(No Model.)

C. D. HASKINS.

TELEGRAPH SOUNDER.

No. 352,317. Patented Nov. 9, 1886.

Fig. 3.

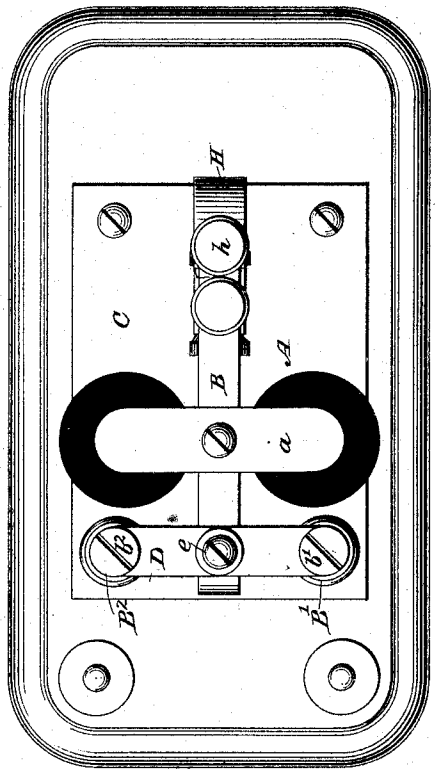


Fig. 1.

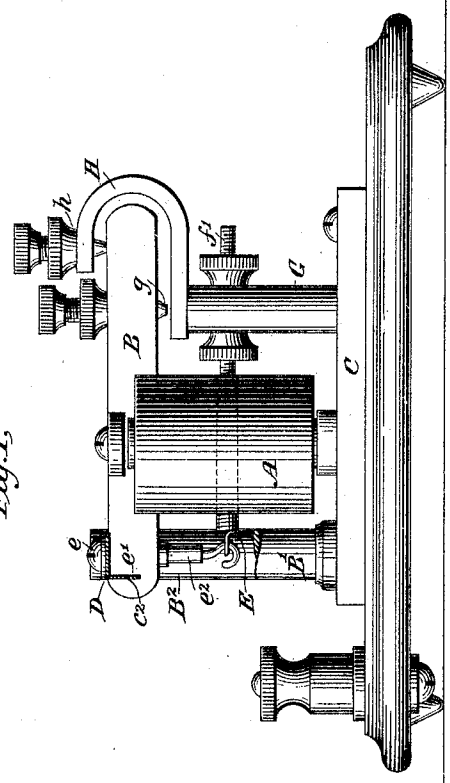
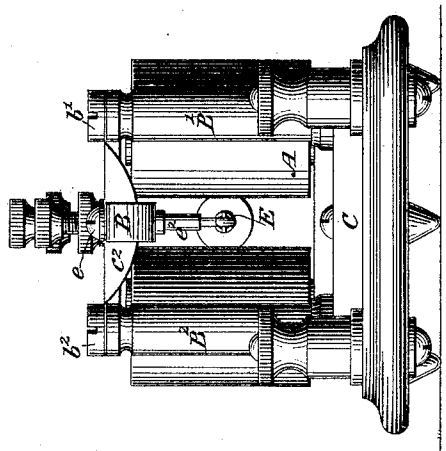


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

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TELEGRAPH-SOUNDER.

SPECIFICATION forming part of Letters Patent No. 352,317, dated November 9, 1886.

Application filed June 22, 1886. Serial No. 205,851. (No model.)

To all whom it may concern:

Be it known that I, CHARLES D. HASKINS, a citizen of the United States, residing in Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Telegraphic Sounders, of which the following is a specification.

The invention relates to the construction of telegraphic instruments, and is especially applicable to telegraphic sounders and keys.

The object of the invention is to provide convenient means for supporting the armature and armature-lever in the proper position relative to the electro-magnet and to dispense with the employment of trunnions or a pivoted support.

The invention further involves a special arrangement of parts, whereby the working-point of the sounder is placed immediately above the stroke-post, which serves to give a clearer and more sharp reading-stroke.

The armature-lever is secured to a flat spring having rectangular extensions which enter a slot at the end of the lever. This insures not only that the lever shall be held in its proper position vertically, but also prevents any horizontal movement of the same.

It has heretofore been proposed to support a lever of a key or an armature upon a flat torsional spring. In such construction, however, there is danger of the lever turning upon its support horizontally.

In the accompanying drawings, Figure 1 is a side elevation, and Fig. 2 an end view, of an instrument embodying the features of the invention. Fig. 3 is a plan.

Referring to the figures, A represents an electro-magnet provided with an armature, *a*. The armature is carried upon a lever, B, and the lever is supported from two posts, B′ and B^2, extending from a base, C. A spring or plate of resilient metal, D, is attached at its central part to the lever by means of a screw, *e*, or in any other convenient manner. The ends of this spring are respectively secured to the posts B′ and B^2 by screws *b′* and b^2. A slot, *e′*, is formed in the lever B, and a rectangular lip or projection, c^2, on the spring D enters this slot. This lip is preferably curved, gradually increasing in width from the ends of the spring. The lip is tightly secured in position, and, together with the upper surface of the spring, holds the lever firmly in position, and at the same time the flexibility of the spring permits whatever vertical movement is required.

The lever is preferably not dependent for its retractile force upon the spring D, although it may be so, but is assisted by a coil-spring, E, extending from an arm, e^2, secured to the lever preferably immediately beneath the spring C. The other end of this lever is secured to an adjacent screw, *f′*, extending through a post, G. This post constitutes the sounding-post against which the point *g* upon the lever B strikes, and is directly beneath the lever.

The arm H extends from the upper end of the sounding-post G in a direction parallel to the lever, and then is curved over the top of the same, and carries a contact-screw or limiting-stop, *h*, which is adjustable in any convenient manner.

The invention has been described in connection with a telegraphic sounder; but it is evident that the torsion-spring may be applied to the armature-lever of any telegraphic receiving-instrument or to the lever of any telegraphic key without departing from the spirit of the invention.

I claim as my invention—

1. The combination, with a lever and means for operating the same, of a supporting torsional spring having a lip extending from the same entering a slot formed in the lever, substantially as described.

2. In a telegraph receiving-instrument, the combination, with an electro-magnet and its armature and a lever supporting the armature, of a flat spring secured to said lever and having an angled extension or lip and means for securing said lip to said lever.

3. The combination, with an electro-magnet, its armature, and armature-lever, of a flat supporting-spring secured to said lever at a central point, supports for the respective ends of said spring, a lip or angled projection upon one side of said spring, entering a slot in said lever, and an adjustable retractile spring applied to said lever.

4. In a telegraph receiving-instrument, the

combination of an electro-magnet, its armature, a lever for the same, a flat torsional spring carrying said lever and having its ends rigidly supported, an arm attached to said lever, extending in a direction at right angles to said spring, and a retractile spring connected with said arm.

In testimony whereof I have hereunto subscribed my name this 2d day of June, A. D. 1886.

CHAS. D. HASKINS.

Witnesses:
JAMES HARÜBLET,
CHARLES A. TERRY.