

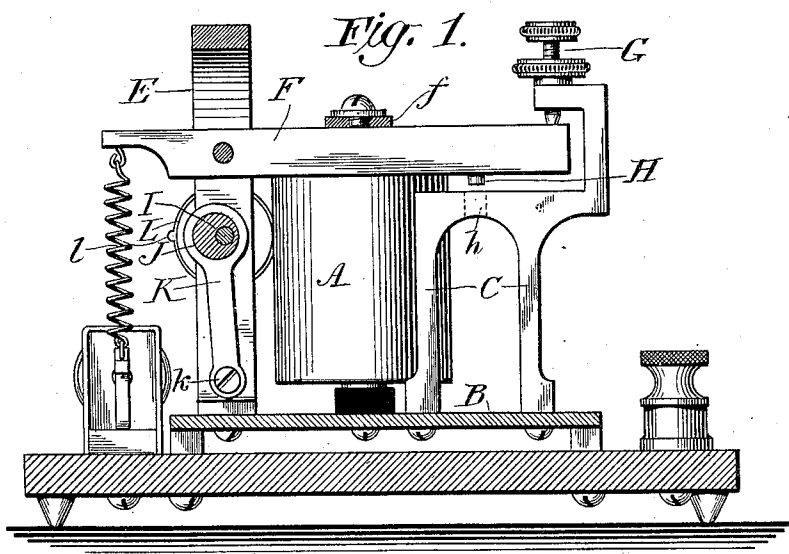
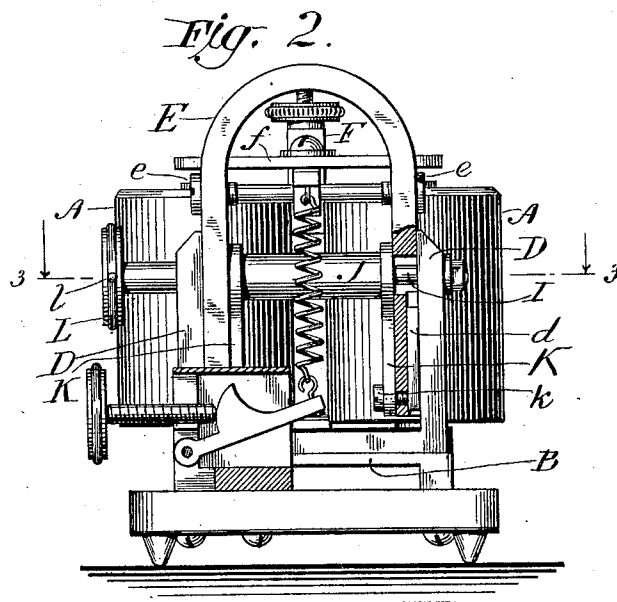
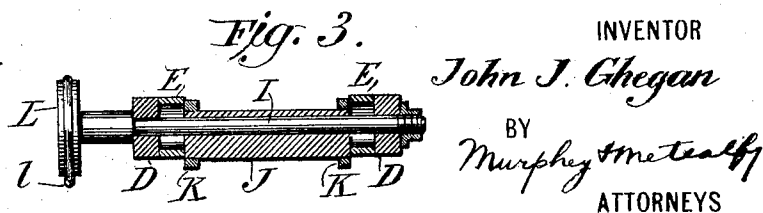
No. 678,395.

Patented July 16, 1901.

J. J. GHEGAN.
TELEGRAPHIC INSTRUMENT.

(Application filed Apr. 16, 1900.)

(No Model.)



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TELEGRAPHIC INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 678,395, dated July 16, 1901.

Application filed April 16, 1900. Serial No. 13,089. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. GHEGAN, a citizen of the United States, and a resident of the city of Newark, Essex county, New Jersey, have invented certain new and useful Improvements in Telegraphic Instruments, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to telegraphic instruments, such as sounders and relays, which are provided with a vibrating armature; and one object thereof is to provide means for adjusting the operating position of the armature, so as to increase or diminish the distance between the same and the poles of the magnet by which the armature is actuated to provide for varying current conditions on the line.

A further object thereof is to secure a construction in which this adjustment may be secured and in which the magnets are rigidly and firmly mounted and secured directly to the base-plate of the instrument.

In the accompanying drawings, Figure 1 is a side elevation, partly in section, of a sounder embodying my invention. Fig. 2 is an end elevation thereof; and Fig. 3 is a horizontal section of the adjusting mechanism on the line 3 3, Fig. 2.

Similar reference characters are employed to designate corresponding parts in all the views.

My invention may be applied to relays and other electrical instruments, which are provided with a vibrating armature; but I have for purposes of illustration and description selected a telegraphic sounder as a type of instrument in which the advantages of my invention are perhaps most perfectly realized. The sounder is of the usual type and comprises an electromagnet A, rigidly and immovably secured to the base-plate B. An anvil C and the standards D, which support the yoke E, by which the armature-lever F is carried, are also secured rigidly to the plate B. The armature-lever F carries the armature *f*. The anvil C is provided with a projection, in which the stroke or contact screw G is adjustably mounted; but instead of em-

ploying the usual lower stroke-screw I secure a contact point or projection H to the under side of the armature, and where, as is usual, the anvil is made of brass I prefer to insert in the anvil a piece of harder metal *h* to receive the impact of the projection H. The armature-lever F is pivotally mounted in a yoke or support E by set-screws *e*, which form adjustable bearings for the axis of the lever. The standards D are provided with guides *d*, which enter grooves formed in the lower ends of the yoke E, so that the latter may be raised and lowered relatively to the standards. A shaft I is rotatably mounted at the upper extremities of the standards D, and the arms of the yoke E are slotted to permit the passage of the shaft through them and also to allow for the vertical movement of the yoke. Upon the shaft I is mounted to turn therewith an eccentric J. As shown and as preferably constructed, this eccentric J is in one piece, extending from one side of the yoke to the opposite side, and on the ends of the eccentric are fitted eccentric links or rods K, the opposite ends of which are pivotally secured to the lower ends of the yoke E by the set-screws *k*. The shaft I is provided with the operating-head L, upon which is formed an indicator *l*, so placed as to show at all times the position of the armature. This indicator is preferably in the form of a projection extending from the surface of the head L, so that the operator may determine its position by the sense of touch and without visual observation.

Assuming that the armature is in the intermediate position shown in Fig. 1 and the operating conditions require an increase in the distance between the armature and the poles of the magnet, the head L of the shaft I is turned toward the right—that is, to carry the indicator *l* upward. The eccentric J will be thereby turned in the same direction and will draw up the links K, which will raise the yoke E and elevate the bearings of the armature-lever, thus securing an increased distance between the armature and the magnet-poles. By turning the head L in the opposite direction this distance will be decreased. The position of the armature will at all times be denoted by the position of the indicator *l*. When the head L has been moved to bring

the indicator uppermost, the armature will be at the maximum distance from the magnet-poles, and when the indicator is at the bottom of the head L the armature and magnets will have reached their closest proximity. An intermediate position of the indicator will denote a corresponding intermediate adjustment of the armature. Thus the operator is enabled by simply noting the position of the indicator to determine accurately and exactly without visual observation the degree of separation between the magnet and armature-poles. The parts are usually constructed so that the set-screws *k* can be tightly enough adjusted to prevent any accidental movement thereof while the apparatus is in operation; but, if desired, any other suitable friction device may be employed for that purpose.

Many modifications of the specific device which I have shown and described may be adopted without departing from the spirit of my invention—as, for instance, the eccentric need not extend from one side of the yoke to the other, as shown—since separate eccentrics, one for each link, may be employed, and it is my intention to claim all such obvious modifications.

Having thus shown and described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a telegraphic instrument, the combination of an armature, a pivoted armature-lever, an electromagnet, a movable support for the armature-lever, a fixed support for the armature-lever support, a connection between said supports and an eccentric for actuating said connection to vary the position of the armature.

2. In a telegraphic instrument, the combination of an armature, a pivoted armature-lever, an electromagnet, a movable support

for the armature-lever, a fixed support for the armature-lever support, a shaft carried by one of said supports, an eccentric on said shaft, a connection between said eccentric and the other support and means for actuating said eccentric to vary the position of the armature.

3. In a telegraphic instrument, the combination of an armature, a pivoted armature-lever, an electromagnet, a movable support for the armature-lever, a fixed support for the armature-lever support, an eccentric supported or carried by said fixed support, a connection between said eccentric and the movable support and means for actuating said eccentric to vary the position of the armature-lever.

4. In a telegraphic instrument, the combination of an armature, a pivoted armature-lever, an electromagnet, a movable support for the armature-lever, a fixed support for the armature-lever support, a shaft carried by said fixed support, an eccentric on said shaft, a link connection between the eccentric and the armature-lever support and means for actuating said eccentric to vary the position of the armature-lever.

5. In a telegraphic instrument of the character described, the combination with the magnets and armature, of a pivoted armature-lever, a movable support therefor, means, comprising a rotatable head or disk, for moving said support through its path of movement upon one-half revolution of said head or disk in either direction, and an indicator movable with said head or disk for denoting the position of the armature-support.

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