S. E. WITT.

RELAY.

APPLICATION FILED OCT. 7, 1912.

1,144,745. Patented June 29, 1915.

FIG. 1.

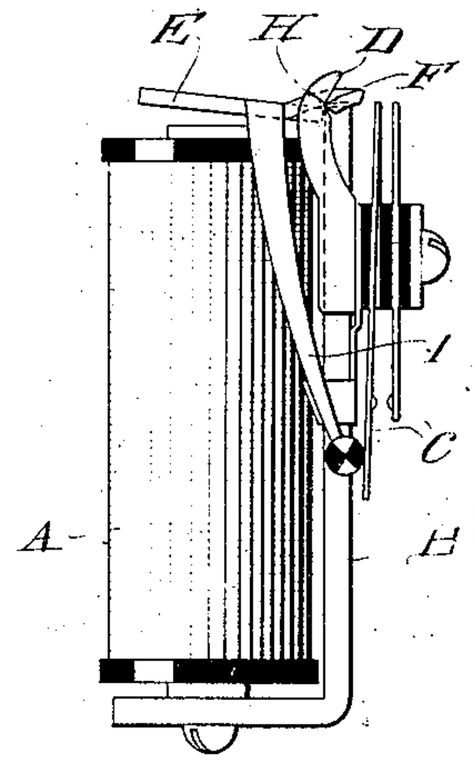


FIG. 2.

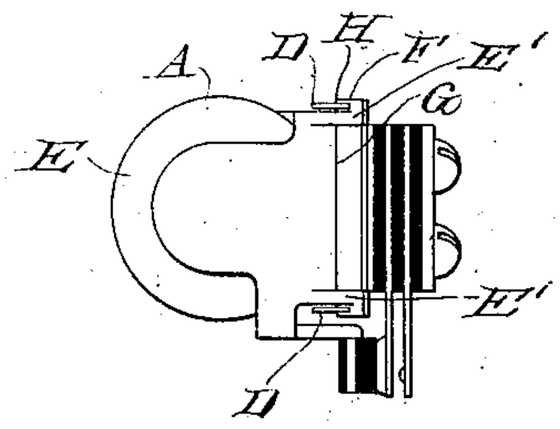
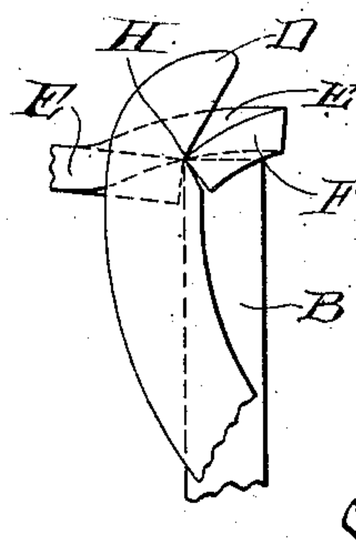


FIG. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

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RELAY.

1,144,745. Specification of Letters Patent. Patented June 29, 1915.

Application filed October 7, 1912. Serial No. 724,479.

To all whom it may concern:

Be it known that I, SAMUEL E. WITT, a citizen of the United States of America, and resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Relays, of which the following is a specification.

My invention relates to improvements in relays, and more particularly to an improved mounting for the relay armature.

An object of my invention is to provide an armature which may be easily put in place and removed and a mounting which allows free movement of the armature without permitting any lost motion.

A further object is to provide a mounting of this character in which the armature is mounted upon a knife-edge bearing and no pivot screws are necessary for holding the same in place.

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

Figure 1 is a side elevation of a relay embodying the principles of my invention. Fig. 2 is a top end view of the same. Fig. 3 is an enlarged view of the armature bearing.

Referring to Fig. 1, I have shown a relay comprising the magnet A adapted to be supported by a heel-piece B which is secured to the magnet by means of a screw at the base of the same. Mounted upon this heel-piece B and insulated therefrom there is a pair of contact springs C. While I have shown but a single pair of contact springs, it is, of course, obvious that a plurality of such pairs could be mounted on this heel-piece and operated simultaneously therewith. Likewise mounted on this heel-piece is a pair of curved flexible pieces of metal D. These members are mounted on opposite sides of the heel-piece, as clearly shown in Fig. 2, and are provided with a pair of notches H. The armature E for the electromagnet is provided with a pair of upwardly-inclined end portions E′, which end portions are provided with flanges F which engage with the notches H in the members D. The point of contact is directly in line with the rear end of the armature E and the front edge G of the heel-piece B. With this arrangement the armature is firmly but lightly held in place, allowing the same to swing or tilt on its fulcrum. As thus mounted the armature operates with a minimum amount of friction and play owing to the fact that a knife-edge bearing is provided at the point where the upper edge G of the heel-piece B engages the armature E. This point being directly in line with the point at which the members D engage the armature, all backward and downward pressure is eliminated, thus allowing the armature perfect freedom. Carried by the armature E there is an operating arm I provided with an end portion which bears against one of the springs C and operates the same in a manner which will be readily understood.

It will thus be seen that I have devised a relay which, when once assembled, will always remain in perfect adjustment, without any particular attention, on account of not having any pivot screws to become loose or bind, or any place where friction will cause impairment to the free movement of the armature. In order to remove the armature from the relay it is merely necessary to press the flexible arms D outward beyond the lugs F and the armature can then be readily removed.

While I have illustrated one particular embodiment of my invention, it will be understood that I do not wish to be limited to the exact construction shown and described.

What I claim as my invention is:—

1. In a relay, an electromagnet, an armature therefor, a heel-piece secured to said electromagnet, and a pair of members carried by said heel-piece, and extending at substantially right-angles to said armature, adapted to hold the edge of said armature against said heel-piece.

2. In a relay, an electromagnet, an armature therefor, a heel-piece secured to said electromagnet, and a pair of flexible members mounted on said heel-piece, and extending at substantially right-angles to said armature, adapted to hold the edge of said armature against said heel-piece.

3. In a relay, an electromagnet, an armature therefor having rearward extensions on opposite sides thereof, and spring members engaging said extensions to hold said armature in place and adapted to be sprung to remove the armature.

4. In a relay, a magnet, an armature therefor, a heel-piece secured to said magnet, a pair of flexible members carried by said heel-piece, and a pair of projections on said armature engaging with said flexible mem-

bers to hold the edge of said armature against said heel-piece.

5. In a relay, a magnet, an armature therefor, a heel-piece secured to said magnet, and a plurality of curved metallic flexible members mounted upon said heel-piece and holding said armature against said heel-piece.

6. In a relay, an electromagnet, an armature therefor, a heel-piece secured to said electromagnet having a portion extending substantially parallel therewith, and a pair of members carried by said heel-piece and adapted to hold said armature against said heel-piece, said members engaging said heel-piece in substantial alinement with the upper edge of said armature and the upper forward edge of said heel-piece.

7. In a relay, an electromagnet, an armature therefor, a heel-piece secured to said electromagnet and having a portion extending substantially parallel thereto, a pair of flexible members mounted upon said heel-piece, and a pair of extensions on said armature engaging with said flexible members and adapted to hold said armature against said heel-piece, said members engaging said heel-piece in substantial alinement with the rear edge of said armature and the upper forward edge of said heel-piece.

Signed by me at Lincoln Lancaster county, Nebraska, this 24th day of September, 1912.

SAMUEL E. WITT.

Witnesses:

SELMER G. OFTEDAHL,

WALTER J. FURIS.