No. 654,834. Patented July 31, 1900.

G. H. LANDGRAF.

SECRET TELEGRAPH SOUNDER.

(Application filed June 21, 1898.)

(No Model.)

Fig. 1.

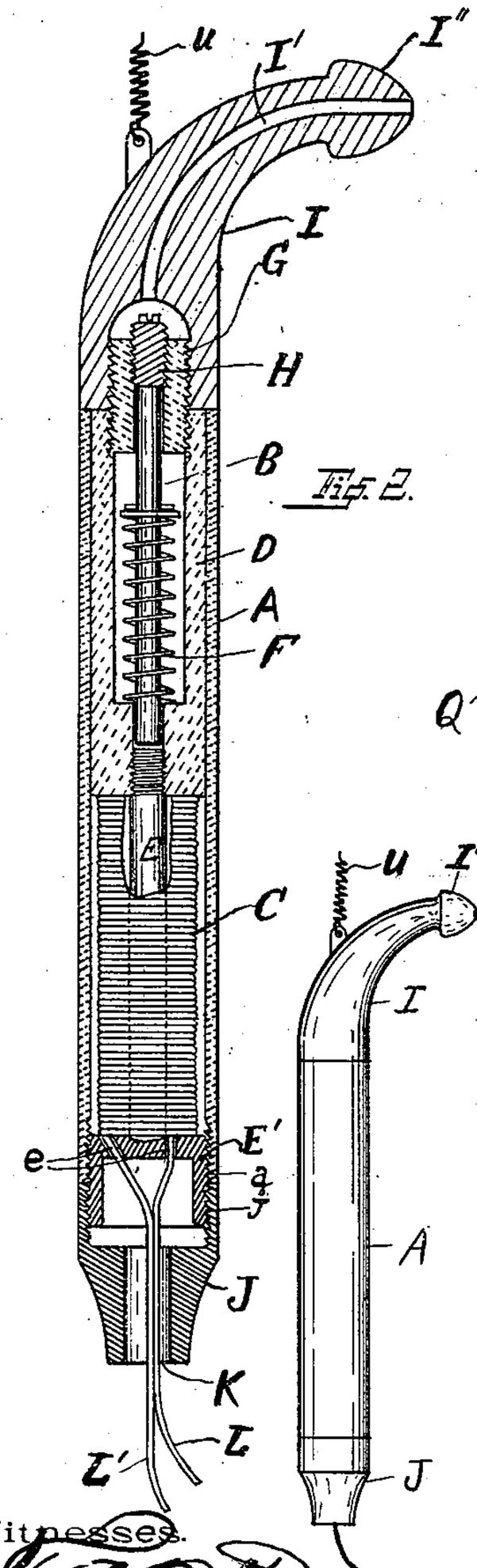
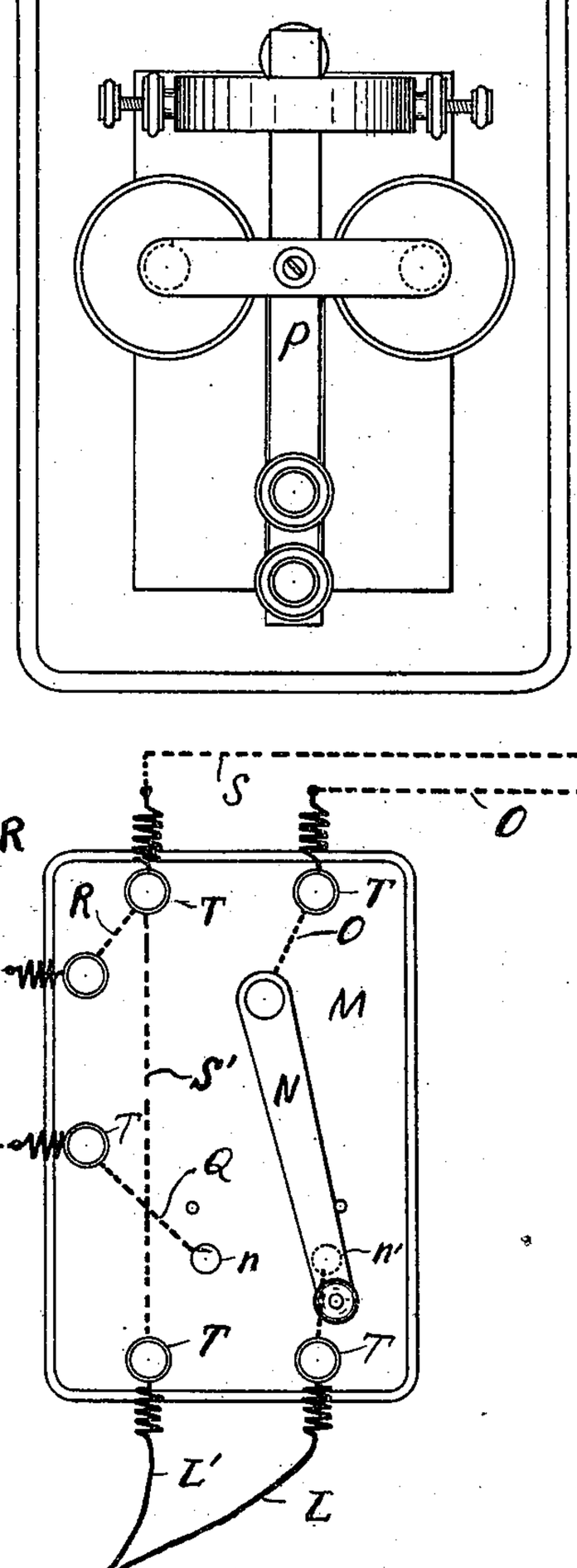


Fig. 2.



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GEORGE H. LANDGRAF, OF WATERLOO, WISCONSIN.

SECRET TELEGRAPH-SOUNDER.

SPECIFICATION forming part of Letters Patent No. 654,834, dated July 31, 1900.

Application filed June 21, 1898. Serial No. 684,054. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. LANDGRAF, a citizen of the United States, residing at Waterlóo, in the county of Jefferson and State of Wisconsin, have invented new and useful Improvements in Secret Telegraph-Sounders, of which the following is a specification.

My invention relates to improvements in secret telegraph-sounders.

The objects of my invention are, first, to provide a portable telegraphic receiving instrument of miniature proportions which may be suspended from the ear or teeth of the operator and is adapted to produce telegraphic signals audible only to the operator, and, second, to provide for the interchangeable use of my device with a receiver or sounder of ordinary construction.

In the following description reference is had to the accompanying drawings, in which—

Figure 1 is a central longitudinal section view of my improved sounder, showing the electromagnet and armature therein. Fig. 2 is a plan view illustrating the connections adapted to permit the use of my device interchangeably with the ordinary telegraphic receiver or sounder.

Like parts are identified by the same reference-letters in both views.

Referring to the drawings, A is a tubular casing or inclosure provided with a longitudinally-vibrating armature B in one end and an electromagnet C in the other end. The armature is preferably located in a cylinder D, of brass or other non-magnetic material, in the lower end of which the core E of the electromagnet C is screwed, the armature being held normally out of contact with the magnet by means of a spring F. The upper end of the cylinder D is closed by a removable end piece G, provided with a centrally-disposed aperture in which the upper end of the armature is entered. H is an adjusting-screw fitting in said aperture and adapted to regulate the length of stroke of the armature.

The upper end of the casing A is closed by a signal-conveying earpiece I, preferably formed of gutta-percha. This is inserted in the ear or between the teeth of the operator and conveys the sound or vibrations of the armature either by means of the vibration of the material itself or the air in a duct I′, with which the piece is preferably provided. The lower end of the casing is closed by an end piece J, which is provided with an aperture K, through which the electrical conductors L L′ are passed to the magnet C. A convenient mode of construction is shown in Fig. 1, in which the core E is provided with a screw-threaded enlargement E′, adapted to engage interiorly-screw-threaded portions *a* and *j* of the casing A and J, respectively, whereby the parts E, A, and J are secured together. In this construction the part E′ is also provided with apertures *e*, through which the electrical conductors L and L′ pass.

Referring now to Fig. 2, in which I show my invention arranged to be used interchangeably with the ordinary telegraph-sounder, it will be observed that I have provided a switchboard M, having a switch-lever N, operating upon two switch-points *n* and *n′*. The switch-lever is connected to one pole of the battery-circuit by the conductor O and when brought into contact with the switch-point *n* completes the circuit through an ordinary sounder P by means of the conductors O, Q, R, and S; but when the lever N is brought in contact with the switch-point *n′* the circuit is completed through my improved sounder by means of conductors O, L, L′, S′, and S. T shows binding-posts of ordinary construction used upon the switchboard to facilitate the connection of the electrical conductors.

It is obvious that my improved sounder may, if desired, be used independently of the ordinary receiver or sounder. It is also evident that where the two sounders are used interchangeably a variety of means may be employed to permit such use not involving the use of an independent switchboard. I prefer to use the latter, however, as I can thereby apply my invention to any of the ordinary sounders now in use without disturbing or disarranging the latter.

From the foregoing description it will be understood that my improved sounder is adapted to be applied to the ear of the operator, the tip I″ of the earpiece I being adapted to be engaged between the lobes of the ear and the sounder held in a suspended position thereby. It may also be suspended by a spring

or elastic cord U from the ceiling or any other convenient point of support, so that it will always be within easy reach, and the spring or cord U will then bear a portion of the weight and relieve the tension upon the lobes of the ear accordingly. The light clicking of the armature within the casing and armature-cylinder D will be inaudible to any one not in direct contact with the instrument, but will be distinctly heard when the piece I is applied to the ear. It will also be heard or felt in case the piece I is taken between the teeth, and by this means a deaf person may receive telegraphic messages.

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

1. A secret telegraph-sounder, comprising an inclosing tubular case provided with non-magnetic armature-bushings; an electromagnet having its core engaged in one of said bushings; a longitudinally-vibratory rod engaged in said bushings and adapted to contact with the end of the magnet-core; a spring coiled about said armature and adapted to support the same normally out of contact with the magnet-core; a removable cap for one end of said inclosing case extending in the form of a curved earpiece, and flexible conductors included in a telegraphic circuit and connected with said magnet through the other end of said case.

2. A secret telegraph-sounder, comprising an electromagnet, included in a telegraphic circuit by flexible conductors; an armature-inclosing cylinder closed at both ends by apertured caps or bushings; a longitudinally-vibratory armature having its ends engaged in said bushings and adapted to contact with the magnet-core; an adjusting-screw adapted to enter one of said end caps or bushings to limit the movement of the armature; an inclosing tubular case covering said magnet and armature-cylinder, and provided with a removable end cap extending to form a curved earpiece adapted to be engaged in the ear of the operator and support the entire device therefrom.

3. A secret telegraph-sounder comprising an inclosing tubular case; an electromagnet located at one end thereof and provided with a core longitudinally disposed within the casing; a rod or bar longitudinally disposed in non-magnetic bushings within the casing and adapted to reciprocate into and out of contact with the core of said magnet; a signal-conveying device of rigid material secured to the casing and adapted to be inserted in the ear or between the teeth of the operator and to support the instrument therefrom; and flexible conductors adapted to connect said magnet with a telegraphic circuit, substantially for the purpose set forth.

In testimony whereof I have hereunto set my hand this 13th day of June, 1898.

GEORGE H. LANDGRAF.

Witnesses:
L. S. HURD,
T. A. WILLIAMS.