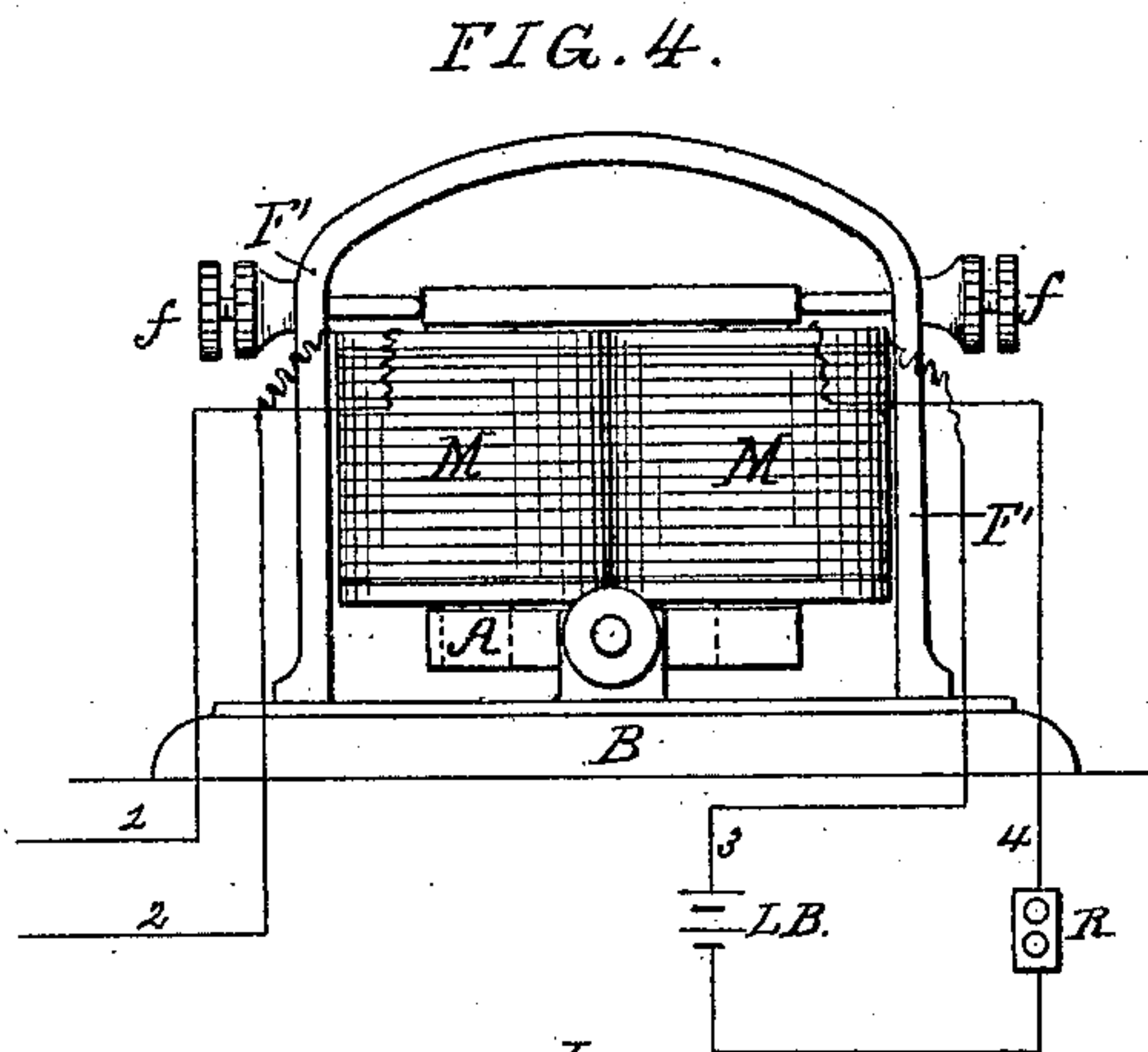
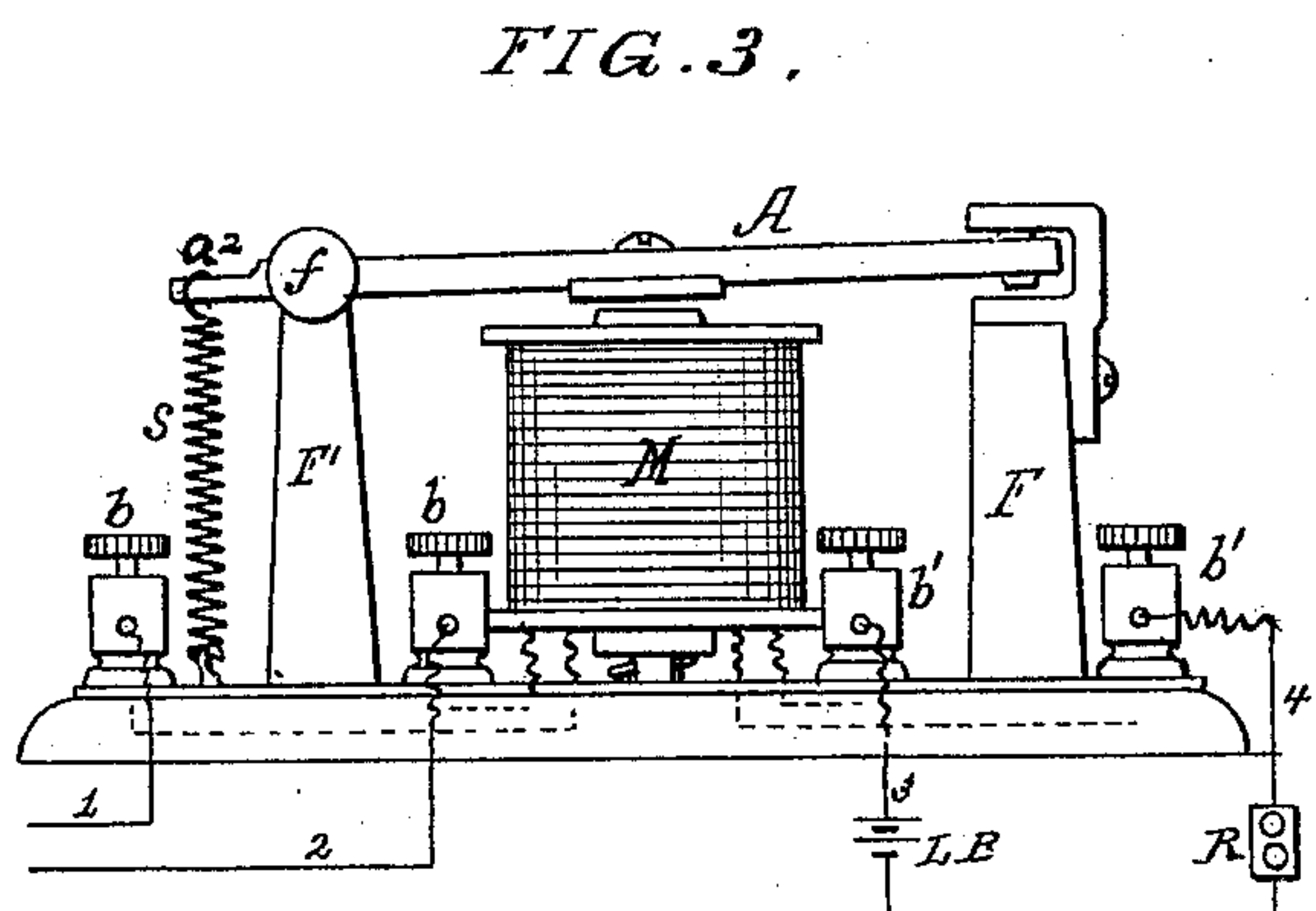
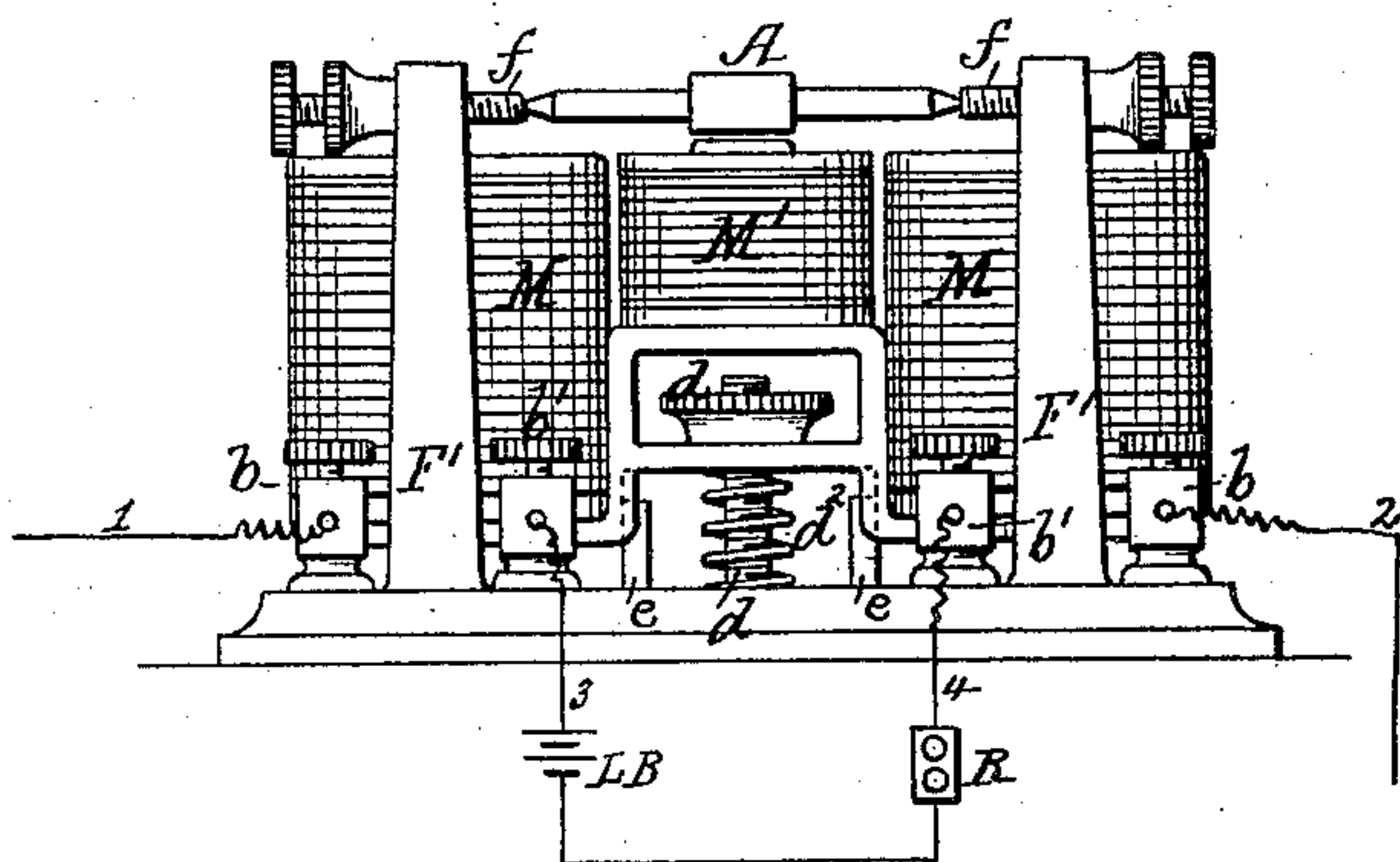
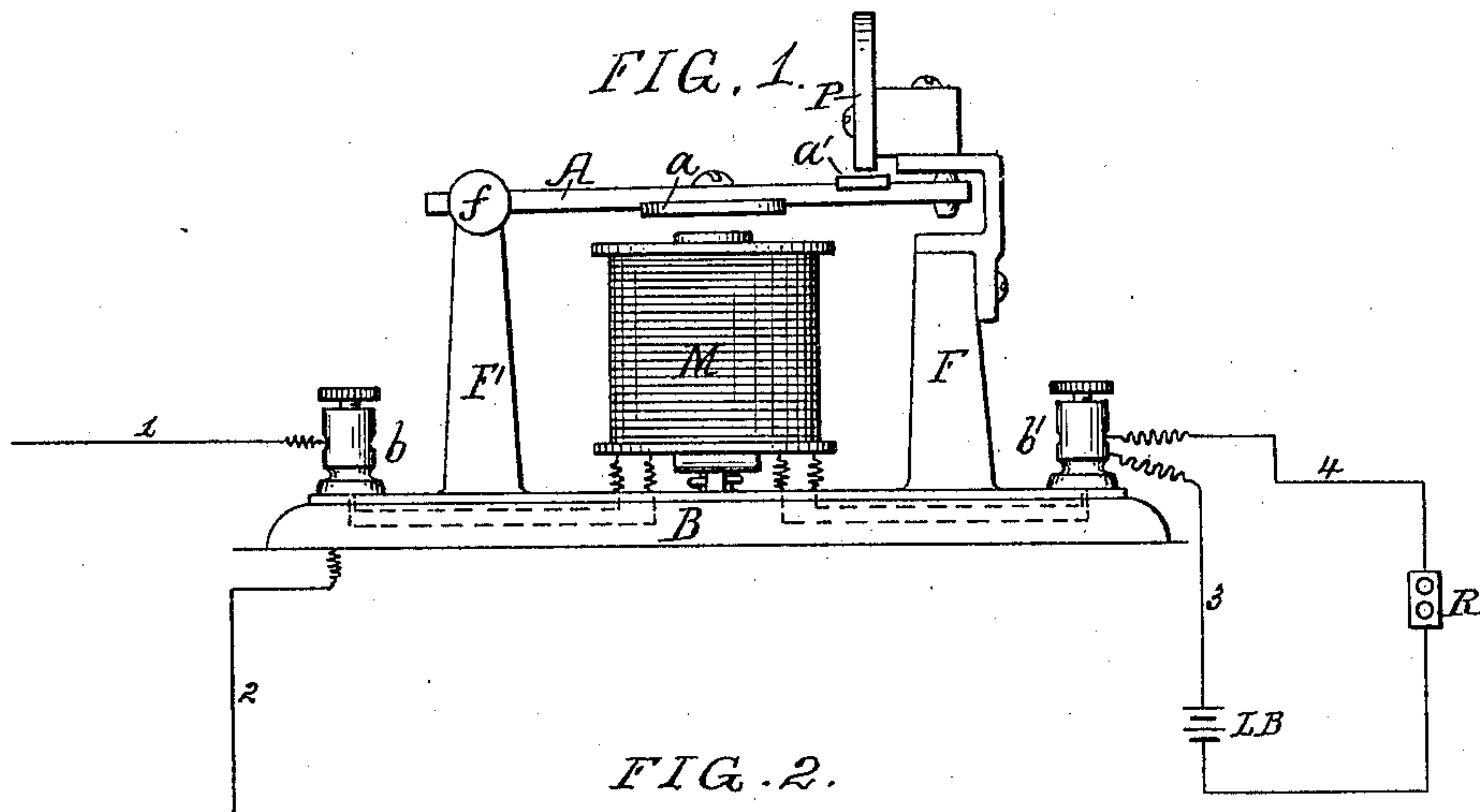


(No Model.)

G. S. MOTT.
TELEGRAPHIC SOUNDER.

No. 246,537.

Patented Aug. 30, 1881.



Witnesses:
Harry Drury
James F. Tobin.

Inventor
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by his attorneys
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UNITED STATES PATENT OFFICE.

GARRET S. MOTT, OF PHILADELPHIA, PENNSYLVANIA.

TELEGRAPHIC SOUNDER.

SPECIFICATION forming part of Letters Patent No. 246,537, dated August 30, 1881.

Application filed July 7, 1881. (No model.)

To all whom it may concern:

Be it known that I, GARRET S. MOTT, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented an Improved Telegraphic Sounder, of which the following is a specification.

My invention relates to certain improvements in the construction of the telegraphic instruments known as "Morse sounders;" and the object of my invention is to construct the instrument so as to dispense with the use of adjusting-screws for regulating the length of movement of the vibrating armature or the tension of the retracting-spring for the armature. This object I attain by combining an armature and non-adjustable retractor with an electro-magnet having two or more coils polarizing their core or cores in the same direction, and one or more of the coils forming part of a permanently-closed local circuit containing an adjustable resistance, as more fully described hereinafter.

In the accompanying drawings, Figure 1 is a side view of a telegraphic instrument containing my improvements, with the circuits shown in diagram; and Figs. 2, 3, and 4, views of modifications.

Referring to Fig. 1, A is the vibrating armature-lever, mounted on the usual points, *f*, on the posts *F'* of the frame, and having a limited motion between fixed points on the post *F*. The electro-magnet *M*, instead of being formed of the usual single coil or coils in the same circuit, is provided with two or more coils on one or both spools acting on the core or cores in the same direction, but in different circuits, the terminals of one coil or set of coils being connected to the binding-posts *b* for the line-circuit 1 2, while the terminals of the other coil or set of coils are connected to binding-posts *b'*, to form part of a permanently-closed local circuit, 3 4. This local circuit contains a battery, *L B*, and an adjustable resistance or rheostat, *R*.

When the line-battery is not in circuit through its coils of the electro-magnet *M*, the armature *a* is retracted by a permanent magnet, *P*, fixed to the top of the post *F*, and acting on a back armature, *a'*, fixed to the lever *A*. This permanent magnet is of such a strength as to prevent the attraction of the armature by the elec-

tro-magnet when the main-line circuit is not closed, even though the resistance in the closed local circuit is adjusted to throw the full strength of the battery *L B* on its coils; but when the effect of the incoming line-current on the cores is combined with that of the closed circuit the armature will be attracted by the electro-magnet.

By adjusting the resistance *R* in the closed local circuit the strength of the current in the electro-magnet of such circuit can be readily adjusted in accordance with the variations in the strength of the line-current, and by this means the combined effects of the two currents on the cores of the electro-magnet can always be maintained to about the same degree.

In forming the two or more coils of the electro-magnet for the two circuits, if there be only one spool or bobbin, it may be double-wound—one coil for the closed local and the other for the main circuit. Where there are two spools, they may be double-wound in the same way, or may be single-wound, the two coils being then unconnected, but one being for the closed local and the other for the main-line circuit. The instrument may also be made with the usual two single-wound spools, with connected coils for one circuit, and a third spool, *M'*, as illustrated in the rear view, Fig. 2, for the other circuit. In this case the third coil, *M'*, forms part of the closed local circuit 3 4. In all cases it is desirable to make the electro-magnet adjustable toward and from the armature, as in the relays in common use. In the instrument illustrated in Fig. 2 this is accomplished by means of a screw-post, *d'*, and screw-nut *d*, with an intermediate spring, *d²*, the magnets being guided by pins *e e* or other suitable devices.

In the modification shown in Fig. 3, the armature-lever is retracted by a non-adjustable spring, *s*, instead of a permanent magnet; or, if preferred, the end *a²* of the armature may be provided with a fixed weight to return the lever to its raised position when the line-circuit is opened.

My improvements may be applied to different forms of sounders. For instance, they may be applied to the construction of telegraphic instrument described and claimed in an application filed by me of even date herewith, and illustrated in Fig. 4. In this instrument the

electro-magnet bobbins M M are mounted on pivots *ff*, so as to vibrate, while the armature A is stationary but adjustable toward and from the poles of the electro-magnets, which are retracted by weight or a non-adjustable spring. One of the coils of the spools M M forms part of the closed local circuit 3 4, the other coil or coils being in the main circuit.

I claim as my invention—

10 A telegraphic sounder in which an armature and non-adjustable retractor are combined with an electro-magnet or electro-magnets composed

of two or more coils adapted to polarize their cores in the same direction, and one or more of the coils forming part of a permanently-closed local circuit containing an adjustable resistance. 15

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GARRET S. MOTT.

Witnesses:

HARRY DRURY,
HARRY SMITH.