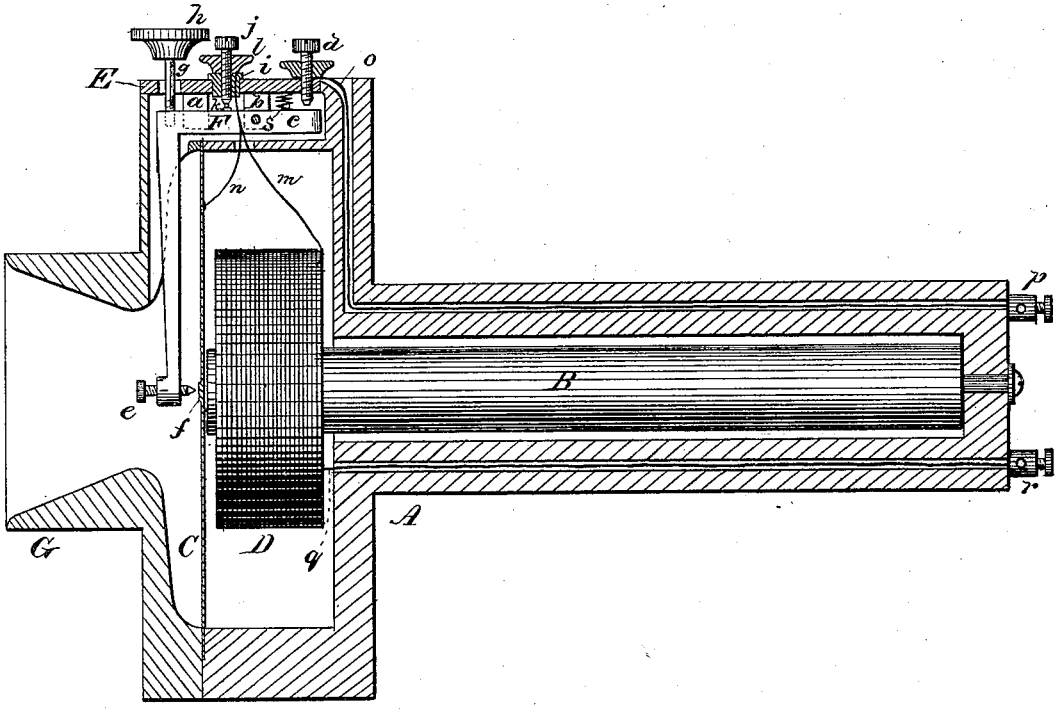
S. E. RUSK.

Telephone Call Signal.

No. 205,580. Patented July 2, 1878.



WITNESSES:

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UNITED STATES PATENT OFFICE.

SAMUEL E. RUSK, OF CATSKILL, NEW YORK.

IMPROVEMENT IN TELEPHONE CALL-SIGNALS.

Specification forming part of Letters Patent No. **205,580**, dated July 2, 1878; application filed February 27, 1878.

To all whom it may concern:

Be it known that I, SAMUEL E. RUSK, of Catskill, in the county of Greene and State of New York, have invented a new and Improved Telephone Call-Signal, of which the following is a specification:

My invention relates to that class of telephones in which magnets, helices, and soft-iron diaphragms are used in transmitting and receiving sounds produced by the human voice; and it consists in a device whereby the electric current may be rapidly broken and established by the vibration of the diaphragm, so that a sound will be produced in the receiving-telephone that will be audible throughout a room of ordinary size.

Referring to the drawing, which is a longitudinal section of a telephone having my improvement attached, A is the body of the telephone, in which is placed the bar-magnet B, and to the larger end of which is secured the iron diaphragm C. Upon the end of the magnet within the diaphragm a helix, D, is placed. The instrument thus far is identical with the well-known "bell-telephone."

In one side of the larger part of the telephone-body there is a plate, E, from which two pairs of ears, *a b*, project toward the center of the instrument. Between the ears *b* is pivoted a lever, F, whose shorter arm *c* extends backward under the adjusting-screw *d*, that passes through the plate E. The longer arm of the lever extends between the ears *a* toward the front of the instrument, is bent at right angles, and extends parallel with the outer face of the diaphragm to the center of the instrument, where it is provided with a platinum-pointed screw, *e*, which passes through the lever at right angles to the diaphragm. The diaphragm is provided with a small platinum disk, *f*, which contacts with the screw *e* when the call-signal is in use. A short rod, *g*, is screwed into the lever F at the angle, and projects through an aperture in the plate to receive the insulated knob or thumb-piece *h*. Between the ears *a b* there is, in the plate E, a vulcanite insulator, *i*, through which passes a platinum-pointed screw, *j*, which, when the alarm is not used, contacts with a platinum disk, *k*, attached to the upper surface of the lever F. A milled lock-nut, *l*, is placed upon the screw *j*, and binds the terminal *m* of the helix D, so that it is brought into electrical connection with the screw *j*. A spiral spring, *s*, is placed between the shorter arm of the lever F and the plate E, to throw the lever away from the diaphragm and into contact with the screw *j*. A wire, *n*, is connected with the terminal *m*, and also with the diaphragm C. The plate E is connected by a wire, *o*, with a binding-screw, *p*, at the smaller end of the telephone-case. The telephone is provided with a mouth-piece, G, which partly covers the diaphragm and the lever F.

When the parts are in their normal position the telephone is used for talking in the usual way; but when it is desired to give a signal the lever F is depressed by pressure of the finger upon the thumb-piece *h*, the shorter arm *c* of the lever F is brought into contact with screw *d*, and the screw *e* is brought lightly into contact with the diaphragm C. The current, which before passed through the wire O, plate E, lever F, helix D, and terminal wire *q*, now passes through the wire *o*, plate E, screw *d*, lever F, diaphragm C, and helix D, and is broken and established at every vibration of the diaphragm. The current, when thus interrupted, produces in the receiving-telephone a loud reed-tone, which may be readily heard in every part of a room of ordinary size. After giving the signal the finger may be removed from the thumb-piece *h*, and the telephone may be used in talking in the usual way. When the lever F is depressed the telephone may be employed in transmitting musical tones.

It is obvious that many devices may be contrived for breaking the electrical current by the vibration of the diaphragm. Therefore I do not limit or confine myself to the form, proportion, or arrangement of the parts of the signal attachment.

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

1. The combination of an adjustable contact-point carried by a lever, by which it can be thrown at pleasure into or out of contact with the diaphragm of a bell-telephone, the said diaphragm and point being the terminals of

an electric circuit, and adjusted so that the vibration of the diaphragm alternately makes and breaks the circuit, substantially as herein shown and described.

2. The lever F, provided with an adjustable point and connected with one of the line-wires of the telephone, in combination with the diaphragm C, connected with one of the terminals of the helix D, substantially as herein shown and described.

3. The alarm attachment, consisting, essentially, of the lever F, having the adjustable platinum-pointed screw *e* and thumb-piece *h*, the screw *d*, and insulated screw *j*, in combination with the telephone, consisting of the magnet B, helix D, and diaphragm C, substantially as herein shown and described.

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Witnesses:
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