No. 720,029. PATENTED FEB. 10, 1903.

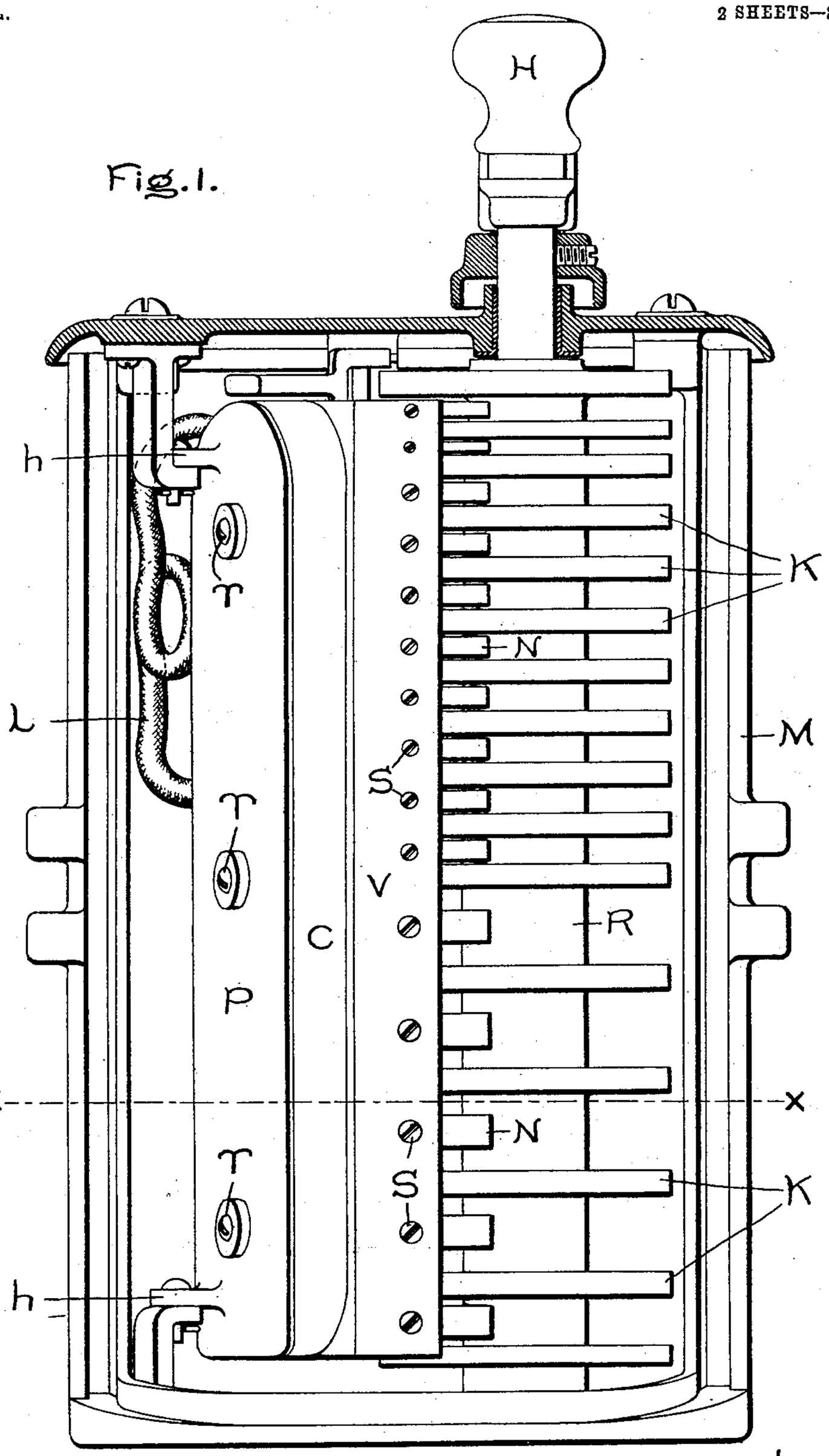
O. HOLZ.

CONTROLLER FOR ELECTRIC MOTORS.

APPLICATION FILED OCT. 4, 1901.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.



Witnesses
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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 2.

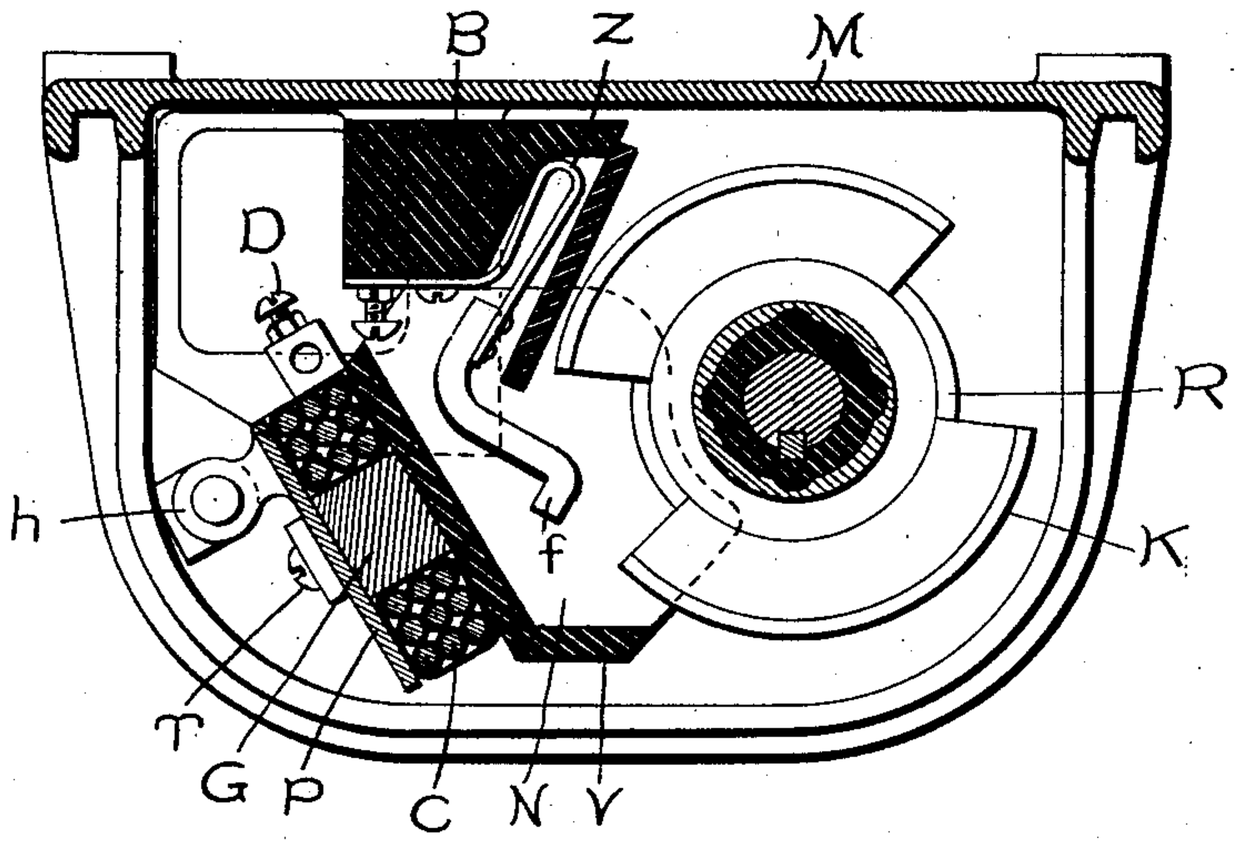
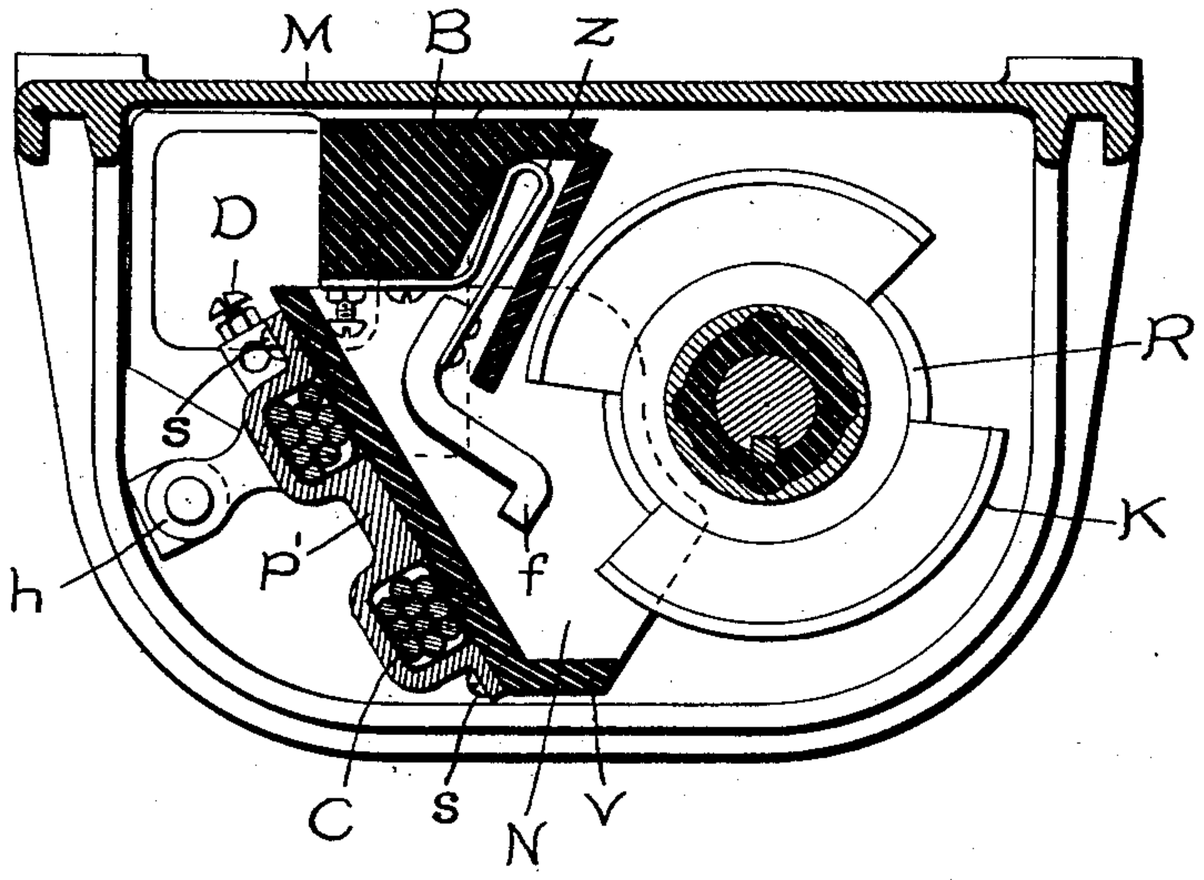


Fig. 3.



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Inventor:
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UNITED STATES PATENT OFFICE.

OTTO HOLZ, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

CONTROLLER FOR ELECTRIC MOTORS.

SPECIFICATION forming part of Letters Patent No. 720,029, dated February 10, 1903.

Application filed October 4, 1901. Serial No. 77,554. (No model.)

To all whom it may concern:

Be it known that I, OTTO HOLZ, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Controllers for Electric Motors, (Case No. 2,306,) of which the following is a specification.

This invention relates to controllers for electric motors, and especially to that class in which a rotatable member carries certain contacts which are adapted to engage with certain fixed contacts or fingers, and has for its object the placing of the blow-out coil in such controllers in the most efficient position and so mounting it that it will not interfere with the access to any part of the controller and will permit of a compact design.

In order that the blow-out may be most efficient, it is necessary to bring it as close as possible to the arc-gaps, so that the leakage of flux into paths other than that through the arc-gaps is reduced to a minimum. To accomplish this, I support my coil from the side of the arc-gap which is away from the rotatable member. If the coil and its support were fixed, this construction would seriously interfere with the inspection and repair of the contacts. I therefore make the coil-supporting member movable, so that it, with the coil, can be moved out of the way. In order that the blow-out may be most effective both as regards the total flux through the arc-gaps and its distribution in them, I use a blow-out coil which is coextensive with the range of the blow-out—that is to say, one in which the coil itself is in a position to extend over the entire area which it is desired that the blow-out shall cover. The blow-out in the construction shown in the drawings extends the whole length of the controller.

Referring to the attached drawings, Figure 1 is a front elevation of a controller embodying my invention with the front casing removed. Fig. 2 is a section at line X X of Fig. 1; and Fig. 3 is a section similar to Fig. 2, but showing a modified construction.

Referring to Figs. 1 and 2, H is a handle by means of which a rotatable member R, carrying contacts K, can be operated. Adapted to engage with contacts K are contact-fingers *f*, mounted, by means of springs Z, upon an insulating-block B. Secured to the top and bottom of the controller-casing M by supporting-hinges *h* is a plate P of magnetizable material. Attached to plate P by screws T is a core G, (also of magnetizable material,) about which is wound the blow-out coil C. Secured to core G by countersunk screws (not shown) is the piece V of arc-resisting and insulating material, and to V are secured pieces N of the same material by means of screws S, which are also countersunk, and therefore do not show in Figs. 2 and 3. The pieces N extend in between the contacts *f* and, together with V, to which they are perpendicular, provide a means for confining the arcs within proper limits. In the usual controller construction, the blow-out coil being placed elsewhere, the arc-deflecting pieces V and N are secured directly to plate P and the whole generally referred to as the "arc-deflector." The blow-out coil C is connected into circuit by means of flexible conductors, as L. In Figs. 2 and 3 L is not shown; but terminal D indicates how connections may be made.

In Fig. 3 the single piece P′ is substituted for plate P and core G of Figs. 1 and 2, the piece V being secured to it by screws *s*. I realize that other constructions can be adopted without departing from my invention, and do not, therefore, wish to be limited to those shown in the drawings.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a controller provided with a rotatable contact-carrying member and a series of fixed contact-fingers for engagement therewith, a blow-out coil common to a number of said fingers, and a movable member for supporting said coil in close proximity to the contact-fingers.

2. In a controller provided with a rotatable contact-carrying member and a series of fixed contact-fingers for engagement therewith, a blow-out coil common to a number of fingers and coextensive with the range of blow-out, and a movable member on which said coil is mounted.

3. In a controller provided with a rotatable contact-carrying member and a series of fixed

contact-fingers for engagement therewith, a blow-out coil common to a number of said fingers and coextensive with the range of the blow-out, and a hinged member for supporting said coil in close proximity to the contact-fingers.

4. In a controller provided with a rotatable contact-carrying member and a series of fixed contact-fingers for engagement therewith, a removable arc-deflector inclosing said fingers, and a blow-out coil common to a number of fingers and coextensive with the range of the blow-out mounted on said arc-deflector.

5. In a controller provided with a rotatable contact-carrying member and a series of fixed contact-fingers for engagement therewith, a removable arc-deflector inclosing said fingers, a blow-out coil coextensive with the range of the blow-out mounted on said arc-deflector, and a core or pole piece of magnetic material for said coil.

In witness whereof I have hereunto set my hand this 2d day of October, 1901.

OTTO HOLZ.

Witnesses:
ALEX. F. MACDONALD,
HELEN ORFORD.