No. 673,289. Patented Apr. 30, 1901.

U. G. ROGERS.

SUPPORTING FRAME FOR RELAY MAGNETS.

(Application filed Feb. 28, 1901.)

(No Model.)

Fig. 1.

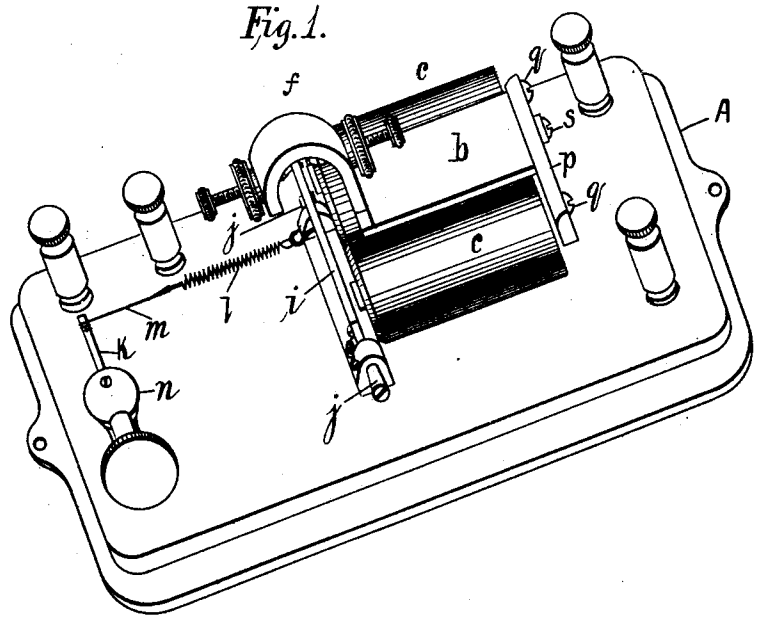


Fig. 2.

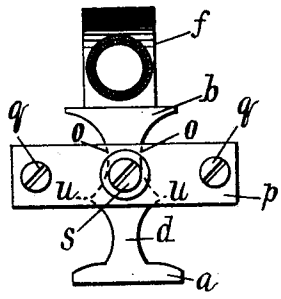
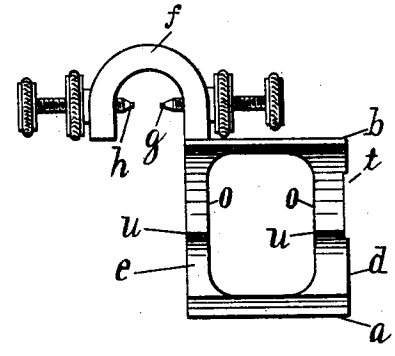


Fig. 3.



Witnesses
Edgwood Browne
C. Sedgwick

Ulysses G. Rogers
Inventor
By his Attorney A. O. Thayer

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ULYSSES G. ROGERS, OF NEW YORK, N. Y.

SUPPORTING-FRAME FOR RELAY-MAGNETS.

SPECIFICATION forming part of Letters Patent No. 673,289, dated April 30, 1901.

Application filed February 28, 1901. Serial No. 49,221. (No model.)

To all whom it may concern:

Be it known that I, ULYSSES G. ROGERS, a citizen of the United States of America, and a resident of New York city, county and State of New York, have invented certain new and useful Improvements in Supporting-Frames for Relay-Magnets, of which the following is a specification.

My invention consists of an improved construction of the frame for supporting the eletromagnets of electric relay apparatus, whereby with a considerable reduction in the amount of metal used greater supporting strength is obtained in a part of insufficient strength as heretofore constructed, more substantial fixture of the spools is provided, and the length of the frame for spools of a given size is reduced with further economy of metal, all as hereinafter described, reference being made to the accompanying drawings, in which—

Figure 1 is a perspective view of relay apparatus constructed according to my invention. Fig. 2 is a rear end elevation of the frame with the iron cross-bar by which the spools are connected attached. Fig. 3 is a side elevation of the frame.

A represents the base-plate on which the several parts of the apparatus are mounted. *a* represents the base, and *b* the top, of the frame for supporting the magnet-spools *c*. *d* represents a hind leg, and *e* a front leg, of this frame, supporting the top *b* at each end, respectively.

f represents the gooseneck or yoke supporting the armature-contacts *g* and *h*.

i represents the armature, supported on the pivots *j*; *k*, the adjusting-pin; *l*, the coiled spring, and *m* the cord connecting said spring with the adjusting-pin for regulating the tension of the armature, said pin being revoluble in its supporting-post *n* for winding or unwinding the cord and subject to friction therein for holding it when adjusted against the pull of the spring.

In these frames as heretofore constructed only one leg is provided for the support of the top *b* and the gooseneck *f*, such leg being necessarily at the hind end; but in consequence of the much greater quantity of metal needed for the requisite strength for the support of the top and the gooseneck in this manner the frame has to be made as much longer than, as herein shown, as the thickness of the iron bar *p* and of the leg to allow the leg to be placed outside of the bar, and must be much wider for strength, whereas by the employment of the additional front leg *e* the two legs may be made sufficiently narrow at *o* in the horizontal plane of the axes of the spools as to enable them to be placed between the spools, and the frame may be shortened to the extent of the thickness of the leg and said iron bar, so that although I use two legs I require less metal for the same strength. The shortening of the frame is also advantageous in that it enables a corresponding shortening of the entire instrument. When such a wide hind leg is used, there are commonly two screws, as *s*, used for connecting the iron bar to the leg; but while the hind leg of my construction is not wide enough for two screws I find that by recessing the hind leg transversely, as shown at *t*, for insetting the bar *p* slightly, the said bar is not only more effectually secured because of the support of the shoulders of the recess, but there is a slight advantage of cheaper construction.

While the front leg *e* is of essential advantage in supporting the gooseneck against shocks and jars, to which it is more or less subject in handling and shipping and to which it is always liable in use and which frequently ruin the frame when supported only by one leg, said front leg is of equal or greater advantage in affording means for supporting the front ends of the spools, which in relays of ordinary construction are only supported by their hind-end connection with the iron bar *p*. These front-end supports consist of the shoulders *u*, extended circumferentially to the spool-cases downward from the horizontal plane of the axes of the spools, so that the cases rest thereon and have ample support against thrusts from the upper and outward direction, to which they are mostly liable, being largely protected from directly-downward thrusts by the partly-overhanging top *b* of the frame.

It will be seen that as the front ends of the magnets afford no means of attachment to bearing-supports without interfering with the cores these bearing-shoulders at the front end constitute an important element of the sup-

porting-frame and are thus provided without appreciable cost of material and labor. While I have represented like supports on the hind end and will prefer to employ them in practice, it is evident that because of the support the spools have at their hind end through their connection with the iron bar *p* such hind shoulders may be omitted, and I do not limit myself to their use.

In view of the great quantities of these instruments used and the low prices obtainable the economies due to the improved construction herein shown though slight in the several items are of material importance in the aggregate.

What I claim as my invention is—

1. In a relay-magnet-supporting frame having the armature-contact-supporting yoke on the front end of the top, said frame having hind-end and front-end top-supporting legs located between the magnet-spools at their ends respectively.

2. In a relay-magnet-supporting frame having the armature-contact-supporting yoke on the front end of the top, said frame having hind-end and front-end top-supporting legs located between the magnet-spools at their ends respectively, the hind side of the hind leg being practically flush with the ends of the spools.

3. In a relay-magnet-supporting frame having the armature-contact-supporting yoke on the front end of the top, said frame having hind-end and front-end top-supporting legs located between the magnet-spools at their ends respectively, the hind side of the hind leg being practically flush with the ends of the magnet-spools, with the spool-core connecting and supporting bar secured in a transverse recess of the leg by a single screw.

4. In a relay-magnet-supporting frame having the armature-contact-supporting yoke on the front end of the top, said frame having hind-end and front-end top-supporting legs located between the magnet-spools, the front leg having the spool-supporting shoulders circumferentially extended under the spools.

Signed at New York city, New York, this 26th day of February, 1901.

ULYSSES G. ROGERS.

Witnesses:
A. P. THAYER,
C. SEDGWICK.