NG generator

A stationary electric clad electromagnetic core, recruited from thin sheets to obtain the required set height, having closed grooves radially distributed in which two three-phase windings are arranged together, one at the center, the other at the periphery, in order to obtain a rotating electromagnetic field; supplying the three-phase current temporarily to one of said windings, and thus obtaining an induced voltage on the second winding; proceeding from this, we have an output energy much greater than the input one. From the output of the circuit, the energy is fed back to the input by the feedback and the temporary power supply is switched off afterwards. The generator will work independently indefinitely, constantly generating a large surplus of energy.

Description of pictures

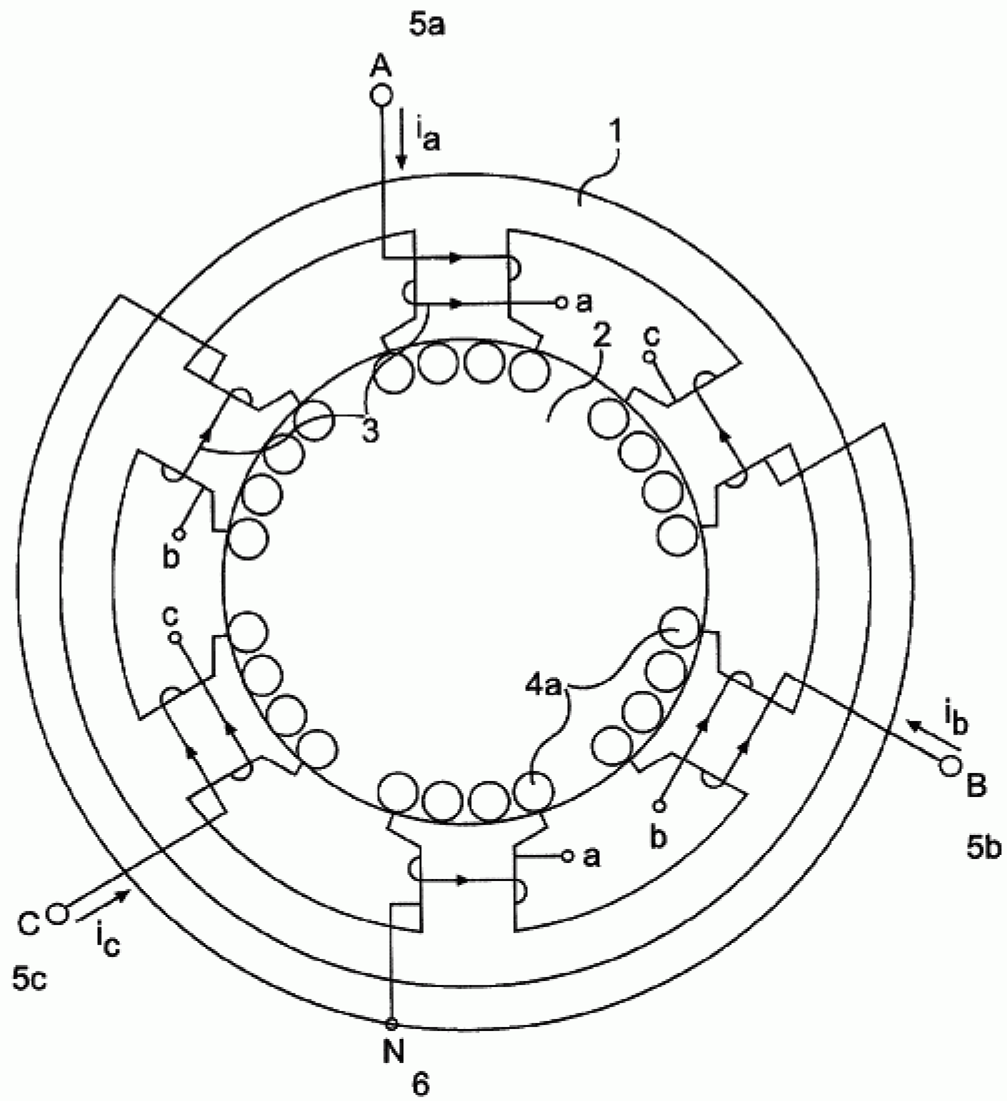

FIG. 1

Fig. 1 shows a first embodiment of the present invention.

where: 1- outer core;

2- inner core;

3- winding excitation;

4a - anchor (receiving) windings;

5a, 5b, 5c, 6-terminals of phase windings of excitation and neutral.

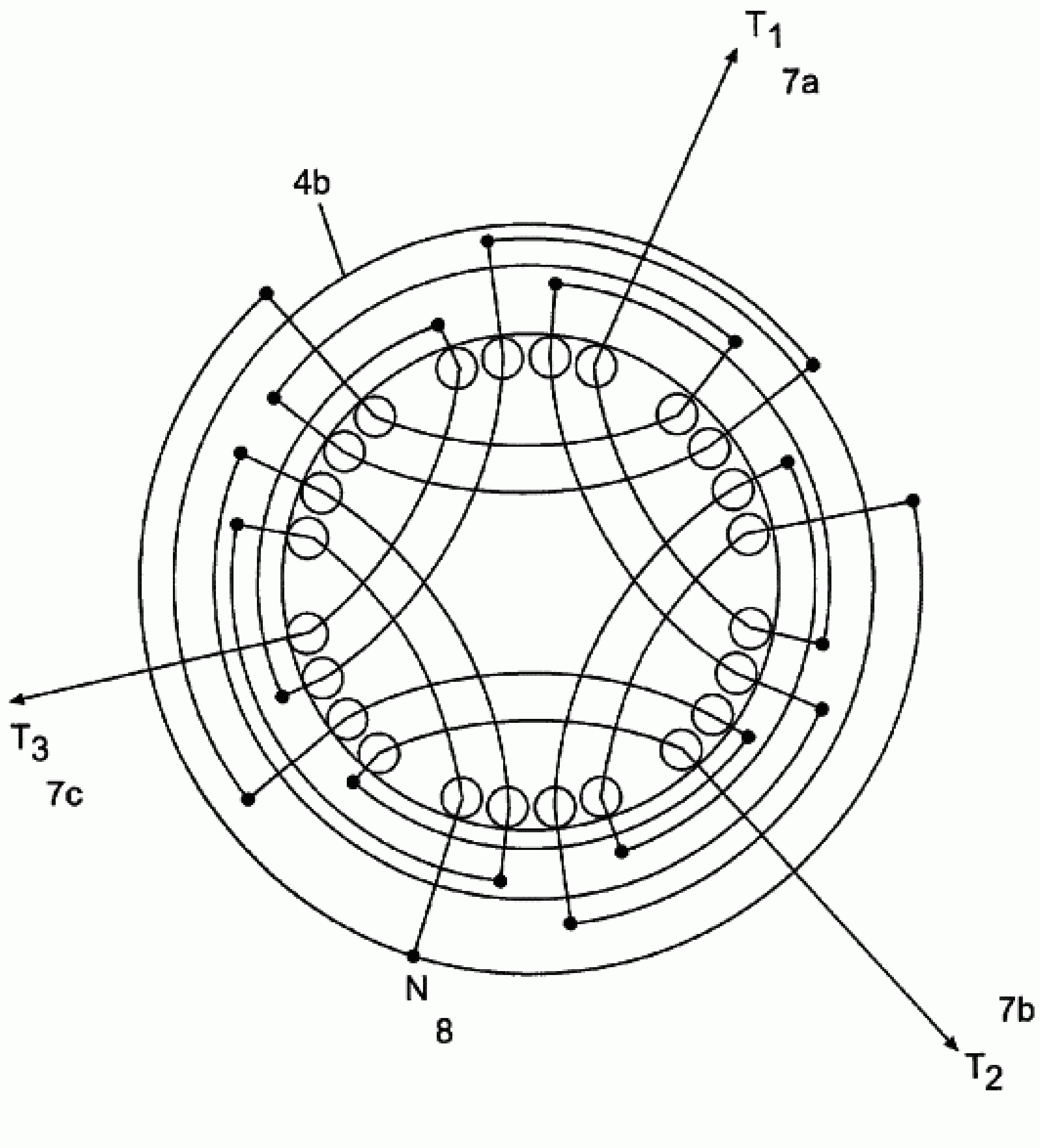

FIG. 2

Figure 2 shows the layout of the internal windings for the embodiment of the present invention shown in Fig.

where: 4 - the scheme of connection of anchor (receiving) windings; 7a, 7b, 7c, 8- terminals of phase winding and neutral windings.

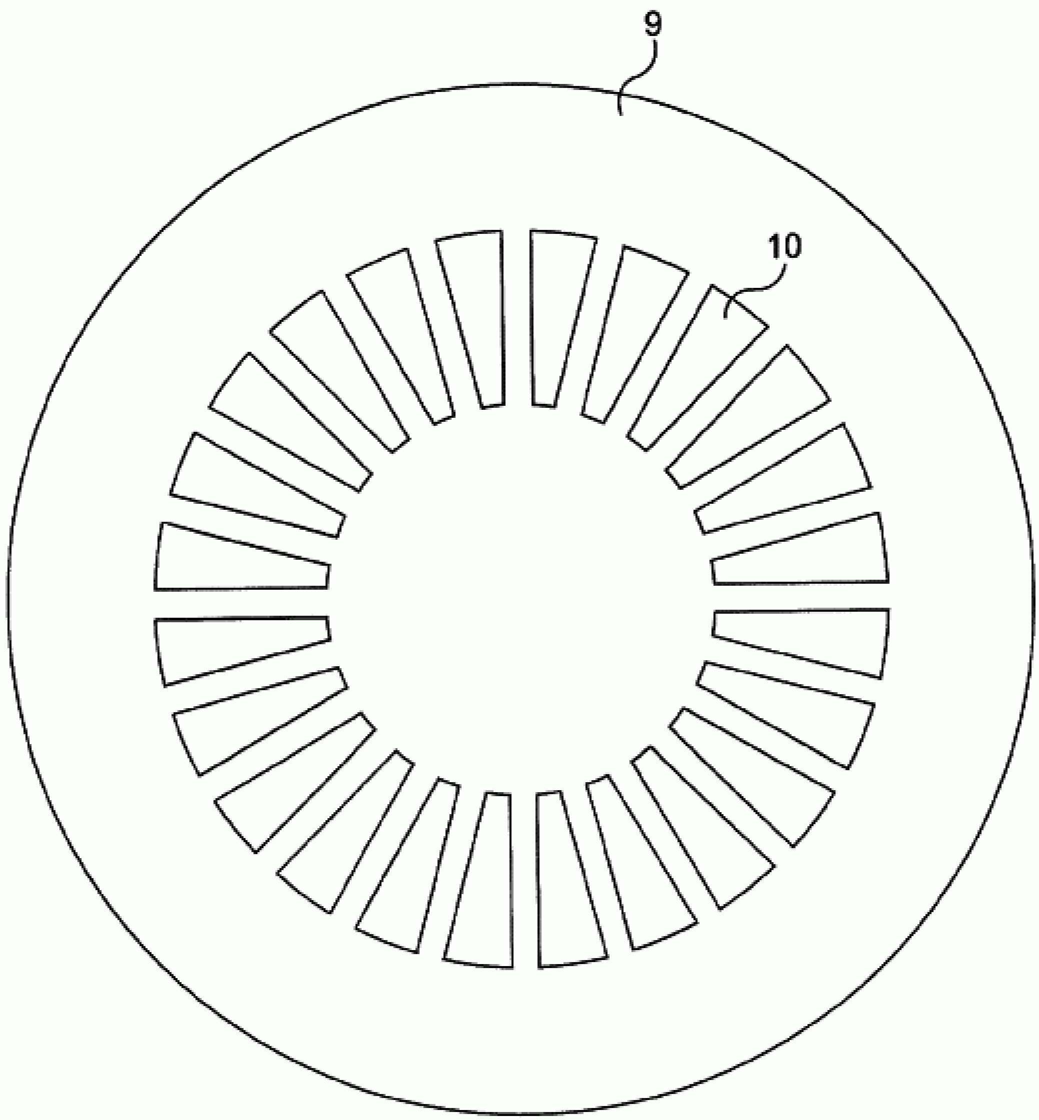

FIG. 3

Fig. 3 shows a single set-up core for a second embodiment of the present invention.

where: 9 - the core;

10- grooves for windings.

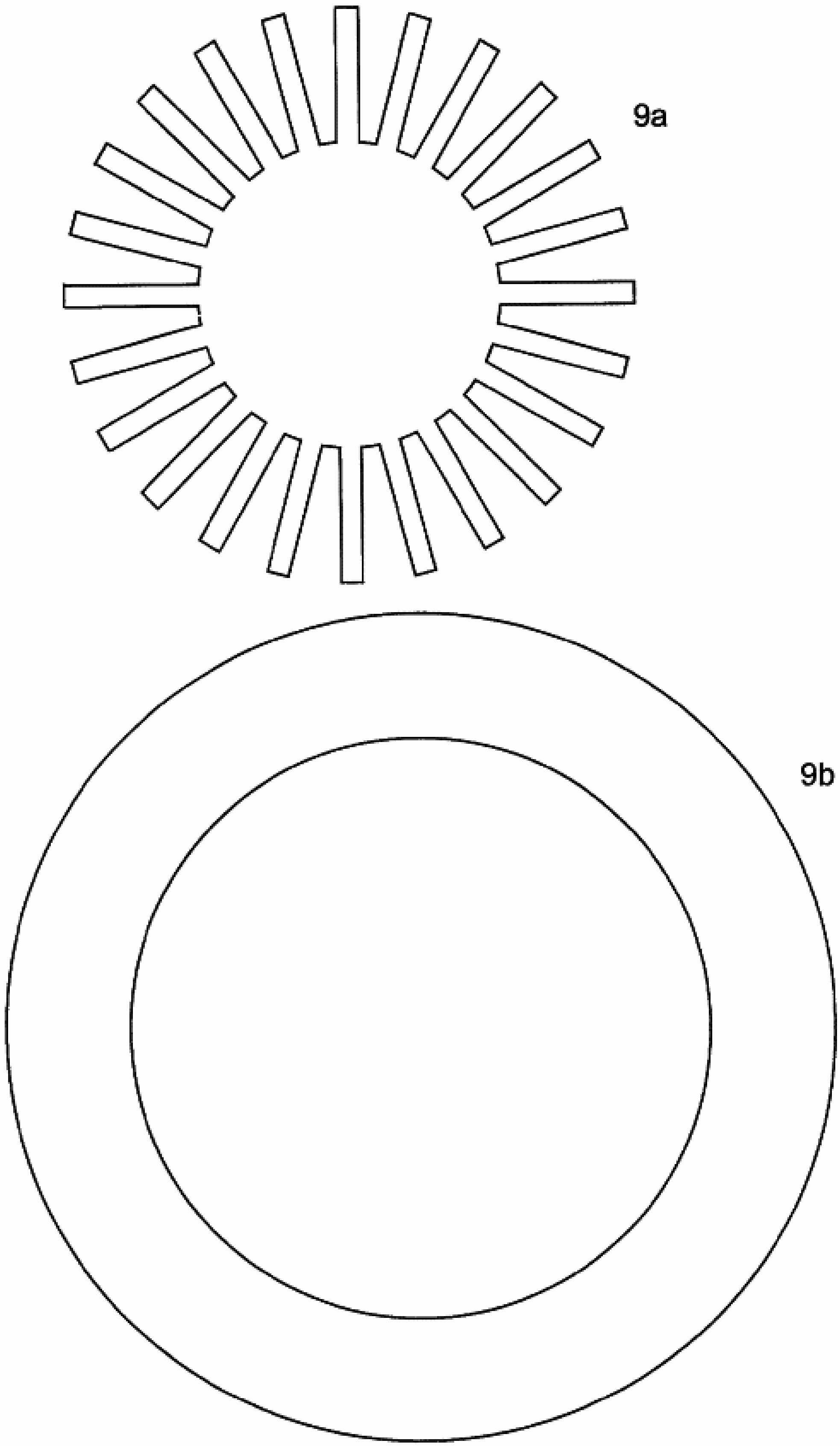

FIG. 4

Fig. 4 shows a divided core set consisting of two parts for a second embodiment of the present invention.

where: 9a - inner core;

10- outer core.

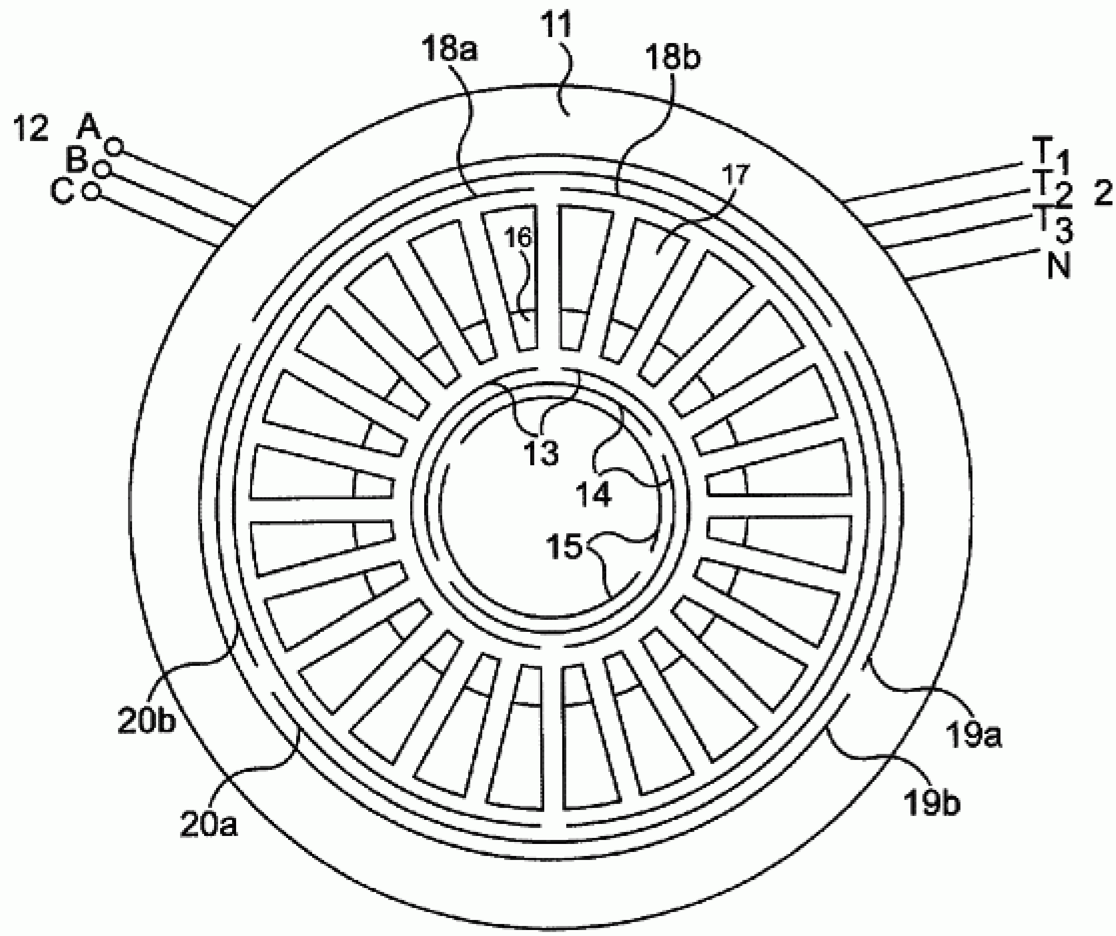

FIG. 5

Fig. 5 shows the arrangement of the windings of the second embodiment of the invention, made from the set-up cores shown in Figs. 3 and 4.

where: 2- terminals of phase winding (receiving) windings;

11- ferromagnetic core;

12 - terminals of three-phase field windings;

13, 14, 15 are phase excitation windings;

16 - location of phase winding;

17 - location of the phase anchor (receiving) windings;

18, 19, 20-phase anchor (receiving) windings.

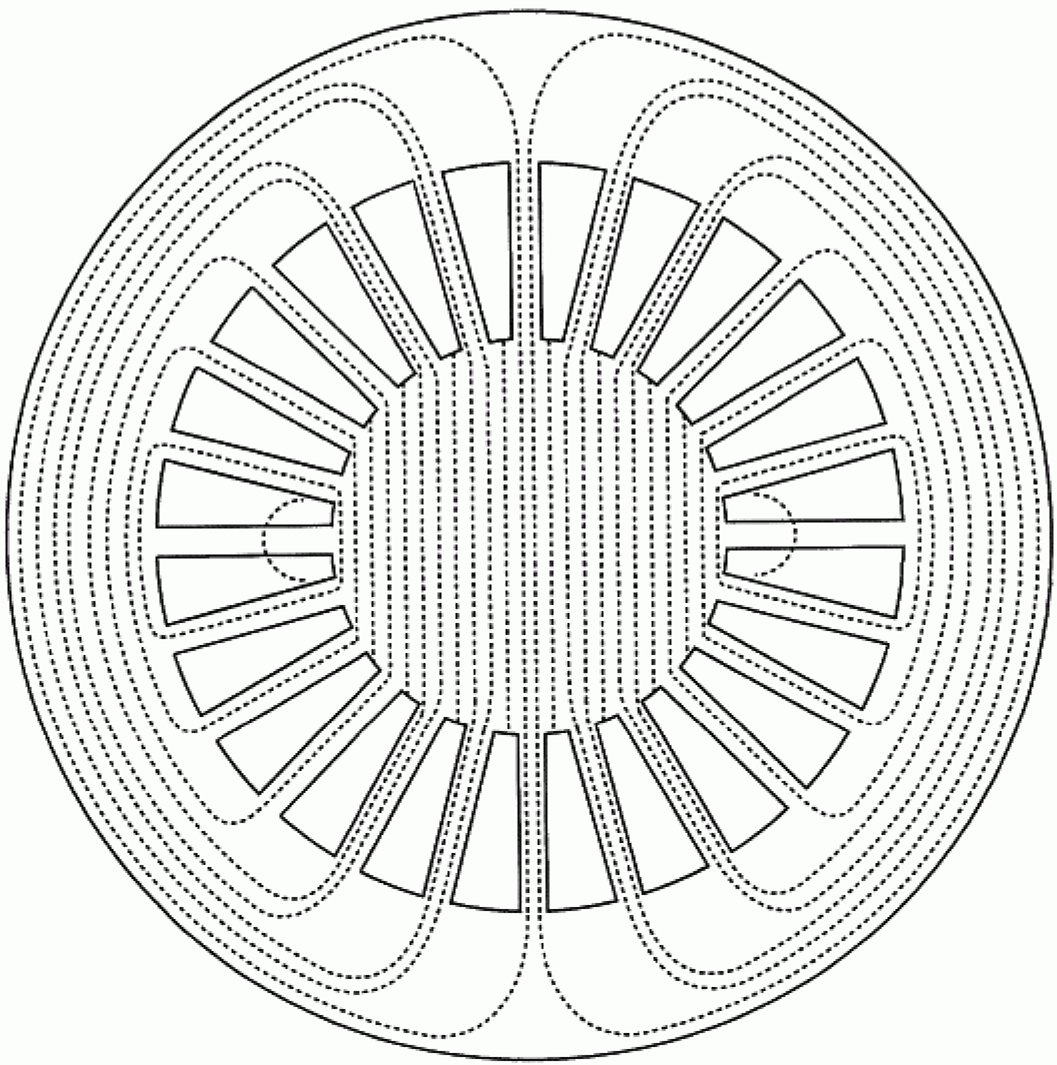

FIG. 6

Figure 6 shows an example of the distribution of the magnetic field produced by the present invention.

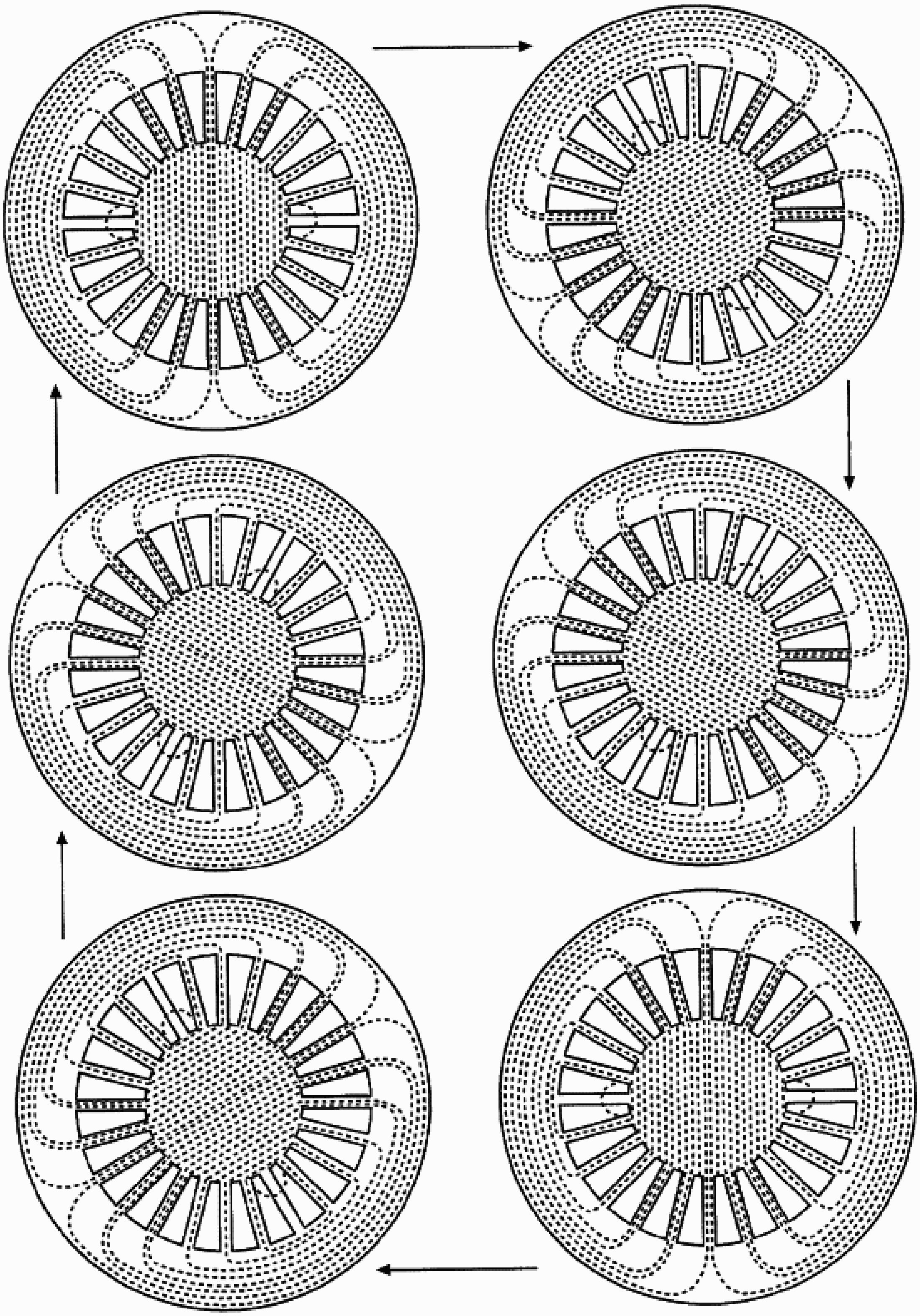

FIG. 7

Fig. 7 shows the rotation of the magnetic field produced by the present invention.

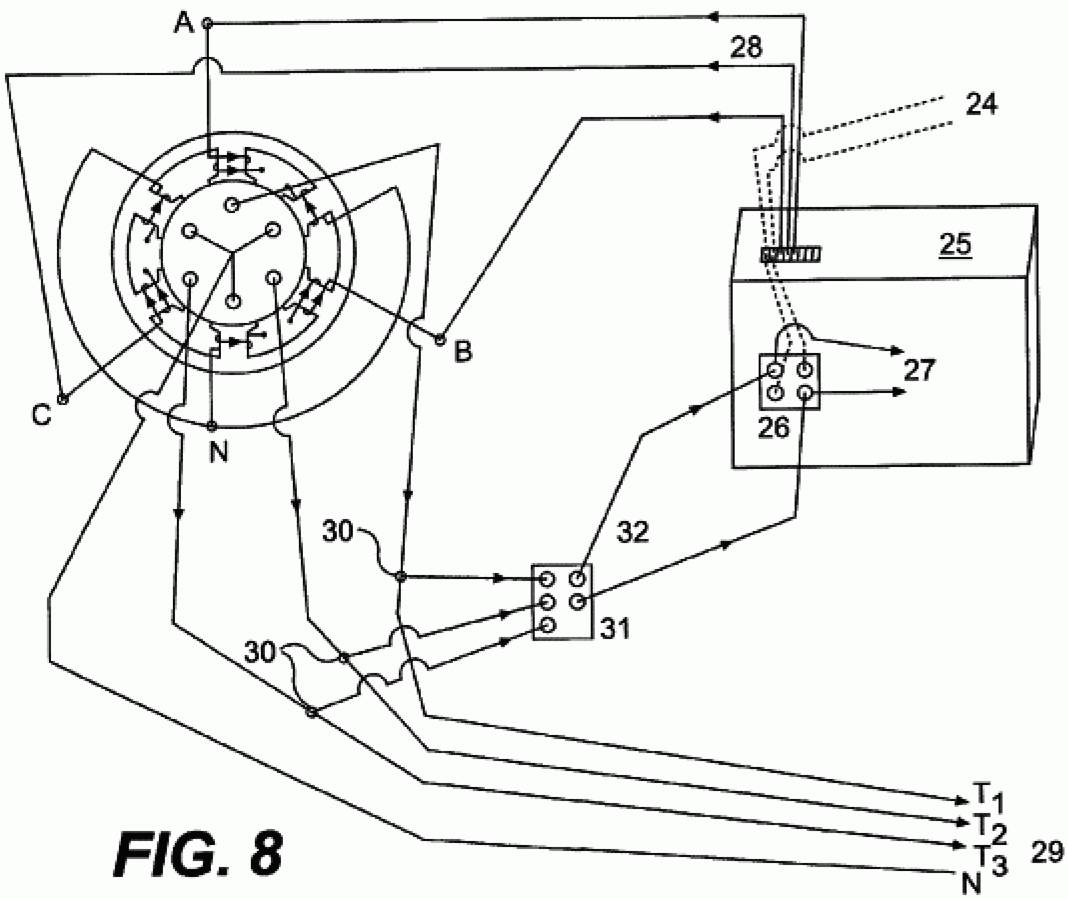

FIG. 8

Fig. 8 shows a complete system of the present invention.

where: 24 - temporary external power source;

25 - electronic converter (inverter) of direct voltage into alternating three-phase voltage;

26 - input terminals of DC power supply inverter;

27 - selection of power in the form of a direct current;

28- output of alternating three-phase voltage from the inverter;

29 - output terminals of the generator;

30 - output terminals of feedback from the generator;

31-diode rectifier;

32 - output of DC voltage after the rectifier.

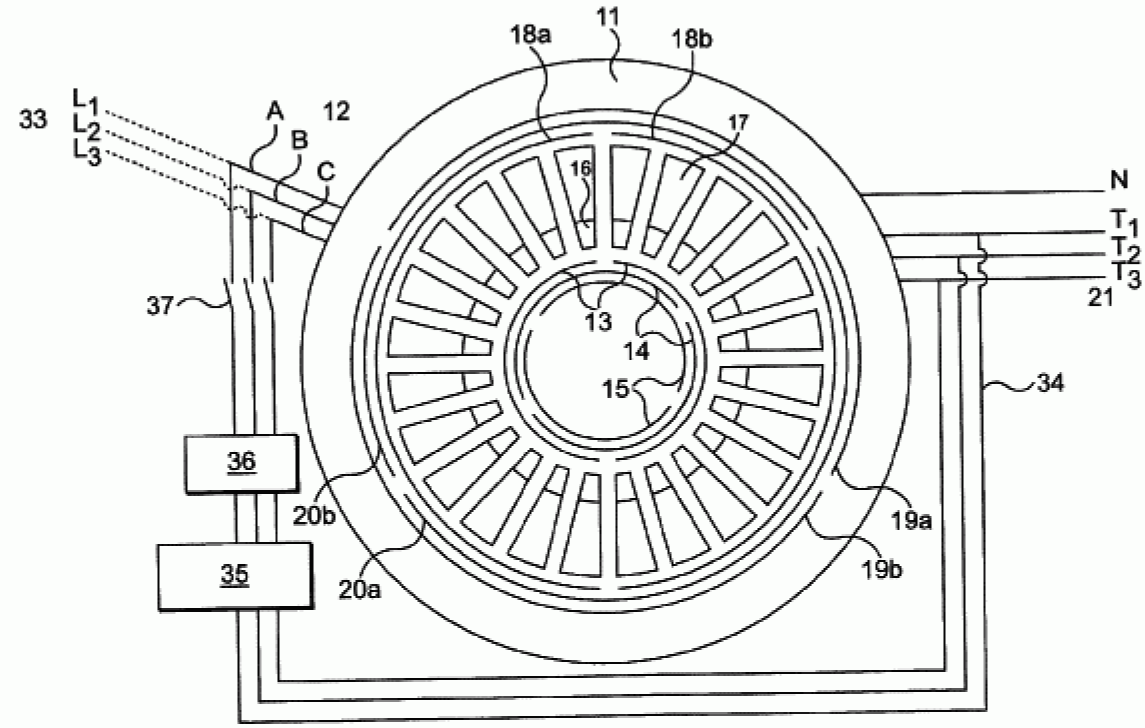

FIG. 9

Fig. 9 shows the extended circuit of the second embodiment of the present invention shown in Fig. 3 and 4.

where: 11 - ferromagnetic core;

12 - terminals of three-phase field windings;

13, 14, 15 are phase excitation windings;

16 - location of phase winding;

17 - location of the phase anchor (receiving) windings;

18, 19, 20-phase anchor (receiving) windings.

21 - output terminals of the generator;

33 - temporary three-phase external power supply;

34 - generator feedback line;

35- transformer for supplying the field windings;

36 - three-phase phase regulator;

37 - feedback switch generator.

2. Reference to the application.

(0001) Existing application requires priority from U.S. Temporary Application No. Series 60 / 139.294, filed June 15, 1999.

(0002) BACKGROUND OF THE INVENTION

(0003) The present invention relates generally to the field of electric power generating systems. More particularly, the present invention relates to self-feeding (autonomous) electric power generating devices.

(0004) Description of the present invention.

(0005) Since Nikola Tesla invented and patented his polyphase system for generators, inductive motors and transformers, no significant improvement has been made in the field field.

The generators produce multiphase voltages and currents by mechanical rotational motion to force the magnetic field to rotate across the radially located windings of the generator. The basis of the induction motor system was the generation of an electromagnetic rotating field that forces voltages and currents to produce electromotive forces suitable for use as mechanical energy or power. Finally, the transformers would control voltages and currents to make them convenient for use and transmission over long distances.

(0006) In all existing electric generators, a small amount of energy, usually less than 1% of the output power of large generators, is used to drive mechanically rotating electromagnetic poles that induce voltages and currents in conductors having a relative motion between rotating and stationary poles.

(0007) The rest of the energy consumed in the electricity generation process is necessary to move the windings in space and compensate for system losses: mechanical losses, friction losses, brush losses, air resistance losses, anchor reaction losses, air gap losses, losses for synchronous reactance, loss of eddy currents, loss of hysteresis. All these together are the reason that the input power consumption of the system is dominated by the excess of mechanical energy necessary to generate an always less arithmetically small amount of electricity.

SUMMARY OF THE INVENTION.

(0008) A continuous electric generator (hereinafter referred to as "NEG") consists of a stationary cylindrical electromagnetic core assembled from thin sheet plates before the formation of a cylinder in whose grooves two three-phase windings are located that do not have the ability to move or shift relative to each other. When one of the windings is connected to a temporary three-phase power source, it creates a rotating electromagnetic field, and this field will cross fixed coils of secondary windings, inducing voltages and currents in them. In the same way and to the same extent as in conventional generators, approximately one percent or less of the output power will be needed to excite and maintain a rotating magnetic field.

(0009) There are no mechanical losses, loss of friction, loss of air resistance, losses on brushes, loss of anchor reaction and loss of air gap in the NEG because there is no mechanical movement of any kind. There are only the following losses: synchronous reactive (inductive) losses, eddy current losses and hysteresis, which are inherent in the design and materials of the generator, but to the same extent as for conventional generators.

(0010) One percent or less of the total energy produced by existing generators is to create their own magnetic field; mechanical energy that exceeds the total output energy of existing generators is used to cause this field to rotate during the generation of electric current from this field. In the NEG there is no need for movement, since the field actually rotates in an electromagnetic fashion, therefore, the need for mechanical energy disappears. With similar ratios of excitation currents, core cross sections and winding design, the NEG is much more efficient than existing generators, which also means that it can produce significantly more energy than it needs for control. The NEG can feed itself by feedback, and the generator, after disconnecting the temporary (starting) power source, goes into autonomous operation mode.

(0011) Like any other generator, the NEG can excite its own electromagnetic field, using the minimum part of the generated electricity itself. The NEG only needs to be started by connecting its three-phase inductor winding to a three-phase external power source for the time required for starting, and after disconnection from the temporary source, the operation of the NEG will occur as described herein. The NEG will continuously generate a large amount of electricity according to its design capacity.

(0012) The NEG can be developed and calculated with the use of all mathematical formulas and relationships existing today for the development and calculation of modern electric generators and engines. In the calculations, all laws and relationships used to calculate electromagnetic induction and generation are applied.

(0013) With the exception of the Law of Conservation of Energy, which, by and large, is not a mathematical equation but a theoretical concept, and for the same reason does not play any role in the mathematical calculus of the work of an electric generator of any type, the NEG observes all laws of physics and electrical engineering . The existence of the NEG obliges us to review the Law of Conservation of Energy. In my personal belief, electricity has never been obtained from the mechanical energy that we put into the machine for moving masses and overcoming resistances. The mechanical system actually provides a channel for the compaction of electricity. NEG provides a more efficient channel for electricity.

DETAILED DESCRIPTION OF THE INVENTION.

(0023) The present invention is an NEG capable of generating more energy than consuming and which provides itself with the generated electricity. The basic idea is to induce electrical voltage and current without any physical movement by using a rotating magnetic field obtained on a three-phase stator temporarily connected to a three-phase power source in placed stationary conductors along the path of said rotating magnetic field, eliminating the need for mechanical forces.

(0024) The basic version of the system is shown in Figure 1, which shows the first embodiment of the present invention. The figure shows a stationary ferromagnetic core 1 with three-phase excitation windings 3 located at angles of 1200 and connected to a "star" 6 to provide a rotating electromagnetic field, which in this case will be a two-pole field. Inside the core 1 there is a second stationary core 2 from the ferromagnet, without a gap between them, i.e., without an air gap. This second core has stationary three-phase windings 4A (Fig. 1), and 4B (Fig. 2) located relative to external excitation windings 3, as shown in Figures 1 and 2. Between these two cores there is no movement, gap between them. There are no axes on the cores, since there is no rotation of the cores themselves. Both cores can be made from folded insulated plates or from an isolated and compacted ferromagnetic powder (ferrite). The system works in both directions, inducing three-phase voltages and currents on stationary coils 4A of internal windings 4B, outputting three-phase currents to terminals T17A, T27B and T37C from internal windings 4B. When three-phase voltage is applied to terminals A5A, B5B and C5C, the currents will have the same value, but they will be shifted in time by an angle of 1200. These currents produce magnetomotive forces (MDS), which in turn create a rotating magnetic flow. The design can vary widely, as it repeats the design of modern alternators (generators) and three-phase motors, but at the heart of it is one principle: a stationary but constantly rotating magnetic field that induces voltages and currents in fixed coils located in the path of a rotating magnetic field . The circuit shows a bipolar arrangement of both windings, but many other devices can be used, as in conventional engines and generators.

(0025) Fig. 2 shows the arrangement of three-phase internal windings 4B, which provide practically symmetrical voltages and currents due to a shift of 1200. This is similar to a bipolar arrangement. A variety of other three- or polyphase arrangements can be used. Wherever a conductor crosses a rotating magnetic field, the voltage taken from the terminals will be induced. The interconnections of the windings depend on the device of the system. In this case, we will receive a three-phase voltage at terminals T17A, T27B and T37C and at neutral 8. The output voltage depends on the density of the rotating magnetic flux, the number of turns of the receiving windings, the frequency of the applied current (instead of the rotation speed) and the length of the conductor crossed by the field, as and in any other generators.

(0026) Fig. 3 shows a second embodiment of the present invention in which the generator is made from a set of identical insulated plates stacked together in a cylinder until the desired height is obtained. This version can also be made from a single piece of ferrite. The same slots (windows) 10 will contain internal and external windings 3, i. E. Receiving windings and excitation windings (see Figure 5). In this case, a 24-slot core is shown, but the number of grooves may vary widely depending on the needs and the construction.

(0027) Fig. 4 shows two parts of one plate for another embodiment of the present invention. For practical use, each plate can be divided into two parts: 9A and 9B, as shown, to facilitate winding of the coils. Then these parts are inserted into each other without gaps, as if they were a single whole.

(0028) The plates described above can be made from thin (0.15 mm thick or less) insulated sheets 9 (or 9A and 9B) of high permeability material and low hysteresis losses such as, for example, Hiperco 50A or similar to reduce losses, or from a pressed electrically insulated ferromagnetic powder that has lower eddy current losses and hysteresis, which can make the generator more efficient.

(0029) The principle of the generator.

NEG, as described and shown in the following figures, is designed and designed to produce a powerful rotating electromagnetic field with low excitation currents. Using layered materials such as the above Hiperco 50A, we can get rotating magnetic fields by induction of more than 2 Tesla, since there is no loss of air gap, mechanical losses, air loss, anchor reaction loss, etc., mentioned above. This can be obtained by applying a three-phase voltage to the terminals A, B, C 12 of the excitation windings 13, 14 and 15 (5A, 5B and 5C in Figure 1) located through the angle 1200 relative to each other (see Figure 50) from an external power source.

(0030) Fig. 5 shows the spatial arrangement of the induction windings 13, 14 and 15 as well as the receiving windings 18A, 18B, 19A, 19B, 20A and 20B. Both: both the inducing and receiving windings are located in the same grooves 10 or 16 and 17 in the same manner. Even though the system works in both directions, the best configuration seems to be the following: the excitation windings 13, 14 and 15 are in the center, and the receiving (anchor) windings 18A, 18B, 19A, 19B, 20A and 20B are on the periphery, since small windings are more preferable for exciting a very strong rotating magnetic field, due to low process losses, and on the other hand, large and powerful windings are needed to extract all the energy that the system provides. Both windings are connected to a "star" (not shown), but they can be connected in other ways, as on other generators. All of the above is true for the version of the device shown in Figures 1 and 2.

(0031) Excitation windings 13, 14 and 15 are designed and calculated so that the generator can be started from a conventional three-phase voltage (230 V 60 Hz, for example). If local voltages in the network do not fit, you can control the voltage to obtain the desired level using a three-phase transformer, an electronic converter or an inverter, etc. As soon as we get the right powerful magnetic field rotating and crossing the fixed receiving (armature) windings 18A, 18B, 19A, 19B, 20A and 20B, the three-phase voltage can be removed from the terminals T1, T2, T3 and N21 in proportion to the magnetic flux density, coils in coils, generation frequency (instead of the angular velocity of the inductor rotation), the length of the conductors intersected by the rotating field, as in any other generator. Output currents will be three-phase currents (or multiphase currents, depending on the design), and we can get neutral 21 if we use a "star" connection, as in any other generator.

(0032) The output voltage variables and currents are perfect sinusoidal curves, separated in time and completely symmetrical. The voltages and currents obtained by this method are suitable for use by any existing method. Any stresses can be obtained, depending on the design.

(0033) Fig. 6 shows a sample of the magnetic flux produced by the three-phase excitation winding 13, 14 and 15. This flow is similar to the flow in stators of induction motors. Since there is no air gap, all parts of the magnetic flux are homogeneous (unbreakable) regardless of the material used. The core is made of thin insulated plates with high magnetic permeability and low losses to hysteresis; the eddy current losses are minimal due to the small thickness of the plates. There are no counter flows and armature responses, therefore, the magnetic flux can be close to the saturation flux of the core, and it can be obtained by a relatively small excitation current or a small input energy. Due to the time shift between the three phases and the spatial distribution of the field coils, a rotating magnetic field can be obtained in the core, as shown in Fig. 7.

(0034) After starting the generator, a small part of the received energy is fed to the input (Figures 8 and 9) to feed the excitation coils 3 (in Fig. 1) or 13, 14 or 15 (in Fig. 5), as in any other generator with self-excitation. Naturally, the voltages and phases must be completely identical and symmetrical, and if necessary, the feedback voltages can be processed and changed by various transformers, electronic regulators, phase regulators (for phase correction) or other types of voltage and phase controllers.

(0035) One possible method is to use an electronic converter 25 that initially rectifies the line voltage from two or three phases of an alternating current 24 to a direct current by an electronic rectifier 26 and then electronically converts the direct current 27 into an alternating three-phase current 28 to produce three-phase currents shifted in time by 1200 to excite the electromagnetic fields A, B and C. Some converters or inverters use single-phase (two-wire) power, while others use Only three-phase power supply. This version uses a 3 kVA converter, which can be powered by two

(0036) The rotating magnetic field obtained by currents flowing through the three-phase excitation windings 13, 14 and 15 causes a voltage applied to the terminals T1, T2, T3 and N29 (7A, 7B, 7C, 8 in Fig. 2). Afterwards, the output voltage through the wires 30 is returned back to the system, converted into an inverse alternating current, which is rectified by the diode rectifier 31 to a constant current 32 and then fed to the terminals of the electronic inverter 26 (see Fig. After the feedback is closed, the NEG can be disconnected from the temporary source 24 and continue to generate electricity autonomously.

(0037) Figure 9 shows the second version of the NEG. The basic principles remain the same as for the above-described generator, and for the one shown in Fig. 1 and 2. The main differences are in the form of plates and in the spatial distribution of the windings, as described and shown earlier. Changes in the feedback circuits, the use of inverters and phase-shifting transformers are also shown.

(0038) The ferromagnetic core 11 is composed of solid plates 9, as shown in Fig. 3 (or separated for convenience, as shown in Fig. 4), until the desired height is obtained. The notches 10, as shown earlier, contain both windings: the excitations 13, 14, and 15 and the receiving (anchor) 18A, 18B, 19A, 19B, 20A and 20B in the same windows 10 or 16 and 17. The lead wires of the three phases 12 lead to three-phase excitation windings 13, 14 and 15. They are energized: initially from a temporary source 33 and from a three-phase output source 34 once the generator is self-generated.

(0039) The excitation windings 13, 14 and 15 have a bipolar arrangement, but many other three-phase or multiphase devices can be used to produce a rotating electromagnetic field. These windings are connected to a "star" (not shown) in the same way as in the variant in Fig. 1, 2 and 8, but can be connected in other ways. The excitation windings 13, 14 and 15 are located on the inner part 16 of the grooves 10.

(0040) The anchor windings 18B, 19A, 19B, 20A and 20B have a bipolar device, exactly repeating the field winding device 13, 14 and 15, but many other different devices can be applied depending on the design and purpose. Receiving (anchor) windings should be calculated in the direction that the generator has the smallest possible synchronous reactive and active resistances. Therefore, most of the energy produced must go into the load, and not be expended on internal resistances. These windings are connected to a "star" to form a neutral 21, in the same manner as in the embodiment of the invention shown in Fig. 2, but may be connected differently, depending on the need. Anchoring (receiving) windings are located in the outer part 17 of the grooves 10.

(0041) The outgoing wires of the three phases and the neutral 21 run from the armature windings 18B, 19A, 19B, 20A and 20B. Rotating magnetic field. created in the core (see Figures 6 and 7) by excitation windings 13, 14 and 15, induces a voltage applied to the terminals T1, T2 and T3 plus neutral 29. A reverse voltage is applied to each of the three-phase terminal 21 on the wires 34 to self-drain the system.

(0042) A temporary three-phase power supply 33 for starting up the system is connected to terminals A, B and C 12. NO. should instantly start from an external three-phase source, and then disconnect from it.

(0043) Even though the output secondary line voltage can be accurately calculated and obtained at the armature windings, the voltage required to supply the field windings (depending on the design) can be obtained from a three-phase adjustable transformer or from another converter voltage 35, included between the input and output for more precise regulation of the return voltage.

(0044) Located after the adjustable transformer 35, the three-phase transformer-phase regulator will correct and equalize any phase shift at the voltage and current angles before applying power to the field windings. This system works similarly to that shown in Fig. 8, which uses a converter 25.

(0045) Once the voltage and phases have coincided with the time source 33, the output circuits 34 are connected to the input circuits A, B and C 12 via the feedback circuit 37 and the temporary source 33 is then turned off. The NEG will remain undefined for a long time without supply of energy from an external source, providing a constantly large output of energy.

(0046) The outgoing electricity generated in this system was used to produce light and heat, multiphase motors were powered, single- and multi-phase voltages and industrial frequency currents were generated, voltages and currents were converted by means of transformers, multi-phase currents were rectified to DC as well , as for other uses. Electricity, obtained in the manner described above, is as universal and perfect as electricity received by conventional electric generators. But the NEG is autonomous and does not depend on any other external source of energy, it is fed from itself; it can be used everywhere without restrictions, it can be constructed of any size and provide generation of any amount of electricity continuously, according to its design.

(0047) The NEG is and will be a very simple machine. The cornerstones of the system are: ultra-low losses of fixed generating systems and very low design losses for synchronous reactances.

(0048) The receiving (anchor) windings should be calculated on the basis that the generator must have the minimum possible resistive (ohmic) resistance and the smallest synchronous reactance. Proceeding from this, most of the output power will go into the load, and not be spent on overcoming internal resistances.

The patent formula is as follows:

1. NEG, which includes:

a core having a plurality of grooves;

- excitation consists in the production of a stationary rotating electromagnetic field, read the induction of excitation must permeate a multitude of grooves;

- electromagnetic induction consists in directing electric energy, read the induction of guidance should be present in a multitude of grooves, also induced induction should be a source of energy for supplying the field windings;

2. The NEG described in paragraph 1 has a single, indivisible core;

3. The NEG described in paragraph 1 may also consist of:

- inside part;

- the outer part, with the inner and outer parts to be assembled together without gaps and fixedly relative to each other.

4. The NEG described in item 1 may have a core recruited from a plurality of plates.

5. The NEG described in item 1 can have a core made of ferrite powder, compacted, molded and insulated.

6. The NEG described in paragraph 1 may have a cylindrical, integral central part.

7. The NEG described in the first paragraph has a plurality of slots (slots) diverging from the cylindrical central portion to the outer edge of the core.

8. The NEG described in the first paragraph, in which the excitation occurs in the first (outer) row of electrical windings.

9. The NEG described in paragraph 1, in which the induction occurs in the second (internal) row of electrical windings.

10. The NEG described in item 8, in which the first series of electrical windings has a bipolar arrangement.

11. The NEG described in paragraph 9, in which the second series of electrical windings has a bipolar arrangement.

12. The NEG described in item 8, in which the first series of electrical windings consists of three-phase windings located through an angle 1200 relative to each other.

13. The NEG described in paragraph 9, in which the second series of electrical windings consists of three-phase windings located through an angle 1200 relative to each other.

14. The NEG described in paragraph 7, in which the field windings are located in grooves near the cylindrical center portion.

15. The NEG described in paragraph 7, in which the receiving (anchor) windings are located in grooves on the opposite side of the cylindrical central portion.

16. The NEG described in 1 clause furthermore includes a feedback system for taking power from the receiving coils for the generator's own needs.

17. The NEG described in paragraph 16, in which the power supply is switched off as soon as the feedback system for power take-off for powering the field windings is operational.

18. The NEG described in clause 16 further includes a regulator for adjusting the output power.

19. The NEG described in clause 16 further includes a phase regulator for controlling the phase shift at the output of the power supply.

- Comments on the descriptions of resonance systems
- Resonance Melnichenko
- Patents of Melnichenko
- Resonance of Chernetsky
- Electric car Tesla
- US 4.806.834: Electrical circuit for inductors, transformers and motors.
- Generator of electricity according to the scheme Gramma
- Experiments on the transmission of energy on one wire, without them and obtaining a reverse current in the power circuit
- Matson anti-Lenz high efficiency motor
- An efficient power source suitable for Inductive Loads. Gray design report No. 4,595,975