T. A. WATSON.
Telephone.

No. 199,007 Patented Jan. 8, 1878.

Fig. 1.

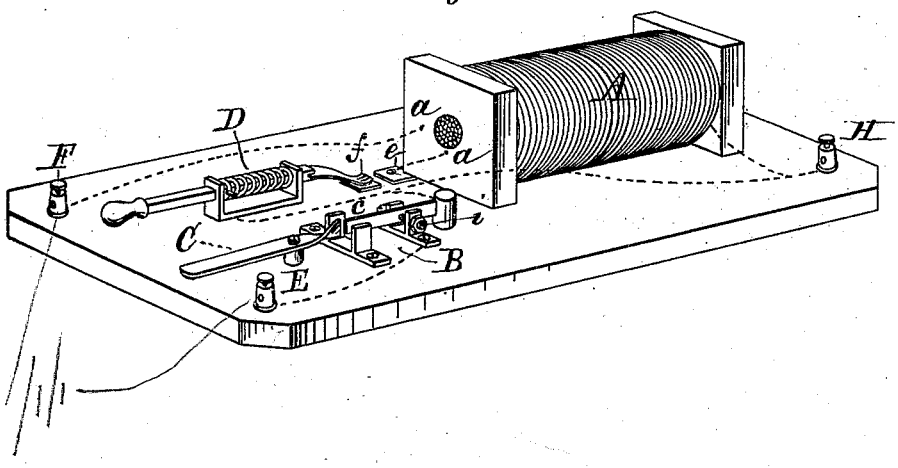
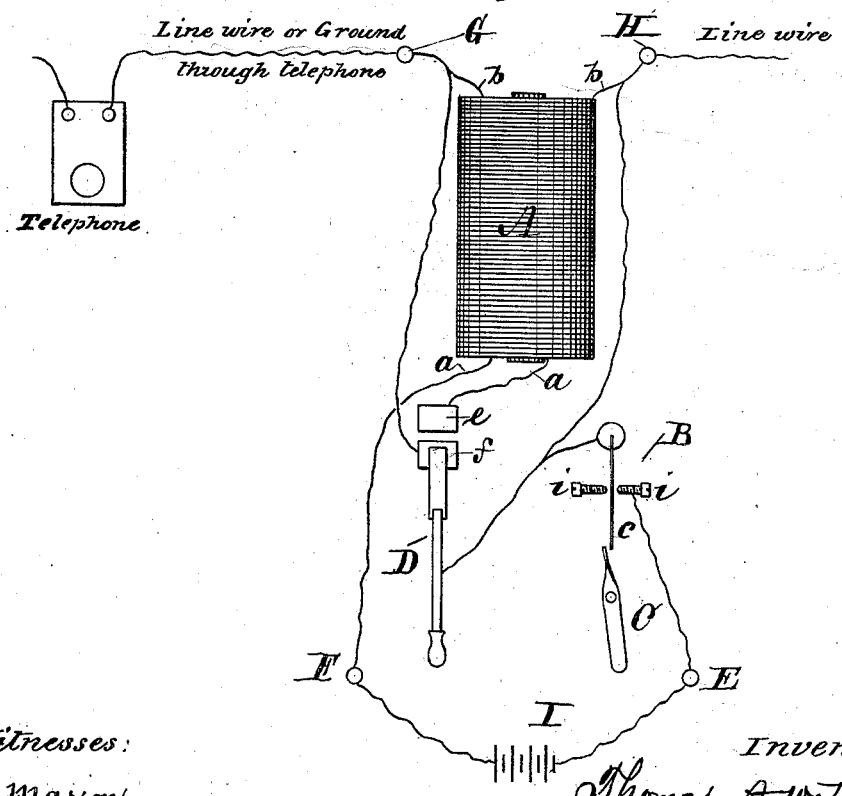


Fig. 2.



Witnesses:
E. E. Masson.
E. A. Sick

Inventor:
Thomas A. Watson by
Pollok his attorney.

UNITED STATES PATENT OFFICE.

THOMAS A. WATSON, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN TELEPHONES.

Specification forming part of Letters Patent No. **199,007**, dated January 8, 1878; application filed December 5, 1877.

To all whom it may concern:

Be it known that I, THOMAS A. WATSON, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Telephones, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of an apparatus constructed in accordance with my said invention; and Fig. 2, a diagram of the same, showing its arrangement in telephonic circuit.

In using a system of electric telephones it is necessary to provide some means for producing a sound at the distant telephone-station loud enough to attract the attention of persons at a distance from the telephone.

My present invention supplies one means for doing this by causing an intermittent current of electricity of high intensity to pass through the line-wire and the distant telephone. For producing such current I make use of an ordinary induction-coil, combined with a galvanic battery and a rheotome, for rapidly interrupting the current. These are arranged as shown in the accompanying drawings, in which A is the induction-coil. *a a* are the terminals of its primary, and *b b* those of its secondary, coil. B is a rheotome, consisting of a steel spring, *c*, capable of producing a musical note. This spring is set into vibration by the motion of the lever C, and in vibrating makes and breaks contact on screws *i i*.

The construction of the rheotome can be varied in many ways. For instance, if a metallic membrane is substituted for the steel spring, it can be set in vibration by the voice, and caused to make and break contact against a screw corresponding to screw *i* in diagram. All that is necessary is to supply some means for making and breaking contact between two metallic points.

D is a circuit-closer, which makes contact with plate *e* when the knob is pressed, and is kept in contact with the plate *f* when the knob is released by means of its weight or a retractile spring. A galvanic battery, I, is connected with the posts E and F and the main circuit to the posts G and H.

The operation is as follows: The knob of the circuit-closer is pressed, bringing the contact-spring upon the plate *f*. This completes the battery-circuit through the screws *i i*, steel spring *c*, contact-spring D, plate *e*, and primary coil. The lever C is now moved to and fro, throwing the spring of the rheotome into vibration, and, as it makes and breaks contact against the screws *i i*, renders the current passing through the primary coil intermittent, inducing in the secondary coil a correspondingly intermittent current of much higher intensity, and the terminals of this coil being connected with the main circuit, the induced current flows through the line-wire, and produces a loud sound in the distant telephone. Upon releasing the knob the contact-spring is drawn back from plate *e*, thus breaking the battery-circuit into contact with plate *f*, and as one of the terminals of the secondary coil is connected with the contact-spring and the other with plate *f*, the coil is therefore shunted out of the main-circuit.

I claim—

The method of producing a signal or call at a distant telephonic station by combining with a system of electric telephones an induction-coil, rheotome or circuit-interrupter, circuit-closer, and galvanic battery, substantially as herein described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

THOMAS A. WATSON.

Witnesses:

C. E. HUBBARD,

WARREN KYLE.