

G. W. LORIMER.
RELAY AND SOUNDER.
APPLICATION FILED JULY 22, 1902.

Fig. 1.

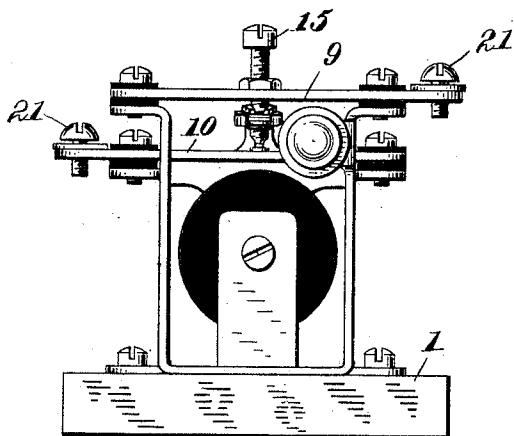


Fig. 2.

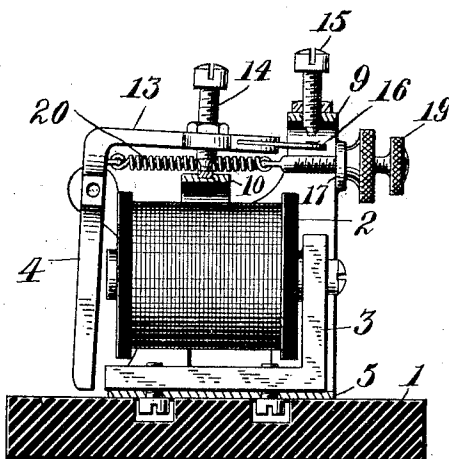


Fig. 3.

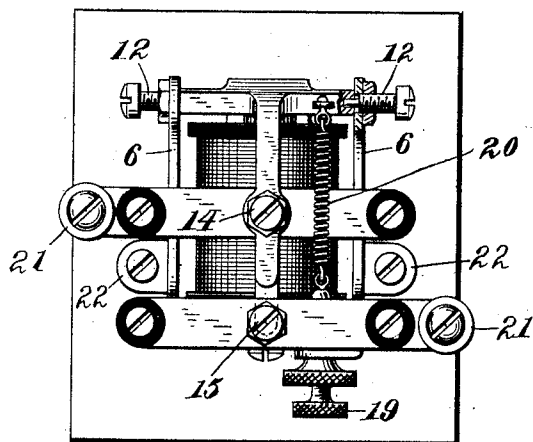
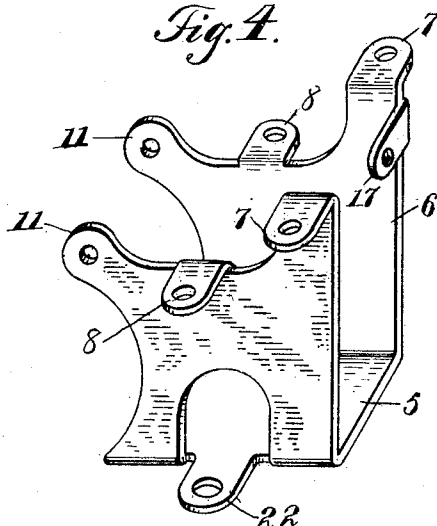


Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE WILLIAM LORIMER, OF PIQUA, OHIO, ASSIGNOR TO THE LORIMER AUTOMATIC TELEPHONE COMPANY, OF AUGUSTA, MAINE, A CORPORATION OF MAINE.

RELAY AND SOUNDER.

No. 862,084.

Specification of Letters Patent.

Patented July 30, 1907.

Application filed July 22, 1902. Serial No. 116,522.

To all whom it may concern:

Be it known that I, GEORGE WILLIAM LORIMER, a citizen of the British Empire, and a resident of Piqua, in the county of Miami and State of Ohio, have invented certain new and useful Improvements in Relays and Sounders, of which the following is a specification.

My invention relates to the construction of electromagnetic relays and sounders and has reference more particularly to the portion of the instrument constituting the frame upon which the working parts are mounted or supported.

The general object of my invention is to secure simplicity and cheapness in the construction of relays and sounders together with rigidity in the support for the adjusting screws or stops, facility of adjustment, convenience of access and other advantages which will be apparent from the subjoined description taken in connection with the accompanying drawings.

My invention is in some respects useful for sounders only, but will be hereinafter described as carried out in connection with a relay wherein provision is made for the connection of circuit-wires to the parts mounted upon the frame.

Figure 1 is an end elevation, and Fig. 2, a side elevation of an instrument constructed in accordance with my invention; Fig. 3 is a plan of the instrument, and Fig. 4 a perspective view of the frame upon which the working parts are mounted.

1, is a base to which the frame with an electromagnet secured thereto is attached.

2, is the electromagnet which in this case is preferably of the single straight core type and is furnished with the core extension 3 secured to one end of the core and extended around to the opposite end in proximity to the armature 4, as usual in the art. The electromagnet is secured to the frame by screws, or other means, (as shown in the sectional portion of Fig. 2,) fastening the extension 3 to the base 5 of the frame shown in perspective in Fig. 4. At opposite sides of the base are the uprights or standards 6, between which the magnet is mounted as shown in end elevation, Fig. 1, and in plan Fig. 3. The frame is preferably composed of sheet metal bent up from a metal blank of proper form, and the uprights or standards 6, at their tops are each furnished with two ears 7, 8, which are bent down as shown, to form means for the attachment of two cross-bars 9, 10, located in different longitudinal planes. At another part of the standards are provided the ears 11, in which are mounted the bearings or bearing-screws 12, for the armature 4. In the horizontal arm 13, extending from the armature

4, is the adjustable stop or contact-screw 14, which engages with the horizontal cross-bar 10. In the cross-bar 9, is mounted the adjustable stop or contact 15, which is engaged by the contact tongue 16, carried by the armature on the reverse movement of the armature from the position in which stop 14 engages cross-bar 10. Another ear 17 bent up from the material of one of the standards 6, affords a support for the adjusting screw 19, to which the retractile-spring 20 for the armature is attached in the usual manner.

When the device is used as a relay designed to close or break circuit on both its front and back contacts, suitable binding screws 21 are furnished upon ends of the cross-bars 9, 10, and said bars are insulated from the frame by the interposition of suitable insulating washers, as clearly shown.

To attach the frame and parts mounted thereon to the base 1, suitable ears 22 formed of material taken from the standard 6, are provided.

As will be seen, all the parts of the frame illustrated in Fig. 4, may be formed of a single piece of sheet metal, the parts described being bent to occupy the proper position for attachment of the devices described. It will also be seen by reference to Figs. 1 and 3, that the adjustment-screws 14, 15, and connection binding-post 21, are all located at the top or outer portion of the instrument where they may be readily gotten at for manipulation without obstruction of any other parts of the instrument.

What I claim as my invention is:

1. The combination of an electromagnet, an armature lever, a sheet-metal frame having a base 5 and uprights or standards 6, means for securing the magnet to the base 5, ears 7, 8, bent over from the material of the uprights, and cross-bars 9, 10, between which the armature lever plays.

2. In a relay or sounder, a sheet-metal frame supporting the working parts and comprising a base, two uprights provided with ears for the bearings of the armature and with ears bent over into a horizontal plane but at different heights from the base for attachment of cross-bars, as and for the purpose described.

3. A sheet metal frame for electro-magnets having a base to afford a support for the magnet and two uprights or standards at opposite sides of the base, each of said uprights being provided at its top with two laterally projecting ears bent over into a horizontal plane but at different heights, as and for the purpose described.

4. A sheet metal frame for electro-magnets comprising a piece of sheet metal having a base, two uprights each provided with ears bent over into a horizontal plane for attachment of cross bars and with other ears cut and bent down out of the uprights for attachment of the frame to a suitable support.

5. A sheet-metal frame for the support of an electromagnet, its armature and the parts operating therewith, consisting of a piece of sheet-metal comprising a base, standards, ears formed in said standards for supporting an

armature lever, an ear on one of the standards for attachment of the adjusting screw for the retracting spring, and ears occupying horizontal planes at different heights, as and for the purpose described.

- 5 6. In a relay, the combination with an electro-magnet, an armature lever, a frame in which the same is pivoted, two transverse bars also carried by said frame and between which said lever plays, each said bar being provided with a suitable binding screw, an adjustable contact car-

ried by the lever to engage one of said bars and an adjustable contact screw borne by the other bar, as and for the purpose described. 10

Signed at Piqua in the county of Miami and State of Ohio this 17 day of July A. D. 1902.

GEORGE WILLIAM LORIMER.

Witnesses:

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JAS. WARD KEYT.