(No Model.)

C. G. BURKE.

TELEGRAPH SOUNDER.

No. 246,717. Patented Sept. 6, 1881.

Fig. 1.

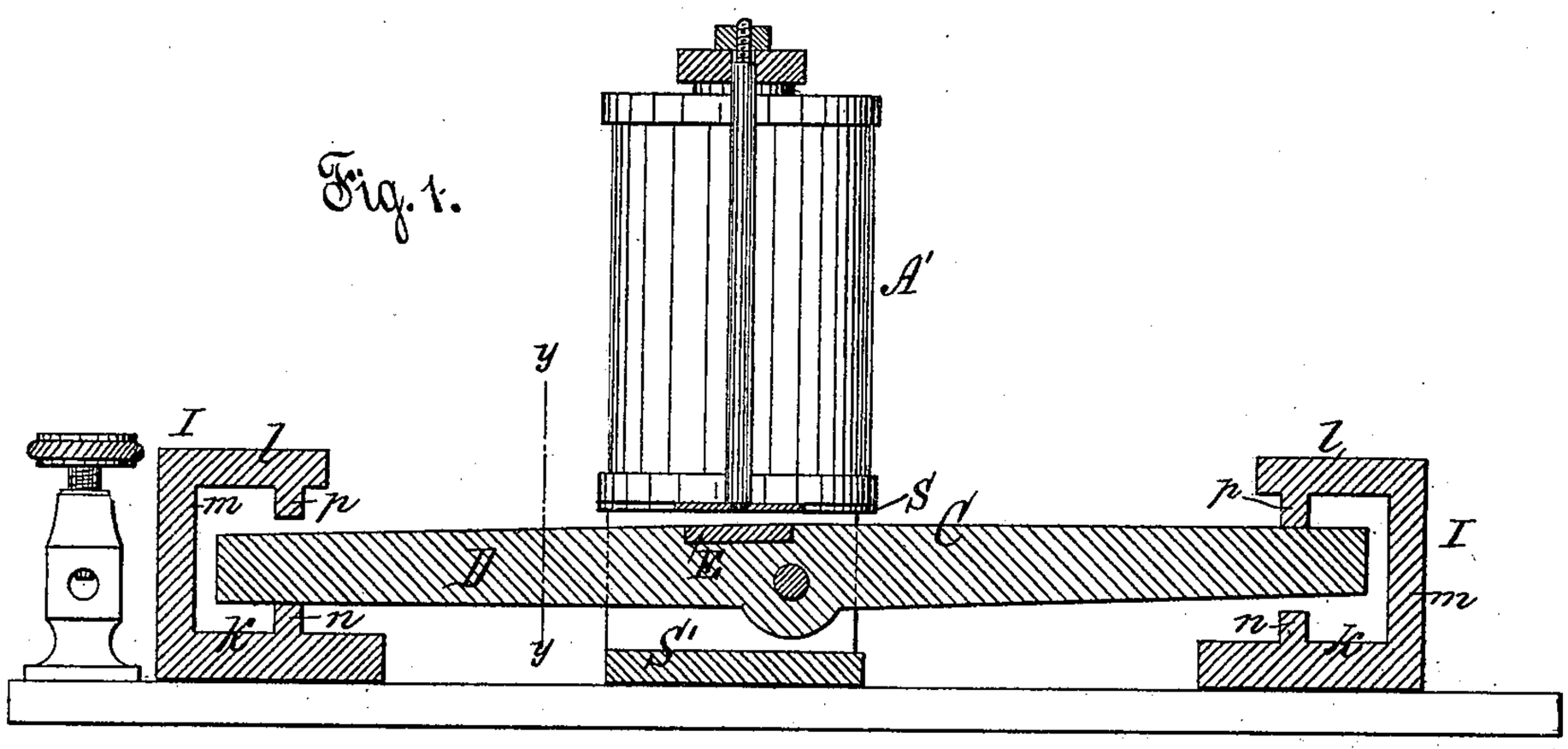


Fig. 2.

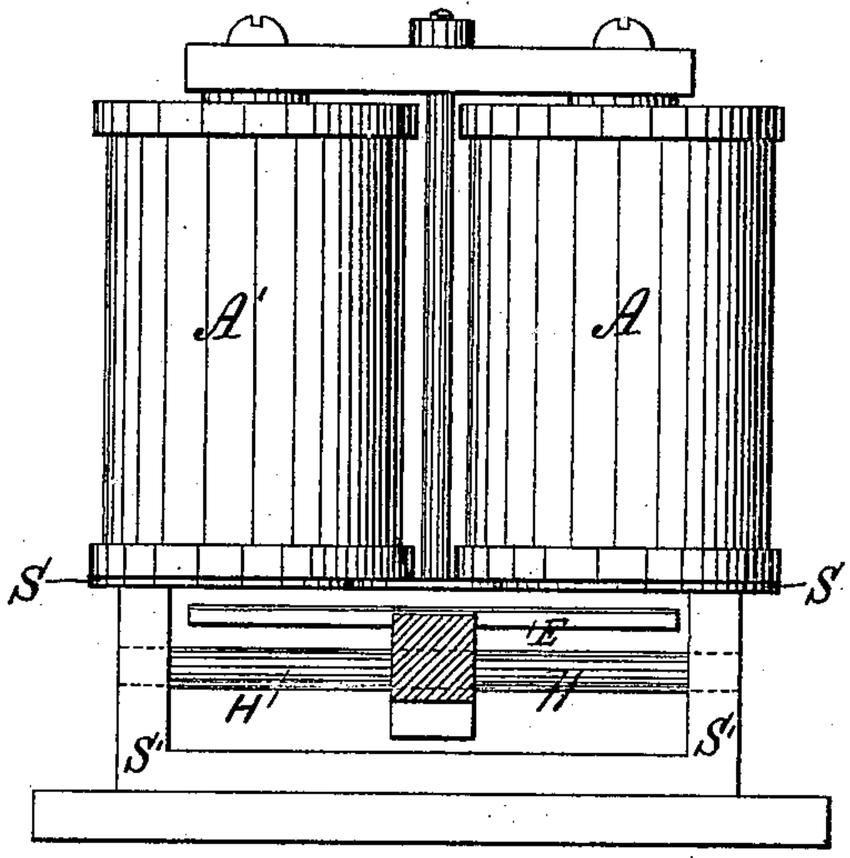
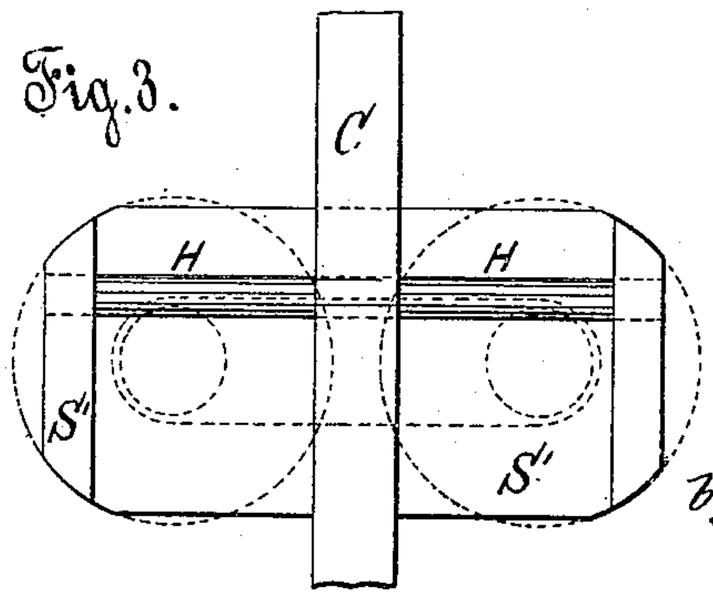


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

CHARLES G. BURKE, OF NEW YORK, N. Y.

TELEGRAPH-SOUNDER.

SPECIFICATION forming part of Letters Patent No. 246,717, dated September 6, 1881.

Application filed April 23, 1881. (No model.)

To all whom it may concern:

Be it known that I, CHARLES G. BURKE, of the city of New York, of the county and State of New York, have made a new and useful Improvement in Telegraph-Sounders, of which the following is a specification.

The object of my invention is to render the operation of the armature of a sounder more easy and to compensate by mechanical means for the loss of the sound that would naturally result from a diminution of the operating power.

Figure 1 is a longitudinal section of a sounder containing my improvement. Fig. 2 is a sectional view of Fig. 1. Fig. 3 is a top view of the supporting-base of electro-magnet A A.

Armature D, which is in one piece, is pivoted at or about its center, giving its arms a free play upward and downward. Cross-piece or armature-bar E is placed beyond the pivot, on either side of such pivot, and directly under the cores of magnet A and A′. The effect of thus placing armature-bar E is to increase the weight of one of the arms to such an extent as to destroy their balance, the heavier arm dropping to the stop beneath it and the higher arm ascending to the stop above it. Both stop-pieces are alike, and each may be cast in or made of one piece.

Magnet A A′ is of the usual kind, but inverted over armature D and supported over and separated from said armature by the supporting-plate S S and the rests S′ S′, rigidly attached to the bottom plate or frame of the sounder. The magnet is rigidly attached to the plate S S by a pin passing through the connecting-bar of the magnets, and plate S S secured by proper nuts or screws.

It will now be seen that the magnet A A′ being directly over the armature cross-bar E, its attractile force will be exercised upon this point, and that when the magnet is operated the effect will be to raise the arm to which such cross-piece is attached and necessarily to depress the opposite or corresponding arm. When the attraction ceases the arm holding the cross-piece will, from its own gravity, fall again to its stop. In the up movement resulting from an attraction of magnet A and A′ and the down movement or fall following the cessation of the attraction, each arm makes an impact in opposite directions. Such impact being simultaneous and of about equal force, the resulting sound is greater than if but one stroke or impact were made; and as the weight to be raised is only a little more than the actual weight of the cross-piece a less power is required than if the armature were constructed and pivoted in the usual way. The sound, increased by this double impact, is in a proportion greater than what would result from a single impact, even with a much increased electric force.

Upper stops are not essential to the working of the armature-lever, as the descent and rise of the respective ends of the lever will cause an alternate impact with the two lower stops, and thus define the length or duration of the signal.

I am aware that instruments have been constructed so that one bar moving toward a stop from the impact with which only a feeble sound would result operates another bar, also having striking-points, the striking of the secondary bar against its stops being louder than the primary one; but I do not claim this.

I am also aware that it is not new to have an armature-lever so pivoted that a double movement of such lever may be effected by the alternating attraction of magnets placed on opposite sides of such armatures and within electric relations thereto; and this I do not claim.

What I do claim, and desire to secure by Letters Patent, is—

A telegraph instrument or sounder consisting of an inverted impending electro-magnet, in combination with a supporting-frame sustaining such magnet over an underlying armature, such armature being so pivoted that an arm will project on each side of such pivot, one arm bearing the usual cross-piece or armature-bar, and thereby made heavier than the other, the up movement of the heavier arm of such armature and the downward movement of its lighter arm being caused by the attractile force of such magnet, and the down return movement or fall of the heavier

arm of such armature and the up movement of the lighter arm resulting from the unequal gravity of the arms of such armature, and such arms being but one piece, a duplication of sound being produced by such movement upward and downward from the impact of the arms of such armature with stops, in combination with such armature and electro-magnet, substantially as described, and for the purpose specified.

CHARLES G. BURKE.

Witnesses:
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