

Alfred Hubbard's Self-Powered Generator



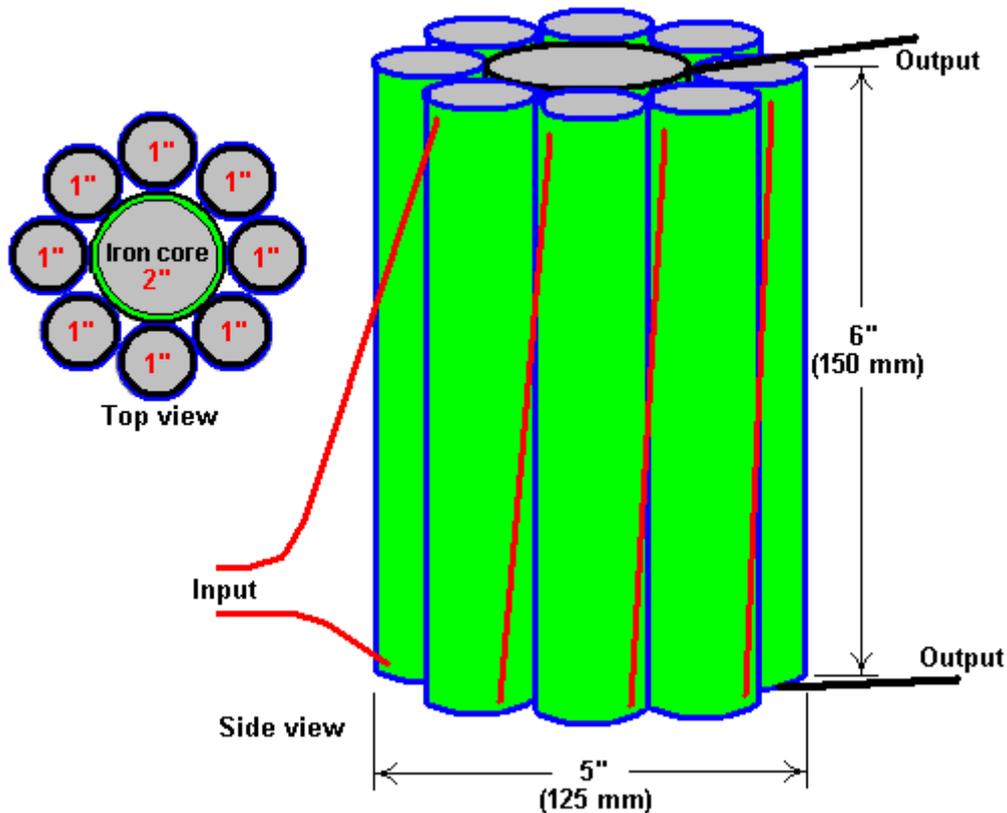
In the year 1919, at Portage Bay on Lake Union, Seattle, Washington in America, Alfred Hubbard, an acquaintance of Nikola Tesla, demonstrated a self-powered electricity generator design. The generator was about 14 inches (350 mm) tall and 11 inches (280 mm) in diameter. It powered a 35 H.P. electric motor, which pushed an 18-foot boat which contained no batteries, continuously around the bay for several hours. This demonstration was witnessed by thousands and ended because the wiring was beginning to overheat. It was said that the cable used contained seven strands of 0.09-inch (2.286 mm) diameter. Each of those strands would be able to carry 12 amps and so if this is correct, the cable had a current-carrying capacity of about 84 amps. The diameter of the wire including the insulation was said to be 0.34 inches (8.5 mm). The inner core was said to be made of a pipe containing 16 iron rods with 43 turns of wire around it, which if correct, would suggest 43 turns in 14 inches or 3 turns per inch, implying a cylindrical coil with the turns side by side, touching each other.

However, a great deal of misleading information, not to mention a good deal of speculation has been spread around concerning the Hubbard design, which Alfred took three years to develop. Several years after the demonstration, when Hubbard was employed by the Radium Company, he said that radium was used in the device, which is something which I personally, find very hard to believe, and strongly suspect that Hubbard was persuaded to say that by his employers who were selling radium at that time. However, Hubbard's demonstration is very well attested to and the important thing about it is the fact that he managed to do it, consequently, if we work out how he did it, then we can do it as well.

Hubbard made a sketch of one of his smaller generators which was used for ordinary household electrical appliances and that showed a very simple design which had eight cylindrical primary coils each of which was wound on a solid iron bar and connected in series. These primary coils surrounded a slightly larger secondary coil of some 35 turns wound around a hollow tube filled with metal bars or wires (presumably of soft iron). This smaller device was about six inches (150 mm) tall (maximum wire diameter 4 mm including the insulation) and about five inches (125 mm) in diameter. Each core had only one layer of thick insulated wire and not many turns were used.

I understand that when a patent was applied for, the patent application was seized and a spurious "Of National Security Importance" order slapped on it, acting as an unlawful gag order on Hubbard, prohibiting him from ever developing, using, showing or selling it or anything akin to it. The US Patent Office is a privately owned commercial company, and while they will probably be using the design themselves, they certainly have no intention of ever allowing the public to have access to it as energy freedom is a major step towards complete freedom. Consequently, we know next to nothing about Hubbard's successful design.

The general arrangement might have been something vaguely like this:



In Joseph Cater's book "The Awesome Life Force" he attempts to explain the theory of its operation, but it must be clearly understood that what Cater says is just speculation on his part as Hubbard's actual design was never disclosed publicly.

What Cater says is certainly plausible, and even if it is not Hubbard's design, it is worth investigating and experimenting with. The mechanism put forward by Cater is based on the well-known and widely accepted graph of the magnetisation of soft iron versus applied levels of magnetic force. This graph is highly non-linear and the central section of the graph rises steeply, indicating that there is a considerable increase in the magnetisation of the iron for relatively little increase in energy input.

Cater stresses that the input waveform should be pulsating DC. The method of applying pulsing DC is then, almost the same as for the Clemente Figuera design shown in chapter 3, with an offset base level of DC current flow which needs to be maintained at all times. Here is the magnetisation graph for soft iron:

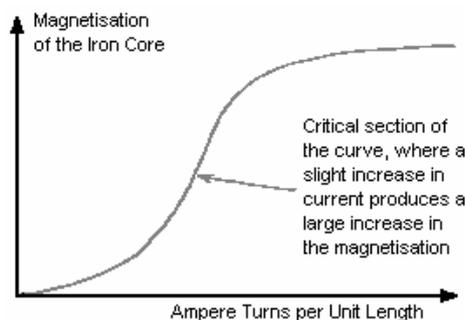
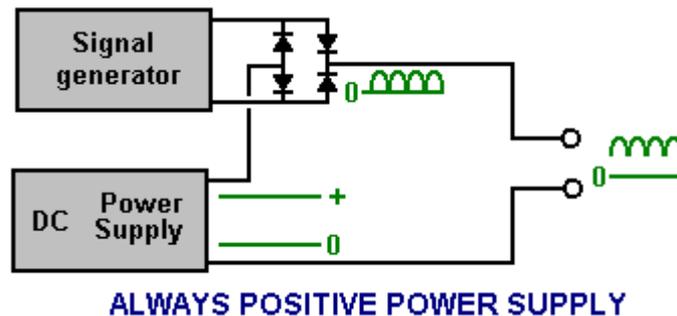


Fig. 29

Fig. 29 shows a graph of the magnetisation of an iron core plotted against ampere turns per unit length. The term "ampere turns" is the number of turns of the coil per unit length of the coil multiplied by the number of amps of current flowing through the coil.

The steep section of the curve appears to start at around 3.5 Tesla, and so, a constant DC current in the magnetising (Hubbard primary) coil needs to provide that level of magnetisation at all times, and the applied pulsing DC half-sinewave waveform applied on top of that and since the induced EMF in a coil is directly proportional to the rate of change of magnetic flux, it follows that the higher the frequency of this sine wave supply, the better. Using a ramp waveform might well be more effective.

Normal working transformers have ampere-turns which are well below this critical point. The additional EMF induced in the coils by the magnetisation of the iron offsets the natural inductive impedance of the coils. This is why transformers have such a high degree of efficiency. If any material other than iron or special steel were used for the core, the efficiency would drop significantly. Hubbard used part of the output power to provide the input power, and so he only needed to provide input power for less than a second to get the device running. The power supply might well be of this nature:



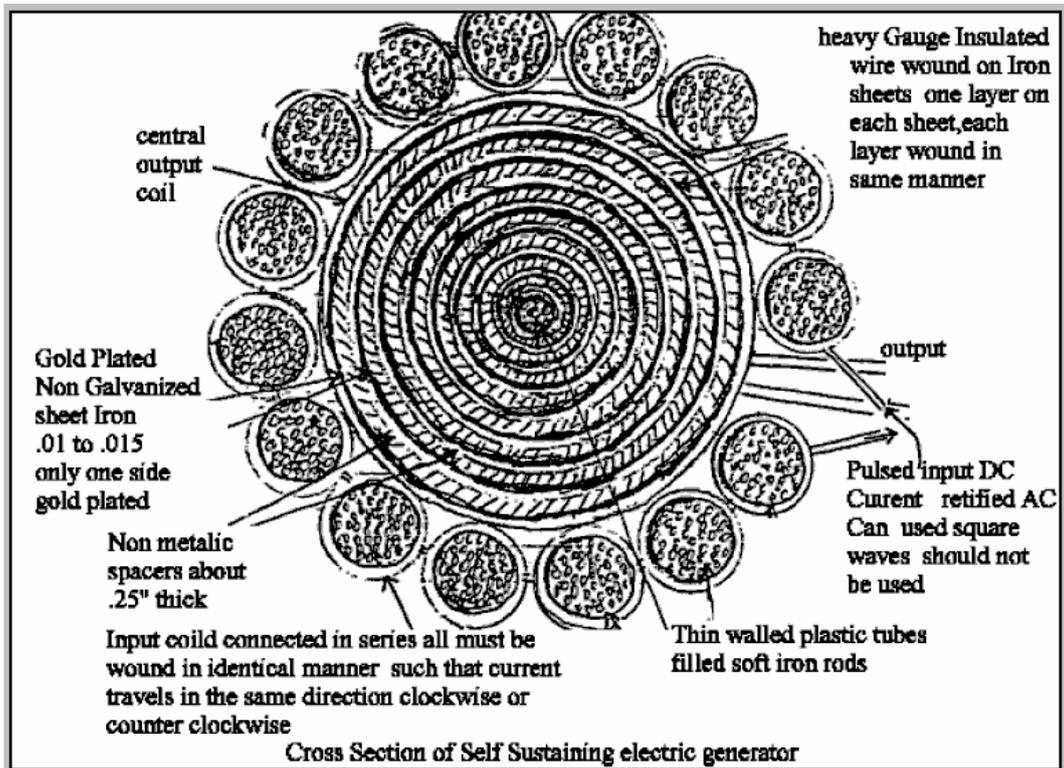
Here, instead of letting the high frequency rectified sine wave (or ramp generator signal) reach zero volts, and additional DC current supply is maintained, and while the signal generator pulses add to the overall voltage applied to the device, the voltage is never allowed to reach zero.

There is possibly another factor which could contribute to the success of the Hubbard device. At that time, the only insulated wire available had thick and heavy insulation. This means that adjacent turns of wire in the coil were separated by a distance equal to twice the thickness of the insulation. Consequently, the gap resulted in a cancellation of magnetic effects produced by electrons flowing in the wire. Since inertia is dependent on the ability to generate a magnetic field, the inertial properties of the electrons would be almost nullified.

There is an optimum distance between the wires which would produce the maximum effect. It seems likely that the thick insulation on Hubbard's wire produced this optimum distance. Most of the resultant magnetic field was that which encircled both wires and that would be the weaker part of the field. This means that a relatively low EMF could accelerate a larger number of electrons to a high velocity during a very short period of time. As the electrons leave the coil, inertia returns. This would result in a backup of a high concentration of electrons in the coil. Since electrostatic repulsion is not affected, electrons would be ejected from the coil at a high velocity despite their increased inertia. This would produce an output of both high voltage and high amperage.

Joseph Cater's Version of the Hubbard Generator

Although containing conflicting information, there is what appears to be an implementation of the Hubbard coil system, or perhaps a very closely related device from Joseph H. Cater. As usual, information on it is limited and not particularly clear, so the following is just my attempt to piece together some information from different sources. Much of this information comes from a document which has Geoff Egel's name on it and although it seems likely that Geoff is quoting some other source, my thanks goes to him for sharing what we have here. The diagrams give the names of various minor websites none of which exist any longer and so these have been removed as they have no useful purpose any longer. Here is an original diagram from this information:



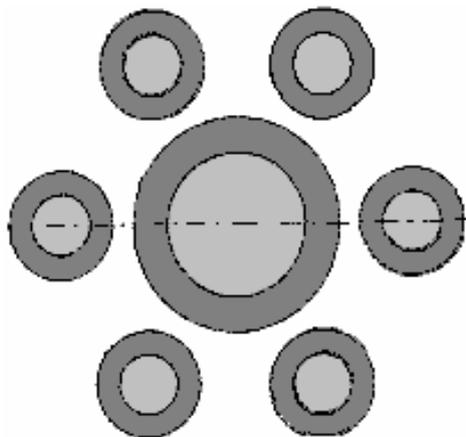
As it seems to me that there are many conflicting details in this information, I am presenting it here in pretty much the same form in which it reached me. You will notice that the composite central coil is now presented as the secondary rather than the primary. It should be stressed that Hubbard never disclosed his design publicly and so this, and similar information elsewhere, has to be considered to be guesswork.

The Generator of André Coutier

Some twelve years after Hubbard's public demonstration, on 12th January 1933, André Coutier was awarded patent FR739458 which is entitled Self-generating Electrical Generator. This design is so similar to the Hubbard device that it seems very likely that it is the Hubbard device under a different name.

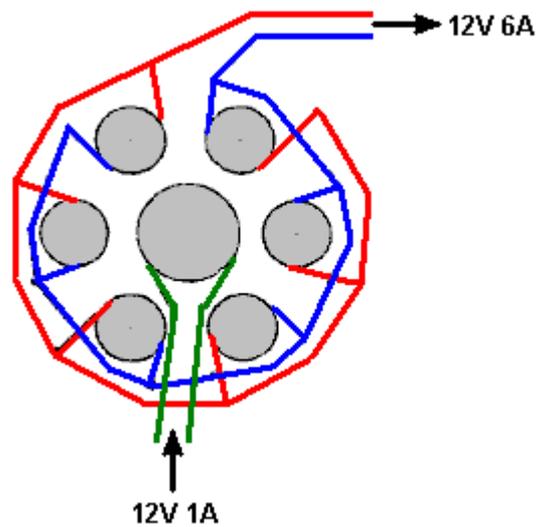
Description

The apparatus is composed of a closed magnetic circuit (Fig.1)



consisting of one soft iron central core coil, surrounded by a number of smaller diameter soft-iron cored coils. While the diagram shows six coils, that is not a fixed number. The smaller diameter coils have the same number of wire turns wound around them and so each of those small coils produces the same current as that which flows in the coil wound around the large inner coil. The cross-sectional core areas of the satellite coils is set to be the same as the cross-sectional area of the central coil core.

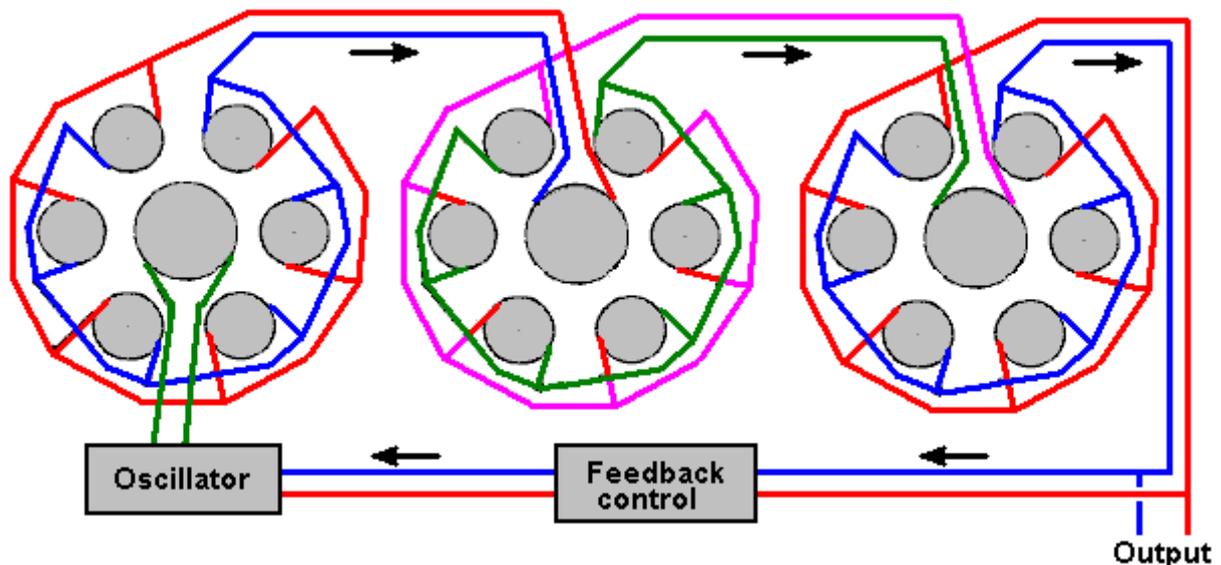
The overall design is very simple as shown here:



According to the patent, each of the surrounding coils has an output current equal to that of the central coil. So, if a current of say, 1 amp, is fed to the central coil, then each of the six surrounding coils will have an output current of 1 amp. As the six output coils are wired in parallel, the output current should be 6 amps, giving a COP value of 6 or if you prefer, an electrical efficiency of 600%.

No system is 100% efficient as there are some losses from the wire resistance, the heating of the wire, eddy currents flowing sideways in the iron cores, etc. in each coil. So, the overall efficiency will be less than 600% but the overall energy gain will still be substantial. The voltage remains essentially unchanged but please remember that as the current increases, so must the wire diameter in order to carry that increased current.

Coutier uses three of these coil sets as part of his arrangement and he then takes off a controlled amount from the output to provide the needed input for the system:



The output is alternating current. Coutier chooses to use an isolating transformer in his feedback control which feeds the necessary input current to his oscillator circuit. He also uses a mechanical vibrator as his oscillator as way back in 1933 there were no readily available semiconductors. His overall circuit diagram uses infinity symbols to indicate Alternating Current and it looks like this:

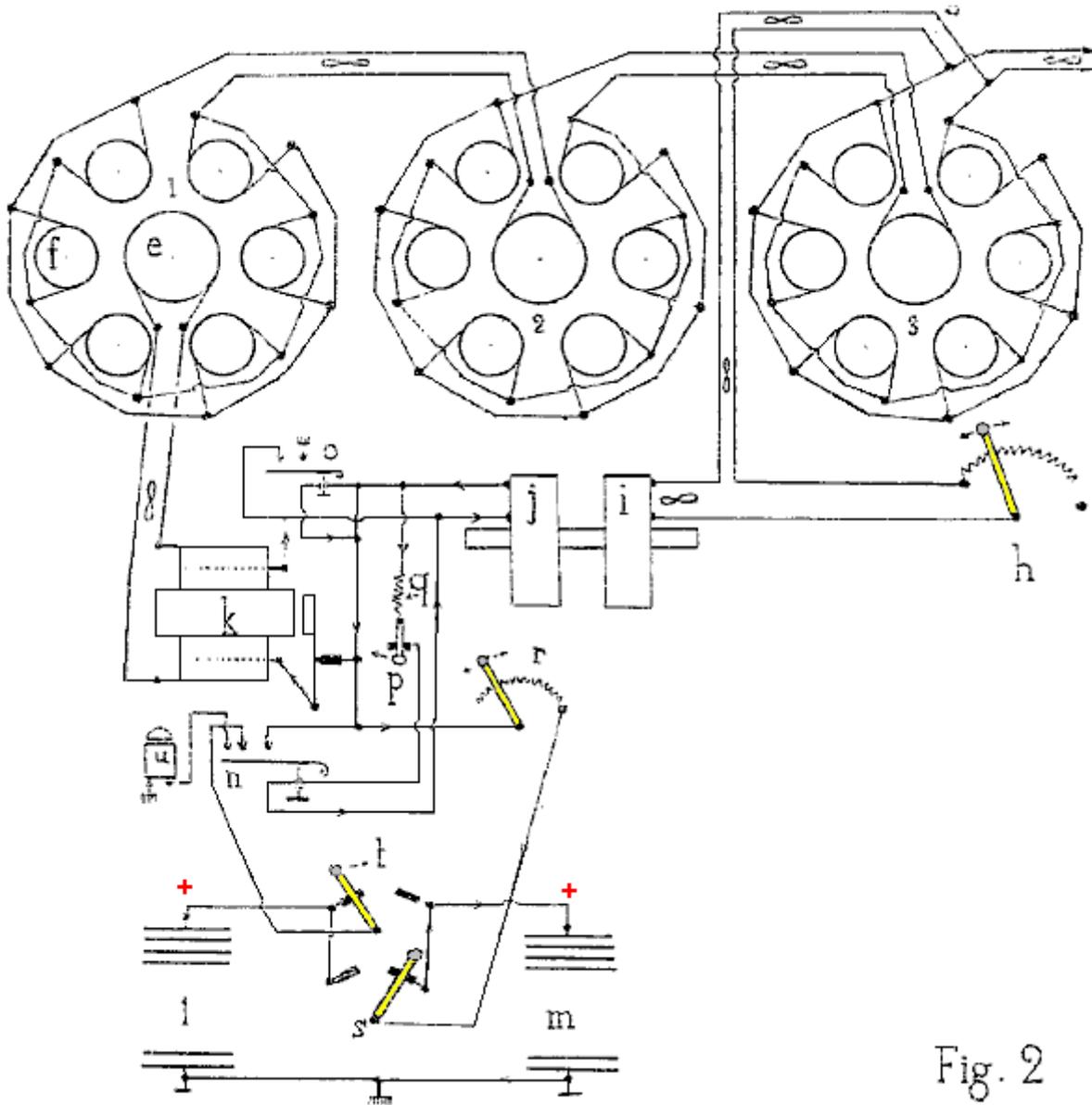


Fig. 2

An attempted translation of the patent text is:

The device consists of a closed magnetic circuit (**Fig.1**) consisting of one central core of soft iron, in the shape of a cylinder. There are N similar satellite cores, set parallel to the central core and placed in a circle around the central core. The central core is an inductive coil with the number of turns required to achieve saturation of the magnetic circuit with the chosen inductive current. Each of the satellites coils has the same number of turns as there are in the central core coil.

Given the particular provision of the magnetic circuit, each of the satellite coils is an isolated transformer and so the current induced in each of the satellite windings has the same power as the central coil current. Thus, the unit produces a multiplication of electrical energy. As the output energy exceeds the initial input energy, we see immediately the opportunity to use some of the output energy to provide the necessary input energy on a continuous basis.

The device used for the industrial model of the perpetual self-powered electricity generator, established for use in industry, maritime and river navigation, and traction on railways, is shown schematically in **Fig.2**.

Three multiplier devices (there can be any number of these devices) are combined in series, so that the core **e** of one circuit is powered by electricity from the combined satellite circuits **f**, of the previous device. The satellite coils of set **1** feed the central coil of set **2**. Similarly, the set **2** satellite circuits feed the central coil of set **3**.

Each unit with 6 satellites (there can be any number of satellites) determine the factor of power amplification of each set, and in this case it is 6. With the three coil sets shown, the power amplification is $6 \times 6 \times 6 = 216$ times the input power.

It is easy, using an output power tap and the rheostat **h**, to provide the energy required as the input current. The coil **i** is magnetically linked to coil **j**, as they are mounted on the same core and they form a 1-to-1 ratio transformer. The output of coil **j** is used to operate a buzzer **k** whose AC coil output is used to feed the central coil **e** of the first power multiplier circuit.

The device also includes two batteries **l** and **m** - intended to deal with any eventuality. One battery can be charged while the other is available for use if there is an accidental stop of the generator.

Claims

Multiplication of electrical energy carried out by induction of satellite windings, grouped in a circle around an inductive central winding. The sum of the cross-sectional areas of the satellite cores is equal to the cross-sectional area of the central core. Self-generating perpetual electrical energy is achieved by taking energy from the last multiplier and using it to provide the input current.

Patrick Kelly

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