

F. I. & B. P. REMY.
 COMBINED MAGNETO ELECTRIC GENERATOR AND ENGINE.
 APPLICATION FILED MAR. 22, 1909.

949,634.

Patented Feb. 15, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

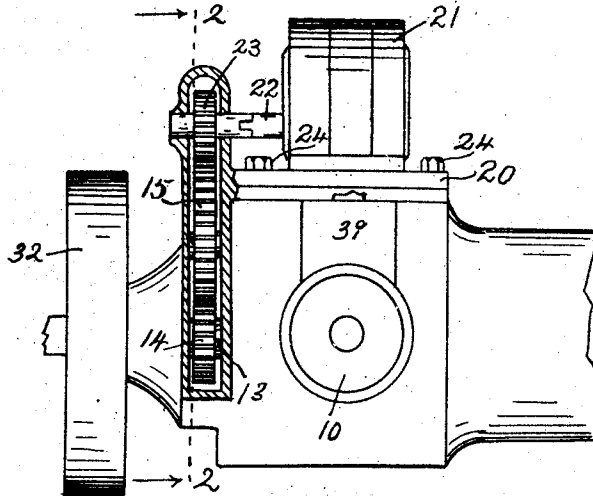
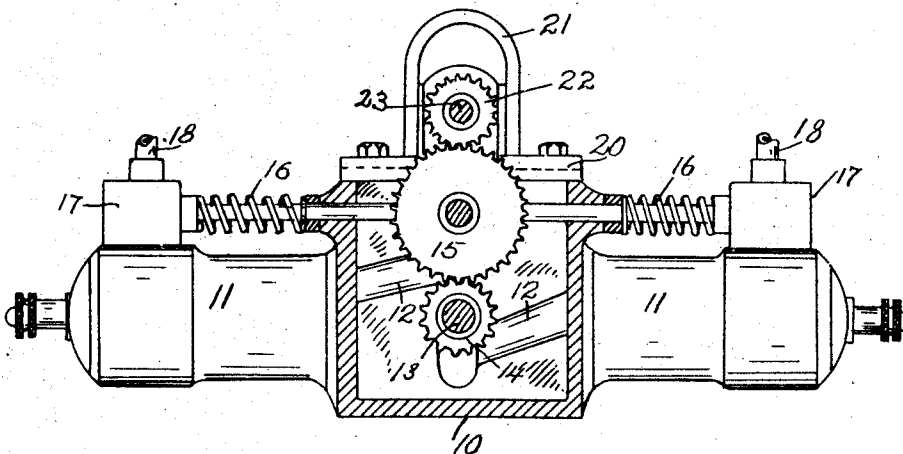


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. -3-

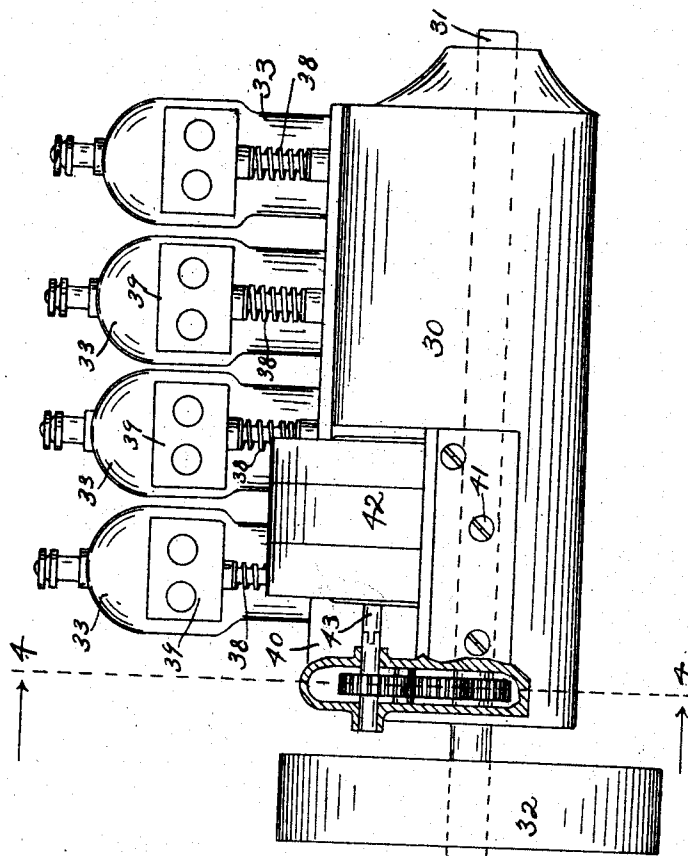
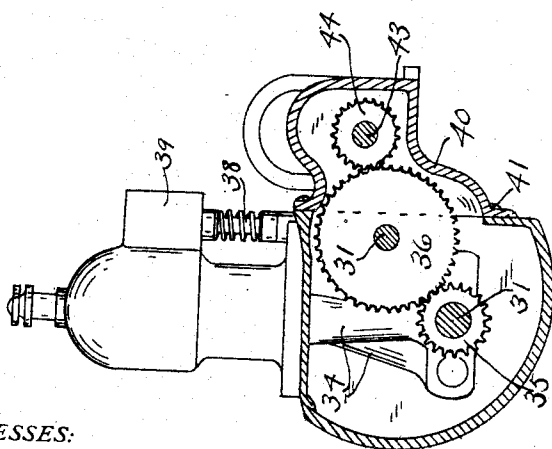


Fig. -4-



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UNITED STATES PATENT OFFICE.

FRANK I. REMY AND BENJAMIN P. REMY, OF ANDERSON, INDIANA, ASSIGNORS TO
REMY ELECTRIC COMPANY, OF ANDERSON, INDIANA, A CORPORATION.

COMBINED MAGNETO-ELECTRIC GENERATOR AND ENGINE.

949,634.

Specification of Letters Patent.

Patented Feb. 15, 1910.

Application filed March 22, 1909. Serial No. 434,875.

To all whom it may concern:

Be it known that we, FRANK I. REMY and BENJAMIN P. REMY, of Anderson, county of Madison, and State of Indiana, have invented a certain new and useful Combined Magneto-Electric Generator and Engine; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like numerals refer to like parts.

The object of this invention is to improve the mounting of magnetos in connection with combustion engines, whereby the magnetos will be actuated and the gas in the engines will be ignited and the engines driven.

This invention is important because of the necessity of equipping old types of engines with magnetos, that is, engines made without reference to the combination therewith of magnetos.

The chief feature of the invention consists in so constructing the magneto that it can be combined with such old forms of engines, and especially to form a part of the engine. Thus with two-cylinder engines, the magneto is so arranged that it can be substituted for the top or cover of the crank shaft case. In such instance the base of the magneto constitutes the cover of the crank shaft case, and therefore the magneto is removable with the cover, and yet the parts are so mounted that the inductor shaft or armature of the magneto will be driven by the cam shaft gear, that is, the cam shaft gear will be in mesh with a gear on the armature shaft or inductor shaft of the magneto. Likewise with a four-cylinder engine, there is combined with the magneto a frame adapted to be substituted for the door or cover for the side opening of the crank shaft case, and when so combined or substituted, the gear on the end of the armature or inductor shaft of the magneto will mesh with the cam shaft gear of the engine.

The full nature of this invention will be understood from the accompanying drawings and the following description and claims:

In the drawings, Figure 1 is an end elevation of a two-cylinder engine, parts being broken away. Fig. 2 is a section on the line 2—2 of Fig. 1, showing the cylinders of the engine in side elevation. Fig. 3 is a side

elevation of a four-cylinder engine parts being broken away. Fig. 4 is a section on the line 4—4 of Fig. 1.

The two-cycle construction shown in Figs. 1 and 2 is as follows: There is a crank case 10 with a cylinder 11 on each side thereof. Piston rods 12 extend into the crank case 10 and actuate the crank shaft 13, on which there is a gear 14 that meshes with the cam shaft gear 15, which controls the valve rods 16 running to the valve chest 17. 18 are the fuel supply tubes. The crank case 10 is open at the top and usually has a lid or cover that is removable so as to give access to the crank case, and in that form it is sold without the magneto. A magneto electro generator for generating the igniting spark for the engine, as formed herein, consists of a base 20 on which the magneto construction is superimposed, including the magnets 21, the armature or inductor shaft 22, and the gear 23 thereon, for actuating the inductor shaft in generating the current. In the combination the base 20 of the magneto is substituted for the cover of the crank shaft case and is secured thereto like the cover by screws 24, whereby said base constitutes the removable cover for the crank shaft case, and also holds the magneto in place, so that the gear 23 on the armature or inductor shaft will mesh with the cam shaft gear 15. This is a very simple and satisfactory manner of mounting the magneto in connection with such engines, whereby the two objects are accomplished, closing the crank shaft and bringing the gears into actuating mesh for driving the magneto. The four-cylinder construction shown in Figs. 3 and 4 involves the same principle, but is in detail as follows: The crank shaft case 30 has mounted in it the crank shaft 31 with the fly wheel 32. Above the case 30 there are four cylinders 33, from which pistons 34 descend and are connected with the crank shaft 31. Said shaft has on it a gear 35 that meshes with the cam shaft gear 36, which is on the cam shaft 37, and which actuates the valve rods 38 that run to the valve chest 39. This type of engine has the crank shaft case open in the side near one end, as shown, and that opening is covered by a removable door or cover, so as to render the mechanism accessible. In order to enable magnetos to be readily mounted in combination with such engines, we provide a base plate or casing 40 for mounting the

magneto, which is adapted to be substituted for the door or cover of the crank shaft case 30. It will be removable, as it is held in place by the screws 41. In connection with it the magneto is mounted, the same including the magnets 42, armature shaft or inductor shaft 43, a gear 44 that meshes with the cam shaft gear 36 and is driven thereby. The main portion of the part 40 is a mere plate, but the left-hand end thereof, as appears in Fig. 4, has formed with it a casing for the gear 44.

In both forms shown herein the armature or inductor shaft is formed of two pieces loosely jointed together, as shown, by a simple slip-joint, that enables the main portion in the magneto to cause the rotation of the other portion on which the gear 23 or 44 is mounted. Since there is no longitudinal slippage of either part of said shaft, said slip-joint will suffice.

What we claim as our invention and desire to secure by Letters Patent is:

1. The combination of a combustion engine having a crank shaft case with an opening into the same, a magneto electric

generator provided with a base plate adapted to removably close said opening in the crank shaft case, and a driving connection between the parts of the engine and magneto that is in operative condition when the magneto is secured in place on the crank shaft case.

2. The combination of a combustion engine having a crank shaft case with an opening into the same, a gear in said case driven by the engine, a magneto electric generator provided with a base plate that removably closes said opening in the crank shaft case, and a gear mounted in connection with said magneto for driving the same that meshes with the gear in said crank shaft case, whereby the engine will drive the magneto.

In witness whereof, we have hereunto affixed our signatures in the presence of the witnesses herein named.

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Witnesses:

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