

A Practical Guide to 'Free Energy' Devices

Device Patent No 27: Last updated: 9th May 2007

Author: Patrick J. Kelly

This is a reworded excerpt from this patent which shows a high-efficiency electrical generator of alternating current. It is stated that this generator design is not affected by Lenz's law and the experimental results showed a 13,713% improvement over conventional power output.

US Patent 6,946,767

20th September 2005

Inventor: John Reardon

ALTERNATING CURRENT GENERATOR

ABSTRACT

An alternating current electrical generator creates three different and distinct magnetic fields between would coil elements and rotating magnets, two fields of which are induced fields caused by magnet rotation. A plurality of magnets are positioned such that they extend outwardly from a rotating shaft. The magnets are circumferentially spaced around the shaft such that the north polar end of one magnet follows the south polar end of the next magnet or such that the polar end of one magnet follows a magnet with the same polar end. A plurality of stationary coil elements are positioned in spaced relation to the magnets. The coil elements each have electrical windings and metal cores which extend the lengths of the coil elements. The magnets rotate in spaced relation to the ends of the coil elements in such a way that the magnets' flux lines cut the cores located at the centre of each of the coil elements. This induces alternating electric current that oscillates back and forth along the lengths of the cores. This oscillating current creates an expanding and collapsing set of magnetic flux lines which expand and contract through every inch of the coil element's windings. This expanding and collapsing magnetic field induces an expanding and collapsing magnetic field and an alternating electric field in the coil elements.

US Patent References:

4009406	Feb, 1977	Inariba.
4823038	Apr, 1989	Mizutani et al.
5696419	Dec, 1997	Rakestraw et al.
5821710	Oct, 1998	Masuzawa et al.
5973436	Oct, 1999	Mitcham.
6069431	May, 2000	Satoh et al.
6373161	Apr, 2002	Khalaf.
6462451	Oct, 2002	Kimura et al.
6541877	Apr, 2003	Kim et al.
6717313	Apr, 2004	Bae.

BACKGROUND OF THE INVENTION

Alternating current generators are rotating devices which convert mechanical energy into electrical energy. To generate an electromotive force by mechanical motion, there must be movement between an electric coil and a magnetic field in a manner that will cause a change in the flux that passes through the coil. Fundamentally, the induced electromotive force is brought about by a change in the flux passing through the coil.

The use of electromagnets, magnets and magnet components in generators to create the magnetic field and its subsequent effect on electric coils to ultimately generate electric current is well known. Such magnetic generators operate by using the repelling forces created by the effect of changing polarities of both permanent and electromagnets. For instance, there are electrical generating devices which employ electromagnets which are fixed in position and which induce current by being selectively energised, as iron or other magnetic metal discs, bars, or similar elements are rotated at or around the magnets. Other systems

employ electromagnet or permanent magnets which are rotated, by various means, in relation to iron cores or coils, inducing an alternating electrical current within the coils.

However, prior alternating current generators which employ rotating magnet systems are inefficient and generally fail to deliver adequate current, in relation to the mechanical effort applied.

SUMMARY OF THE INVENTION

It is thus an object of the present invention to address the limitations and disadvantages of prior alternating electric current generators.

It is an object of the present invention to provide an alternating current generator which generates a substantial amount of electrical current efficiently and effectively.

It is a further object of the present invention to provide an alternating current generator which employs rotating magnets to induce increased alternating electrical current within the iron cores of electrical coils.

It is still another object of the present invention to provide an alternating current generator which can be simply and readily manufactured and be operated with high efficiency.

These and other objects are obtained by the present invention, an alternating current electrical generator which creates three different and distinct magnetic fields between wound coil elements and rotating magnets, two fields of which are induced fields caused by magnet rotation. A plurality of magnets are positioned such that they extend outwardly from a rotating shaft. The magnets are circumferentially spaced around the shaft such that the north polar end of one magnet follows the south polar end of the next magnet or such that the polar end of one magnet follows a magnet with the same polar end. A plurality of stationary coil elements are positioned in spaced relation to the magnets. The coil elements each have electrical windings and metal cores which extend the lengths of the coil elements. The magnets rotate in spaced relation to the ends of the coil elements in such a way that the magnets' flux lines cut the cores located at the centre of each of the coil elements. This induces alternating electric current that oscillates back and forth along the lengths of the cores. This oscillating current creates an expanding and collapsing set of magnetic flux lines which expand and contract through every inch of the coil element's windings. This expanding and collapsing magnetic field induces an expanding and collapsing magnetic field and an alternating electric field in the coil elements.

The novel features which are considered as characteristic of the invention are set forth in particular in the appended claims. The invention itself, however, both as to its design, construction, and use, together with additional features and advantages thereof, are best understood upon review of the following detailed description with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

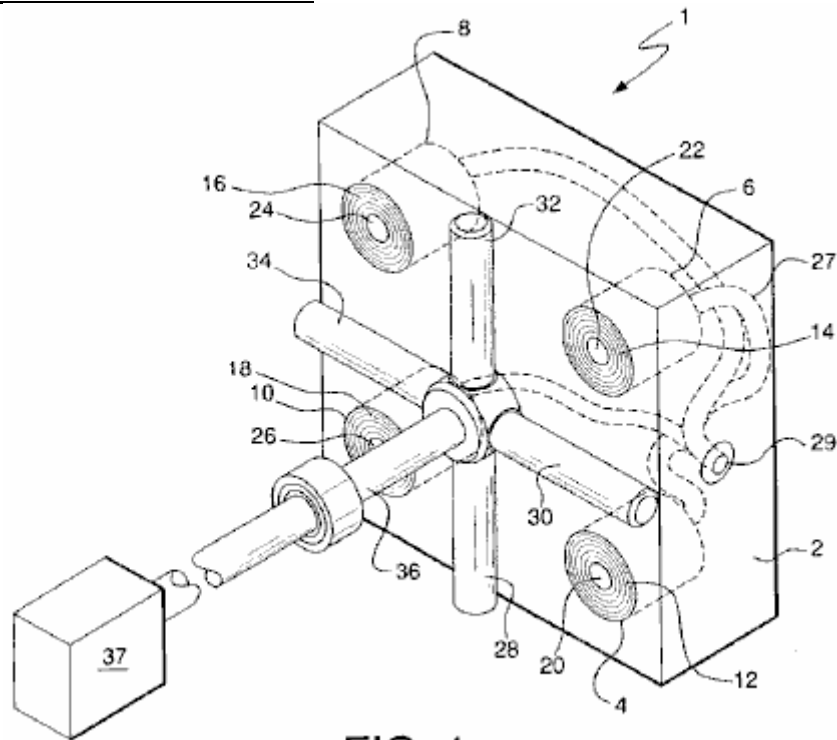


FIG. 1

Fig.1 is an isometric representation of keys components of the present invention.

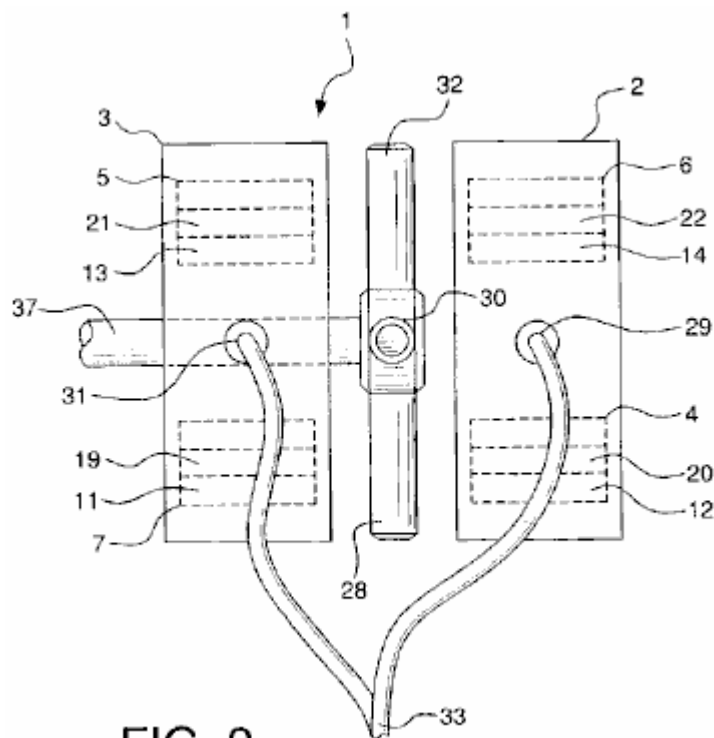


FIG. 2

Fig.2 is a side view representation of the present invention showing the two housed sets of coil elements and their relationship with the magnets.

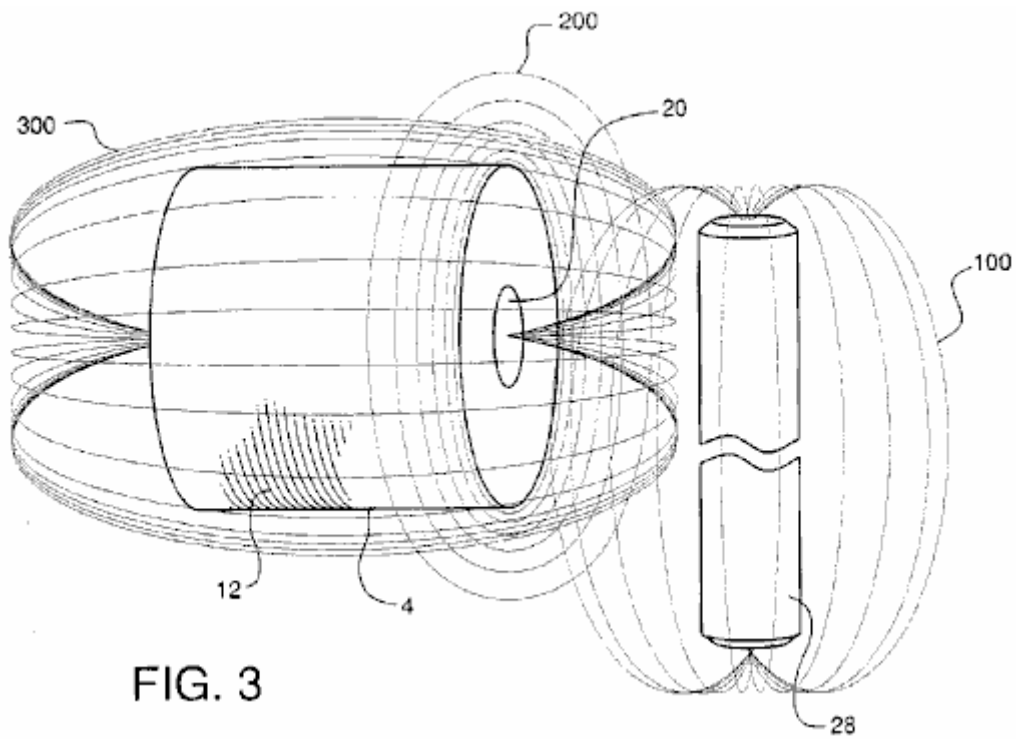


FIG. 3

Fig.3 is an explanatory view, showing the generation of flux lines which forms the basis for the operation of the present invention.

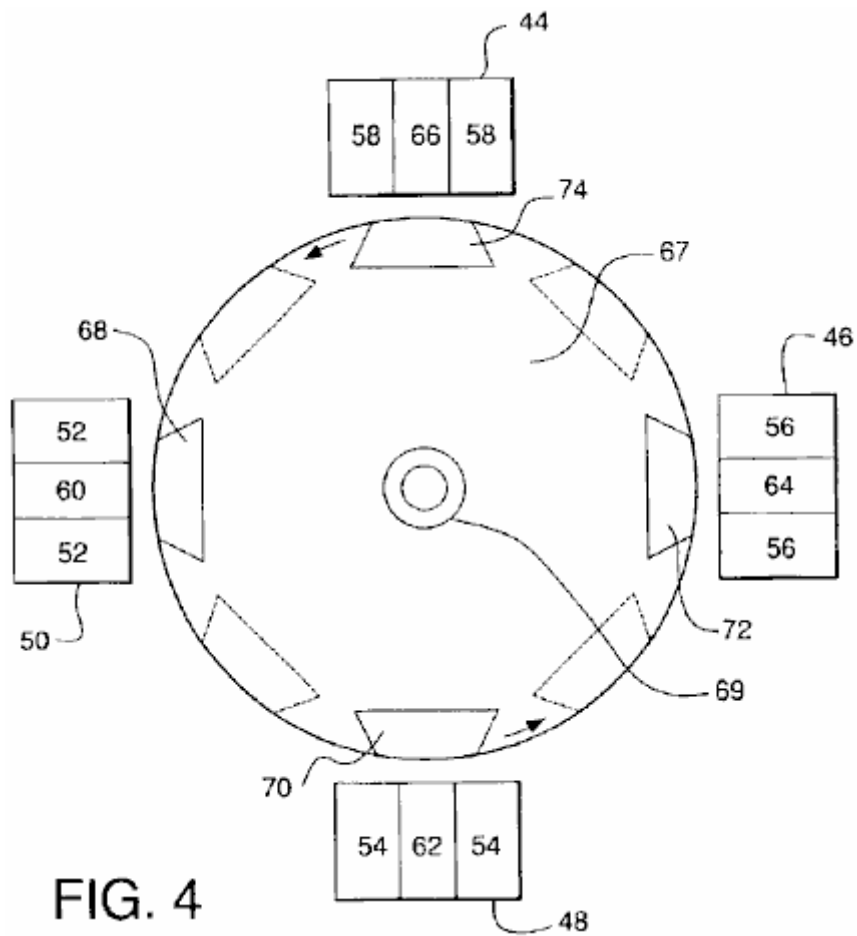


FIG. 4

Fig.4 is an alternate embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

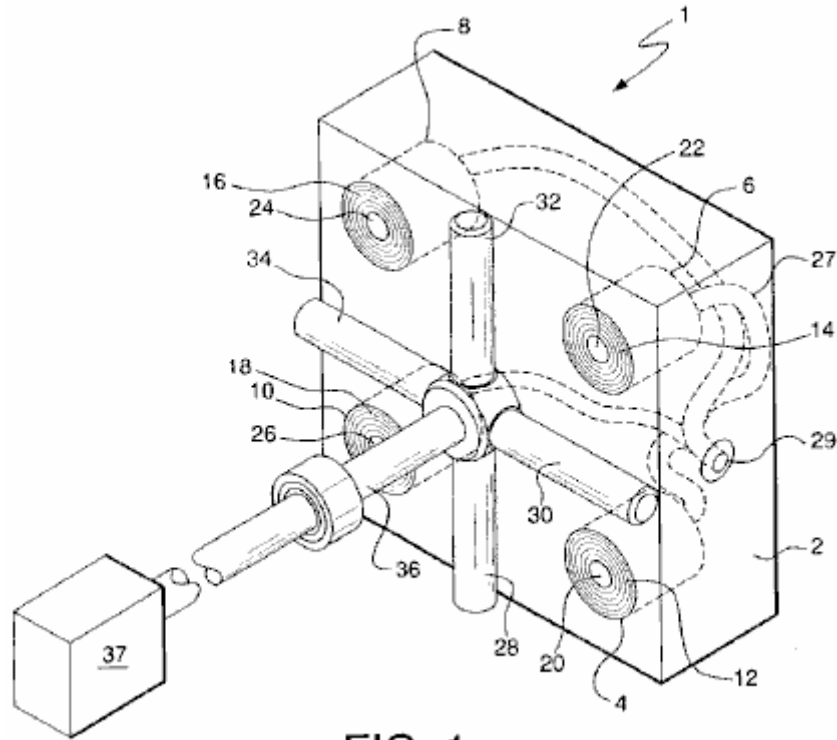


FIG. 1

Fig.1 and **Fig.2** show a clear depiction of the components of alternating current generator 1 of the subject invention. Generator 1 comprises housings 2 and 3. For simplicity purposes and ease of understanding, only housing 2 is shown in **Fig.1**. It must be understood, however, that generator 1 of the present invention is configured for use with both housings 2 and 3. Housing 2 contains coil elements 4, 6, 8 and 10. Each coil element comprises multiple windings 12, 14, 16, and 18, respectively, wound around inner steel or similar metal cores 20, 22, 24, and 26, respectively. Each steel core extends the full length and directly through each of the coil elements. Coil elements 4, 6, 8, and 10 are mounted within housing 2, such that the end surfaces of the coil elements and the ends of cores 20, 22, 24, and 26 are positioned flush with the external surface of housing 2.

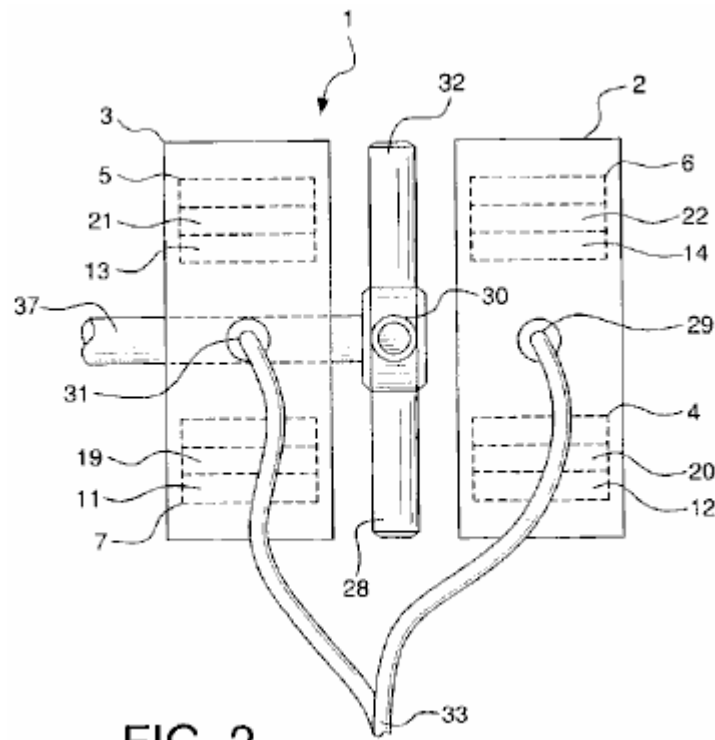


FIG. 2

Housing **3** also contains four coil elements positioned identically as has been described with regard to housing **2**. Two of these coil elements **5** and **7** are shown in **Fig.2**. Coil element **5** has multiple windings **13** and centre core **21** and coil element **7** has multiple windings **11** and centre core **21**.

Magnets **28**, **30**, **32**, and **34** are secured to shaft **36**, which is configured to be rotated by conventional power source **37**, such as a diesel engine, turbine, etc. Magnets **28**, **30**, **31**, and **32** all have ends with outwardly extending polarities. Magnets **28**, **30**, **32**, and **34** are positioned in spaced relation to the ends of exposed cores **20**, **22**, **24** and **26** of coil elements **4**, **6**, **8**, and **10** and in spaced relation to the ends of the four exposed cores in the four coil elements located in housing **3**, cores **19** and **21** being shown in **Fig.2**. All magnets are equidistantly spaced on and around shaft **36**, such that the outwardly extending pole of one magnet circumferentially follows the outwardly extending pole of the next magnet. The north polar end of one magnet may follow the south polar end of the next magnet or the polar end of one magnet may follow a magnet with the same polar end.

While four magnets and four cores are shown, it is contemplated that additional magnets and cores could be employed in the generator. Also, while permanent magnets are shown in the drawings, electromagnets could also be used, as they produce the same magnetic flux.

Alternating electrical current is generated when power source **37** rotates shaft **36**, thus causing rotation of magnets **28**, **30**, **32**, and **34** in spaced, adjacent relation to the ends of cores **20**, **22**, **24**, and **26** of coil elements **4**, **6**, **8**, and **10**, and in spaced, adjacent relation to the ends of cores **19** and **21** of coil elements **7** and **5** and the ends of the cores of the other two similarly aligned coil elements in housing **3**. The current which is generated is transmitted through electrical conductive wiring **27**, which merges at connection points **29** in housing **2** and **31** in housing **3**, for the consolidated transmission at connection point **33** of the electricity produced.

As best represented in **Fig.2**, when magnet **28** is rotated in space relation to the end of core **20** of coil element **4**, flux lines **100** of the magnet cut the core at the centre of the coil element. This induces an alternating electrical current that oscillates back and forth along the length of core **20**. This oscillating current creates an expanding and collapsing set of magnetic flux lines **200** which expand and contract through every inch of coil windings **12**. Expanding and collapsing field **200** induces an alternating electric field in coil element **4** which is accompanied by an expanding and collapsing magnetic field **300**. It is noted, significantly, that none of the magnetic field lines **100**, **200** and **300**, act in a negative fashion or in an opposing action. This allows the subject invention to overcome the limitations of Lenz's law, which states that whenever there is a change in magnetic flux in a circuit, an induced electromotive force is set-up tending to produce a current in a direction which will oppose the flux change.

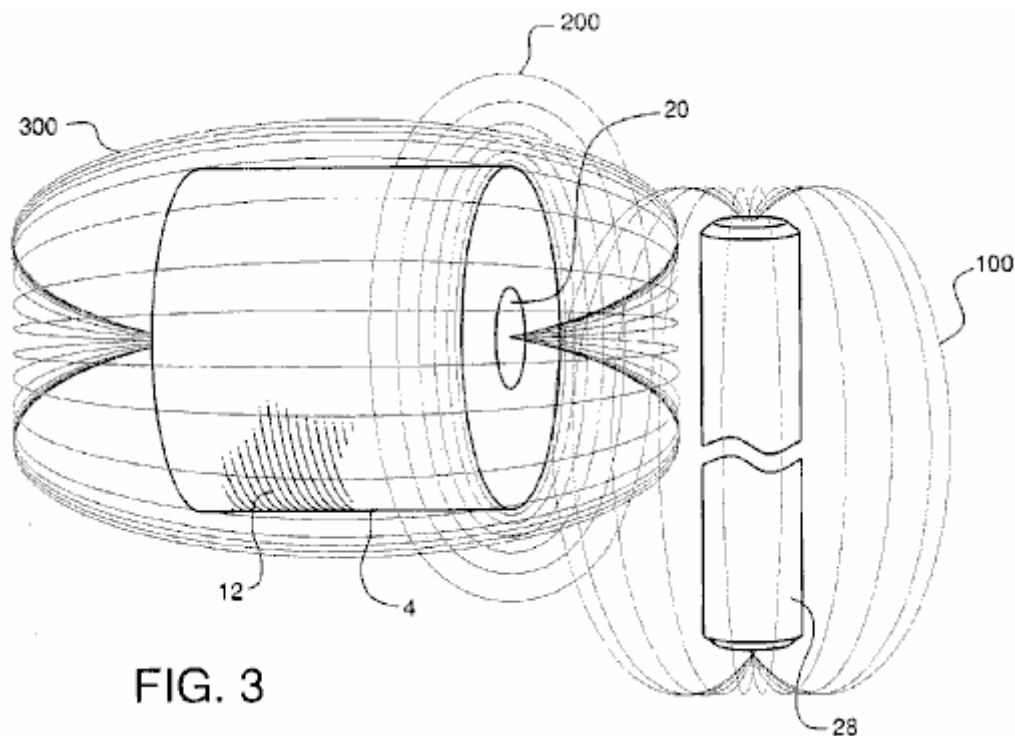


FIG. 3

Fig.3 illustrates an alternate embodiment of the invention to that which is shown in **Fig.1**. As shown in **Fig.3**, coil element **44** with outer windings **58** and inner steel core **66**, coil element **46** with windings **56** and core **64**, coil element **48** with windings **54** and core **62**, and coil element **50** with outer windings **52** and core **60** are positioned adjacent to rotor **67**, which is mounted on shaft **69**. Magnets **68** and **72** are mounted on rotor **67** such that the north poles of the magnets are positioned in spaced relation to coil elements **44**, **46**, **48** and **50**. Magnets **70** and **74** are mounted on rotor **67** such that the south poles of the magnets are also positioned in spaced relation to coil elements **44**, **46**, **48**, and **50**. All magnets are fixedly mounted on rotor **67** such that a north pole of one magnet circumferentially follows a south pole of the next magnet in line. The contemplated gap between the magnets and coil element cones is approximately 0.0001 of an inch, although the scope and use of the invention should not be deemed restricted to this distance.

As in the prior embodiment, rotation of magnets **68**, **70**, **72**, and **74**, by rotation of shaft **69** and hence rotor **67**, causes the flux lines of the magnets to cut cores **60**, **62**, **64**, and **66** of coil elements **44**, **46**, **48**, and **50**, eventually resulting in the output of electrical current as previously described.

It is noted that the larger the diameter of rotor **67**, the more coil elements can be positioned around the rotor. The greater the number of coil elements, the slower rotor **67** needs to rotate; however, there is a power loss in so doing. In addition, while rotor **67** is shown as being circular, it may be as square in shape or formed of as other appropriate multi-sided configurations.

This unique way of generating electricity allows generation of more electrical power, e.g. anywhere in the range of 4 to 137 times more power, than prior, conventional means. It also has the advantage of obtaining unity power with very little effort.

As evidence of such power gains, reference is made to the below outlined experimental outputs from coils and magnets which produced electric power the conventional way compared with the subject invention. The conventional way of generating power, for purpose of the following experimental outputs, as referenced herein, is accomplished by cutting the wires, not the cores, of the coil's windings with the magnet's flux.

In this regard, proof is also provided that the herein described method of generating electrical power is not affected by Lenz's Law, by reference to the readings obtained by the conventional methods as the rpm and size of the coil increase. With conventional methods, the values do not change linearly, but are less because Lenz's Law restricts the outputs from increasing proportionally to the speed and size of the coil. In comparison, however, in the method of producing power of the subject invention, there is an increase in the readings of V (voltage), I (current), and P (power) which are actually larger than anticipated.

It is also noted that, just like a transformer, when the number of turns ratio is increased, V increases and I decreases, which is exactly what is seen at the various rpm readings for the different size coils. However, they do not increase or decrease proportionally.

Thus, this presents the ideal model for producing electrical power that corresponds to the general law that states that as the speed increases, the voltage will increase proportionally, through the equation:
 $V = q \text{ (charge)} \times v \text{ (velocity)} \times B \text{ (magnetic field strength)}$. This also holds true for a coil, in that transformers increase proportionally to the turns ratio.

With reference to the voltage outputs for each of the coils, 1100T, 2200T and 5500T, it is seen that they are consistent with the types of voltage outputs for a transformer action. That is to say, as the turns ratio goes up in a transformer so does the voltage. Since the increases in voltage between the number of turns is not exactly 2 to 5 times, one can pick any one of the coils and assume it is accurate and adjust the other coils accordingly. Thus, by fixing the 1100T coil, the other coils become 2837T and 5896T respectively. By fixing the 2200T coil, the other coils become 853T and 4572T respectively. And by fixing the 5500T coil, the other coils become 1026T and 2646T respectively. Also, if the adjustments are made as described here, i.e. that the coils are bigger than originally thought, and they are applied to the voltages for the conventional method of generating power, the voltages do not increase proportionally but are actually smaller than they are supposed to be, additional proof that Lenz's Law has application to conventional generators, but not to this invention.

The proportional changes in the voltage relative to speed can also be seen. Thus, considering the 350 RPM speed as accurate, the 1200 RPM and 1300 RPM speeds will adjust to 906 RPM and 1379 RPM respectively. Considering the 1200 RPM speed as accurate, the 350 RPM and 1300 RPM speed becomes 464 RPM and 1826 RPM respectively. And finally, considering the 1300 RPM speed as accurate, the 350 RPM and 1200 RPM speeds become 330 RPM and 854 RPM respectively.

It is noted that in using the various RPM readings based upon the above, it is seen that, in the conventional way of generating power, there are losses associated with the measured values. The calculated values again show the application of Lenz's Law in the conventional way of generating power, but not to this invention. In fact, whether or not there is an adjustment of RPM speed or coil size, the power generation of this invention is in no way affected by Lenz's Law.

Since Lenz's Law has no effect in this generator, it can be assumed that the voltages increase proportionally to the speed of the magnets rotation. Therefore, one can extrapolate the expected voltages at 1800 RPM, the speed necessary to create 60 Hz. With regard to this generator, for each of the three coils from the 350 RPM, 1200 RPM and 1300 RPM speeds, the following results (values are based on one coil/magnet.):

1. At assumed 350 RPM the voltages range as follows:

- A. 5.863v @1100T
- B. 15.12v @2200T
- C. 31.42v @5500T

2. At assumed 1200 RPM the voltages range as follows:

- A. 4.425v @1100T
- B. 11.295v @2200T
- C. 16.845v @5500T

3. At assumed 1300 RPM the voltages range as follows:

- A. 6.217v @1100T
- B. 10.716v @2200T
- C. 17.668v @5500T

The reason the current is not changing linearly as the laws of physics imply from transformers, i.e. as voltage goes up based on the number of turns, the current goes down proportionally to the voltage gain, is due to the fact that the inductive reactance is also going up. See the following chart for the inductive reactances for each coil at each speed.

Impedance (Z) or inductive reactance (X(L)) for a circuit with only a coil in it is the AC voltage divided by the AC current, and the inductance (L) is $Z/2 \times \pi \times F$ (frequency). For a circuit with a resistor and a coil $Z = \text{square root of } (R \text{ (resistance) squared} + X(L) \text{ squared})$.

The following is the chart of impedance Z for all coil sizes at all speeds for the conventional method of generating power and the method of generating power with this invention:

Where:

“T” stands for Turns,

“CM” stands for Conventional Method and

“SI” stands for Subject Invention:

(1) For 350 RPM for 1100T, 2200T and 5500T coils,

1. (a) CM: $0.57\text{v} / 56.6 \text{ mA} = 10.021 \text{ ohms} = Z$
(b) SI: $1.14\text{v} / 106.6 \text{ mA} = 10.694 \text{ ohms} = Z$
2. (a) CM: $0.93\text{v} / 32.4 \text{ mA} = 28.704 \text{ ohms} = Z$
(b) SI: $2.94\text{v} / 70.1 \text{ mA} = 41.94 \text{ ohms} = Z$
3. (a) CM: $2.09\text{v} / 17.3 \text{ mA} = 120.81 \text{ ohms} = Z$
(b) SI: $6.11\text{v} / 37.9 \text{ mA} = 161.21 \text{ ohms} = Z$

(2) For 1200 RPM for 1100T, 2200T and 5500T coils:

1. (a) CM: $1.45\text{v} / 60.2 \text{ mA} = 23.387 \text{ ohms} = Z$
(b) SI: $2.95\text{v} / 141 \text{ mA} = 20.922 \text{ ohms} = Z$
2. (a) CM: $3.225\text{v} / 36.2 \text{ mA} = 89.088 \text{ ohms} = Z$
(b) SI: $7.53\text{v} / 73.5 \text{ mA} = 102.449 \text{ ohms} = Z$
3. (a) CM: $4.81\text{v} / 17 \text{ mA} = 282.941 \text{ ohms} = Z$
(b) SI: $11.23\text{v} / 31.4 \text{ mA} = 357.643 \text{ ohms} = Z$

(3) For 1300 RPM for 1100T, 2200T and 5500T coils:

1. (a) CM: $1.6\text{v} / 83 \text{ mA} = 19.27 \text{ ohms} = Z$
(b) SI: $4.59\text{v} / 157 \text{ mA} = 29.236 \text{ ohms} = Z$
2. (a) CM: $2.75\text{v} / 50.4 \text{ mA} = 54.455 \text{ ohms} = Z$
(b) SI: $7.74\text{v} / 88.5 \text{ mA} = 87.458 \text{ ohms} = Z$
3. (a) CM: $5.061\text{v} / 17.3 \text{ mA} = 292.543 \text{ ohms} = Z$
(b) SI: $12.76\text{v} / 36.4 \text{ mA} = 350.549 \text{ ohms} = Z$

(4) For 400 RPM for 2300T coil with 24 gauge wire and 0.5" core:

- (a) CM: $0.15\text{v} / 3.7 \text{ mA} = 40.541 \text{ ohms} = Z$
(b) SI: $2.45\text{v} / 26.2 \text{ mA} = 93.511 \text{ ohms} = Z$

(5) For 1200 RPM for 2300T coil with 24 gauge wire and 0.5" core:

- (a) CM: $0.37\text{v} / 2.7 \text{ mA} = 137.037 \text{ ohms} = Z$
(b) SI: $4.1\text{v} / 10.3 \text{ mA} = 398.058 \text{ ohms} = Z$

(6) For 1400 RPM for 2300T coil with 24 gauge wire and 0.5" core:

- (a) CM: $0.58\text{v} / 2.4 \text{ mA} = 241.667 \text{ ohms} = Z$
- (b) SI: $8.3\text{v} / 7.8 \text{ mA} = 1065.385 \text{ ohms} = Z$

(7) For 400 RPM for 2300T coil with 24 gauge wire and 0.75" core:

- (a) CM: $0.23\text{v} / 4.2 \text{ mA} = 54.762 \text{ ohms} = Z$
- (b) SI: $0.37\text{v} / 7.2 \text{ mA} = 51.389 \text{ ohms} = Z$

(8) For 1200 RPM for 2300T coil with 24 gauge wire and 0.75" core:

- (a) CM: $0.79\text{v} / 3.4 \text{ mA} = 232.353 \text{ ohms} = Z$
- (b) SI: $0.43\text{v} / 6.9 \text{ mA} = 207.246 \text{ ohms} = Z$

(9) For 1400 RPM for 2300T coil with 24 gauge wire and 0.75" core:

- (a) CM: $0.79\text{v} / 3.21 \text{ A} = 246.875 \text{ ohms} = Z$
- (b) SI: $2.1\text{v} / 2.7 \text{ mA} = 777.778 \text{ ohms} = Z$

(10) For 400 RPM for 6000T coil with 28 gauge wire and 0.5" core:

- (a) CM: $0.49\text{v} / 2 \text{ mA} = 245 \text{ ohms} = Z$
- (b) SI: $5.48\text{v} / 0.13 \text{ mA} = 421.538 \text{ ohms} = Z$

(11) For 1200 RPM for 6000T coil with 28 gauge wire and 0.5" core:

- (a) CM: $1.25\text{v} / 1.5 \text{ mA} = 833.333 \text{ ohms} = Z$
- (b) SI: $15.04\text{v} / 4.1 \text{ mA} = 3668.293 \text{ ohms} = Z$

(12) For 1400 RPM for 6000T coil with 28 gauge wire and 0.5" core:

- (a) CM: $2.08\text{v} / 1.1 \text{ mA} = 1890.909 \text{ ohms} = Z$
- (b) SI: $18.76\text{v} / 2.5 \text{ mA} = 7504 \text{ ohms} = Z$

(13) For 400 RPM for 6000T coil with 28 gauge wire and 0.75" core:

- (a) CM: $0.64\text{v} / 1.7 \text{ mA} = 376.471 \text{ ohms} = Z$
- (b) SI: $7.97\text{v} / 7.4 \text{ mA} = 1077.027 \text{ ohms} = Z$

(14) For 1200 RPM for 6000T coil with 28 gauge wire and 0.75" core:

- (a) CM: $2.08\text{v} / 1.3 \text{ mA} = 1600 \text{ ohms} = Z$
- (b) SI: $20.4\text{v} / 5.6 \text{ mA} = 3642.857 \text{ ohms} = Z$

(15) For 1400 RPM for 6000T coil with 28 gauge wire and 0.75" core:

- (a) CM: $2.28\text{v} / 1.2 \text{ mA} = 1900 \text{ ohms} = Z$
- (b) SI: $28.4\text{v} / 2.1 \text{ mA} = 13523.81 \text{ ohms} = Z$

It is noted that, based upon the variations of wire size, core size and number of turns, the following effects take place:

- (a) the smaller the wire size the higher the gains regardless of speed;
- (b) the greater the number of turns, generally the higher the gains; and
- (c) the smaller the core size the higher the gains.

However, when comparing coils with smaller cores but a higher number of turns, the effects stay about the same.

Finally, the magnets are placed in the rotor so that they are all north or south poles up or out. A pure half-wave generator is created without rectifying the AC signal, which otherwise must be accomplished in a normal AC generator with electronic components in an electronic circuit.

Experimental Values for Producing Power the Conventional Way and with the Subject Invention:

The results were achieved using a small 3" magnet with a diameter of ±2" on a 1.25" high coil of 1" diameter and 3/8" centre/core of steel. (Unknown wire gauge size.)

(a) Conventional method of generating electricity:

1. 0.324 volts
2. 2.782 mA (milli-amperes)
3. 0.9014 mW (milli-watts)

(b) Subject invention method of generating electricity:

1. 7.12 volts
2. 17.35 mA
3. 100.87 mW

(c) Associated gains of Volts, Current and Watts:

1. 2,198% over conventional voltage output.
2. 624% over conventional current output.
3. 13,713% over conventional power output.

The following results show the voltage, current and power outputs for an 1100, 2200 and 5500 turn coil of 20 gauge copper wire, 6" in length, 3" in diameter with a 0.75" core of steel. The results are those taken at 350 rpm, 1200 rpm and 1300 rpm.

(A) 350 RPM for an 1100 turn coil

	Volts	mA	mW
(a) Conventional method:	0.57	56.6	32.3
(b) Subject invention method:	1.14	106.6	121.5
(c) Associated gains	200%	188.3%	376.6%

(B) 350 RPM for a 2200 turn coil

	Volts	mA	mW
(a) Conventional method:	0.93	32.4	30.1
(b) Subject invention method:	2.94	70.1	206.1
(c) Associated gains	316.1%	216.4%	684%

(C) 350 RPM for a 5500 turn coil

	Volts	mA	mW
(a) Conventional method:	2.09	17.3	36.2
(b) Subject invention method:	6.11	37.9	231.6
(c) Associated gains	292.3%	219.1%	640%

(D) 1200 RPM for an 1100 turn coil

	Volts	mA	mW
(a) Conventional method:	1.45	60.2	87.3

(b) Subject invention method:	2.95	141	416
(c) Associated gains	203.4%	234.2%	476%

(E) 1200 RPM for a 2200 turn coil

	Volts	mA	mW
(a) Conventional method:	3.225	36.2	116.75
(b) Subject invention method:	7.53	73.5	553.5
(c) Associated gains	233.5%	203%	474%

(F) 1200 RPM on a 5500 turn coil

	Volts	mA	mW
(a) Conventional method:	4.81	17	81.77
(b) Subject invention method:	11.23	31.4	352.6
(c) Associated gains	235.5%	184.7%	431.3%

(G) 1300 RPM on an 1100 turn coil

	Volts	mA	mW
(a) Conventional method:	1.6	83	132.8
(b) Subject invention method:	4.59	157	704.9
(c) Associated gains	280.6%	189.2%	530.8%

(H) 1300 RPM on a 2200 turn coil

	Volts	mA	mW
(a) Conventional method:	2.75	50.5	138.9
(b) Subject invention method:	7.74	88.5	685
(c) Associated gains	281.5%	175.2%	493.3%

(I) 1300 RPM on a 5500 turn coil

	Volts	mA	mW
(a) Conventional method:	5.061	17.3	87.56
(b) Subject invention method:	12.76	36.4	464.5
(c) Associated gains	252%	210%	530%

The following readings are taken from a coil with 24 gauge wire, 0.5" centre/core of steel and 2300T.

(A) 400 rpm

	Volts	mA	mW
(a) Conventional method:	0.15	3.7	0.56
(b) Subject invention method:	2.45	26.2	64.2
(c) Associated gains	1,633%	708%	11,563%

(B) 1200 rpm

	Volts	mA	mW
(a) Conventional method:	0.37	2.7	1
(b) Subject invention method:	4.1	10.3	42.2
(c) Associated gains	1,108%	381%	4,227%

(C) 1400 rpm

	Volts	mA	mW
(a) Conventional method:	0.58	2.4	1.39
(b) Subject invention method:	8.31	7.8	64.82
(c) Associated gains	1,433%	325%	4,657%

The following readings are taken from a coil made with 24 gauge wire, 0.75" centre/core of copper, 2300T.

(A) 400 rpm

	Volts	mA	mW
(a) Conventional method:	0.23	4.2	0.97
(b) Subject invention method:	0.37	7.2	2.66
(c) Associated gains	137%	171%	235%

(B) 1200 rpm

	Volts	mA	mW
(a) Conventional method:	0.79	3.4	2.69
(b) Subject invention method:	1.43	6.9	9.87
(c) Associated gains	181%	203%	367%

(C) 1400 rpm

	Volts	mA	mW
(a) Conventional method:	0.79	3.2	2.53
(b) Subject invention method:	2.1	2.7	5.67
(c) Associated gains	266%	84%	224%

The following readings were taken from a coil made of 28 gauge wire, 0.5" centre/core of steel and 6000T.

(A) 400 rpm

	Volts	mA	mW
(a) Conventional method:	0.49	2	0.98
(b) Subject invention method:	5.48	13	71.24
(c) Associated gains	1,118%	65%	7,269%

(B) 1200 rpm

	Volts	mA	mW
(a) Conventional method:	1.25	1.5	1.88
(b) Subject invention method:	15.04	4.1	61.66
(c) Associated gains	1,203%	273%	3,289%

(C) 1400 rpm

	Volts	mA	mW
(a) Conventional method:	2.08	1.1	2.29
(b) Subject invention method:	18.76	2.5	46.9
(c) Associated gains	902%	227%	2,050%

The following readings were taken from a coil made of 28 gauge wire, 0.75" steel centre/core and 6000T.

(A) 400 rpm

	Volts	mA	mW
(a) Conventional method:	0.64	1.7	1.09
(b) Subject invention method:	7.97	7.4	58.98
(c) Associated gains	1,245%	435%	5,421%

(B) 1200 rpm

	Volts	mA	mW
(a) Conventional method:	2.08	1.3	2.7

(b) Subject invention method:	20.4	5.6	114.24
(c) Associated gains	981%	431%	4,225%

(C) 1400 rpm

	Volts	mA	mW
(a) Conventional method:	2.28	1.2	2.74
(b) Subject invention method:	28.4	2.1	88.04
(c) Associated gains	1,246%	175%	2,180%

The extrapolated voltages for the items immediately above at the 1800 RPM speed for the method of the subject invention are as follows:

(A) 400-1400 RPM, 0.5" core, 2300T:

- (1) 11.025v
- (2) 6.15v
- (3) 10.68v

(B) 400-1400 RPM, 0.75" core, 2300T:

- (1) 1.665v
- (2) 2.145v
- (3) 2.7v

(C) 400-1400 RPM, 0.5" core, 6000T:

- (1) 24.66v
- (2) 22.56v
- (3) 24.12

(D) 400-1400 RPM, 0.75" core, 6000T:

- (1) 10.25v
- (2) 30.6v
- (3) 36.51v

Some of the readings above do not seem consistent with others. This is attributed to the possibility that the wire connections may have been faulty or the proximity of the magnet relative to the core or coil may not have been the same. This was not taken into account at the time the tests were done.

The following figures are derived based on the premise that the subject invention has characteristics of a transformer when the number of turns on the coils change. In nearly all these situations, the subject invention acts exactly like a transformer, while the conventional way of producing electricity does not.

CM = conventional method;

SI = subject invention;

350 RPM		1100 to 2200 Turns	1100 to 5500 Turns	2200 to 5500 Turns
CM:	expected voltage:	1.14 volts	2.85 volts	2.325 volts
	actual voltage:	0.93 volts	2.09 volts	2.09 volts
	expected current:	28.3 mA	11.32 mA	12.96 mA
	actual current:	32.4 mA	17.3 mA	17.3 mA
	expected power:	32.3 mW	32.3 mW	30.1 mW
	actual power:	30.1 mW	36.2 mW	36.2 mW
	expected voltage gain:	2	5	2.5
	actual voltage gain:	1.636	3.667	2.247
	expected current gain:	0.5	0.2	0.4
	actual current gain:	0.572	0.306	0.534
expected power gain:	1	1	1	
actual power gain:	0.932	1.12	1.203	
SI:	expected voltage:	2.28 volts	5.70 volts	7.35 volts
	actual voltage:	2.94 volts	6.11 volts	6.11 volts
	expected current:	53.30 mA	42.64 mA	28.04 mA
	actual current:	70.10 mA	37.90 mA	37.90 mA
	expected power:	121.74 mW	243.05 mW	206.09 mW
	actual power:	206.10 mW	231.60 mW	231.60 mW
	expected voltage gain:	2	5	2.5
	actual voltage gain:	2.579	5.36	2.078
	expected current gain:	0.5	0.2	0.4
	actual current gain:	0.658	0.356	0.5407
expected power gain:	1	1	1	
actual power gain:	1.696	1.906	1.124	

1200 RPM		1100 to 2200 Turns	1100 to 5500 Turns	2200 to 5500 Turns
CM:	expected voltage:	2.90 volts	7.25 volts	8.06 volts
	actual voltage:	3.225 volts	4.81 volts	4.81 volts
	expected current:	30.10 mA	12.04 mA	14.48 mA
	actual current:	36.2 mA	17.0 mA	17.0 mA
	expected power:	87.29 mW	87.29 mW	116.71 mW
	expected voltage gain:	2	5	2.5
	actual voltage gain:	2.22	3.32	1.49
	expected current gain:	0.5	0.2	0.4
	actual current gain:	0.6	0.28	0.47
	expected power gain:	1	1	1
actual power gain:	1.34	0.94	0.70	
SI:	expected voltage:	5.9 volts	14.75 volts	18.83 volts
	actual voltage:	7.53 volts	11.23 volts	11.23 volts
	expected current:	70.50 mA	28.20 mA	29.40 mA
	actual current:	73.50 mA	31.40 mA	31.40 mA
	expected power:	415.95 mW	415.95 mW	553.60 mW
	actual power:	553.50 mW	352.60 mW	352.60 mW
	expected voltage gain:	2	5	2.5
	actual voltage gain:	2.55	3.81	1.49
	expected current gain:	0.5	0.2	0.4
	actual current gain:	0.52	0.22	0.43
expected power gain:	1	1	1	
actual power gain:	1.33	0.85	0.64	

1300 RPM		1100 to 2200 Turns	1100 to 5500 Turns	2200 to 5500 Turns
CM:	expected voltage:	3.20 volts	8.00 volts	6.88 volts
	actual voltage:	2.75 volts	5.06 volts	5.06 volts
	expected current:	41.50 mA	16.60 mA	20.20 mA
	actual current:	50.50 mA	17.3 mA	17.3 mA
	expected power:	132.8 mW	132.8 mW	138.98 mW
	actual power:	138.9 mW	87.56 mW	87.56 mW
	expected voltage gain:	2	5	2.5
	actual voltage gain:	1.72	3.16	1.84
	expected current gain:	0.5	0.2	0.4
	actual current gain:	0.61	0.21	0.34
	expected power gain:	1	1	1
	actual power gain:	1.05	0.66	0.63
	SI:	expected voltage:	9.18 volts	22.95 volts
actual voltage:		7.74 volts	12.76 volts	12.76 volts
expected current:		78.50 mA	31.40 mA	35.40 mA
actual current:		88.50 mA	36.40 mA	36.40 mA
expected power:		720.63 mW	720.63 mW	685.0 mW
actual power:		685.0 mW	464.50 mW	464.50 mW
expected voltage gain:		2	5	2.5
actual voltage gain:		1.69	2.78	1.65
expected current gain:		0.5	0.2	0.4
actual current gain:		0.56	0.23	0.41
expected power gain:		1	1	1
actual power gain:		0.95	0.64	0.68

The following data represents the expected and actual voltage readings for the conventional method of producing voltage and the method of the subject invention. In virtually all circumstances, the herein invention produced more voltage than the conventional method and has gains that are higher than anticipated.

1100 Turns		350 to 1200 RPM	350 to 1300 RPM	1200 to 1399 RPM
CM:	expected voltage:	1.954 volts	2.117 volts	1.571 volts
	actual voltage:	1.45 volts	1.60 volts	1.60 volts
	expected voltage gain:	3.429	3.714	1.083
	actual voltage gain:	2.544	2.807	1.103
SI:	expected voltage:	3.909 volts	4.234 volts	3.196 volts
	actual voltage:	2.95 volts	4.59 volts	4.59 volts
	expected voltage gain:	3.429	3.714	1.083
	actual voltage gain:	2.579	4.026	1.556

2200 Turns		350 to 1200 RPM	350 to 1300 RPM	1200 to 1399 RPM
CM:	expected voltage:	3.189 volts	3.454 volts	3.494 volts
	actual voltage:	3.225 volts	5.061 volts	5.061 volts
	expected voltage gain:	3.429	3.714	1.083
	actual voltage gain:	3.468	2.957	0.853
SI:	expected voltage:	10.081 volts	10.919 volts	8.157 volts
	actual voltage:	7.53 volts	7.74 volts	7.74 volts
	expected voltage gain:	3.429	3.714	1.083
	actual voltage gain:	2.561	2.633	1.028

5500 Turns		350 to 1200 RPM	350 to 1300 RPM	1200 to 1399 RPM
CM:	expected voltage:	7.167 volts	7.62 volts	5.211 volts
	actual voltage:	4.81 volts	5.061 volts	5.061 volts
	expected voltage gain:	3.429	3.714	1.083

	actual voltage gain:	2.301	2.422	1.052
SI:	expected voltage:	20.951 volts	22.693 volts	12.166 volts
	actual voltage:	11.23 volts	12.76 volts	12.76 volts
	expected voltage gain:	3.429	3.714	1.083
	actual voltage gain:	1.838	2.088	1.049

2300 Turns	(0.5" core 24 gauge wire)	400 to 1200 RPM	400 to 1400 RPM	1200 to 1400 RPM
CM:	expected voltage:	0.45 volts	0.525 volts	0.432 volts
	actual voltage:	0.37 volts	0.58 volts	0.58 volts
	expected voltage gain:	3.00	3.50	1.167
	actual voltage gain:	2.467	3.867	1.568
SI:	expected voltage:	7.35 volts	8.57 volts	4.785 volts
	actual voltage:	4.10 volts	8.31 volts	8.31 volts
	expected voltage gain:	3.00	3.50	1.167
	actual voltage gain:	1.673	3.392	2.027

2300 Turns	(0.75" core 24 gauge wire)	400 to 1200 RPM	400 to 1400 RPM	1200 to 1400 RPM
CM:	expected voltage:	0.69 volts	0.805 volts	0.922 volts
	actual voltage:	0.79 volts	0.79 volts	0.79 volts
	expected voltage gain:	3.00	3.50	1.167
	actual voltage gain:	3.435	3.435	1.00
SI:	expected voltage:	1.11 volts	1.295 volts	1.688 volts
	actual voltage:	1.43 volts	2.10 volts	2.10 volts
	expected voltage gain:	3.00	3.50	1.167
	actual voltage gain:	3.865	5.676	1.469

6000 Turns	(0.5" core 28 gauge wire)	400 to 1200 RPM	400 to 1400 RPM	1200 to 1400 RPM
CM:	expected voltage:	1.47 volts	1.715 volts	1.459 volts
	actual voltage:	1.25 volts	2.08 volts	2.08 volts
	expected voltage gain:	3.00	3.50	1.167
	actual voltage gain:	2.551	4.245	1.664
SI:	expected voltage:	16.44 volts	19.18 volts	17.668 volts
	actual voltage:	15.04 volts	18.76 volts	18.76 volts
	expected voltage gain:	3.00	3.50	1.167
	actual voltage gain:	2,745	3.423	11.247

6000 Turns	(0.75" core 28 gauge wire)	400 to 1200 RPM	400 to 1400 RPM	1200 to 1400 RPM
CM:	expected voltage:	1.92 volts	2.24 volts	2.427 volts
	actual voltage:	2.08 volts	2.28 volts	2.28 volts
	expected voltage gain:	3.00	3.50	1.167
	actual voltage gain:	3.25	3.563	2.427
SI:	expected voltage:	23.91 volts	27.895 volts	23.80 volts
	actual voltage:	20.40 volts	28.40 volts	28.40 volts
	expected voltage gain:	3.00	3.50	1.167
	actual voltage gain:	2.56	3.563	1.392

CLAIMS

1. A generator for providing alternating electrical current comprising:

(a) an independently supported rotating drive shaft;

(b) a plurality of spaced apart magnets extending outwardly from the shaft, the magnets each creating magnetic flux and having a polar end with a particular north or south polarity, said magnets being circumferentially spaced and mounted around the shaft, such that the polar ends of the magnets extend away from and circumferentially around the shaft;

(c) a plurality of stationary coil elements, each said coil element comprising electrical windings wound about substantially the entire coil element, each of said coil elements further comprising a solid metal core with two ends extending substantially through the coil element at the centre of the coil element, each element being positioned such that one end of each of the cores is located in spaced, adjacent relation to the magnets, whereby rotation of the shaft causes rotation of the magnets around the shaft and in spaced, adjacent relation to the cores of the coil elements, the magnetic flux of the magnetics cutting the cores of the coil elements, creating alternating current in the coil elements; and

(d) a first housing in which some of the plurality of coil elements are mounted and a second housing in which the remainder of the plurality of coil elements are mounted.

2. The generator as in claim 1 wherein the magnets are spaced 90° apart around the shaft.

3. The generator as in claim 1 wherein magnets with north polar ends alternate with the magnets with south polar ends in spaced, circumferential relation around the shaft.

4. The generator as in claim 1 wherein all the plurality of magnets are magnets with the same polar ends.

5. The generator as in claim 1 wherein the magnets are equidistantly spaced around the shaft.

6. The generator as in claim 1 wherein the plurality of magnets is rotated by the drive shaft between and in spaced apart relation with the housings.

7. The generator as in claim 1 further comprising four magnets extending from the shaft, adjacent magnets being positioned perpendicular to each other, each magnet having either an outwardly extending north or south polar end, and said magnets being positioned such that a north polar end magnet follows a south polar end magnet, in spaced, circumferential relation around the shaft.

8. The generator as in claim 1 further comprising multiple north polar end magnets and multiple south polar end magnets extending from the shaft, said magnets being positioned in spaced, circumferentially relation around the shaft.

9. The generator as in claim 1 in which the shaft is positioned within a rotor and the magnets are circumferentially mounted on the rotor.

10. The generator as in claim 1 in which the shaft is connected to power means for rotating the shaft, whereby upon rotation of the shaft, the magnets are rotated around the shaft in spaced relation to the cores of the coil elements, thereby inducing an alternating electrical field along the length of each of the cores, thereby producing an alternating electric current in the windings of the coil elements.

11. The generator as in claim 10 further comprising means to transmit the alternating electrical current for electrical power usage.