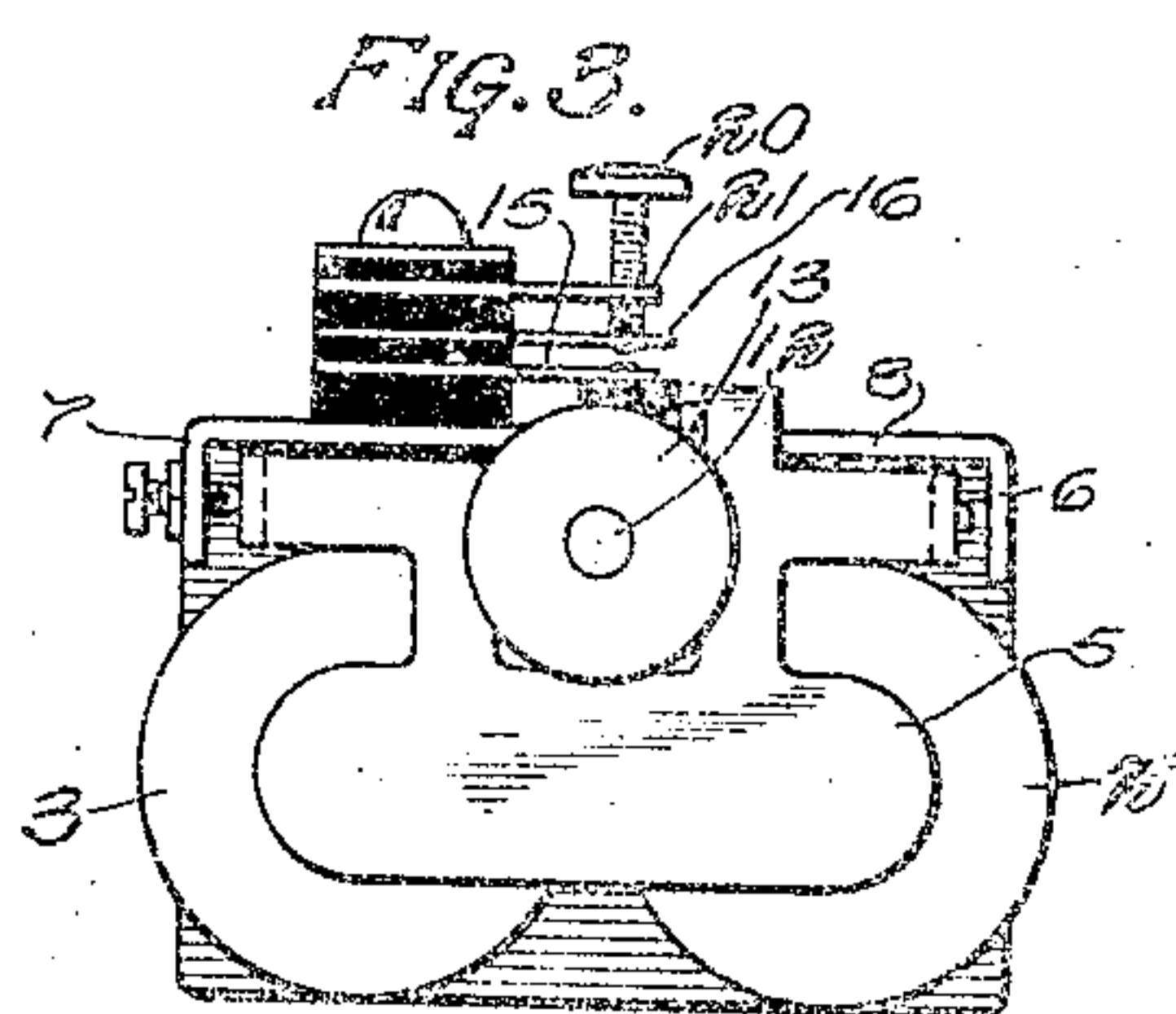
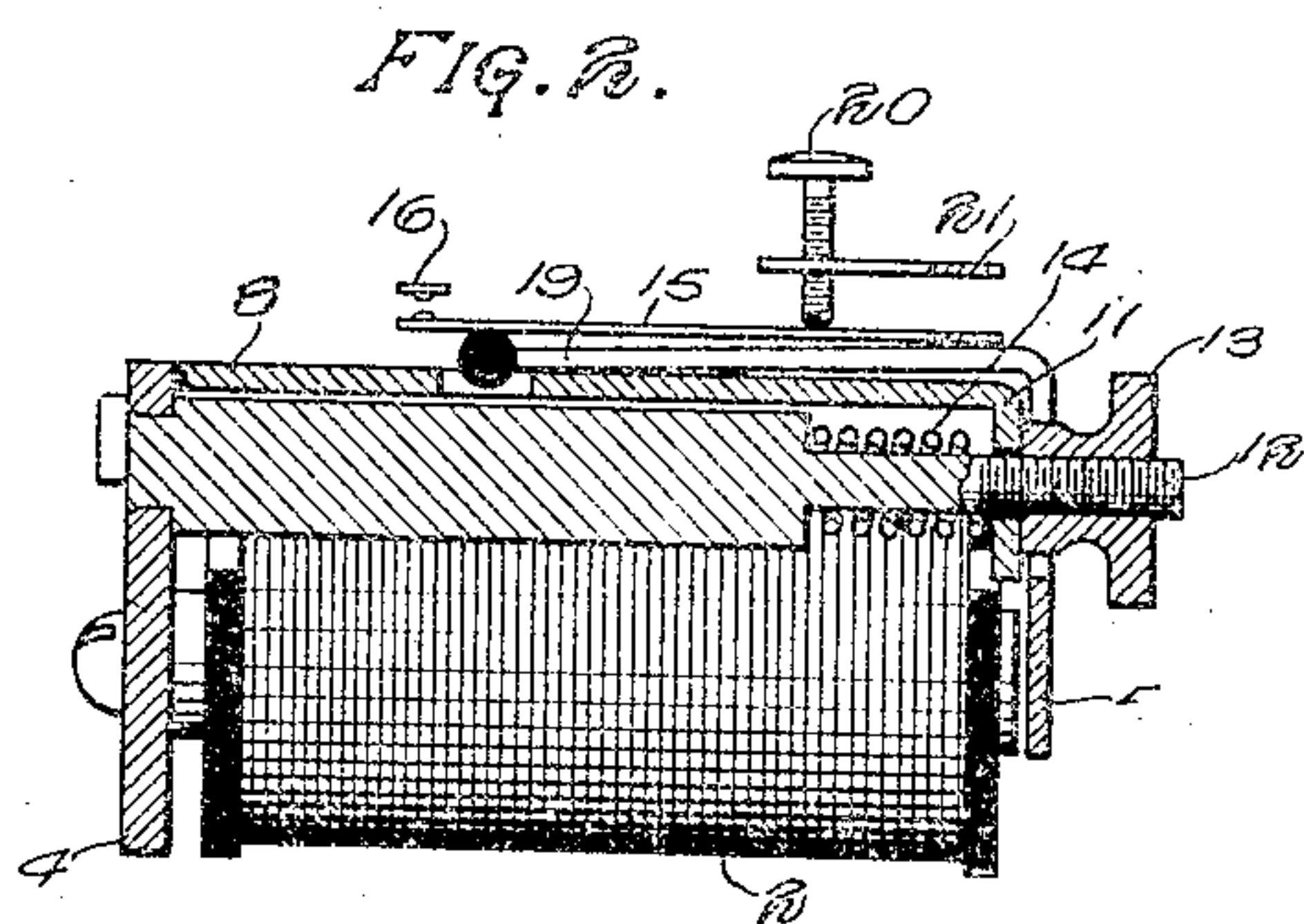
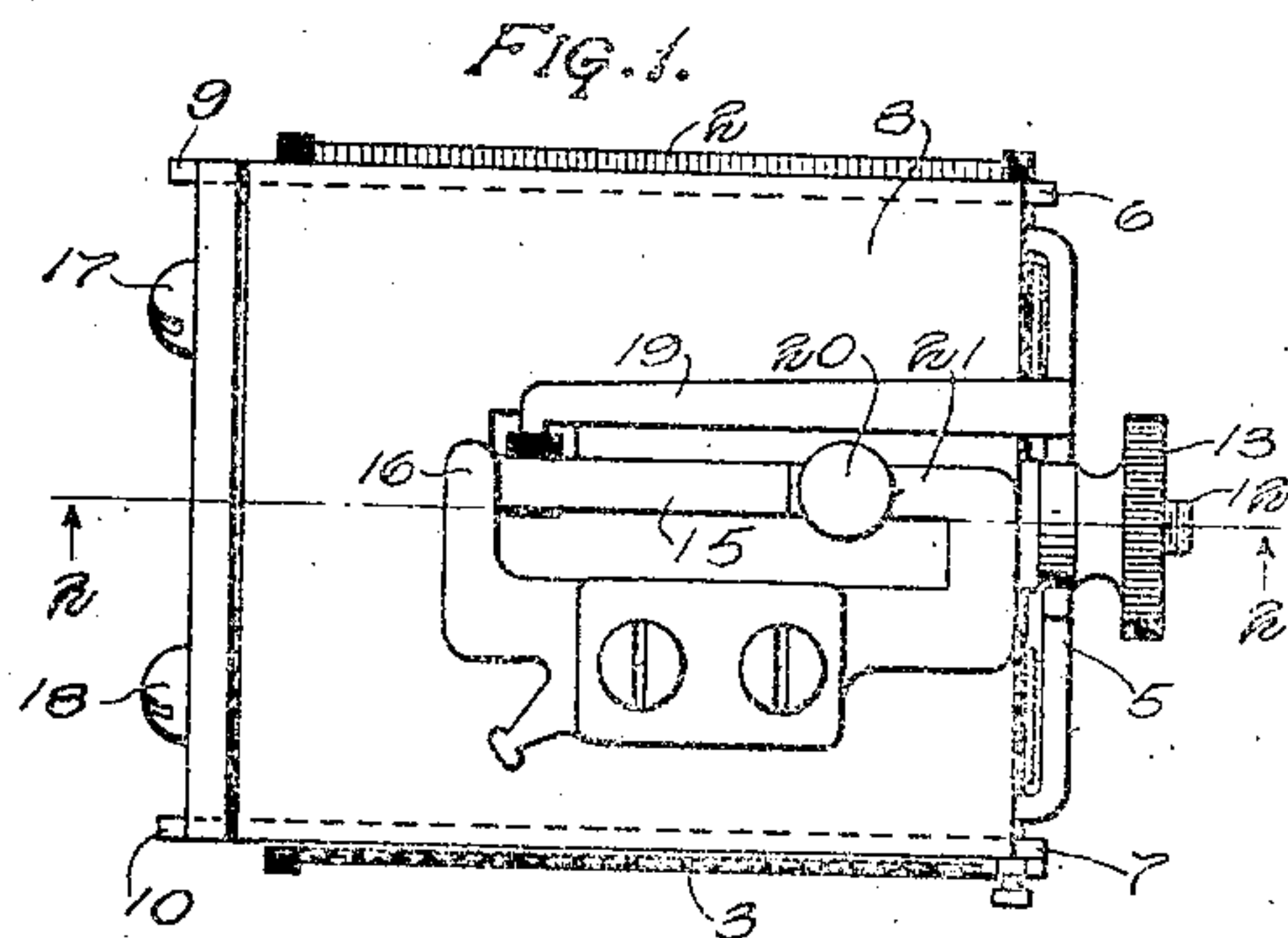


1,191,167

J. ERICKSON.
RELAY.
APPLICATION FILED OCT. 7, 1912.

Patented July 18, 1916.



WITNESSES
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RELAY.

1,191,167.

Specification of Letters Patent.

Patented July 18, 1916.

Application filed October 7, 1912. Serial No. 724,455.

To all whom it may concern:

Be it known that I, JOHN ERICKSON, 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 particularly that type of relays ordinarily used in connection with telephone systems.

Among the objects of my invention are to improve the construction and operation of these relays, and particularly to provide a compact relay structure in which the length of the stroke of the armature and the tension of the retracting spring may be easily and accurately adjusted.

These and other objects of my invention will be more readily understood by referring to the accompanying drawings and description thereof, in which I have illustrated a relay embodying the features of my invention.

Figure 1 is a rear view of a relay embodying the principles of my invention. Fig. 2 is a sectional view on the line 2—2 in Fig. 1. Fig. 3 is a view of the armature end of the relay.

As illustrated in the drawings, the electromagnet of the relay comprises a pair of coils 2 and 3, the cores of which are secured to the yoke 4 by the screws 17 and 18. The armature 5 is pivoted between the lugs 6 and 7 on a back-plate 8 which is made preferably of brass or other non-magnetic material. The back-plate is held in place by means of two lugs 9 and 10 on one end which fit into two notches in the yoke 4, and by a laterally projecting lug 11 upon the other end which is provided with a hole through which passes the end of a post 12 which is mounted upon the yoke 4. The end of the post 12 is threaded to receive a thumb nut 13 between which and the spring 14 the lug 11 on the back-plate is clamped. With this method of mounting, the back-plate 8 is held rigidly in place, but is capable of adjustment endwise by means of the thumb nut 13, whereby the distance between the armature 5 and the pole-pieces may be varied. The contact springs of the relay are mounted upon the back of the plate 8, and, although there is herein shown only a single stationary contact 16 and one flexible

contact 15, it will be understood that any suitable combination of springs may be employed. The armature controls the flexible spring 15 through the medium of the arm 19. The contact spring 15 also serves as the means for returning the armature to its normal position when the magnet is deenergized. To the rear of the spring 15 there is provided an adjusting screw 20 which passes through a threaded hole in the bracket 21. The end of the screw 20 bears against the spring 15, so that by turning the screw either in or out, the pressure of the spring 15 on the armature 5 may be either increased or decreased, as desired, until the proper tension is obtained.

It will thus be seen that I have devised a relay in which the length of the stroke of the armature can be readily adjusted by means of the thumb nut 13. In telephone constructions these relays are usually mounted in banks, and this thumb nut being at one end of the relay it is readily accessible for adjusting the armature without necessitating the removal of the relay from the bank.

While I have illustrated and described one 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, a pair of electromagnets, a yoke connecting the same, said yoke having a pair of notches, a plate having a pair of lugs at one end thereof registering with said notches, whereby said plate is supported by said yoke, means for adjusting said plate longitudinally, said means comprising a threaded screw and a nut whereby the plate may be moved by merely turning the nut for adjusting the armature either toward or away from the pole piece, and an armature for said magnets carried by the opposite end of said plate.

2. In a relay, a magnet, a yoke secured to one end thereof, a post secured to said yoke and extending substantially parallel to said magnet, a plate adjustably mounted on said yoke and having an end portion through which said post extends, an armature mounted on said plate, and means for adjusting said plate along said post to adjust the stroke of said armature.

3. In a relay, an electromagnet, a yoke

mounted at one end thereof, a post mounted on said yoke and extending substantially parallel to said magnet and having a reduced end portion, a non-magnetic plate adjustably mounted on said yoke and having a bent end portion through which the reduced portion of said post passes, a spring surrounding said post and engaging between said plate and a shoulder on the post, a thumb nut mounted upon the end of said post and bearing against said plate, whereby said plate may be longitudinally adjusted, and an armature mounted on said plate.

4. In a relay, an electromagnet, a yoke mounted at one end thereof, a plate adjustably mounted on said yoke, an armature mounted on said plate, a retracting spring bearing against said armature, and a thumb screw for regulating the pressure exerted upon said armature by said spring, means for adjusting said plate, said means comprising a threaded screw and a nut whereby the plate may be moved by merely turning the nut for adjusting the armature either toward or away from the pole piece.

5. In a relay, an electromagnet, a yoke having a pair of notches, a plate having a pair of lugs registering with said notches, whereby said plate is supported by said yoke,

means for adjusting said plate longitudinally, and an armature for said electromagnet mounted on said plate.

6. In a relay, an electromagnet, a plate mounted on said electromagnet, an armature for said magnet mounted on said plate, a retracting spring bearing against said armature, means for adjusting said plate comprising a threaded screw and a nut whereby the plate may be moved by merely turning the nut for adjusting the armature either toward or away from the pole piece.

7. In a relay, a pair of electromagnets, a yoke connecting the same, a plate carried by said yoke, an armature for said magnets mounted on said plate, a retracting spring bearing against said armature, and means for adjusting said plate comprising a threaded screw and a nut whereby the plate may be moved by merely turning the nut for adjusting the armature either toward or away from the pole pieces.

Signed by me at Chicago, Cook county, Illinois, this 3rd day of October, 1912.

JOHN ERICKSON.

Witnesses:

ARTHUR J. RAY,
ALEX. E. WALKER.