(No Model.) 2 Sheets—Sheet 1.

G. W. STEWART.

TELEGRAPH INSTRUMENT.

No. 330,271. Patented Nov. 10, 1885.

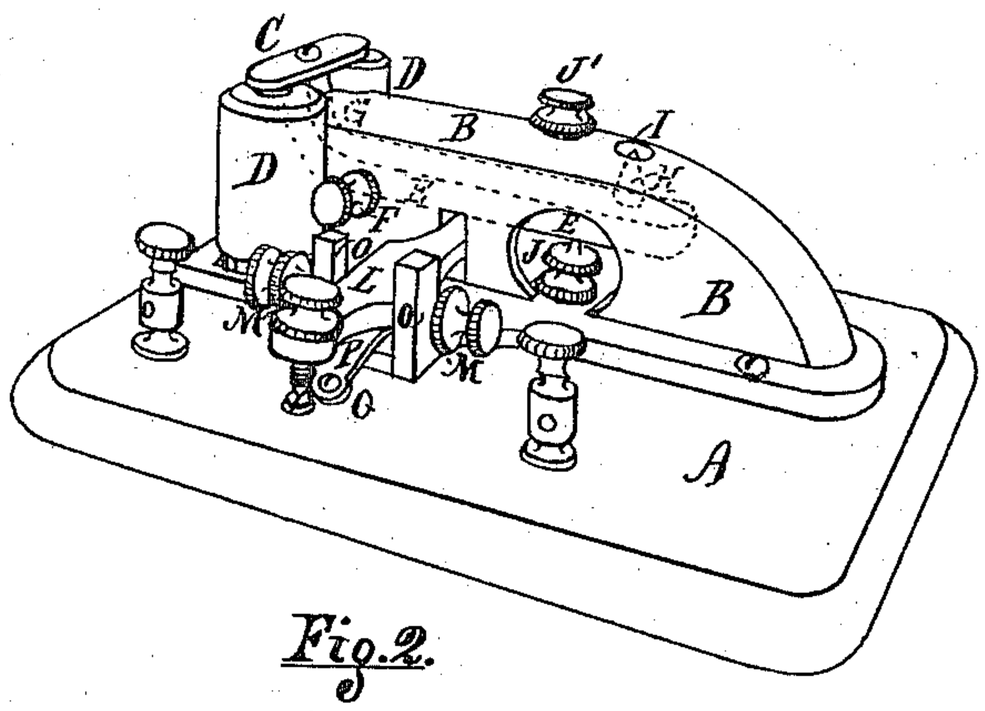

Fig. 2.

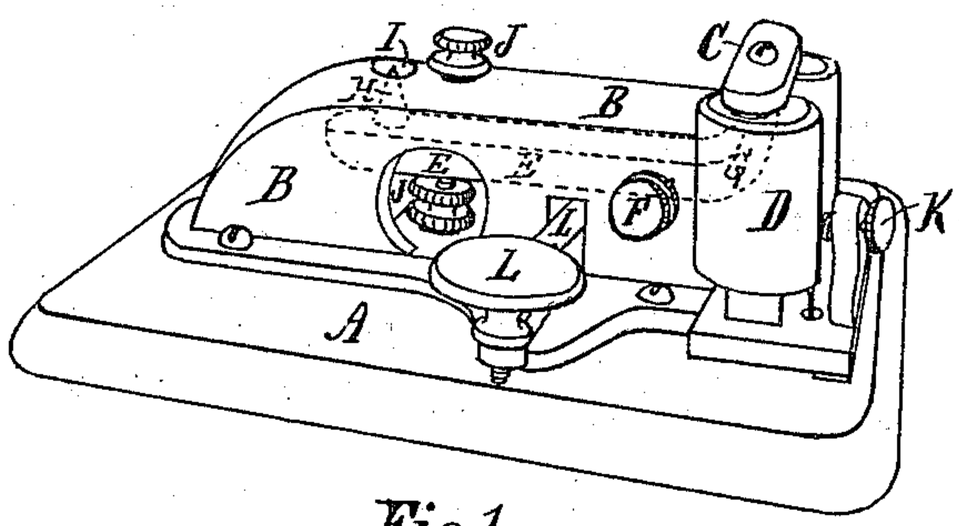

Fig. 1.

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(No Model.) 2 Sheets—Sheet 2.

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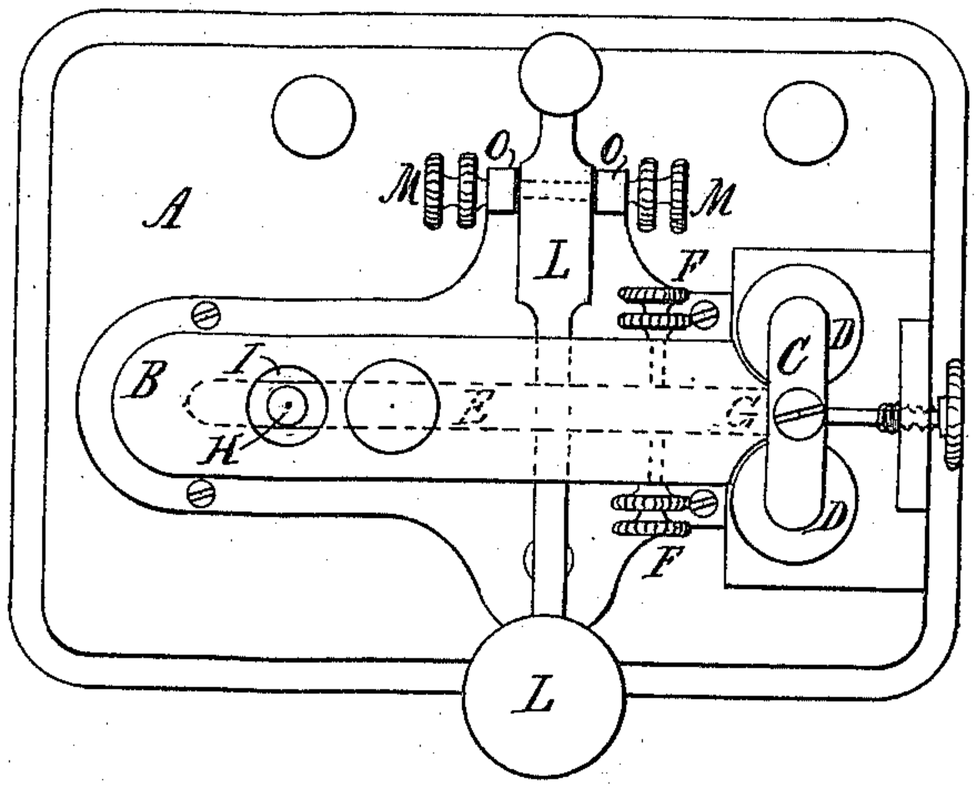

Fig. 3.

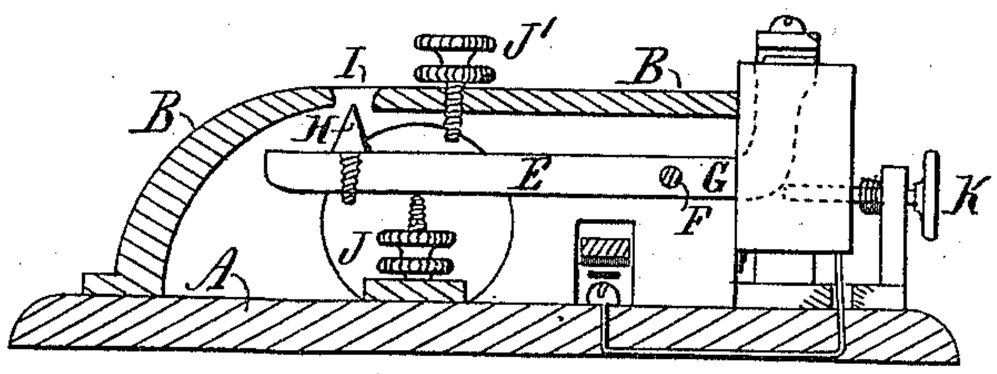

Fig. 4.

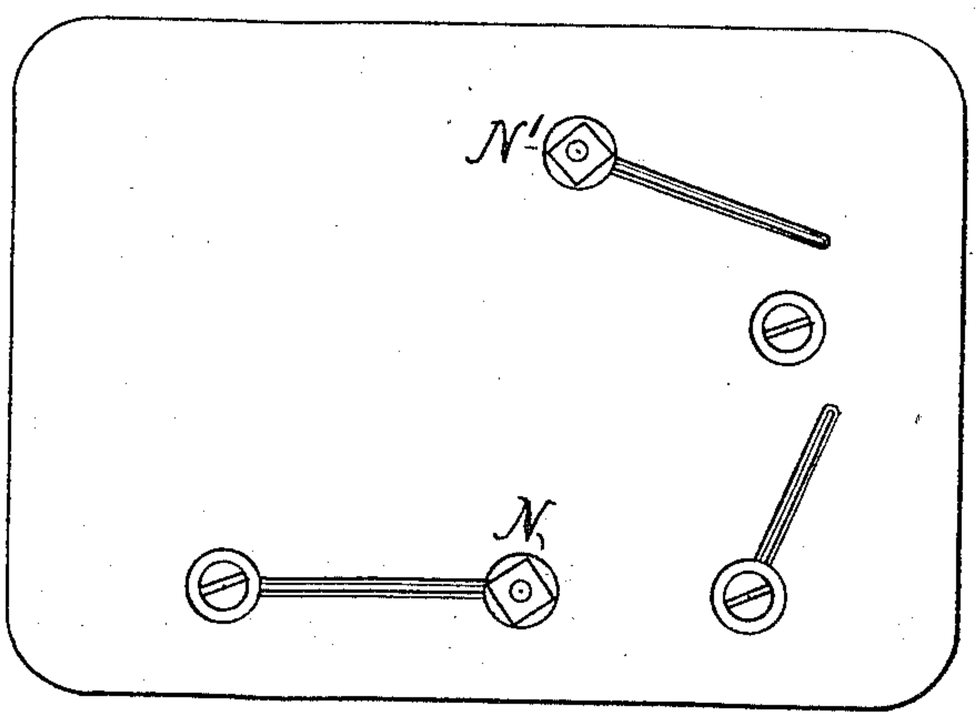

Fig. 5.

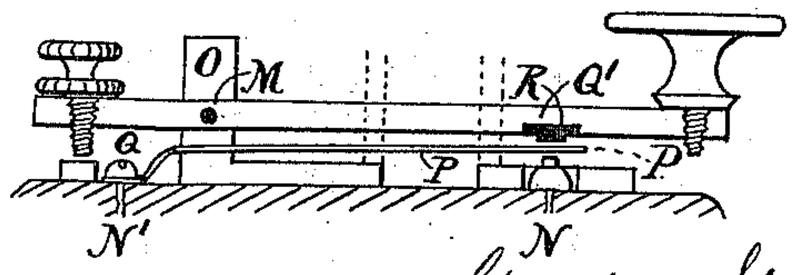

Fig. 6.

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UNITED STATES PATENT OFFICE.

GEORGE W. STEWART, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO STEPHEN J. COX, OF SAME PLACE.

TELEGRAPH-INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 330,271, dated November 10, 1885.

Application filed March 14, 1885. Serial No. 158,775. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. STEWART, a citizen of the United States, and a resident of the city, county, and State of New York, have invented certain new and useful Improvements in Telegraph-Instruments, of which the following is a specification.

The nature of my invention consists in making the instrument with a frame of cast metal incasing the "sounder," which is arranged to operate within the casing lengthwise the same, properly pivoted with adjustable devices, hereinafter described.

It further consists in providing the casing with an aperture over the end of the sounder opposite the armature, and in providing that end of the sounder with an upwardly-projecting point arranged and adapted to pass upward and downward in the aperture of the casing sufficiently to strike against the operator's finger when placed upon and over the aperture, as that end of the sounder is connected to the armature.

The object of the construction and arrangement before mentioned is to enable the operator to obtain by sense of feeling the message as given by the electric current operating through the armature as the point at the end of the sounder strikes upward against his fingers. By this arrangement the message may be taken by sound, as usual; or by touch of the point to the finger a deaf person can take the message. A message may be taken by one at the instrument without others in the room knowing of it or what it says. A person may learn the telegraphic alphabet quicker by this means than by sound, as the touch does not give it double, while the sounder does. Double sounds confuse the ear. Sound has to travel. Therefore the touch gives the message quicker.

It further consists in the arrangement of the key crosswise, the casing aforesaid and its combination therewith rendering the instrument more compact than old methods, and in providing it with a spring beneath, through which the current passes. In all other instruments the current passes through the key. The spring or conductor, being covered by the key, is not likely to come in contact with the hand, and thereby lose any of the current.

It also consists in the combination of an insulator at the bottom of the key over the wire, to prevent escape of electricity.

It further consists in providing the sounder with an adjustable device, as hereinafter described, at the armature, and by which the effect of strong currents may be reduced and weak currents aided in their operation thereon.

It further consists in the combining of the parts of the instrument to one casting and one bed-plate, to make it compact and convenient to operate and adjust each part to each other part.

It further consists in the combination of devices by which the current passes through this instrument and gives its message, as hereinafter described, whereby the currents are prevented from scattering. The entire instrument by its peculiarities of arrangement and construction, may be handled freely without risk of any loss of electricity.

It also consists in the combination of magnet armature and sounder E, so arranged and adapted that the effect produced by the electric current passing through the magnet vibrating the armature will convey to the operator by sense of touch the dots, dashes, and spaces made by the downward and upward movement of the key.

In the accompanying drawings, Figure 1 is a perspective view from the key side of the instrument. Fig. 2 is a perspective view from the opposite side. Fig. 3 is a plan from above the entire instrument. Fig. 4 is a vertical lengthwise section. Fig. 5 is a plan of the bottom of the bed-plate, looking upward, showing the wire-connections beneath. Fig. 6 is a section across the instrument, sufficient only being shown to illustrate the key, spring beneath, and the insulator in the bottom of the key with the connections.

A represents the bed-plate.

B represents the casting forming the frame or casing. This is fastened to the bed-plate.

C represents the armature-casting, and D the magnet with its connections for passing the current through it.

E represents the sounder, arranged within the casing B, the casting being hollow for its reception. It is pivoted at F, and its one end, G, is attached to the armature C, and its other

end is provided with an upwardly-projecting pin, H, adapted to enter a perforation, I, through the casting, so that as the sounder E vibrates the pin will strike up through that aperture or perforation I against the operator's finger when placed thereon. The sounder is provided at that same end with the usual sounding devices, J J′, by which its throw vertically is regulated. Openings each side through the casing permit access thereto. At the armature end the sounder is provided with a regulating screw and spring K, which, by being tightened or loosened as to its pressure upon or against the sounder or indicating-bar E, serves to enable it to work more freely or otherwise, to suit the current whether strong or weak.

L represents the key, pivoted at M through standards O, forming part of casting B. The usual wire-connections beneath at each end are shown at N and N′. The key is placed crosswise, the instrument passing through the casting or casing B. Beneath the key L is the spring P, and through this the current passes. It is connected to the bed A, and at Q′ an insulator, R, is provided at that point, set into the bottom of the key, to prevent escape of the current. Beneath that point is the wire-connection N. The other end connects to the wire at Q.

The end of the sounder may be used without the addition of the touch-point, its own end being used instead; also, any suitable rest for the finger may be provided, in which case the full casing or casting B may be dispensed with.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a telegraphic instrument adapted for communicating messages by alphabetical signs or symbols, provided with magnet and key, the sounder or lever-indicator E, connected at its one end to the armature above the magnet, provided centrally with a fulcrum upon which it may swing, and having at its other end a touch point or pin, H, arranged essentially as shown and described.

2. In combination with the sounder or lever-indicator E of a telegraphic instrument adapted for communicating messages by alphabetical signs or symbols, as herein set forth, and the sounder or indicator therein being provided with the touch point or pin H, a hollow arched casing, B, provided with aperture I, substantially as and for the purposes set forth.

3. In combination with the sounder E, provided with the touch point or pin H, the device K, for regulating the amount of freedom with which the sounder may work, according to the strength of the electric current, substantially as herein set forth.

4. The telegraphic instrument comprising casing B, provided with the aperture I, magnets D, armature C, sounder E, inclosed within the casing B and provided with the touch point or pin H, arranged to work through aperture I of casing B, also regulating device K, all arranged and combined substantially as shown and described.

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