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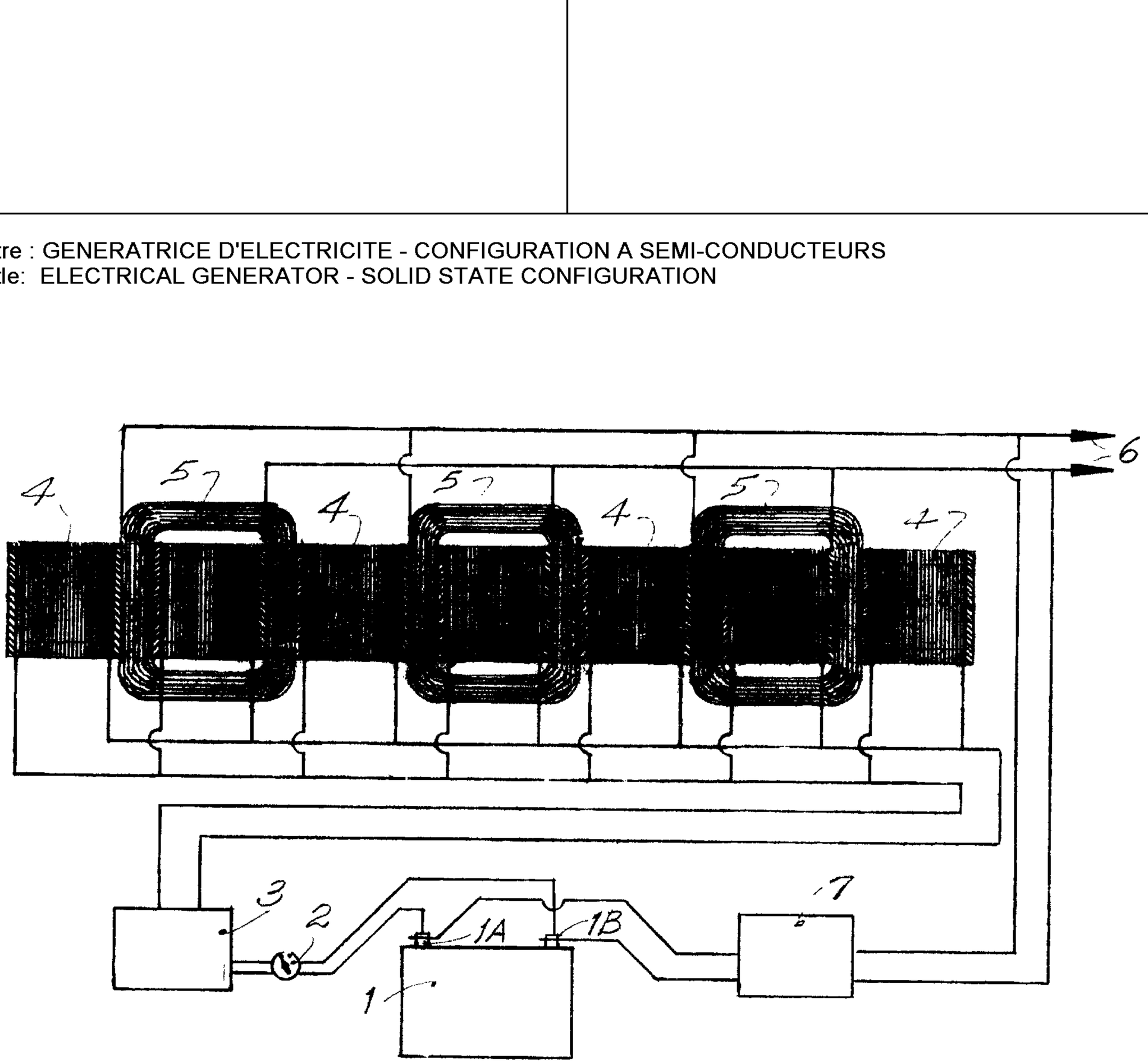
(54) Titre : GENERATRICE D'ELECTRICITE - CONFIGURATION A SEMI-CONDUCTEURS
(54) Title: ELECTRICAL GENERATOR - SOLID STATE CONFIGURATION



ELECTRICAL GENERATOR
SOLID STATE CONFIGURATION

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A Canadian Citizen

This invention relates to a more simple means of creating an electrical generator, where, through the use of a cycling or cycle controller device, and a stationary system and configuration of coils and electromagnets, it is unnecessary to use any mechanical means to drive or operate the generator. The system of coils and electromagnets in this generator is necessarily different from previous state of the art. Electromagnets are placed perpendicular to, and on opposite and opposing sides of coils for the usual perpendicular application of magnetic energy. Such application of magnetic energy in this case, however, is simply and directly perpendicular, with no passing or crossover motion, and the said magnetic energy is provided by means of applied impulse, rather than mechanical motion. This inventive idea would have been somewhat more difficult to apply prior to the more recent development of solid state electronic ignition systems as used in automobiles, and adjustable or variable electrical impulse timing systems, presently referred to as cycle controllers, used to vary the speed of electric motors.

This electrical generator invention has only one means of creating hysteresis, and that is through the alternating polarity of its electromagnets in the process of generating AC electrical current. There is no mechanical motion to create further drag which would have to be overcome through mechanical means, as with present state of the art electrical generators.

The only energy input costs or losses to be experienced in this electrical generator will be, firstly, the amount of DC current from its battery as required to energize its electromagnets, and secondly, hysteresis through the action of changing the polarity of its electromagnets, and thirdly, the energy costs of powering its cycle controller, and battery charger. Those losses in each case, will be converted to heat, and the net output of this solid state electrical generator will be its gross output less the above described input energy and costs of powering its accessory components.

The cycling device or cycle controller, as well as the battery charger within present state of the art, are now well developed, quite efficient, and both have been in common use for a period of time.

Although each of those items, or key elements of their technology would become essential accessory components of this invention, their inclusion is described, but their details are left out as not essential to the detailed description of this invention, or the drawing provided herewith.

BACKGROUND OF THE INVENTION

An electromagnet with a mild steel core of adequate mass, wound with a large number of turns of magnet wire, is capable of producing a large amount of magnetic energy with the application of a comparatively small amount of DC electrical current. This is true to the point that such an electromagnet can be somewhat stronger than most comparable high strength rare earth types of permanent magnets. The main point is that very little electrical current is required to produce high intensity magnetic fields, as such are applied in a rather different configuration in a present state of the art electrical generator of the usual cylindrical shape or configuration. Those types of generators for their levels of output of electrical energy, do rely on the intensity of their electromagnets to provide sufficient output. The only difference of any real consequence between this invention, and those other generators, is that their electromagnets or field coils are rotated to provide the alternating application of magnetism to their field coils. Such rotation is paying the price in terms of applied energy at the driving end.

The inventor had recently achieved some familiarity with electrical theory and practices, and a basic knowledge of present state of the art solid state automobile ignition systems and AC cycle controllers. It was becoming apparent, through applied experiments, that a coil and magnet positional configuration change, plus the application of a DC power source and impulse cycle controller could allow the creation of a solid state electrical generator. Although this new electrical generator configuration would obviously work, its output would be somewhat similar, but slightly smaller than that of a present state of the art electrical generator with the same amount of coil windings, and a similar amount of applied magnetic energy. The main, but greatly significant advantage would be the elimination of mechanical energy toward its operation, and that seemed important enough to encourage development of the present invention.

OBJECTS OF THE INVENTION

The elimination of a mechanical drive requirement for an electrical generator could also eliminate the need for the use of internal combustion engines to generate required electrical energy. Reduction in their usage, and eventual elimination of hydrocarbon fuels has long been one of the inventor's goals, toward a cleaner environment. Such will take a number of years to achieve, but this invention could be a good beginning toward that end result.

Lower cost means of electrical power generation has also been a particular object of this invention.

More common use and possession of lower cost means of electrical power generation could lead to much progress for less developed countries of the world, and that is a further worthy object of this invention.

SIMPLE DESCRIPTION OF THE INVENTION

This invention in its presently preferred embodiment consists of seven electromagnets and three output coils in its power generation and output section. The three output coils in the present embodiment are of a substantially square configuration, with equal length sides, and rounded corners. All seven electromagnets are each of the same configuration and size. Their length is determined by the width of the open area between the inside facings of each coil, and their width is equal to, or slightly greater than the perpendicular facing width of each coil. Each of the electromagnets is wound with a large number of turns of copper magnet wire, to provide a large amount of magnet strength, based on a comparatively small amperage of DC current. The electromagnets are rectangular in cross section, as are their cores and end plates. Their cores and end plates are of mild steel, and the end facing dimensions of the end plates are larger than that of their cores by the thickness of magnet wire windings thereon. It is also contemplated by the inventor that U - shaped end plates which would extend almost half way across the side cross section of each coil, might provide tighter concentration and more intensity of magnetic field penetration into the coils. It is further contemplated that the open end of the electromagnet at either end of the electromagnet and coil assembly section of the generator might be connected to each other by means of a continuous and properly shaped or bent bar of mild steel, to achieve what would be termed as magnetic close-coupling.

The generator in its most common size range would normally be powered by a standard automobile type of 12 volt storage battery, and the required amount of energy from the battery passes through a cycle controller, which pulses that amount of current at 50 or 60 cycles per second, based on North American or European standards. There is an on - off control switch between the battery and the cycle controller, so the generator can be turned on and off as desired. There is a 12 volt battery charger with its output terminals connected to the battery, and its 120 volt AC input would be connected to the AC power output of the generator.

The generator would be set up as adequate in net output to provide alternating current of 120 volts at 50 or 60 cycles per second, and sufficient amperage to serve as a base power supply for a regular household, in the area or country where it may be used.

The generator can also be operated in the DC output mode, by providing the same DC pulses as one would apply to generate AC current, except that the matter of polarity change is left out of the sequence. In its DC mode in particular, this electrical generator invention lends itself easily to effective miniaturization.

In certain of its applications, and more particularly in miniaturized form, this electrical generator invention would require a Faraday Cage arrangement

around its main body, or built into its encasement or enclosure. This would tend to eliminate its potential emissions of electromagnetic waves or impulses, which might interfere with computers and communications equipment, etc..

POTENTIAL USES AND ADVANTAGES OF THE INVENTION

Miniaturized versions of this invention could readily be used as reliable power sources for computers, radio and telecommunications. With its energizing battery source connected through a timing or alternate switching device, it might serve as an ideal power source for many applications, including night lights, security and alarm systems, traffic lights, and many other possibilities. Further, in any areas where there is any regular possibility of power outages, a small version of the generator could be a practical means for avoiding the “crashing” of a computer.

Larger versions of this invention could be used to eliminate generating systems based on coal, natural gas and other hydrocarbon fuelled means of generating electrical energy.

With all of the foregoing in view, and such other or further purposes, advantages or novel features as may become apparent from consideration of this disclosure and specification, the present invention consists of the inventive concept which is comprised, embodied, embraced or included in various specific embodiments of such concept, reference being made to the accompanying drawing, labeled or titled as Figure 1.

DETAILED DESCRIPTION OF THE INVENTION

Proceeding therefore to describe the invention in detail, a simple and basic first preferred embodiment of the electrical generator as shown in Figure 1, consists of electrical energy storage battery 1, from which DC electrical current of adequate intensity is transmitted by means of connecting wires to and through on - off switch 2, to energize and operate cycle controller 3, and the said electrical current is pulsed by means of cycle controller 3, and continues on by means of electrical wires to simultaneously energize electromagnets 4, which through their magnetic energy pulses, energize output coils 5, which produce electrical current, far in excess of that provided by battery 1, and the said electrical current from output coils 5, proceeds by means of electrical wires to exit the generator and proceed to distribute output current, as those electrical wires continue on from the exit point as shown by arrows 6. Electrical wires leading to battery charger 7, are connected just prior to arrows 6, so that battery 1, can be maintained at an adequate level of output potential.

Based on the foregoing detailed description, together with further related comments and explanations, the objects set forth hereinbefore have been successfully achieved.

Also, while there is shown and described, a presently preferred embodiment of the invention, it is understood that the invention is not limited thereto, but may be otherwise variously embodied and applied within the scope of the following claims. Accordingly,

CLAIMS

What is claimed is:

1. An electrical generator which has no moving parts.

2. An electrical generator with no moving parts which has no apparent size or output limitations.

3. An electrical generator which operates with all of its essential components, including electromagnets and coils, in stationary position.

4. A solid state electrical generator.

5. A solid state electrical generator which can provide its energy or electrical current output as either alternating current, or direct current.

6. An electrical generator which requires no mechanical motive power for its operation or output.

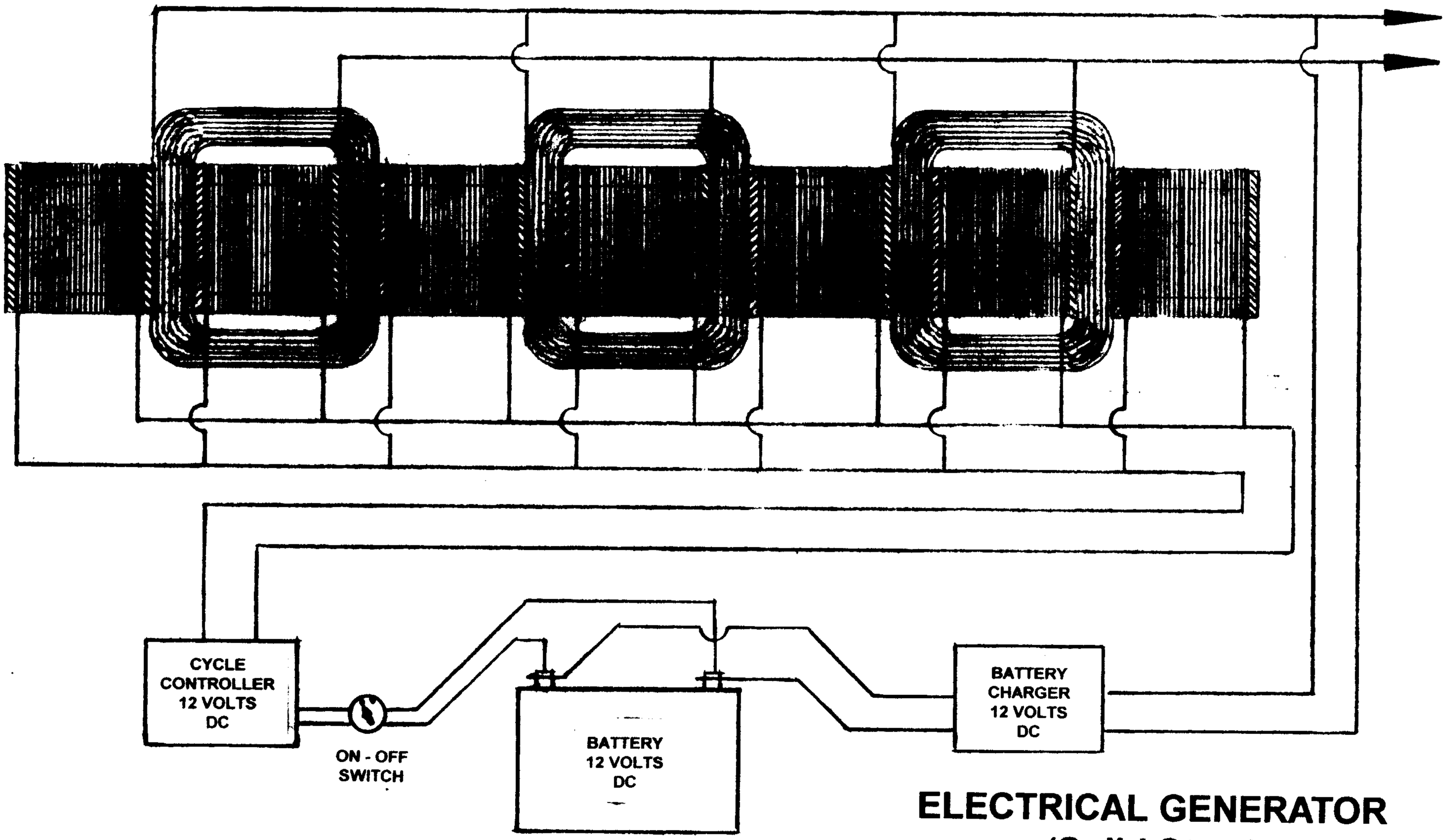
7. An electrical generator which can be built in a more compact form, for the amount of its potential output than would be the case with mechanically powered and operated electrical generators.

8. An electrical generator which can be miniaturized to very small proportions, to where it may be used as a small portable or emergency energy source, in either AC or DC, to power electronic, radio or telecommunications installations, etc.

9. An electrical generator which, when energized by an available DC power source, can operate for the long term, to the extent of the lifespan of one or more of its essential components.

ELECTROMAGNETS & COILS

AC W/ALTERNATING MAGNETIC FIELDS
DC WITH FIXED MAGNETIC FIELDS

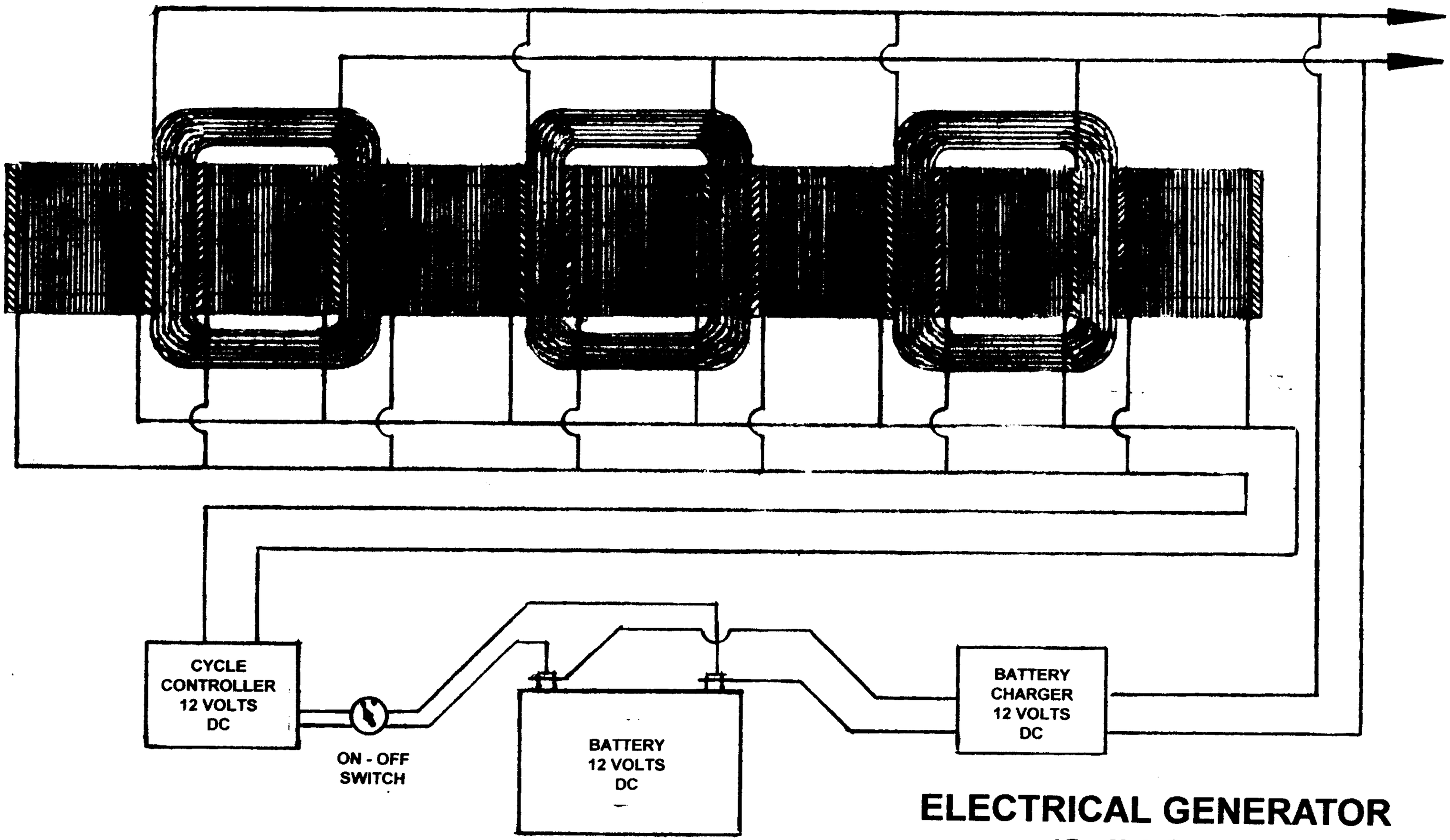


ELECTRICAL GENERATOR
(Solid State)

Invented by: Bud T. J. Johnson
Calgary, Alberta, CANADA
September 3rd., 2001

ELECTROMAGNETS & COILS

AC W/ALTERNATING MAGNETIC FIELDS
DC WITH FIXED MAGNETIC FIELDS



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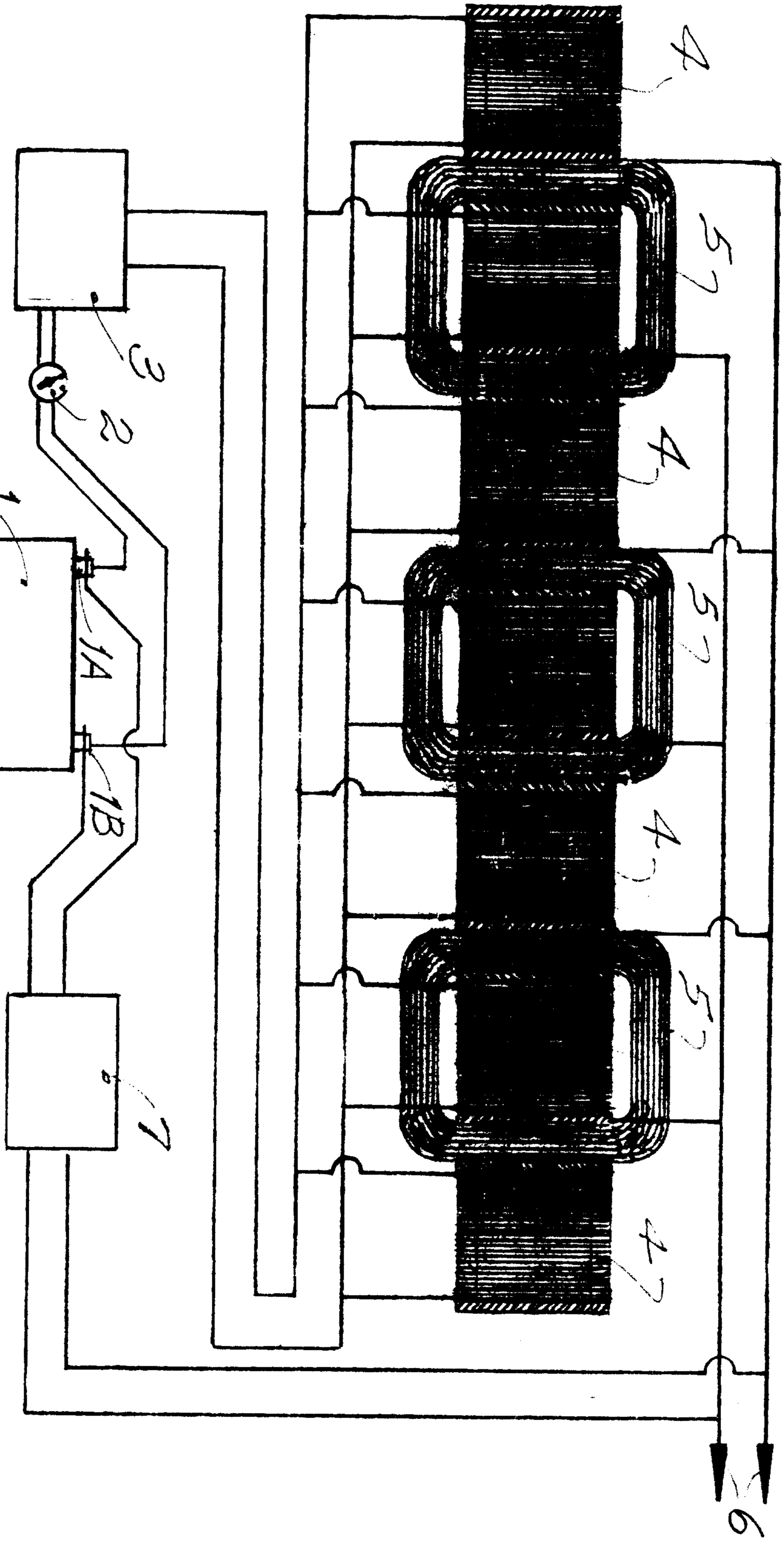
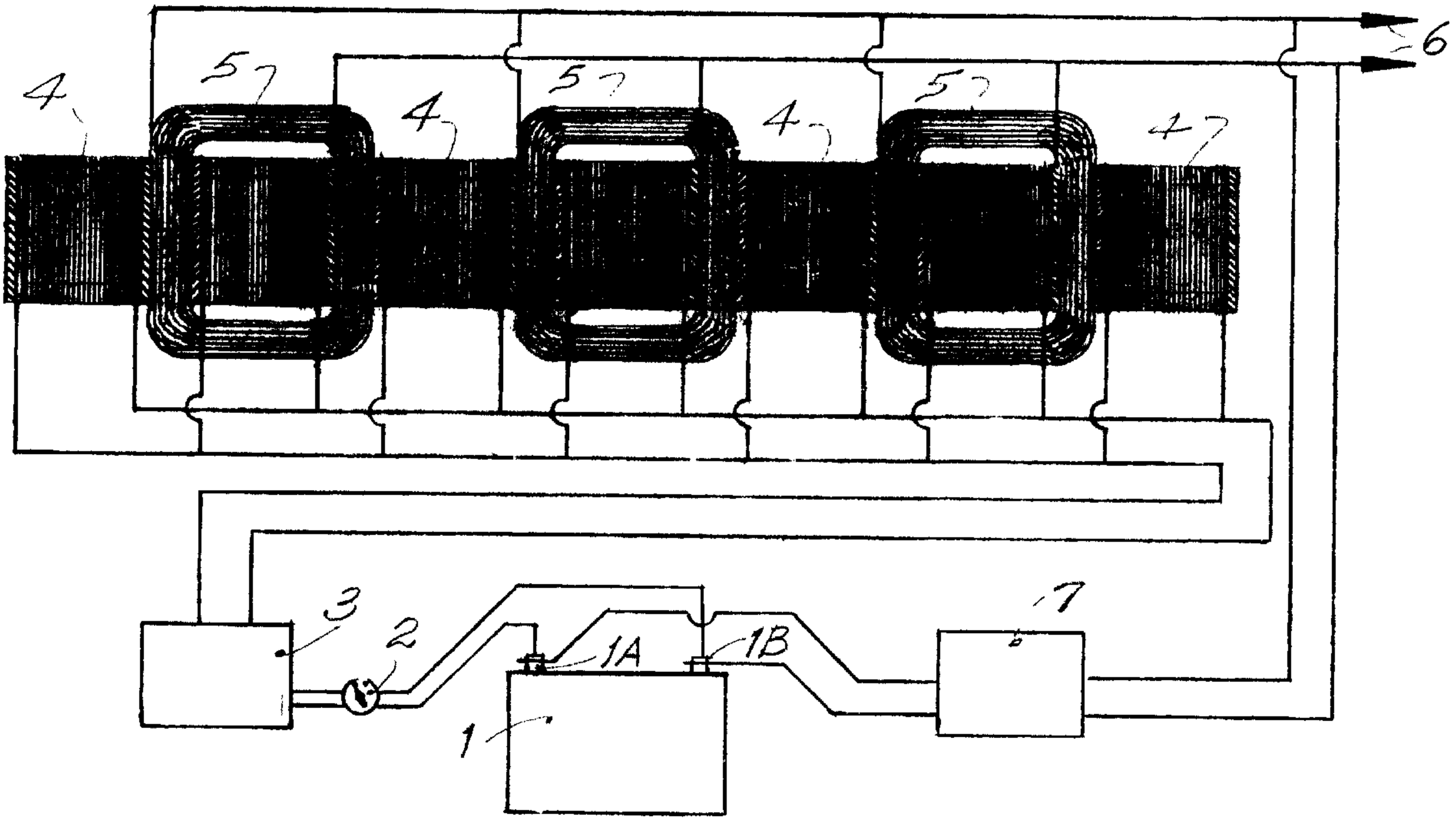


Figure 1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