(No Model.)

J. KING.

ELECTRIC SIGNAL TRANSMITTER.

No. 256,486. Patented Apr. 18, 1882.

Fig. 1

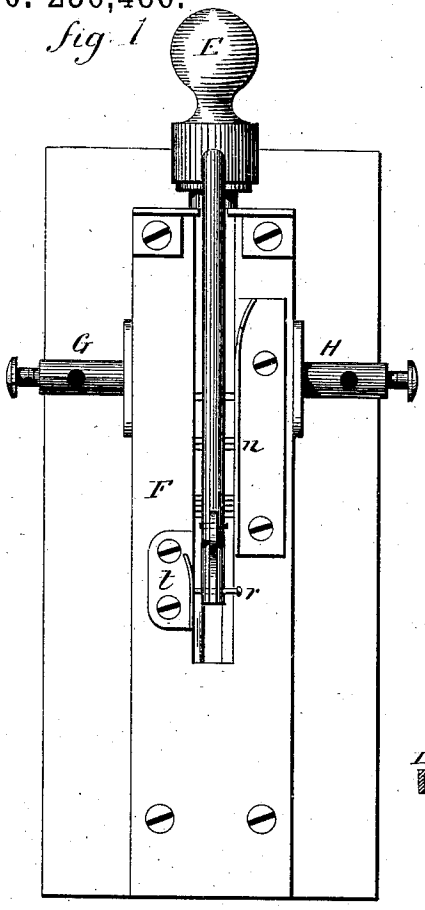


Fig. 2

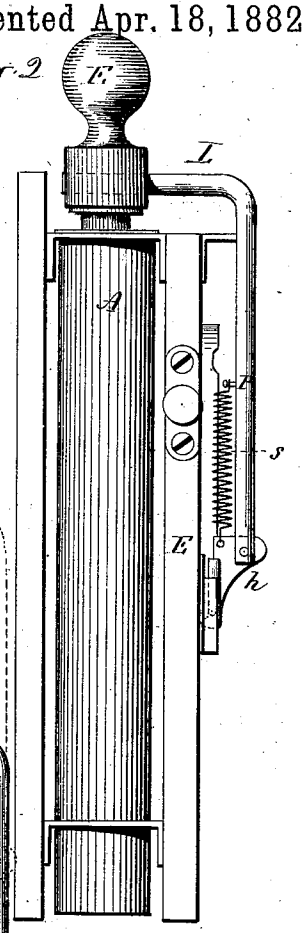


Fig. 3.

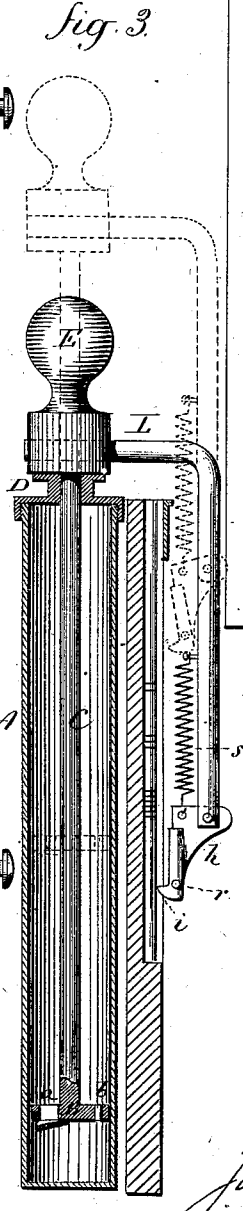


Fig. 4

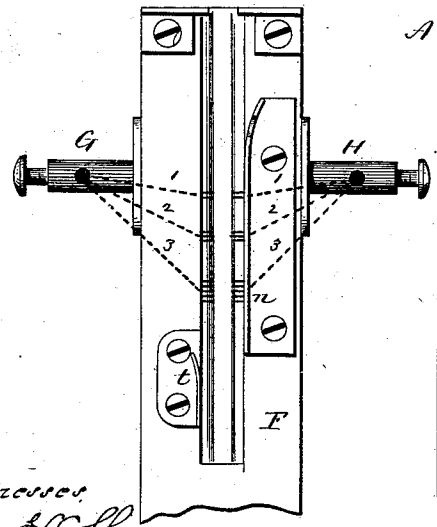
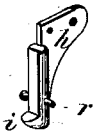


Fig. 5



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UNITED STATES PATENT OFFICE.

JOHN KING, OF ANSONIA, CONNECTICUT.

ELECTRIC SIGNAL-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 256,486, dated April 18, 1882.

Application filed June 29, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOHN KING, of Ansonia, in the county of New Haven and State of Connecticut, have invented new Improvements in Electric Signal-Transmitters; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a front view; Fig. 2, a side view; Fig. 3, a vertical section; Fig. 4, a front view of the plate with the finger removed; Fig. 5, a perspective view of the armature, detached.

This invention relates to a device for giving an electric signal or call, and particularly to that class which are automatic—such as used for telephonic, messenger, and similar calls; and it consists essentially in a plunger arranged in a dash-pot, with a finger in connection with it arranged to pass over the points of connection without contact as the plunger is raised and to be brought into contact with and so as to unite the points of connection as the plunger slowly descends, as more fully hereinafter described.

The dash-pot, as represented, consists of a hollow cylinder, A, closed at its lower end, so as to contain glycerine, or whatever liquid may be used. Within the cylinder is a plunger, consisting of a piston, B, attached to the lower end of a piston-rod, C, and movable with the rod, the rod passing through a suitable stuffing-box, D, at the upper end, and there provided with a weighted head, E. The piston is constructed with a large opening, *a*, fitted with a valve opening downward, and also with a small perforation, *b*, so that, the cylinder being filled to the proper extent with a suitable liquid, the piston, standing near the bottom, as in Fig. 3, may be freely and quickly raised, the liquid above passing rapidly down through the large opening in the piston; but as soon as the power which raised the piston is removed the weight E forces the piston downward. This closes the valve of the larger openings, and so that only the small perforation *b* is left for the liquid to pass up through above the piston, which makes the descent of the piston very much slower than its rise. In front of this dash-pot is a plate, F, to which, on one side, is a post, G, for the battery-wire, and on the other side a like post, H, for the line-wire, over which the signal is to be carried. From these posts branches extend toward the center, as seen in Fig. 4, (here represented as 1 2 3.) These branch wires are connected with the signal-points, as at *d e f*, and as here represented there are two points at *d*, three points at *e*, and four points at *f*, with a space between each series, so that the signal or call to be made is two thirty-four.

From the plunger of the dash-pot an arm, L, extends outward and is turned down, as at P, in front of and parallel with the plate F at its lower end. The finger *h* is hinged so as to be turned out and in—that is, from or toward the plate F—and moves in a path between the points of connection *d e f*, and upon its inner face is constructed with a single point, *i*, (see Fig. 5,) which, as it passes down, will successively strike the several points of both lines and successively make connection between the point of one line and the corresponding point of the other line, hence will make and break the circuit successively at the said points and give the required signal. As connection should only be made while the finger is moving slowly—that is, downward—it is turned out from the plate in its ascent, so as to avoid connection with the points. This is best done by a rib, *n*, projecting on one side, over which a pin, *r*, in the finger will ride, so as to raise or turn the finger outward, as seen in broken lines, Fig. 3, and after the finger has passed up above all the points to be connected, the pin *r* escapes from the rib *n*, and then the finger is forced inward by a spring, *s*, and passes down free from the rib *n*, and in a path to make the connections, as before described. The pin *r* is made movable to the right and left, or transversely. As it approaches its extreme downward movement it strikes an inclined rib, *t*, on the side opposite the rib *n*, which forces the pin toward the said rib, so that in its ascent it will make engagement with the rib *n* to raise it or turn it outward. Then, as the finger approaches its extreme upward movement, the pin *r* escapes from the rib *n* and springs inward so as to strike the side of the rib which is inclined at its upper end, and which forces

the pin back out of the way of the rib *n*, so that in descending the finger will make and break the circuit, as before described.

Instead of a weight on the plunger, a spring may be applied, or the plunger itself may be made sufficiently heavy to avoid the necessity of added weight or spring. If a spring be applied, the apparatus may be inverted, in which case the finger would make its connections in an upward movement. I therefore wish to be understood by the term "descent" as meaning the slow movement produced by the dash-pot.

It will be evident to those skilled in this art that various devices may be substituted for the ribs *n* and *t* and the movable pin *r* to throw the finger out of the way of the points of connection in its upward movement and bring it into line therewith in its descent. Hence I do not wish to be understood as limiting my invention to this particular construction.

I do not broadly claim a plunger arranged in a dash-pot to operate a device passing over points so as to make and break an electric circuit, as such, I am aware, is not new; but

What I do claim is—

The combination of a dash-pot and the plunger arranged therein for slow descent, an arm extending from the plunger, the finger hinged at one end of said arm and so as to move in a path parallel with the plunger, a plate parallel with said arm, to which the wires to be connected are brought, the points of connection arranged in the path of the descending armature, and device, substantially such as described, to turn the armature out of the path of said points as the armature ascends and to bring it into a path to connect said points as the armature descends, substantially as described.

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