(No Model.)

F. F. HOWE.

SOUNDER.

No. 531,188. Patented Dec. 18, 1894.

Fig. 1.

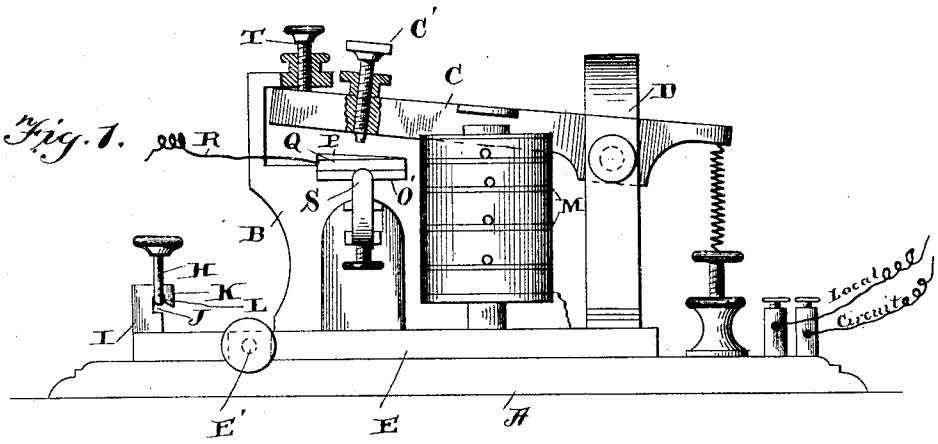


Fig. 3.

Fig. 2.

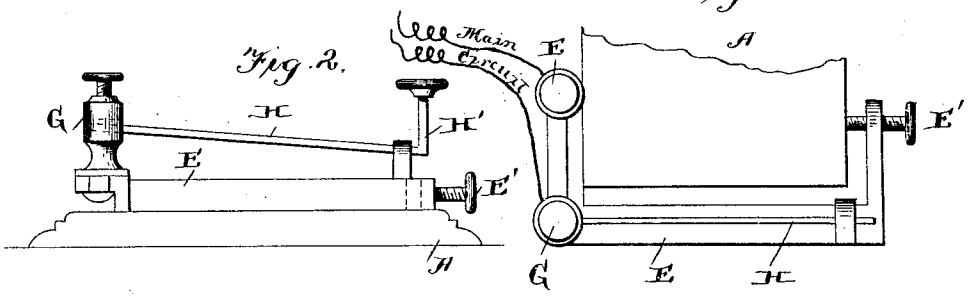


Fig. 4.

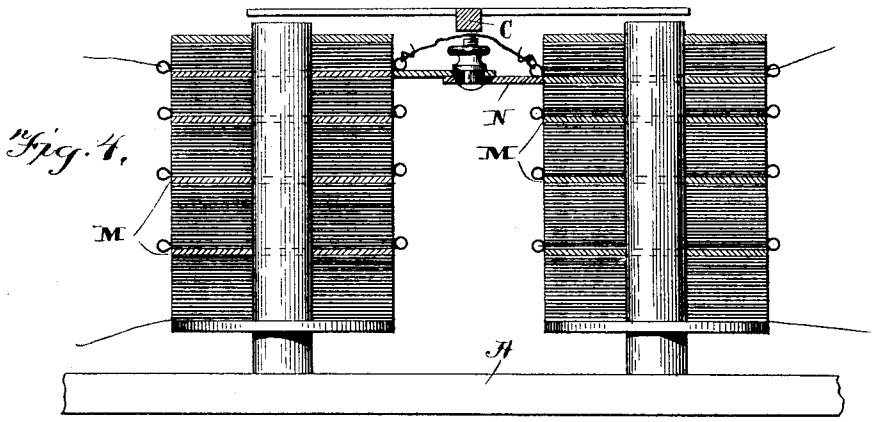
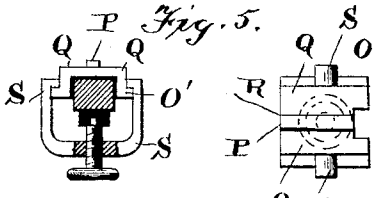


Fig. 5.



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SOUNDER.

SPECIFICATION forming part of Letters Patent No. 531,188, dated December 18, 1894.

Application filed January 16, 1894. Serial No. 496,967. (No model.)

To all whom it may concern:

Be it known that I, FRANK F. HOWE, of Marietta, in the county of Washington and State of Ohio, have invented certain new and useful Improvements in Sounders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in sounders; and the object of my invention is to provide an instrument which may be used either as a repeating or a local sounder, or as a relay.

A further object of my invention is to provide an improved device for attaching the circuit wires to the sounder which serves as a cut out.

A further object of my invention is to provide an improved adjustable sounder contact.

With these objects in view, my invention consists in the novel features of construction and combination of parts fully described hereinafter, and claimed and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved instrument. Fig. 2 is an end view of the circuit wire attaching device and cut out. Fig. 3 is a plan view of Fig. 2. Fig. 4 is a vertical sectional view of the magnet. Fig. 5 is a detail view of the adjustable contact.

A designates the base, B the sounder bridge, C the armature carrying contact screw C′, and D the armature support, all of ordinary and well known construction.

E is the clamp frame adapted to fit the end of the base and carrying screw E′ for securing it in position as shown. Carried by this clamp frame are the direct post F and insulated post G, and to and from the respective posts leads the main circuit wire.

H is the spring arm of the cut out which is attached to post G and provided at its free end with the upturned key H′.

A catch I is extended from frame E having notch J cut in one side thereof which is overhung by lip K having its lower edge formed with an upwardly and inwardly extending incline which terminates at shoulder L. By this arrangement it will be seen that when the circuit is to be closed the spring arm is depressed so as to engage the under side of the lip K, and if there freed the upward tendency of the spring will carry it up the inclined lip above described and into the notch behind shoulder L, from which it cannot be moved by accidental lateral or vertical pressure, as both of said movements are required to effect its release. A most secure circuit closer is thus formed which is free from the possibility of accidental misadjustment.

Several strands of the magnet coils are here shown as looped on their adjacent sides, the loops being arranged opposite each other or in other words in pairs, and projecting from the cores and beneath the coils are the flanges M, and for connecting any one pair of these flanges I provide the expansible cross bar N, which consists of two sections as shown, one being adapted to slide longitudinally on the other and having a screw for binding them together. For a comparatively short local circuit where a low resistance magnet is desired the cross bar is positioned well up toward the upper coil ends as shown in the drawings, whereas if the circuit is a long one the bar is lowered in proportion to the length of the line. It will thus be understood that the resistance of the magnet may be readily regulated for either repeating work, or local sounder work in the local or main circuits.

O is a plate recessed on its under side to fit the bridge B from which it is properly insulated and having on its upper side the rib P to which is secured the platinum contact plate Q to which main circuit wire R leads through post G. Plate O has wings O′ which are engaged by clamp S as shown and the latter carries screw S′ which is insulated at its end where it engages the under side of bridge B. This clamp enables me to move the plate longitudinally on the bridge and thus place when necessary a new and smooth surface of plate Q beneath contact screw E′.

Owing to the novel manner here shown of attaching the circuit wires to the instrument it is unnecessary to insulate the bridge or the armature support from the base nor is there any insulation at the upper contact screw T, so that when the instrument is used as a re-

peating sounder the contacts sound clear and distinct as there is no insulation to muffle them.

By reversing the connections of the main and local circuits to the instrument, lowering the cross bar of the magnet to secure a high ohmic resistance and adjusting the contacts of the armature the instrument is transformed into a relay as will be readily understood.

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

1. An improved sounder comprising a non-insulated frame, a magnet, an armature carrying a contact point, a frame detachably secured to the first named frame, a direct and an insulated post carried by said frame, and an insulated contact plate to which the wire leads from the insulated post, substantially as shown and described.

2. An improved magnet for telegraphic instruments comprising separated cores, coils therefor and a movable cross bar for connecting the cores at different points, substantially as shown and described.

3. An improved magnet for telegraphic instruments comprising separated cores, coils therefor, projections from the cores to the exteriors of the coils, and a movable cross bar for connecting the corresponding projections of the cores, substantially as shown and described.

4. The combination of catch I having recess J, lip K over-hanging said recess and inclined upward and inward at its lower end and shoulder L at the upper end of said incline, and cut out arm H adapted to be depressed to the lower end of lip K when it will spring inward and upward and be lodged in the upper portion of notch J from lateral displacement, substantially as shown and described.

5. The combination of a sounder bridge, a movable plate secured thereto carrying a circuit contact, and an armature contact adapted to engage the first named contact, substantially as shown and described.

6. An improved sounder comprising a non-insulated frame, a magnet, an armature carrying a contact, a direct and an insulated post detachably secured to the frame, and an insulated contact opposite the armature contact and connected to the insulated post, substantially as shown and described.

7. The combination with the bridge of a sounder, of a plate recessed on its under side to fit the bridge, a means for securing it in position, a ridge on the upper side of the plate, and a contact secured to said ridge, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK F. HOWE.

Witnesses:
J. M. NESBIT,
GEO. E. FRECH.