

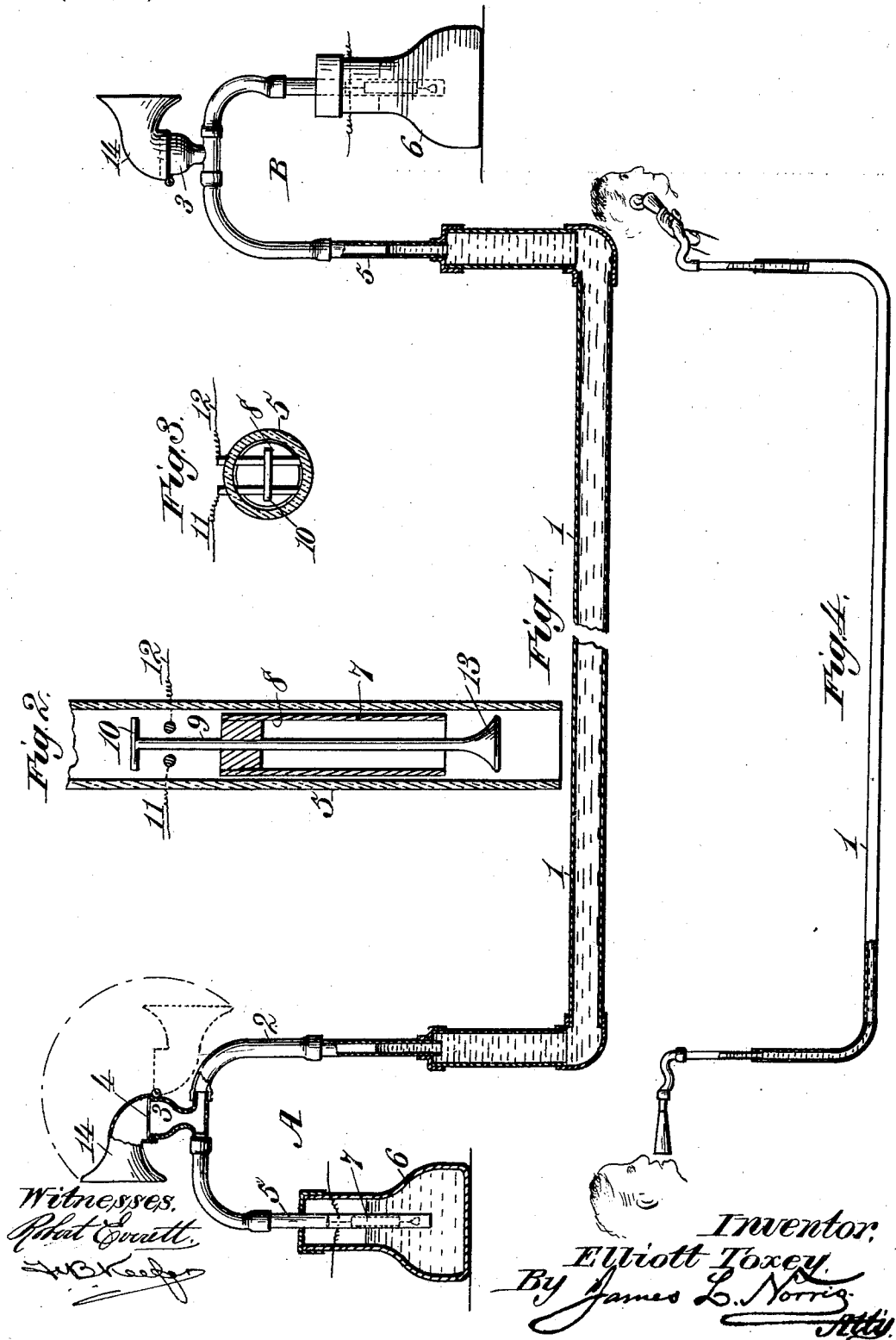
No. 653,156.

Patented July 3, 1900.

E. TOXEY.
APPARATUS FOR TRANSMITTING SOUNDS.

(Application filed July 25, 1899.)

(No Model.)



UNITED STATES PATENT OFFICE.

ELLIOTT TOXEY, OF MOBILE, ALABAMA.

APPARATUS FOR TRANSMITTING SOUNDS.

SPECIFICATION forming part of Letters Patent No. 653,156, dated July 3, 1900.

Application filed July 25, 1899. Serial No. 725,059. (No model.)

To all whom it may concern:

Be it known that I, ELLIOTT TOXEY, a citizen of the United States, residing at Mobile, in the county of Mobile and State of Alabama, have invented new and useful Improvements in Apparatus for Transmitting Sounds, of which the following is a specification.

My invention relates to apparatus for transmitting sounds or sound impulses from one point to another and depends for its action upon the use of a conduit containing an incompressible fluid by which the sound-waves are transmitted and means for imparting the sound waves or impulses thereto.

In different embodiments of my invention I am enabled to use the same for the transmission of articulate speech and for the actuation of electrical contacts for the purpose of opening and closing a circuit through an electric sounder by means of which certain predetermined signals in accord with the Morse or other alphabet may be sent.

The construction and method of operation of my improved apparatus will be set forth in detail hereinafter and the novel features thereof will be defined in the claims.

In the drawings forming part of this specification, Figure 1 is a sectional elevation of the device. Fig. 2 is a detail sectional view of the float. Fig. 3 is a transverse sectional view of the tube in which the float is located, showing the contact-maker; and Fig. 4 is a view similar to Fig. 1, showing a different application of the device.

Like reference numerals and letters indicate like parts in the different views.

In the illustration I have shown two stations A and B, each provided with similar devices for the transmission and receipt of the sounds or signals sent from one to the other. It is obvious, however, that any number of such stations may be employed. Between the stations A and B is a conduit 1, which is formed with upright arms at its opposite end and contains water or other incompressible liquid. As the transmitting and receiving devices in both stations are alike, only those in station A will be specifically described. Connecting the vertical arm of the conduit 1 in each station is a curved inverted-U-shaped pipe 2, having at a point intermediate its ends

a transmitter 3. Upon the face of the transmitter 3 is an elastic cover 4, which may, if desired, be in the form of a diaphragm stretched across the transmitter or the transmitter itself may be a flexible bulb. The same is adapted to be acted upon by the hand for the purpose of creating waves or impulses in the pipe 2 and transmitting them to the incompressible liquid in the conduit 1. Connected to the arm of the pipe 2 opposite that which is attached to the conduit 1 is a pipe 5, of glass or other insulating material, which leads down into a vessel 6, containing water or other liquid. In the pipe 5 is a float 7, which consists of an inverted-cup-shaped base 8, a stem 9 upon the upper end thereof, and an electric contact-maker 10 on the stem 9, which is preferably constructed of a transversely-extending bar of suitable conducting material. The said contact-maker is adapted to cooperate with and open and close the circuit between the circuit-terminals 11 12, which lead, respectively, from an electric generator or battery and to a telegraphic sounder of any suitable form and construction. If desired, the stem 9 may extend down through the float 7 and be formed with a weighted end 13 for the purpose of preserving the proper position of the float in the liquid of the vessel 6 and the proper location thereof in the pipe 5.

From the foregoing description it will be observed that as the flexible portion of the transmitter 3 is actuated either by the pressure of the hand thereon or by sound-waves upon the same an impulse will be given to the air or other medium in the coupling 2, which will be transmitted directly to the incompressible material in the conduit and by the latter transmitted to station B and also to the other stations on the line, causing a pressure upon the upper end of the float 7 in the receiving-station. By reason of this pressure the said float is forced downwardly in the pipe 5, carrying with it the contact-maker 10, which being brought into engagement with the circuit-terminals 11 and 12 closes the circuit through the sounder in the receiving-station and thereby reproduces the signal sent from the transmitting-station.

To use the device as a telephone, the couplings 2 are removed from the ends of the con-

duit 1 and ordinary funnel-shaped trumpets applied. In lieu of this, however, I may form upon the transmitter 3 a pivotally-mounted mouthpiece 14, which may be thrown up in line with the transmitter 3 when it is desired to transmit articulate speech and swung down out of the way when it is desired to use the device for sending continuous telegraphic messages.

It will be understood that when my device is used as a telephone no vibrating diaphragm is necessary, although if the sending and receiving stations are on different levels it may be necessary to provide means for preventing the escape of the liquid in the conduit 1 from the station at the lower level. It will also be obvious that instead of locating the float 7 and the pipe 5 in a receptacle 6, containing water, they may be located in the conduit 1 at any desired point.

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

1. In apparatus of the character and for the purpose described, a conduit containing throughout its length an incompressible liquid as the transmitting medium, a diaphragm connected therewith adapted to be actuated either manually or by sound-waves, and a removable mouthpiece for said diaphragm, as and for the purpose set forth.

2. In apparatus of the character and for the purpose described, a conduit, transmitting and receiving mechanism connected therewith, the transmitting mechanism adapted to be actuated either manually, or by sound-waves, and a pivotally-mounted mouthpiece

for the transmitting mechanism, as and for the purpose set forth.

3. In apparatus for transmitting signals from one point to another, a tubular conduit between the transmitting and receiving stations, a liquid-containing receptacle in each station, a pipe connecting said conduit with the interior of said receptacle, a transmitter in said pipe, a float supported by the liquid in said receptacle, also located in said pipe, and a contact-maker carried by said float adapted to open and close an electric circuit, as and for the purpose set forth.

4. In apparatus for transmitting signals from one point to another, a tubular conduit connecting the transmitting and receiving stations and containing an incompressible liquid throughout its length, a liquid-containing receptacle in each station, a tube of insulating material leading down into the liquid in said receptacle, circuit-terminals in said tube, a pipe connecting said conduit with said tube, a transmitter in said pipe, a float in said tube supported by the liquid in said receptacle, the said float comprising an inverted-cup-shaped base, a stem extending therethrough, and a contact-maker on said stem, cooperating with said circuit-terminals, as and for the purposes set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ELLIOTT TOXEY.

Witnesses:

JNO. E. MITCHELL,
HENRY TOUSINEIRE.