M. L. HOOVER.

Mechanical-Telephone.

No. 217,690. Patented July 22, 1879.

Fig 1

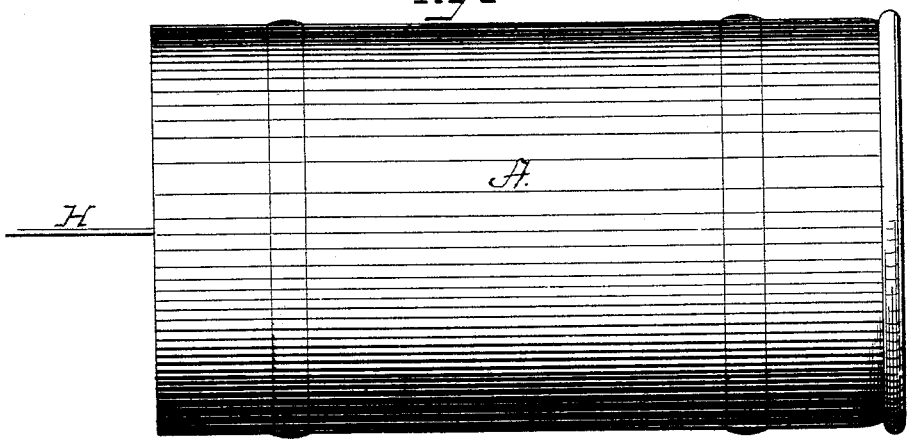


Fig 2

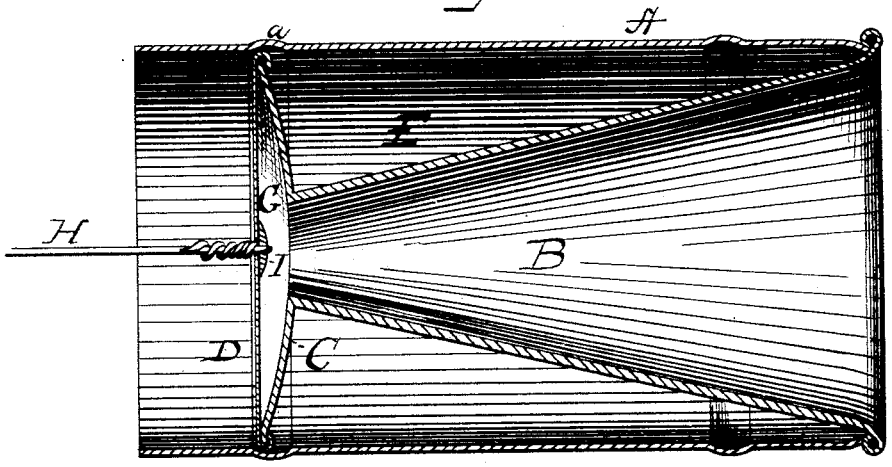
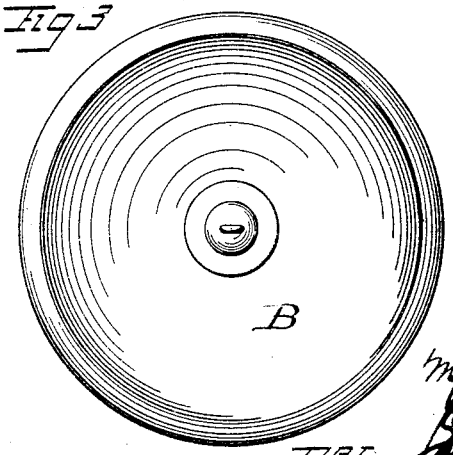


Fig 3



Witnesses
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UNITED STATES PATENT OFFICE.

MARTIN L. HOOVER, OF BUSHNELL, ILLINOIS.

IMPROVEMENT IN MECHANICAL TELEPHONES.

Specification forming part of Letters Patent No. **217,690**, dated July 22, 1879; application filed June 3, 1879.

To all whom it may concern:

Be it known that I, MARTIN L. HOOVER, of Bushnell, in the county of McDonough and State of Illinois, have invented certain new and useful Improvements in Telephones; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a side view of my improved telephone. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a front view of the same.

This invention relates to improvements in mechanical telephones; and the object is to furnish to the public a cheap apparatus which shall be so constructed as to receive the full volume and force of the voice and other sounds, and transmit them to the instrument at the other end of the line with good articulation of sound, so that they can be clearly heard.

In the annexed drawings, forming a part of this specification, the letter A represents a cylindrical tube, having near its rear end a bead, *a*, made of tin.

B indicates the cone or intensifier, made of zinc or tin, and arranged within the tube A, substantially as shown in Fig. 2 of the drawings, its forward or enlarged end firmly attached to the front end of the tube. The rear or smaller end of the cone B is provided with a sounding-diaphragm, C, having an opening corresponding with the diameter of the opening at the smaller end of the cone. This diaphragm is concaved, as shown, and made of heavy sheet-brass, for the purpose hereinafter stated.

D indicates the diaphragm, made of light sheet-brass, having its edges bent down over the edges of the concaved diaphragm, which bent-over edges are secured in the bead *a* of the tube, so as to form a sounding-chamber between the diaphragms. Thus it will be seen that the cone B, contracting at the inner end, is in open relation with the recess and central part of the diaphragm D, substantially as shown in Fig. 2 of the drawings.

Between the tube A and the cone B and its diaphragm is a dead-air chamber, E, serving as a non-conductor of the vibration of sound. If the space occupied by the air-chamber were solid, all the vibrations of sound would not pass off through the wire, but would cause the articulation of words to be indistinct.

The sounding-chamber G is designed to increase or intensify the sound, and the diaphragm made of sheet-brass materially aids the articulation of the sound.

The line H, for conveying the message, is connected with the diaphragm D by means of the button I in the recess opposite the opening in the cone or speaking-tube.

The line H should be provided with spiral springs at intervals, to regulate the tension at the places of fastening the line.

Operation: In using the instrument, the cone or speaking-tube is applied to the lips for the free utterance of the message to be sent, which is concentrated in its passage through the opening in the cone and impinged upon the central part of the diaphragm and button, and by means of the chamber G deflection is prevented and the uttered sounds intensified. Thus all the force of the voice acts directly upon the central part of the diaphragm, where it is the most sensitive to acoustic influence, and as there is but little reflection in the chamber, the volume of sound is expanded upon the diaphragm, causing immediate, strong, and distinct vibrations, which are carried over the line to the receiving-instrument.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a mechanical telephone, the cone or speaking-tube B, provided at its inner or smaller end with the sounding-diaphragm C and diaphragm D, substantially as and for the purpose set forth.

2. A mechanical telephone consisting, essentially, of a tube, A, cone B, diaphragms C and D, and air-chamber E, in combination with line, all arranged substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 12th day of May, 1879.

MARTIN L. HOOVER.

Witnesses:
WM. T. BEADLES,
GEO. R. EPPERSON.