(No Model.)

C. M. DYER.

TELEGRAPH RELAY.

No. 470,557. Patented Mar. 8, 1892.

Fig 1

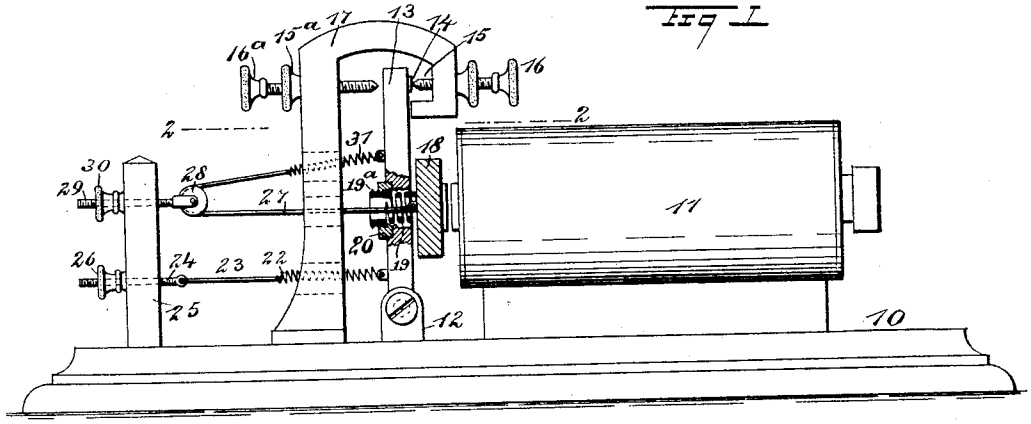


Fig 2

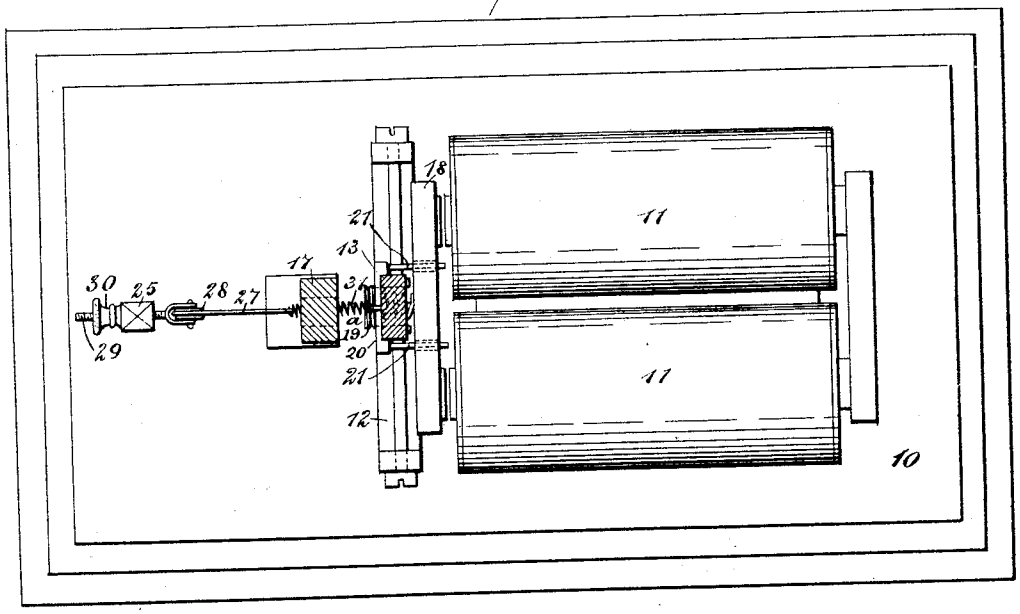


Fig 3

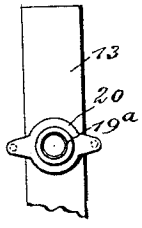
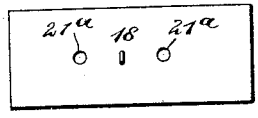


Fig 4



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES M. DYER, OF CLOVERDALE, INDIANA.

TELEGRAPH-RELAY.

SPECIFICATION forming part of Letters Patent No. 470,557, dated March 8, 1892.

Application filed September 9, 1891. Serial No. 405,339. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. DYER, of Cloverdale, in the county of Putnam and State of Indiana, have invented a new and Improved Telegraph-Relay, of which the following is a full, clear, and exact description.

My invention relates to improvements in telegraph-relays; and the object is to provide a nicely-balanced armature which will be held in proper adjustment without regard to the variations of the electric current.

To this end my invention consists in certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the relay provided with the improvement, the armature and armature-lever being shown partly in section. Fig. 2 is a sectional plan on the line 2 2 of Fig. 1. Fig. 3 is a broken rear elevation of the armature-lever, and Fig. 4 is a front elevation of the armature.

The relay is provided with the usual base 10 and magnets 11, and these are of the usual construction, suitable binding-posts (not shown in the drawings) being provided to make the line and local connections. At one end of the magnets 11 is a transverse block 12, to which the armature-lever 13 is pivoted, and the armature-lever has the usual contact 14 near its free end, which is adapted to contact with the contact-screw 15, which screw is held in the post 17 and adjusted by a screw 16 in the usual way. In the rear of the lever are similar screws 15^a and 16^a, which are adjusted to limit the retraction of the lever. This post, the adjusting-screws, and the arrangement for contact with the armature-lever are of the usual construction, and form no part of my invention. The armature 18 is loosely connected with the armature-lever 13 by means of a spiral spring 19, which extends through a central aperture in the lever and has one end secured to the armature, and the opposite end terminates in a threaded sleeve 19^a, which is screwed into a socket-plate 20 on the lever, thus providing for the adjustment of the spring. The armature is prevented from turning by means of the arms 21, which are secured to the armature-lever and extend through holes 21^a in the armature. This spring provides for a slight movement of the armature in relation to the lever. The armature-lever is provided with the usual retractile spring 22, which connects by means of a rod 23 with a screw 24 in the post 25, which screw is adjusted by means of a nut 26. The armature 18 is centrally secured to a belt 27, which extends through the aperture in the lever 13, through the post 17, over a guide-pulley 28, which is adjustably secured to the post 25 by means of a screw 29 and nut 30, and the belt is finally secured to a spring 31, one end of which is attached to the armature-lever. As described, it will be noticed that the armature and armature-lever will swing together under the influence of the magnets; but in case of a sudden increase of current the armature would necessarily start quickly toward the magnets, and this movement is neutralized by the connection between the armature and the armature-lever, as when the armature is drawn forward it will pull on the belt 27, which, operating on the free end of the armature-lever, will have a tendency to pull the lever away from the armature, and thus keep the lever-movement constant.

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

1. The combination, with the armature-lever pivoted at one end at right angles to the magnet and provided with a spring projecting beyond its front face toward the magnet, of an armature mounted on the inner end of the spring adjacent to the magnet, substantially as set forth.

2. In a telegraph-relay, the combination, with an armature-lever and a spring having a longitudinally-adjustable connection at one end with said lever, of the armature secured to the opposite end of the spring and carried thereby, substantially as set forth.

3. In a telegraph-relay, the combination, with the apertured armature-lever, of the armature having a spring secured thereto, said spring extending through the aperture in the lever and being secured to the back side of the latter, substantially as shown and described.

4. In a telegraph-relay, the combination, with a swinging armature-lever and the armature supported yieldingly on the front of the said lever, of a belt secured to the armature and extending over a guide-pulley to connect with the armature-lever, the belt being arranged so that the movement of the armature will impart an opposite movement to the lever, substantially as shown and described.

5. In a telegraph-relay, the combination, with the apertured armature-lever having a spring secured thereto, of the armature arranged in front of the lever and a belt secured to the lever-spring and extending over a guide-pulley and through the lever to connect with the armature, substantially as shown and described.

6. The combination of the swinging armature-lever, the armature supported on the lever by a spring, and a spring-belt connection between the armature and lever, whereby the movement of one will impart an opposite movement to the other, substantially as shown and described.

CHARLES M. DYER.

Witnesses:
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GEO. B. ROCKWELL.