C. T. MASON.

IGNITION DYNAMO.

APPLICATION FILED MAY 12, 1916.

1,252,601.

Patented Jan. 8, 1918.

2 SHEETS—SHEET 1.

FIG. 2.

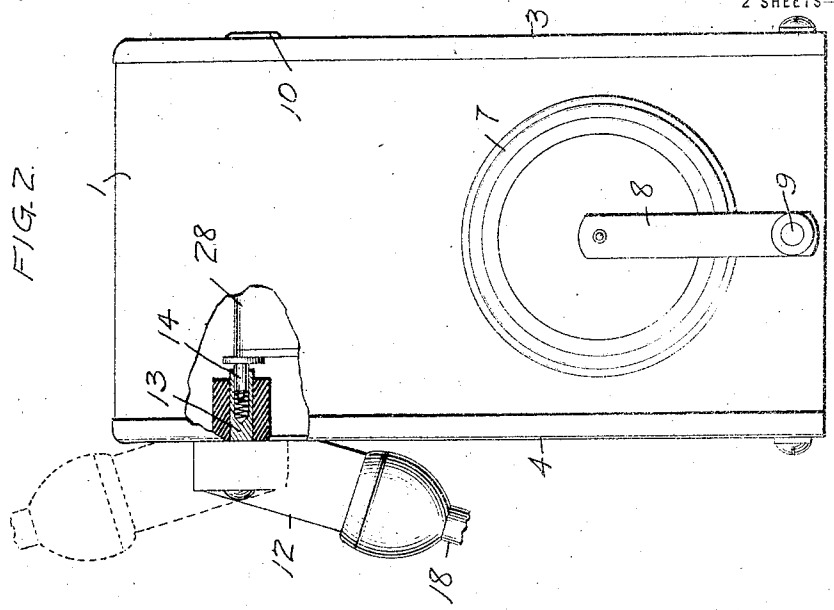
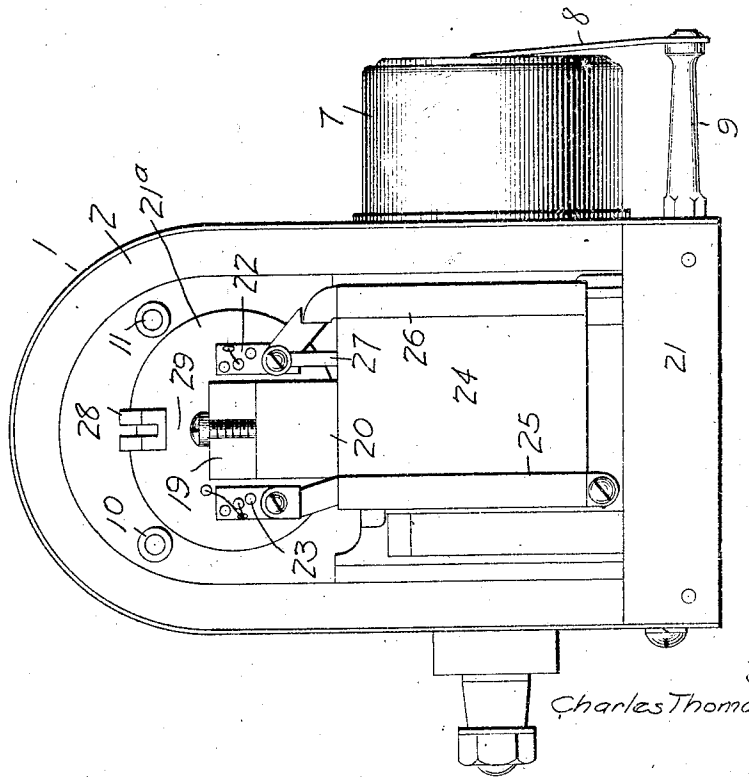


FIG. 1.



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2 SHEETS—SHEET 2.

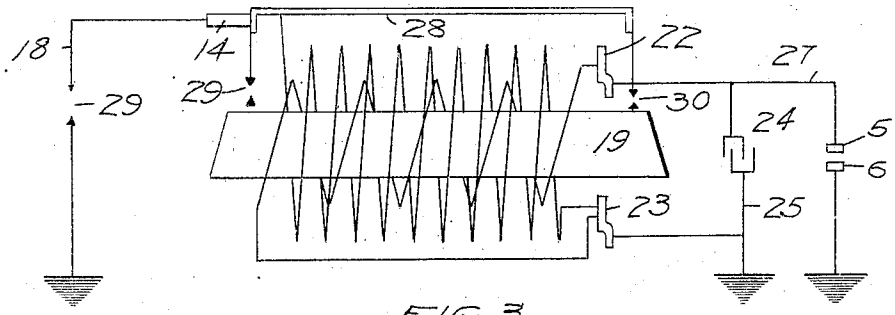


FIG. 3.

FIG. 4.

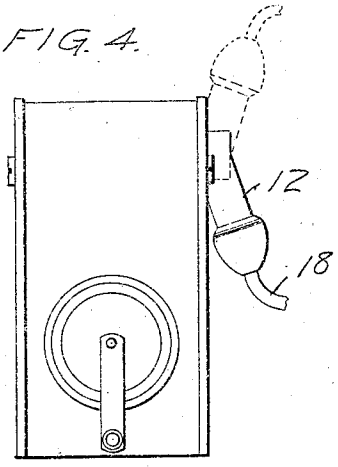
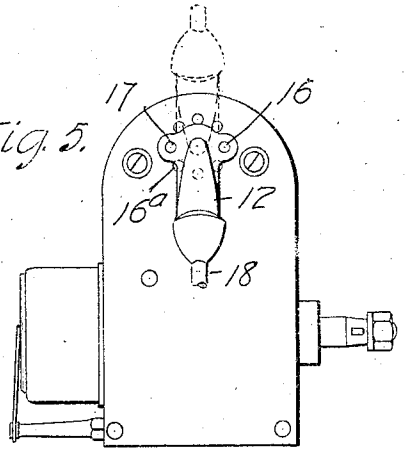


Fig. 5.



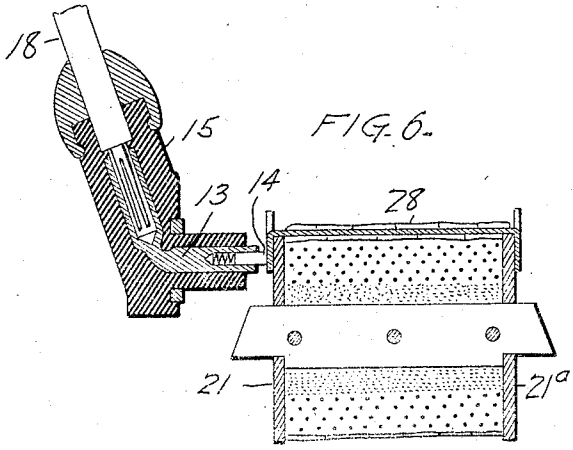


FIG. 6.

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UNITED STATES PATENT OFFICE.

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IGNITION-DYNAMO.

1,252,601. Specification of Letters Patent. Patented Jan. 8, 1918.

Application filed May 12, 1916. Serial No. 97,037.

To all whom it may concern:

Be it known that I, CHARLES THOMAS MASON, a citizen of the United States, residing at Sumter, in the county of Sumter and State of South Carolina, have invented certain new and useful Improvements in Ignition-Dynamos, of which the following is a specification, reference being had to the accompanying drawing.

This invention relates to ignition dynamos commonly called magnetos. One of the principal objects of the invention is to provide a magneto in which the high tension cable terminal may be turned in various positions. When the magneto is mounted for use, it is often desirable to have the cable extending out of the terminal in a downward direction. In other cases, owing to the close proximity of heated pipes or the intake manifold of the engine, it is desirable to have the terminal so it may be readily turned upward, and my invention provides such an arrangement.

Another object is the arrangement of the terminals of the generating windings of the magneto in such a manner that the various parts—such as the condenser, and the high tension terminal—may connect directly to the said terminals without the use of intervening flexible wires or the like.

A further object is to so arrange the condenser that one of the metallic clips forming the terminal for one group of the condenser plates, will also form a circuit connection between one of the winding terminals and the frame of the magneto, thereby eliminating any flexible conductors or sliding contacts as usually employed in this circuit.

Ancillary objects will more fully hereinafter appear.

In the drawings Figure 1, is a side view of the magneto with cover plate removed, showing the arrangement of the windings—hereinafter called the "coil", and the condenser. Fig. 2, an end view of the magneto, showing the high tension terminal. Fig. 3, a circuit diagram illustrating the arrangement of the terminals of the coil and the circuit connections thereto. Fig. 4, is an end and Fig. 5, a side view of a magneto showing the cable terminal in two positions. Fig. 6, is a view, partly in section, of the high tension cable terminal, and its connections with the magneto coil. Like figures of reference denote the same parts wherever they are shown.

My invention may be used with various types of magnetos, but for the sake of illustration I show it in connection with a machine as illustrated and described in my U. S. Patent #1,081,760, dated December 16, 1913, but I only here show and describe sufficient of said machine to illustrate the new improvements herein disclosed.

The numeral 1, denotes a suitable cover bent around the field magnet or magnets 2, this together with suitable side plates 3 and 4, serve to completely inclose the magneto, with the exception of the usual interrupter mechanism, consisting of a fixed contact 5 and movable contact 6, shown in diagram Fig. 3, said mechanism being inclosed by a cap 7 held in position by a suitable cover spring 8 supported on the post 9.

The two side covers 3 and 4 are bolted together by through bolts, indicated at 10 and 11, or in any suitable manner. On either side cover plate is mounted the high tension terminal 12, as shown in section in Fig. 5, comprising the metallic body 13, carrying a suitable spring-pressed contact brush 14; the body 13 is embedded in an insulating outer shell 15, having two extended portions, 16 and 17, in which are holes for suitable screws, whereby the terminal as a whole may be attached to the cover plate 4 in various positions by providing a plurality of holes 16^a in the cover plate, as indicated in Fig. 4, for the screws. This enables the cable 18 to extend upwardly, downwardly or to either side of the magneto, a feature of considerable importance in manufacturing as all machines can be made up with a uniform type of terminal, which can then be arranged in any desired position by the customer to suit the particular engine on which the magneto is mounted.

The generating windings of the magneto comprise a coil having an iron core 19, adapted to bridge the pole pieces of the magneto, one of which is shown at 20. These pole pieces and the base 21 of the magneto form a rotor housing and comprise means supporting the coil. All of these parts may be of any suitable form to accomplish the result of changing the flux flow through

the core 19 when the shaft of the magneto is revolved or oscillated. The heads 21 and 21ª of the coil, are of insulating material and upon one of them is mounted the primary terminals 22 and 23. It will be noted that the primary winding of the coil is not connected to the core thereof, as in such arrangements the current must necessarily overcome the resistance of the gap between the core 19 and the pole pieces upon which it is mounted. One of the objects of the present invention is to eliminate this resistance and to provide a path of low resistance between the primary winding and the frame of the magneto.

A suitable condenser 24 is employed, having a terminal clip 25, forming a solid metallic connection between the terminal 23 of the coil and the frame 21 of the magneto, thereby eliminating the contact resistance existing between the core 19 and the pole pieces supporting the same, which would be in the circuit if the usual method of connecting 23 to the core 19 was employed. This also eliminates the use of a wire conductor and its attendant contact resistance in this circuit.

The remaining side of the condenser is connected by means of clip 26 to terminal 22, which is also connected by means of a suitable conductor 27 to one of the interrupter contacts. The complete circuits of the magneto are shown in Fig. 3, it being understood that brush 14 may contact on terminal 28 on either end of the coil.

The windings on the coil in the case of a high tension magneto consist of a primary and secondary winding. The inside end of the secondary winding is connected to terminal 23, and the outside end to terminal 28, which may be a strip of metal running across the top of the coil and extending downwardly over both heads, and being clamped thereto in any suitable manner. The ends of 28 form with the core of the coil or with any other metallic part of the magneto, a safety spark gap or gaps as indicated at 29 and 30. The ends of the terminal 28 are so shaped at each end of the coil, that brush 14 in terminal 12 may engage them, so that terminal 12 may be used on either side of the machine by merely reversing the side plates.

The high tension current flows from the secondary winding to terminal 28, to the brush 14 through 13, over cable 18, to the spark plug indicated at 29, and returns over the frame of the engine to the base 21 of the magneto and then by way of clip 25 to terminal 23, thereby completing the circuit.

As the operation of a magneto of this character is well understood, I do not describe the same here, nor do I refer to the many obvious modifications that can be made in the invention herein described, without however departing from the appended claims.

Having thus described my invention, I claim:

1. In an ignition dynamo, a fixed generating winding, a cover plate adjacent said winding, and a high tension cable terminal carried by said plate in contact with said winding and having insulated portions adapted to be secured to said plate in various positions thereon.

2. In an ignition dynamo, a fixed generating winding having an insulating head, a terminal for said winding on said head, a cover plate for the magneto and said winding, and a high tension cable terminal carried by said plate and in contact with said first mentioned terminal, and having insulated portions adapted to be secured to said plate in various positions thereon.

3. In an ignition dynamo, a generating winding, a cover plate adjacent said winding, and having a plurality of apertures therein, a terminal carried by said plate and connected to said winding, and means for securing said terminal to said plate in various positions thereon, said means including screws engaging said terminal and passing through the apertures in said plate, substantially as described.

4. In an ignition dynamo, a fixed generating winding, a cover plate adjacent said winding, and a high tension cable terminal carried by said plate in contact with said winding and adapted to be secured to said plate in various radial positions relative to its point of contact with said winding, and means for removably securing said terminal to said plate, substantially as described.

5. In an ignition dynamo, a generating winding, a cover plate adjacent said winding, and a terminal carried by said plate connected to said winding and having an off-set portion forming a cable support, substantially as described.

6. In an ignition dynamo, a fixed generating winding, a cover plate adjacent said winding and a terminal carried by said cover plate comprising a metallic conducting core forming a brush holder and an outer insulating case with ears forming lugs whereby said terminal may be secured to said plate, and a cable attached to said core and having a portion surrounded by a part of said insulating case, substantially as described.

7. In an ignition dynamo, a generating winding having a core, insulating heads on said core, a pair of terminals for said generating winding mounted upon one of said heads, and a condenser having metallic terminals directly connected to said terminals.

8. In an ignition dynamo, a cover plate,

a cable terminal thereon, a generating coil having insulating heads, a plurality of circuit terminals mounted upon one of said heads, a connection between said cable terminal and one of said circuit terminals, and a condenser connected to two of said circuit terminals.

9. In an ignition dynamo, a cover plate, a cable terminal thereon, a generating coil having insulating heads, a plurality of circuit terminals mounted upon one of said heads, a connection between said cable terminal and one of said circuit terminals, and a condenser having metallic terminals directly connected to two of said circuit terminals, one of said condenser terminals completing the circuit between one of said circuit terminals and the frame of the dynamo, substantially as described.

10. In an ignition dynamo, a generating winding, a core therefor, heads on said core, a plurality of circuit terminals on one of said heads, interrupter mechanism, a connection between one of said circuit terminals and said interrupter mechanism, a condenser, a metallic clip forming a circuit terminal for said condenser secured to one of said circuit terminals, a second condenser terminal comprising a metallic clip secured to one of said circuit terminals at one end to the frame of the dynamo at the other, a cover plate for the dynamo, and a high tension terminal mounted upon said cover plate and in contact with one of the terminals on said coil head, substantially as described.

11. In an ignition dynamo, a stationary coil comprising a primary and secondary winding, terminals for the primary winding, a connection between the secondary winding and one of said terminals, and a connection between said last mentioned terminal and the frame work of said dynamo, said connection including a condenser terminal whereby said last terminal is directly connected to said framework.

12. In an ignition dynamo, interrupter mechanism, a condenser, a stationary coil comprising a primary and secondary winding, a connection between one terminal of said primary winding, said interrupter mechanism and said condenser, a connection between the remaining terminal of said primary winding and one end of said secondary winding, and a direct connection between the last mentioned ends of said primary and secondary winding and the frame work of said dynamo, said connection including the remaining terminal of the condenser, substantially as described.

13. In an ignition dynamo, a stationary coil comprising insulating heads and a primary and secondary winding, terminals for the primary winding on one of said heads, a connection between the secondary winding and one of said terminals, a connection between said last mentioned terminal and the frame work of said dynamo, a removable cover plate for the dynamo whereby access may be obtained to said coil terminals and a terminal on said cover plate connected to said secondary winding.

14. In an ignition dynamo, interrupter mechanism, a condenser, a stationary coil comprising insulating heads and a primary and secondary winding, a connection between one terminal of said primary winding, said interrupter mechanism and said condenser, a connection between the remaining terminal of said primary winding and one end of said secondary winding, a connection between the last mentioned end of said secondary winding and the frame of said dynamo, said connection including the remaining terminal of the condenser, a removable cover plate for the dynamo whereby access may be obtained to said coil terminals and a high tension terminal mounted upon said cover plate and in contact with said secondary winding, substantially as described.

15. In an ignition dynamo, interrupter mechanism having one contact connected to the framework of said dynamo, a condenser having metallic terminals whereby it is mechanically held in place and with one of said terminals connected to the framework of said dynamo, a stationary coil comprising primary and secondary windings, a connection between one end of the primary winding and the remaining terminal of the condenser and the interrupter mechanism, a connection between the remaining side of said primary winding and one end of said secondary winding, and a translating device in circuit with the remaining side of said secondary winding and the framework of said dynamo.

In testimony whereof I hereunto affix my signature.

CHARLES THOMAS MASON.