

(No Model.)

S. H. BECKWITH.

TELEGRAPH SOUNDER.

No. 250,703.

Patented Dec. 13, 1881.

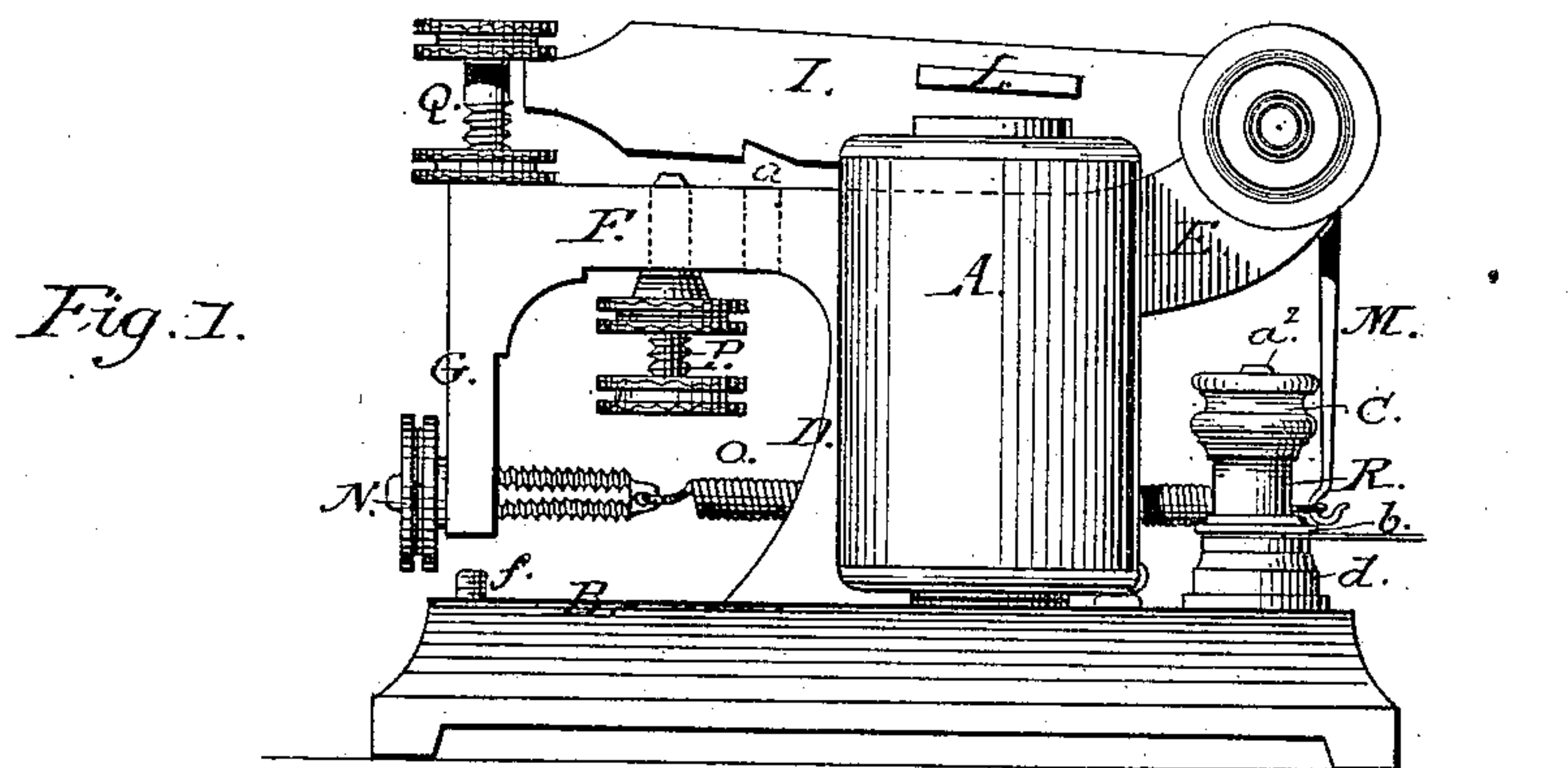


Fig. 2.

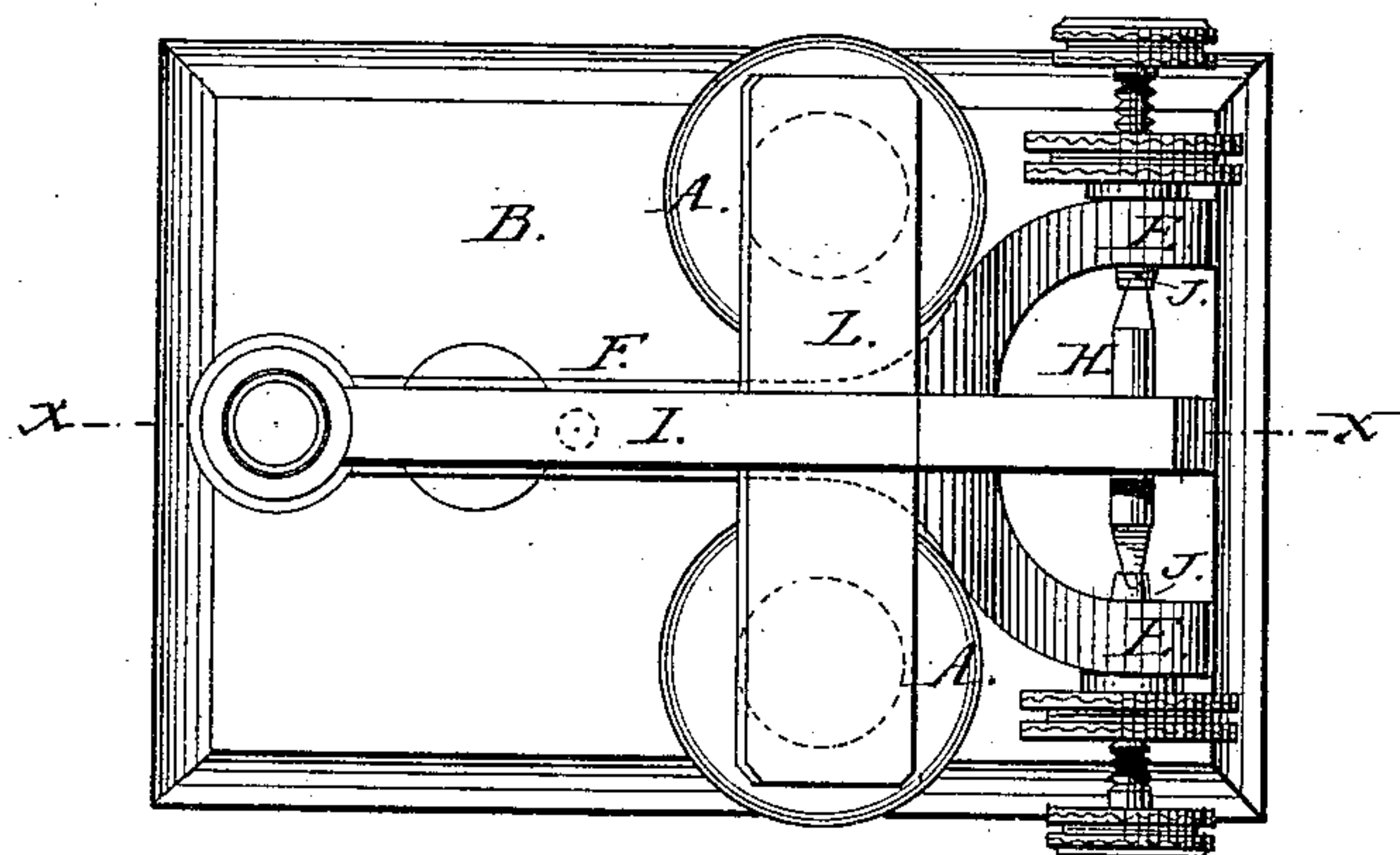
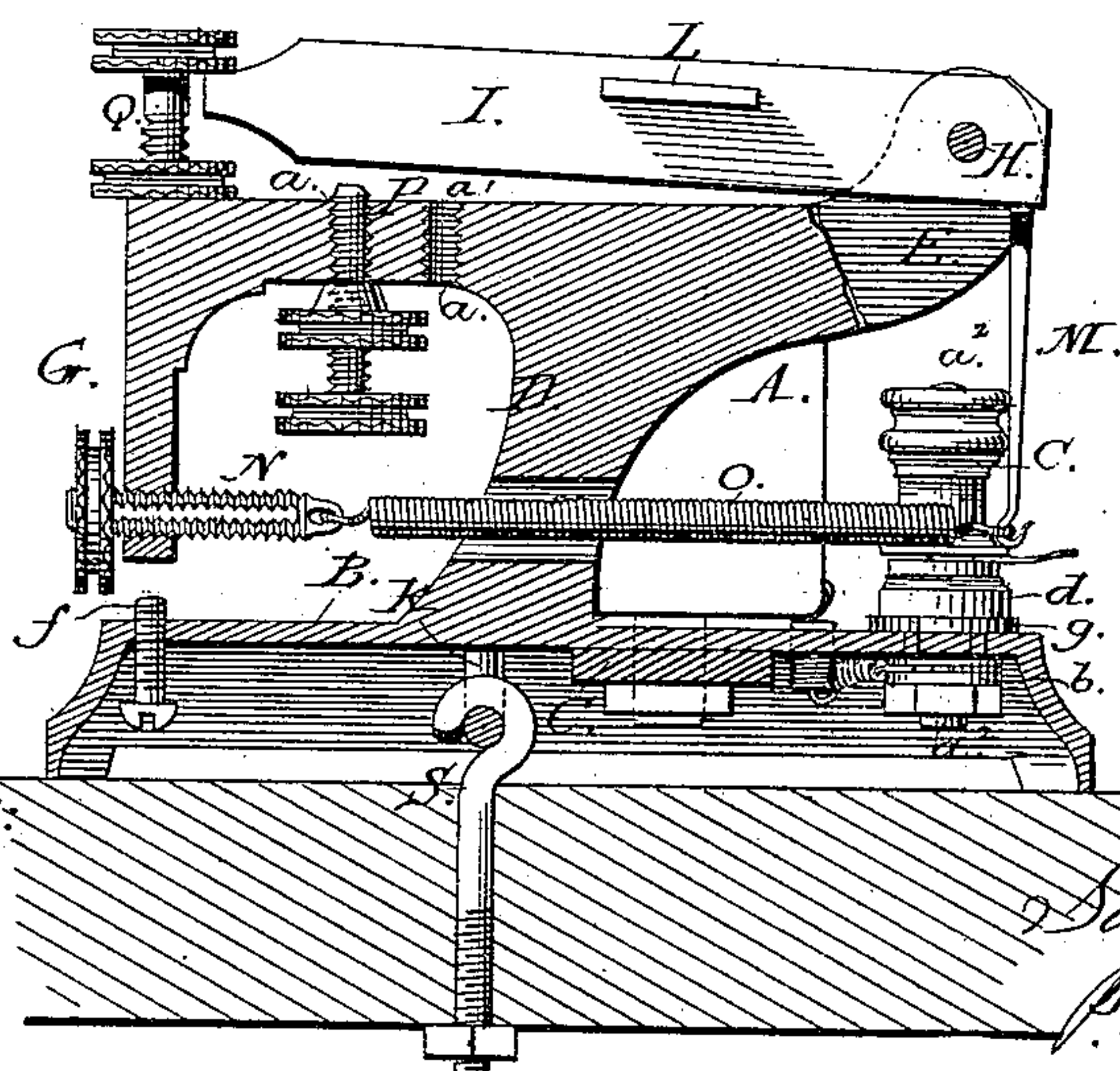


Fig. 3.



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UNITED STATES PATENT OFFICE.

SAMUEL H. BECKWITH, OF UTICA, NEW YORK, ASSIGNOR OF TWO-THIRDS TO WM. H. PRENTICE AND FRANK J. CALLANEN, BOTH OF SAME PLACE.

TELEGRAPH-SOUNDER.

SPECIFICATION forming part of Letters Patent No. 250,703, dated December 13, 1881.

Application filed May 11, 1881. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL H. BECKWITH, of Utica, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Telegraph-Sounders; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

It consists of a sounding-post provided with a tail-piece attached to its back arm, which, together with a rod extending downward from the front end of the armature-bar, serves to connect the actuating-spring for said armature-bar, all to be fully described hereinafter.

It consists, also, in connection with the back arm of the sounding-post, of an interchangeable set-screw to limit the downstroke of the same. It consists, also, of an improved binding-post for clamping the conducting-wires, which will be fully described hereinafter.

In my drawings, Figure 1 is a side elevation of the sounder, showing my improvements. Fig. 2 is a plan or top view of the same. Fig. 3 is a vertical section on line *x x* of Fig. 2.

Similar reference-letters indicate like parts in all of the figures.

Referring to drawings, A A compose a set of electro-magnets constructed in the usual manner, with soft-iron cores extending below, with screw-threaded ends which pass through a base or resonance plate, B, and are held together and to said plate by means of a plate, C, which forms a yoke, and suitable nuts which fit upon said screw-threaded ends.

From the resonance-plate B rises a column or post, D, which is virtually a part of said plate, and, extending in opposite directions, terminates in front with upwardly and laterally projecting arms to form trunnion-bearings E E, for the trunnions of the armature-bar, and to the rear extending by an arm, F, and a drop, G, which forms the rear termination. The front terminations of the post D form a yoke or jaw provided with suitable set-screws adapted to receive and hold the ends of the

rod H, which forms the axis of motion to the vibrating armature-bar I. Set-screws J J fit in screw-threaded openings in the arms E E, and screw-threaded washers clamp them to a suitable adjustment upon said rod H.

The bar I is secured to the rod H, and has secured to it the armature L, which is placed immediately over the cores of the electro-magnets.

To the front end of the bar I is secured a rod, M, which terminates with a hook to serve as a hold to a spiral spring, which controls the upward movement of the said armature-bar.

To the drop or termination G of the post B is a screw, N, provided with a clamping-washer adapted to hold to a proper tension the spiral spring O. The post or column D is pierced horizontally through its base with an opening to accommodate the spring O and allow to said spring a free movement without contact.

In the back arm of the post D are screw-threaded holes *a a'* to receive a set-screw, P, provided with a clamping-washer to hold it to a suitable adjustment with reference to the armature-bar. This screw is intended to limit the downward throw of said bar, and from the point of contact to produce the sound from the downstroke. The screw P may be changed to the second hole *a'* when it is desirable to alter and vary the tone from the downstroke.

At the extreme end of the back arm, F, of the post G is fixed a set-screw, Q, which is held to a given adjustment by a suitable clamping-washer, the head of which is intended to limit the upward movement of the armature-bar, the contact with which produces the back-stroke sound.

It may be observed here that in having the column or post B, with its dependent parts, entirely independent of the base or resonance plate, except at the base of said post, a free vibration will be afforded to the front and back arms to produce the primary waves of sound. The back arm, with its drop or tail piece, is particularly sensitive to the strokes of the armature-bar, being directly under the points of contact, and is therefore free to vibrate independently of the other parts. For the purpose of modifying the tone or muffling it, (as it may

sometimes be desirable thus to do,) I provide a screw, *f*, which may enter the hole in the back end of the resonance-plate, and be driven up until it comes in contact with the end of the drop *G*. This feature I provide for a possible demand, although I prefer to have all the parts instrumental in producing the sound independent of the resonance-plate, except at a single point—viz., at the base of the post *B*.

10 The binding-post *R* is composed, in the main, of a double screw, a^2 , having its threads cut away on one side in a plane parallel to the axis, which is adapted to receive washers correspondingly formed and clamping-nuts *c c'*.
 15 About midway between the ends of the double screw is fixed a nut, *d*, which forms a bearing for the conducting-wire, and which itself bears upon the upper face of an insulating-washer, *g*. In clamping the conducting-wires they are
 20 placed in the holes provided in the upper and lower portions of screw a^2 , beneath the washer *b*. The clamping-nuts are now brought down to bring the relatively lower and upper faces of said washers, obviously without a revolving
 25 movement, onto said wires to hold them firmly in place. By this construction of binding-post there is no liability to grinding of the wires asunder, as is frequently the case with the old post. The lower end of the screw a^2 passes
 30 through the base-plate, being insulated from it by washers *g* and *h*, and is held firmly by a suitable washer and nut of metal, as described.

There is an advantage to the construction and location of the binding-post described
 35 with reference to the arms forming the yoke to receive the trunnions of the armature-lever, for the reason that the upper nut, *c*, of said post is kept safely upon its screw, as against a liability to loss, while being lifted in the act
 40 of placing the conducting wires, as it comes

in contact with the arms of said yoke before it could possibly be lifted a distance equal to the height of said screw. The said binding-post can be displaced only by first removing the nut and washers from the lower half of the screw a^2 . 45

Beneath the resonance-plate, and preferably under the post *D*, I provide an eye or loop, *K*, and a screw-threaded hook, *S*, by which I secure, by means of a suitable nut, or nut and washer, the sounder immovably to the table or stand which forms its rest. 50

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is— 55

1. In an electro magnetic-telegraph sounder, the perforated sounding-post *D*, based upon a resonance-plate with a narrow bearing, provided with arms *E*, extending outward and upward to form journal-bearings for the armature-bar, and a rear arm, *F*, extending and terminating with a depending tail-piece, in combination with screw, *N*, spring *O*, rod *M*, and armature-bar *I*, as and for the purpose set forth. 60

2. In combination with the sounding-post described, provided with several holes in its rear arm, the adjustable screw *P* and armature-bar *I*, as and for the purpose set forth. 65

3. In combination with the sounding-post and tail-piece *G* of same, the adjustable screw *f*, and the resonance-plate, substantially as and for the purpose set forth. 70

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses. 75

S. H. BECKWITH.

Witnesses:

H. B. MCCREARY,
 JOHN H. HOUSE.