important point. This double torus is not a surface, nor a balloon. It is a ***filled*** topology. It is not a ***surface***! If you like, consider that you have infinite number of surfaces of all dimensions. Of course there is a limit, but if you have infinite number of surfaces, then this double torus is not empty in the inside. It is full. Keep that in mind.

Considering this limit. Of course this double torus topology won't be 2 meters in diameter created by 10 cm Rodin coil. This is absurd. The reason, maybe not so obvious from all the pictures above, is that this double torus field is limited in maximum diameter by the average value of the inner hole radius and the whole torus radius.

Rodin logarithmic spiral closed magnetic flux field



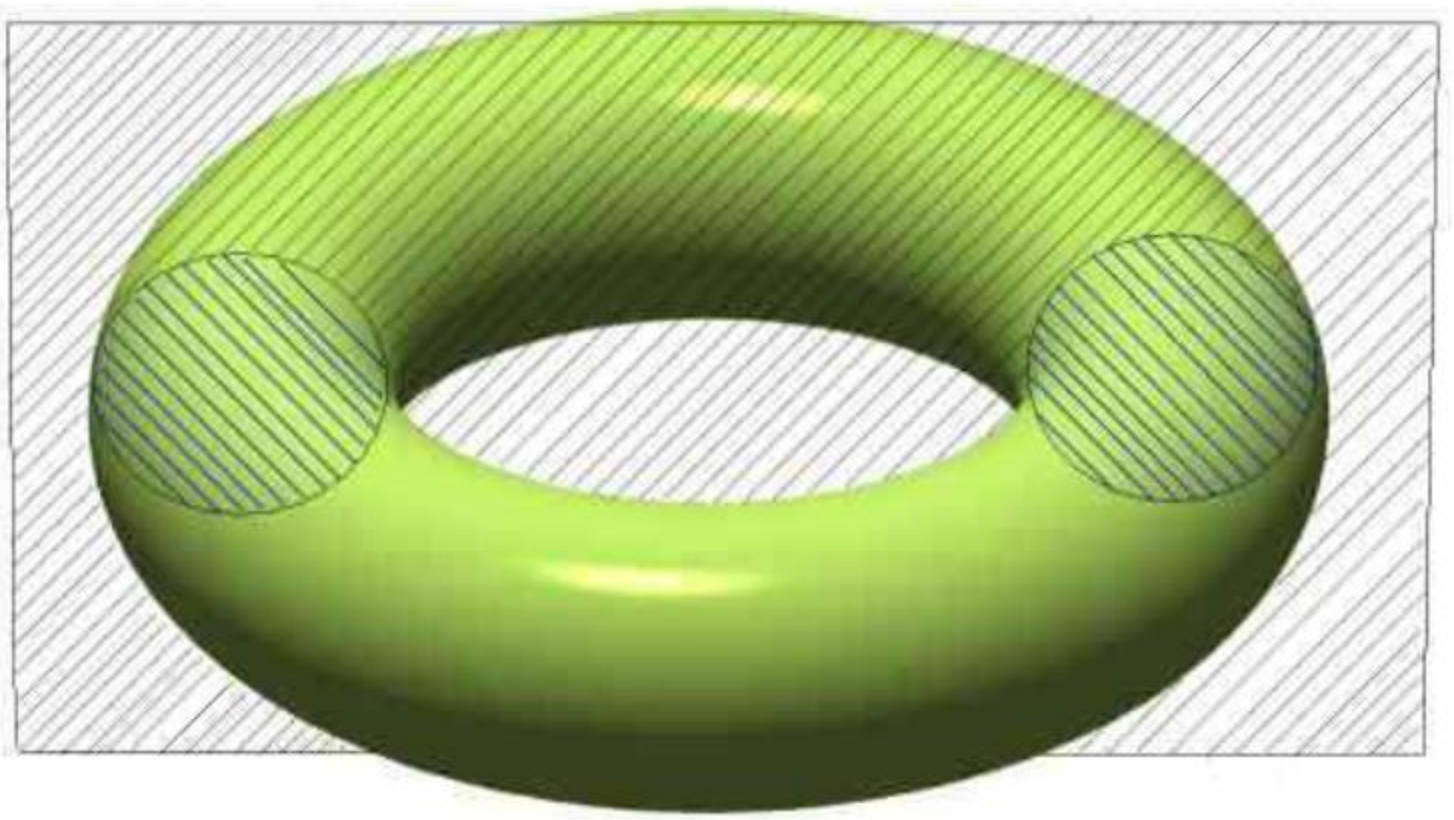


Interesting similarity between the magnetic flux field created by the Rodin coil and Nautilus shell phi logarithmic spiral. Also there is a resemblance with Folium of Descartes at the center of the torus, due to the inversion of the spiral on the other side and the offset in the spiral convergence point and center of the torus.

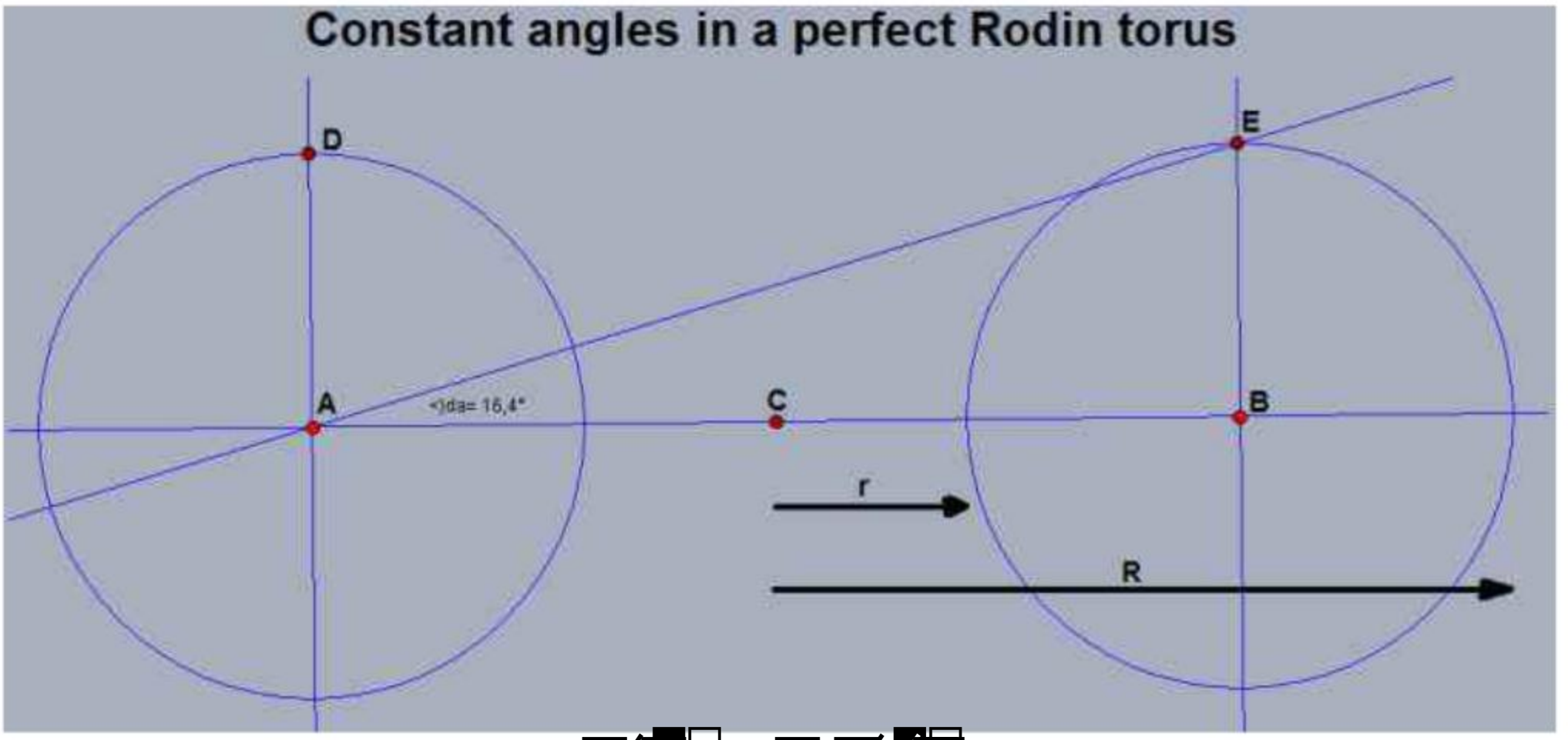
Calculating Rodin wire length

This serves many purposes. First it allows us to determine the wire consumption which is useful, but another main purpose is for magnetic resonance. The magnetic resonance frequency is determined by the wire length. So how do we do it?

First thing that might pop up is that of a cross-section through the toroid like this:



Just as a parenthesis, regarding the above drawing, it can be shown, that in any perfect Rodin torus the angle made by connecting the center of the core of the torus with the maximum apex of the opposed circle will be:



Knowing this, we can apply:

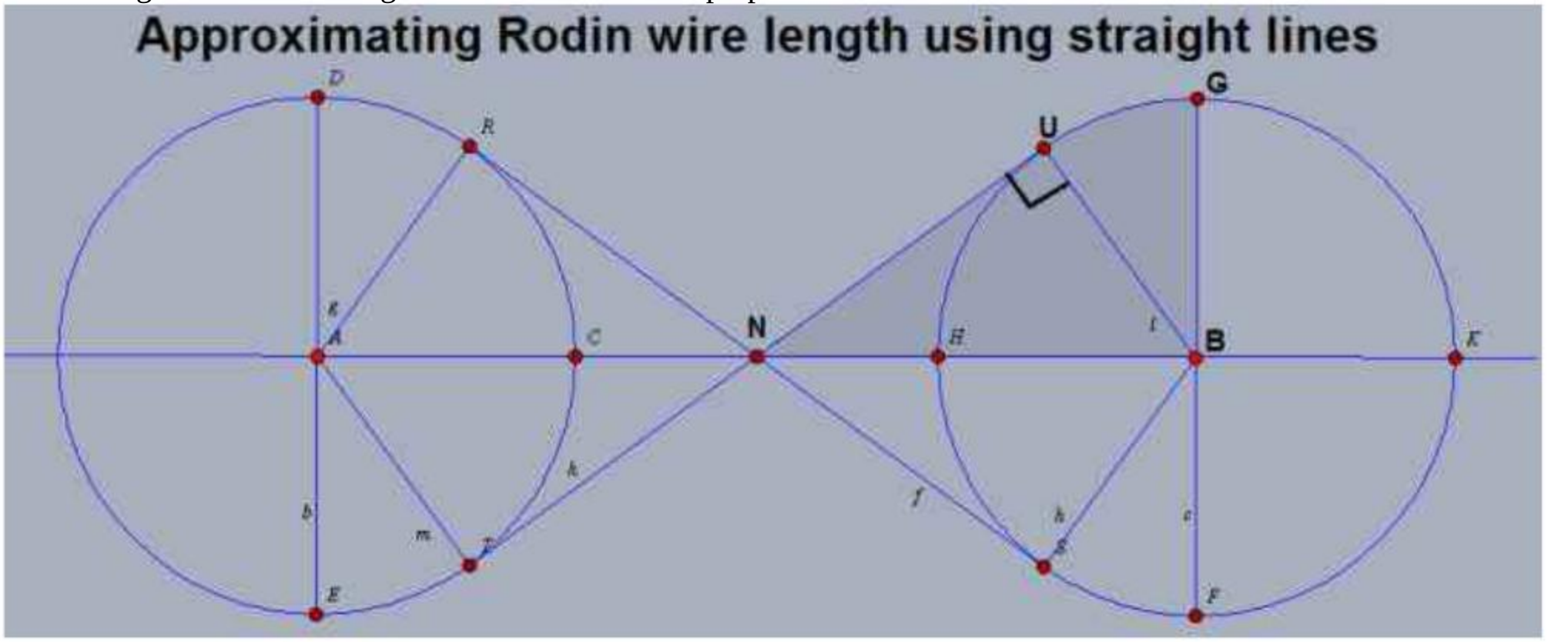
But we also know the equation for a perfect Rodin torus to be:

Therefore:

So, now, we can know that angle EAB to be:

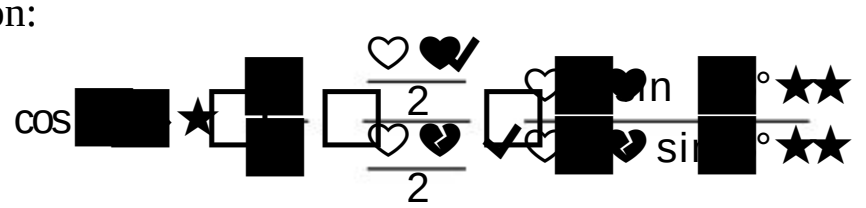
This is useful in creating a perfect cross-section of a perfect Rodin torus.

Now, let's get back to our approximation. It can be shown that the straight lines of our wires are actually straight lines through the center N tangential to our circles and perpendicular to the inner radius of the core.

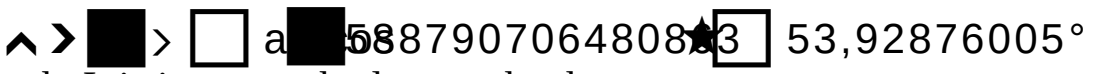


In the right angle triangle NUB, we know:

So we apply a trigonometric function:



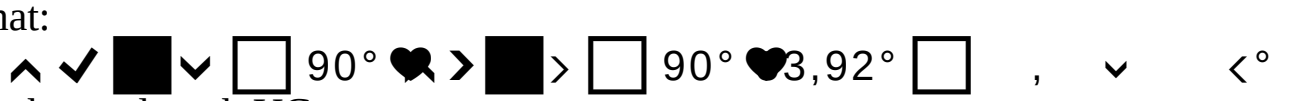
So, angle UBN is:



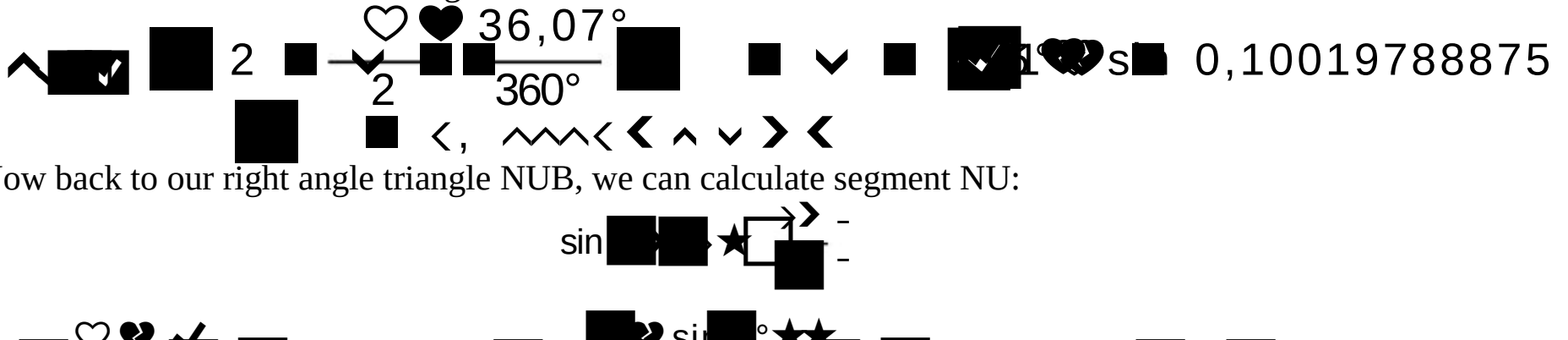
This is not however what we seek. It is just a method to reach where we want.

We need the angle UBG to determine the arc length UG.

Therefore it is clear that:

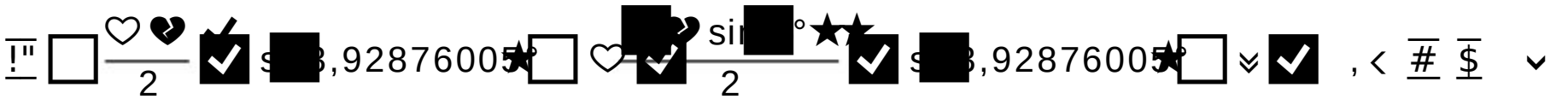


Now we can calculate the arc length UG:



Now back to our right angle triangle NUB, we can calculate segment NU:





So, now, we can finally approximate the Rodin small turn length to be:



However, this is only an approximation, and further more than that, it is wrong.

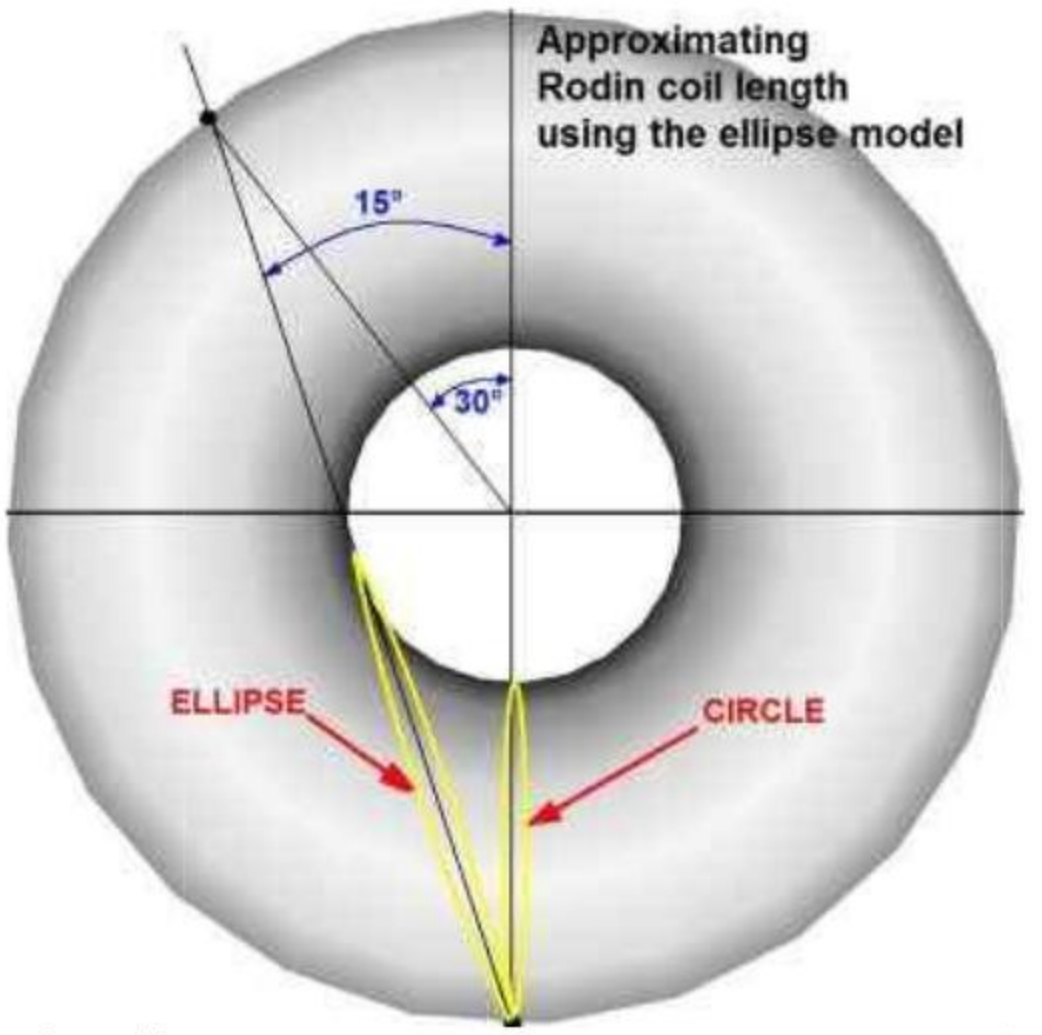
Why?

Because, of two reasons. ***First,*** I am tired of repeating that RODIN WIRES MUST ALWAYS SIT ON THE SURFACE OF THE TOROID! I AM TIRED OF REPEATING THIS OVER AND OVER AGAIN! AND I SHOUT IT AGAIN IN VAIN: IT IS IMPERATIVE! IT IS CRUCIAL! IT IS CRITICAL THAT RODIN COIL **WIRES MUST ALWAYS, ALWAYS, ALWAYS, ALWAYS, ALWAYS IN ALL** SITUATIONS SIT ON THE SURFACE OF THE TORUS. ALWAYS! NO MATTER WHAT! I DON'T CARE HOW YOU DO IT, BUT WIRES MUST IN ALL SITUATIONS, IN ALL PLACES, IN ALL CIRCUMSTANCES, SIT ON THE SURFACE OF THE TORUS TOPOLOGY ALWAYS! ALWAYS!

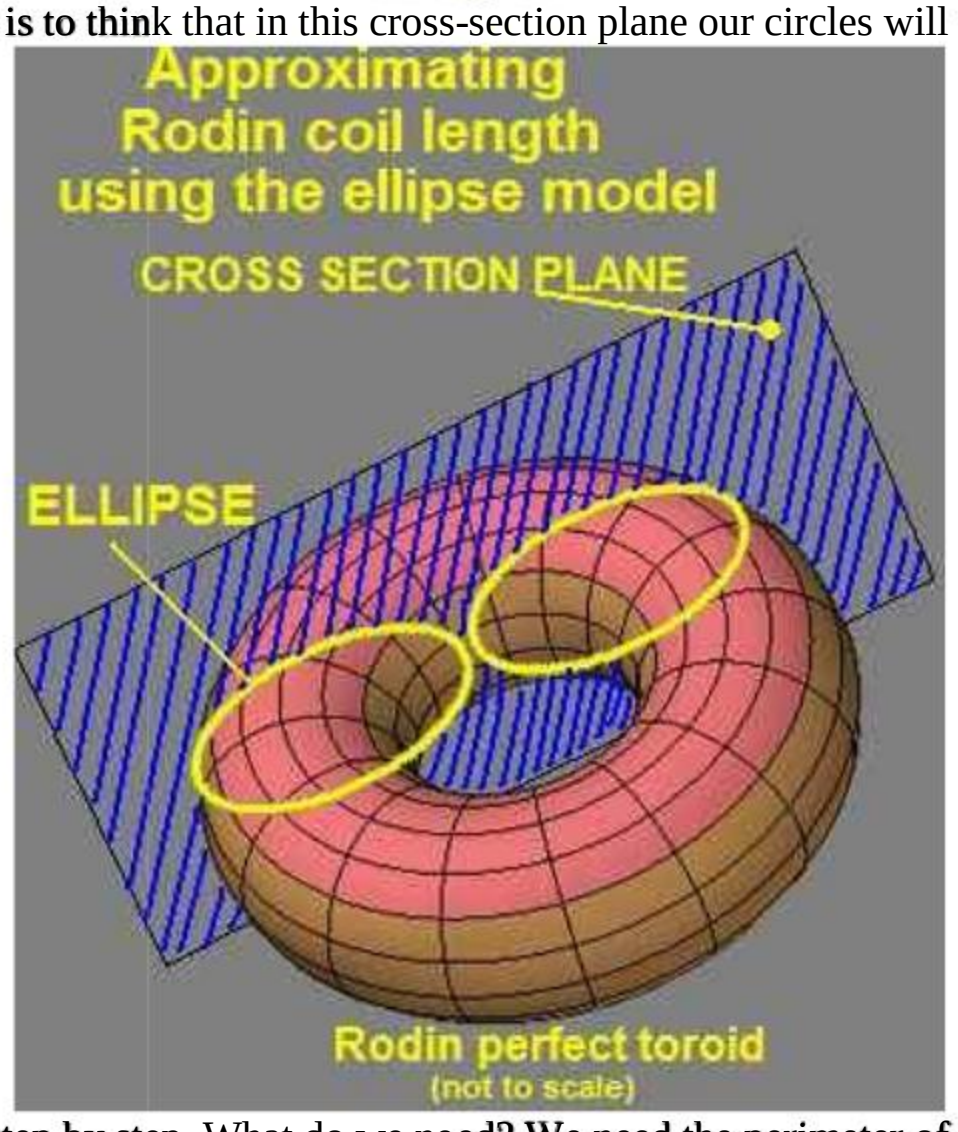
I'M TIRED! can't you see the reason? Maybe bigger letters, will help people understand...but I'm just deluding myself...sad...nobody seems to get it...

And here I go again with the reason. Marko Rodin clearly states that there must be a third band, a third space, a third segment, a third place, however you want to call it which is un-winded(no coil on it). So this empty space is crucial in separating the equatorial outgoing magnetic flux vectors from the merging magnetic flux vectors in the double torus topology. So what's the point in respecting this empty space on the outside circumference of the toroid, if in the inside all the wires are mingled together, and no more discrimination is visible? What's the point? I mean how do you expect to discriminate between the directional equatorial flux vectors? Which of them are going, and which are merging? How will the flux look like in the inside? Think about it! Imagine it! It's nonsense! It won't work! Wires must always sit on the surface of the torus so that they can be separated one from the other, otherwise all of them will be mingled and chaotically jumbled together at the center.

Second **reason why the method** presented above is wrong is that one **small Rodin** turn (meaning between two poles) is NOT situated on a cross- **section plane through the center of the torus.** **A s**mall Rodin turn is ***situated on a plane inclined 15° in respect the plane through the center of the torus.***



So **the next logical step is to thin**k that in this cross-section plane our circles will become ellipses:



So, now let's take this step by step. What do we ne**ed? We need the perimeter of a**n ellipse. It is also called circumference of the ellipse**. This is not a**n easy equation, but we can use simp**ler approxi**mate versions instead.

We can use **Ramanujan equation** for the circumference of the ellipse:

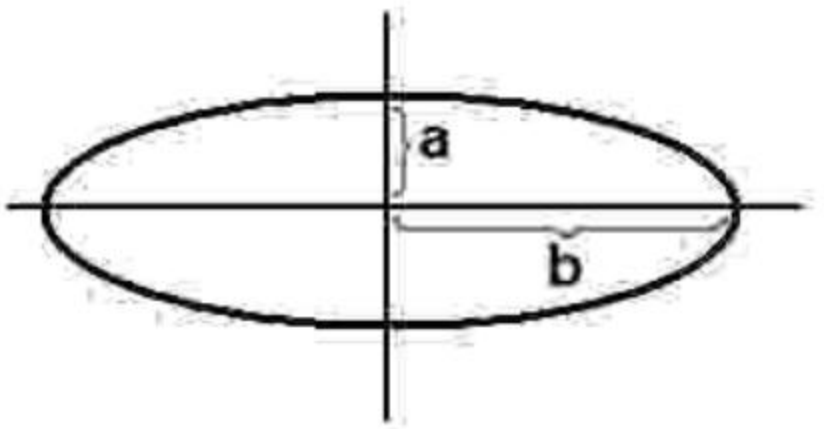
$$C \approx \pi\left[3(a+b) - \sqrt{(3a+b)(a+3b)}\right]$$

Or a better approximation:

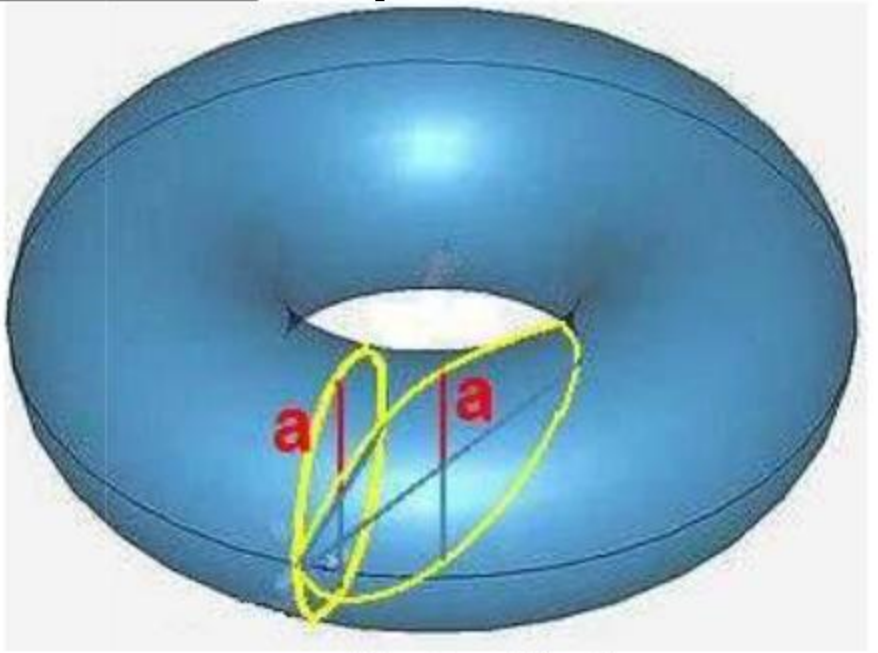
equation to aproximate the small Rodin turn ***(complete turn/12)*** **using the ellipse model :**

$$C \approx \pi(a+b)\left[1+\frac{3\left(\frac{a-b}{a+b}\right)^2}{10+\sqrt{4-3\left(\frac{a-b}{a+b}\right)^2}}\right]$$

Where a and b are:

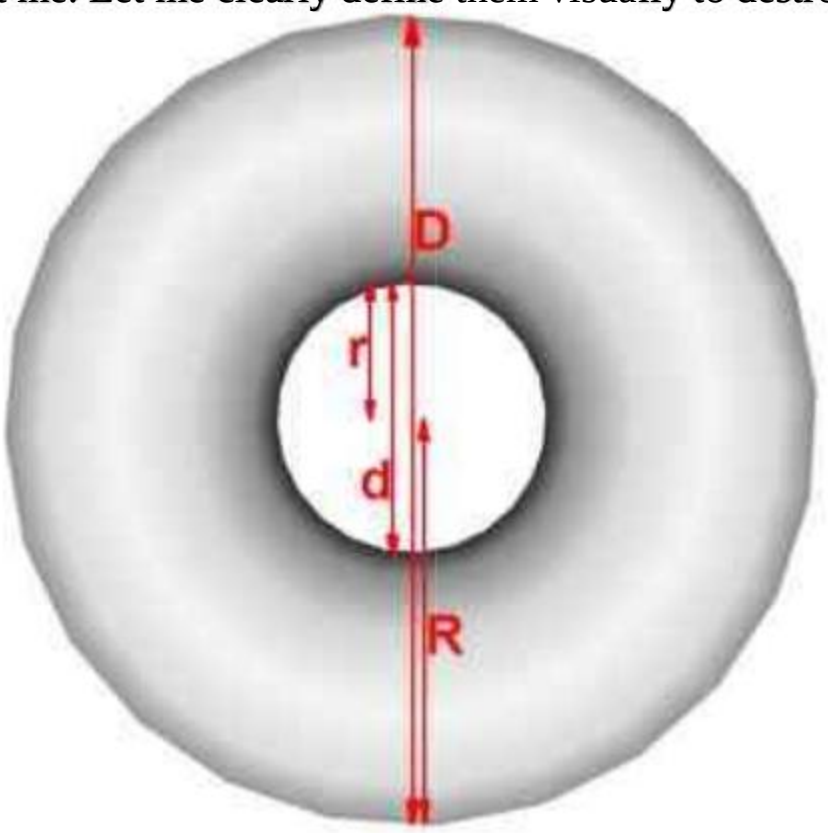


Or they could be reversed; **it is n**ot relevant in our case.
<a> is simple. It is the **radius of the core** of the perfect Rodin torus:

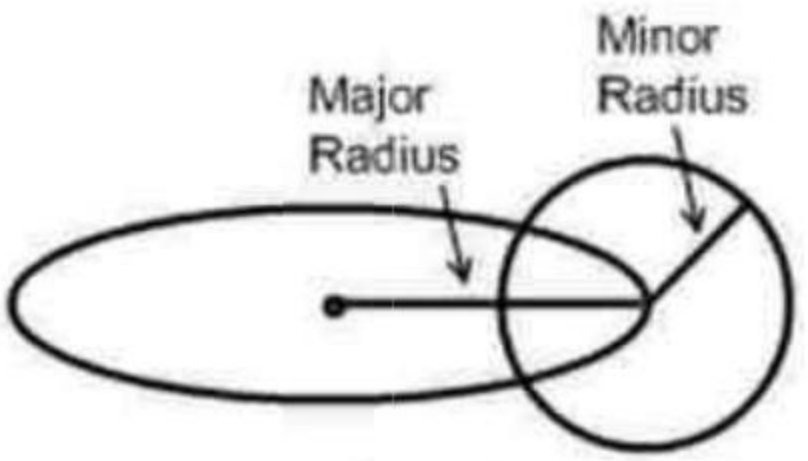


$$a = \frac{R \quad r}{2} = \frac{D \quad d}{4}$$

I have to admit I'm using a non-**conventi**onal naming for D,d,R,r **in a standard donut torus**. Yeah I know, guilty as **charged. Shoot me. Let me clearly define** them visua**lly to destroy any shadow of a doubt:**



My convention

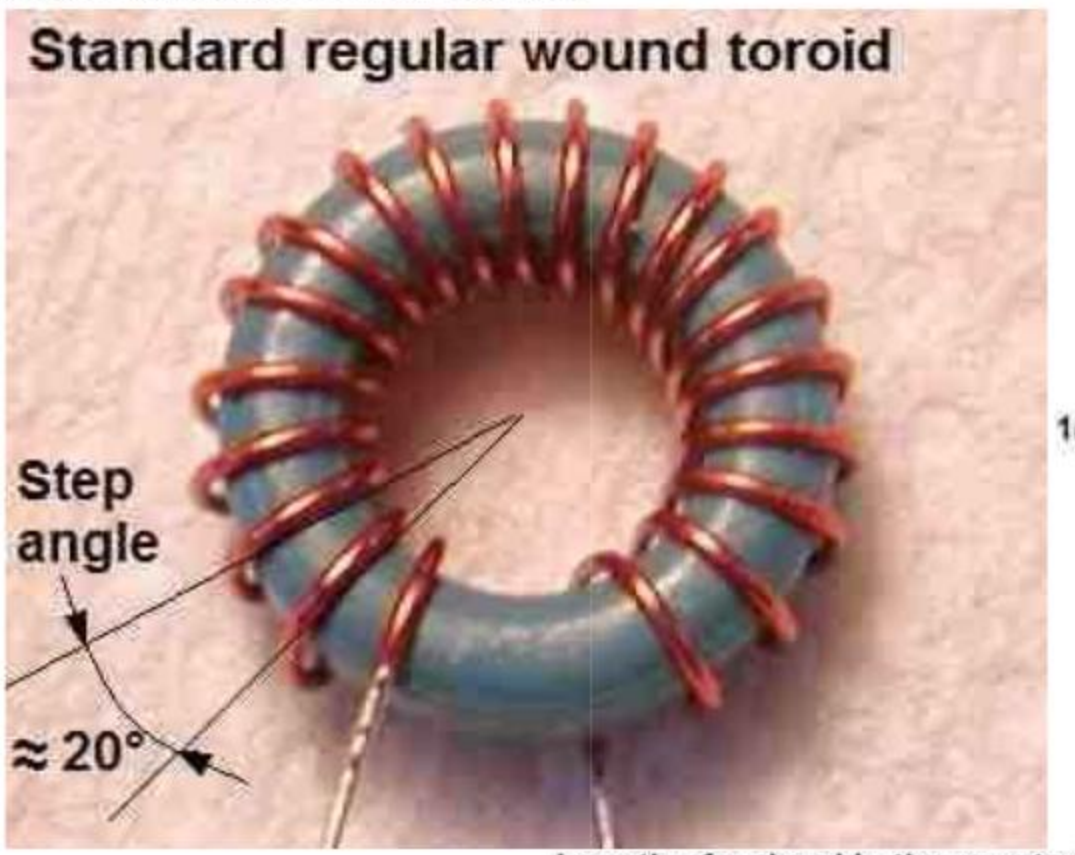


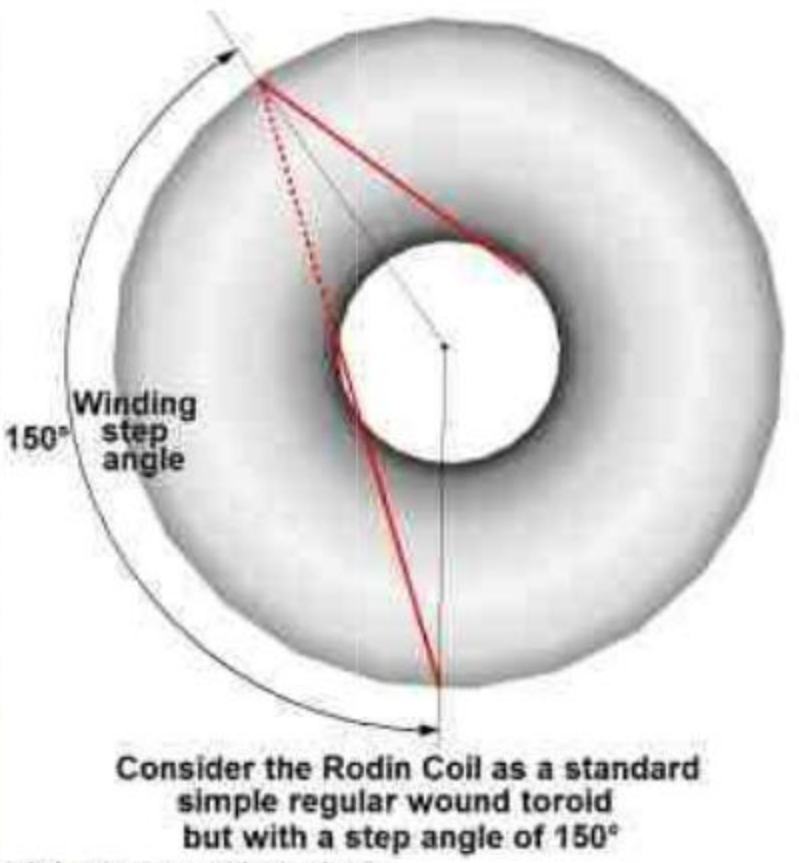
Correct conventional convention

Use any method you prefer, as long as your calculat**ions are correct, and we all ge**t there, there is nothing to argue about. **I'm still using my convention** because I find it mor**e accessible in practical a**pplication. But if you don't like **it and you are rigorously mathematic the**n you can use the correct convention. **Different r**oads, same destination. No problem here.

To **determine b, we will return to** the ***standard basic Rodin step angle of 150°.***

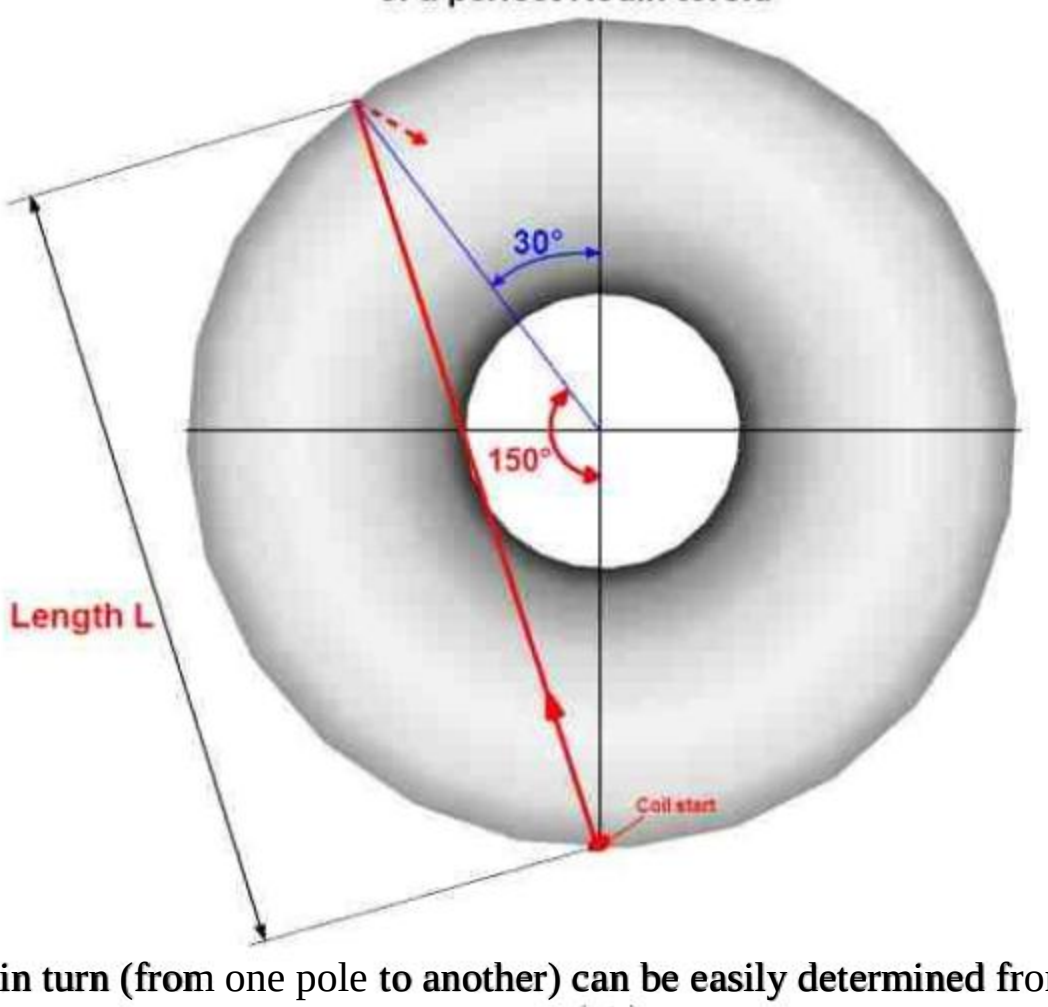
What do I mean by the term "step angle"? What does it mean? It's simple. Consider the Rodin coil, as a normal standard winded regular toroid, where each turn has been laid one next to the other, but in our case we have a 150° step around the equatorial circle. Let me illustrate:





Consider the Rodin Coil as a standard simple regular wound toroid but with a step angle of 150°

Length of a chord in the equatorial cross section plane of a perfect Rodin toroid



This length L of a small Rodin turn (from one pole to another) can be easily determined from this equation:

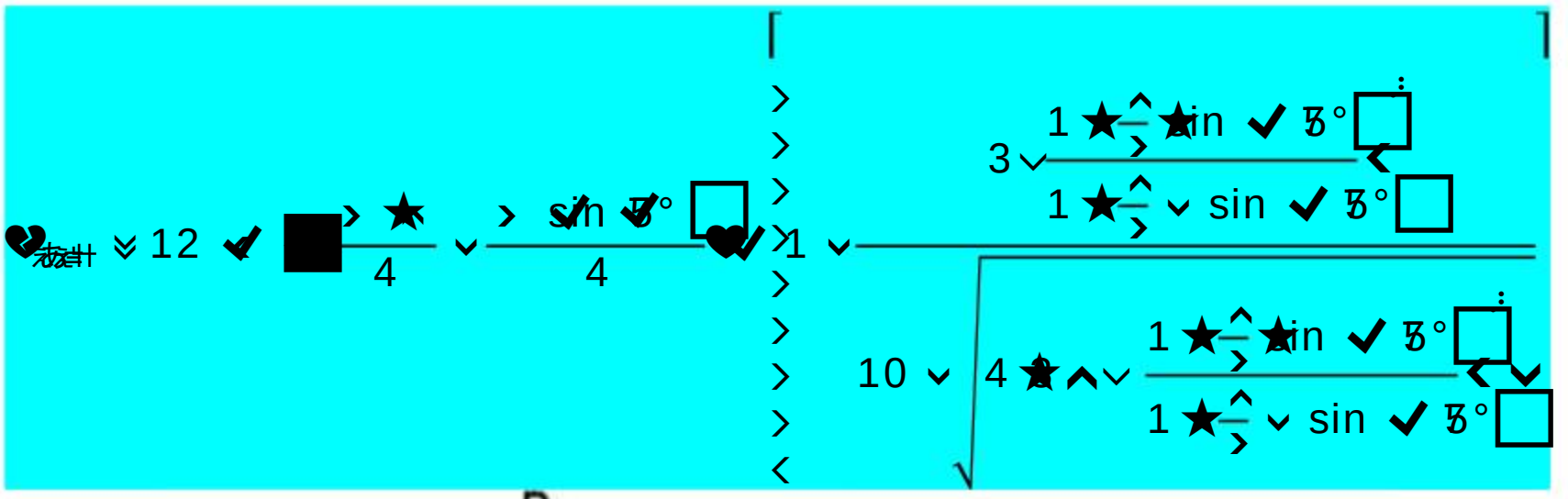
$$L \quad 2*R*sin\left(\frac{\pi}{2}\right) \quad 4*b$$

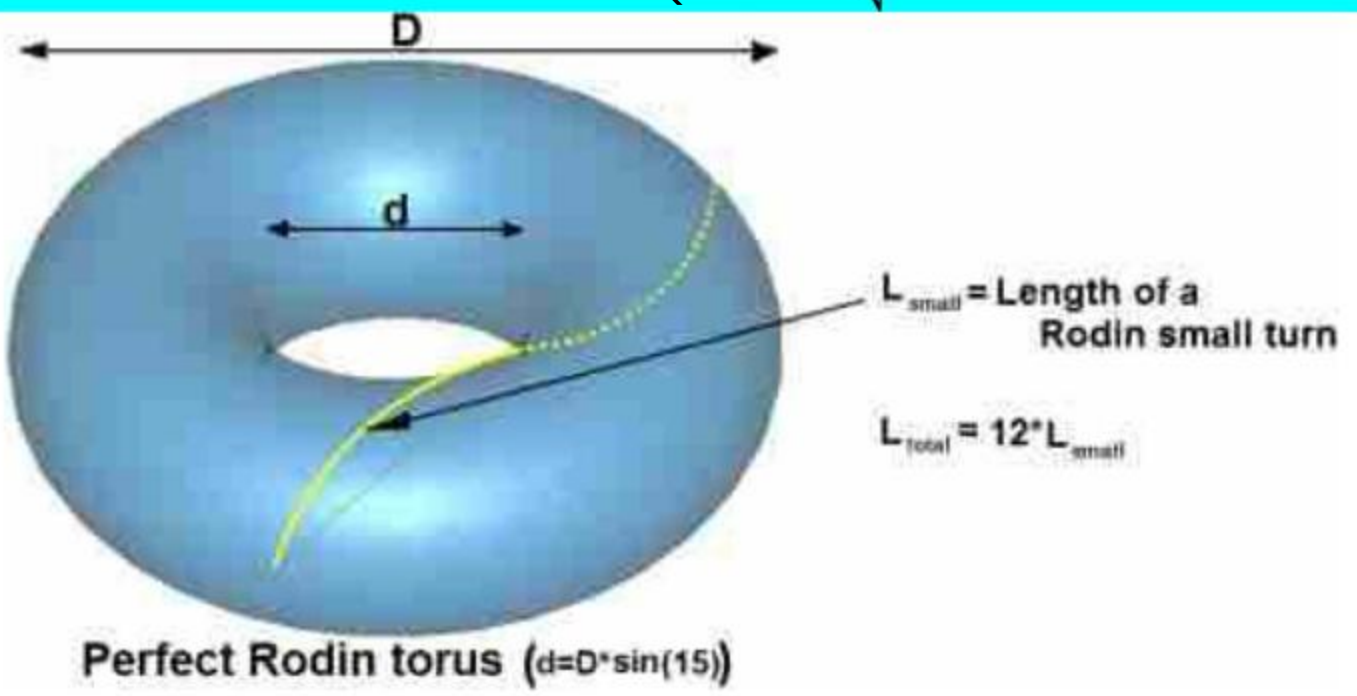
This length can be easily seen that it is four times our b in the ellipse.

$$b = \frac{D*sin(75)}{4} = \frac{R*sin(75)}{2}$$

From all of this, we can now write the

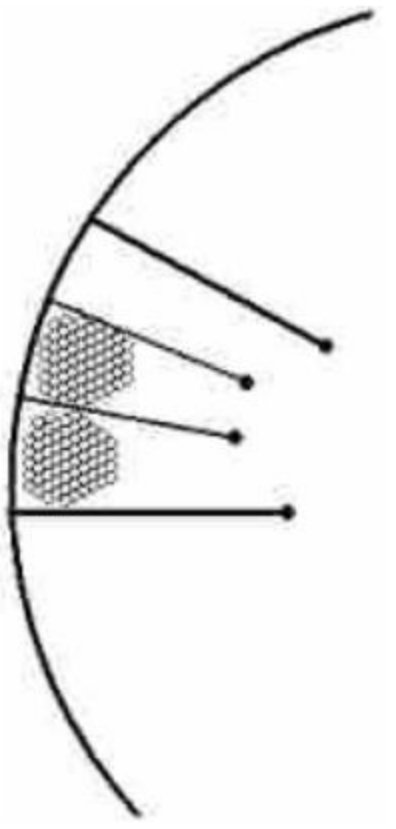
Equation to approximate the total length of a *complete Rodin turn* using ellipse model:





Although this might seem neat, fancy, extravagant, cool, or whatever, it is not correct. You could try to verify the above formula by taking a perfect Rodin torus, and again I repeat myself, a perfect Rodin torus is a toroid where the inner hole diameter is smaller than the total big diameter of the whole torus with a factor of sin(15). So take such a torus, measure the diameters, and calculate a complete Rodin turn using the above formula. Then take a piece of sewing string, cut it at the result you get, and verify the equation.

Note that first thing first, this formula is an approximation, and is very close to reality so you don't have to worry, unless you are planning for more than 100 complete turns in Rodin coil A for example, which is a titanic work. Second, this formula only applies to **only one** complete turn! When you have winded 2 complete turn, the 3rd winding will theoretically arrange itself with the two before it in a compact close together cylinders (packaging). And so on depending on how many complete turns you have:

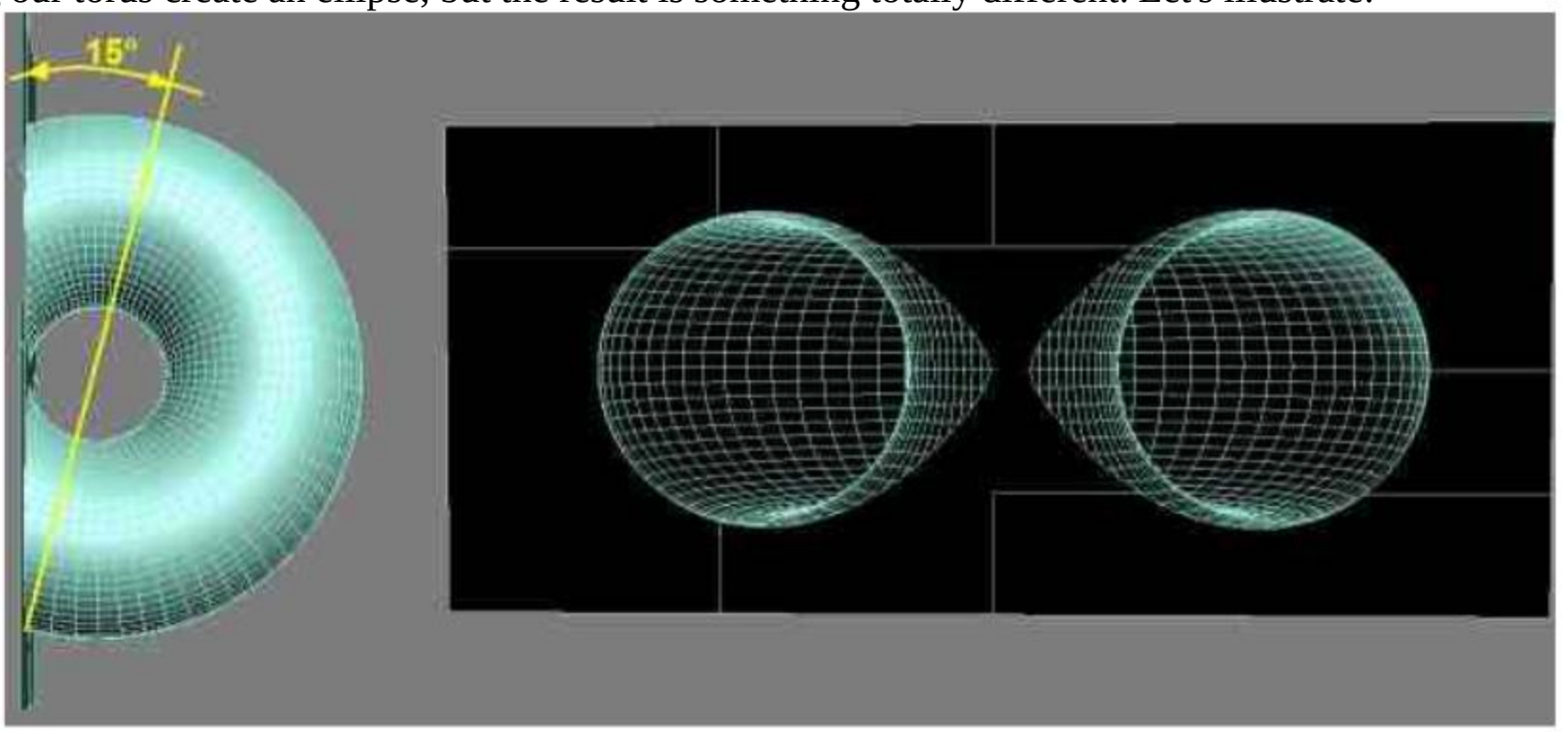


In other words, the total length for a complete Rodin turn (12*small turn) slightly differs with each complete turn you lay down, because the first ones will be just slightly suspended in air at the equator, therefore the slope of the wire going in the Rodin hole will not be on the surface of the ellipse, but it will be more linear. Thus the given equation for a complete Rodin turn, will say a length slightly longer than what we will achieve in practice, due to this linearity of the wire falling in the Rodin hole of the torus. So the equation applies only in an ideal case, when we have only one complete turn, that sits PERFECTLY on the surface of the torus. But given the fact that we will wind a few complete Rodin turns, our inner diameter will be slightly larger to accommodate for this bunch of wires, therefore our first

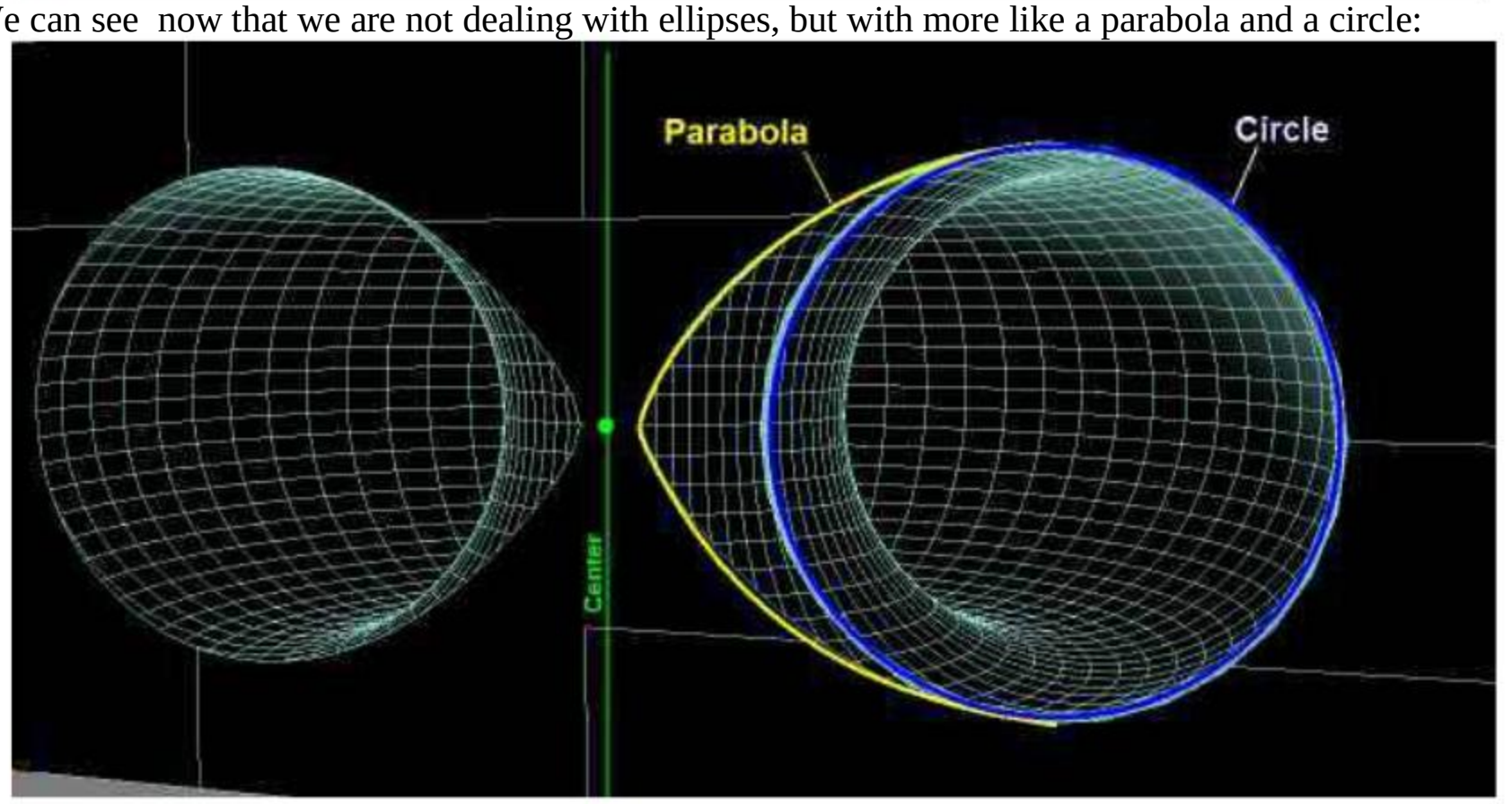
complete turns will be slightly suspended in air at the equator thus we will use a shorter path, thus we will have a shorter total length of a complete Rodin turn than that we have calculated.

Aproximating Rodin coil wire length using the parabola model

Our previous calculations were inexact, because we have wrongly presumed that the 15° inclined plane that is intersecting our torus create an ellipse, but the result is something totally different. Let's illustrate:



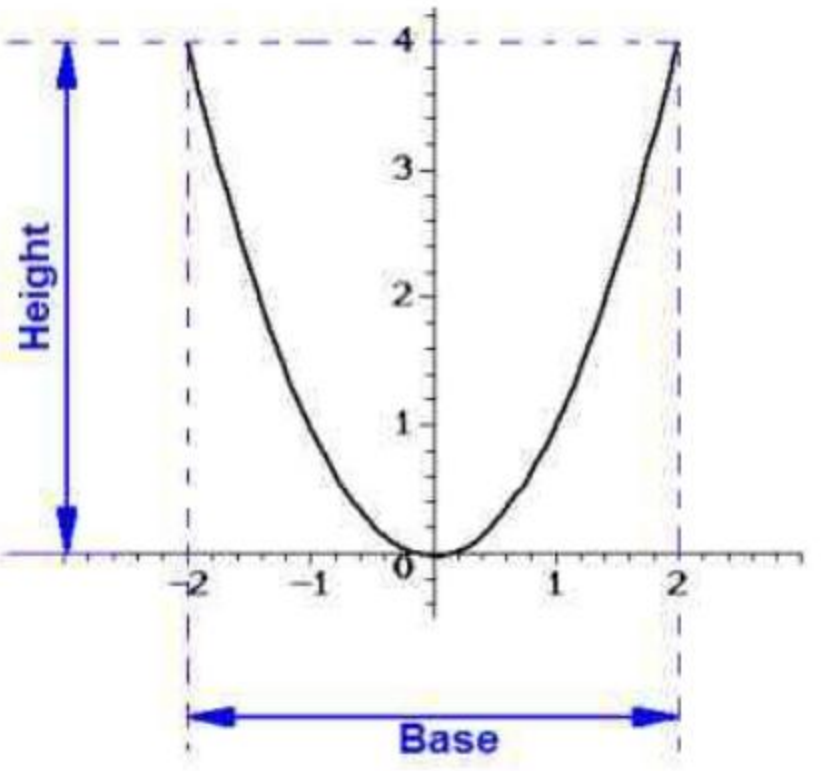
We can see now that we are not dealing with ellipses, but with more like a parabola and a circle:



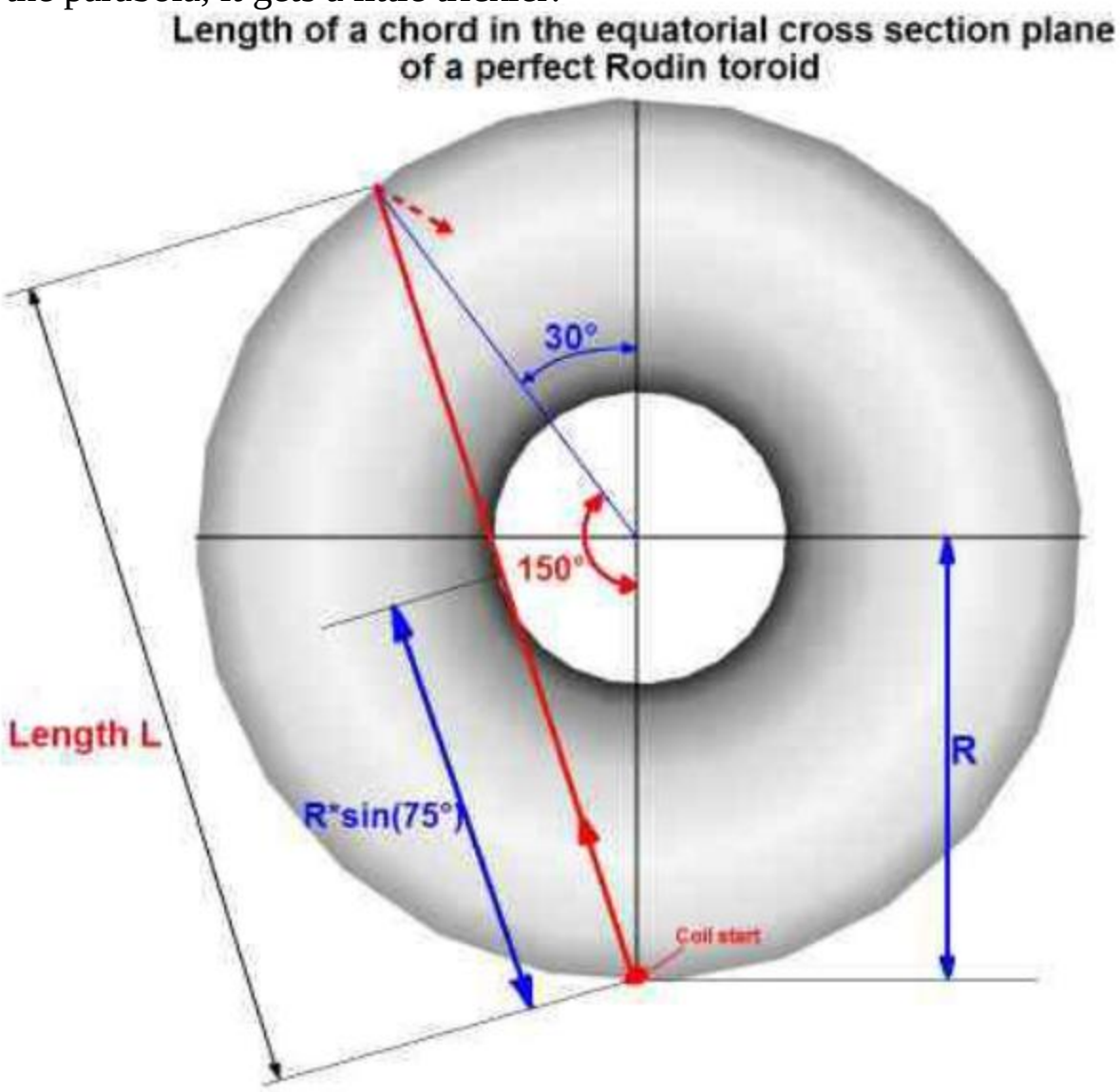
Therefore, we must change our approach in calculating the length, by using this formula in calculating the length of the parabola:

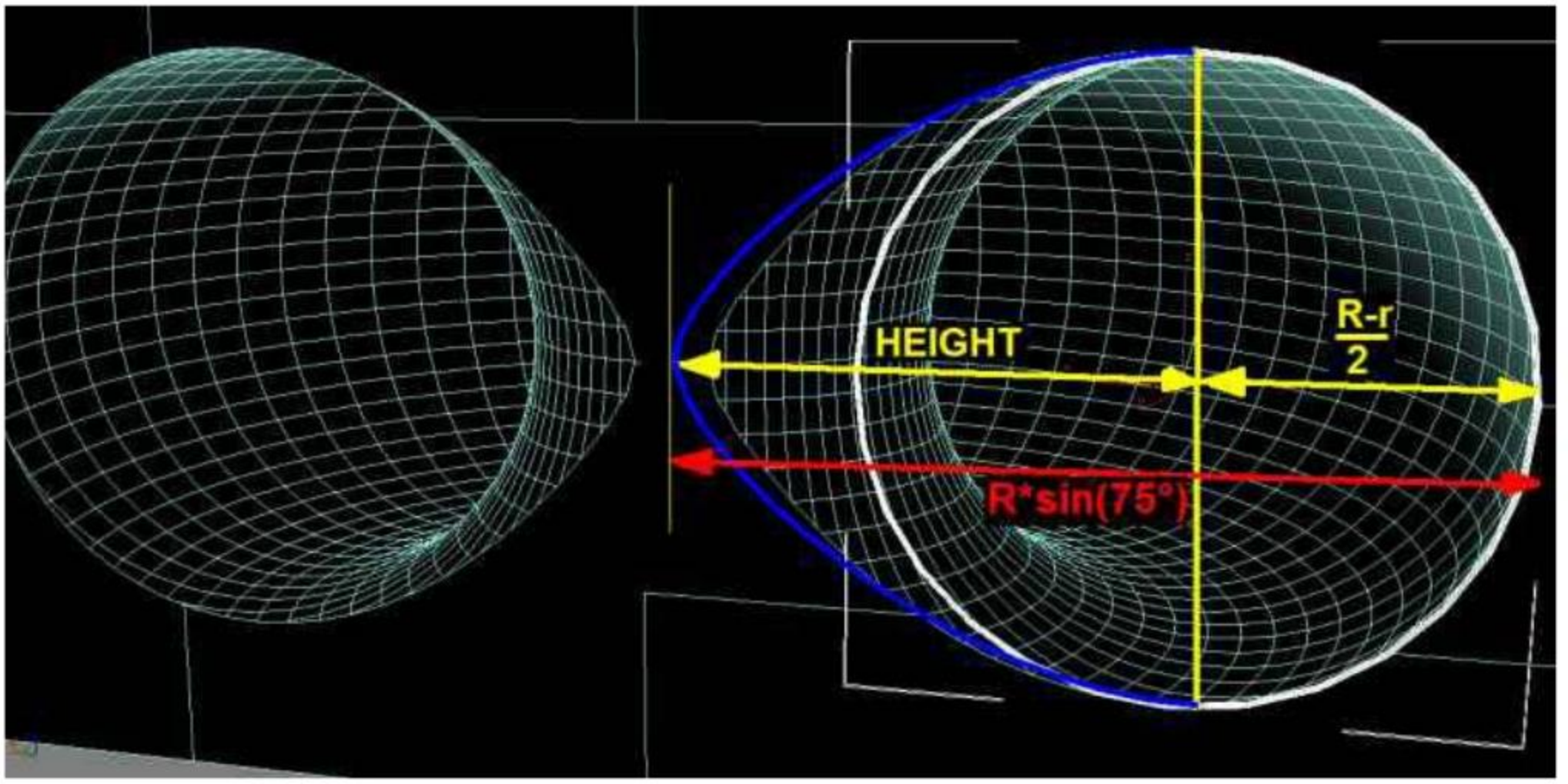
$$\frac{b^2}{2}\sqrt{\frac{4h^2}{b^2}+1}+\frac{b^2}{8h}\ln\left(\frac{2h}{b}+\sqrt{\frac{4h^2}{b^2}+1}\right)$$

Where b and h are the base and height of our parabola:



For the base b we already know it's the diameter of the core of the toroid, which is R-r according to my personal definitions for the toroidal parameters.
For the height of the parabola, it gets a little trickier.





So our parabola height is:

$$\frac{\text{HEIGHT}}{2}$$

But we also know, that:

$$\text{HEIGHT} = R \cdot \sin(75°)$$

Therefore our height will become:

$$\frac{R \cdot \sin(75°)}{2} + \frac{\frac{R-r}{2} \cdot \sin(75°)}{2}$$

$$\frac{\frac{R}{2} \cdot \sin(75°) \cdot \cos(75°) + 2 \cdot \cos(75°) \cdot \sin(75°) \cdot \frac{R-r}{2}}{2}$$

$$\frac{\frac{\sqrt{3}}{8} \cdot \frac{1 + \sqrt{3}}{2\sqrt{2}} \cdot \frac{\sqrt{3} - 1}{2\sqrt{2}} \cdot R + \frac{\sqrt{3}}{4} \cdot \frac{3 + \sqrt{3}}{2\sqrt{2}} \cdot \frac{\sqrt{2}}{2} \cdot (R - r)}{2}$$

$$\frac{3\sqrt{3} + \sqrt{2} + 1}{4\sqrt{2}} \cdot \frac{R}{2} = 0{,}595335348 \cdot R$$

So now, I'm not going to go in too much detail, due to extreme complexity of the equation, but what I'm going to give is the end result:

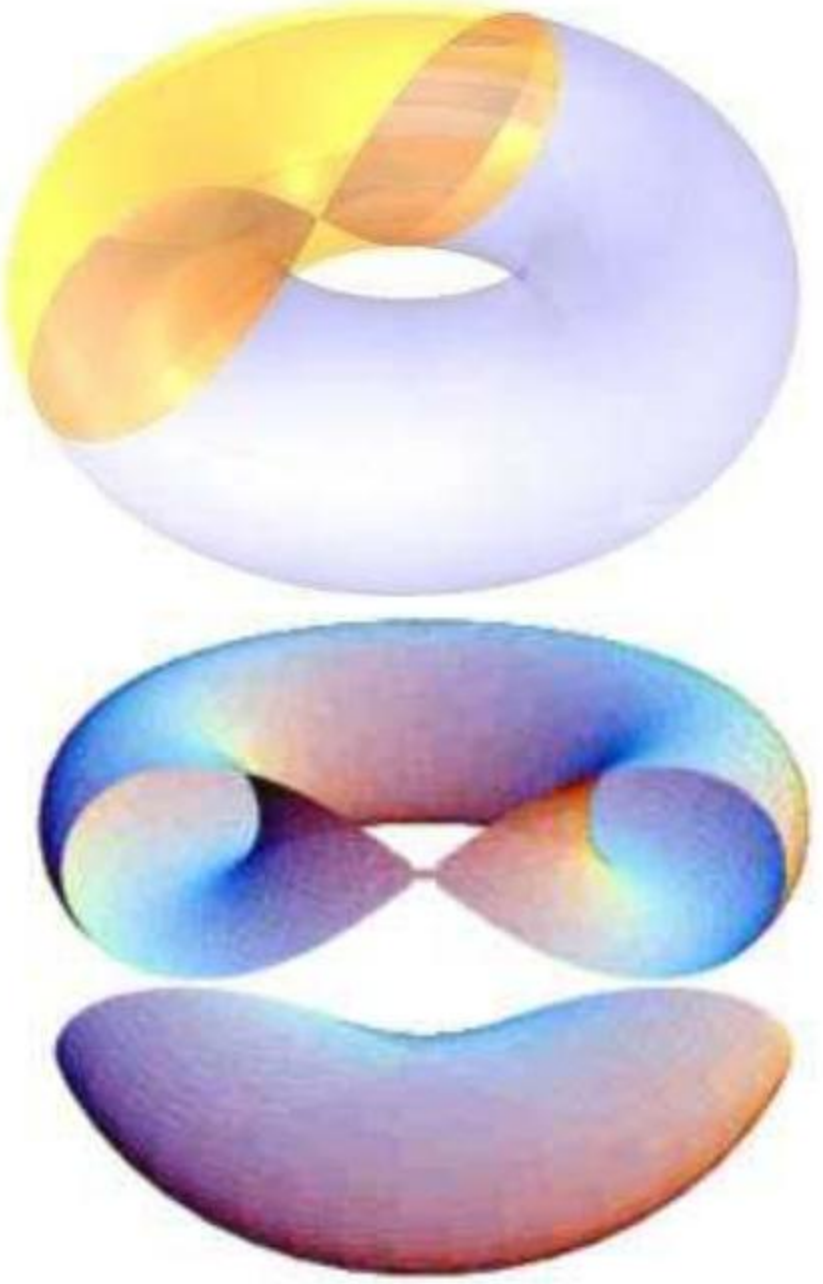
$$\text{[illegible]} = 0{,}595335348 \cdot R$$

The correct determination of the Rodin coil length using the lemniscate model

What we are really dealing here is something along the lines of Cassinian ovals. We must study the Curves of Perseus produced by intersecting (cutting) a ring torus (donut torus) with a plane. NOT an inclined plane like in Villarceau circles, but a plane that is parallel to the axis of the torus and tangent to the interior inner circle of the torus (the circle formed by the inner radius), this gives a plane curve, called a "spiric section of Perseus". Thus we are dealing with a special case of curves of Perseus called the curve of Booth or the hippopede of Proclus.

Rodin small turn length
is known as:

< Hippopede of Proclus >
also known as
< Hyperbolic Booth lemniscate >
or
< Lemniscate of Bernoulli >



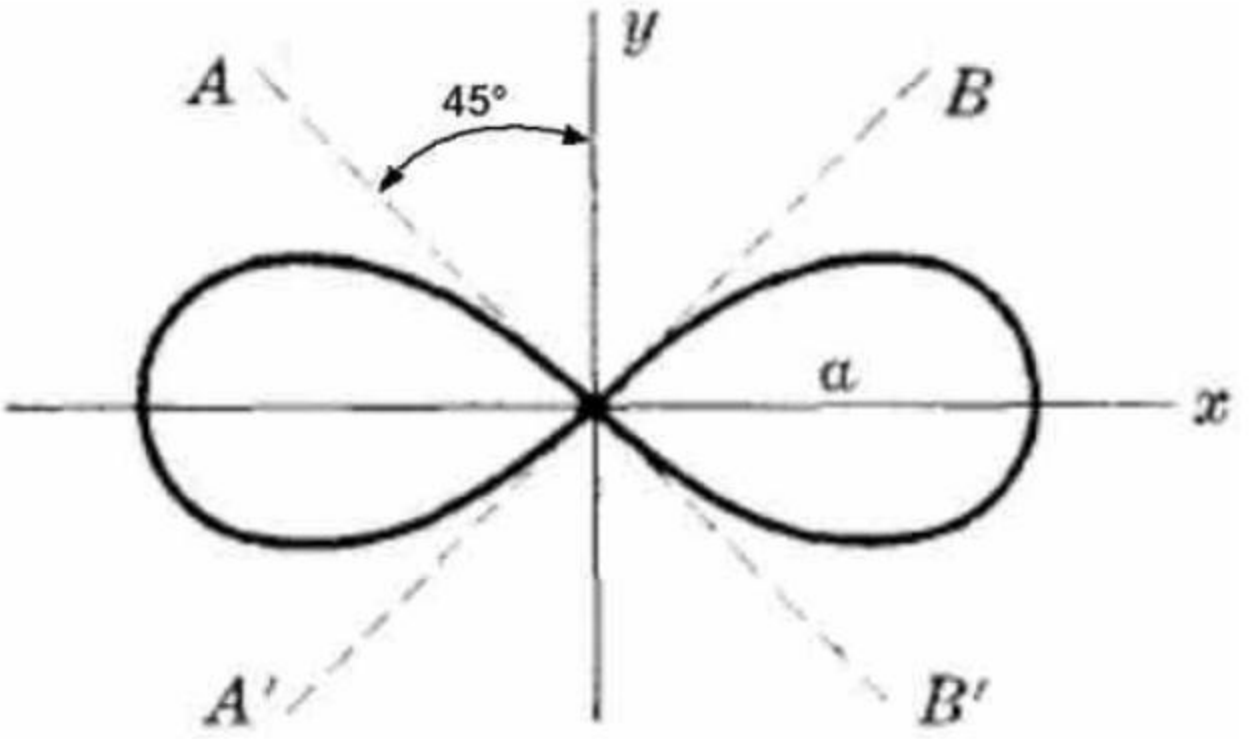
So we are dealing with a special hippopede ("foot of a horse" or "horse fetter") called the "Hippopede of Proclus", aka "lemniscate of Booth" which is a special curve of Booth that is hyperbolic and NOT elliptic or oval.

So in other words, we are trying to determine the total arc length of the hyperbolic Booth lemniscate, or simply what is the length of the infinity symbol? How long is the infinity? If you catch my drift.

The lemniscate of Bernoulli is both a curve of Booth and a curve of Cassini.

These curves were studied by Jakob Bernoulli, Cassini, Gauss, and Euler. Their study has led to interesting problems in approximation theory and elliptic functions.

Lemniscate of Bernoulli



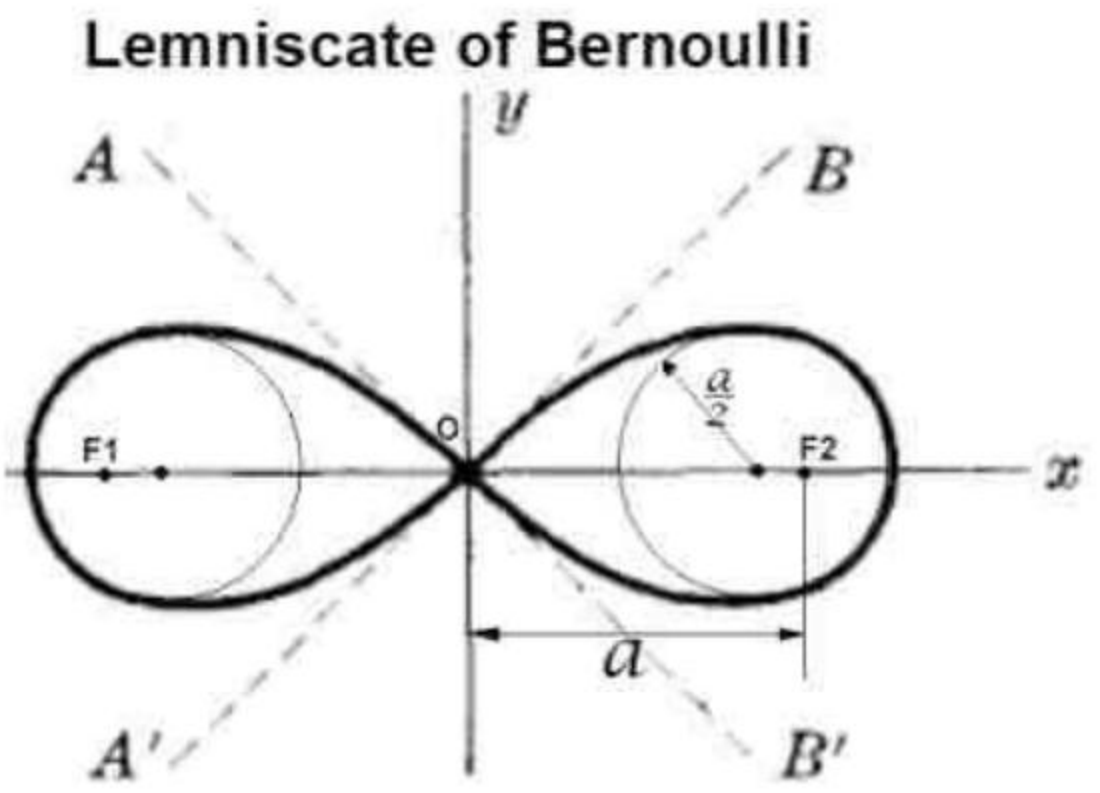
First examined by Jacob Bernoulli (1654 - 16705), the lemniscate of Bernoulli has the general form of a figure eight, or the mathematical symbol for infinity. Bernoulli's conceptualization of the lemniscate followed his earlier research on parabolas, logarithmic spirals, and epicycloids. Bernoulli published an article in Acta Eruditorum in 1694 in which he originally termed this curve the lemniscus (Latin for "a pendant ribbon") to describe the unique shape of the curve.

Bernoulli was not aware that the curve he was describing was a special case of a family of curves known as Cassini's ovals (and alternatively known as Cassini's curve) named for the astronomer Gian Domenico Cassini (1625 - 1712). Cassini first described his ovals in 1680 while researching the relative motion of the earth and the sun. Cassini's curves are more general than Bernoulli's lemniscate; instead of describing just a single curve, Cassini described a family of curves in which the locus of each curve satisfies the condition that the product of the distances to each foci is exactly a constant, generally denoted c2. Cassini's ovals were apparently unknown to Bernoulli at the time of Bernoulli's investigation. The general properties of the lemniscate were discovered by G. Fagnano in 1750 (MacTutor Archive). Gauss's and Euler's investigations of the arc length of the curve led to later work on elliptic functions.

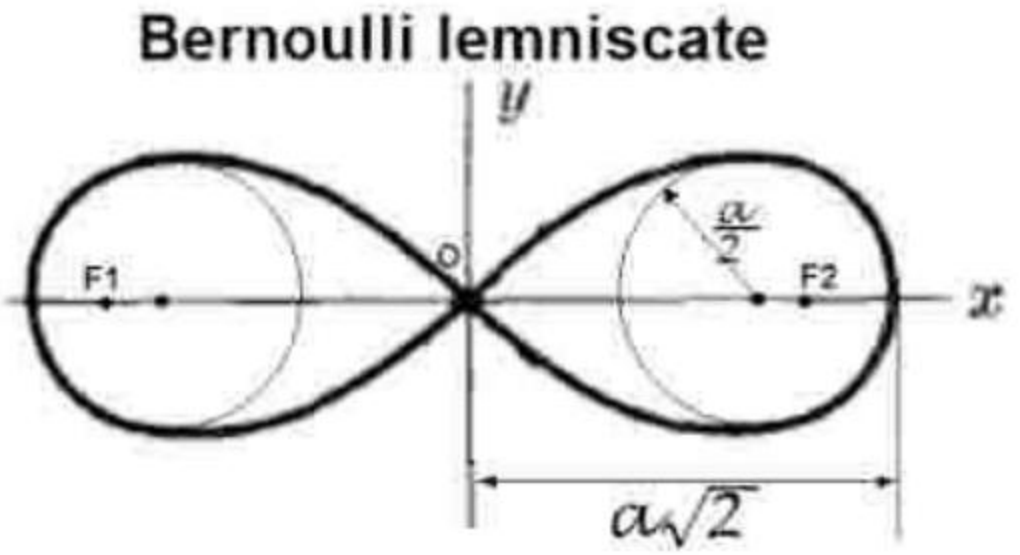
Both Gauss and Euler studied the arc length of the lemniscate curve. Much like the relationship between pi and the diameter circle, Bernoulli's lemniscate has a unique constant that relates its arc length to the distance between the foci. Specifically, Gauss determined for a leminscate in which the distance between the two foci is 2 (that is, a = 1), the arc length can be represented by the lemniscate constant 5.24411510858. Sloane's proved in 1937 that the lemniscate constant 2.62205755429 is a transcendental number. The lemniscate constant plays a role for the lemniscate analogous to that of π for the circle.

Proof that the Rodin lemniscate is not the Bernoulli lemniscate

To prove this, we must pay attention to the inscribed circles in the two lobes of the lemniscate.
It is known that the Lemniscate of Bernoulli is a unique lemniscate where the radius of the inscribed circle is half the foci distance:



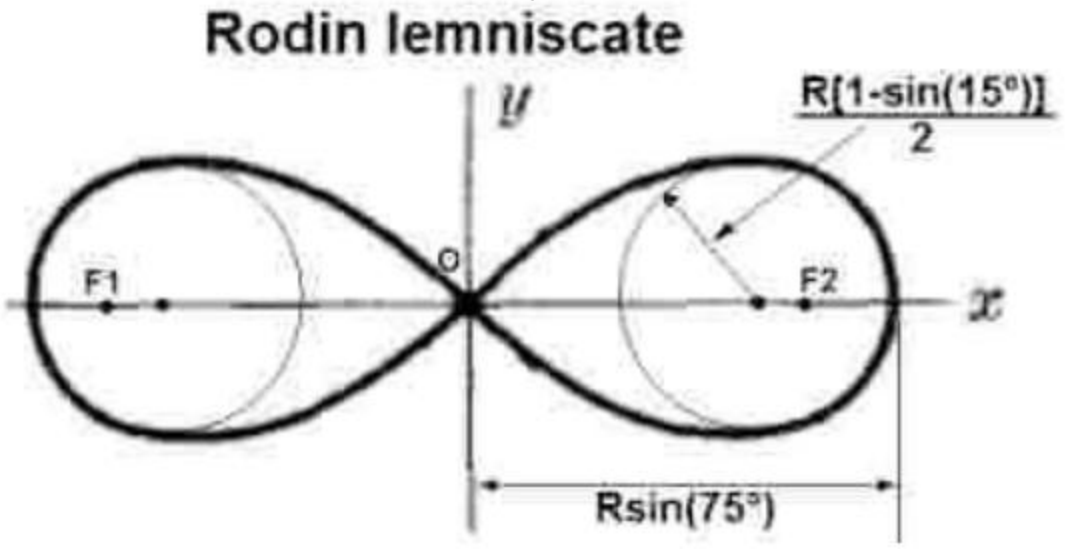
To express this mathematically we will define the ratio of the radius of the inscribed circle in one of the lobes to half of the total length of the lemniscate in x direction:



So in the Bernoulli lemniscate we have:

$$\frac{\sqrt{2}}{\frac{\sqrt{2}}{2}} = \sqrt{2}\sqrt{2} = 2.82$$

But in the Rodin lemniscate we have a different story:

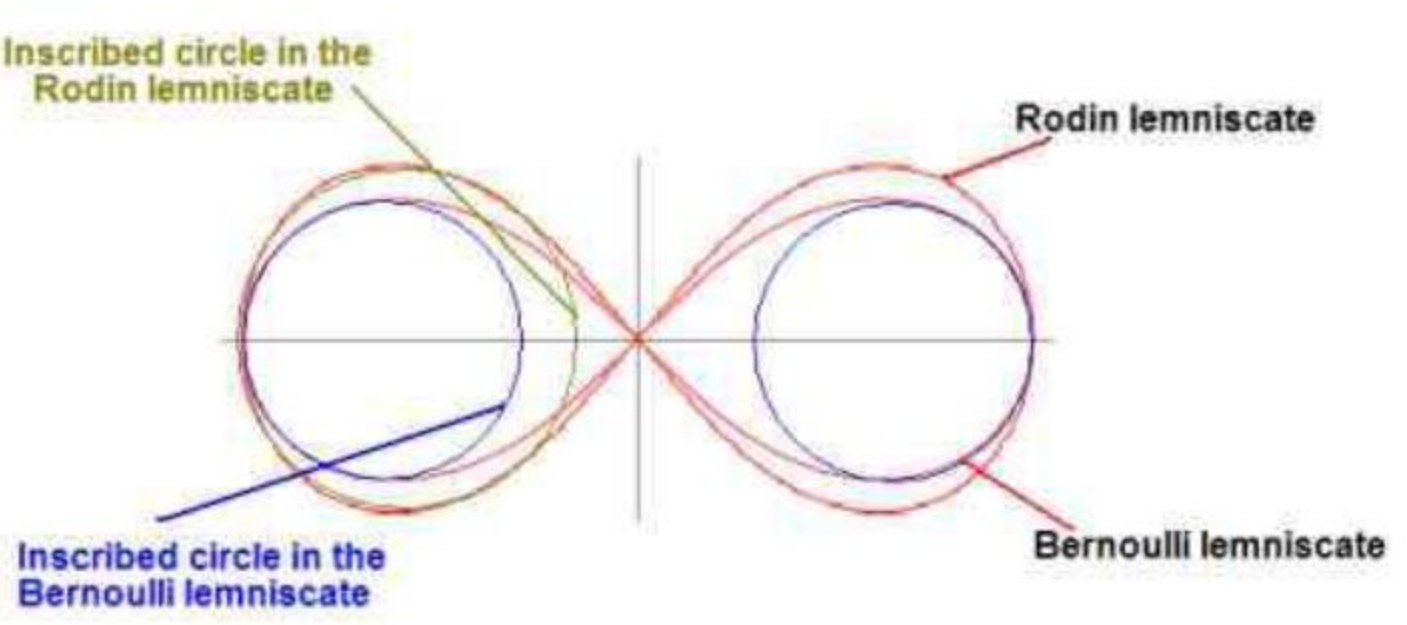


In this case we have:

$$\frac{2\sin(\square^\circ)}{\sin(\square^\circ)} = 2.606$$

Where R is the radius of the entire Rodin torus.

This determination clearly shows that the Bernoulli lemniscate is not an accurate approximation of the Rodin lemniscate small turn length. The Bernoulli lemniscate is slightly more stretched; while the Rodin lemniscate is more close to the origin (narrow/close-together/compacted/you choose the word). So let me exaggerate a little bit to illustrate this:

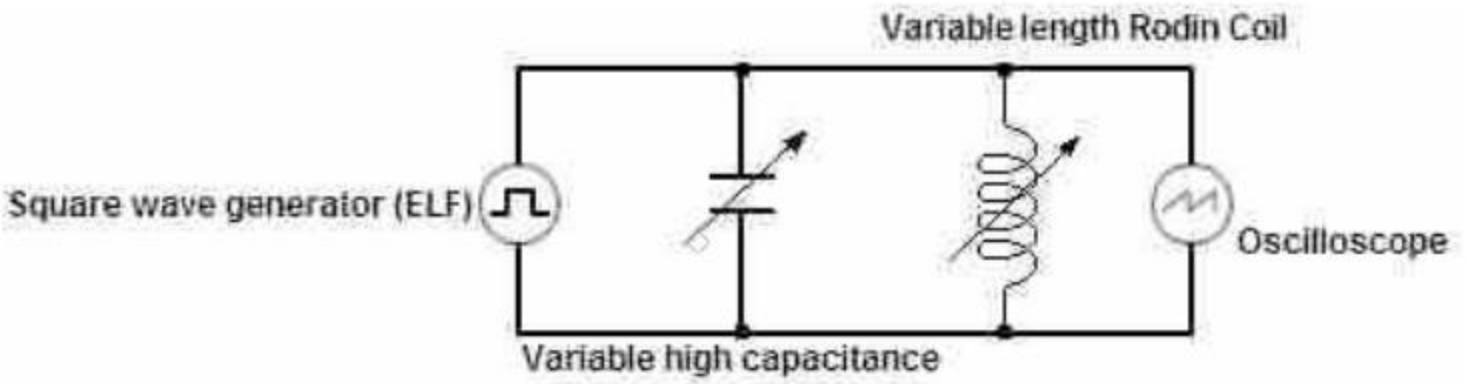


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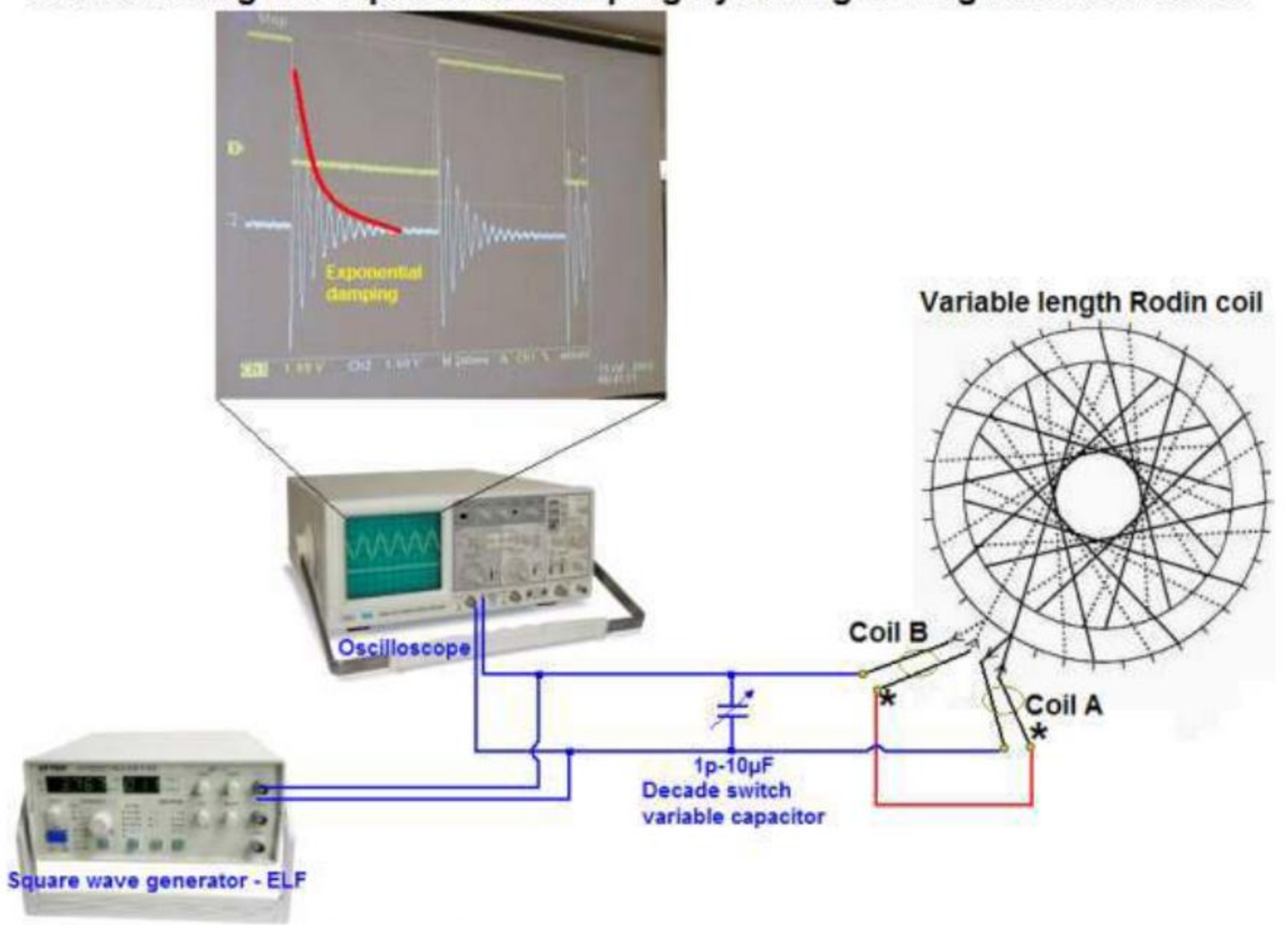
Tuning to magnetic resonance experiment with a Rodin Coil

We will use the standard configuration Rodin Coil, winded with the standard 150° step, double torus topology magnetic torsion field, non-standard firing sequence. We will drive it at ELF, in order not to interfere with the natural damping of the LC oscillations.

We will use this basic setup:



Counteracting the exponential damping by tuning to magnetic resonance

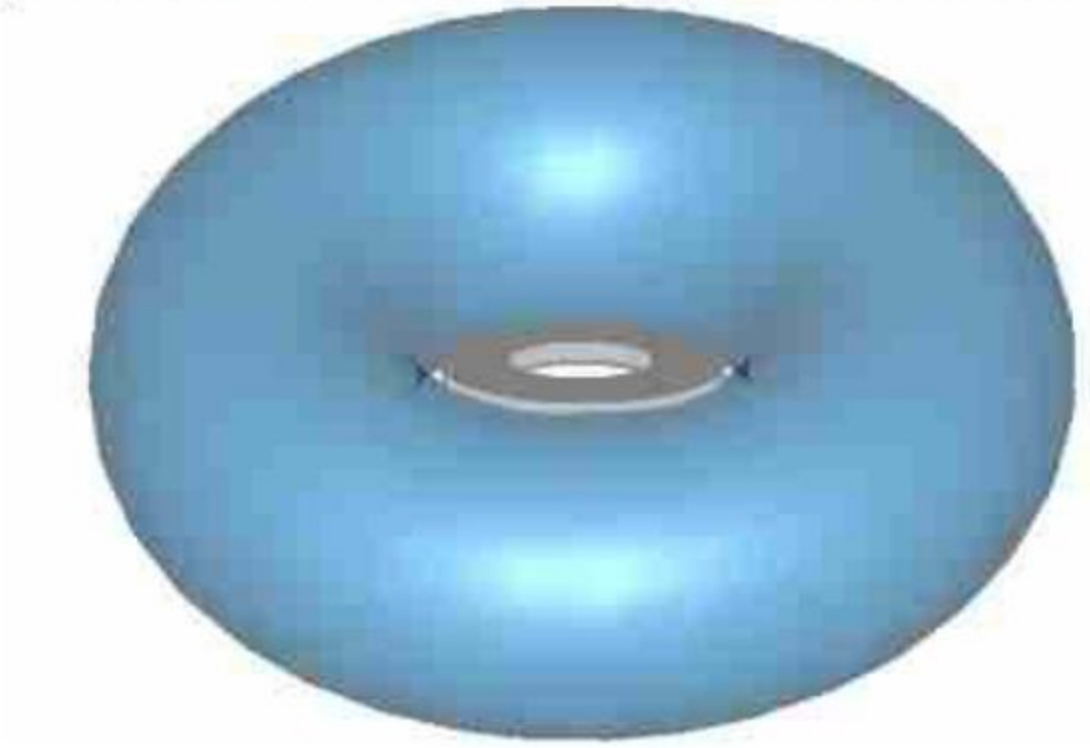


We are interested in Q factor and Damping ratio

We can make the Rodin coil with a variable length by not winding it incomplete and with each small turn we do another sweep of the frequencies to see if the damping has decreased. We can change from series to parallel connection between the L and C, if we don't have such a high value variable capacitor. But something must be bigger and something small. Either you have a high value capacitor and few turns, or either you have low capacitance variable capacitor and many turns in your Rodin coil. We can make a temporary connection to the enameled wires with a alligator clip that has sharp teeth, with not a very strong spring, so we will not cut the wire accidentally with it. We wind another small turn and sweep again. And so on, until we determine the exact relation between magnetic resonant frequency and the Rodin wires length/turns/torus size.

Rodin spinner for a demagnetized ring magnet

Establishing spinning magnetic domains in a demagnetized ring magnet placed in the center of a perfect Rodin torus



Conditions:

1. It must be a perfect torus (d=D*sin(15)).Note, I use different notations for d and D than the conventional model of a torus.
2. It must be a ring magnet, not a disk magnet
3. Two standard Rodin coils. 150 step angle. To the left winding standard technique.
4. Wires must be placed perfectly on the surface of the torus. They must never be suspended in air.
5. The torus is not a core for the coils. It provides merely as a support or a frame. Therefore it must not be made out of a ferromagnetic material. It is just a frame. A perfect frame.
6. The ring magnet must be placed perfectly on the equatorial plane of the Toroid.

1. Why does it have to be a perfect torus?
Because wires must always sit on the surface of the toroid.
4. Why do the wires must always sit on the surface of the torus? What's wrong in leaving them the way they arrange themselves?
Because, they don't arrange themselves correctly. They will be mixed together at the center. The wires from coil A will be mingled with the wires from the coil B in the hole of the torus.
So what?
No. The wires from the coil A must be separated from the wires of coil B with a small space between them.
Why?
Because, their magnetic flux, meaning the magnetic flux created by coil A and magnetic flux created by coil B, when there is a current flowing in opposite directions, this flux will have a direction in the equatorial plane of the whole torus. This can be easily visualized by projecting your mind in the center of the torus. Then grab one of the two adjunct coil A or coil B with your right hand. So, by applying the right hand rule on the wires in the center you will see that on the equatorial plane, (the plane also from where you visualize things), a magnetic flux vector is established that is going away from you or towards you.
If what you say is true, then the whole double torus topology will have to form even if you have mingled wires at the center. Even if the wires from the coil A and wires from the coil B are jumbled together at the center.
This is not true. The net total equatorial 12 flux vectors created by this mixing together of the two coils at the center will be greatly diminished when the coils are fired with opposing currents.
But it will still form?
In theory, but it will be negligible. The original standard Marko Rodin coil was never intended to work like this.
2. Why does it have to be a ring magnet? Wouldn't a disk magnet work to?
In theory it should, but it is more efficient to design the Rodin magnetic domain spinner with a demagnetized ring magnet.
But why?
Because, as it will become obvious from the following pictures, the 12 flux vectors when they are in the equatorial plane of the torus, will be opposing at the center. This must be avoided. But don't worry. Nature, ho dictates that monopoles must not be created, will correct this and say that half of the equatorial ingoing flux vectors will exit on the top of the ring, while the other half will exit through the bottom. So everybody is happy. Thus the double torus field is formed.

3. Why two Rodin coils? Why not use a bi-filar coil? Isn't it easier to wind both coils together? Why to the left winding technique? Isn't it cool to wind the right side to, like we see in many YouTube videos about Rodin Coils?
We use two Rodin coils, because that is the standard Rodin coil configuration.
Yeah. But why. Why not use only one or three coils?
We can't use only one coil, because in order to spin the domains in the demagnetized ring magnet we must also need equatorial flux vectors, meaning that we will also need ingoing and outgoing magnetic flux vectors relative to the center of the torus on the equatorial plane. These equatorial flux vectors, meaning the flux vectors that are situated on the equatorial plane of the toroid, must be created somehow, and the best way to do it is with another coil, which is coil B in our case, that must be physically discriminated from the first one, and fired in opposition (with a current flowing in opposite direction). If you hurry this job, and you are too lazy saying to yourself, that I will wind both coils, meaning coil A and coil B together at once, like in standard bifilar coils, then you clearly haven't understood anything that I've told you so far. I'm sick and tired of repeating myself that the coil A must be physically separated from coil B because you always want a physical small space between them reserved for the flux that will be created by the coils fired in opposite direction. If you mix the wires together, this flux in shooting in all directions, so there is no net sum in one direction. We want it just to shoot equatorial ingoing or outgoing.
Why to the left standard winding technique?
It works with the right winding technique also. It is symmetrical. Turn the torus upside down, and it is again to the left. It doesn't matter.
Won't we fire two coils winded to the left and one to the right?
Not in this setup. We will see this in other setups.
Can't we use a different step angle than that of a 150°?
Yes we can. But let us stick to the standard model for a while, before we explore different step angle winding configurations.
5. Why can't we use a internal ferromagnetic core placed perfectly inside the core of the Rodin torus?
Because the Rodin coil is not a transformer. It is a field Coil.
Yeah. But what does that mean?
It means that the Rodin coil creates a special twisted magnetic field. If we wind it on a metal core like so:

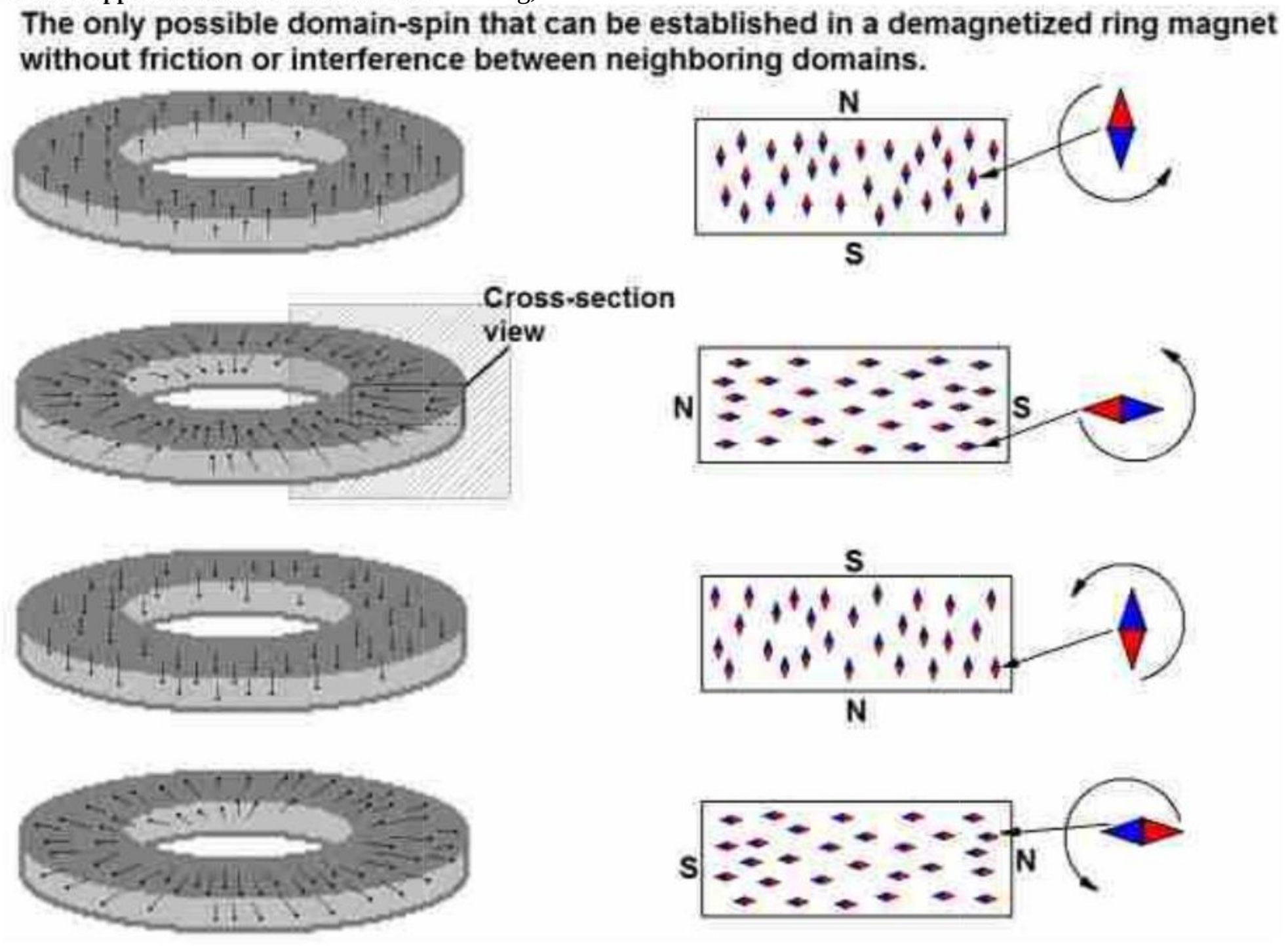


or we enclose the double torus field with a core like so:

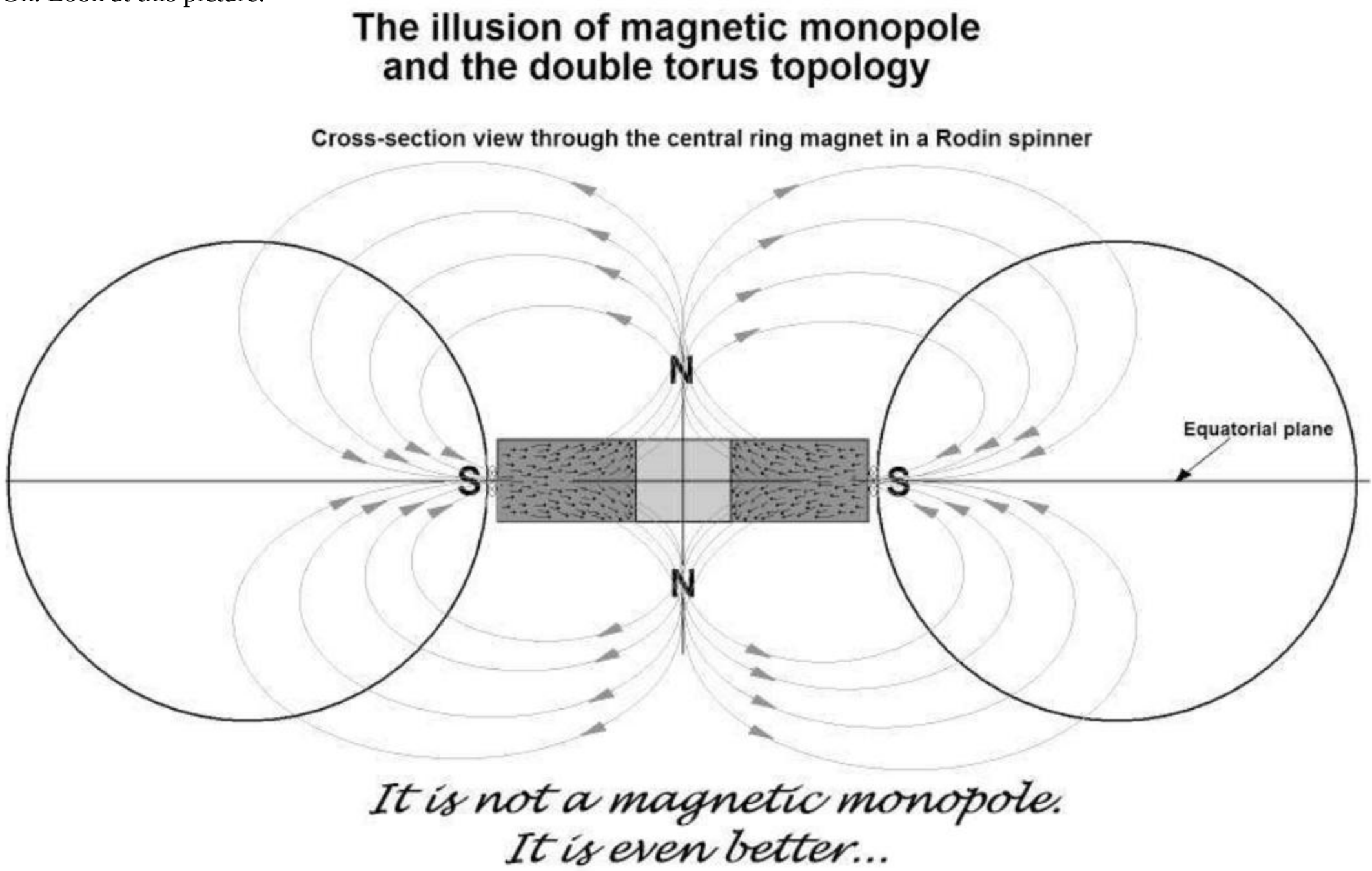


Then the torsion will disappear, and there will be no way to create the double torus topology.
So it is not a transformer?
No. It is a Field Coil.
What do you mean by that?
It means that it creates a Magnetic Field.

Yeah. But can't we tap this field, or capture it with a core? And then wind a collector/secondary coil on it and voila! we have a transformer!
No. This is wrong.
Why?
Because the Rodin field has torsion or it is twisting, or is twisted.
What does that mean?
It means that the field is rotating.
How can this be? I mean If you power the coil with pure DC and leave it on for a while, NOTHING WILL BE SPINNING, NO ROTATION, NO TWIST, NO TORSION, NO NOTHING? You are wrong!
No. I'm not wrong. You don't get the full story. I'm not wrong and you are also not wrong.
I have spoken the truth, and so did you.
But how can this be? How can we both be right?
We can, because what we both need to understand is that the twist happens at the shutting off of one coil. At power down. At that moment, at that instant when we cut off the DC power supply, ***the field collapses and the Rodin field flips and twists.***
Aha...I see...interesting...So no transformer?
It is not a transformer. It is a field Coil.
But can't we tap into this torsion?
No. Because it is not a changing magnetic flux. Its intensity doesn't change, so according to Faraday, you will not get an induced EMF with this twist/torsion because $d\Phi / dt$ is not changing. You will only get an induced EMF from the collapse an build up of the field, which will happen regardless of the twist/torsion.
If the twist/torsion of the Rodin coil has no inductive effect, what is it good for?
It has many uses. But we will be focusing in using it to spin the magnetic domains at resonance. Meaning that we will just pinch them with a little bit of energy, while they provide work to our load. Thus reaching overunity.
6. Why do we have to place the demagnetized ring magnet perfectly on the equatorial plane of the torus?
Because, we want perfect symmetry.
Why? Symmetry of what?
Symmetry of the splitting in half of the domains inside the ring magnet.
This is an approximation of what we will be doing, it is not accurate:



Why isn’t it accurate?
Because of the double torus topology.
I don’t understand.
Ok. Look at this picture:



So, this means that those who think that Rodin coil creates magnetic monopole are wrong.
No. No. No. They might say. You are the one who is wrong. Because you are using a magnet inside the Rodin coil.
My response to you is. My friend, it is you who is wrong. The double torus topology has nothing to do with the central ring magnet. This double torus topology can be easily created with the Rodin coil even without anything at its center.

So let me get this straight, you are trying to magnetize a magnet with only one pole? You are trying to create a monopole permanent magnet?

My friend. You got this whole story backwards. First I want to make it perfectly clear that the Rodin coil has nothing to do with monopoles. It is just an illusion as you can see in the above picture.

Having the North pole on both faces of a magnet, doesn’t mean it’s a magnetic monopole!

No. No. No. You are mistaken. This experiment clearly shows that you are wrong:



And it is done by Marko Rodin himself! Who do you think you are saying that Marko is wrong? You don't claim to be greater than him? Do you?

My friend, you don't seem to understand that you can be easily taken into the illusion of monopoles when you try to measure and determine the polarity of a Rodin field. It seems like a monopole, but the other pole is at the equator of the toroid. If you don't understand this than it's clear that you refuse to acknowledge the double torus topology created by the Rodin coil.

So what are you really trying to achieve then?

I'm trying to fire/power/actuate/excite/kick/activate (you chose the word) the Rodin coils in resonance with the established spin of its magnetic field. I will lower this frequency of this spin by using a demagnetized ring magnet at the center, and thus I will also at the same time give more inertia to the spinning field, because I'm using and attaching magnetic domains to it. So I'm not spinning the ether, I'm spinning the magnetic domains. Once that spin is established and self-sustains for a few seconds, I'm interested in tuning to that established spin, so that I just have to "pinch" it from time to time, just like the child on a swing analogy of resonance.

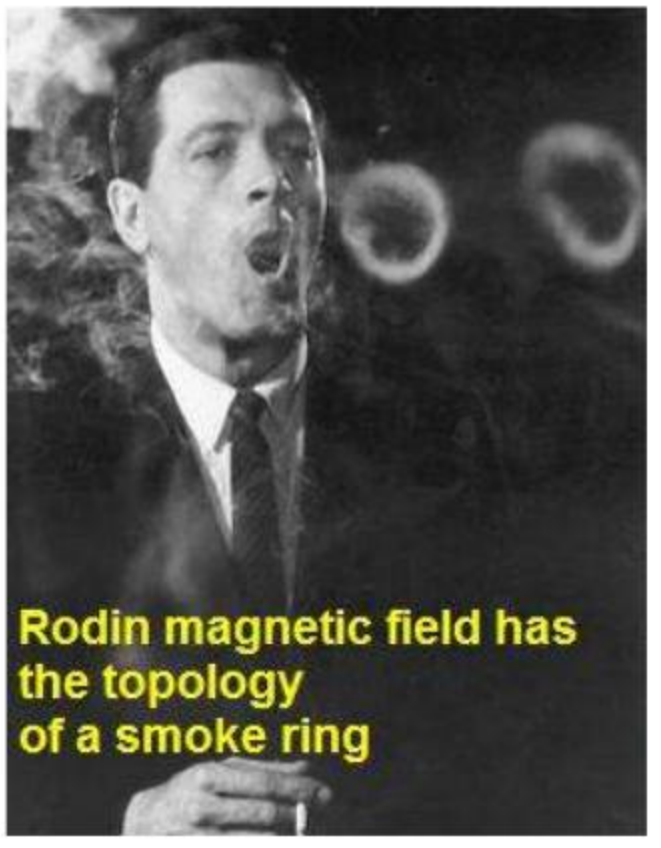


Then the spinning domains will power my load and generate a lot more electricity than the power I'm using to "pinch" or "kick" or "actuate" the spin from time to time.

Excuse me for telling you this, but what you are saying doesn't make sense!

Ok. Then let me make myself clear, by further explaining the processes involved here:

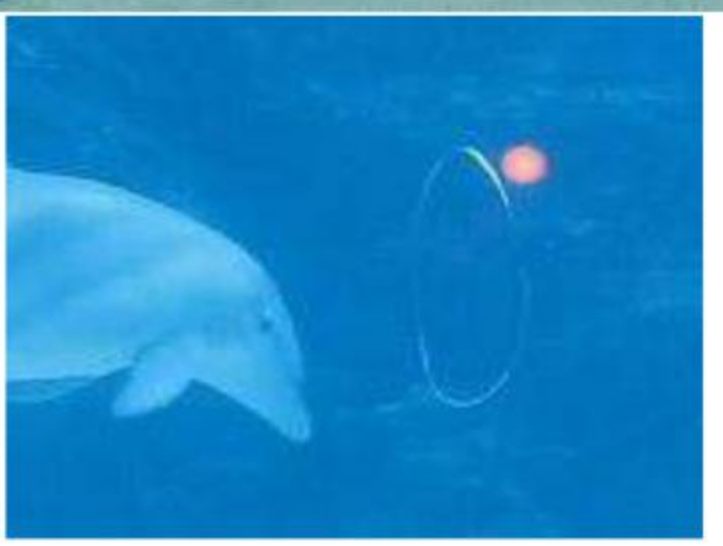
Rodin coil creates what is known in physics as a water bubble ring, or a smoke ring, or however you want to call it:



This is child-play for dolphins:







The bubble ring is the most stable 3D ***dynamic*** structure in entire Universe. We must thank the dolphins that keep reminds us that. Note that I said "***dynamic"*** structure, not "static" structure. The most stable 3D static structure in existence is the geometry of the vacuum, the Nassim Haramein 64 tetrahedron grid that encompasses all the platonic solids, all the orbits of the electrons in the atom, even the phi spiral. Everything is embedded inside the 64 tetrahedron grid. Every geometry can be born or constructed from this 64 grid. You just have to study it in detail, to realize this deep truth. That is if you are drawn to all of this. I'm not going to insist on this, because it doesn't make the subject of this book.

I believe that the magnetic bubble ring formed inside Rodin coil solves our big problem of the instability of the not-so-self-sustaining spinning magnetic domains. **It is the ULTIMATE stability of any spin you can imagine.**

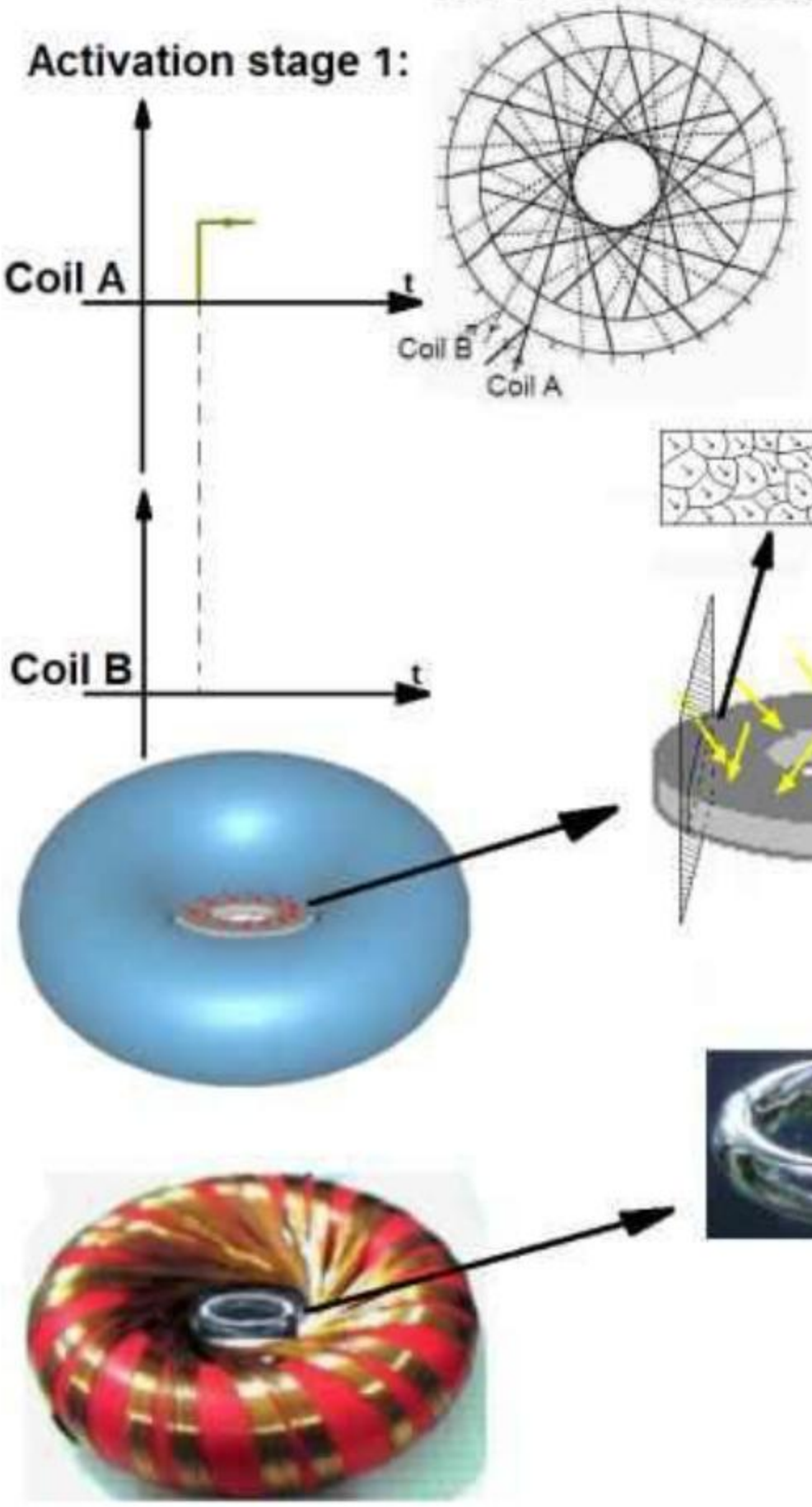
Just like the dolphins playing and entertaining themselves by creating these water bubble rings, we will also entertain ourselves by creating a **magnetic bubble ring** inside the hole of a Rodin Coil.

Dynamic twisting magnetic field takes the form of a bubble ring formed inside the hole of a standard Rodin coil

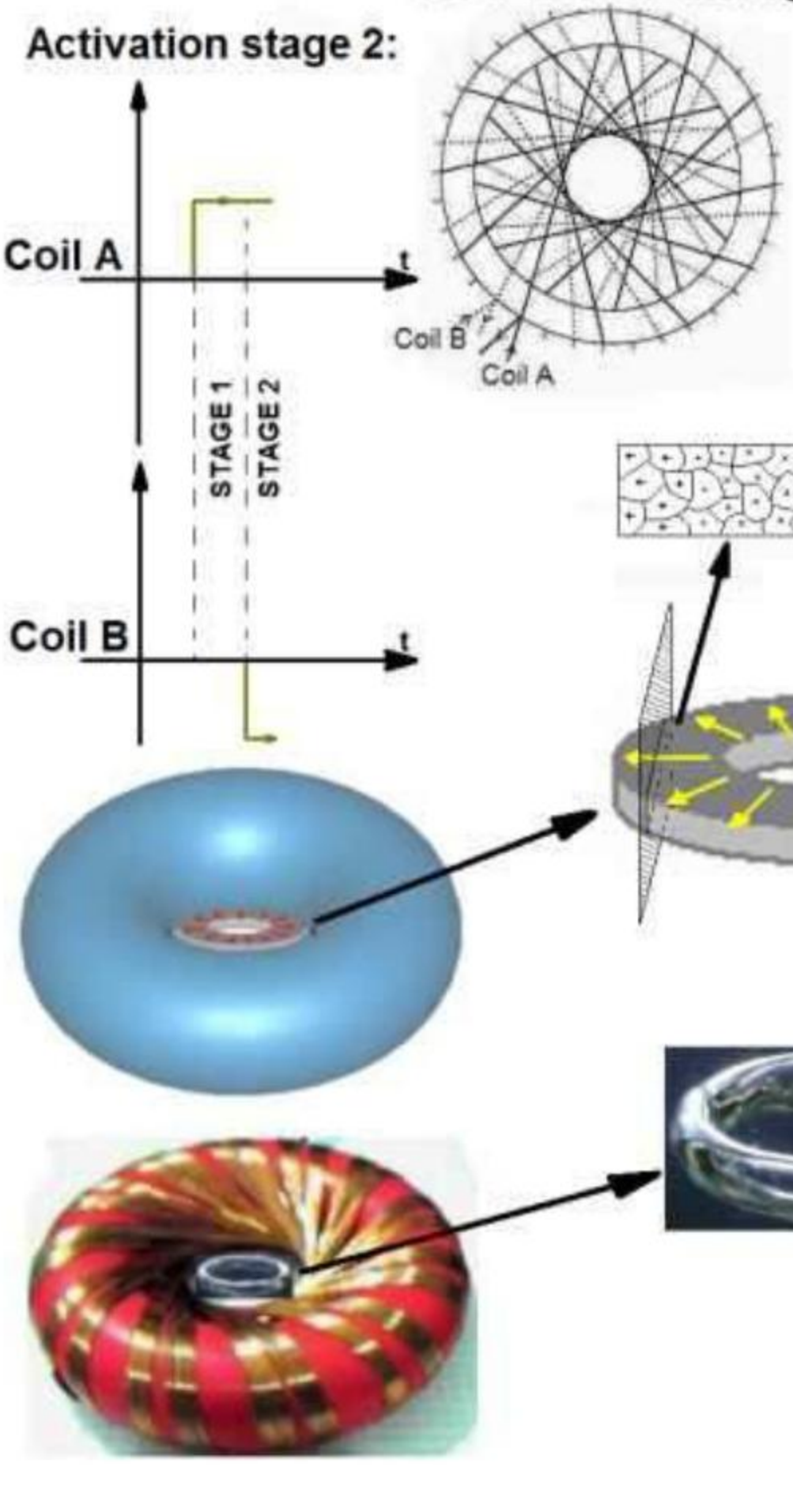


Of course, the activation sequence must be altered significantly and if I think about it, I haven't even discussed it until now. It is a very complex firing sequence, and I it's not even complete:

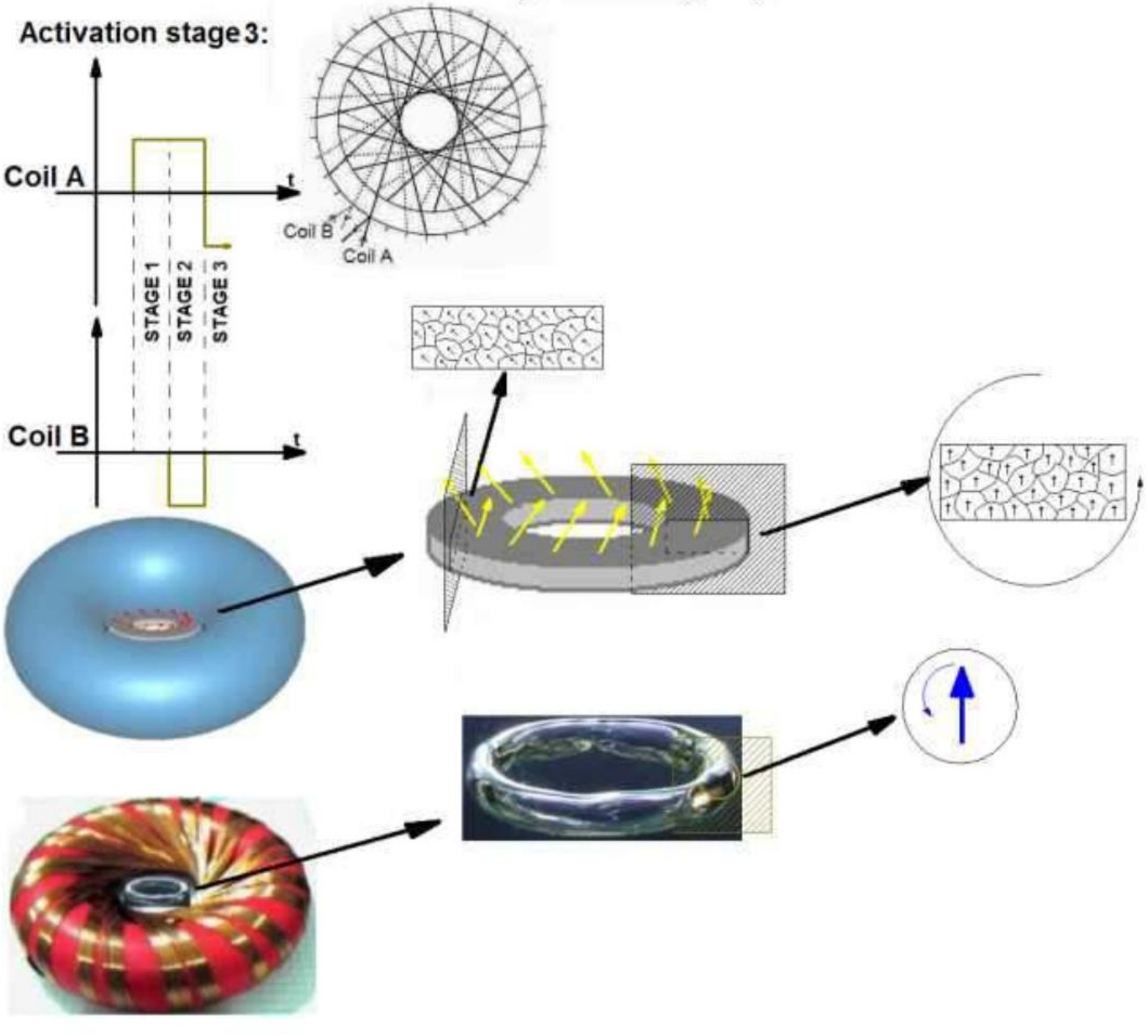
Activation sequence for a Rodin magnetic-domains-bubble-ring-spinner for a central demagnetized ring magnet

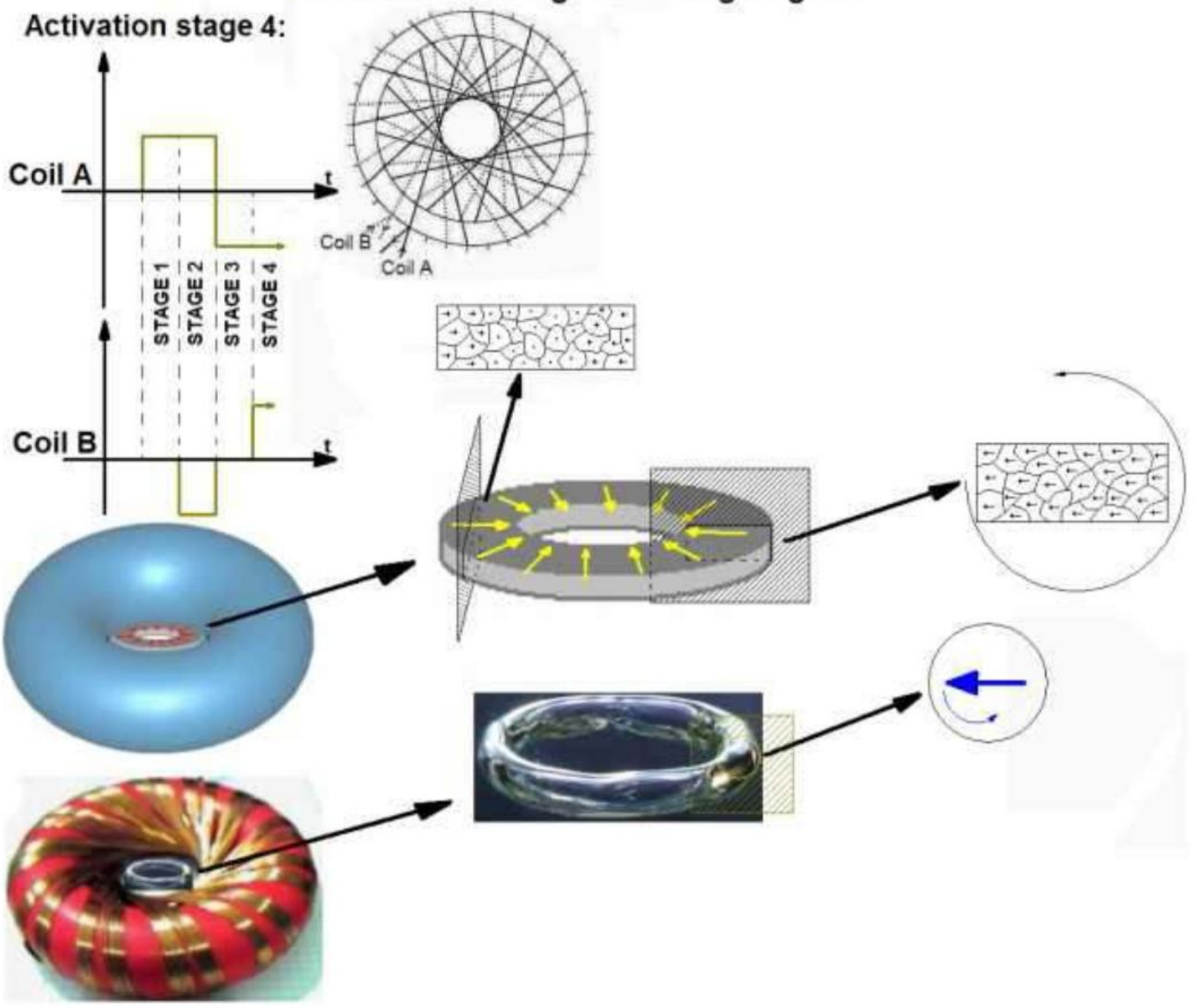


Activation sequence for a Rodin magnetic-domains-bubble-ring-spinner for a central demagnetized ring magnet



Activation sequence for a Rodin magnetic-domains-bubble-ring-spinner for a central demagnetized ring magnet

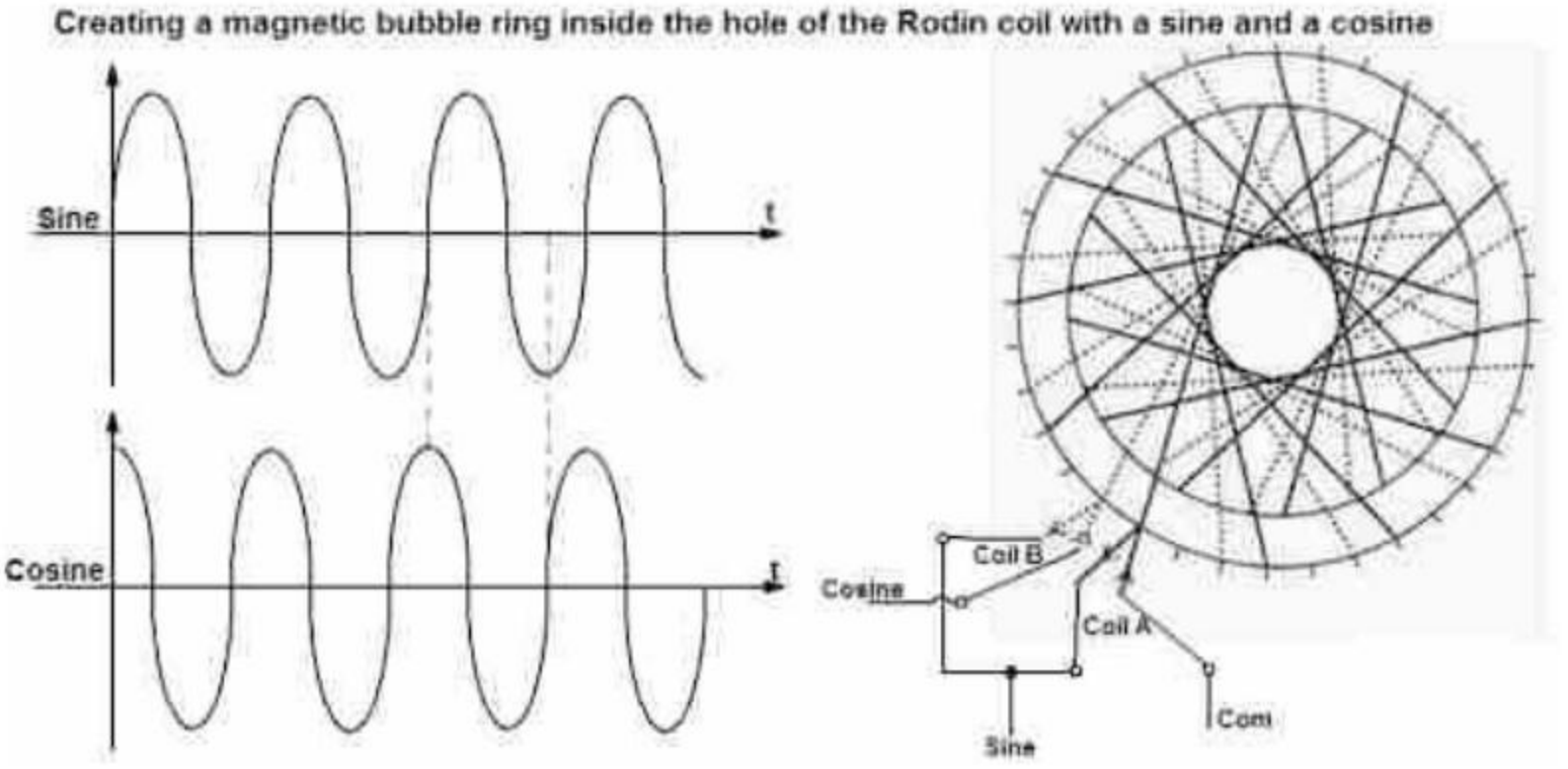




It is not complete because it does not incorporate that break/transition time/pause/delay/off time required for the actuator/exciter/kicker to lag the spin. In theory it should still work, however, it will not be the best configuration, best performance or best efficiency.

Of course, when we analyze this, we immediately recognize the spinning magnetic field driven in four stages. Then an obvious question arises. Why don’t we use two sine-waves 90° phase shifted (sine and cosine) to create this spin more naturally? Won’t it be more smother? More softer? More gently? More naturally? More efficient? Won’t it work better because the rotational magnetic dipole vector takes all the directions across the circle, and doesn't suddenly jumps from a 90° direction to the other? Won’t it work better with a sine and a cosine?

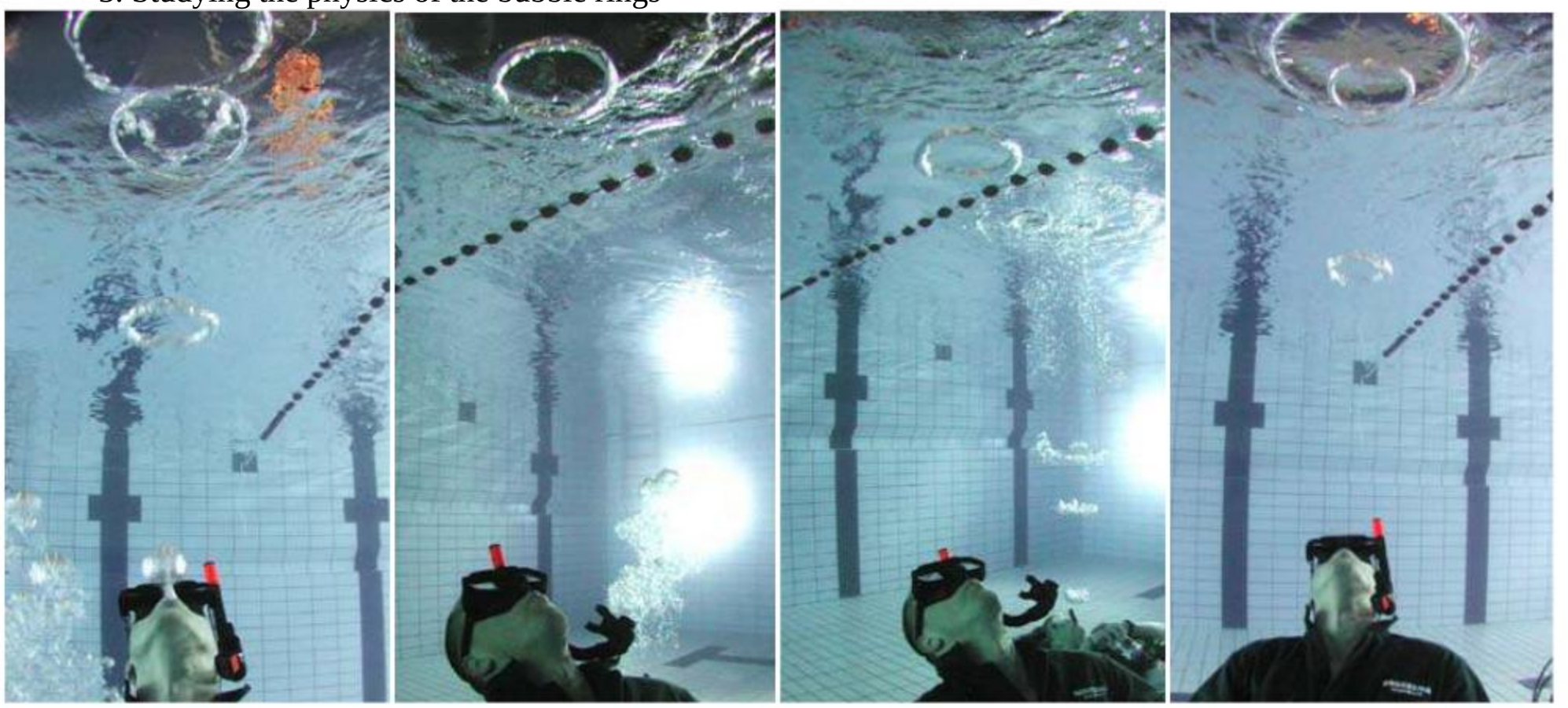
That is a good question. Let’s see how this can be accomplished:



Interesting configuration. However, I will give you three good unbreakable reasons why this should NOT work:
1. As we will see, there is no way to implement (at least in the drawing presented) the essential 90° lag between the actuator field and the spinning magnetic bubble ring. This will make sense later on.

2. Marko clearly stated that his coil works in PDC (Pulsed Direct Current). My guess is probably because of the reason 1.

3. Studying the physics of the bubble rings



Diver blowing bubble rings (photos: Wim Bakker)

and how some scuba divers are able to imitate the dolphins and to create such water bubble rings, we find out that abrupt closing and opening and sudden release of pressure is crucial and essential for success in the technique described here.

quote:

"[...]. ***Abrupt*** closing is essential.[...] Rings can be created by letting air escape through an orifice that is ***opened and closed abruptly***."

Source: http://www.deepocean.net/deepocean/index.php?science09.php

Who am I? What do I seek? What I am doing here? And why?

For the Rodin coil to work correctly we must incorporate the necessary break/transition time/pause/delay/off time in the firing sequence.

Why?

As I stated it is required.

Yeah. But why?

Again, I repeat myself: We seek self-sustaining, we seek self-spinning. Thus we must at first activate/fire/power/turn on the coils, and then after some time, we will have to implement a maximum 90° lag/break/transition time/pause/delay/off time before we hit it again. So now we will not express ourselves anymore like "activate/fire/power/turn on", because that was at the beginning. Now, after this lag/break/transition

time/pause/delay/off time, we say “we actuate/kick/pinch/excite the coils” . Because it is like a potter wheel. At first you move your hand with it, in phase, you put energy in motion, but after it gains speed we say that the wheel is self-spinning, or the wheel self-sustains it’s spin. **OF COURSE IT WILL SLOW DOWN, OF COURSE IT WILL STOP**, but from time to time, you just kick it to prevent this and the spin will maintain.

So you are trying to do the same with the magnetic field?

Yes.

But it’s impossible, the magnetic field collapses, it is in its nature. What you are saying is bullshit.

Not if you successfully create a magnetic bubble ring. It is the most durable and stable dynamic form in existence.

Wait a minute...If what you say is true, then why haven’t other Rodin coils builders managed to create such ...bubble...or however you say? Answer that!

Because they don’t have the correct activation sequence.

Oh...really...and you do? You self-righteous arrogant bastard, who the hell do you think you are?

Please, check you language, and don’t swear.

First, as I said, I’m somebody who is nobody at the same time. Who I am is irrelevant. The messenger is not important. It is the message you should pay attention. **If you get a summons for a lawsuit in your mail, you don’t throw tomatoes at the mail man.** You just don’t do that. The message is the message. You do whatever you please with it. You keep it, you throw it away. It’s your business. The psychological discrimination between the message and messenger has its roots from the time of Crucifixion of Jesus. 2000 years later we still are not able to differentiate the message from the messenger. It’s sad... Personally I believe in the return of Jesus, and He may not “return” the way we expect Him to “return” but it will happen somehow, someway. What I’m saying is that I don’t want Him to return , because if He ever comes back, **He will be crucified again.** You can be sure of that. That’s the way the world works. It sad...

Second I’m not saying that I’m right, or that I’m always right. I make mistakes, I correct them. ERRARE HUMANUM EST.

Third , I have a motto in life. I don’t know how to put it in English, but for short it’s like this: “If you don’t like it, then don’t look!” Simple as that. Nobody is forcing you to read this junk of a book, so do whatever you want with it. I don’t care.

Forth I will gladly share the correct activation sequences (there are more than one) to successfully and accurately create such a bubble ring. I share all this information, not because *it is right,* or because I believe it to be right, but because it may provide useful insight for other researchers in the world. My motivation comes from a pure and honest exacerbation of altruism. If you believe me, fine, if you don’t, fine. I don’t care either way. If I’m wrong, fine. If I’m correct, fine. This book is like a junk yard. You pick what is useful to you and discard the rest. I don’t care.

I just take comfort in the hope that just one, that’s all, just one person out-there formulates a new idea, or gets a new idea from all this garbage in this book. I’m the junk yard keeper , that welcomes all who enters searching for pieces of scrap metal. Everything is for free. If they find something they consider useful, then I’m glad I have served my purpose. If they truly want to repay me, or the help I have given to them and to those who got inspiration from all of this, I will decline. I don’t seek rewards. But if they truly want to do something in return for me, then they should show me what they have practically done from the junk pieces of data they have gather from this book. That is all I ask in return, and that is only if they want. No obligation. No string attached. Nothing like that. Everything is free. Free energy means free of charge , not *free from constraints and boundaries* like others think.

Further insights on the Rodin firing sequences

We must first really understand the importance and necessity of this break/transition time/pause/delay/off time/lag time in the Rodin firing sequence. Marko underlines this in his first original seminar presentation YouTube, quote:

“And then they’re both off . None of them are positive, they’re all neither positive, and the middle space in there becomes all positives (the 3,9,6)” (*Movie clip 18/44 minute 4 second 13*)

This is extremely important. Why?

As I stated it is required, because by seeking self-sustaining in the magnetic field, once this spin is established we will NO LONGER HIT IT IN PHASE. WE MUST HIT THE SPIN LAGGING BEHIND IT. WE MUST HIT THE ESTABLISHED SPIN AFTER IT HAS PASSED OUR FIST. If you follow my illustration.

We must truly understand this concept of hitting something that is already spinning after it has passed its original momentum. Just like the children on a swing. We don’t push the swing when it’s exactly on top, but after it has passed that point and it’s reversing direction.

This break/transition time/pause/delay/off time/lag time or however you want to call it, is crucial. Still, there is a big problem ahead in implementing this “off time” , when everything is off and all coils are off.

At first we might think that after we set the spin, and establish it, we implement the break/pause, and then we just actuate/excite the spin.

Basically this is correct in theory, but things are not so simple. This will work as long as the spin doesn't break down. As we have determined in the past, this established spin is not all the times stable, and can easily break down. If this happens, then our 90° lagging behind actuator/exciter/kicker signals will become again in phase with the spin, and the signals will not know it, and we will also not know it. Nobody will know that we are no longer actuating the spin 90° behind it.

So due to the nature of the established spin, to decay/fade away, we can’t implement a lagging/pause/break time so that our signals will be behind the spin.

Everything will decay especially if we stress it, or put a load on this spin. Everything in the Universe decays. What we are dealing here is no exception. So how can we solve this problem?

We can incorporate another lag after some time....but that will add up with the last 90° and we will have 180° phase shift between the self-spin and the kickers/actuators/exciter signals. So this may look like an impractical/impossible situation.

But, there is a solution.

WHAT IF WE IMPLEMENT AN INTELLIGENT 90° PHASE SHIFT BETWEEN THE ESTABLISHED SPIN AND THE ACTUATOR/EXCITER/KICKER SIGNALS?

What do you mean by “intelligent”?

Ok. What if we design a signal with some kind of a built-in fail-safe mechanism? What if we can build a self-correcting driving signal?

Fail-safe, self-correcting? What are you talking about there?

What if we can have our driving signal for the Rodin Coil, with a built-in fail-safe mechanism, so that our kick signals will always be 90° behind the spin. Always!

Nonsense! What you say is absurd! Dream on...

No. It is real, I assure you, and such a driving/actuator signal exists. It can be accomplished by always shifting and rotating the signals or the coils you fire with, so that they will always lag behind the spin.

Yeah...maybe in theory...but it will never work

No. It can be done, and it will work!

How?

If you can imagine, that after a lag/pause/break time in the firing sequence, there will be a 90° phase shift, then after the next lag/pause/break time there will be a sum total 180°, but if we correct the actuator signals to drive the spin this time 90° instead of 180 then everything will be solved.

What you say is too complex. It is impractical.

No. No. No. Don’t think like that. If we change the coils we are firing after each pause/break time then we should in theory repeat the whole sequence after 4 pause/break times. Correct?

4? Why 4?

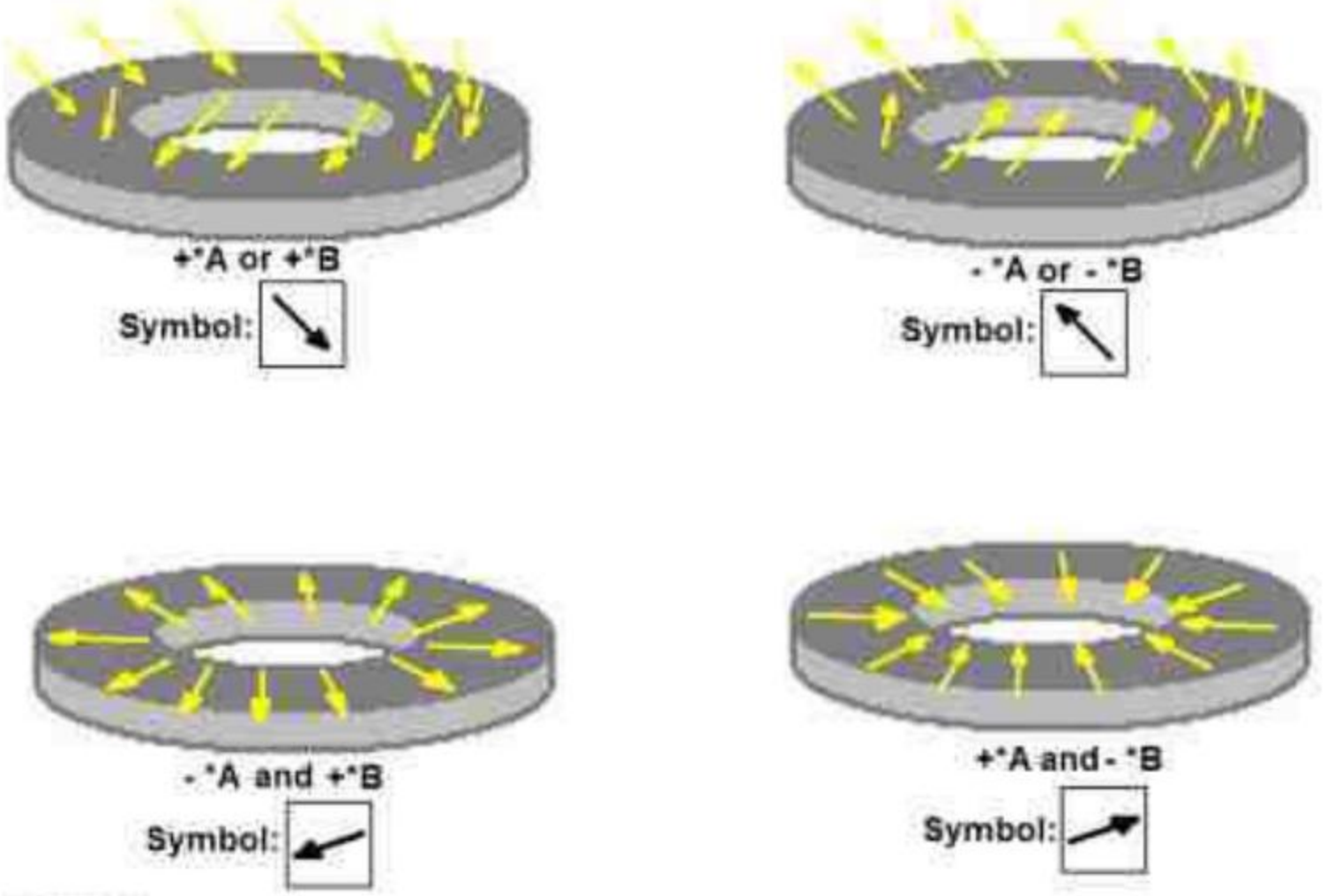
Because that is how we establish the spin, in four times/poles/sequences. Remember? We establish the spin by driving it in 4 directions sequentially. One after the other.

I see...But it’s still too complex. Why do we even have to go there? Can’t we implement a simpler solution?

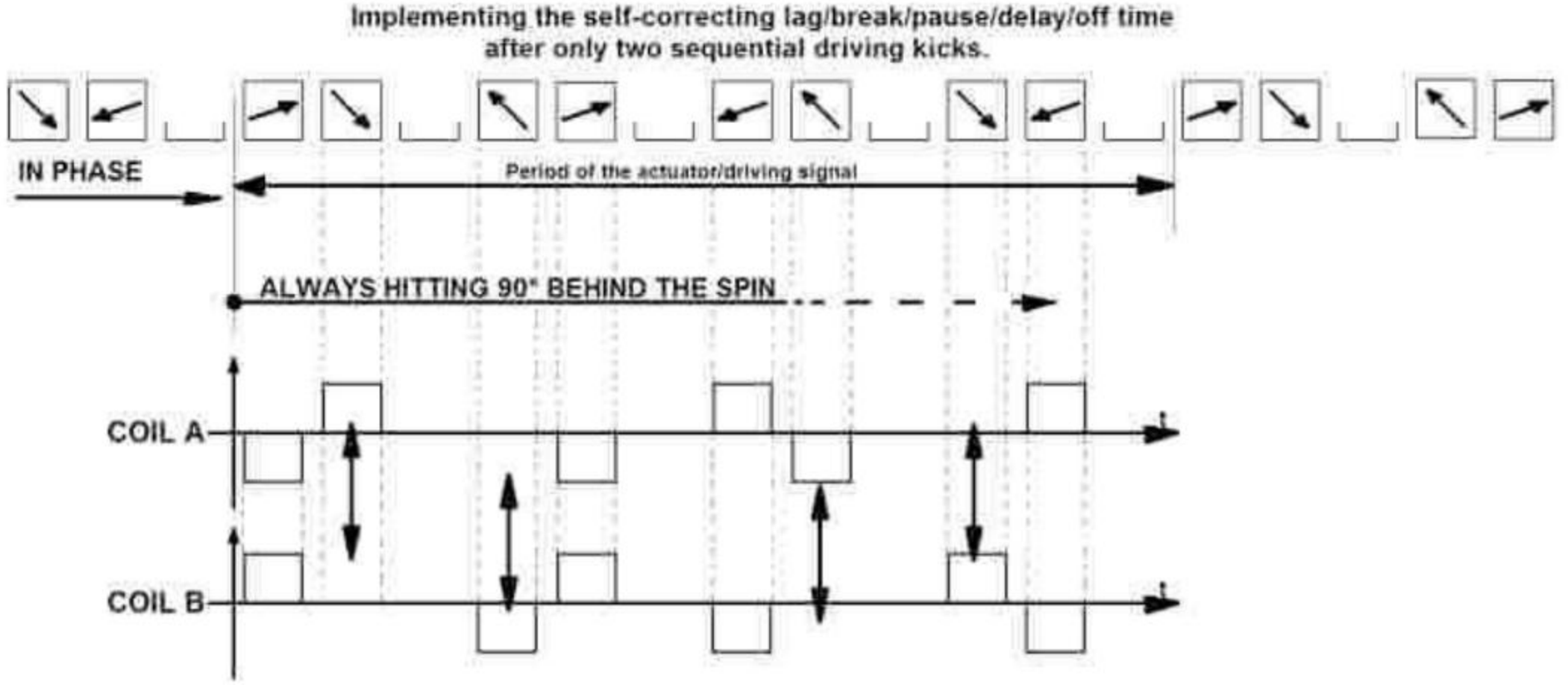
We will, but first we must study this. It is important. Then we will reach at a very simple intelligent firing sequence that has all this “self-correcting” lag built-in. This time you will have to trust me.

First I’m going to use a legend to simplify the vectors dynamics inside the Rodin coil, when we are trying to achieve a magnetic bubble ring. Note that there are other vectors dynamics that the Rodin coil can create, but we are sticking to a magnetic bubble ring for now.

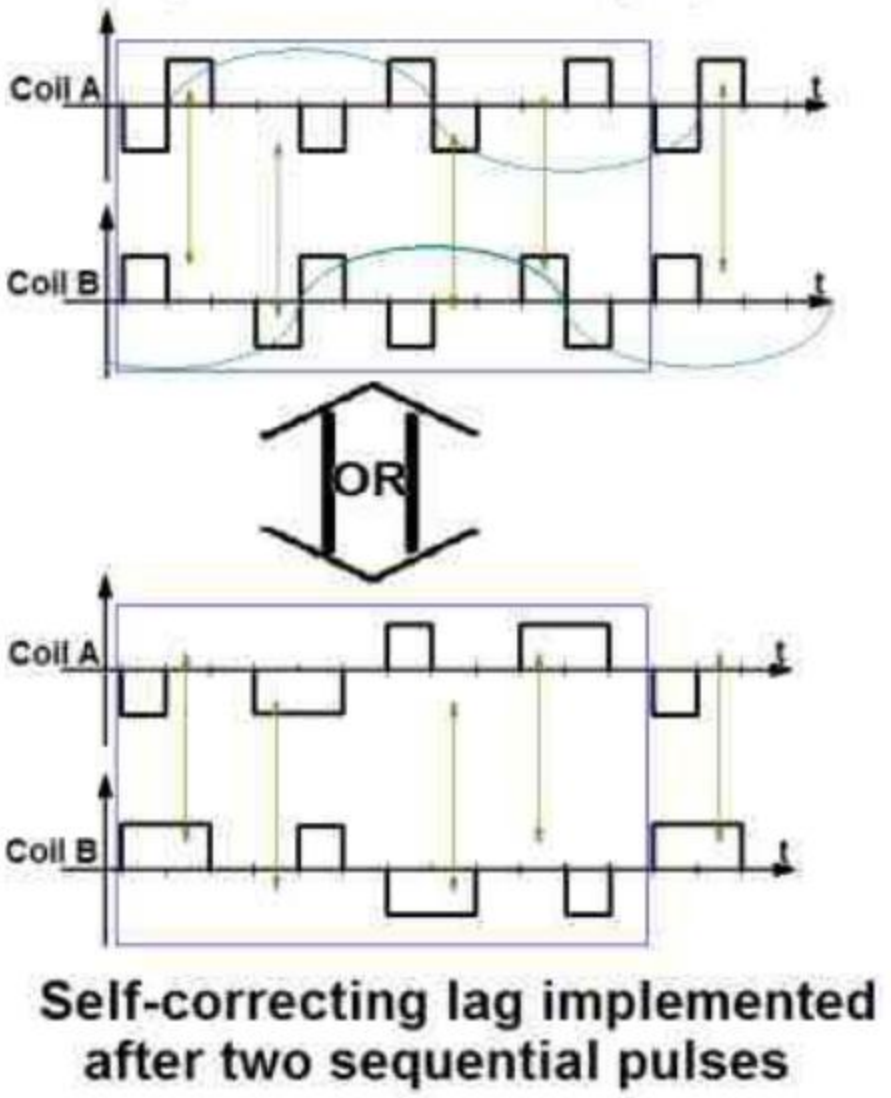
I’m using a new invented alphabet to describe all this dynamic motion in the field, so bear with me, because this is very sophisticated and complicated stuff.



Let’s start by designing the self-correcting 90° lag firing sequence for the magnetic bubble ring formation inside the Rodin coil:



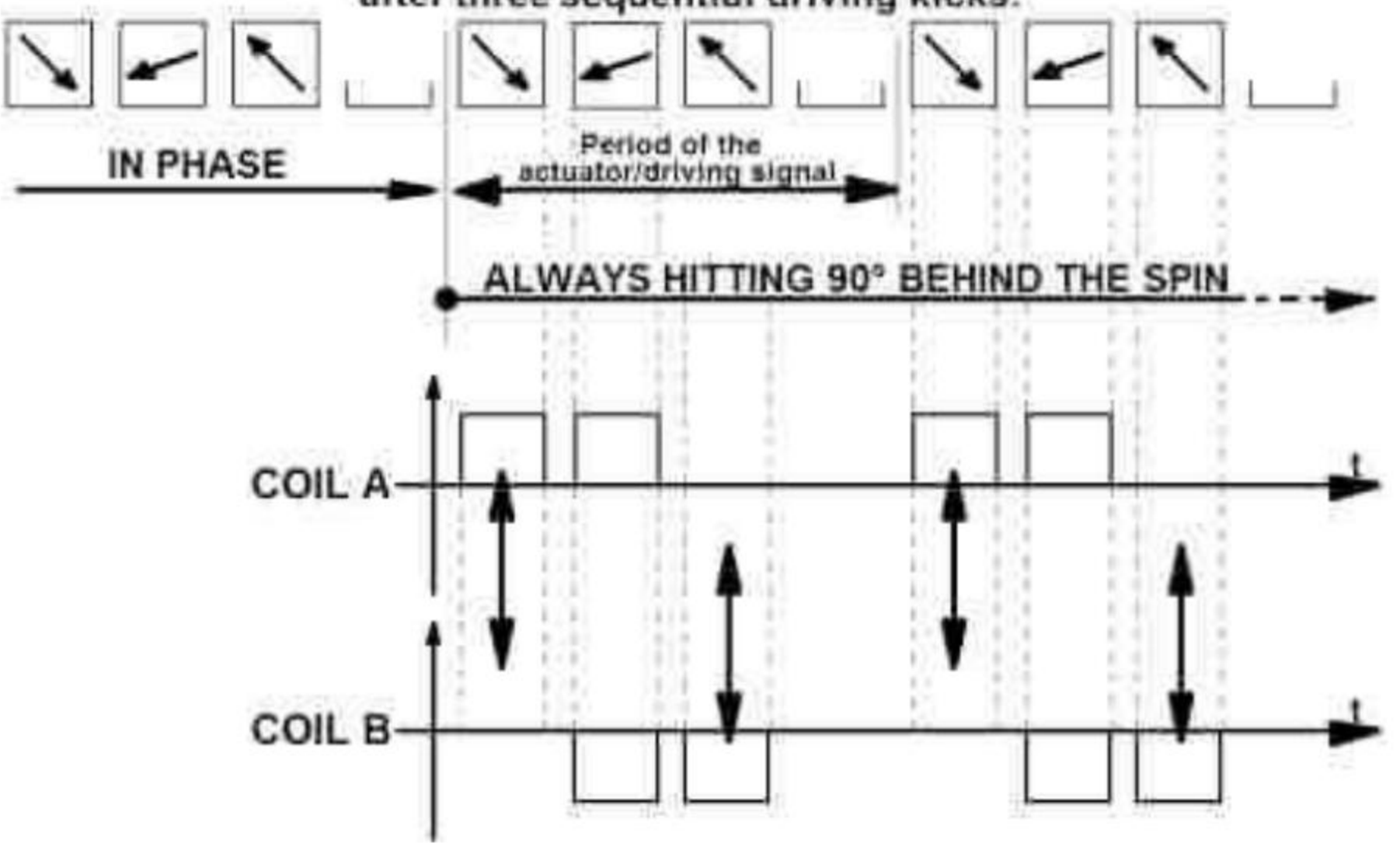
Thus our driving signals should look like this:



As it can be seen, there are various ways to implement the magnetic bubble ring. These are just two possibilities for a firing sequence with two sequential pulses. But it can be shown that there are a total of 16 variants of this signal mainly because of the arrows depicted in the above pictures (2*2*2*2=16). This is because for example if we need to create a downwards twisted flux, we can connect the positive terminal of our power supply to the beginning of the coil A, or coil B. It doesn't matter. It will work either way. Because coil A and B are identical and wound in the same standard direction to the left. The only difference between them, as probably is clear by now, is when they are both powered in opposite directions to create the double torus topology as long as the third empty space is still delimited on the circumference of the inner hole (at the center) of the toroid.

However, one might think that there are more than 16 variants of activation sequences for two sequential pulses because I only treated the case when my activation starts with a positive on coil A (positivating coil A). My response is that it's the same story. Meaning that if we start for example with the negative terminal of our power supply connected to the beginning of the coil A (negativating coil A) we will find again one of the 16 variants of activation sequences, just that it starts with a different stage, but basically it's the same signal, same period, same everything, just that it start at a different stage, or it starts later on but it's the same signal. It all depends where you define your starting point for the period. It like I'm saying that for the period in the above picture I have a total of 12 possibilities of defining my period of the signal. Who cares? What difference does it make? Isn't the same signal? It's irrelevant. It's like saying that in a sine-wave signal I have an infinite possibilities of defining my interval for my period of the signal. Again, what difference does it make, from what point I define my period? It's the same signal, no-matter where I start my period of repetition in the signal.

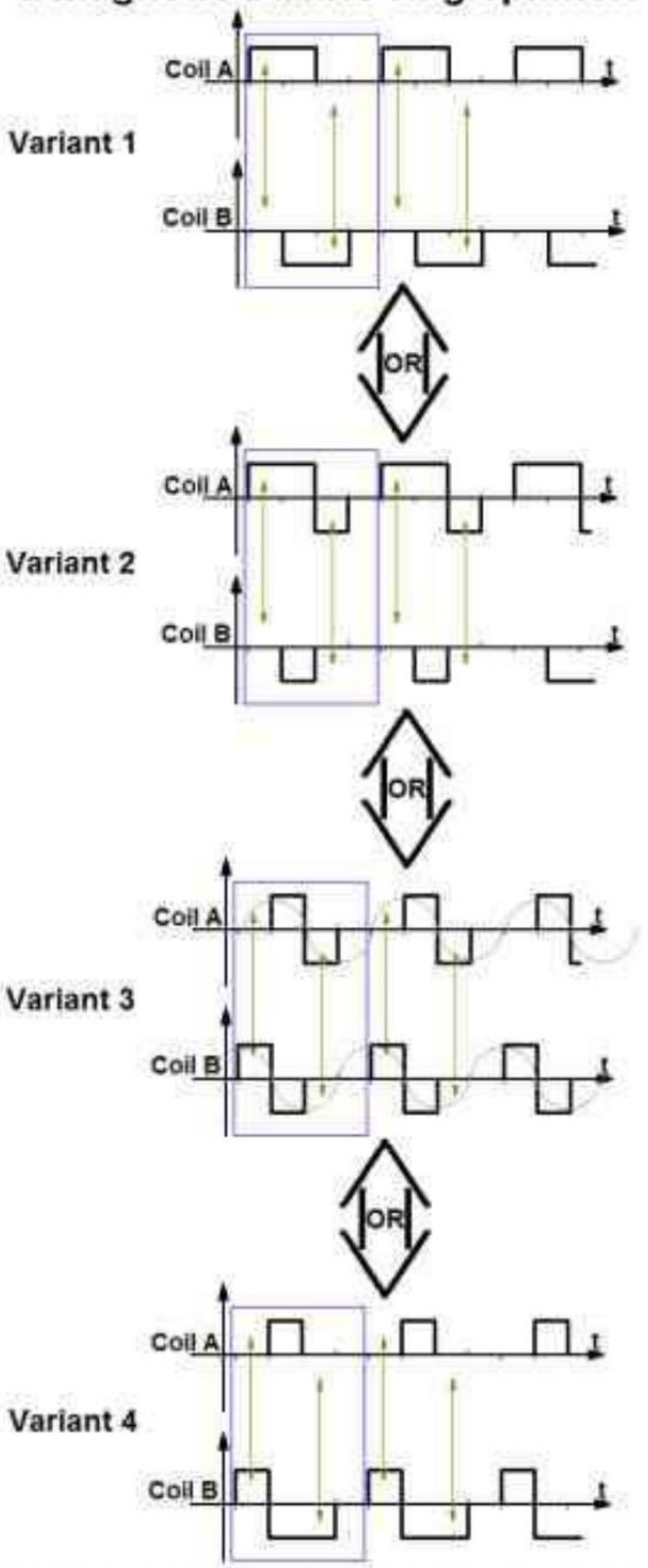
Let's look now at how we can create the self-correcting delay after three sequential actuator pulses:



Of course, all this applies if we have established a self-spin in the magnetic domains, at least a quarter of a revolution. Otherwise all kicks will be in phase with the domains alignment.

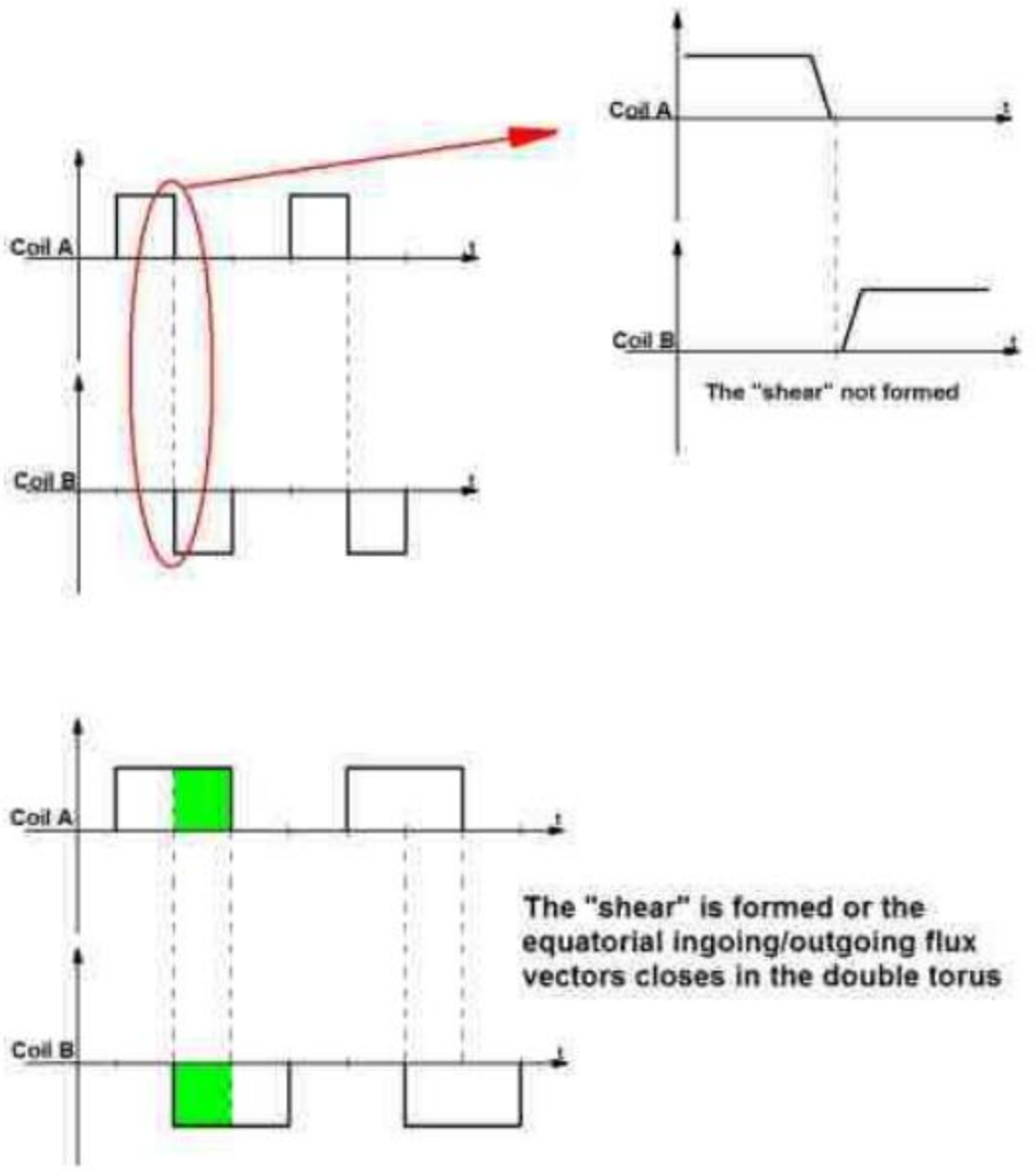
And our driving signals should look like this:

Rodin firing sequence to create a magnetic bubble ring spinner.



Self-correcting lag implemented

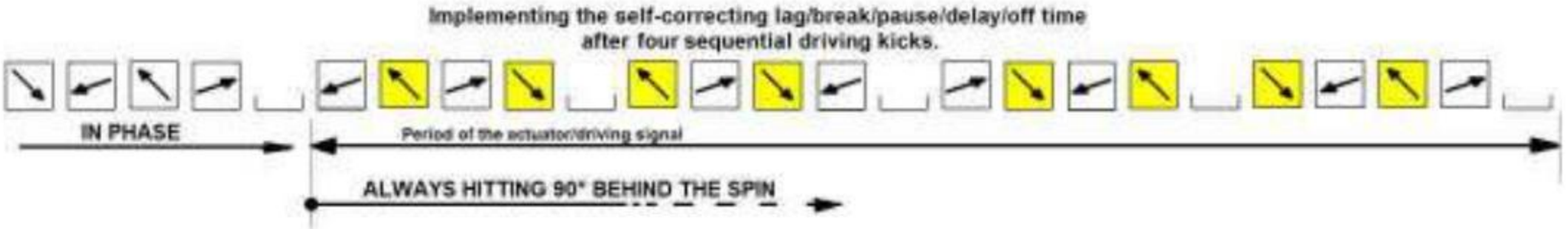
We must be somehow extremely blind not to see the remarkable resemblance between Variant 1 of the activation sequence for the magnetic bubble ring and our standard Rodin coil firing sequence version 2. However the difference must be pointed out:



By “shear”, if we look it up in the dictionary, I mean this:

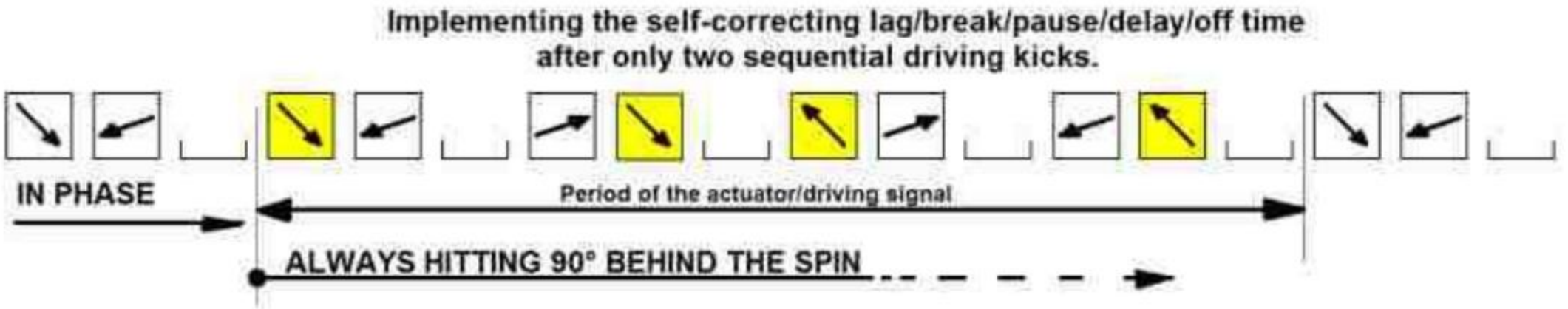
“(Engineering / General Engineering) Engineering to cause (a part, member, shaft, etc.) to deform or fracture or (of a part, etc.) to deform or fracture as a result of excess torsion or transverse load”

Note that I used quotation marks, because nothing is really fracturing or deforming, it is just a figure of speech. This term is used to describe the equatorial ingoing or outgoing magnetic flux vectors formed between the two coils when they are fired with opposed signals. These flux vectors that go inside the torus core, they come out through this empty band (the “nozzle” as Marko is referring to it), closing on themselves in the double torus. Ok, maybe you can say that the magnetic field gets deformed, but that is not quite accurate, because you must define the torsion/twist as a deformation in a regular/standard magnetic dipole from a standard/regular coil. Using the term “deformation” will imply then a moment when it’s not deformed. But the field is always twisted, even in the standard torus field or the double torus. So that is not quite accurate, because to be exact it is always “deformed” so it can’t become more “deformed” if by “deformed” you mean twist.

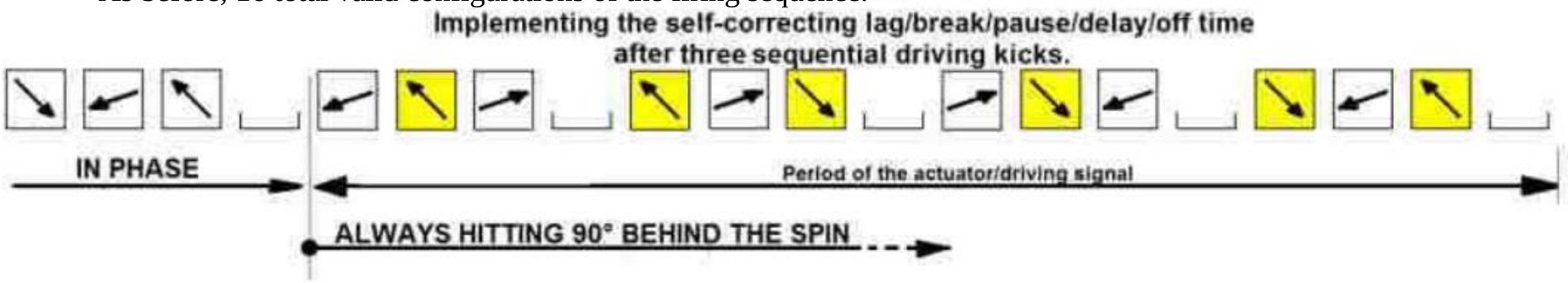


The yellow symbols can be implementing by positivating/negativating coil A OR coil B since they are identical. This will determine 2 at the power of 8 meaning a total of 256 variants of valid firing sequences. Now, I know that I’m crazy, but listing all these variants is beyond insanity, entering in the realm of pathology.

All these firing sequences are valid only if the inertia of the self-spin of the magnetic domains is less than 90°. If just after a falling edge of a pulse entering in a pause time, the magnetic domains spins more than 90°, and the next pulse just after a pause finds the domains more than 90° self travelled from their last known location, then all the firing sequences presented are invalidated, and these ones will come into play:



As before, 16 total valid configurations of the firing sequence.

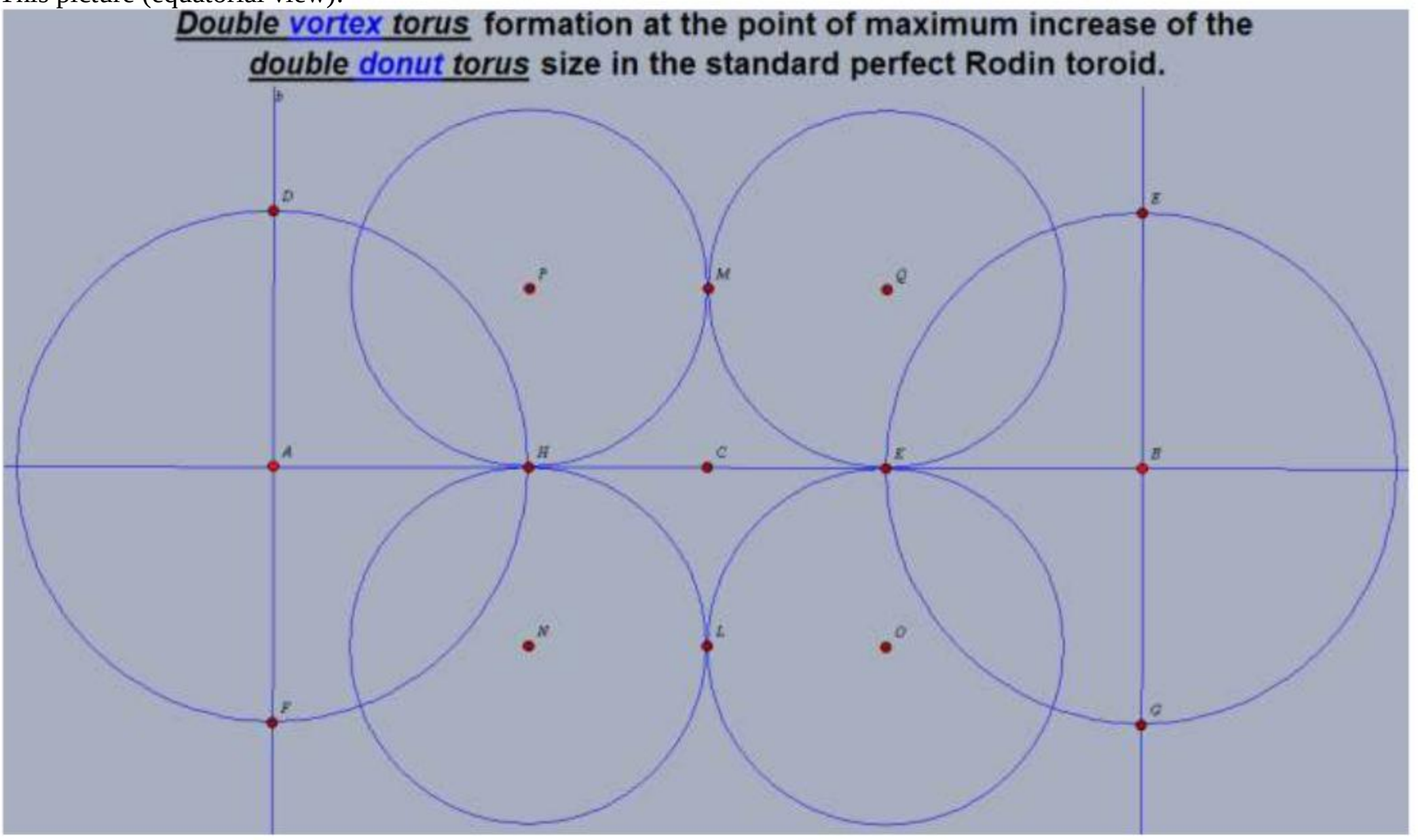


2 to the power 6 will mean 64 total valid activation sequences. And so on and so forth. etc. etc. etc. You get the picture.

The magnetic bubble ring maintained by the Rodin “flux pump” actuator field

Before I explain myself, why I used the term “flux pump” which is really true, and not just a fancy way to express myself, there are some things we must consider first.

This picture (equatorial view):

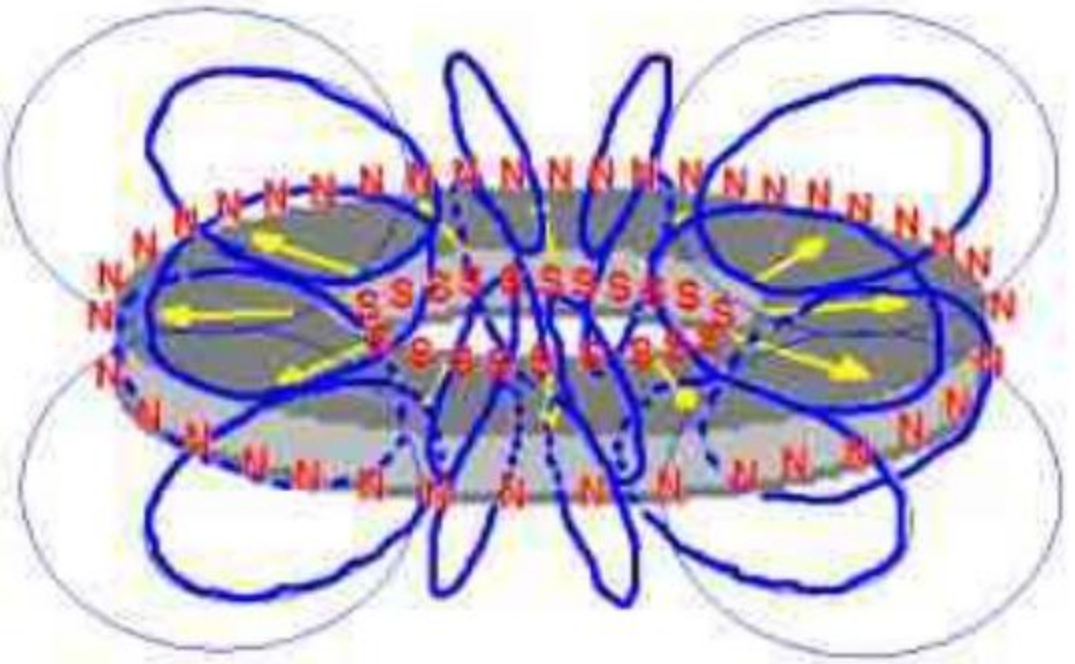


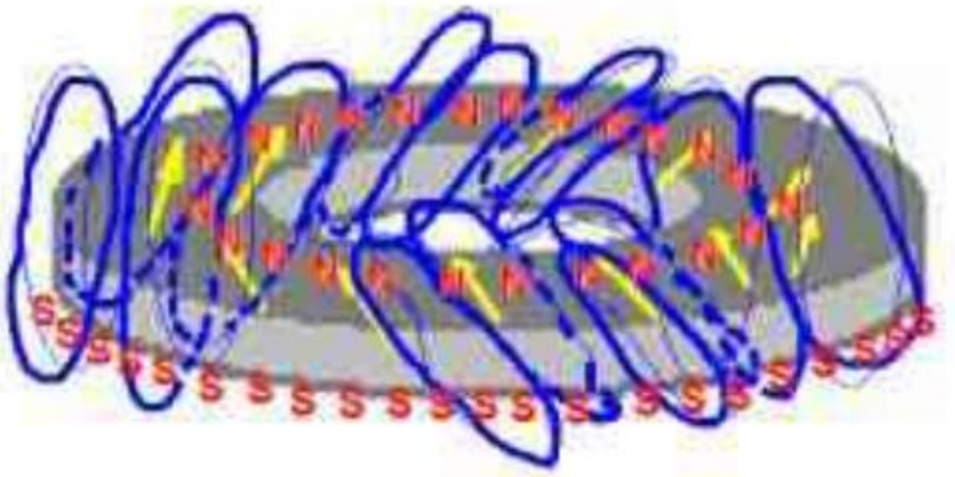
depicts the maximum allowed magnetic field double donut torus size formed inside the standard perfect Rodin toroid. At this point of maximum size, we no longer have, a double donut torus , but we have a double vortex torus ***(horn torus),*** because the points M and L are tangential, thus the donut hole no longer exists.

Although we are pulsing/actuating/exciting/firing/activating/powering the coils in four points 90° apart, we will consider also a 45° vectors orientation to better illustrate the dynamic motion of the Rodin flux pump.

The magnetic bubble ring is created only inside the domains of the ring magnet, so the field created by these dynamic domains alignment has this configuration:

Magnetic bubble ring field configuration





What is the Rodin Coil?

Another very important aspect is the core material of the Rodin Coil.

Why?

Because we don’t want a core with high magnetic reluctance, because it will distort the complex interaction of the double torus with the simple torus. The equatorial ingoing/outgoing twelve flux vectors will have to enter through the core, so we must let them enter without reluctance.

Yeah, but surely a plastic torus doesn't have magnetic reluctance...

True. That’s true. But you have to understand the Rodin coil is a field Coil.

I have asked you before what does that mean, and I still didn’t get it. What should I understand when I hear the term “field coil”. I mean what is that? What’s it for? A field? A field for what? You say “A field Coil”, but it’s to ambiguous. To Abstract. Be more specific. What exactly means a “field coil”?

It simply means that it creates a magnetic field.

You see? It’s too abstract. Any coil in the Entire Universe creates a field. So we can say about any type of coil that it’s a “field coil”. Why is this one different? How is the Rodin coil different? And why call it “field coil”, and not specifically what it is? For example we can say about the coils inside a motor, that they are “field coils”. That is a true statement. However is too abstract, to ambiguous, to inexact, and insufficient. They are called “stator coils” or “rotor coils”, meaning coils wounded on the stator of the motor. So let’s be more specific.

First of all, the best way to be specific about the Rodin coil, without complicating stuff, we can say that it’s a field coil. The best way to describe it is to call it “field coil”.

Why?

Because, as you have pointed out, all coils create a field. But none creates a field like the Rodin coil. None! It’s unique..

Why?

Because it has a very special field configuration. The true reason behind calling the Rodin coil a “field coil” is because it ***needs to be completely air core.*** Any sort of material brought near it, will disrupt this unique and special field configuration, and thus the Rodin coil will not work. So the best way to put it is to name it a “field coil”.

Because its purpose is not to “transform”, the purpose of the Rodin coil is not to be a speaker, like others mock it. The purpose of the Rodin coil is not to be a starship, like other lunatics name it. The purpose of the Rodin coil is not to be a motor, like some abuse it. The TRUE PURPOSE OF THE RODIN COIL IS TO CREATE THIS DYNAMIC UNIQUE AND SPECIAL MAGNETIC FIELD CONFIGURATION. It is not a motor, it’s not a speaker, it is not a starship, it is not a transformer, it is a “field coil”.

Does that make it clear?

No.

Why?

Because. As I said, is to abstract, ambiguous, and inexact. Be more specific.

Ok. Ok. Fine. However you want. Fine. Ok. Then. Let’s name it “special field coil”.

You’re funny. You are indeed more specific, but it’s still ambiguous. Tell me again, why can’t it be used as a transformer?

Because we are dealing with a dynamic torsion/twisting of the toroidal magnetic field. An iron core around these twisted flux lines will break the torsion/twist, and will have to be extremely complex and sophisticated if they are lines. But if they are surfaces of twisted flux, then it’s even more complex, then the core will have to pass through the wires. So you will have to drill holes through you core. But they are not lines, nor surfaces. The magnetic field is a filled form of a torus. It is indeed more dense near the wires, but you can’t use a double torus iron core for example, because the Rodin coil, may work in different ways, and the double torus is one way, but in other ways this double torus interacts with the simple torus magnetic field created by just one coil powered up, so it’s increasing and decreasing in size. You can’t design a dynamic size iron core, can you?

No.

Exactly. So even if you are using just the double torus topology, you still can’t use an iron core, because the double torus passes it’s outside “arms” through the 3rd band or “nozzle” or “invisible 369” or the space were there should be the third coil, that it’s not winded. So it’s interwoven between the wires of the Rodin coil. Therefore the best way to describe it is to call it a “field coil”.

I still disagree with you. Naming the Rodin coil a “field coil” is to insufficient. It’s like saying about a person that it’s a doctor. I mean what kind of doctor? For all I know, it could be a neurosurgeon, or a veterinary or a dentist. You have to be more specific.

You can’t, unless you invent different fancy - garbage names for it, like vacuum thruster, atom pulser, vacuum field extractor, vacuum field pump, ether spinner, torsion field creator, magnetic bubble field creator, zero point module, zero point energy extractor, torsion ether spinner and so on and so forth. But all of these are junk. I mean who can be satisfied with such a name? Can’t we manifest a little maturity and go beyond the “sounds cool to name it....” faze? Isn’t it more “academic” to name it “Field Coil”? Think about it!

Ok....I guess, you’re right...I give up....you’re right it’s a Field coil.

Good. Glad you agree.

Now, once you truly understand that the special magnetic field created by a Standard Rodin coil must be formed with as little distortion possible, you will come to the conclusion that the best way to do it is by not having a core at all.

You’re insane. How can you wind the Rodin coil without a frame? Surely you can’t just bent the wires in plain air. How can this be?

Open mind...parachute....you know the story. It can be done, if your ***frame can melt or dissolve*** after you have finished winding the coil.

Interesting....

Yes. And others, probably thought about all of this in some form or another, and started to build air core Rodin coils, like we see here:



I’m glad that I’m not the only lunatic who has awaken to this truth, but what we see in the above picture is completely erroneous.

Why?

First of all errors in this design, is that it’s not a perfect torus. The ratio between the inner hole diameter and the diameter of the whole torus must be sin(15).

Why?

Because of the second error in his design, that the wires must always sit on the surface of a perfect Rodin toroid.

Why?

Because we want to create a composed magnetic flux vector between the coil A and B when they are fired in opposition. For this to happen coils must never overlap especially at the center, where the equatorial ingoing/outgoing magnetic flux vectors are formed between them.

Why?

Because we want to create the double torus.

It can do that?

Yes. Only if you respect these conditions, the double torus will be formed interwoven between the 3rd not winded empty space and closed upon itself.

Why?

We want the double torus, because we will use it to create a magnetic bubble.

Why?

Because the magnetic flux vectors inside the magnetic bubble will always be 90° in respect with the actuator field created by the Rodin coil. Thus it will not be affected by any load or weight that is connected or attached to it.

If the air core Rodin coil presented in the previous picture, is not correct, how should it be built?

Like this:



The core is just a frame made from liquid paraffin (wax) poured in a thin plastic bag in a mold created from a block of gas-formed-concrete: The negative was hand carved using the pre-made tool made from 2mm thick galvanized sheet:



So your perfect Rodin torus is made from two halves joined together?
Yes.



We must be very careful, placing the inner guiding pins in the inner hole 5° offset from the outer guiding pins.



The third band, “invisible 369”, “nozzle”, empty space or however you want to call it, is crucial in the standard Rodin design. If you don’t respect it especially at the center, you can throw you coil in the dumpster. It’s garbage.

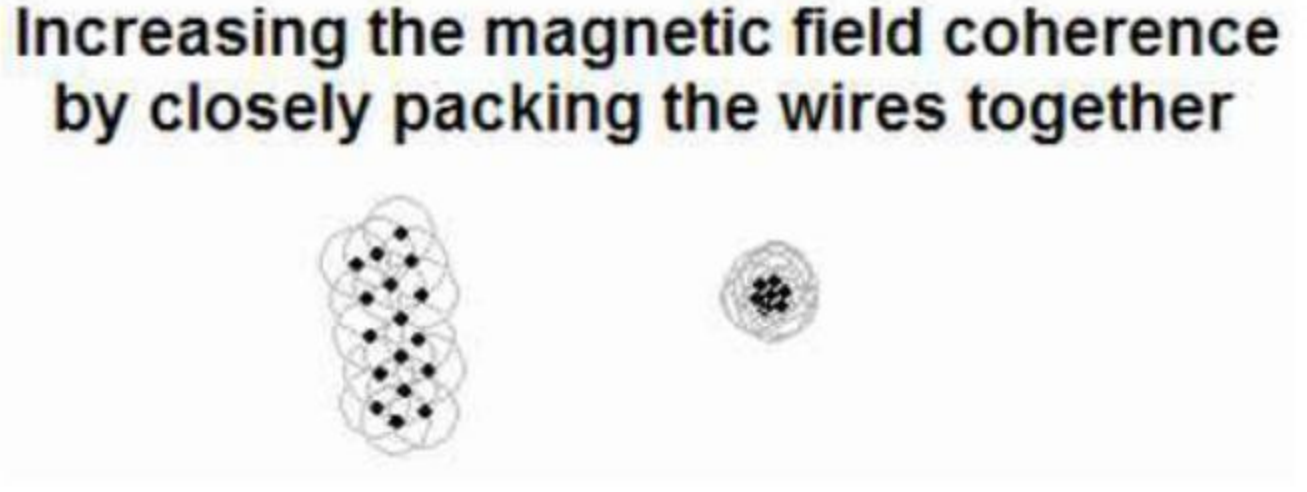


Remind me again, why do we have to sew the coil, and do all this tedious work?

We are using a curved sewing needle and a small hook because we want the turns in a coil packed as closed together as possible.

Why?

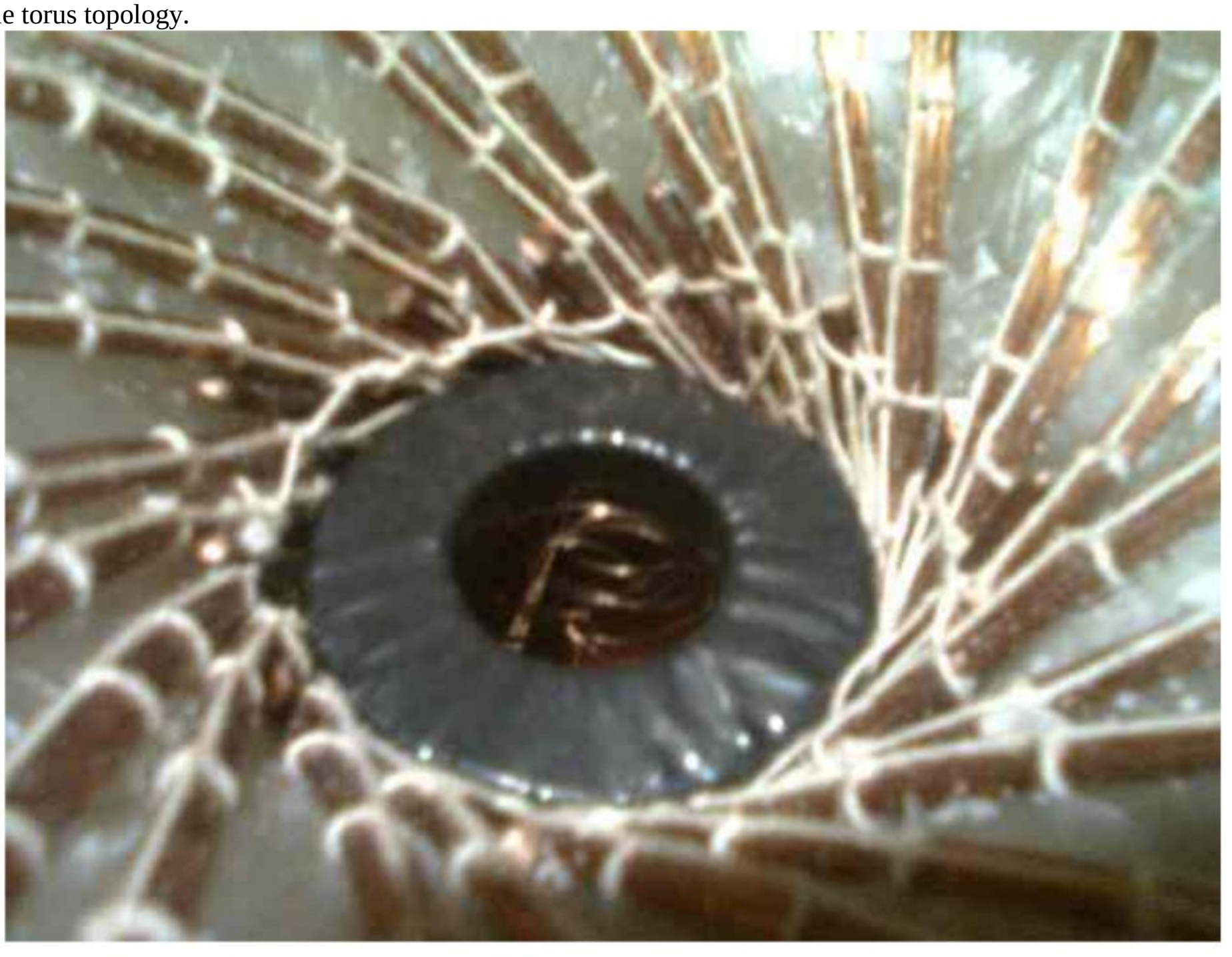
Because the magnetic field is strengthen and more coherent if we sew the wires together,



and not only that but we give more stability and rigidity to the whole structure.



As it can be seen, the third band is blank but I’m placing twelve pieces of copper wires (2,3mm thick AWG 11) approximate 20mm(0,8 inch) in this empty space ***only*** at the center to shield the return path of the ingoing/outgoing equatorial flux vectors, because we want unidirectionality at the equator. Without them then the outgoing/ingoing flux will return through this empty space/air gap/nozzle and close open itself all on the equatorial plane, without forming the double torus topology.

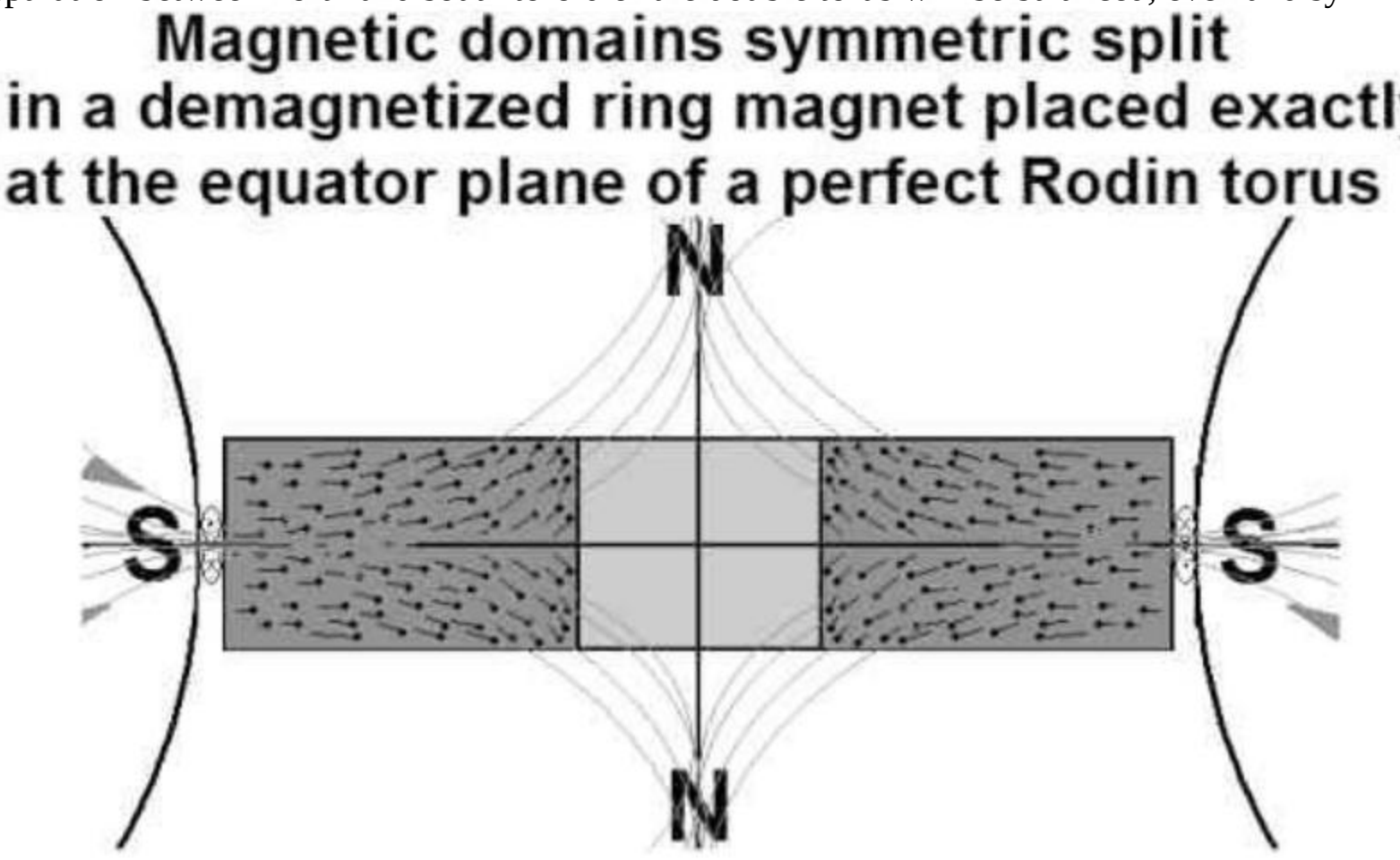


Why didn’t you used that thick wire (AWG 11) to wind the entire Rodin turn in this empty band, missing coil, invisible 369 shit, “nozzle” or whatever you want to call it, why?

If you think that way, it’s clear that you haven’t understood anything about the Rodin double torus field formation inside the Rodin coil. The only way to form the double torus inside the Rodin coil, is to have the wires at the center close together, and under any circumstance overlapped, and an empty third space between them, that gives a little reluctance of the field so instead of the shear closing in the equatorial plane forming alternating poles along the circumference of the inner hole, the equatorial flux going out let’s say will tend to go up and form a torus, instead of returning in the same equatorial plane through this empty space.

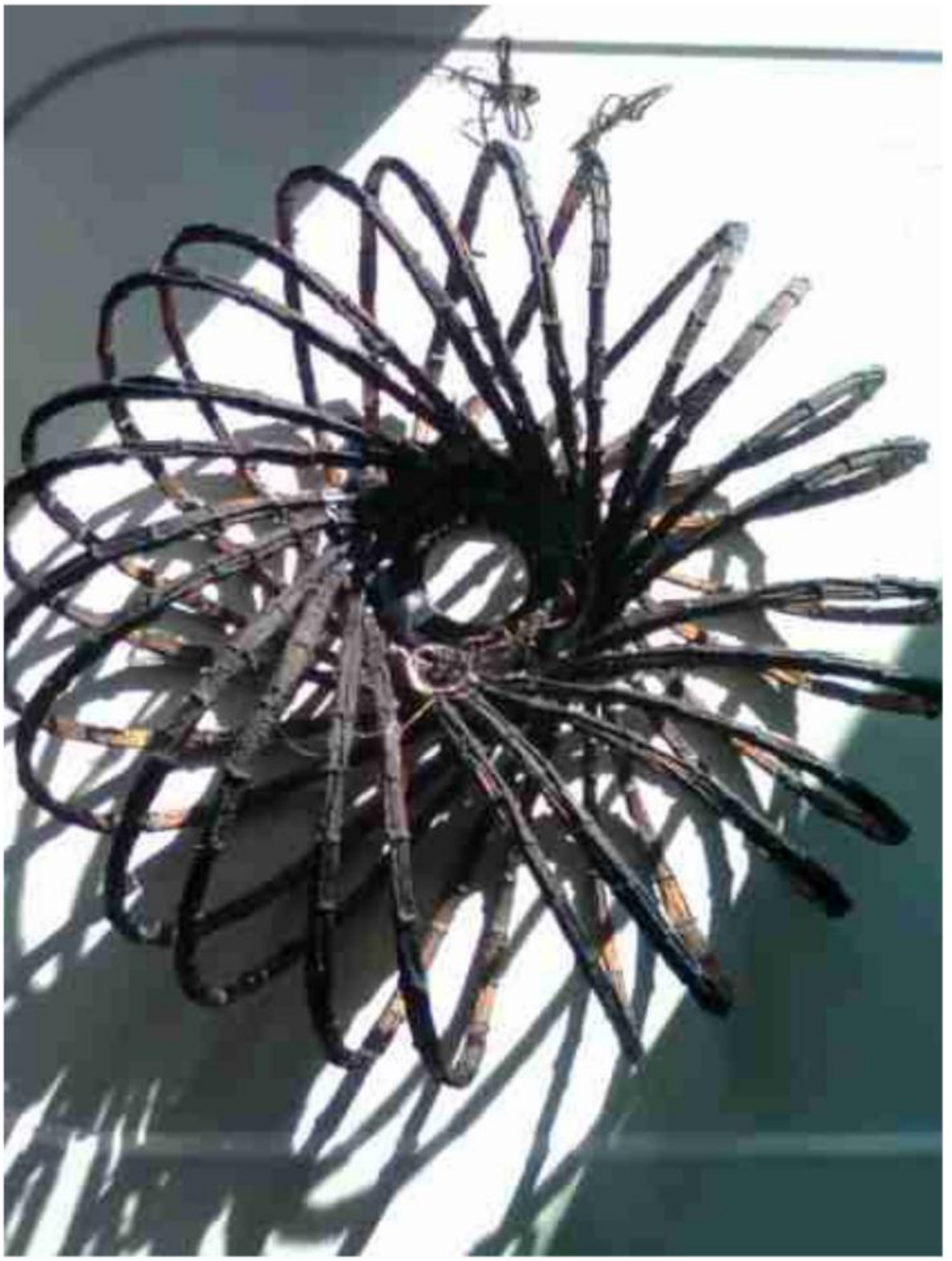
The small pieces of copper wire placed ***only*** at the center serves the purpose of increasing the reluctance in this central region, so that the field created by the ”shear” between the coils (e.g. equatorial outgoing magnetic flux vector) are more inclined to close themselves in the double torus, rather than creating alternating poles around the circumference in the equatorial plane of the toroid.

It can also be seen the central ring magnet placed exactly at the equator, so that the magnetic domains alignment-separation between north and south toroid of the double torus will be balanced, even and symmetrical.

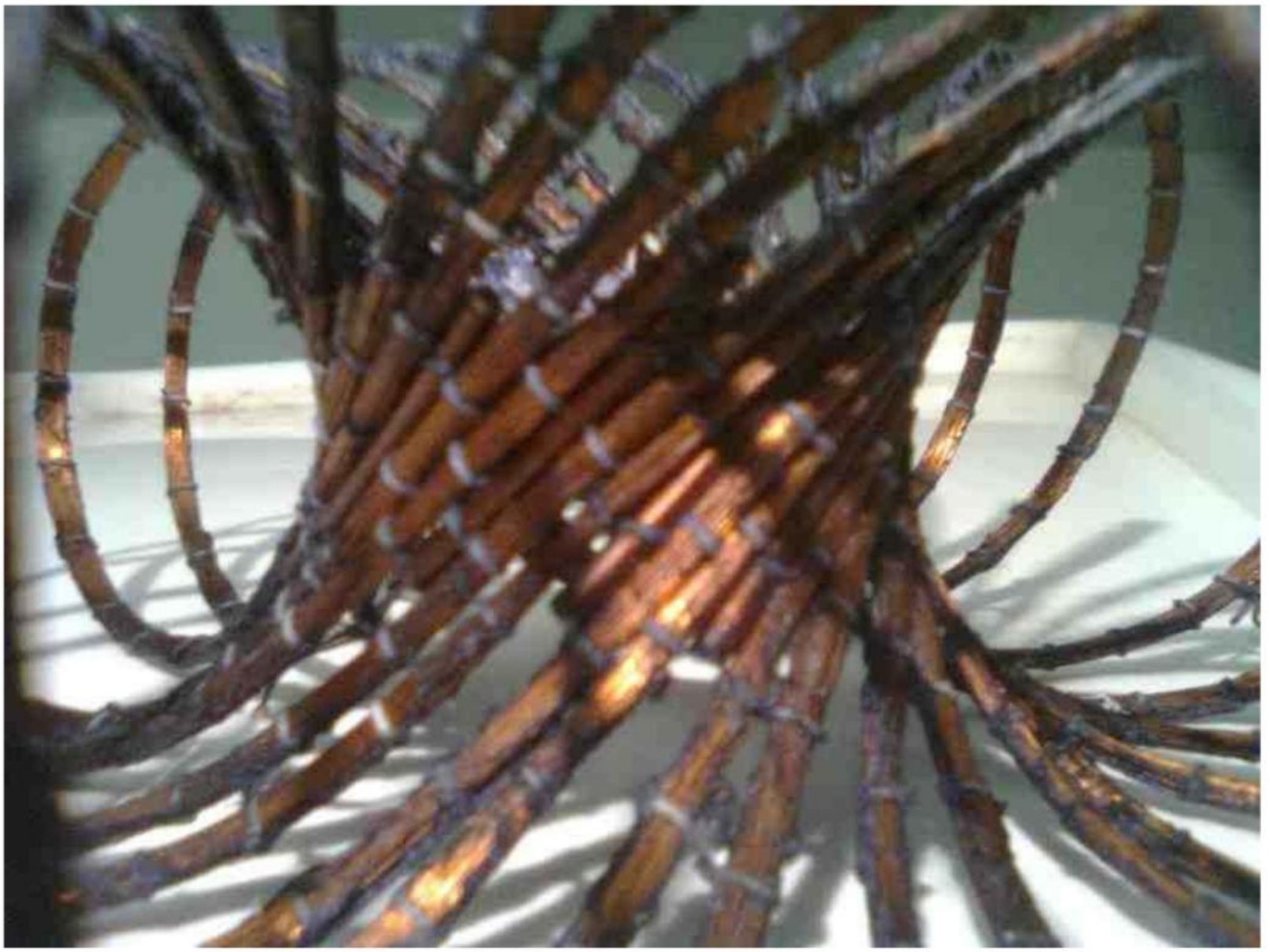


The Ring magnet is glued to position and provides the main stability of the assembly. It is also the “handle” or the place where the Coil can be lifted by hand without damaging the spacing between the wires.

Then the whole assembly was put in hot water, and in 5 to 10 minutes all the paraffin melted and raised to the surface. Then I took the coil out, and the paraffin solidified at the surface of the water. Thus it will not get thrown away, and it can be reused in different molds.



As it can be seen from the different color of the coils, all the wires were treated with several layers of shellac to gain more insulation and rigidity in the whole structure. Or you could use any electrical varnish you have lying around, spray or liquid whatever happens to have around, as long as it hardens when it dries and doesn't attack the enamel of the wires. Whatever you have.





Now this is what I call a successful replica of an authentic original exact Abha torus described in the primordial first ancient original standard configuration basic Rodin coil presented in the first original video-clips released on the Internet, first on YouTube (the most earlier ones). I have express myself like that because there are so many variants of Rodin Coil out-there that you can't even imagine. The basic design has mutated and evolved beyond comprehension. Excuse my grammar errors but I'm always living with a constant fear within me, that people don't understand what I'm saying. So to avoid that, and work around this issue I tend to exaggerate in my repetitions of the same idea with different words, that many times leads to grammar errors. This happens in my native language too. Nobody is perfect. I'm no exception. So I apologize. This, In a scale from 1 to 10, this time with this design I will evaluate my own work at somewhere around 8. There is always room for improvement. We must always seek self-perfection of ourselves and of our work that we are doing. There is never enough. There is always room for more. That is another philosophy of life of mine.

Coil A is a bifilar coil and so is coil B. Therefore there are a total of 4 wires. in other words there are 4 wires and 2 coils, because each coil is bifilar. Simple.

Why did I make coils A and B bifilar?

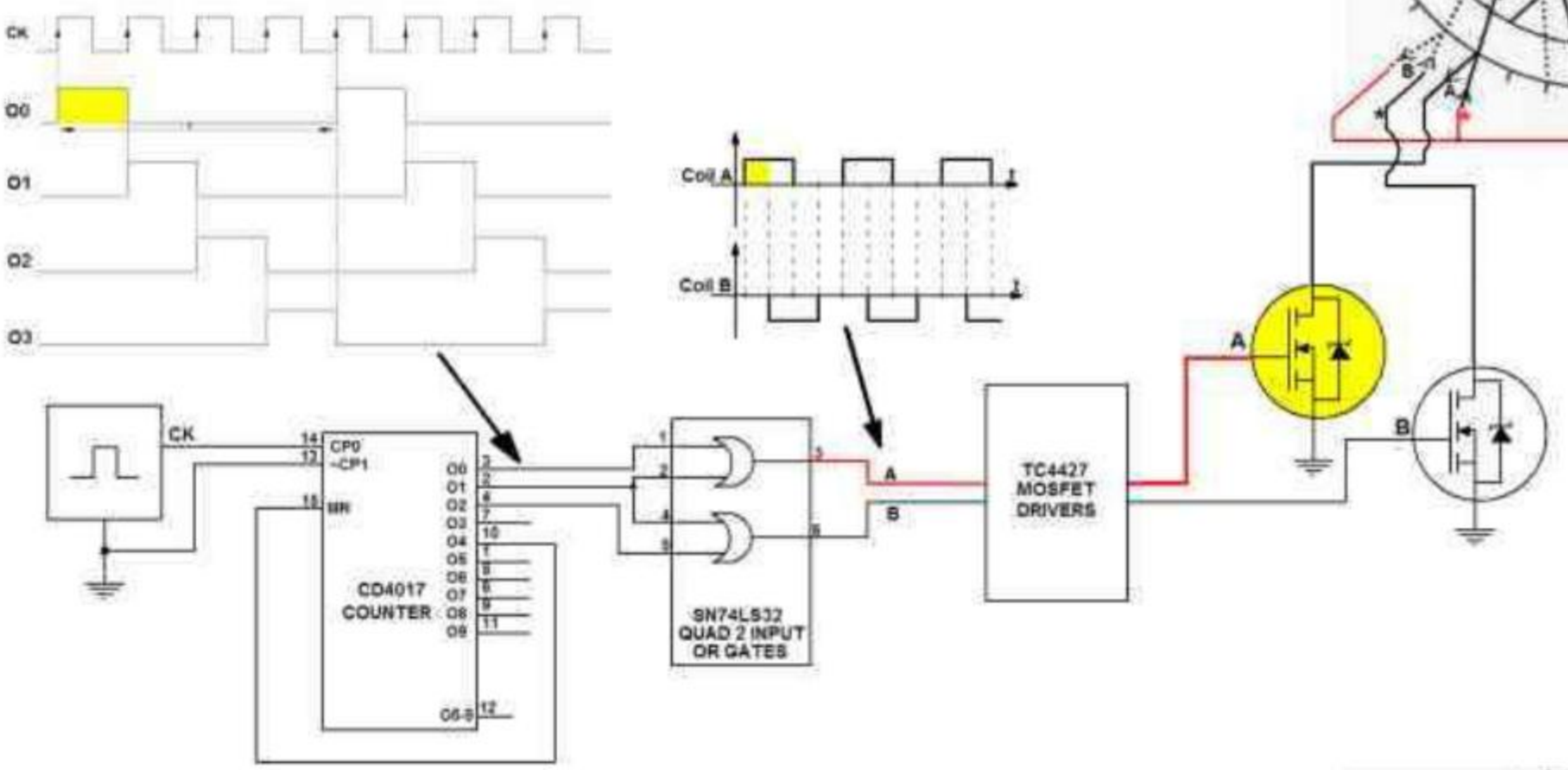
Because it is easier to switch a coil in one direction, than to switch it in both directions. So to make things simpler, you use two transistors switching on different wires, but same coil. Thus we have implemented bipolar square wave signals that may provide useful in different firing sequences/activations.

For example, I intend to activate/fire the whole assembly with this setup:

Magnetic bubble ring generator inside a perfect Rodin air-core toroidal coil

Self-correcting 90° lag.

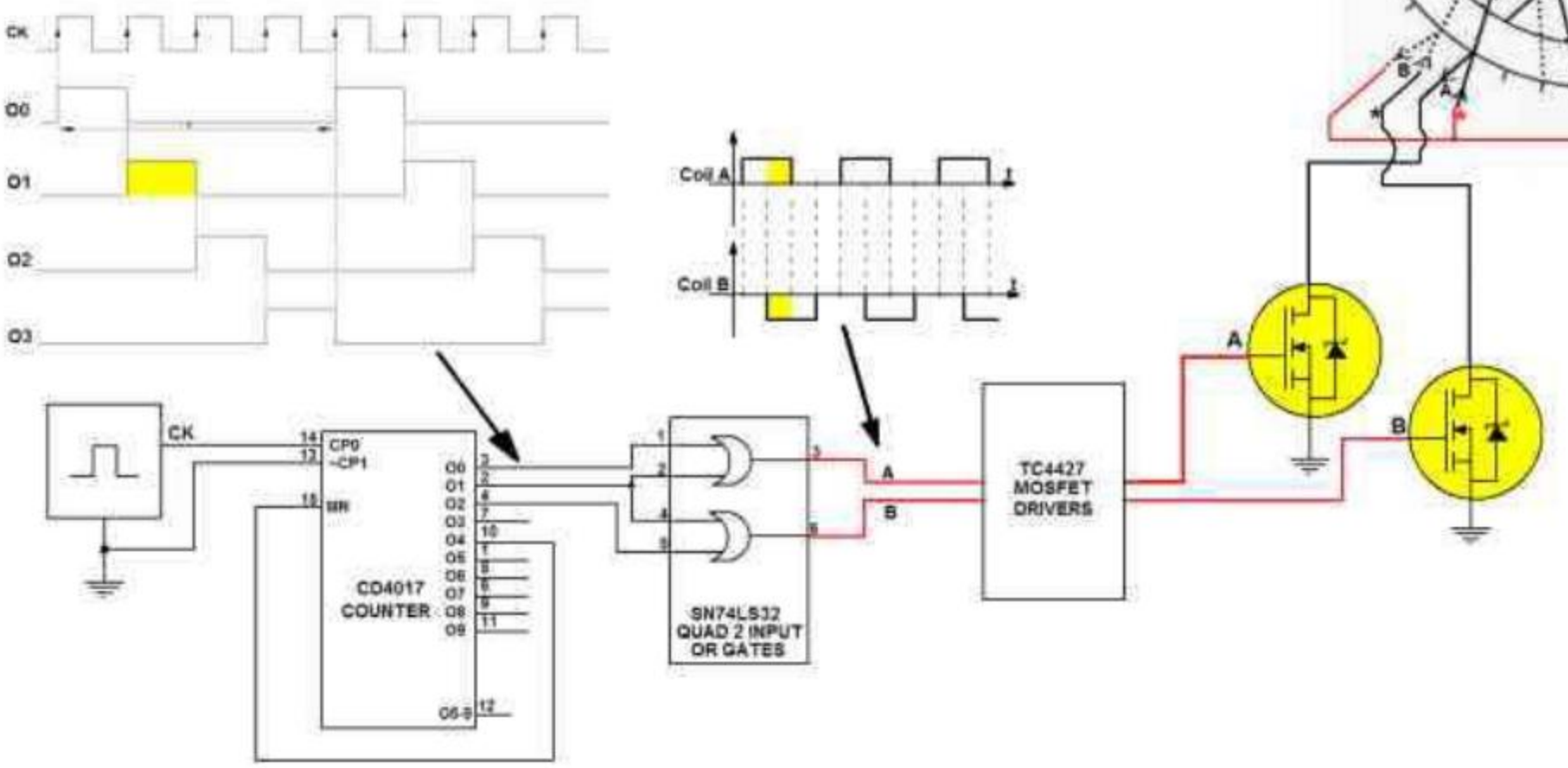
Activation sequence 1



Magnetic bubble ring generator inside a perfect Rodin air-core toroidal coil

Self-correcting 90° lag.

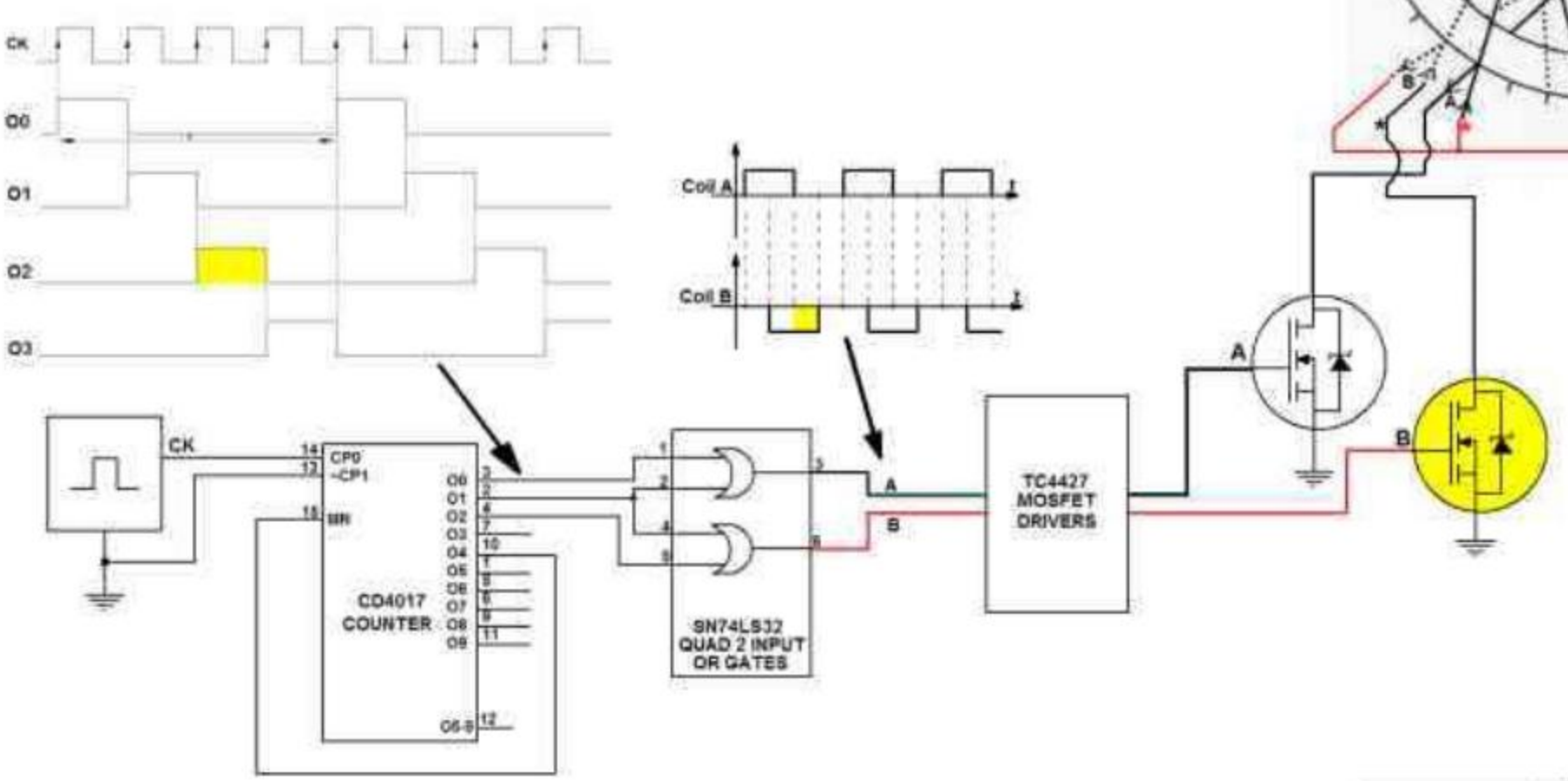
Activation sequence 2



Magnetic bubble ring generator inside a perfect Rodin air-core toroidal coil

Self-correcting 90° lag.

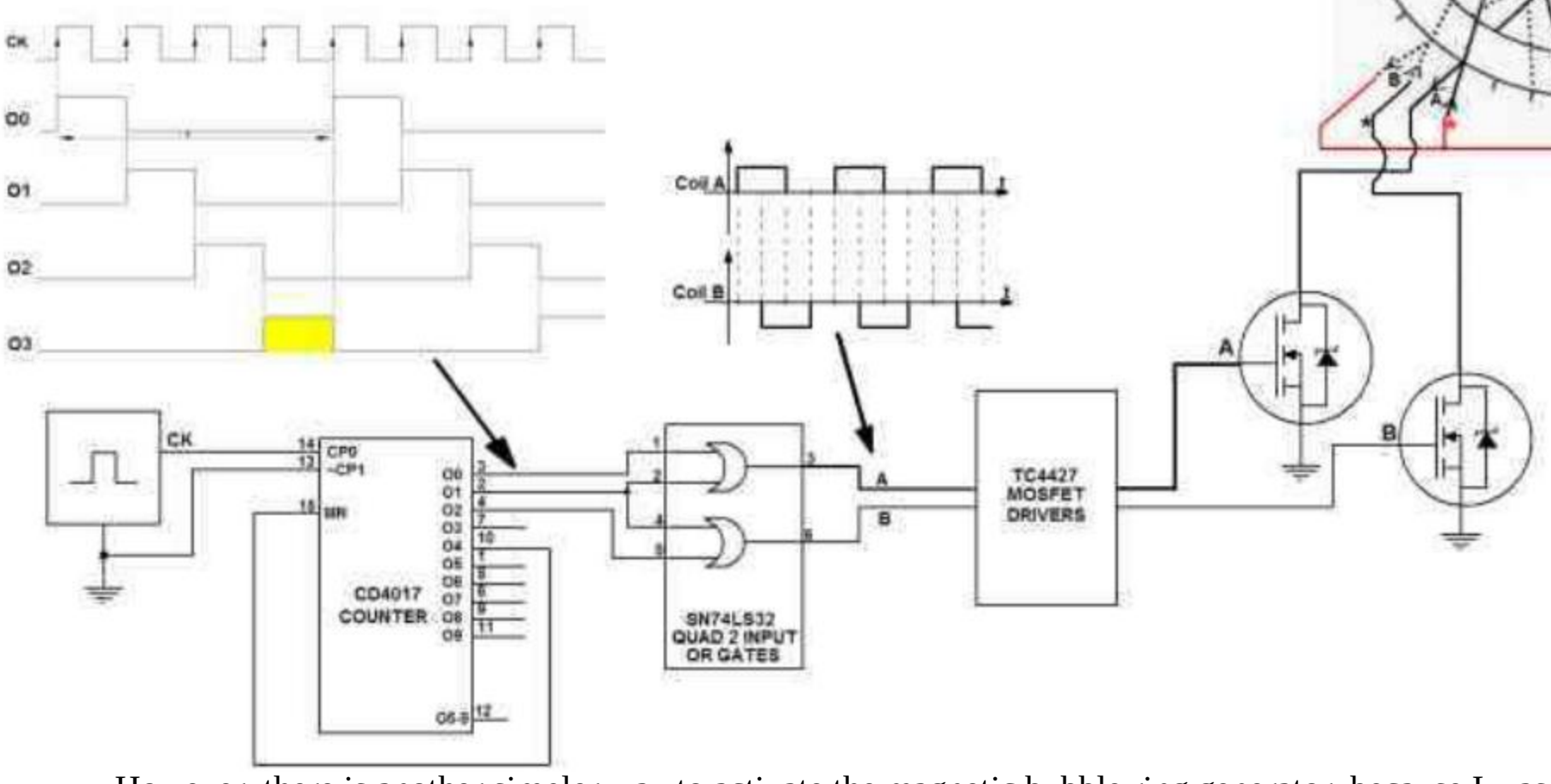
Activation sequence 3



Magnetic bubble ring generator inside a perfect Rodin air-core toroidal coil

Self-correcting 90° lag.

Activation sequence 4

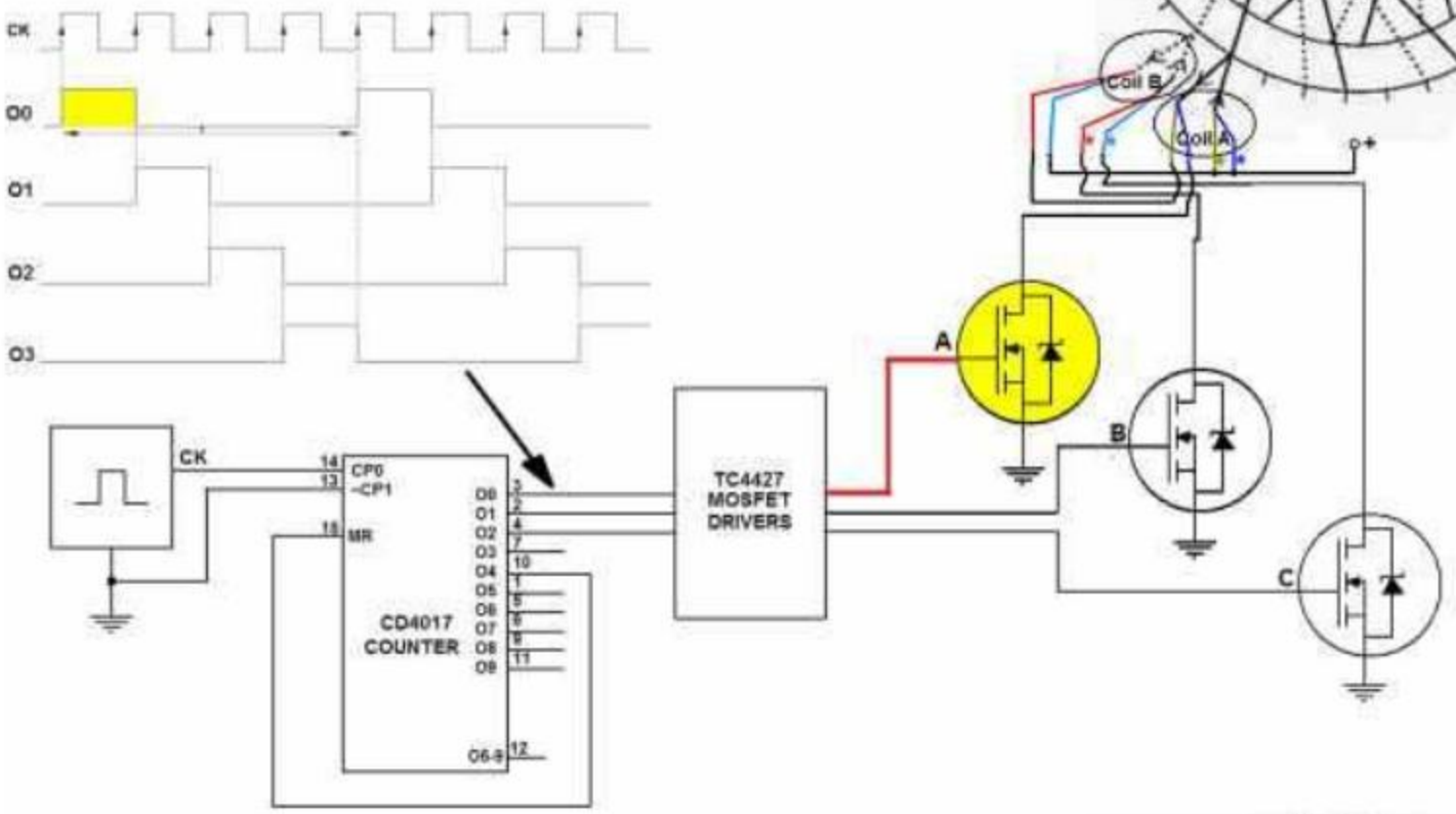


However, there is another simpler way to activate the magnetic bubble ring generator, because I was inspired to make the coil A and B, each bifilar. Therefore I can connect one wire from coil A to the other wire from coil B to implement the double torus formation at stage 2 in the activation sequence. This solution however, on one hand I can throw away the OR gates, I will need another Mosfet transistor instead. So this alternative may seem simpler to some, while more costly to others. It is still a variant, nevertheless.

Magnetic bubble ring generator inside a perfect Rodin air-core toroidal coil

Variant 2

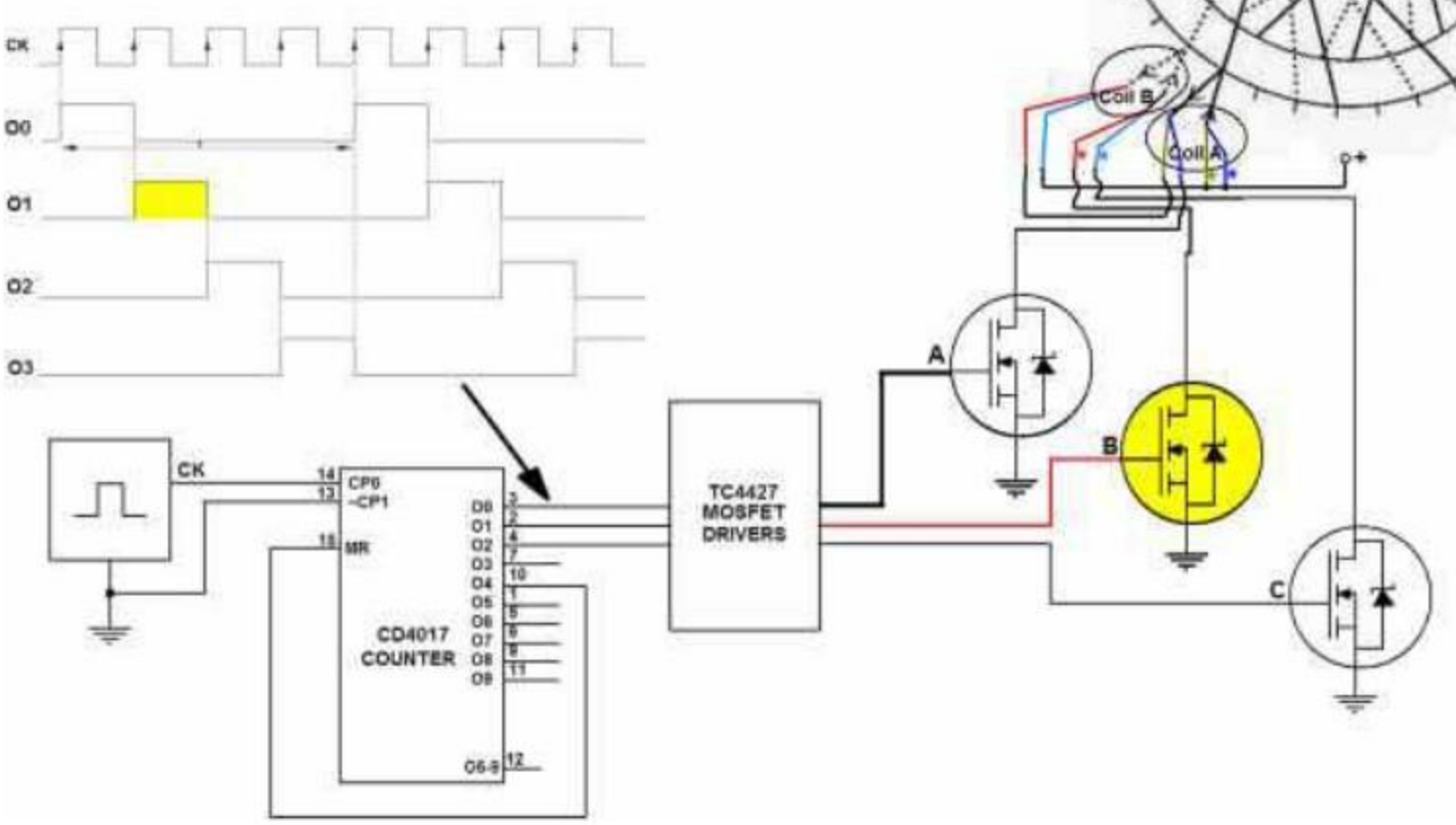
Activation sequence 1

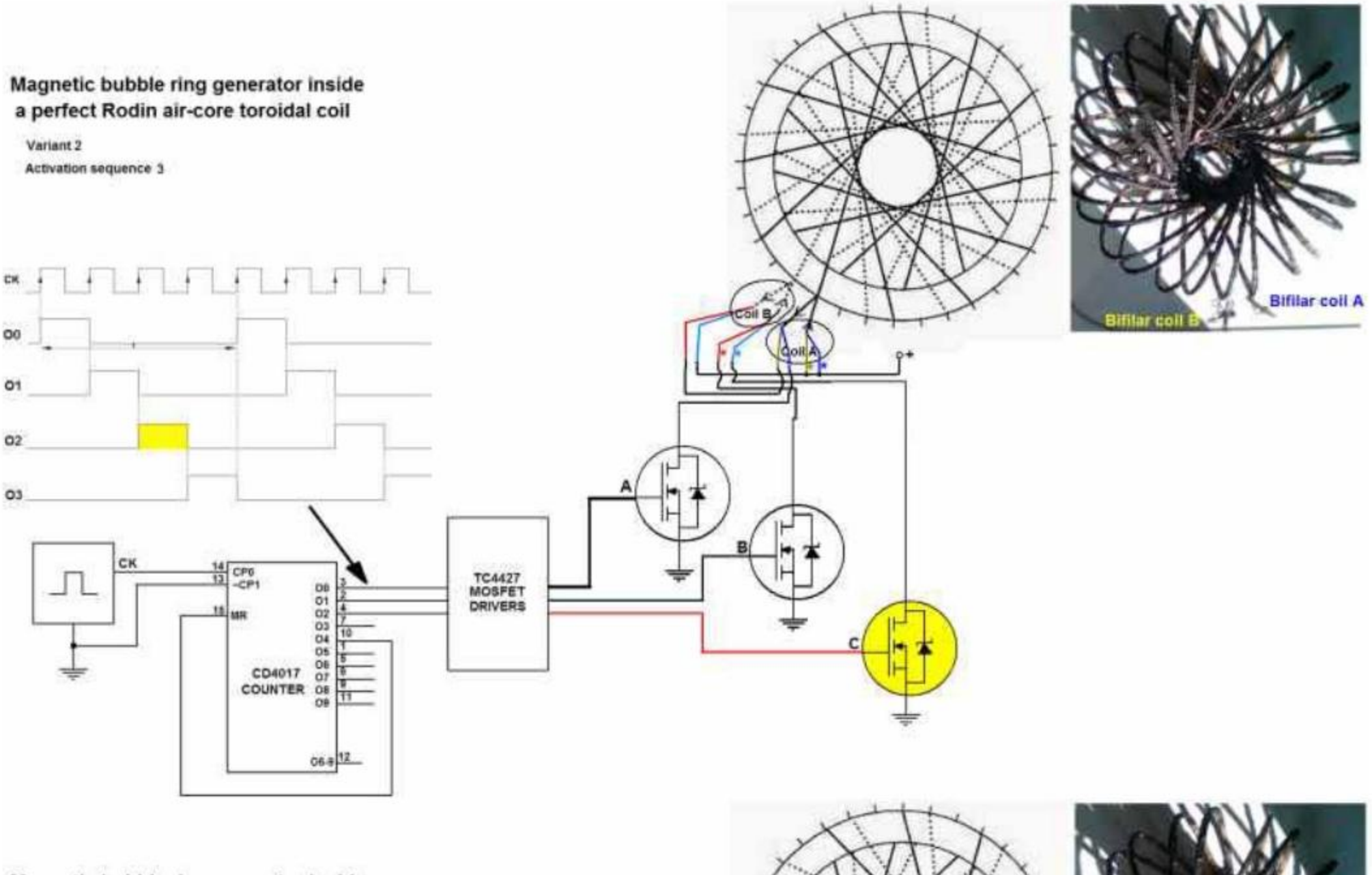


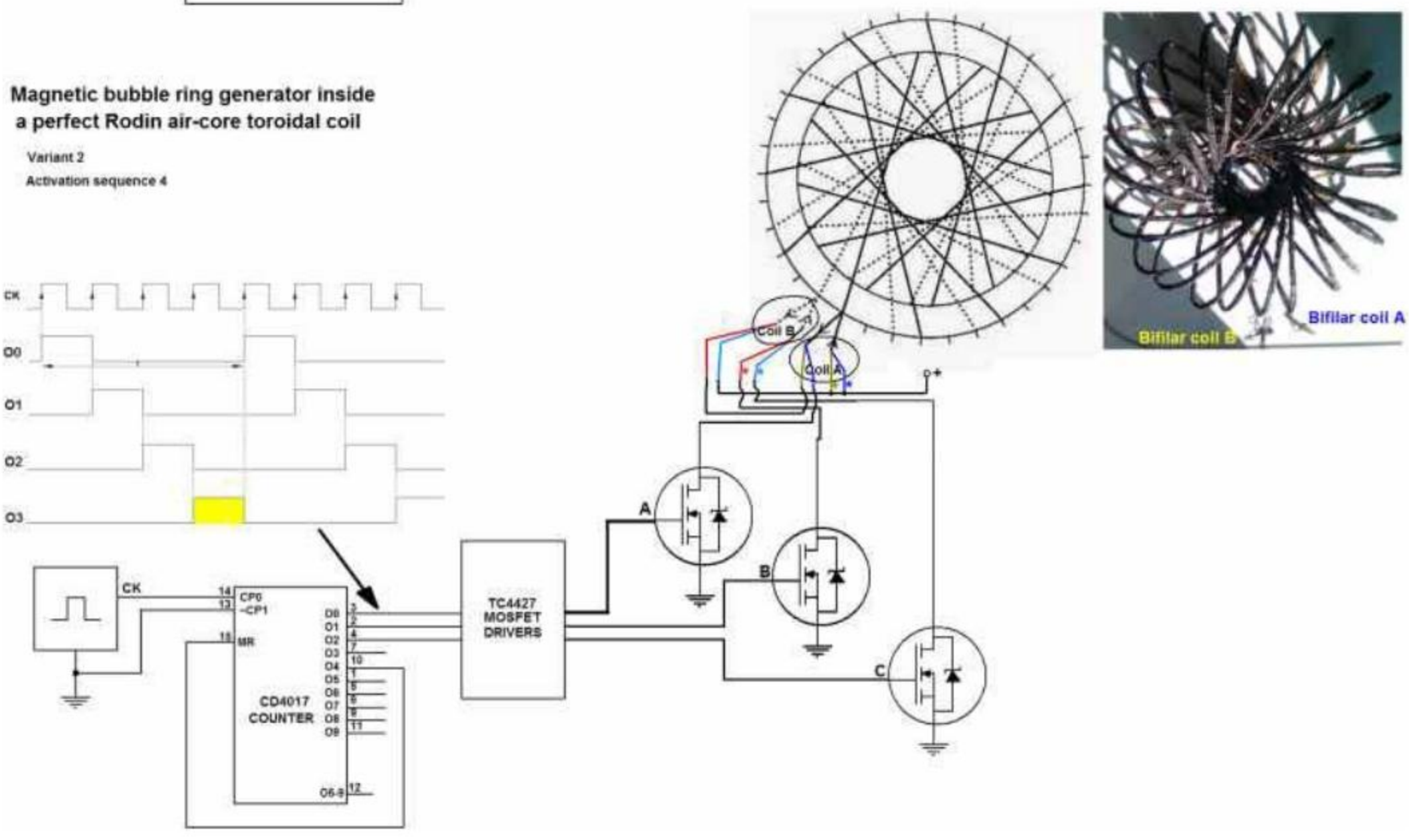
Magnetic bubble ring generator inside a perfect Rodin air-core toroidal coil

Variant 2

Activation sequence 2

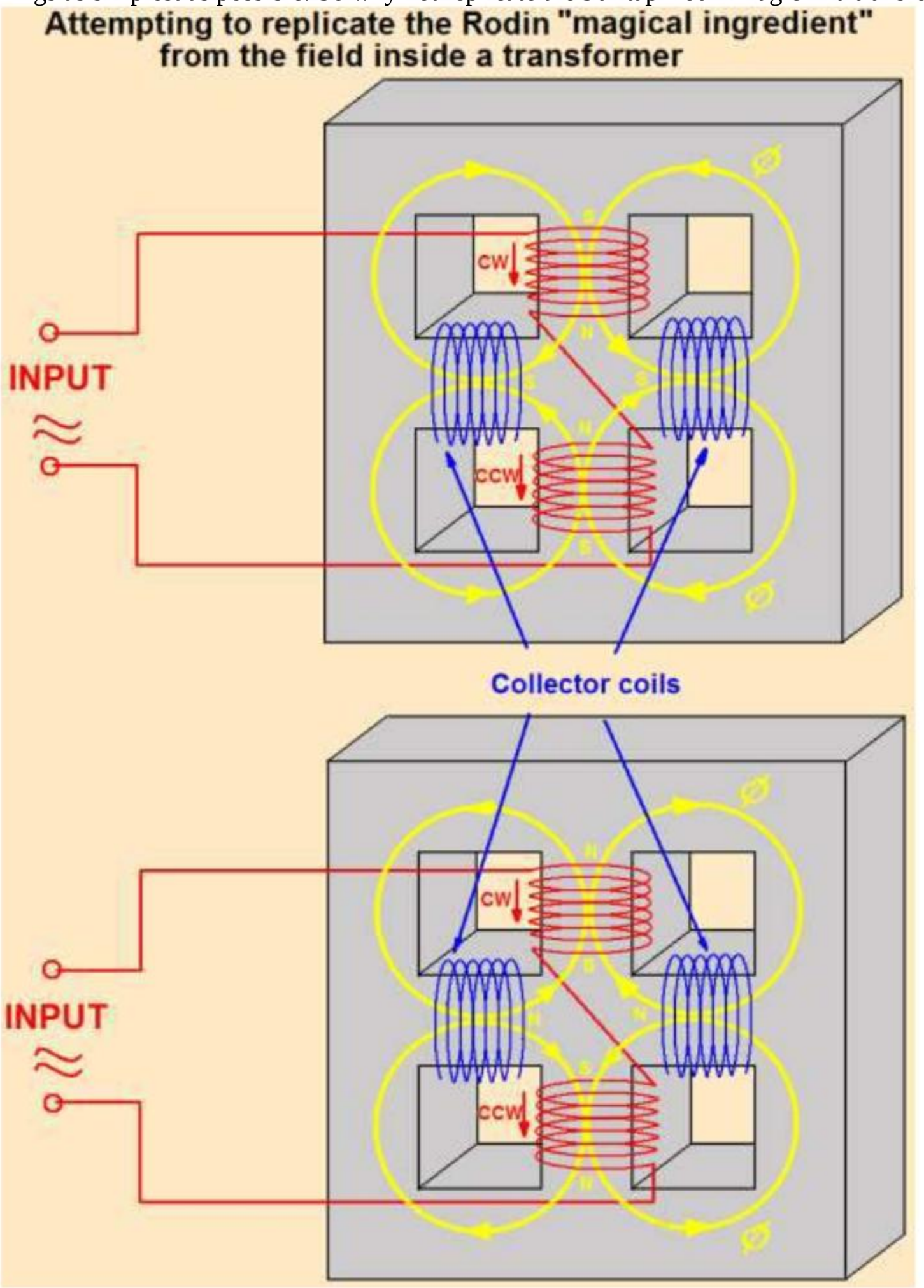




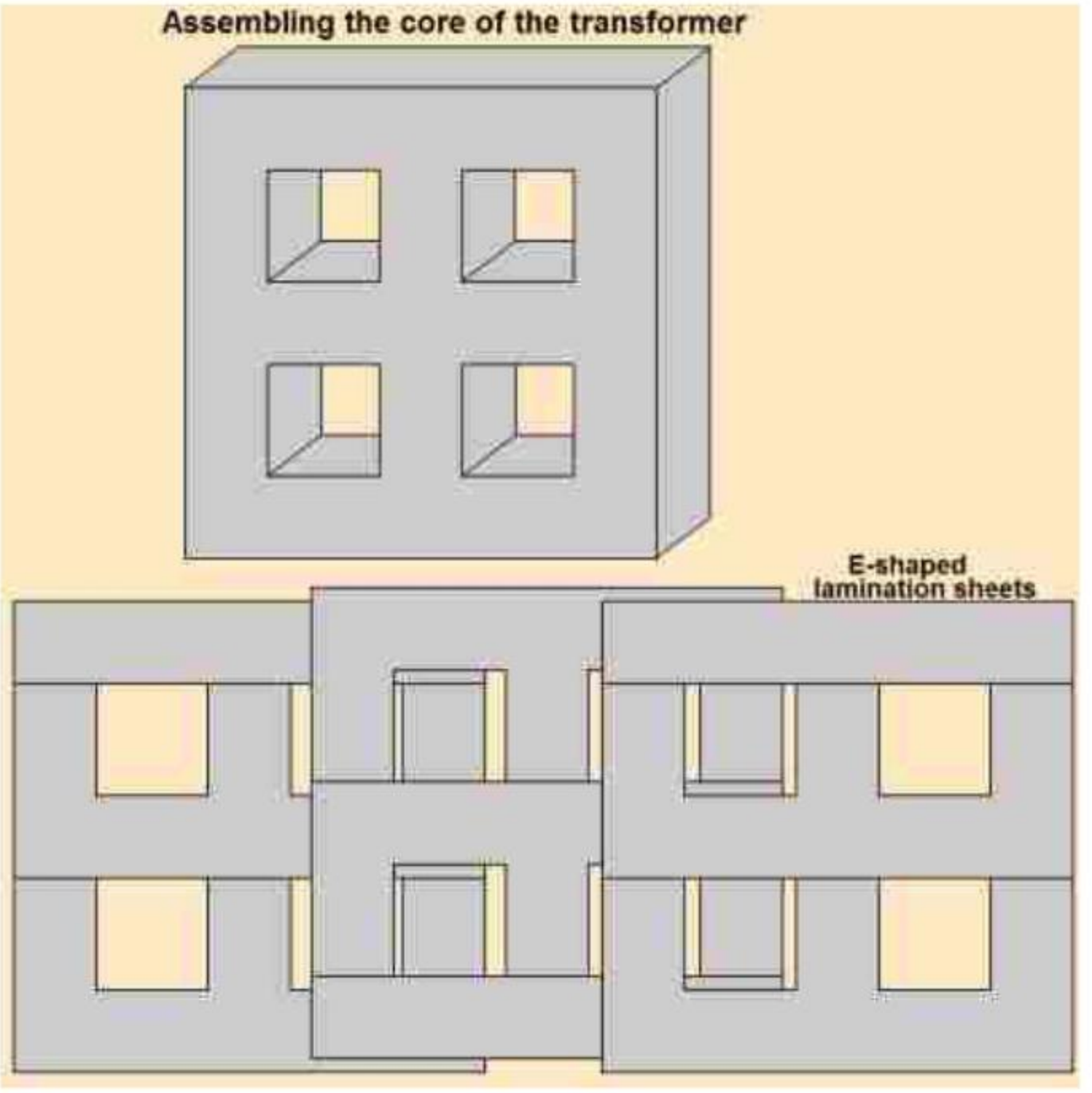


Looking at this, it makes me a little dizzy. It still seems too complicated. Why not simplify things to the basic fundamental elements? Why not replicate the main magical ingredient of the Rodin coil, let say, in a simple basic transformer? Why not? Why not simplify to the extreme what makes the Rodin coil ticks in the most simplest device that this technology allows? Why not start from the simplest things? and then go on from there? Why not create/replicate this magical 90° field tapping from two magnetic opposing dipoles in a simple transformer? If this collecting/tapping the magnetic field 90° in respect to the field created by two opposing magnetic dipoles is the magic of the Rodin coil, why not build an elemental unit in a simple transformer? Isn't it much more simpler? Let' not

complicate stuff here. I mean where will we reach if we always tend to complicate things? The correct healthy attitude in life is to keep things as simplest as possible. So why not replicate the 90° tap Rodin magic in a transformer, like this:



And the core will be simple and easy to make by interwoven standard E and I shaped laminated steel sheets from on old transformer:



No. No. No. No. No. No. I completely disagree.

Why?

You don’t seem to understand what we are really trying to accomplish.

And what is that?

Although your transformer will exhibit some interesting performance, and again the “magic” as you call it, 90° rule of tapping into the magnetic component of two opposed magnetic dipoles will behave by lowering the input power consumed when put under heavy load, but that is not what we seek. In this transformer you are describing, all the energy comes from the input source, thus it will not exceed 100 efficiency or overunity. It will suffer from hysteresis loses, and it doesn't even have a hard ferromagnetic component embedded in the core or in the flux path.

Why will it need something like that?

Because we seek self-oscillations, we seek self-spin of the magnetic domains. You will never achieve a spin by hitting the domains in a 180° fashion. Only if you hit the domains in less than 180° orientations (90° four stages, or 3 stages 120° apart) or along these lines you can eliminate hysteresis for good. And when all this is meet, the spin of the domains must be prolonged in a hard ferromagnetic material (a demagnetized magnet for instance) because in a simple standard laminated or ferrite core, the domains don’t have magnetic remanence, meaning that the core magnetizes easy from an outside field but after power is removed, the domains miss-align quickly, so the cores of modern transformers behave like this because they are specifically design to minimize hysteresis loses. So what we are really seeking, is to establish a self-sustaining, self-spinning magnetic domains in a hard ferromagnetic material. It can’t be soft because the self-spin will not last. It will rapidly break down, due to the nature of the ferromagnetic material itself. Thus, when we have achieved something along these lines, we will get a sinusoidal output, even if we are inputting one-shot spikes/kicks low duty cycle square wave. This is because the energy source is not the input spikes, but the spinning domains. That’s where the energy is coming from, just like in the MEG.

Wait. You are confusing me. I thought that MEG technology is a “magnet switcher” not a “magnetic domains spinner”

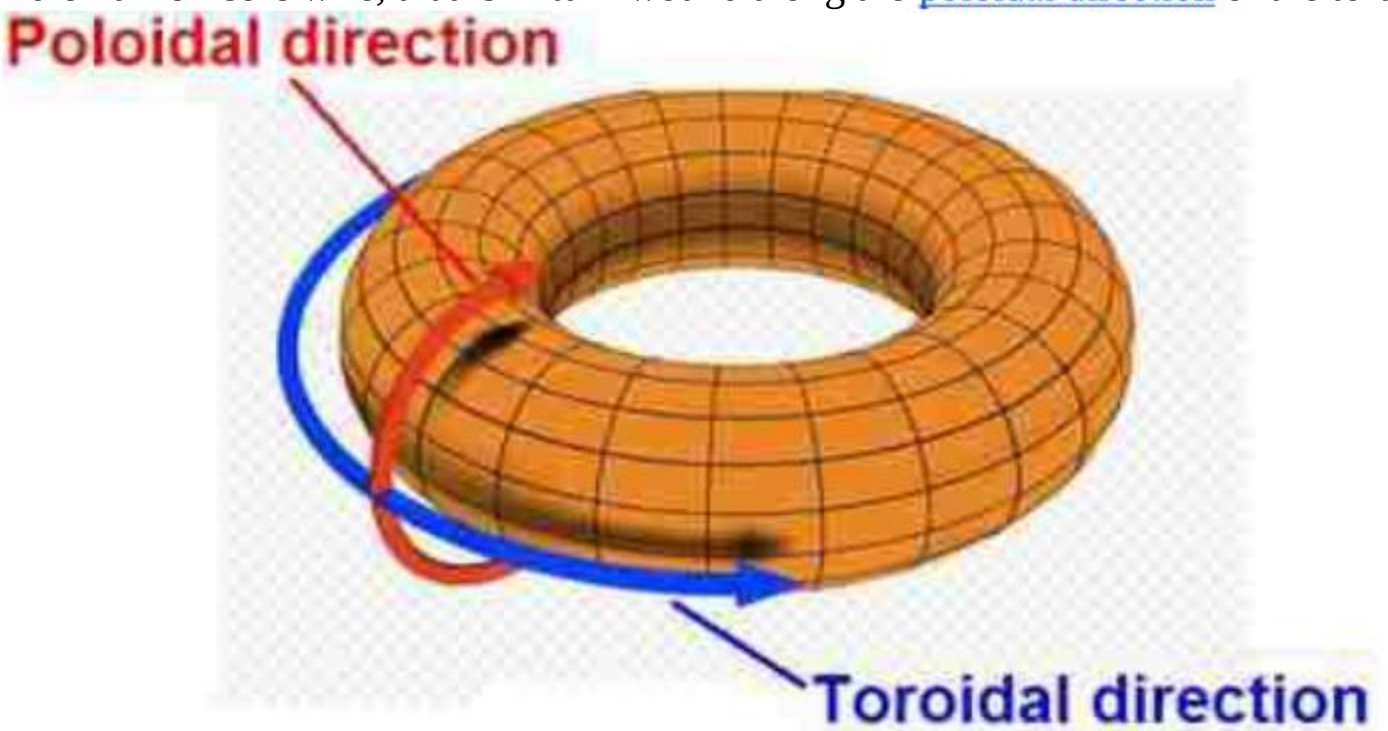
It is not confusing at all. The magnetic flux path switching happens naturally due to the established domain spin in the central magnet. The kicks don’t magically change the flux path intensity from one side to the other. That happens by itself, once the domain spin is established. But this will eventually stop, so that is where the kicks/spikes come in. They are just the catalyst and NOT the input source like others might be erroneously tempted to think, in a conventional mentality.

Designing a Rodin collector coil for the Rodin field

Why do we need something like this?

Because the Rodin magnetic field has a very unique and special configuration. The Rodin Coil is a “field coil”. It is not a transformer, nor a speaker and not a motor. Therefore it is essential to design a coil that taps into this field, so that we can actually put a load on it, and not affect the input in anyway, just like Marko is saying.

One way that we might be tempted to stress the magnetic donut torus field created by powering just one coil, is to create a coil wound on a iron core wire, that is in turn wound along the poloidal direction of the torus.



Might be tempted to create an outside collector like this:



Or an inside collector like this:



But this is not an efficient energy conversion process, because the flux path created from the Rodin coils don't have this configuration. As I have stated in the past, the magnetic flux takes the form of a logarithmic spiral that skims the surface of the torus always 90° in respect to the Rodin turns/wires. It also skims the surface of the torus in the inside of the core in the opposite direction from the one on the surface, but that's a different story.

A better way of tapping this special Rodin flux especially the equatorial plane magnetic flux from the double torus, is by winding a coil in the toroidal direction in both ways, like this:





No. No. No. This is not good.

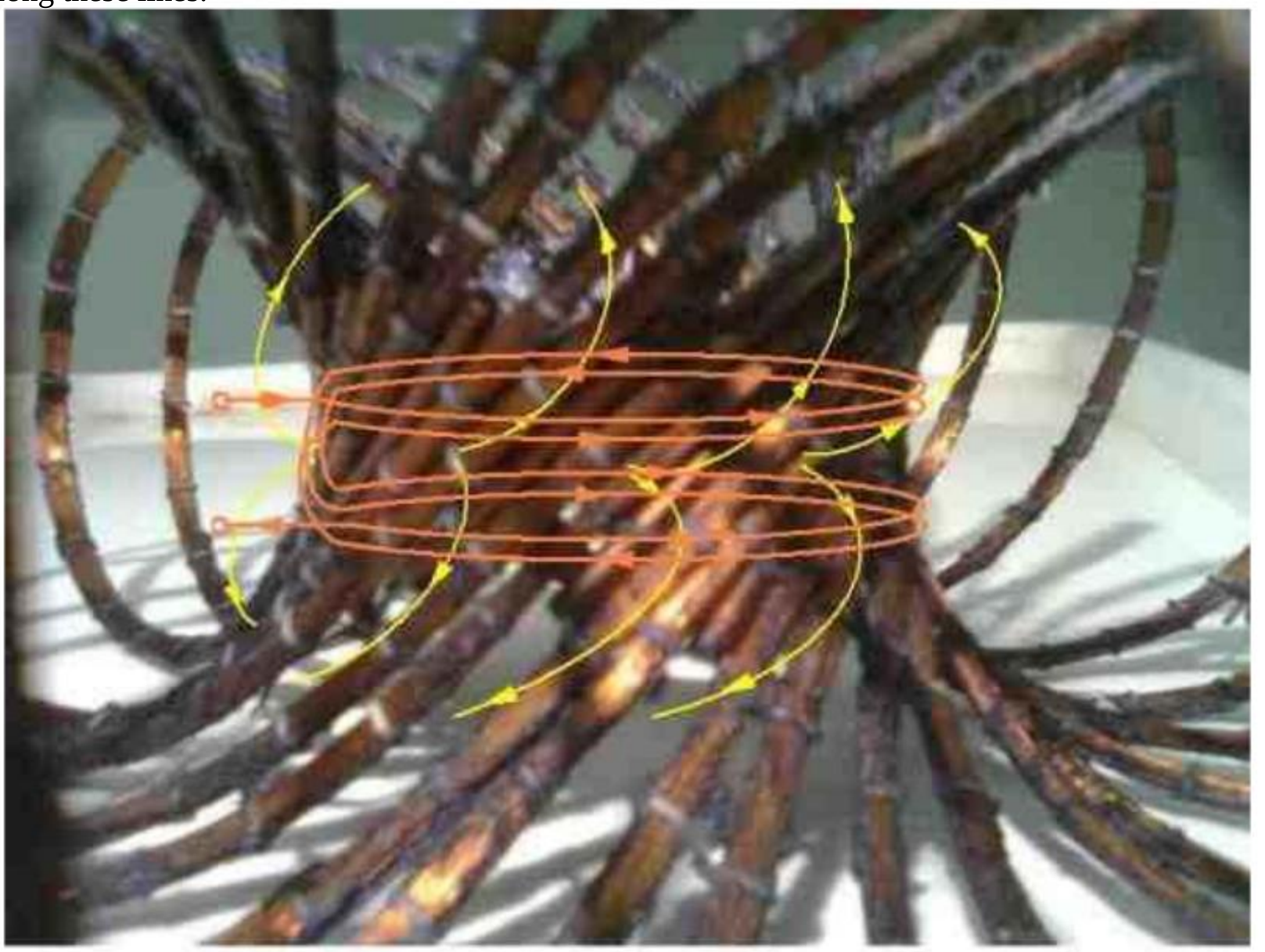
Why?

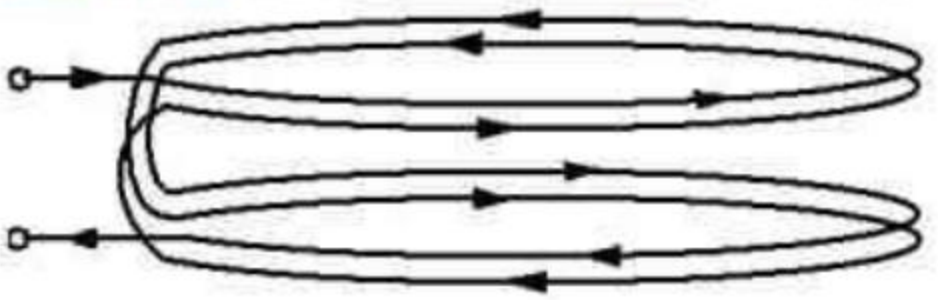
Because, first, the double torus equatorial flux field doesn't reach the outer circumference of the toroid. It is only generated on the inside circumference of the hole, and it’s not a flux that goes parallel to the equatorial plane. It is only tangential to the equatorial plane, because it closes itself in the double torus. So your equatorial flux created by the double torus formation will never reach your collector. However you will get something induced in your collector, and that is the opposing flux that stabilizes the formation and the size of the double torus.

Secondly it is a lot of hard labor and it doesn't worth it, not when you have a different much more easier alternative:

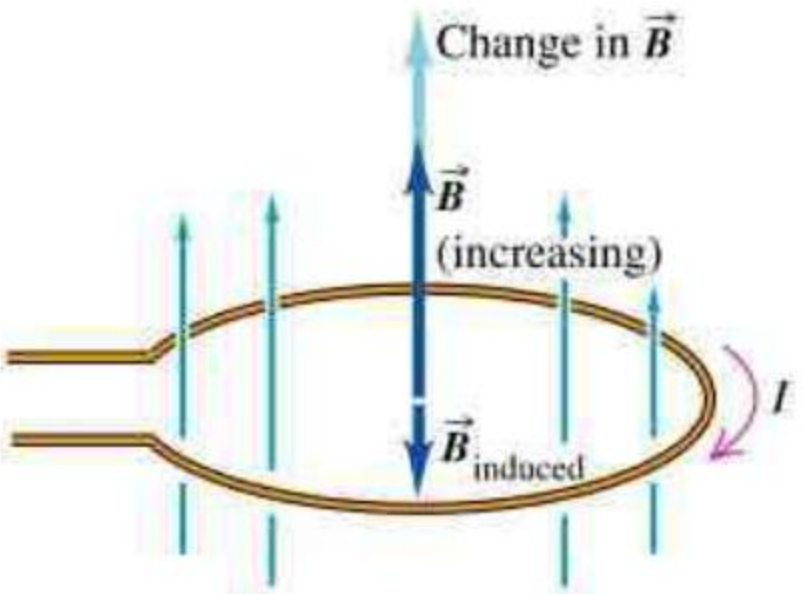


So, a much more efficient collector that taps into this equatorial flux from the double torus formation, will be something along these lines:

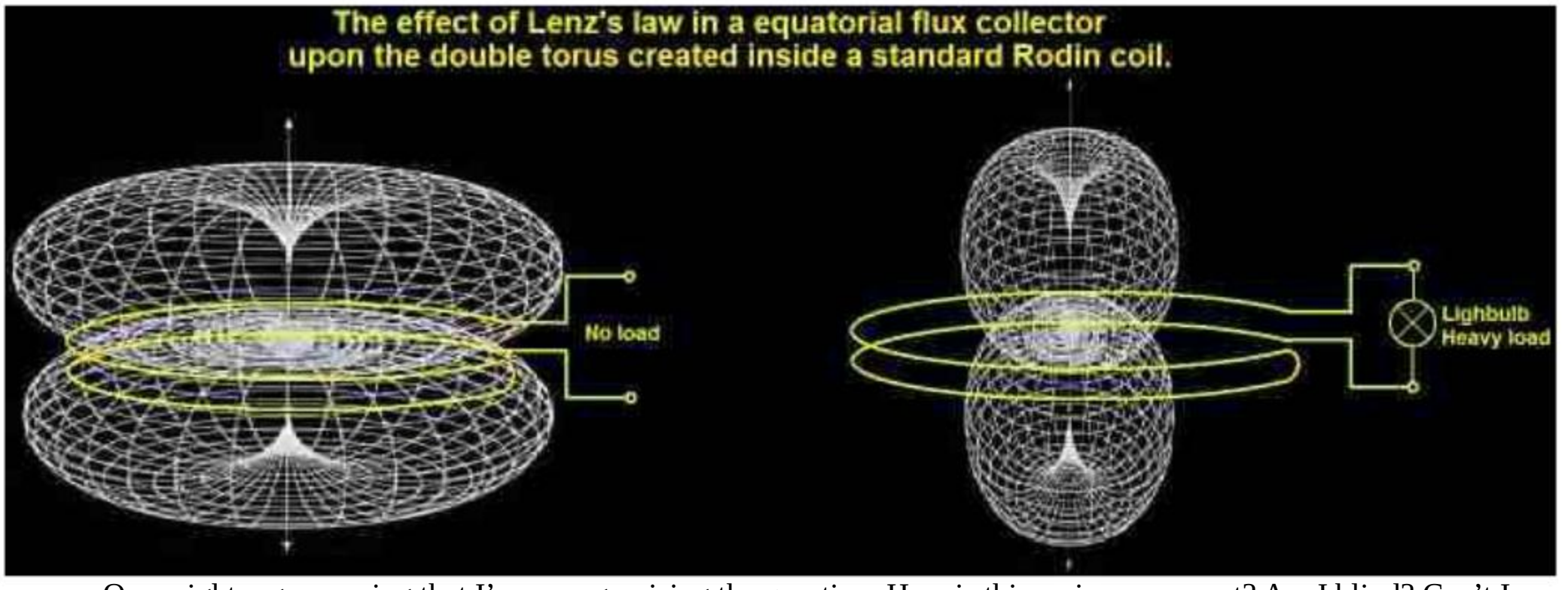




What is truly an amazing thing about this double twisted torus formation and the tapping collector in the equatorial plane is that the Lenz's law helps the double torus formation.



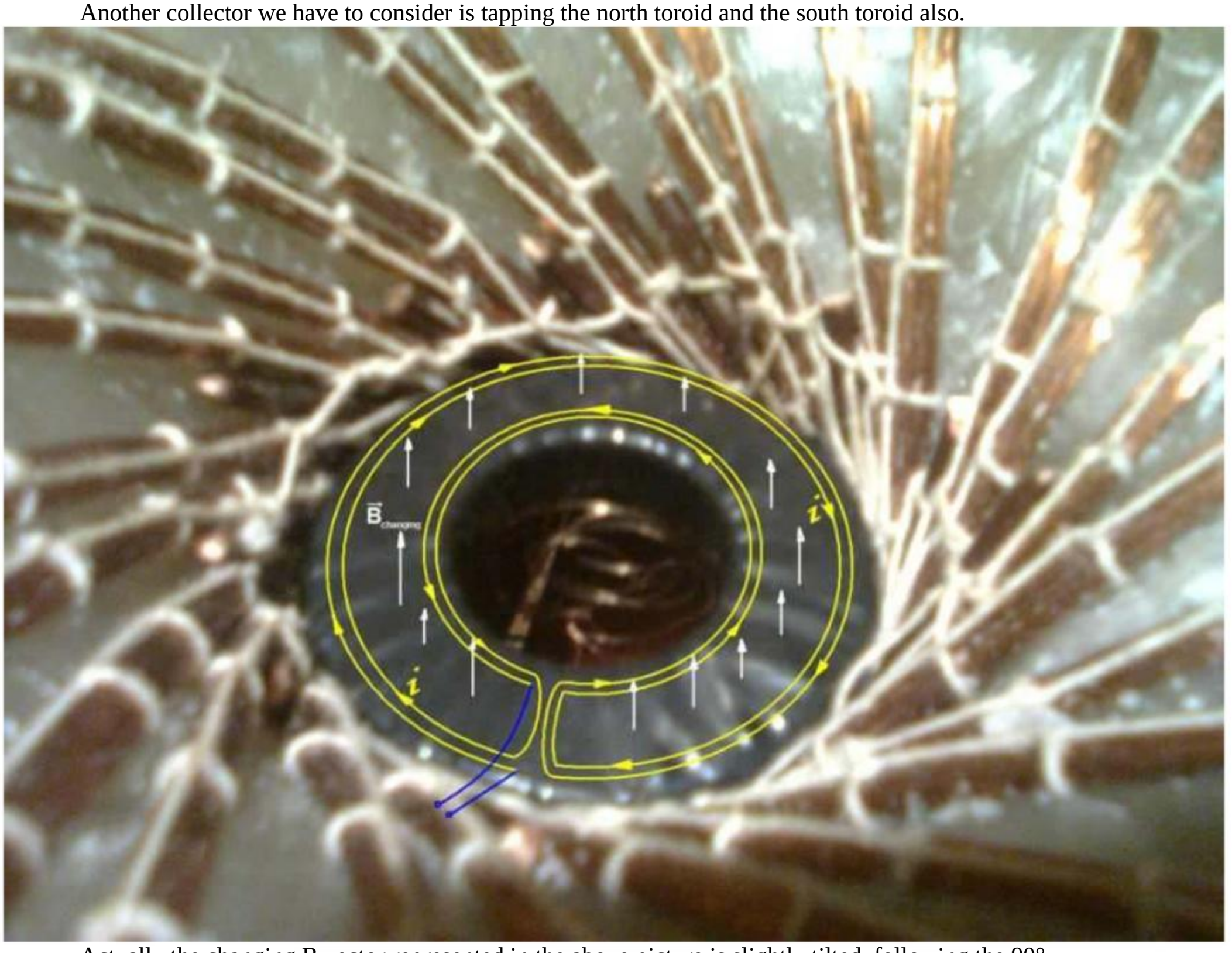
It works for us, and not against us. The opposed induced EMF in the coils, actually helps the equatorial splitting of the flux field. If you can imagine, when no load is attached to it, the double torus is much more flatten in respect to the equatorial plane. But when we put a load on the collector, then the opposed flux created by the coil, will actually better help the formation of the torus, like squeezing a lemon or an orange in your hand. It will work much more efficient and better, because we are helping the equatorial flux separation closer to the center, to form the two "hemispheres" of the double torus. Pretty neat and impressive, I have to say.



One might argue, saying that I'm wrong, raising the question, How is this an improvement? Am I blind? Can't I see that the double torus gets smaller?

My friend, it is just an illustration. When you squeeze a balloon in your hand, you don't reduce its volume. Think about it!

Another collector we have to consider is tapping the north toroid and the south toroid also.



Actually the changing B vector represented in the above picture is slightly tilted, following the 90° perpendicular to the wires of the Rodin coils, but you get the picture.

However, if we successfully manage to establish a magnetic bubble ring inside the hole of a Rodin coil, then what is truly an amazing thing, is that ANY POINT IN SPACE WILL BE ENERGIZED!

What do I mean by that? It sounds impossible, I know, but once you visualize the correct dynamic flux created by the magnetic bubble ring, then you will come to see, that you can have a simple coil, and you can rotate it in any

direction, and all the axes and the induced EMF in the coil will be the same in any point in space, in all directions. Even in a transverse plane, because of the twist/torsion of the torus.

Going beyond the basic standard 150° winding step angle for the Rodin coil. Exploring different configurations

If we intend to explore other Rodin coil type windings with different step angles than the standard 150°, then we must acknowledge that **we can't use any step angle we want.**

Why?

Because let me explain what happens in the standard Rodin coil step angle , and then see what we are dealing with in other non-standard Rodin coils step-angles.

An extremely important concept to grasp before exploring the incomprehensible table that will be given below.

In the Rodin coil, we start from an external point on the outside circumference of the torus, and let's call it point 0°. Then we go at 150°, then after a loop through the hole (a small turn) we go to the point 300°.

After we have reached 300° point on the outside circumference we wind another turn and we aim at 450°. Hmm….interesting…we have passed our starting point 0° by 90° and we haven't finished a complete turn!
Hmm….When will it end? At what specific angle? After how many 360° complete revolutions? Interesting questions. Let's explore the answer.

In a standard Rodin coil step-angle we have these angles: 150° then 300°, then 450°, 600°, 750°, 900°, 1050°, 1200°, 1350°, 1500°, 1650° and after that we reach 1800°.

This 1800° is the 5th multiple of 360°. That means that we have over-passed the origin 0° (our starting point) 4 times! And the 5th time we have ended where we have originally started!

Now, going further than this simple winding, let's see a different step-angle.

If for example we choose a step-angle of 31°, and we start from an external point on the outside circumference of the torus, then our angles will be:

-we start at 0° (original starting point);
-we go with the wire to the point 31°;
-then, after another loop, we go with our wire to the angle 62°;
-after another loop, we go with our wire to the angle 93° (in respect to our starting point);
-then 124°, 155°, 186°, 217°, 248°, 279°, 310°, 341°, 372° (we have passed our original starting point, thus completing a 360° revolution), then we continue with 401°, 434°, 465° and so on… until infinity and we will never reach our original starting point. The problem is that none of these numbers will be a perfect multiple of 360°. None of them. We could reach the angle 17.493.951° and we still haven't got a perfect multiple of 360° that denotes we have reached our starting point.

-Therefore we can't accurately wind a torus in a Rodin fashion with a step-angle of 31° due to this reason alone.

Now an interesting question arises: What are the correct step-angles we could use that are valid from this perspective and are able to end up where they eventually started?

The answer is a simple algorithm that can verify all iterations of the step angles if it evenly divides at 360. If it finds an angle like 47° which all his multiples never divide at 360°, it will remove it from the list.

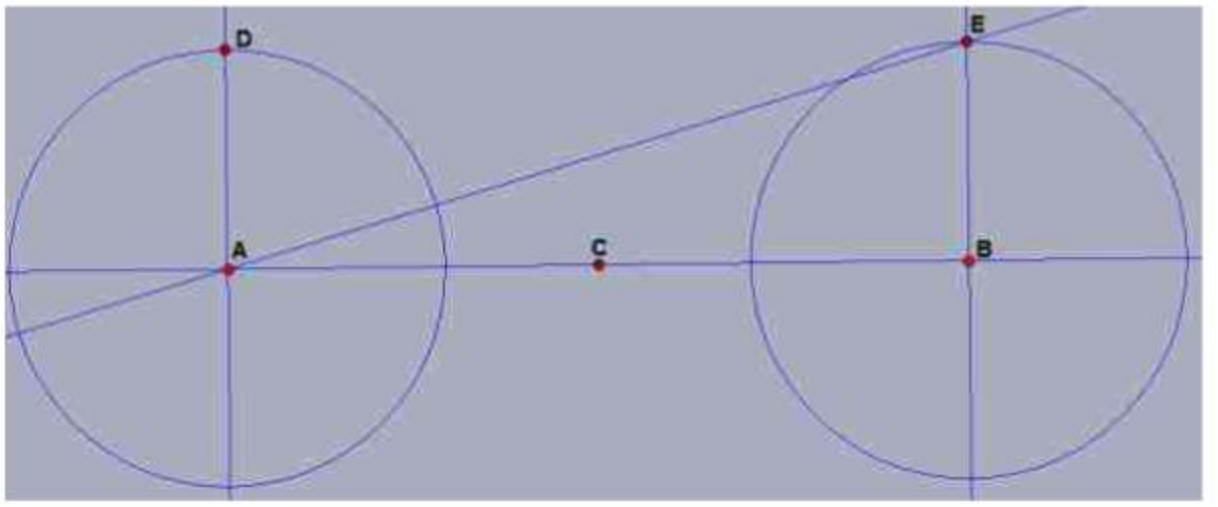
So our result will be something like this:

Winding step angle	Number of outer points	Angle at one of the outer points	Nr of complete 360° revolutions, before ending where we started	The first small turn that is parallel to another previous laid small turn	Inner radius to outer radius ratio	Core radius	Length of a chord for a radius R=1 torus	Full Rodin turn length in the equatorial plane	(total length of a complete full turn) / (length of the outside circumference of the torus)	∠EAB
1	3	179	0,00833333	180	0,0087265	0,4956367	0,017453	0,052359213	0,008333228	0,000545422
2	180	178	1	90	0,0174524	0,4912738	0,034905	6,282866317	0,999949231	0,002181772
3	120	177	1	60	0,0261769	0,4869115	0,052354	6,282467594	0,999885772	0,004909299
4	90	176	1	45	0,0348995	0,4825503	0,069799	6,281909406	0,999796934	0,008728419
5	72	175	1	36	0,0436194	0,4781903	0,087239	6,281191781	0,99968272	0,013639712
6	60	174	1	30	0,052336	0,473832	0,104672	6,280314749	0,999543137	0,019643929
8	45	172	1	45	0,0697565	0,4651218	0,139513	6,278082637	0,999187885	0,034934955
9	40	171	1	20	0,0784591	0,4607705	0,156918	6,276727658	0,998972233	0,044224097
10	36	170	1	18	0,0871557	0,4564221	0,174311	6,275213478	0,998731244	0,054610824
12	30	168	1	15	0,1045285	0,4477358	0,209057	6,271707796	0,998173297	0,078683538
14	180	166	7	90	0,1218693	0,4390653	0,243739	43,87296363	6,982599029	0,107167795
15	24	165	1	12	0,1305262	0,4347369	0,261052	6,265257227	0,997146657	0,123069584
16	45	164	2	45	0,1391731	0,4304134	0,278346	12,52557909	1,993507827	0,140080998

18	20	162	1	10	0,1564345	0,4217828	0,312869	6,257378602	0,995892735	0,177443277
20	18	160	1	9	0,1736482	0,4131759	0,347296	6,251334396	0,99493077	0,219277505
21	120	159	7	60	0,1822355	0,4088822	0,364471	43,73652612	6,960884325	0,241879503
22	180	158	11	90	0,190809	0,4045955	0,381618	68,69123834	10,93255013	0,265609322
24	15	156	1	15	0,2079117	0,3960442	0,415823	6,237350725	0,9927052	0,316467163
25	72	155	5	36	0,2164396	0,3917802	0,432879	31,16730441	4,960430559	0,343602999
26	180	154	13	90	0,2249511	0,3875245	0,449902	80,98237956	12,88874601	0,371882283
27	40	153	3	20	0,2334454	0,3832773	0,466891	18,67562911	2,972318688	0,40130937
28	90	152	7	45	0,2419219	0,3790391	0,483844	43,54594121	6,930551795	0,431888792
30	12	150	1	6	0,258819	0,3705905	0,517638	6,211657082	0,988615929	0,496523685
32	45	148	4	45	0,2756374	0,3621813	0,551275	24,80736202	3,948214291	0,56582688
33	120	147	11	60	0,2840153	0,3579923	0,568031	68,16368273	10,84858705	0,602242375
34	180	146	17	90	0,2923717	0,3538141	0,584743	105,2538137	16,75166473	0,639841259
35	72	145	7	36	0,3007058	0,3496471	0,601412	43,30163513	6,891669275	0,678629363
36	10	144	1	5	0,309017	0,3454915	0,618034	6,180339887	0,983631643	0,718612707
38	180	142	19	90	0,3255682	0,3372159	0,651136	117,2045356	18,65368119	0,802190159
39	120	141	13	60	0,3338069	0,3330966	0,667614	80,11364622	12,7504828	0,845797275
40	9	140	1	9	0,3420201	0,3289899	0,68404	6,15636258	0,979815536	0,890625648
42	60	138	7	30	0,3583679	0,320816	0,716736	43,00415395	6,844323674	0,983974354
44	90	136	11	45	0,3746066	0,3126967	0,749213	67,42918681	10,73168839	1,082294658
45	8	135	1	4	0,3826834	0,3086583	0,765367	6,122934918	0,974495358	1,133338291
46	180	134	23	90	0,3907311	0,3046344	0,781462	140,6632063	22,38724459	1,185648196
48	15	132	2	15	0,4067366	0,2966317	0,813473	12,20209929	1,942024418	1,294099919
50	36	130	5	18	0,4226183	0,2886909	0,845237	30,42851485	4,842848549	1,407718156
51	120	129	17	60	0,4305111	0,2847445	0,861022	103,3226632	16,44431259	1,466487008
52	90	128	13	45	0,4383711	0,2808144	0,876742	78,90680642	12,55840829	1,526574674
54	20	126	3	10	0,4539905	0,2730048	0,907981	18,15961999	2,890193286	1,650744747
55	72	125	11	36	0,4617486	0,2691257	0,923497	66,49180031	10,58249869	1,714846865
56	45	124	7	45	0,4694716	0,2652642	0,938943	42,25244065	6,724684787	1,780307223
57	120	123	19	60	0,4771588	0,2614206	0,954318	114,5181025	18,22612208	1,847136248
58	180	122	29	90	0,4848096	0,2575952	0,969619	174,5314633	27,77754511	1,915344598
60	6	120	1	3	0,5	0,25	1	6	0,954929659	2,055943087
62	180	118	31	90	0,5150381	0,242481	1,030076	185,413707	29,50950798	2,202192701
63	40	117	7	20	0,5224986	0,2387507	1,044997	41,79988518	6,652658347	2,277465866
64	45	116	8	45	0,5299193	0,2350404	1,059839	47,69273378	7,590534331	2,354187326
65	72	115	13	36	0,5372996	0,2313502	1,074599	77,3711436	12,31399996	2,432369436
66	60	114	11	30	0,544639	0,2276805	1,089278	65,3566842	10,40183935	2,512024802
68	90	112	17	45	0,5591929	0,2204035	1,118386	100,6547226	16,01969665	2,675807004
69	120	111	23	60	0,5664062	0,2167969	1,132812	135,9374969	21,63512458	2,759960339
70	36	110	7	18	0,5735764	0,2132118	1,147153	41,29750342	6,572701806	2,84563993
72	5	108	1	5	0,5877853	0,2061074	1,175571	5,877852523	0,935489284	3,021633778
74	180	106	37	90	0,601815	0,1990925	1,20363	216,6534083	34,48146087	3,203903041
75	24	105	5	12	0,6087614	0,1956193	1,217523	29,22054859	4,650594748	3,297427926
76	90	104	19	45	0,6156615	0,1921693	1,231323	110,8190656	17,63740207	3,392566589
78	60	102	13	30	0,6293204	0,1853398	1,258641	75,51844693	12,01913412	3,587747756
80	9	100	2	9	0,6427876	0,1786062	1,285575	11,57017697	1,841450858	3,789574433
81	40	99	9	20	0,649448	0,175276	1,298896	51,95584387	8,269029374	3,893021069
82	180	98	41	90	0,656059	0,1719705	1,312118	236,1812504	37,58941347	3,998179149
84	30	96	7	15	0,6691306	0,1654347	1,338261	40,14783638	6,389726615	4,213699163
85	72	95	17	36	0,6755902	0,1622049	1,35118	97,2849899	15,48338703	4,324096613
86	180	94	43	90	0,6819984	0,1590008	1,363997	245,5194096	39,07562767	4,436276546
87	120	93	29	60	0,6883546	0,1558227	1,376709	165,2050982	26,293208	4,550257485
88	45	92	11	45	0,6946584	0,1526708	1,389317	62,51925334	9,950248208	4,666058268
90	4	90	1	2	0,7071068	0,1464466	1,414214	5,656854249	0,900316316	4,903196278
92	90	88	23	45	0,7193398	0,1403301	1,43868	129,4811641	20,6075673	5,147847581
93	120	87	31	60	0,7253744	0,1373128	1,450749	174,089849	27,70726002	5,273041183
94	180	86	47	90	0,7313537	0,1343231	1,462707	263,2873326	41,90348043	5,400174314
95	72	85	19	36	0,7372773	0,1313613	1,474555	106,1679365	16,89715189	5,529268054
96	15	84	4	15	0,7431448	0,1284276	1,48629	22,29434476	3,548255172	5,660343812
98	180	82	49	90	0,7547096	0,1226452	1,509419	271,6954489	43,2416737	5,928528675
99	40	81	11	20	0,760406	0,119797	1,520812	60,83247725	9,681789455	6,065682259
100	18	80	5	9	0,7660444	0,1169778	1,532089	27,57759995	4,389111351	6,204906821
102	60	78	17	30	0,777146	0,111427	1,554292	93,25751537	14,84239455	6,489661532
104	45	76	13	45	0,7880108	0,1059946	1,576022	70,92096782	11,2874226	6,782981494
105	24	75	7	12	0,7933533	0,1033233	1,586707	38,08096033	6,060773075	6,932913893
106	180	74	53	90	0,7986355	0,1006822	1,597271	287,5087836	45,75844409	7,085060822
108	10	72	3	5	0,809017	0,0954915	1,618034	16,18033989	2,575181074	7,396099072
110	36	70	11	18	0,819152	0,090424	1,638304	58,97894719	9,386790983	7,716301238
111	120	69	37	60	0,8241262	0,0879369	1,648252	197,7902853	31,4793016	7,879904334
112	45	68	14	45	0,8290376	0,0854812	1,658075	74,61338153	11,87508849	8,045877735
114	60	66	19	30	0,8386706	0,0806647	1,677341	100,6404682	16,01742798	8,385044358
115	72	65	23	36	0,8433914	0,0783043	1,686783	121,4483682	19,32910813	8,55829286

116	90	64	29	45	0,8480481	0,075976	1,696096	152,6486573	24,29478837	8,734022223
117	40	63	13	20	0,8526402	0,0736799	1,70528	68,21121315	10,85615175	8,912260905
118	180	62	59	90	0,8571673	0,0714163	1,714335	308,5802283	49,11206867	9,093037682
120	3	60	1	3	0,8660254	0,0669873	1,732051	5,196152423	0,826993343	9,462322208
122	180	58	61	90	0,8746197	0,0626901	1,749239	314,8630946	50,1120179	9,842112258
123	120	57	41	60	0,8788171	0,0605914	1,757634	210,916107	33,56834101	10,03602207
124	90	56	31	45	0,8829476	0,0585262	1,765895	158,9305667	25,2945853	10,23264909
125	72	55	25	36	0,8870108	0,0564946	1,774022	127,72956	20,32879085	10,43202421
126	20	54	7	10	0,8910065	0,0544967	1,782013	35,64026097	5,672323706	10,63417856
128	45	52	16	45	0,898794	0,050603	1,797588	80,89146417	12,87427638	11,04695085
129	120	51	43	60	0,9025853	0,0487074	1,805171	216,6204682	34,4762183	11,25763235
130	36	50	13	18	0,9063078	0,0468461	1,812616	65,25416067	10,38552223	11,47122019
132	30	48	11	15	0,9135455	0,0432273	1,827091	54,81272746	8,723716519	11,90724448
134	180	46	67	90	0,9205049	0,0397476	1,84101	331,3817472	52,74104312	12,35528491
135	8	45	3	4	0,9238795	0,0380602	1,847759	14,78207252	2,352639911	12,58389359
136	45	44	17	45	0,9271839	0,0364081	1,854368	83,44654691	13,28093042	12,81560549
138	60	42	23	30	0,9335804	0,0332098	1,867161	112,0296512	17,83007276	13,28847253
140	18	40	7	9	0,9396926	0,0301537	1,879385	33,82893435	5,384042121	13,77415399
141	120	39	47	60	0,9426415	0,0286793	1,885283	226,2339579	36,00625269	14,02188418
142	180	38	71	90	0,9455186	0,0272407	1,891037	340,3866872	54,17422383	14,27291889
144	5	36	2	5	0,9510565	0,0244717	1,902113	9,510565163	1,513653457	14,7850365
145	72	35	29	36	0,953717	0,0231415	1,907434	137,3352409	21,85758245	15,04618657
146	180	34	73	90	0,9563048	0,0218476	1,91261	344,2697121	54,79222644	15,31077549
147	120	33	49	60	0,9588197	0,0205901	1,917639	230,1167364	36,62421608	15,57883659
148	90	32	37	45	0,9612617	0,0193692	1,922523	173,0271053	27,53811909	15,85040305
150	**12**	**30**	**5**	**6**	**0,9659258**	**0,0170371**	**1,931852**	**23,18221983**	**3,689564878**	**16,40418379**
152	45	28	19	45	0,9702957	0,0148521	1,940591	87,32661536	13,8984625	16,97237867
153	40	27	17	20	0,9723699	0,013815	1,94474	77,78959363	12,38059835	17,26196165
154	180	26	77	90	0,9743701	0,012815	1,94874	350,7732233	55,8272924	17,5552437
155	72	25	31	36	0,976296	0,011852	1,952592	140,586625	22,37505631	17,85225584
156	30	24	13	15	0,9781476	0,0109262	1,956295	58,68885604	9,340621544	18,15302859
158	180	22	79	90	0,9816272	0,0091864	1,963254	353,385786	56,24309467	18,76597531
159	120	21	53	60	0,9832549	0,0083725	1,96651	235,9811778	37,55757093	19,07820745
160	9	20	4	9	0,9848078	0,0075961	1,969616	17,72653955	2,821266394	19,39431644
162	20	18	9	10	0,9876883	0,0061558	1,975377	39,50753362	6,287819266	20,03827345
164	90	16	41	45	0,9902681	0,004866	1,980536	178,2482524	28,36909046	20,69805489
165	24	15	11	12	0,9914449	0,0042776	1,98289	47,58935335	7,574080824	21,0339409
166	180	14	83	90	0,9925462	0,0037269	1,985092	357,3166146	56,86870546	21,37385433
168	15	12	7	15	0,9945219	0,0027391	1,989044	29,83565686	4,74849227	22,06584834
170	36	10	17	18	0,9961947	0,0019027	1,992389	71,72601826	11,41555035	22,77419418
171	40	9	19	20	0,9969173	0,0015413	1,993835	79,7533867	12,69314572	23,13454234
172	90	8	43	45	0,9975641	0,001218	1,995128	179,561529	28,57810494	23,49902751
174	60	6	29	30	0,9986295	0,0006852	1,997259	119,8355442	19,07241921	24,24045987
175	72	5	35	36	0,9990482	0,0004759	1,998096	143,8629439	22,89649865	24,61742834
176	45	4	22	45	0,9993908	0,0003046	1,998782	89,94517443	14,31521912	24,99857619
177	120	3	59	60	0,9996573	0,0001713	1,999315	239,917758	38,18409712	25,38390944
178	180	2	89	90	0,9998477	7,615E-05	1,999695	359,9451703	57,28705309	25,77343209
180	2	0	1	1	1	0	2	4	0,636619772	26,56505118

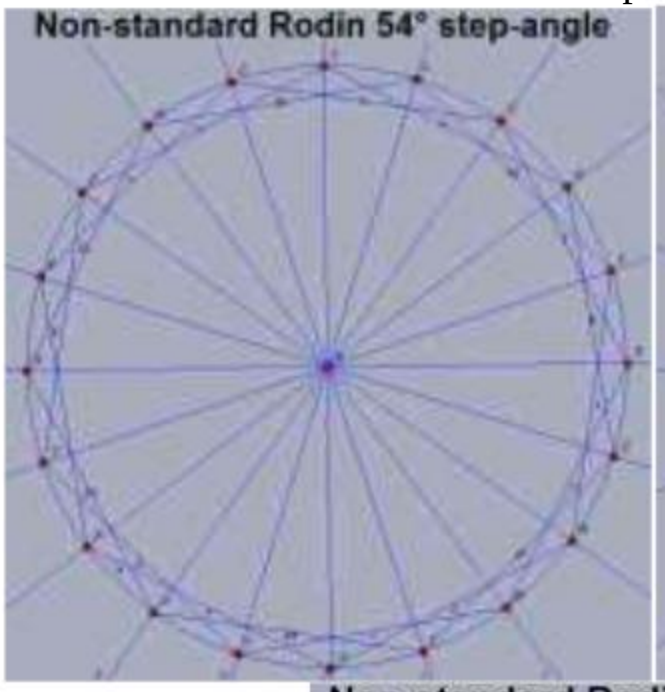
The table was done in Excel using these formulas:
First two columns were produced using the simple algorithm previously described.
Angle at one of the outer points=(360-A2*2)/2
Nr of complete 360° revolutions, before ending where we started=(A2*B2)/360
The first small turn that is parallel to another previous laid small turn=I used another algorithm here.
Inner radius to outer radius ratio==SIN(RADIANS(A2/2))
Core radius=(1-SIN(RADIANS(A2/2)))/2
Length of a chord for a radius R=1 torus=2*SIN(RADIANS(A2/2))
Full Rodin turn length in the equatorial plane=K2*B2
(Total length of a complete full turn) / (length of the outside circumference of the torus)=L2/(2*PI())
Angle ∠EAB*=DEGREES(ATAN((1-SIN(RADIANS(C2/2)))/(2*(1+SIN(RADIANS(C2/2))))))

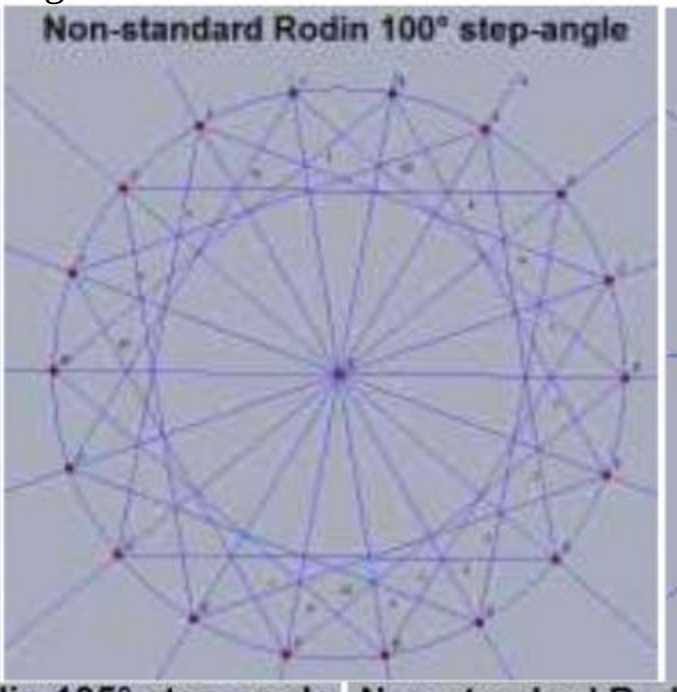


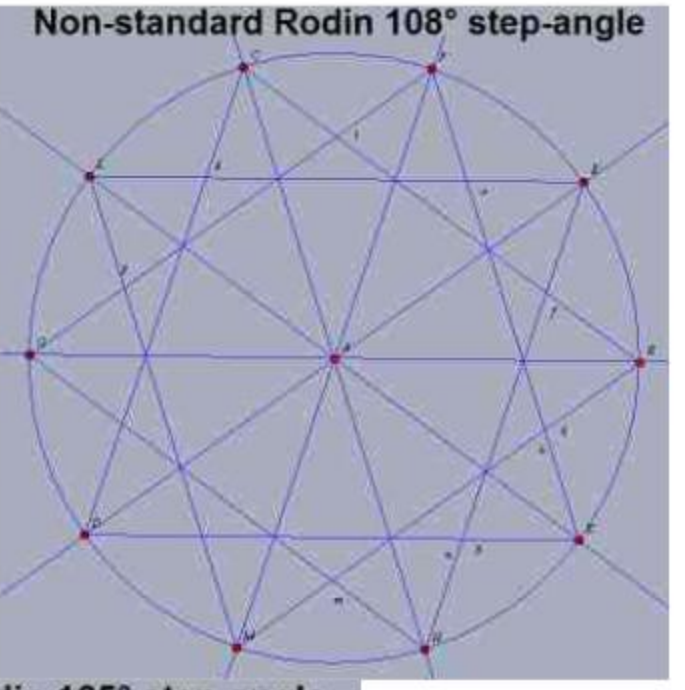
The angle ∠EAB defines the perfect torus, regardless of the step-angle, so that the wires are always laid on the surface of the torus.

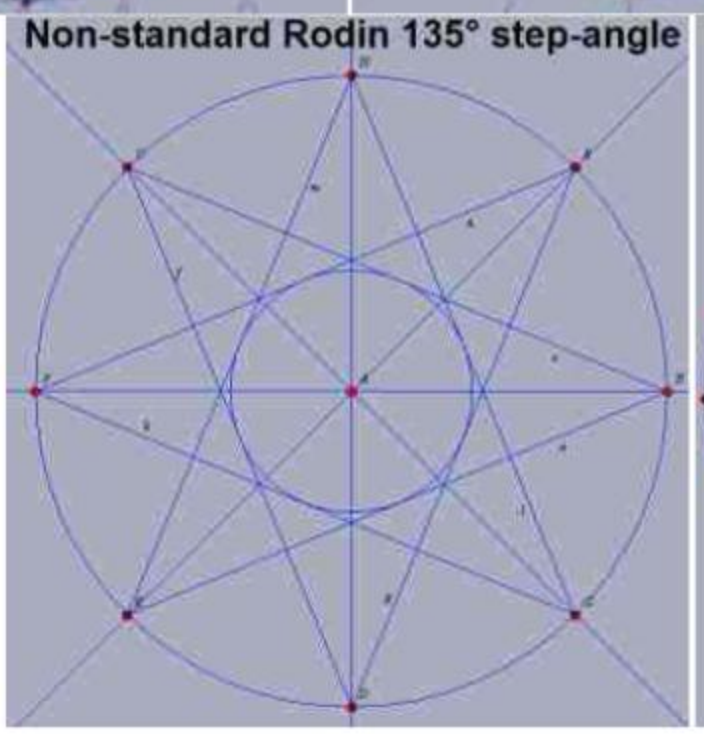
This table just scratches the surface of all the unique variables created by all these special toroids. It is far from complete. It's just the warm-up. It can provide a starting place and guiding lines to others who are working along these lines, and there are many researches out there that are playing with non-standard Rodin step-angles. I hope it provides useful insight.

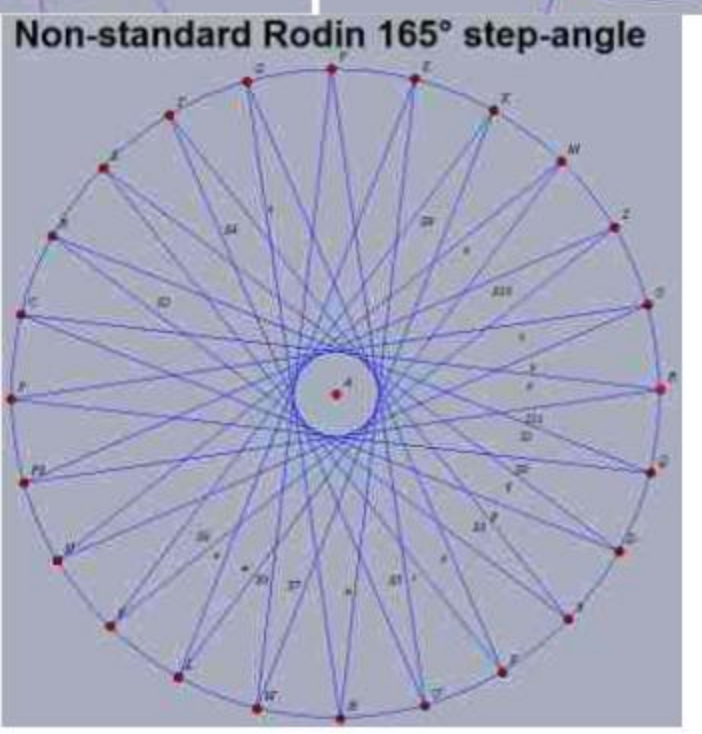
Some Non-standard Rodin step-angles:











I have built this table in order to prove the "specialness" of the standard Rodin 150° step-angle. I was searching for something unique only to this specific step-angle.

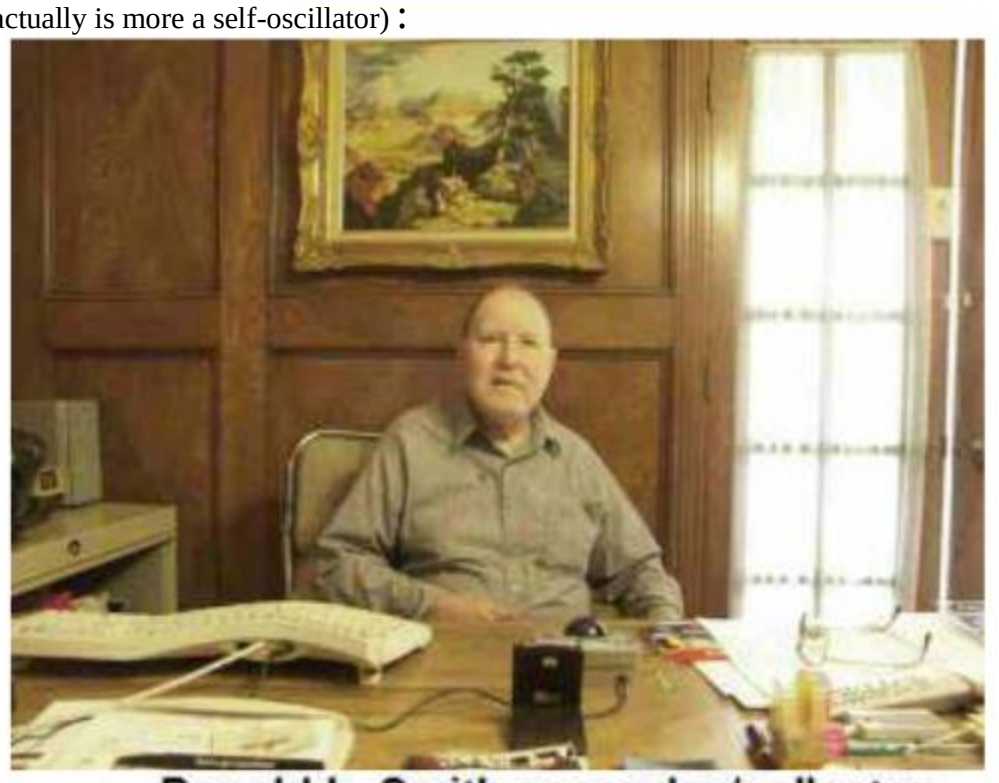
At present time I have a theory about the uniqueness of the standard Rodin 150° step-angle, but I haven't yet come up with a way to prove it, because it deals with extreme advanced math and calculus, that is a little beyond my area of expertise.

My theory is that the uniqueness and specialness of the Rodin winding 150° step-angle technique, that invalidates all the other step-angles is something to do with the magnetic field created taking the form of a perfect phi logarithmic spiral. This can't be proven in the equatorial cross-section of the torus because the spiral pitch angle will be deformed by the curvature of the torus. The only solution is given by tangential lines to the surface of the torus that are perpendicular to the wires. We do know that the pitch of the logarithmic spiral created is 30°, but the nature and curvature of the torus, makes this surface-tangential lines to define a perfect phi spiral (in one of the hemispheres of the torus, and in the other hemisphere you get another inverted phi spiral in the other direction which closes upon itself) with its center offset from the center of the torus, just like in the Rodin mathematical fingerprint of God offset center.

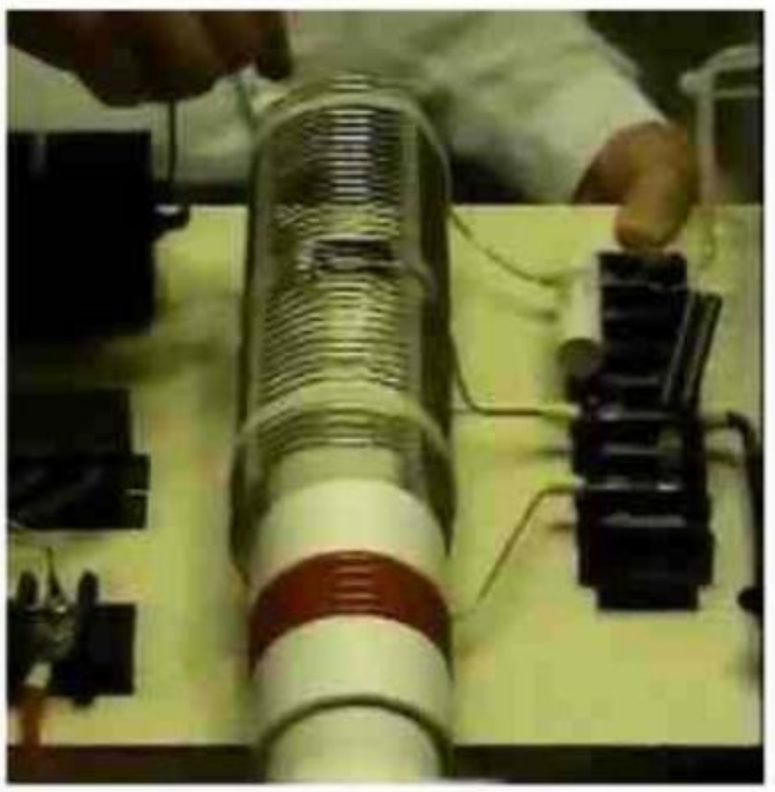
Note that almost all the non-standard Rodin step-angles given in the table above can create in theory the "shear", the double torus topology, the magnetic bubble ring, the surface magnetic field forming the logarithmic spiral, and all these special effects in theory, but there is only one Phi spiral in existence, and I put all my money on the Rodin coil, as being the only one, that can create among all logarithmic spirals, the Golden spiral of infinite growth. That is in theory anyway…

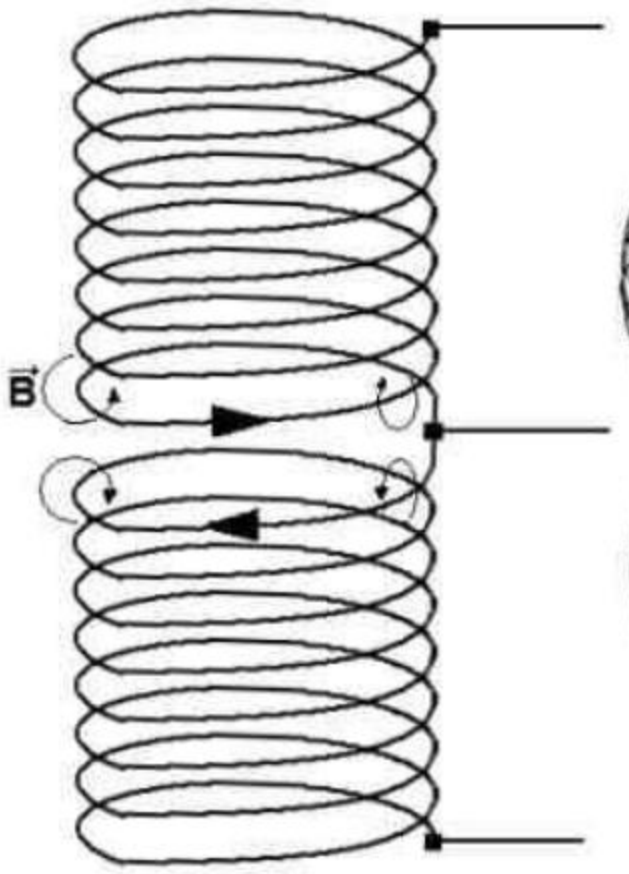
<Working here…on proving my theory and other related stuff…>

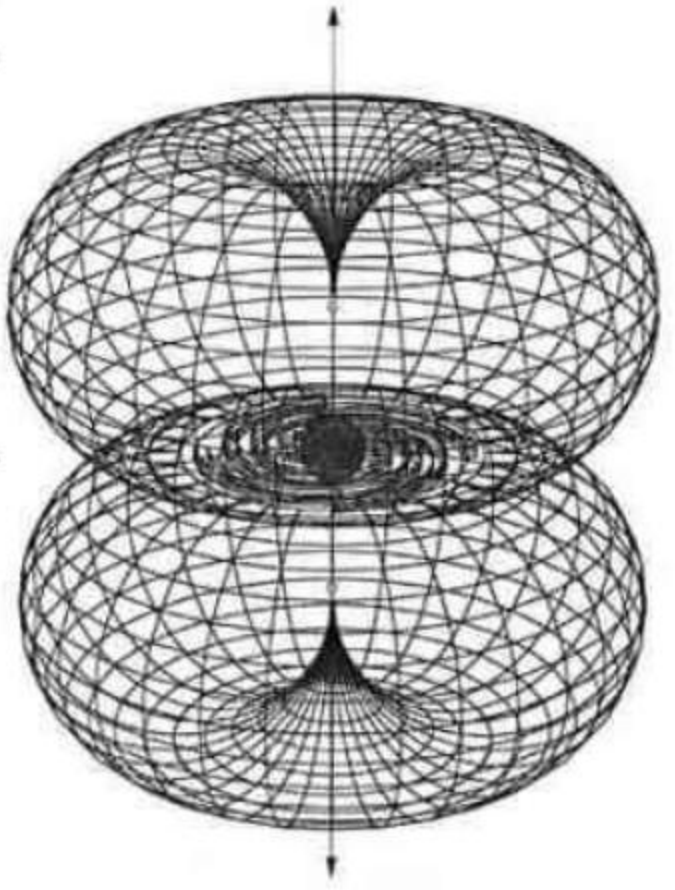
The double torus topology is also where **Donald L. Smith** arrived with his famous resonant air-core transformer (actually is more a self-oscillator) :



Donald L. Smith seconday/collector





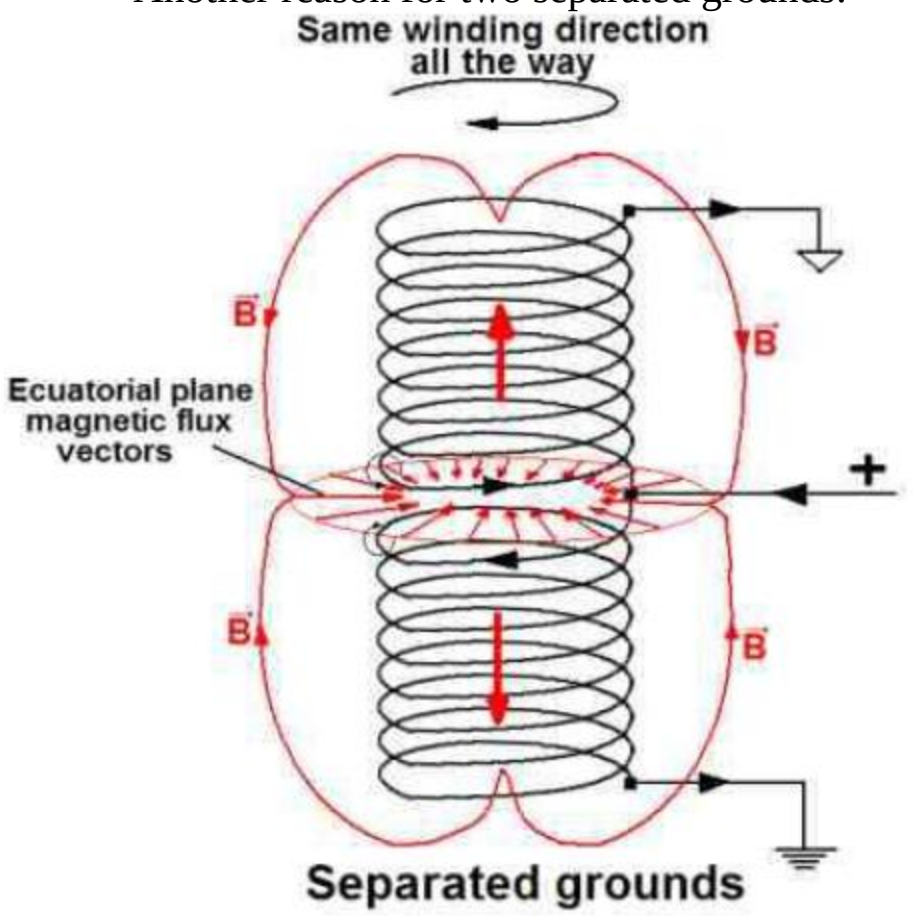


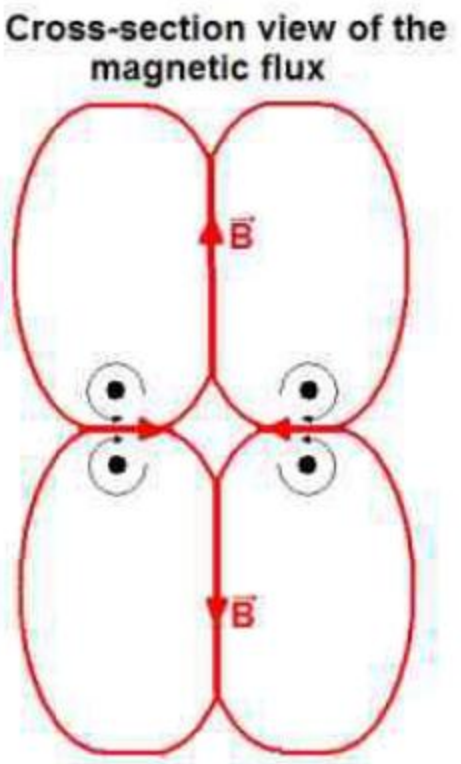
That is why Smith always answers to the questions of how much power can his devices produce, he replies in VA and not in W! Because he is using natural LC oscillations in the secondary(slightly actuated by the primary coil pulses) which deliver the current 90° phase shifted from the voltage. The problem that Don never addresses is when you connect a load to this taped point air core transformer(more like an oscillator) is the fact that the oscillation frequency of the secondary won't be tuned anymore to the magnetic resonance (to the spin established by the coil itself). So extracting energy from this secondary oscillator poses another problem. He does slightly address this issue, but I don’t think he was explicit enough here:

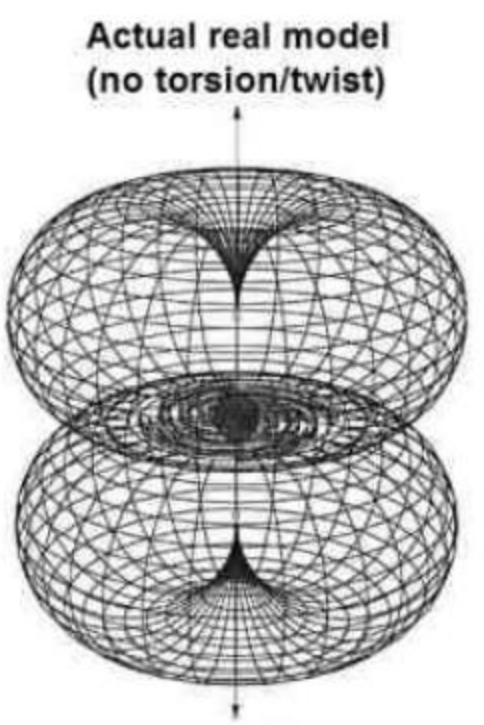


It can’t be seen properly, but what I think he is really talking about re-calculating the oscillation frequency of the secondary if you connect an inductive load (another transformer after the main secondary/collector/oscillator).

Another reason for two separated grounds:







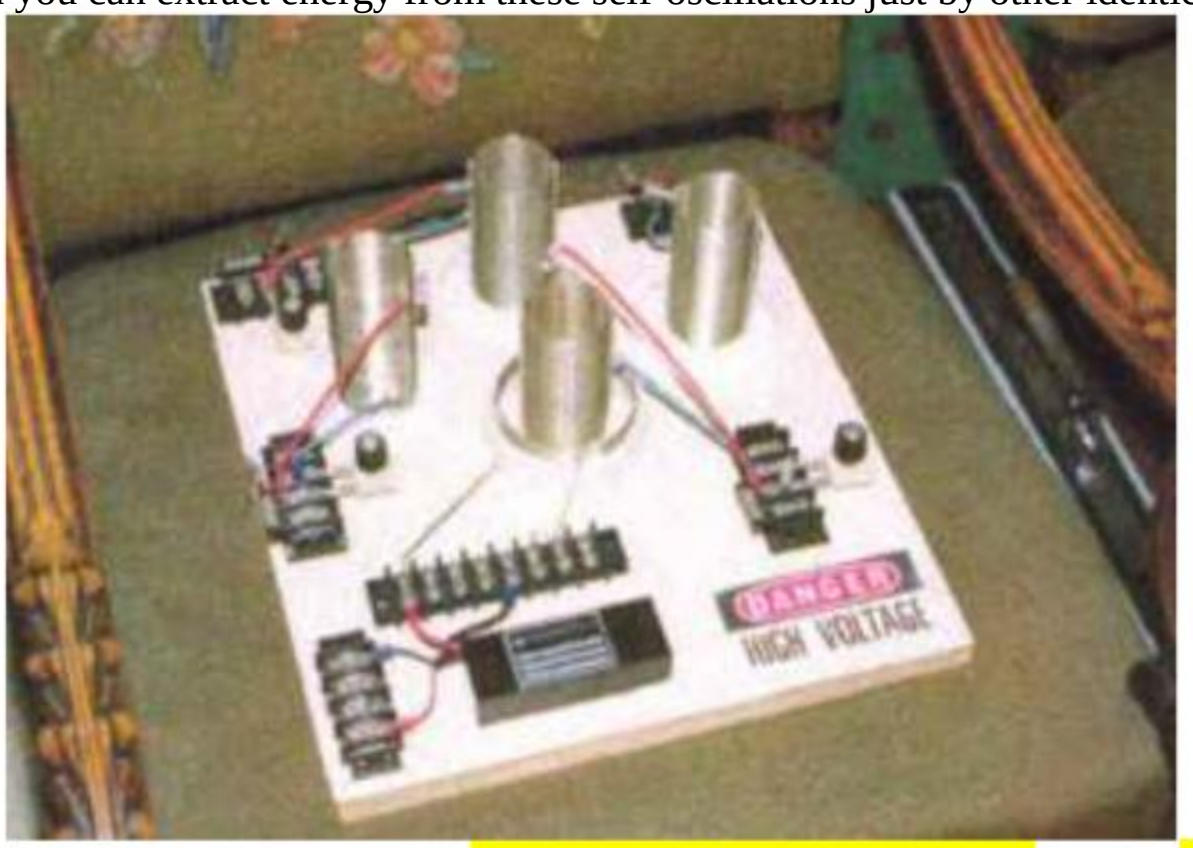
As it is obvious Donald L. Smith air core resonant transformer/oscillator/device creates the Haramein double torus topology just like the standard Marko Rodin coil and Adam Trombly dynamo. The difference is that it is not twisted. It doesn't have torsion like Rodin field has.

First we must **get out of the** famous Tesla Air Core Resonant Transformer mindset if we ever want to replicate Don Smith device. Don’t you ever wondered why it’s called “device”? and not “transformer” or “generator”? Why? I believe that the most logic deduction is that it is neither of those. I firmly believe that the Don Smith device is not a transformer, and it doesn't operate on standard fundamental transformer principles. I think we are dealing here with an oscillator NOT a transformer. Don Smith device is a special oscillator, not a transformer! The “what we will call primary” is actually a simple actuator/exciter/kicker or whatever you want to call it. The “secondary” in Don Smith device is actually the **central/prime unit of oscillation**, The apparent “secondary” is the primary component here! You see now why we have to get out of the Tesla coil mindset? Many people who are trying to replicate Don Smith device consider that they are dealing with a special air core transformer! This is wrong! Appearances can be misleading! Don’t be fooled by obvious deductions. Don Smith device is not a transformer! It is an oscillator! Yeah, but you might say, where does the energy come from? Doesn't come from primary L1 coil? No! No! No! You haven’t understood anything if you are inclined to think that way! If it were to come from the L1 coil, then the “primary” side of the device will have run out of energy long before you were even able to say “Success”. The extra energy is coming from the “secondary” L2 coil! The L2 coil is the Central worker in the device. The L2 is doing all the work. L2 is the central piece that is the most important part. L2 coil is what makes all free energy possible. L2 coil is the magic of the circuit.

L2 coil is where all the action is happening. The L2 coil is the primary component of the circuit. It oscillates by itself because it is in resonance with its established magnetic field. Never forget that any magnetic field has mass, and therefore has a resonant fundamental frequency different from the oscillations of its build up and collapse. So if you can generate a spin or a flip or a polarity reversal of the magnetic field with just one build-up and collapse of the field, then you can enter in magnetic resonance with such a coil just by sweeping the frequency of the build-up and collapse. Then you will find a frequency (different from the LC resonant frequency of the circuit) at which the natural LC oscillations will not fade away exponentially, and have a more slowly decay time. The you can say you have found "magnetic resonance of the LC circuit" or that "the LC circuit is set on magnetic resonance" or "our LC circuit is tuned to magnetic resonance". Then if you want to extract energy from the self-oscillations of such an LC magnetically tuned circuit you will find that it is more difficult that you might think. First thing you might be tempted to do is to put a load on such self-oscillations established in the LC circuit, but this will always will stop the oscillations, because you are changing the frequency! You will need to build a second coil near it and tune it to the same frequency. But you won't get to much induced EMF in you second coil because the first one is not set to its natural LC frequency. We are working with magnetic resonance frequency which is different than of the natural LC frequency of the circuit. Another thing you might be tempted to do is to place a core and thus you increase the magnetic coupling between the coils. This is true, but again, this is conventional thinking, we must put aside such thoughts, if we want to successfully replicate any of these solid state generators. We can't place a core inside the coils, to have a more familiar "transformer type operation" device, because we are changing the inductance of the primary coil, and thus the magnetic resonant frequency. So the self-oscillations will stop. (unless you find the magnetic resonance of the domains in the core - note - not any core will work best)

The solution is to ***bring the two resonances together into only one resonance.***

If we manage to create such a special coil which reverse/spin/move/vibrate/flip it's established magnetic field that creates a field that has a higher harmonic of the fundamental resonant frequency set exactly on the LC natural resonance of the circuit, then we are in business. So, there are many variables here which we can tune to satisfy this condition. We can change the inductance of the coil by using a special core, or change the number of windings, or change the capacitance. Note that by changing the number of windings/inductance you change the magnetic resonance point, and by changing the capacitance you change the LC natural resonance of the circuit. Only when the two resonances are ONE then you can extract energy from these self-oscillations just by other identical coils close to it:



Don Smith devices - bringing *magnetic resonance* and LC resonance into ONLY ONE JOINED SAME RESONANT frequency

As I have stated, we only need just one actuator/exciter/kicker coil to maintain the self-oscillations and prevent their fading away tendency (even at magnetic resonance). This can be clearly seen in the above picture magnetic resonance - LC resonance coils by Don Smith.

Of course you will say, that I'm wrong and these are very similar to Tesla Coils. Ok. Fine. You know what? You want to consider them small Tesla Coils, fine. Consider them what you want. It won't change the fundamental principle of operation. It is the principle of operation here that is important. Fine! Ok! Let it be your way. They are Tesla Coils. Ok. But now, consider improving your Tesla Coil, not only to work on LC resonance (LC frequency of the primary = LC frequency of the secondary for maximum energy transfer) but to work also in magnetic resonance. Then you will get self-oscillations in your secondary coil. They will eventually stop, but if they are to continue for a certain time, then you will in theory get overunity. But then you no longer have a transformer, but an oscillator. Your secondary coil in your Tesla coil will oscillate by itself, and only tiny amounts of power needs to be delivered to the primary in

order to prevent the inevitable natural decay of the self-oscillations. So you have to admit, that they are not Tesla coils, just because the Tesla Coil is regarded in the conventional mainstream science as an air-core transformer. But we have determined that we are not dealing here with a transformer, but instead with an oscillator that oscillates by itself.

Further study:
- Sparky Sweet VTA-SQM useful site: *http://www.rexresearch.com/sweet/1nothing.htm*
- Construction of the Floyd Sweet's VTA by Michael Watson:
http://www.intalek.com/Index/Projects/Research/Construction%20of%20the%20Floyd%20Sweet%27s%20VTA%20by%20Michael%20Watson.htm

This book is suffering frequent updates, so read the last updated version here:
https://docs.google.com/document/pub?id=1gJHVdx7Gl3aPjR2PDblgYGIlMhNKoHPFG0VfJl6U_-Y
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<iframe src="https://docs.google.com/document/pub?id=1gJHVdx7Gl3aPjR2PDblgYGIlMhNKoHPFG0VfJl6U_-Y&embedded=true"></iframe>

We need your help! This book requires proofreading - English is not the native language of the author- If you notice any errors place a comment by logging in with a Google account. Feedback is welcomed.

Final thought:

Maybe it’s not meant to be for me to build a free energy device, but I would give anything, anything just to see at least one human being that has build a working model based on the shit presented in all these nonsense crap of a book. Just one, that’s all I want. Nothing more, nothing less. Just one being that has build a working prototype, and it’s a good compassionate person who will put a video on YouTube, saying to the free energy community: “Hey guys! Check this out! I’ve build a free energy device based on the shit and crap in this bullshit of a book I have found on the web.” .....That’s all I ask from God..... Is it too much???

The junkyard keeper.

Contact the author: http://www.facebook.com/niculae.razvan?sk=info