H. S. L. BRYAN.

Improvement in Electric-Telegraph Sounders, Relays, &c.

No. 113,976. Patented April 25, 1871.

Fig. 1.

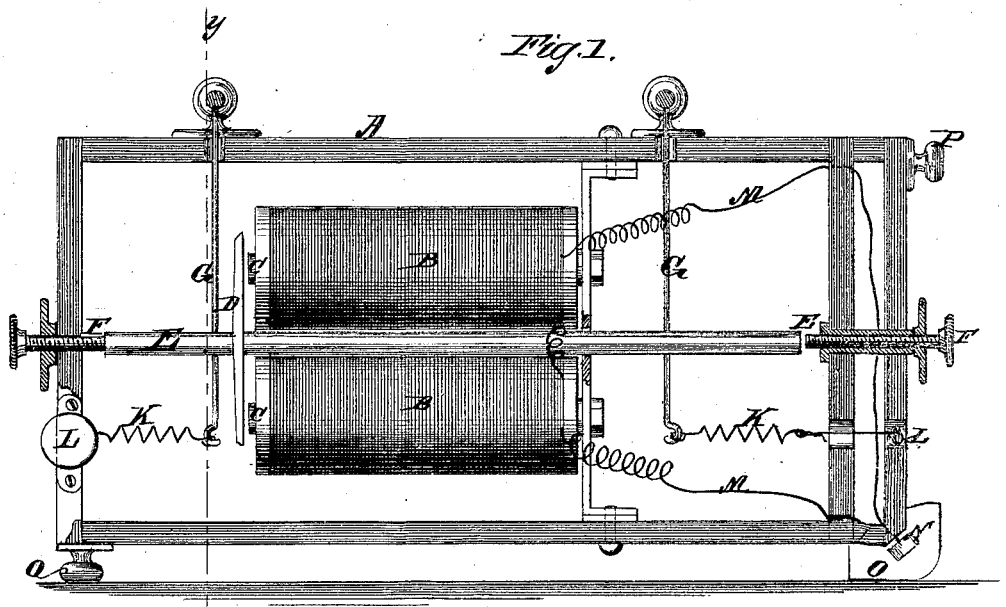


Fig. 2

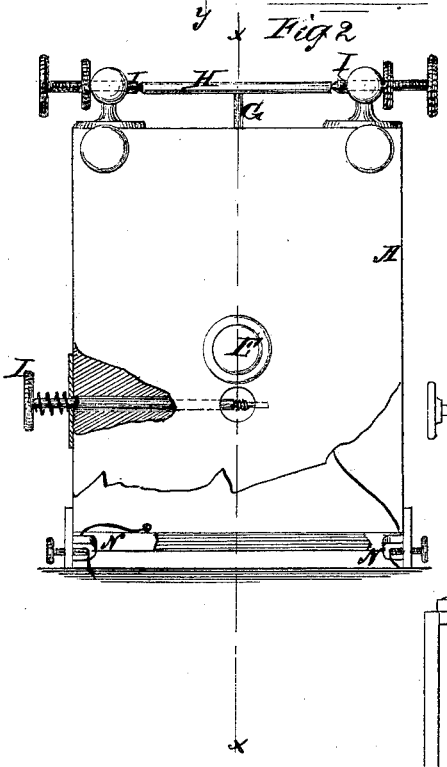


Fig. 3.

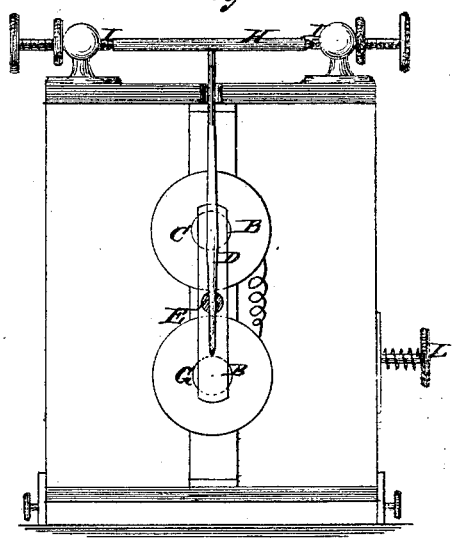
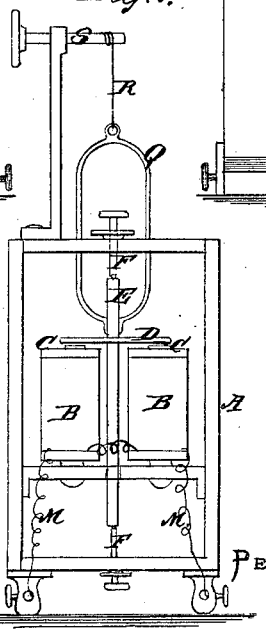


Fig. 4.



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UNITED STATES PATENT OFFICE.

HUGH SWINTON LEGARÉ BRYAN, OF CEDAR RAPIDS, IOWA.

IMPROVEMENT IN ELECTRIC-TELEGRAPH SOUNDERS, RELAYS, &c.

Specification forming part of Letters Patent No. 113,976, *dated April* 25, 1871.

To all whom it may concern:

Be it known that I, HUGH SWINTON LEGARÉ BRYAN, of Cedar Rapids, in the county of Linn and State of Iowa, have invented a new and useful Improvement in Electric-Telegraph Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification.

This invention relates to improvements in telegraph relays, sounders, and registers: and

It consists of an arrangement of the armature and its supports so that the latter shall move or vibrate with the armature between the sounding points in a right line, whether the magnets be arranged vertically or horizontally, and when arranged vertically to utilize the weight of the armature and its support, together with the force of the magnets, to give strength to the blow upon the loud-sounding point.

The invention also consists in an arrangement of the apparatus in an open case calculated to favor the sounding, and adapted for placing so as to hold the magnets either vertically or horizontally.

Figure 1 is a longitudinal sectional elevation of my improved apparatus as arranged for a main-line sounder, the section being taken on the line *x x* of Fig. 1. Fig. 2 is an end view of the same partly sectioned. Fig. 3 is a transverse section taken on the line *y y* of Fig. 1; and Fig. 4 is a side elevation as I prefer to arrange it for a local sounder, and showing a modified arrangement for suspending the armature support. A is a rectangular case made of wood or metal plates and open at two sides; B are the coils; C, the magnets; and D, the armature.

I propose to mount the armature on the long hollow or solid rod E, extending between the sounding points F, mounted adjustably one in each end of the case, the said rod extending along between the coils B, and supported by the rods projecting from the oscillating shafts or pivots H, held in the adjustable centers I, supported in studs on one side of the case; or said rod may be supported in any suitable way.

The free end of each of these rods is connected by a coiled spring, K, and cord, with a turning-pin, L, for regulating the position of the rod, the said pins turning in opposite directions so as to pull in each way when arranged vertically. One of these springs will lift the armature when the circuit is open.

M represents the main-line connections, and N the buttons for the said main lines.

The end of the case supporting the point against which the rod strikes when impelled by the magnets being double, with a space between, will have a tendency to increase the sound, and I propose to arrange it in this way if found best.

The case is provided with the legs O for supporting it in the horizontal position represented in Fig. 1, and may have legs P for supporting it vertically.

In Fig. 4, which represents a local sounder constructed on this plan, I have represented the rod E as suspended by a yoke, Q, and spring R, from a turning-pin, S, on the top of the case, by which its position between the points is regulated, and the spring raises the armature when the circuit is opened, it being drawn down by the magnets when closed.

This plan, besides being very favorable for sounding distinctly, admits of using any number of magnets and coils, as the magnet moving in the true longitudinal line of the magnets has the same relation to all at all times, whereas the said relation varies when mounted on an oscillating lever.

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

1. The armature of sounders, relays, or registers, arranged upon a stem or rod or other support, having a rectilinear movement between adjustable sounding points, one at each end, the said rod or stem being suspended by vibrating arms, springs, or in any suitable way to have such movement, all substantially as specified.

2. The arrangement of the magnets, armature, and its support, and the sounding points, in an open case, substantially as specified.

The above specification of my invention signed by me this 23d day of January, 1871.

HUGH SWINTON LEGARÉ BRYAN.

Witnesses:

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THOMAS B. CARR,
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