C. T. MASON.

INTERRUPTER MECHANISM FOR IGNITION DYNAMOS.

APPLICATION FILED JULY 29, 1913.

1,167,310. Patented Jan. 4, 1916.

Fig. 1.

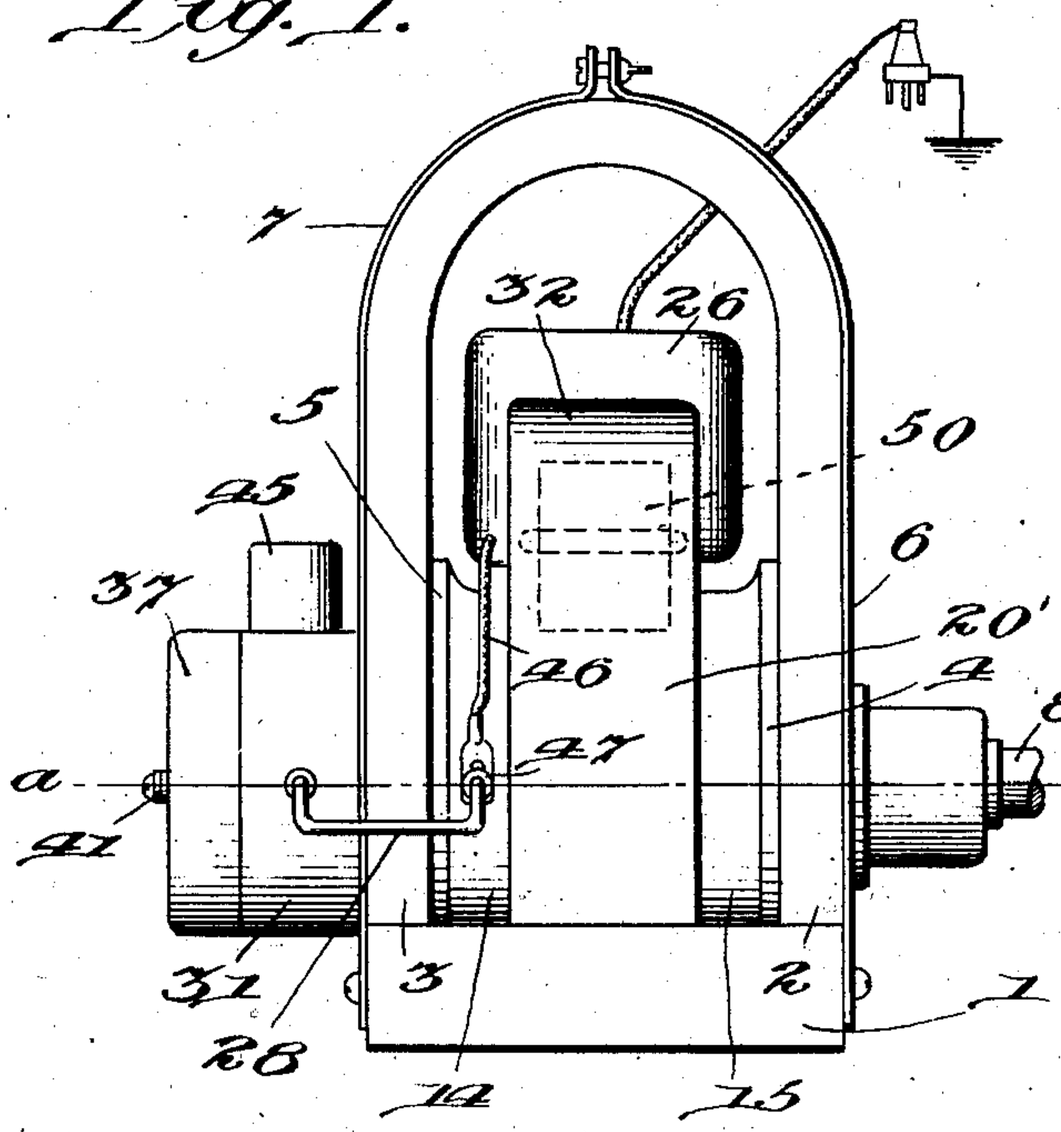


Fig. 4.

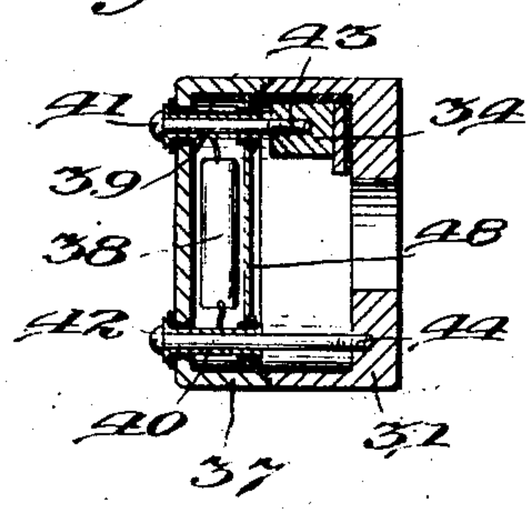


Fig. 2.

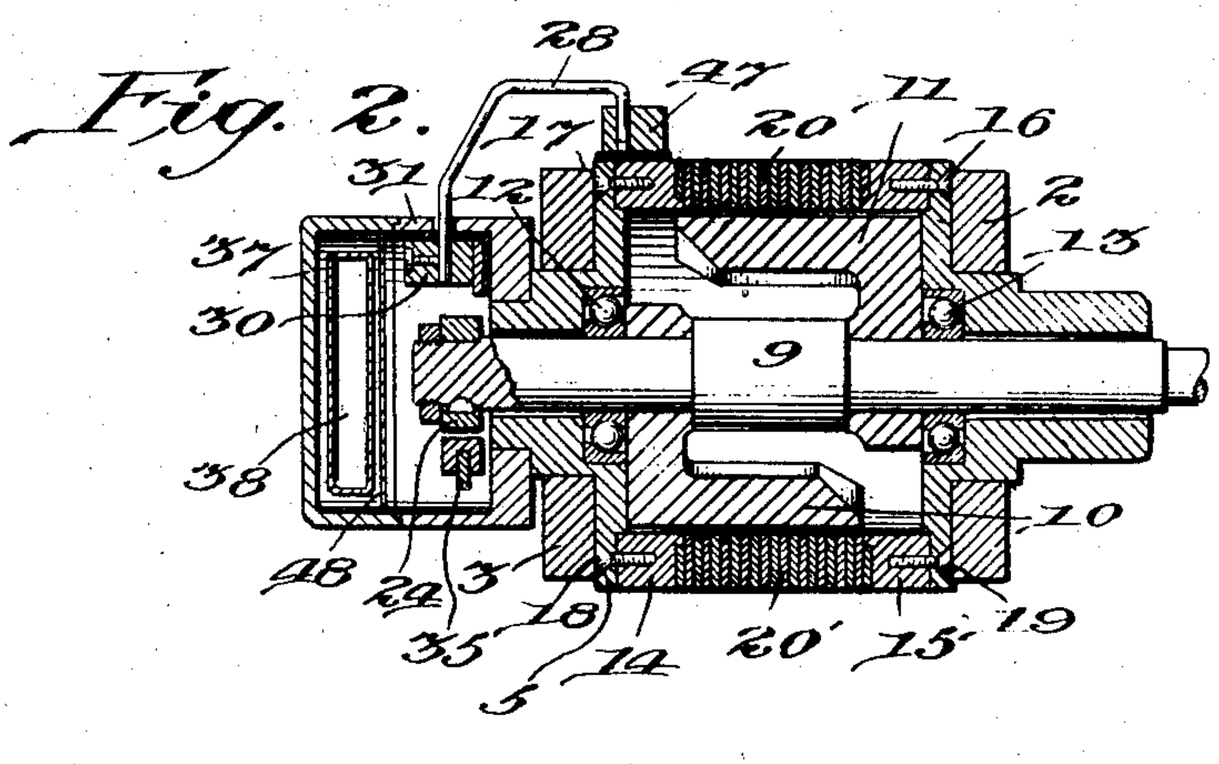
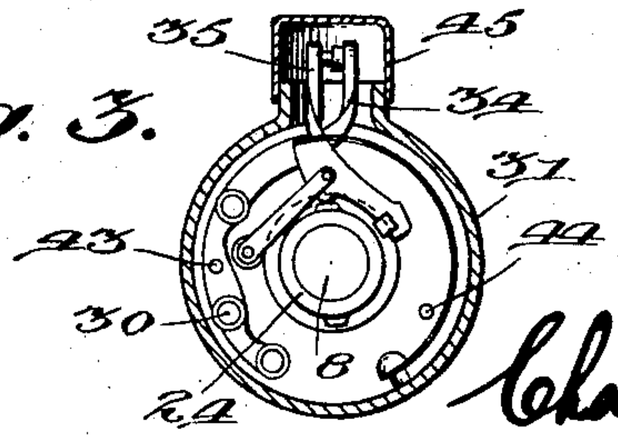


Fig. 3.



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UNITED STATES PATENT OFFICE.

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INTERRUPTER MECHANISM FOR IGNITION-DYNAMOS.

1,167,310. Specification of Letters Patent. Patented Jan. 4, 1916.

Original application filed November 21, 1912, Serial No. 732,681. Divided and this application filed July 29, 1913. Serial No. 781,839.

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 Interrupter Mechanism for Ignition-Dynamos, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to ignition dynamos and has for its object to simplify and improve the parts of the interrupter and condenser structure, whereby the same may be rendered more efficient, and the efficiency of the entire machine with which they are associated may be increased.

The present application is a division of my prior application Serial No. 732,681, filed November 21, 1912. The novel features of the machine are claimed in the said application, and the description and claims in the present case will be restricted entirely to the interrupter and associated parts.

My invention is illustrated in the accompanying drawings in which—

Figure 1 is a side view of a machine employing my invention. Fig. 2 is a longitudinal section of the rotor and the interrupter mechanism thereof. Fig. 3 is a face view of the interrupter contacts and actuating cam and their casing with the end cap removed, and the cap for the contacts in section. Fig. 4 is a section of the interrupter casing and inclosed parts taken at right angles to the section in Fig. 2.

Referring to the drawings, the machine shown employs a rotor having inductor elements 10 and 11 on a shaft 9, journaled in ball bearings 12 and 13 and carrying on its end a cam collar 24 for actuating the interrupter. The ball races for the shaft bearings are supported in flanged bushings 4 and 5 mounted in the generating coil structure between them as indicated at 20, 20′, where the laminations of the field shoes are shown.

The operation of the machine depends upon the transfer of the flux from each magnet pole through its permanently polarized extension 10 or 11 to the coil field shoes 20 and 20′ alternately. The timing of the spark is attained by rotating the bushings and the coil field structure. In an arrangement of this kind it is not only desirable and necessary to have the interrupter and its associated parts in compact, inclosed, accessible form, but to be able to adjust the interrupter through different angles coincidently with the adjustment of the coil field structure. I provide a casing 31 therefor, containing a pair of interrupter contacts, and having a circular opening adapted to slide over the projecting shoulder of the bushing on the end plate 5, so that the shaft 8 carrying the cam 24 may project into the casing. The casing as a whole is secured to the bushing by a screw 25 or in any other suitable manner, so that they will move together.

The interrupter mechanism consists of one movable contact piece 35 normally resting on the fixed contact piece 34 which is insulated from the box 31 in any suitable manner. The terminal 20 is fixed to the contact piece 34 on the breaker. The condenser 38 is housed in a cover 37 forming a cap for the end of the casing 31 of the interrupter. The condenser is connected to two metal eyelets or tubes which form its terminals. These are shown at 39 and 40 and are insulated from the cover 37 by suitable bushings. Through these tubes are passed screws 41 and 42, which connect the condenser on one side to the contact pieces 34, in which is a threaded hole 43 to receive the screw 41, and on the other side to the casing 31 which has a threaded hole 44 to receive the screw 42. Thus, by securing the cap mechanically in place, the electrical connections of the condenser are simultaneously made, the condenser being connected across the interrupter points 34 and 35 and in multiple with the primary of the generating coil.

The arrangement herein described may be somewhat varied in practice, without departing from the invention, but I shall claim the same both broadly and specifically herein.

Having thus described my invention what I claim and desire to secure by Letters Patent is—

1. In an ignition dynamo, an interrupter having a casing with fixed and movable contact members carried thereby, one of said members being insulated therefrom, a cover

fitting said casing, a condenser carried by said cover, and conducting means mechanically connected to the cover and electrically connected to the condenser terminals, for mechanically securing the cover to the casing, and electrically completing the circuit connections between the condenser and the interrupter mechanism in the casing.

2. In an ignition dynamo, an interrupter having a casing with fixed and movable contact members carried thereby, one of said members being insulated therefrom, a cover fitting said casing, a condenser carried by said cover, an insulated condenser terminal on the cap, and a corresponding insulated terminal on the casing connected to the insulated member on the interrupter, and conducting means for connecting said insulated terminals when the cover is in place on the casing, thereby mechanically securing the cover in place and electrically connecting the condenser and the interrupter contacts.

3. In an ignition dynamo, a field, a rotor, and an interrupter comprising an open ended casing mounted coaxially with the rotor, concentric therewith, and of a diameter no greater than the diameter of the rotor, a pair of contacts mounted and carried within the casing, with their operating points extending through a lateral opening in the wall of the casing, means within the casing and driven with the rotor for actuating said contacts, and two separate detachable caps or covers for said casing, one fitted to the open end and the other fitted to the lateral opening and adapted to cover and inclose the exposed contact ends when in place, whereby for purposes of timing and adjustment of engine connections, the contact points may be inspected by removing the lateral cover only, without exposing the principal working parts, and for repairs or adjustments to the latter, the entire body of the interrupter may be opened by removal of the end cap.

4. In an ignition dynamo, circuit controlling contacts, an inclosing casing therefor, and a separable portion of the casing with a condenser mounted thereon and carried thereby, together with means for connecting said separable portion mechanically to the body of the casing, and for simultaneously connecting the condenser terminals electrically with the circuit controlling apparatus in the casing.

5. In an ignition dynamo, a separable interrupter and condenser unit comprising a casing containing the interrupter contacts, an operating cam with an opening on one side to receive the cam shaft of the machine, and an opening on the other side to expose the parts, and a cap for the casing adapted to cover said second opening, said cap containing an inclosed chamber, a condenser mounted within the said chamber, terminals for said condenser carried on the cap, complementary circuit terminals in the casing and conducting means for securing said condenser terminals both mechanically and electrically to said complementary terminals when the cap is in position, so as to complete the combined unit and properly relate the condenser to the other parts both mechanically and electrically at the same time.

6. In an ignition dynamo having a rotor and a complementary part adjustable for timing purposes, an interrupter structure formed in two parts, one a casing supported on said movable part of the dynamo, and the other a cap supported on and movable with the casing, with a pair of contacts in said casing, one of which is insulated therefrom, a dynamo mounted in and carried by said cap, with terminals secured to but insulated from the cap, and fastening devices passing through said terminals and securing the same both mechanically and electrically to the insulated terminal and to the body respectively, of the casing, whereby the interrupter contacts and their associated condenser are maintained in proper relation to each other at all times, and for all positions of timing adjustment, while readily separable for testing or repairs.

7. In an ignition dynamo having a rotor with a driving shaft, an interrupter structure comprising a cylindrical casing coaxial with said shaft and a cylindrical cap or cover adapted to fit over the end of the casing, an operating cam in the center of the casing connected to the end of the rotor shaft, make and break contacts in the casing to one side of said cam, a condenser secured within and carried by the cap, and metallic fastening means for the cap insulated therefrom and connected in the casing to metallic terminals which in turn are connected with the interrupter contacts.

8. In an ignition dynamo having a rotor and an operating shaft therefor, an interrupter secured upon one side of the dynamo and comprising a cylindrical casing coaxial with the rotor and receiving the ends of its shaft, a cam mounted on the end of said shaft, and a pair of contacts in the casing having their lower ends arranged about the center so as to be acted upon by said cam and their upper or contact ends extending through and protruding from an opening in the side of the casing, together with a cap for said opening, and a cap for the end of the casing.

9. In an ignition dynamo having a rotor and an operating shaft therefor, an interrupter secured upon one side of the dynamo and comprising a cylindrical casing coaxial with the rotor and receiving the ends of its shaft, a cam mounted on the end of said shaft, and a pair of contacts in the casing

having their lower ends arranged about the center so as to be acted upon by said cam and their upper or contact ends extending through and protruding from an opening in the side of the casing, together with a cap for said opening, and a cap for the end of the casing, together with a condenser located in the last named cap and connections from its terminals to the said contacts, the cap and condenser being detachable as a unit from the casing.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

CHARLES THOMAS MASON.

Witnesses:
F. C. MANNING,
H. R. VAN DEVENTER.