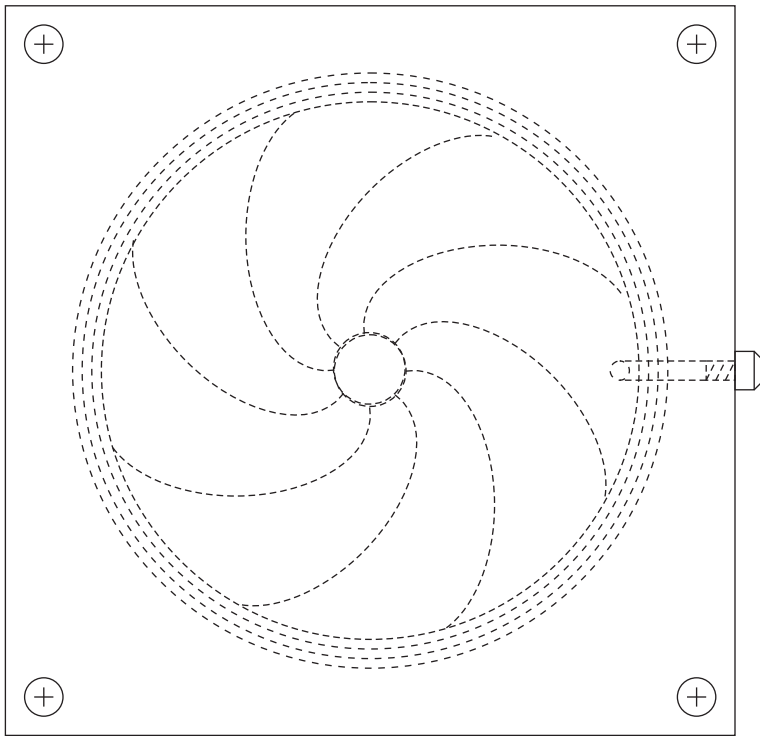
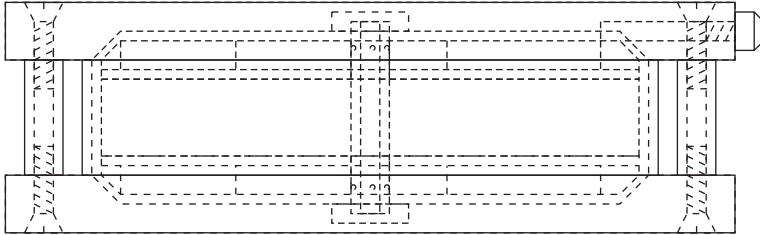


FIG 1

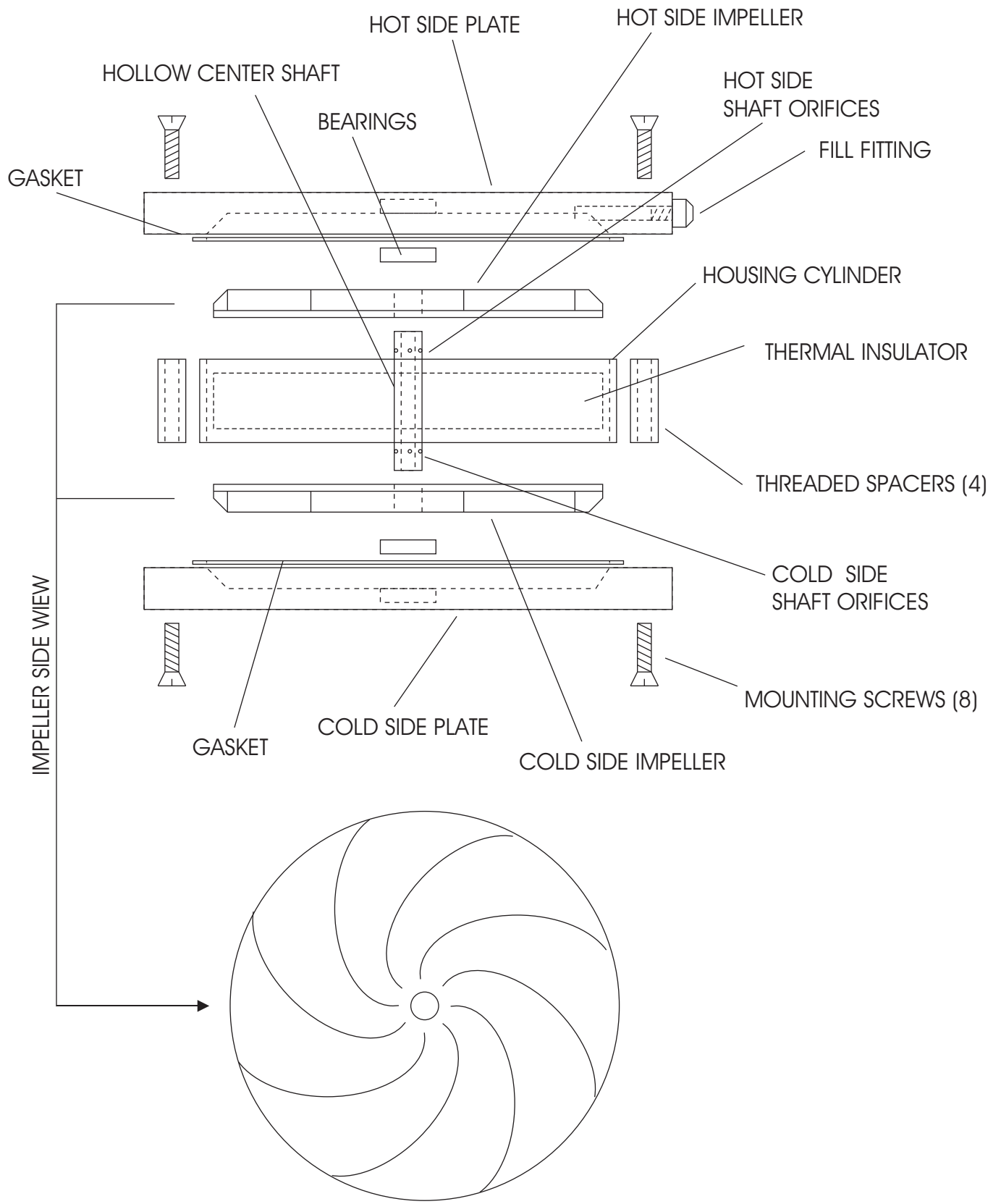


FIG 2

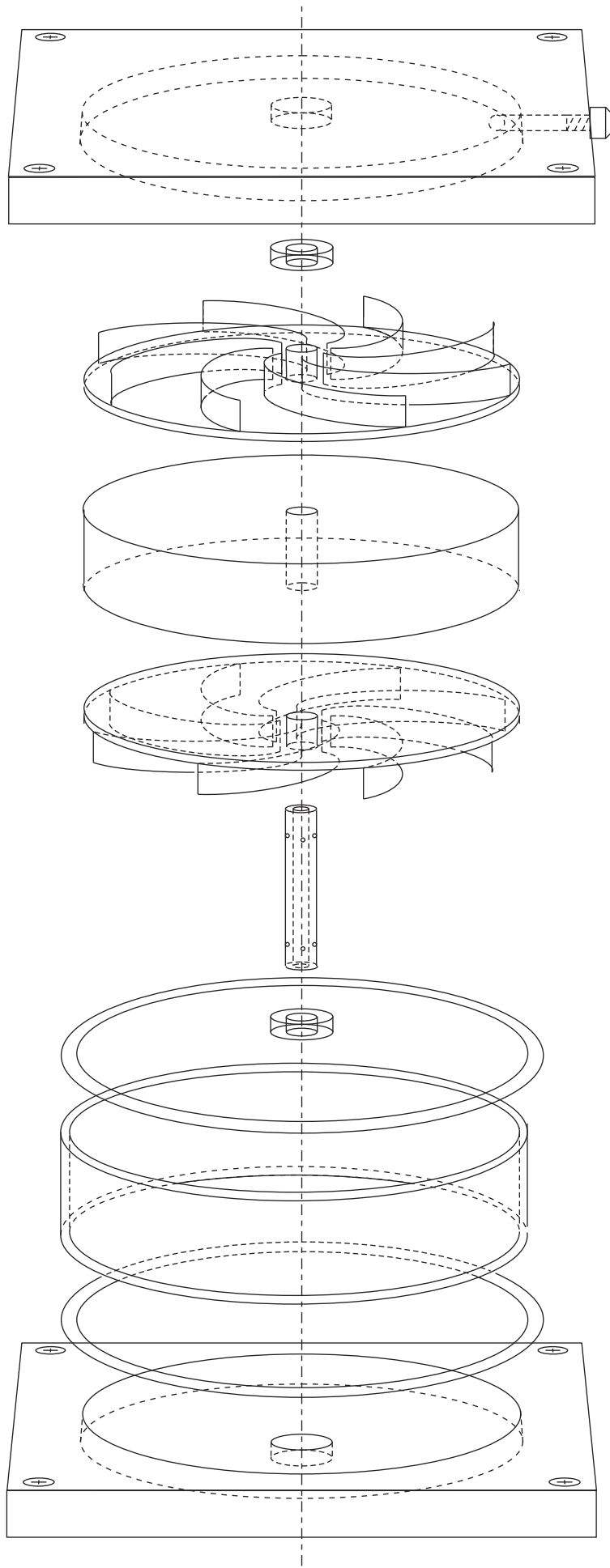


FIG 3

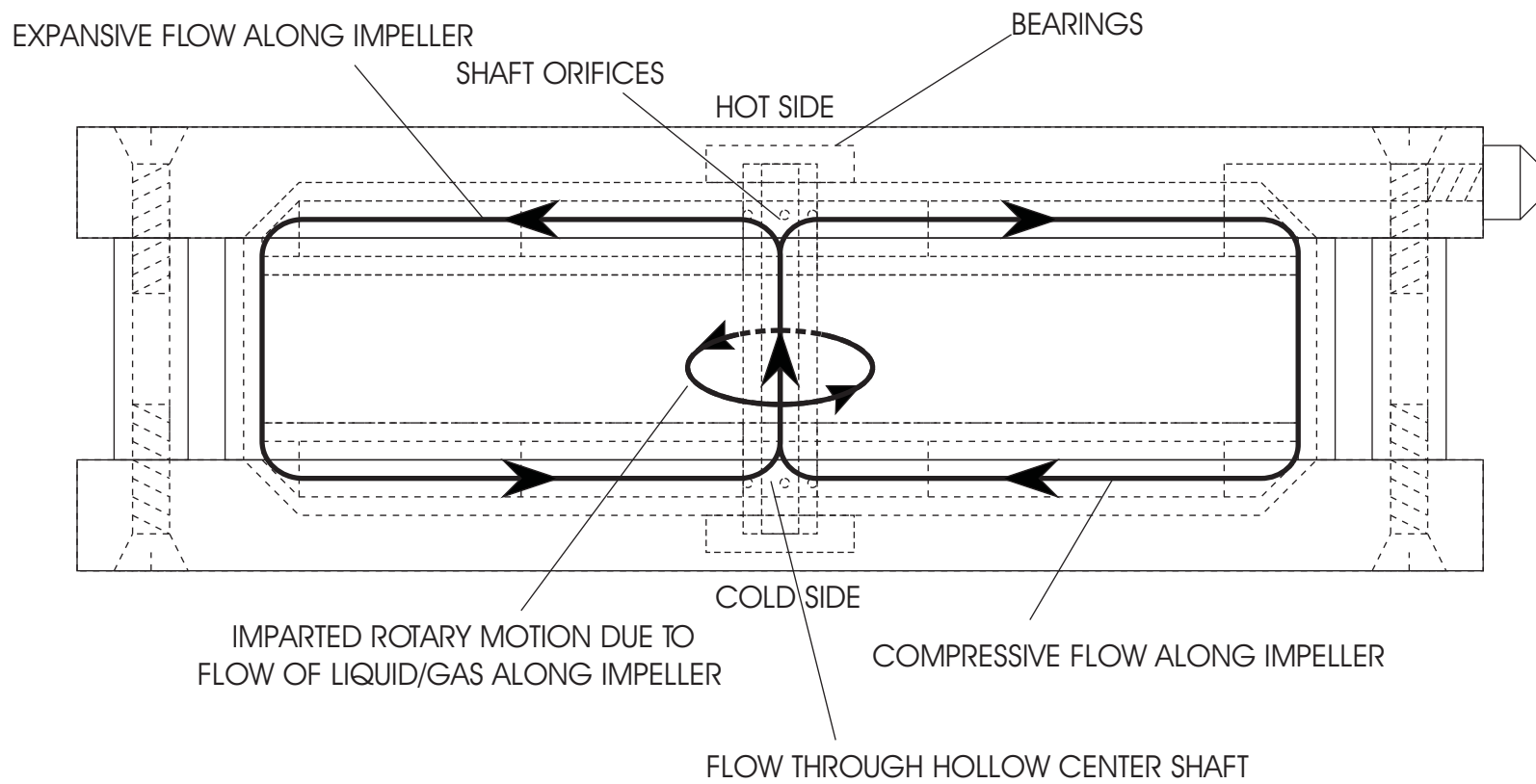
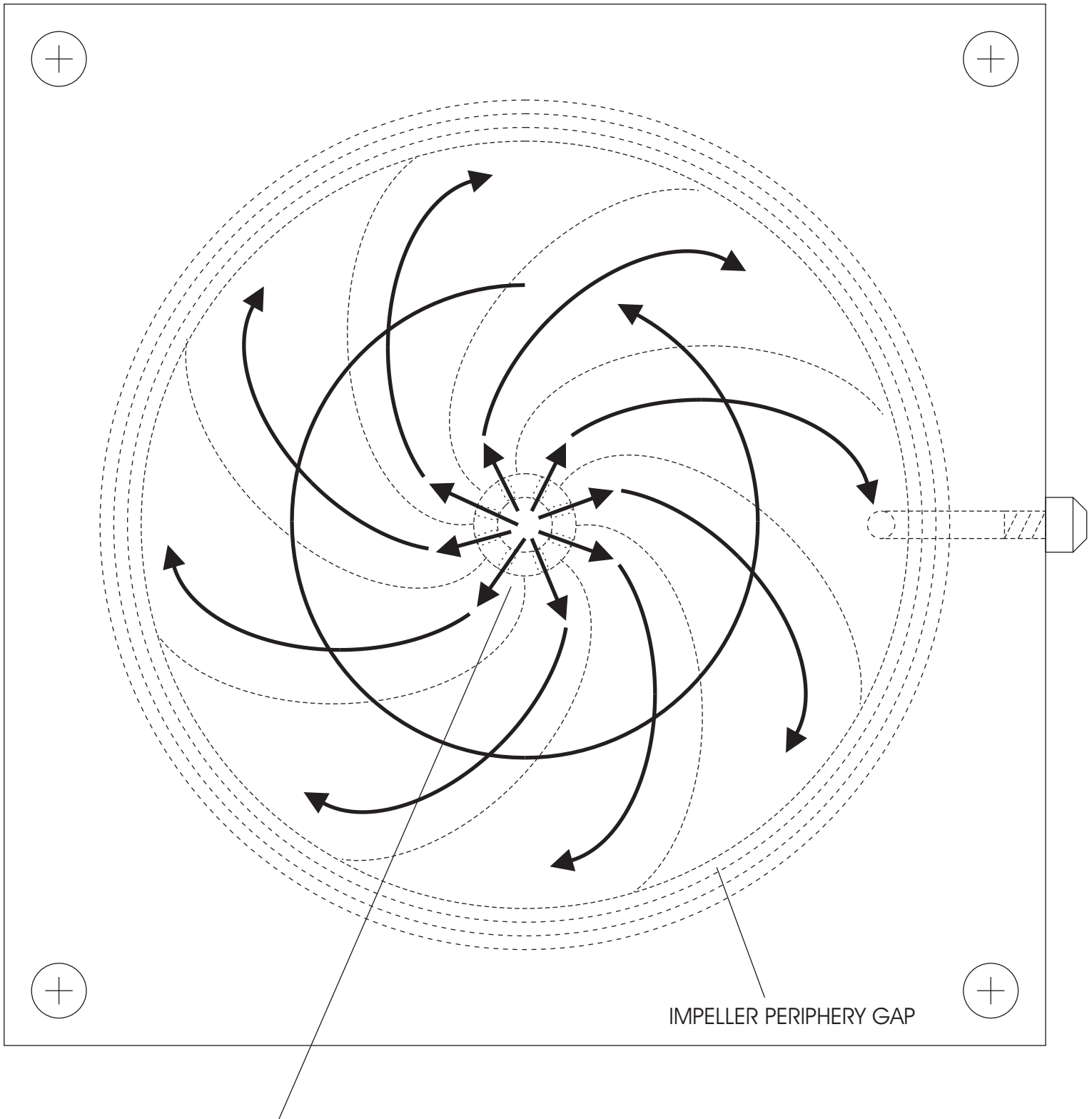


FIG 4

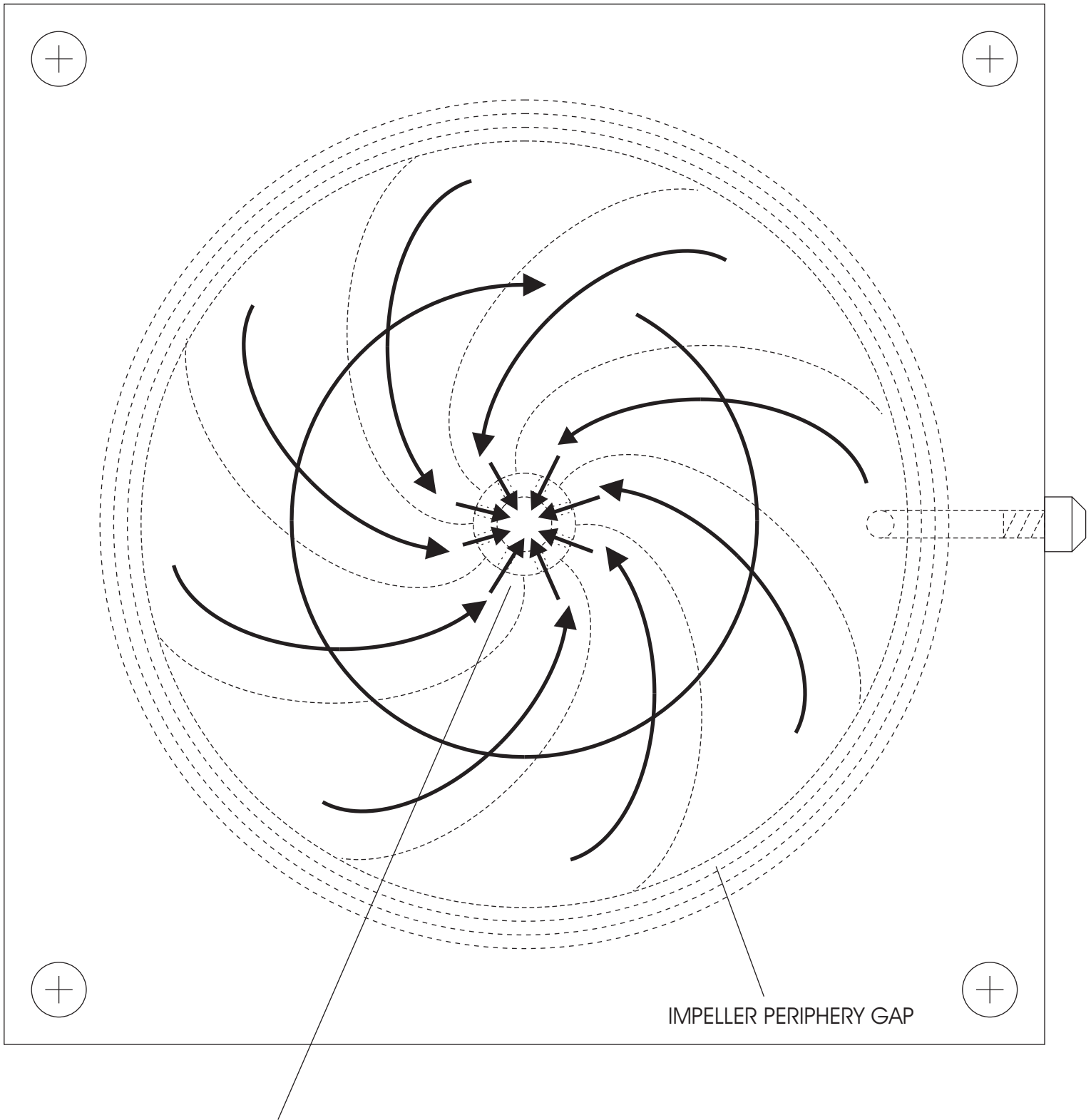
HOT SIDE VIEW



DENSER GAS OR LIQUID TRAVELS THROUGH CENTER SHAFT TO HOT SIDE PLATE WHERE GAS EXPANDS (OR LIQUID IS CONVERTED TO VAPOR). THE EXPANSION IMPARTS FORCE ON IMPELLER CAUSING ROTARY MOTION SHOWN ABOVE. GAS EXITS AROUND THE IMPELLER PERIPHERY GAP AND TRAVELS TO THE COLD SIDE WHERE IT CONDENSES.

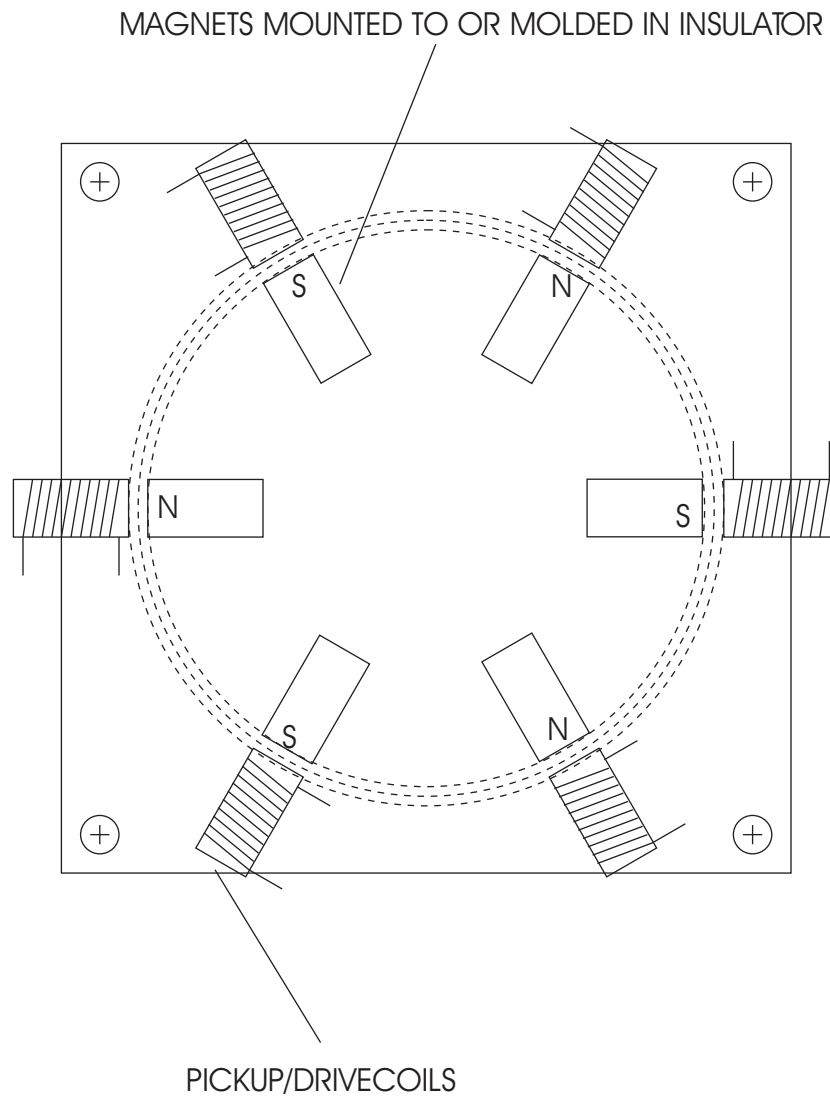
FIG 5

COLD SIDE VIEW



EXPANDED GAS OR VAPOR TRAVELS FROM THE IMPELLER PERIPHERY GAP TO COLD SIDE PLATE WHERE THE GAS IS CONDENSED. THE CONDENSED GAS OR LIQUID TRAVELS THROUGH THE SHAFT TO RETURN TO THE HOT SIDE.

FIG 6



MAGNETS MOUNTED TO OR MOLDED IN INSULATOR COUPLE ELECTROMAGNETICALLY TO THE PICKUP COILS LOCATED OUTSIDE OF THE CASING CYLINDER.

AS A HEAT PUMP THE COILS CAN ALSO BE DRIVEN TO INDUCE ROTATION ON THE INSULATOR - IMPELLER ASSEMBLY.

FIG 7