

W. V. MOAK.
RELAY.
APPLICATION FILED OCT. 21, 1906.

Patented July 4, 1911.

996,874.

Fig. 1.

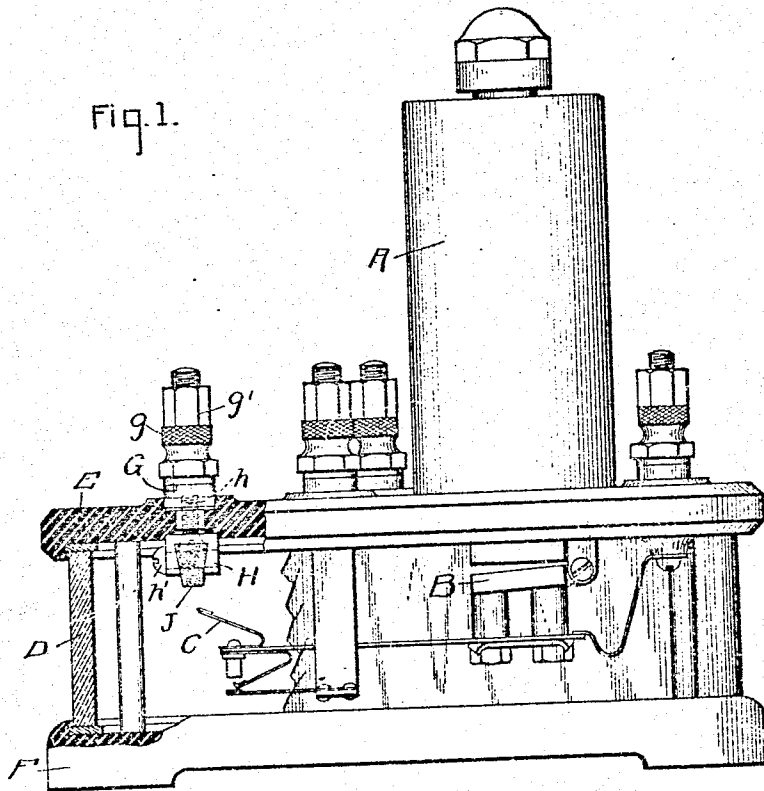


Fig. 2.

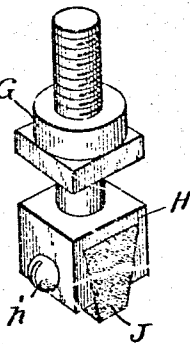


Fig. 3.

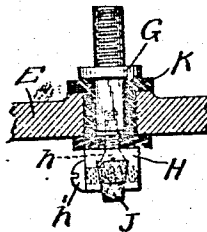
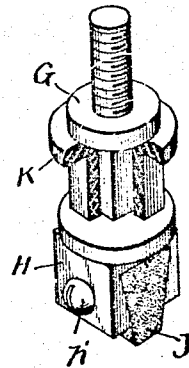


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM V. MOAK, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

RELAY.

996,874.

Specification of Letters Patent.

Patented July 4, 1911.

Application filed October 21, 1908. Serial No. 458,771.

To all whom it may concern:

Be it known that I, WILLIAM V. MOAK, a citizen of the United States, residing at Schenectady, county of Schenectady, State of New York, have invented certain new and useful Improvements in Relays, of which the following is a specification.

My invention relates to relays for use in signaling systems, and has particular reference to the means for supporting the stationary contacts.

The contacts of relays for use in railway signal systems are ordinarily inclosed in a casing for protection against dirt, moisture and insects. The stationary contacts are ordinarily supported within the casing by a stud or binding post which extends through the casing, in order that the leads may be electrically connected to the stationary contacts without carrying the leads through the casing. With the constructions of stud or binding post that have been ordinarily employed heretofore, it has sometimes happened that a maintainer, either unintentionally or wilfully, has changed the adjustment of the stud or binding post in the casing, so as to change the relative positions of the stationary and movable contacts. Since the movement of the movable contacts is not usually great, a change in the position of the stationary contact, which brings it nearer to the movable contact, may prevent the contacts from opening when the relay coils are deenergized.

The object of my invention is to provide a novel construction of the supporting means for the stationary contact, such that no change of adjustment of the stationary contacts is possible without breaking the seal and opening the casing.

My invention will best be understood by reference to the accompanying drawings, in which—

Figure 1 shows a relay, partly in cross section, constructed in accordance with my invention; Fig. 2 shows an enlarged perspective view of a binding post; Fig. 3 shows a cross-sectional view of a modified construction of binding post adapted for a relay in which the portion of the casing through which the binding post extends is formed of conducting material; and Fig. 4 is an enlarged perspective view of the same.

In Fig. 1 A represents a magnet coil, B the armature, and C a movable contact car-

ried by the armature. The armature and contact C are inclosed in a suitable casing, which, in Fig. 1, is shown as formed of a glass cylinder D, and two plates E and F of insulating material. G represents a binding post which enters a hole in the upper plate E. This binding post, as is best shown in Fig. 2, has a portion of rectangular cross section. The upper portion of the hole is also rectangular of cross-section to receive this portion of the binding post, the projecting corners of which serve both to limit the entrance of the binding post into the hole and also to prevent rotation of the binding post in the hole. The upper portion of the binding post is screw-threaded to receive a binding nut *g* and a lock nut *g'*. H represents a contact piece within the casing, which is secured to the binding post G by the screw *h*, shown in dotted lines in Fig. 1. The plate E is slightly recessed on its lower side to receive the contact piece H. J represents a carbon contact block, which is clamped within the contact piece H by means of the screw *h'*. This contact block, which is adapted to be engaged by the movable contact C when the relay is energized, at the same time serves as a locking member for the screw *h*. When the parts are assembled, as shown in Fig. 1, it will be seen that the position of the contact block J cannot be changed from outside the casing, since all movement of the binding post G is prevented. The contact piece J can be adjusted or moved only by breaking the usual seals and opening the casing, so as to remove the screw *h'*.

Fig. 3 shows a modified construction adapted for use in a relay in which the upper plate of the casing is of conducting material. In this modification the plate E is provided with a square hole through which extends a square bushing K of insulating material. The portion of the binding post G which extends into the hole is also square in cross section, so that the binding post cannot be turned in the hole. The entrance of the binding post into the bushing is limited by the enlarged circular flange between the square portion and the screw-threaded portion of the binding post. The construction of the contact piece and contact block is the same as in Fig. 1.

Fig. 4 shows an enlarged perspective view of the construction of Fig. 3.

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Other modifications will readily occur to those skilled in the art. I, therefore, do not desire to limit myself to the particular construction and arrangement of parts here shown, but aim in the appended claims to cover all modifications which are within the scope of my invention.

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

- 10 1. In a relay, a casing, a stationary member entering a hole in said casing, a portion of said hole being of non-circular cross-section and said member having projecting portions limiting its entrance into said hole and preventing its rotation in said hole, a contact piece within the casing having a screw for securing it to said member, and a contact block clamped in said contact piece and forming a locking member for said screw.
- 20 2. In a relay, a casing, a binding post entering a hole in said casing, a portion of said hole being of non-circular cross-section and said binding post having projecting portions limiting its entrance into said hole and preventing its rotation in said hole, a contact piece within the casing having a screw for securing it to said binding post, and a contact block clamped in said contact piece and forming a locking member for said screw.
- 30 3. In a relay, a casing, a stationary member entering a hole in said casing, a portion

of said hole being of non-circular cross-section and said member having projecting portions limiting its entrance into said hole and preventing its rotation in said hole, and a contact piece secured to said member within the casing, the inner end of said hole being enlarged to form a non-circular recess adapted to receive said contact piece, and said contact piece having projecting portions preventing its rotation in said recess.

4. In a relay, a casing, a binding post entering a hole in said casing, a portion of said hole being of non-circular cross-section and said binding post having projecting portions limiting its entrance into said hole and preventing its rotation in said hole and having a screw-threaded portion provided with a binding nut, and a contact piece secured to said binding post within the casing, the inner end of said hole being enlarged to form a non-circular recess adapted to receive said contact piece, and said contact piece having projecting portions preventing its rotation in said recess.

In witness whereof, I have hereunto set my hand this 19th day of October, 1908.

WILLIAM V. MOAK.

Witnesses:

BENJAMIN B. HULL,
HELEN ORFORD.