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(54) **SELF-SUFFICIENT GENERATOR FOR PRODUCING ELECTRICAL POWER**

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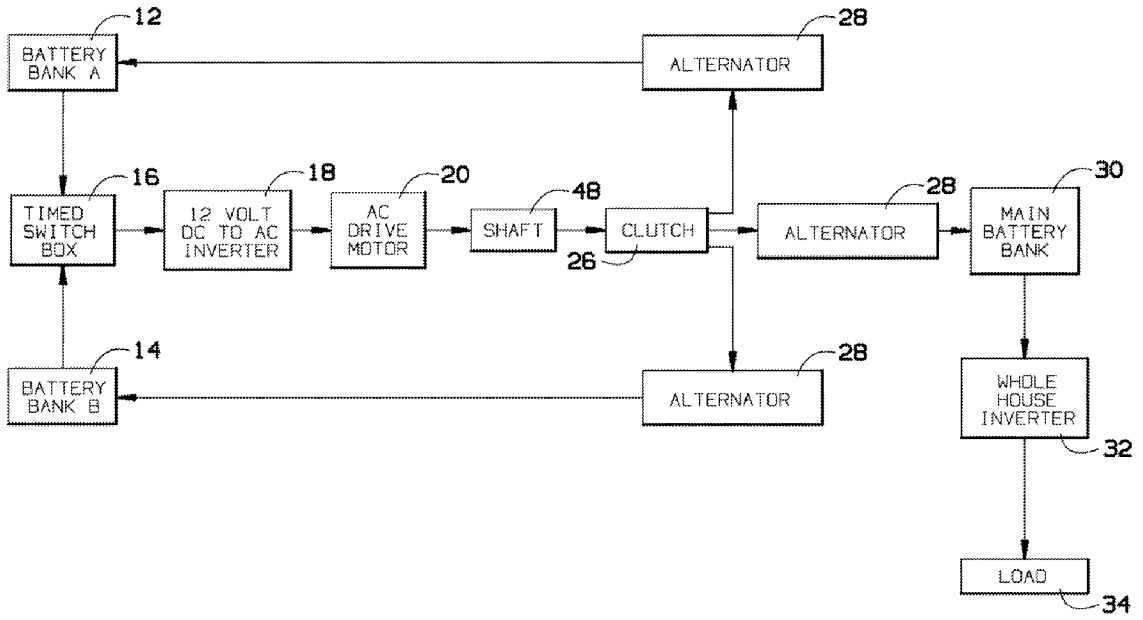
(57) **ABSTRACT**

A self-sufficient generator system includes one or more battery banks recharged by alternators driven by a motor. A main battery bank provides power to a load while other battery banks power the motor.



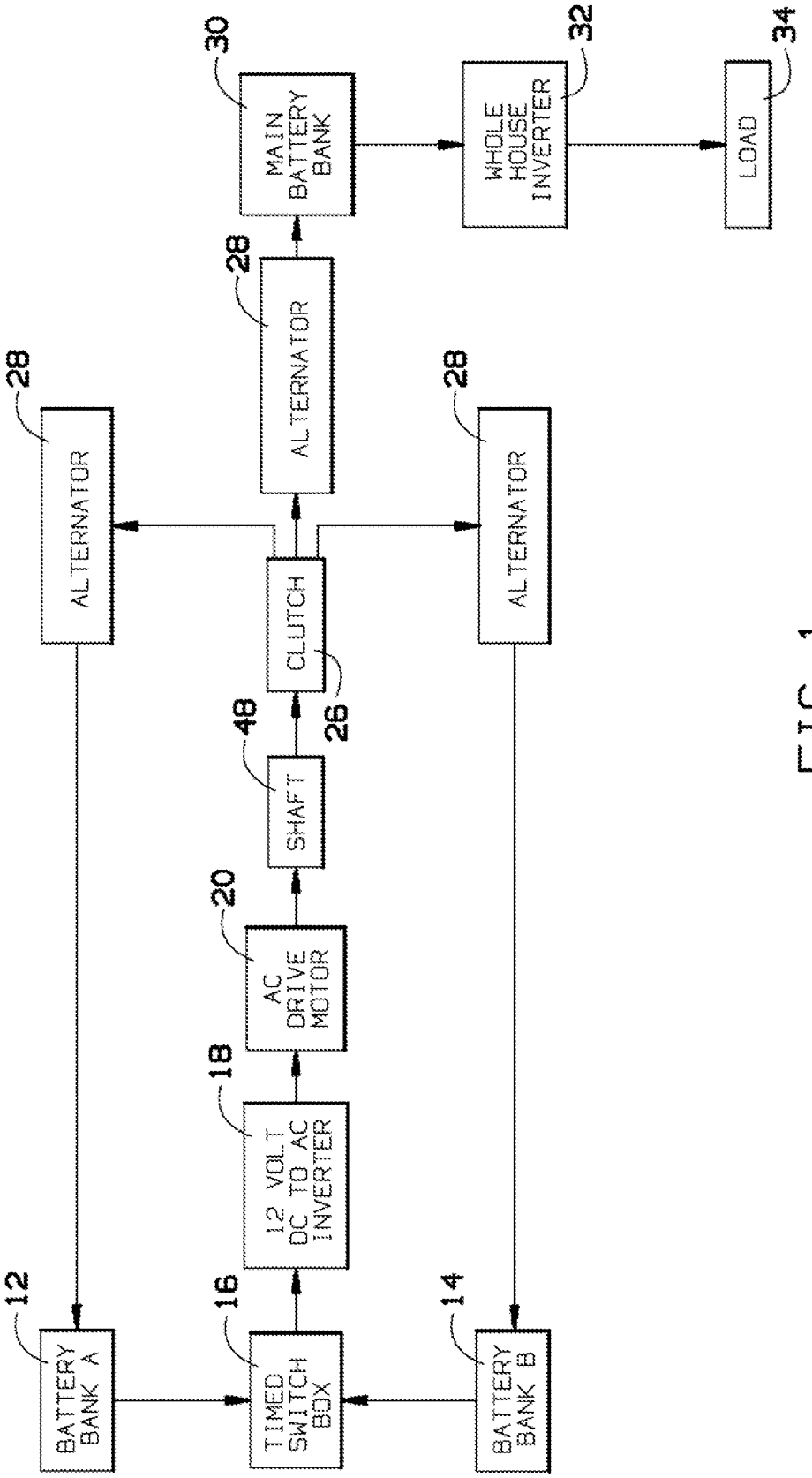

30
MAIN BATTERY BANK
32
WHOLE HOUSE INVERTER
34
LOAD
28
ALTERNATOR
28
ALTERNATOR
28
ALTERNATOR
CLUTCH
26
48
SHAFT
20
AC DRIVE MOTOR
18
12 VOLT DC TO AC INVERTER
12
BATTERY BANK A
16
TIMED SWITCH BOX
14
BATTERY BANK B

FIG. 1

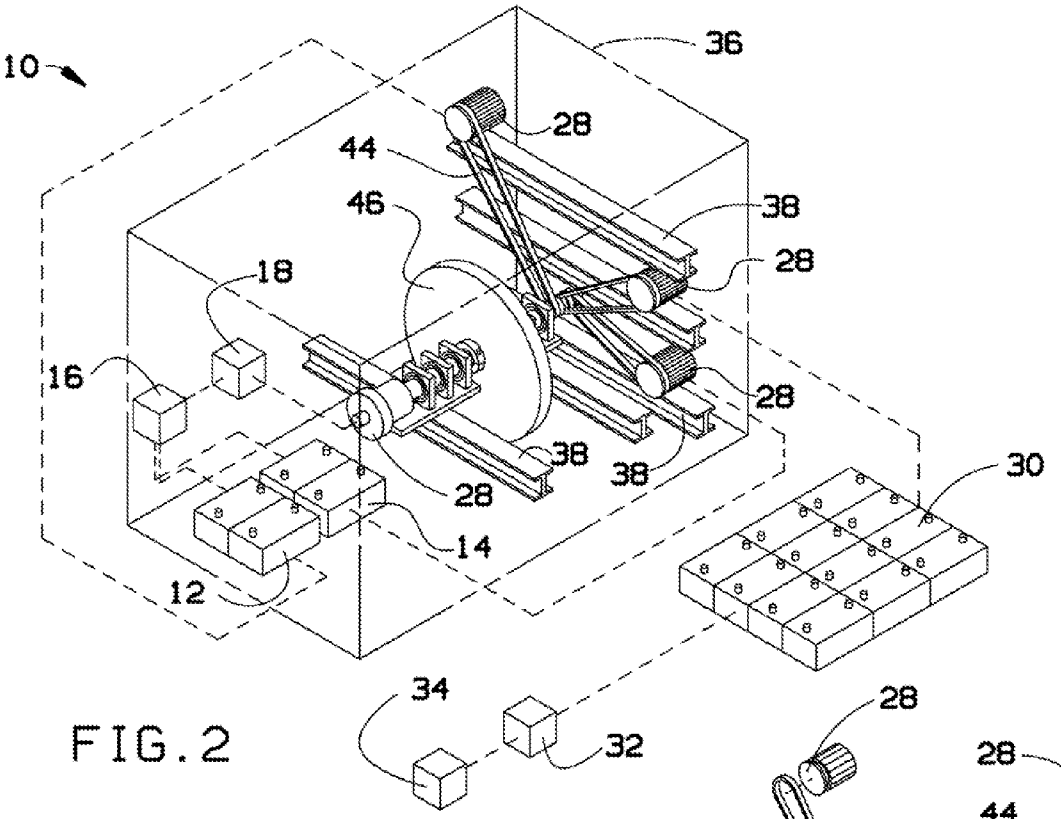

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FIG. 2

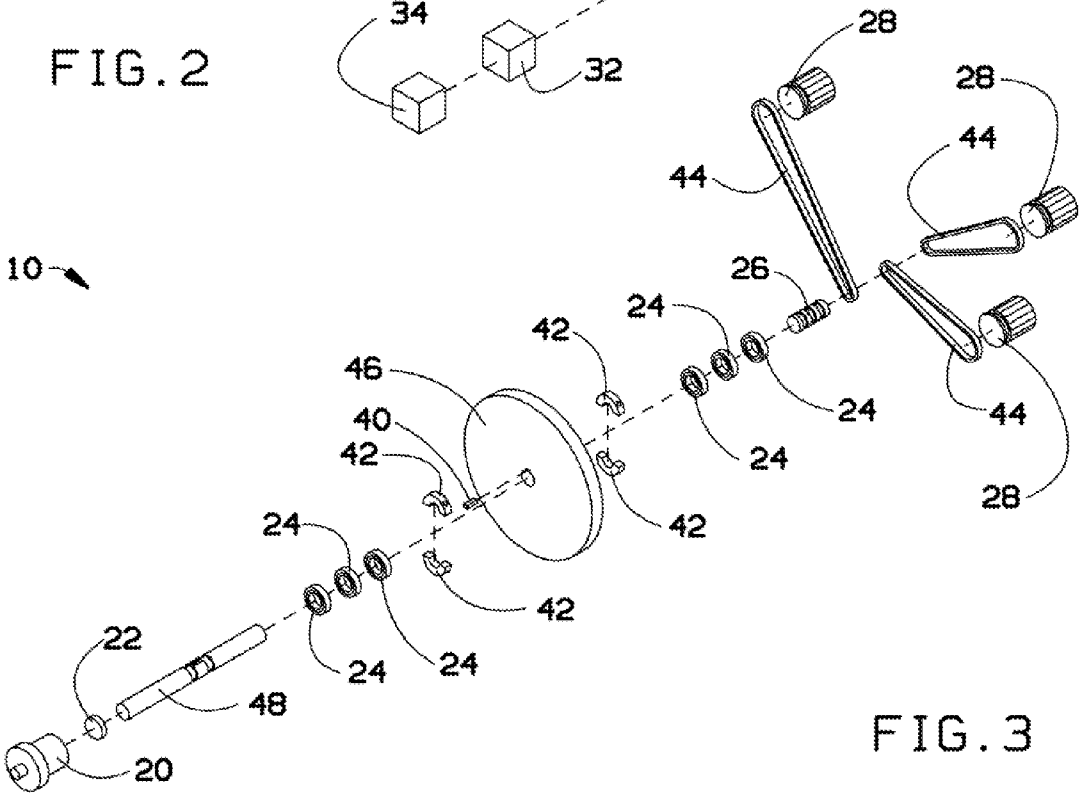
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FIG. 3

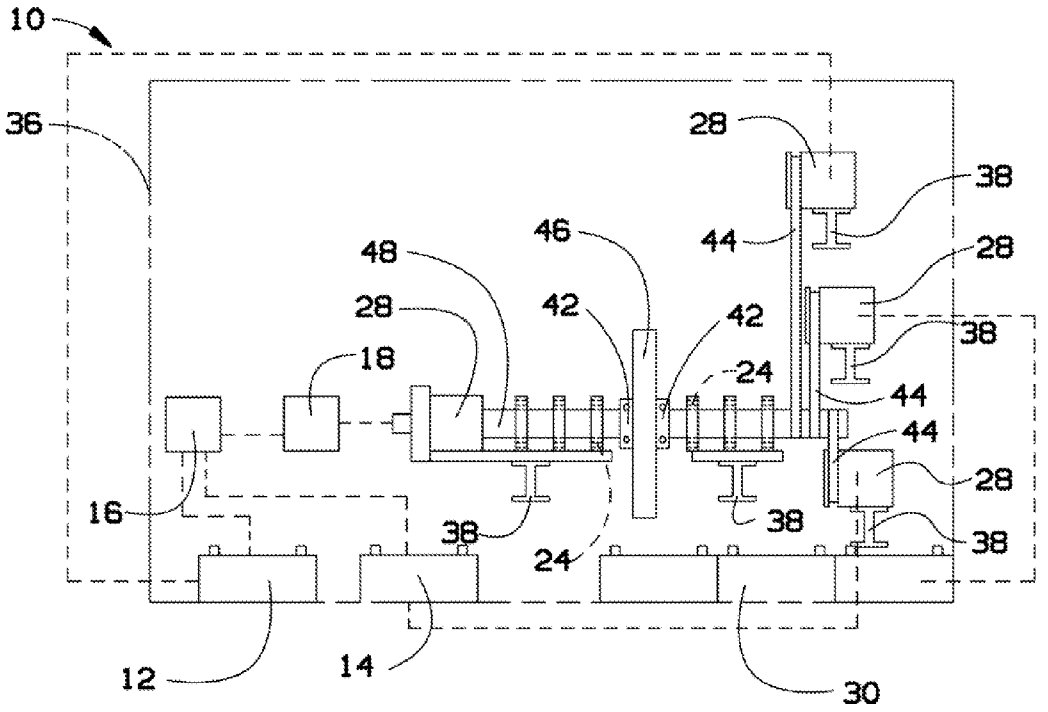
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FIG. 4

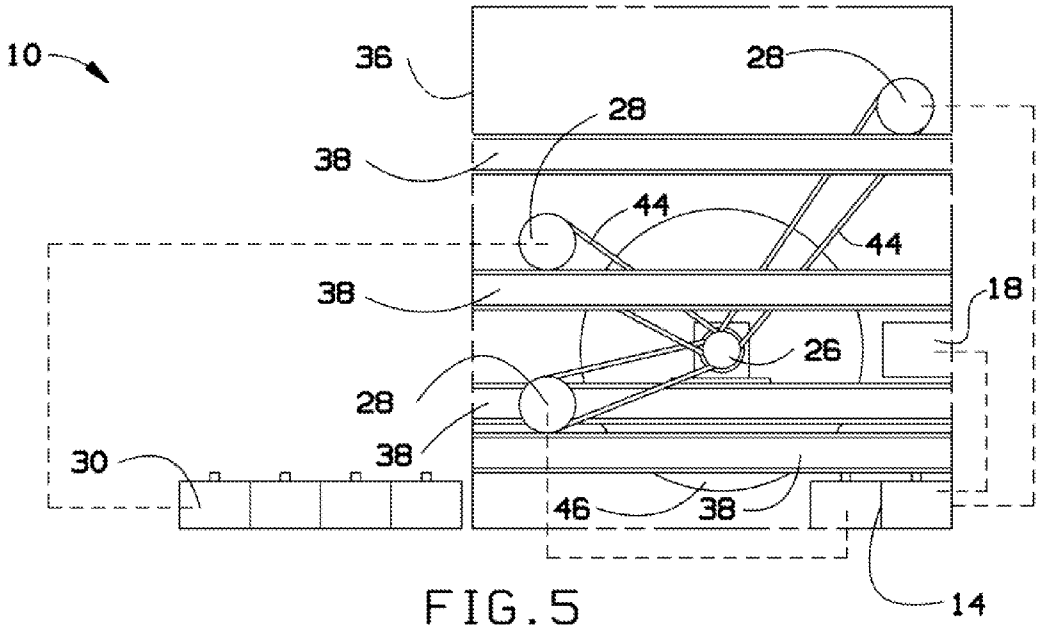
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FIG. 5

SELF-SUFFICIENT GENERATOR FOR PRODUCING ELECTRICAL POWER

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims benefit under 35 U.S.C. §119(e) of U.S. Provisional Application No. 61/484,302 filed May 10, 2011, which is hereby incorporated by reference herein in its entirety.

BACKGROUND OF THE INVENTION

[0002] The present invention generally relates to power generator systems, and more particularly, to a self-sufficient generator for producing electrical power.

[0003] As fuel consumption demands continue to increase, the need for systems that can produce energy more efficiently becomes ever more significant. Typical power generators convert one fuel source into electrical power and thus rely on resupplying the fuel source periodically to continue to produce electricity.

[0004] As can be seen, there is a need for a generator that can produce power more efficiently and with minimal resupplying of a fuel source or an external power source.

SUMMARY OF THE INVENTION

[0005] In one aspect of the present invention, a self-sufficient generator system comprises a first bank of batteries; a second bank of batteries; a motor in electrical communication with the first and second bank of batteries; a first alternator connected between the first bank of batteries and the motor; a second alternator connected between the second bank of batteries and the motor; a third alternator disposed to be driven by the motor; and a main bank of batteries connected between the third alternator and a load.

[0006] In another aspect of the present invention, a self-sufficient generator system comprises a motor; a first battery bank supplying power to the motor; a clutch assembly coupled to the motor; a first alternator connected to and turned by the clutch assembly, wherein the first battery bank is recharged by the first alternator; a main battery bank configured to provide power to a load; and a second alternator connected to and turned by the clutch assembly, wherein the main battery bank is charged by the second alternator.

[0007] These and other features, aspects and advantages of the present invention will become better understood with reference to the following drawings, description and claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] FIG. **1** illustrates a block diagram of a self-sufficient generator for producing electrical power according to an exemplary embodiment of the present invention;

[0009] FIG. **2** illustrates a perspective front view of the self-sufficient generator system for producing electrical power of FIG. **1**;

[0010] FIG. **3** illustrates an exploded view of the self-sufficient generator system of FIG. **2**;

[0011] FIG. **4** illustrates a back side view of the self-sufficient generator system of FIG. **2**; and

[0012] FIG. **5** illustrates an end view of the self-sufficient generator system of FIG. **2**.

DETAILED DESCRIPTION OF THE INVENTION

[0013] The following detailed description is of the best currently contemplated modes of carrying out exemplary embodiments of the invention. The description is not to be taken in a limiting sense, but is made merely for the purpose of illustrating the general principles of the invention, since the scope of the invention is best defined by the appended claims.

[0014] Broadly, an embodiment of the present invention generally provides a self-sufficient generator for producing electrical power independent of an external power supply or a fuel-run generating system.

[0015] Referring to FIG. **1**, a self-sufficient generator system **10** for producing electrical power is shown according to an exemplary embodiment of the present invention. The self-sufficient generator system **10** may sometimes be referred to as the generator system **10**. The self-sufficient generator system **10** may include a first drive battery bank **12**, a second drive battery bank **14** connected to the first battery bank **12**, and a timed switchbox **16** connected on one side of the first battery bank **12** and on the other side to the second battery bank **14**. The timed switchbox **16** may control which of the battery banks (**12** or **14**) may be used to provide power to a motor **20** in electrical communication with the battery banks (**12** and **14**). An inverter **18** may be operatively connected to the timed switchbox **16**. The motor **20** may connected to the inverter **18**. A shaft **48** and a clutch **26** may be coupled to the motor **20**. In an exemplary embodiment, at least one alternator **28** may be operatively connected to the motor **20** and a plurality of batteries. For example, a first alternator **28** may be coupled between the clutch **26** and a main bank of batteries **30** so that the third alternator **28** is driven by the motor **20**. Another alternator **28** may be connected between the clutch **26** and the first bank of batteries **12**. A third alternator **28** may be connected between the clutch **26** and the second bank of batteries **14**. A house inverter **32** may be connected to the main bank of batteries **30** and a load **34**.

[0016] The first bank of batteries **12** and the second bank of batteries **14** may include any commercially available batteries. The amperage and size of the first bank of batteries **12** and the second bank of batteries **14** may depend on the amount of energy required to operate the motor **20**. In some embodiments, the first bank of batteries **12** and the second bank of batteries **14** may be standard **12** volt deep cycle batteries. The first bank of batteries **12** and the second bank of batteries **14** may be connected in parallel. The first bank of batteries **12** and the second bank of batteries **14** may work independently from each other. The first bank of batteries **12** and the second bank of batteries **14** may provide the motor **20** with a constant supply of energy. In an exemplary embodiment, the first bank of batteries **12** and the second bank of batteries **14** may be constantly charged where one battery bank gets charged while the other provides the power to the motor **20**. Thus, while though both battery banks (**12**, **14**) may be charged continuously by independent alternators, one bank may be free from load which would assist in limiting the cycling of the batteries in the banks (**12**,**14**), thereby extending the life of those batteries.

[0017] In some embodiments, the generator **10** may only include one bank of batteries (**12** or **14**). In this embodiment, the battery bank (**12** or **14**) may provide all of the amperage required by the motor **20**. Embodiments including only one

drive bank (either **12** or **14**), can be employed when enough inverted electricity can be supplied by the drive battery bank (**12** or **14**) to maintain the energy requirements of the motor **20**. The lone battery bank (**12** or **14**) may be inverted producing the AC power for the motor **20** and all subsequent loading while it is able to maintain a positive charge in the battery bank (**12** or **14**).

[0018] The inverter **18** may receive the power generated by the first bank of batteries **12** and the second bank of batteries **14** and supply the power to the motor **20**. The inverter **18** may be a DC to AC electrical inverter.

[0019] Referring now to FIGS. **2-5**, the self-sufficient generator system **10** for producing electrical power is shown according to an exemplary embodiment of the present invention. The motor **20** may be connected to a shaft **48** by means of a coupling **22**. The shaft **48** may be supported by bearings **24** which may be capable of supporting the weight and movement of the shaft **48** and its load. The shaft **48** may turn a flywheel **46**. The size and weight of the flywheel **46** may depend on the size of the motor **20**. In some embodiments, the flywheel **46** may have a diameter of approximately 40 inches. In some embodiments, the flywheel **46** may weigh at least 500 lbs. The shaft **48** may be attached to the flywheel **46** by means of one or more fixed collars **42** positioned on either side of the flywheel **46**. The collars **42** may be attached directly to the shaft **48** or to a keyway **40** machined into both the shaft **48** and the flywheel **46**. In order to balance the flywheel **46**, a second fixed collar **42** supported by bearings **24** may be placed on the other side of the flywheel **46**. The opposite side of the shaft **48** may be connected to a clutch assembly **26**, which, by means of at least one drive belt **44**, turn one or more of the alternators **28**.

[0020] An angular momentum of the flywheel **46** may turn the alternators **28** to keep the main bank of batteries **30** charged in order for the generator **10** to operate. The mass of the flywheel **46** multiplied by the speed at which it is turning provides the net force required to turn the alternators **28**. The number of alternators **28** may depend on the amount of power required by the user. The alternators **28** may be supported in the generator system **10** by a frame **38**. As described above, one of the alternators **28** may be connected to the first bank of batteries **12**. Another of the alternators **28** may be connected to the second bank of batteries **14**. Another of the alternators **28** may be connected to the main battery bank **30**. thus, each alternator **28** may be continually charging the bank of batteries (**12**, **14**, or **30**) to which they are connected. While only one alternator **28** is connected directly to the main bank of batteries **30**, it will be understood that a plurality of alternators **28** may be connected to charge the main bank **30** with enough power as needed.

[0021] The use of alternators **28** to charge the main battery bank **30** allows the power load **34** to be drawn from the main battery bank **30** itself and not directly from the alternators **28**. On the generator system **10**, unlike a system that uses standard generators, there is no draw down of the charging units, allowing a smooth, continuous, and uninterrupted charging to take place.

[0022] The main battery bank **30** may be the source of where the user may get the required power for load **34** from a house inverter **32**. The house inverter **32** may be a DC to AC inverter.

[0023] The generator system **10** may be encased in a case **36**. The case **36** may be made of steel, rubber, wood, or plastic. The size of the generator system **10** may depend on the amount of power required by the user.

[0024] In an exemplary application, the generator system **10** may be connected to an existing electrical panel by a licensed electrician. The generator system **10** may be used to recharge electric vehicles or to produce hydrogen to create a fuel source for clean transportation reducing the need for gasoline. In one aspect, the generator system **10** may create its own energy to run by recharging the battery banks **12**,**14** during times of decreased load, in addition to excess energy, which may then be used by the consumer for other load needs.

[0025] It should be understood, of course, that the foregoing relates to exemplary embodiments of the invention and that modifications may be made without departing from the spirit and scope of the invention as set forth in the following claims.

What is claimed is:

1. A self-sufficient generator system, comprising:
- a first bank of batteries;
- a second bank of batteries;
- a motor in electrical communication with the first and second bank of batteries;
- a first alternator connected between the first bank of batteries and the motor;
- a second alternator connected between the second bank of batteries and the motor;
- a third alternator disposed to be driven by the motor; and
- a main bank of batteries connected between the third alternator and a load.

2. The self-sufficient generator system of claim **1**, wherein the load draws power from the main bank of batteries.

3. The self-sufficient generator system of claim **1** further comprising a timed switchbox between the first and second banks of batteries configured to control power to the motor.

4. The self-sufficient generator system of claim **3** further comprising an inverter operatively connected to the timed switchbox.

5. The self-sufficient generator system of claim **1** further comprising a clutch assembly connected to each of the first, second, and third alternators.

6. A self-sufficient generator system, comprising:
- a motor;
- a first battery bank supplying power to the motor;
- a clutch assembly coupled to the motor;
- a first alternator connected to and turned by the clutch assembly, wherein the first battery bank is recharged by the first alternator;
- a main battery bank configured to provide power to a load; and
- a second alternator connected to and turned by the clutch assembly, wherein the main battery bank is charged by the second alternator.

7. The self-sufficient generator system of claim **6** wherein the load draws power from the main battery bank and not the first battery bank.

8. The self-sufficient generator system of claim **6** further comprising an inverter operatively connected between the main battery bank and the load.

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