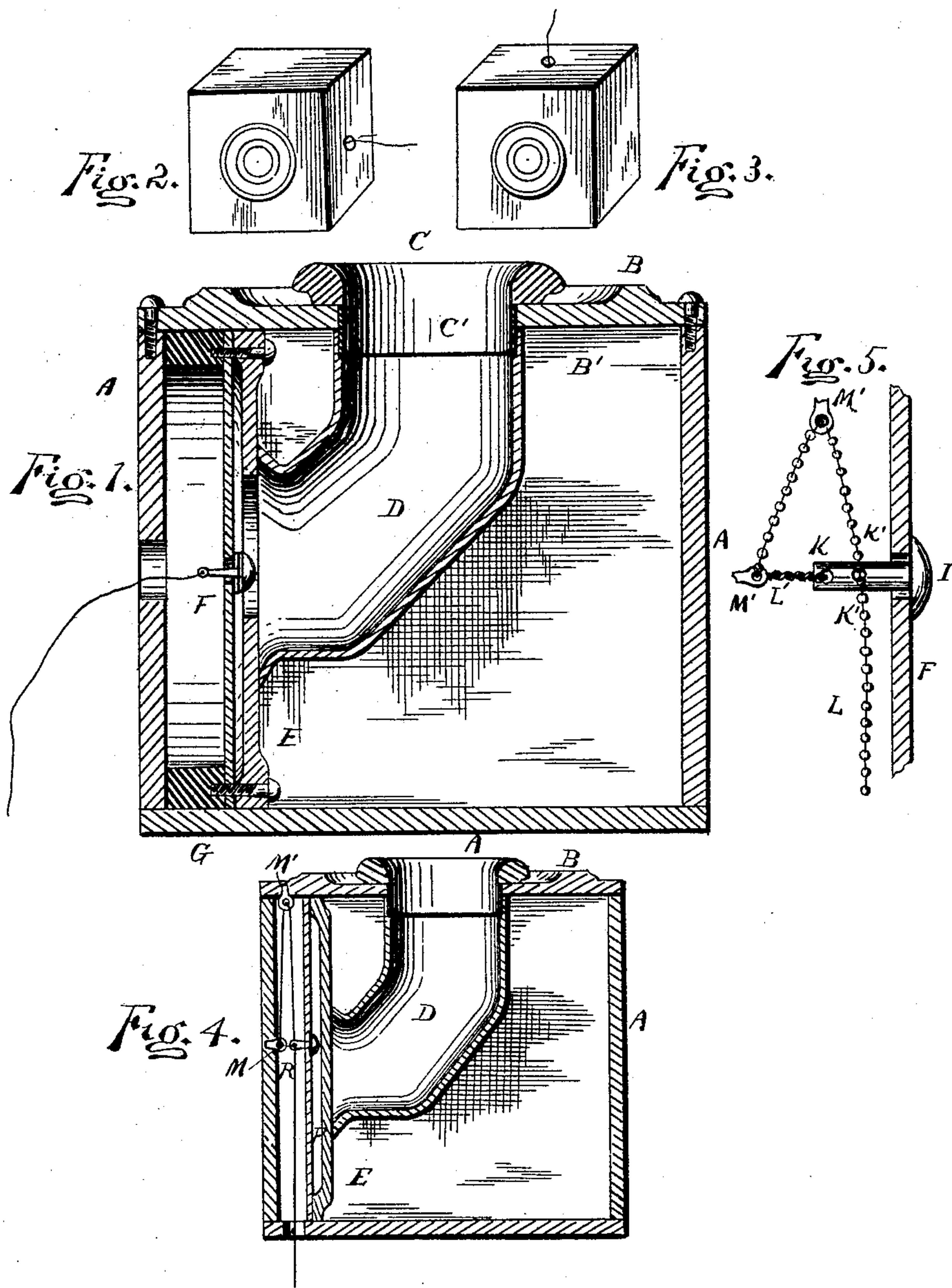


(No Model.)

J. P. SUNDERLAND.
MECHANICAL TELEPHONE.

No. 453,600.

Patented June 2, 1891.



Witness:

M. P. McKee.
T. W. Johnson.

John P. Sunderland,
Inventor
By W. A. Bartlett
Atty.

UNITED STATES PATENT OFFICE.

JOHN P. SUNDERLAND, OF BROOKLYN, ASSIGNOR TO DOMINGO M. MONJO,
TRUSTEE, OF NEW YORK, N. Y.

MECHANICAL TELEPHONE.

SPECIFICATION forming part of Letters Patent No. 453,600, dated June 2, 1891.

Application filed September 22, 1888. Serial No. 286,130. (No model.)

To all whom it may concern:

Be it known that I, JOHN P. SUNDERLAND, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Mechanical Telephones, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to mechanical telephones; and it consists in the construction of casing and the connection of the line-wire to the diaphragm in such manner as to secure easy adjustment and the ability to lead the wire in any direction desired.

In the drawings, Figure 1 is a longitudinal section of a cubical casing or box having a bent sound-conducting tube from the mouth-piece to the vicinity of the diaphragm. Figs. 2 and 3 are reduced perspectives of the same, showing how the wire may be led in various directions from the cubical casing. Fig. 4 is a section like Fig. 1, showing how the wire may be connected to leave the box at the side opposite the mouth-piece. Fig. 5 is a diagram distorted, showing the diaphragm-button and connections arranged after the manner shown in Fig. 4.

A indicates the box or casing. This is an exact cube externally, so that the same wall-space is occupied no matter which side of the casing be attached thereto.

B indicates the face-plate or front side of the box, which is provided with a round opening B', through which the mouth-piece C passes, said mouth-piece being firmly attached to the plate B and having an inward extension C'. A bent tube D is attached to the diaphragm-cover E of the phone. This tube D at its outer end fits easily over the end C' of the mouth-piece. The diaphragm-cover E is recessed at its rear face to give room for the vibration of the diaphragm F. A keeper G in the rear of the diaphragm F has a recess corresponding to that in the diaphragm-cover. The diaphragm F is firmly secured at its edges between its cover E and keeper G, so that its central portion is free to vibrate. The wire H in Fig. 1 leads from the diaphragm in usual manner through the side of the box. With such connection the

wire can be carried up, down, or sidewise, thus permitting the adjustment of the box in nearly all positions, the occupied space in each direction being the same.

In Figs. 4 and 5 a different connection of the line-wire to the diaphragm is shown. This connection draws the diaphragm taut by a direct pull, and at the same time relieves it largely of the strain to which it is often subjected. The button I has a stem or spindle K, which passes through the diaphragm. Two holes K' K² pass through the stem. The line-wire L is attached at its end to the spindle by passing through the hole K'. The wire then passes loosely through a loop M, attached to the side of the box or casing. From loop M it passes (at an angle) to loop M', which is fastened to one side of the casing a little out of line with the hole K² in the spindle K. From loop M' the wire passes through hole K², and thence out at the side of the box. The effect of this arrangement of the wire, loops, and spindle is that the wire is held taut with a less strain on the diaphragm, while the connection at K' and K² gives a very perfect vibration to the wire.

The entire disconnection of the mouth-piece from the bent tube enables the device to be readily taken apart by removing the side of the box bearing the mouth-piece, when the tube will be open to inspection. The break also prevents the transmission of outside vibrations to the tube, and so to the diaphragm.

I claim—

In a mechanical telephone, the combination of a diaphragm, a spindle projecting to the rear thereof, a line-wire connected to said spindle and passing rearwardly through a loop, thence sidewise at an angle and through a second loop, and thence through the spindle and along the line, the parts being constructed and relatively arranged substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN P. SUNDERLAND.

Witnesses:

BENJAMIN FRANKLIN,
AARON L. VOORHEES.