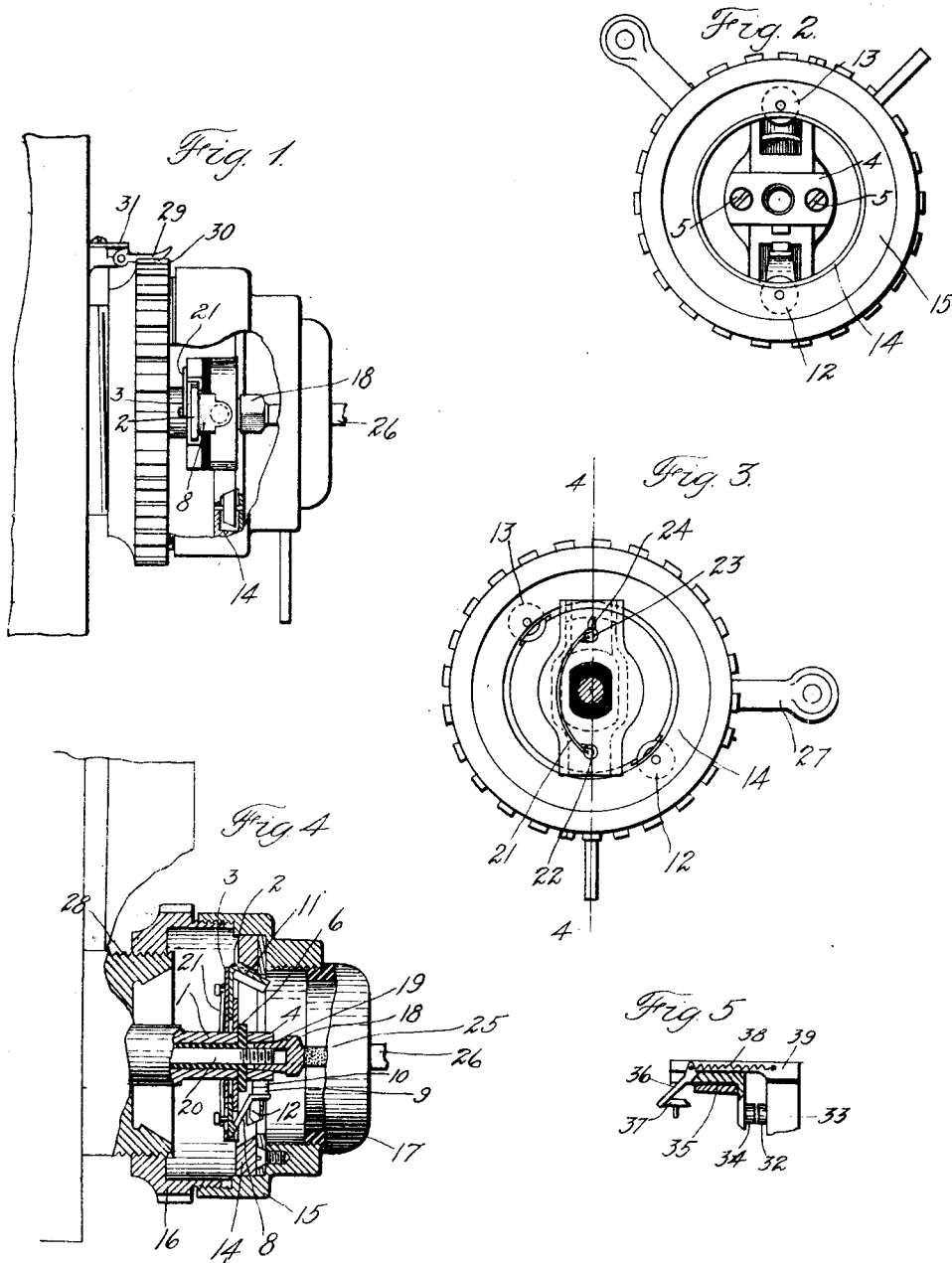


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MAGNETO INTERRUPTER.
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MAGNETO-INTERRUPTER.

1,053,164.

Specification of Letters Patent.

Patented Feb. 18, 1913.

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To all whom it may concern:

Be it known that I, WILLARD E. DOW, a citizen of the United States, and resident of Braintree, in the county of Norfolk and State of Massachusetts, have invented an Improvement in Magneto-Interrupters, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

The main object of my present invention is to provide an extremely durable and accurate interrupter, and to that end I have aimed to eliminate as far as possible the spring construction heretofore common. I have provided a positive sliding member carrying the movable contact; the position of said member being positively controlled and guided by a guide member so that it coöperates with the fixed contact accurately without reference to any carrying spring or other uncertain controlling device. This sliding member is controlled in its make and break movements by tripping wheels mounted in a guard ring whose engaging surface serves to guard the interrupter from being broken in operation.

Further constructional details and advantages of my invention will appear more at length in the course of the following description taken with reference to the accompanying drawings, in which I have shown the preferred embodiment of the invention.

In the drawings, Figure 1 is a view in side elevation, partly in section, of the interrupter portion of the magneto constructed according to my present invention; Fig. 2 is the front or plan view thereof, the outer portion of the cap being removed; Fig. 3 is a rear view thereof; Fig. 4 is a sectional view taken on the line 4-4 Fig. 3; and Fig. 5 is a sectional view of a modification.

The movable part of the interrupter is carried as usual on the armature shaft 1 of the magneto, and comprises a slide or sliding plate 2 held by and movable in a guide or guiding plate 3 whose edges are overturned to embrace the edges of the slide, as best shown in Fig. 1, and a stationary block or transverse member 4 secured to the guide plate 3 by insulated screws 5, a layer 6

of insulation being interposed also between said block and plate, as clearly shown in Fig. 4. One end of the slide 2 is upturned, as indicated at 8, and carries the movable contact or terminal 9 of the interrupter. The fixed contact or terminal 10 is secured to the block 4 opposite the contact 9. The opposite end of the slide 2 is upturned obliquely and beveled as indicated at 11 to be engaged at proper intervals by tripping wheels 12, 13, herein shown as pivotally carried in a guard ring 14 fast on the inner side of a timing band 15, which, together with a usual adjusting ring 16 and cap 17, constitute the inclosure or box which protects and incloses the interrupter. The rotary parts 2, 3, 4 are secured by a nut 18 whose cone-shaped extension 19 is threaded onto a usual insulated rod 20 carried by the shaft 1, said cone-nut wedging against the block 4 so as to firmly clamp the latter immovably in place with very little inward pressure. In other words this cone-nut serves to adjust the rotary portion of the interrupter accurately and hold the same immovably positioned by a radial wedging action without tendency to move said rotary portion inwardly on the shaft 1. The tripping end 11 of the slide 2 is held yieldingly against the guard ring 14 by any suitable means, a spring 21 being herein shown for that purpose, secured at one end at 22 to the back of the guide member 3 and at its other end to a pin 23 projecting from the slide 2 through a slot 24 in the guide plate. A usual carbon post 25 bears on the end of the rod 20 for conveying the current to an external connection 26 in the usual manner. The timing band 15, its guard ring 14 and tripping wheels 12, 13 are operated by a handle 27, and the adjusting ring 16 is adjustable by hand on its threaded bearing 28 and held positively in adjustment by a dog 29 which engages external notches 30 in said ring and is held in its extreme locked and unlocked positions by a spring 31.

In use, as the armature shaft 1 rotates, the upturned end 11 of the slide 2 is quickly moved inwardly each time it engages a tripping wheel 12, 13, and thereby the contact 9 carried thereby is separated from the fixed contact 10, causing the desired interruption. The position of interruption or timing of

the interruption in the revolution thereof is varied simply by turning the handle 27 one way or the other, which correspondingly shifts the guard ring and thereby the tripping wheels. Inasmuch as the two contacts 9, 10 are not carried by springs or yielding supports, they have no tendency whatever to get out of alinement or to work improperly otherwise, as the slide plate is maintained in an unvarying path of movement by the guide plate, the spring 21 serving merely to restore the contacts quickly to closed position after they have been separated by a tripping wheel. The tripping wheels 12, 13 project only slightly beyond the inner surface of the guard ring 14, which therefore serves to guard the interrupter against getting into improper position by the wear of the contacts. If the guard ring were not present, the end 11 of the slide plate would project more and more into the path of the tripping wheels as the contacts wore, until finally it would project so far that the interrupter would be broken by the pounding action of the tripping wheels, but the guard ring renders this impossible by limiting the possible outward movement of the end 11. When the contacts have worn, thereby permitting the end 11 to project correspondingly, the end engages with the inner face of the guard ring, thereby preventing further operation of the interrupter and compelling the user to adjust the parts. By having the end 11 and the guard ring provided with oblique engaging surfaces, the contacts are conveniently and accurately adjusted simply by turning the adjusting ring 16 slightly one way or the other, which correspondingly moves the guard ring inwardly or outwardly with the utmost nicety and thereby adjusts the interrupter for the wear above mentioned, etc. I have found the radial separating movement of the contacts exceedingly efficient, and this unites with the other features of my invention in making the apparatus very durable.

My invention is capable of various changes, and, to indicate somewhat the range of these changes, I have shown in Fig. 5 another form of the invention, in which the fixed contact is indicated at 32 on a central part 33 which corresponds to the block 4, and the movable contact 34 is carried by the upright end of a slide 35 whose outer end 36 is bent obliquely in an opposite direction to the end 11, and instead of being engaged at its outer side by a tripping wheel is shown as engaged at its inner side by a tripping wheel 37, said slide 35 being retracted toward the center by a spring 38 and mounted on a guide plate 39, said slide and guide plate otherwise corresponding to the slide 2 and guide plate 3.

Having described my invention, what I

claim as new and desire to secure by Letters Patent is:

1. A magneto interrupter, comprising a rotary part of the magneto; a slide member and a guide member both carried by said rotary part in sliding contact with each other, two relatively movable cooperating contacts carried by said rotary part and operated by the slide member, said contacts having a contact-closing position at one end of the sliding movement of said sliding member and a contact-breaking position when said two members slide on each other away from contact-closing position, and a relatively stationary tripping mechanism for automatically sliding said slide member on said guide member as the rotary part rotates.

2. A magneto interrupter, comprising a rotary part of the magneto, a relatively stationary tripping device, a radially extending guide plate carried by said rotary part, a fixed contact carried by said rotary part, a slide plate carried and guided by said guide plate in position to be actuated by said tripping device, and a movable contact carried by said slide plate to cooperate with said fixed contact.

3. A magneto interrupter, comprising a rotary part of the magneto, cooperating fixed and slidable contacts carried by said rotary part having their make-and-break movement in their plane of rotation, means for guiding said slidable contact and relatively stationary tripping mechanism for separating said contacts as said rotary part rotates.

4. A magneto interrupter, comprising a rotary part of the magneto, fixed and radially slidable contacts arranged for cooperation carried by said rotary part, means for guiding said slidable contact, and means for operating said slidable contact at predetermined positions of said rotary part as said rotary part rotates to thereby separate said fixed and slidable contacts at definite intervals.

5. A magneto interrupter, comprising a rotary part of the magneto, fixed and movable interrupter contacts carried by said part to rotate therewith, an operating member for operating said movable contact, and tripping wheels carried by a normally stationary part in position to trip said operating member said operating member having an oblique tripping surface to be engaged by said tripping wheels, and the latter being adjustable in a direction axially of said rotary member for varying the point of engagement thereof with said oblique surface and thereby adjusting the tripping movement of said operating member.

6. A magnetic interrupter, comprising a rotary part of the magneto, make and break

contacts and carrying mechanism therefor secured to and carried by said rotary part, including a nut having a thin peripheral cone and a part of said carrying mechanism engaged and held in place by a wedging engagement with said cone in a radial direction without appreciable tendency to move longitudinally of said rotary part.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

WILLARD E. DOW.

Witnesses:

CARLOTTA NIX,
ANNIE I. WALKER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."