(No Model.) 2 Sheets—Sheet 1.

# C. ADER.

## TELEPHONIC TRANSMITTER.

No. 274,246. Patented Mar. 20, 1883.

Fig. 1

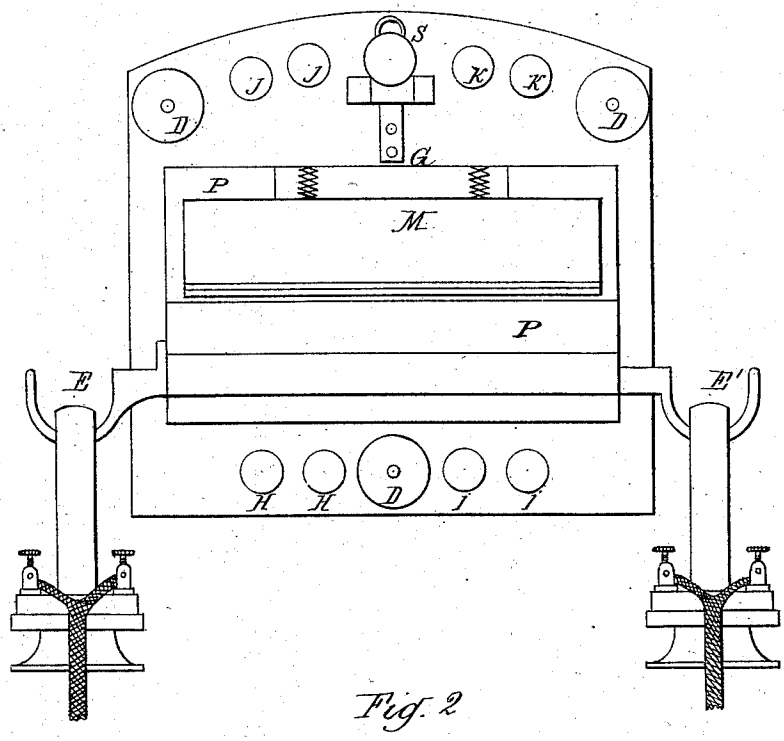
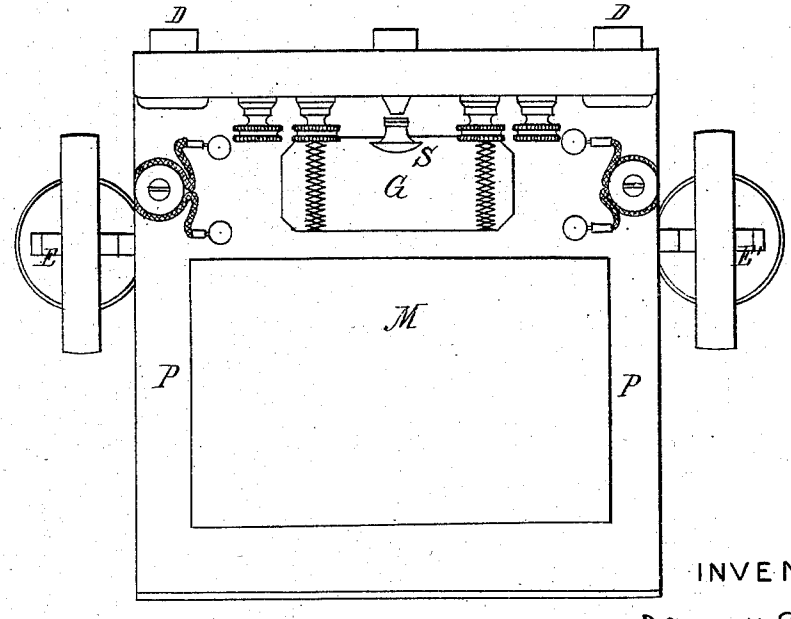



Fig. 2




WITNESSES:

E. B. Bolton

Chas. F. Bainton

INVENTOR:

Solomon Ader

by his Attorneys

Burke, Fraser & Connett

(No Model.) 2 Sheets—Sheet 2.

# C. ADER.

## TELEPHONIC TRANSMITTER.

No. 274,246. Patented Mar. 20, 1883.

Fig. 3

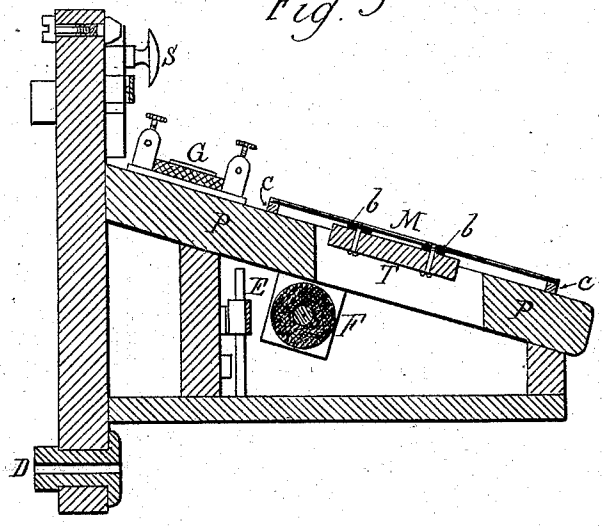
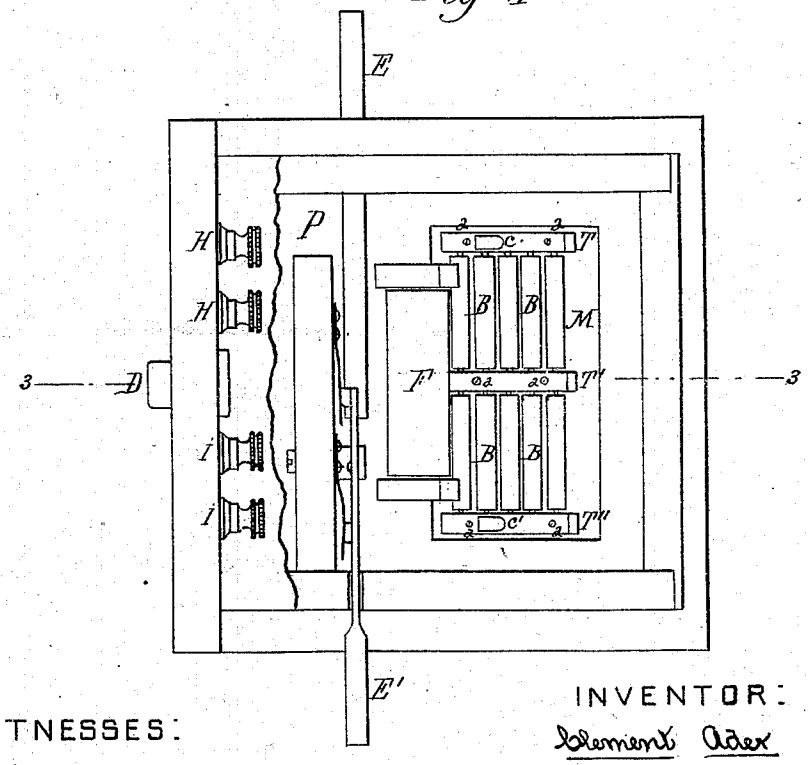



Fig. 4




WITNESSES:

E. B. Bolton

Geo. Bainton

INVENTOR:

Clement Ader

by his Attorneys

Burke, Fraser & Bonnett

# UNITED STATES PATENT OFFICE.

CLEMENT ADER, OF PARIS, FRANCE.

## TELEPHONIC TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 274,246, dated March 20, 1883.

Application filed January 11, 1882. (No model.) Patented in France March 19, 1880, No. 135,667.

*To all whom it may concern:*

Be it known that I, CLEMENT ADER, a citizen of the French Republic, residing at Paris, France, have invented certain Improvements in Transmitting-Telephones, of which the following is a specification.

My invention relates to microphonic transmitters, or those acting by varying the resistance to the passage of a battery-current.

In the accompanying drawings my transmitter is shown in front elevation in Figure 1, in plan in Fig. 2, in vertical mid-section in Fig. 3, and in inverted plan in Fig. 4. The plane of the section in Fig. 3 is on the line 3 3 in Fig. 4, and in Fig. 4 the bottom board is broken away to show the interior parts.

Like letters designate like parts in all the figures.

The frame of my telephone resembles a wall-desk or inclined shelf, by preference, as shown. A somewhat thick board or shelf, P, having a large aperture through it, is arranged in an approximation to a horizontal position, being preferably slightly inclined, as shown in Fig. 3. Over the aperture in this board is fixed a thin vibratory plate or panel, M, of wood, preferably fir wood. This panel is not fastened directly to the board P; but beneath its edge all around is a ring of elastic rubber, C, which serves as a cushion to leave it free to vibrate independently of the board P. This rubber ring may be cemented to the board P and the panel M cemented to it, or other means of attachment may be employed, though a rigid connection should be avoided. The panel M serves the same purpose as the diaphragm in most other telephones, and its nearly horizontal position assures that its vibrations in response to the voice of the user shall be in nearly vertical direction. The elastic mounting of the panel M, by leaving it sufficiently free to vibrate independently, serves to suppress its fundamental tone by enabling it to vibrate immediately and over its entire surface in consonance with the sound-waves that encounter it. The slight muffling of its edge resulting from the contact with the soft rubber also contributes to this result by opposing any tendency to a continuance of its own peculiar vibration.

I prefer to use resistance-varying contacts of the kind shown in the drawings, which are constructed as follows:

To the under side of the panel M are attached three pieces or cleats, T T′ T″, of horn-carbon or other suitable material, arranged parallel with each other within the aperture in the board P. Each of these pieces is connected to the panel at two points, *a a*, and separated therefrom by interposed elastic washers *b b*, Fig. 3. Through the cleats T T′ T″ are pierced five holes in horizontal direction, and in these holes the reduced ends of ten cross-pieces, B B, of carbon or other suitable contacting substance, are placed, the cross-pieces being thus sustained between the cleats like the rounds of a ladder, with this difference, however, that their reduced ends fit very loosely into the holes in the cleats, so as to rest on the under side of said holes with a pressure depending only on the weight of the pieces. To the cleat T is secured one of the terminal connections, *c*, and the other connection, *c′*, is secured to the cleat T″. The current from the battery then enters at *c*, divides into five parts, flows through the cross-pieces B B, reunites again at T″, and flows out at *c′*, passing thence through the primary coil of the inductorium F. If speech be uttered adjacent to the panel M, it sets the latter into vibration, the cleats T are likewise vibrated, and the contact of the latter with the cross-pieces B B is impaired and varied in accordance with the vibrations.

The above-described contacts are nearly like those shown in English Patent No. 1,531 of 1879, and form no novel part of my present invention.

To prevent the vibration of the building from affecting the microphonic system, the telephone should be insulated from the wall by rubber rings or mufflers D D at the points of attachment, which serve to absorb the external mechanical vibrations and prevent their reaching the panel M.

In Figs. 1 and 4 are shown the remaining parts of the telephonic station. E E′ are the hooks on which to hang the receivers, E being fixed, and E′ forming part of a movable lever which springs up when the receiver is lifted off, and thereby shunts the receivers into the

line-circuit. When it is depressed by the weight of the receiver the call-bell is in the line-circuit. The binding-posts H H are for connection with the telephonic battery, and I I are for connection with the special battery for the alarm-bell, (not shown,) which may be arranged at any desired point, being connected at binding-posts K K. To the binding-posts *j j* the line-wires, or a line and ground wire, are connected. G is a lightning-conductor, and S is the signal-key.

I claim as my invention—

The combination of an approximately horizontal board having an opening, a vibrating plate of resonant wood placed over said opening and separated from said board by an interposed elastic cushion, and the microphonic contacts arranged beneath said plate and borne thereby, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

CLEMENT ADER.

Witnesses:
JULES ARMENGAUD, Jeune,
DAVID T. S. FULLER.