No. 771,642. PATENTED OCT. 4, 1904.

C. G. JARDINE.

SPEAKING TUBE.

APPLICATION FILED JAN. 28, 1904.

NO MODEL.

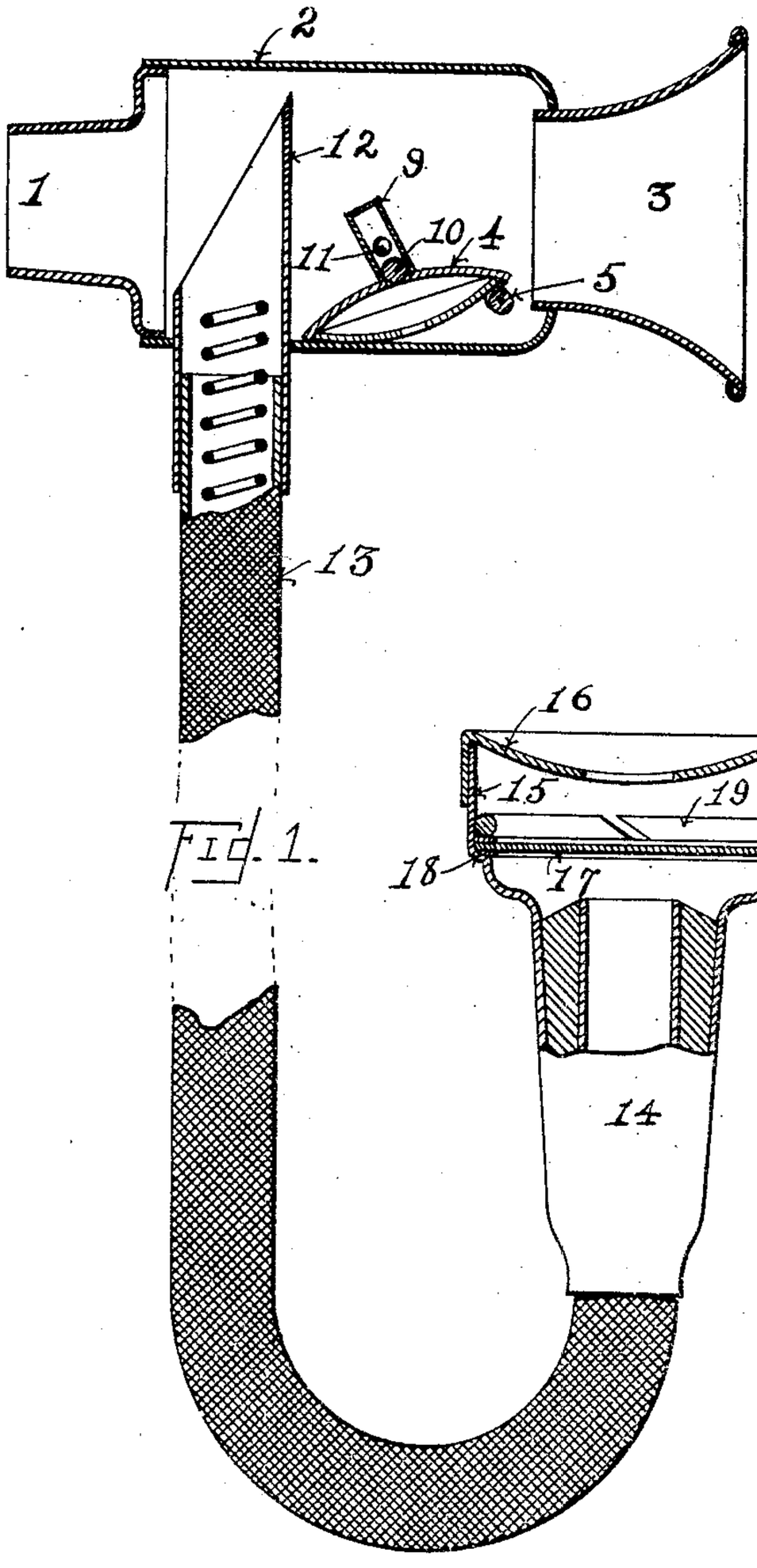

FIG. 1.

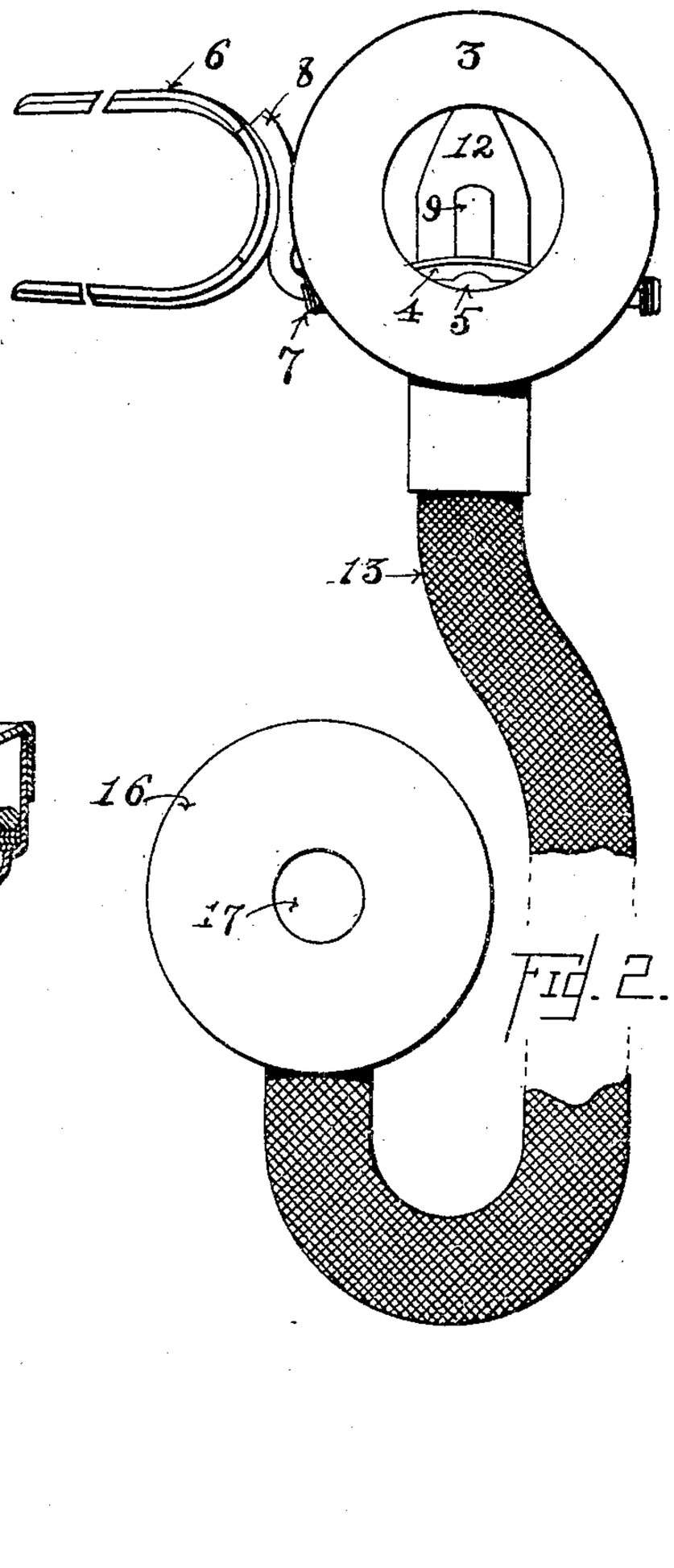

FIG. 2.

WITNESSES:
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No. 771,642. Patented October 4, 1904.

UNITED STATES PATENT OFFICE.

CHARLES G. JARDINE, OF BUFFALO, NEW YORK.

SPEAKING-TUBE.

SPECIFICATION forming part of Letters Patent No. 771,642, dated October 4, 1904.

Application filed January 28, 1904. Serial No. 190,983. (No model.)

To all whom it may concern:

Be it known that I, CHARLES G. JARDINE, a subject of the King of Great Britain, residing at Buffalo, New York, have invented certain new and useful Improvements in Speaking-Tubes, of which the following is a full, clear, and exact description.

The object of my invention is to provide a receiver and a transmitter possessing the best acoustic qualities and at the same time to close the tube against air-currents and moisture when the same is not in use.

It is, furthermore, an object of my invention to prevent "overhearing"—that is to say, to prevent conversation at one end of the table-line being overheard at the other end without the proper use of both transmitters and receivers.

To this end my invention consists of a transmitter provided with a whistle which is closed when the receiver is not in use and means for closing the hole in the whistle automatically when the whistle is in the closed position.

It also consists in the employment of a receiver provided with a sound-collector and a diaphragm, which receiver is hung up and taken down from the yoke like the receiver of a telephone.

Referring to the drawings herewith, Figure 1 is a sectional view, and Fig. 2 is a front elevation, of my invention.

1 is the tube which connects the two points to be put in communication.

2 is a cylindrical body of my apparatus, to which are connected the transmitter and the receiver.

3 is the transmitter, and 4 is the whistle. The whistle 4 is pivoted to a rod 5, which connects with the receiver-yoke 6.

7 is a spring having one end secured to the body 2 and the other end to the rod 5, and the tendency of this spring is to rotate the rod 5 and carry the whistle to the open position, as shown in the drawings.

The rod 5 has a bent portion 8, (see Fig. 2,) to which the yoke 6 is attached, so that the yoke being out of center will be carried down against the spring 7 by the weight of the receiver when hung up. To the front opening of the whistle 4 is secured a tube 9, the central diameter of which is in excess of the diameter of the whistle-opening. The outer end of the tube 9 is closed, and within this tube is placed a ball 10. On one side, midway of the length of this tube 9, is an opening 11. The tube 9 has its axis inclined to the axis of the whistle 4, so that when the whistle occupies the closed position the ball 10 will fall by gravity to close the whistle-opening. On the other hand, the angle of inclination and the weight of the ball are so slight that a whistle-call from the other end of the tube 1 will force the ball 10 outwardly and allow the air to pass out through the opening 11, thus blowing the whistle. It will thus be seen that when the transmitter is in the closed position the tube 1 is closed against air-current, dampness, and against overhearing.

Secured to the body 2 with its axis at right angles thereto is my sound-collector 12. This consists of a cylindrical tube of metal cut at an angle of about thirty degrees from the axis, as shown, and is placed with its opening toward the tube 1, from which the sound comes. Secured to the outer end of the sound-collector 12 is a flexible tube 13. This tube 13 has secured to its free end the body 14 of the receiver. The receiver consists of the usual cylindrical extension 15 of the body 14 and a perforate cap 16. Within the cylindrical part 15 is placed a diaphragm 17, which rests down upon a flange 18 and which is held down in place by an expansion-ring 19. It will thus be seen that the receiver is at all times closed against air or moisture by the diaphragm 17 and that the transmitter is so closed when the device is not in use. It will also be seen that overhearing is prevented. Since the receiver at the other end of the line is similarly closed by a diaphragm, no sound communication can pass through that channel, and since the transmitter is entirely closed, even to the whistle-opening, by a similar transmitter at the other end of the line no sound communication can pass until the receiver at the other end of the line is also taken down.

Having thus described my invention and its method of operation, what I claim is—

1. In a speaking-tube apparatus, in combi-

nation with a transmitter and a receiver, a pivoted yoke for holding said receiver, a whistle moved by said yoke in one direction, a spring for moving said whistle in the opposite direction, and a valve for closing said whistle-opening, substantially as and for the purposes set forth.

2. In a speaking-tube apparatus. in combination with a transmitter and a receiver, a diaphragm in said receiver, a whistle in said transmitter, a rod carrying said whistle, a yoke secured to said rod and capable of engaging said receiver, a spring engaging said rod to rotate it in the direction to carry said whistle to the open position, and a valve on said whistle automatically closed by the movement of said whistle to the closed position and capable of being opened by air-pressure from the other end of the line, substantially as and for the purposes set forth.

3. In a speaking-tube apparatus, in combination with a transmitter and a receiver, a diaphragm in said receiver, a sound-collector between the main tube and the receiver-tube, a whistle in said transmitter, a rod carrying said whistle, a yoke secured to said rod, and capable of engaging said receiver, a spring engaging said rod to rotate it in the direction to carry said whistle to the open position, and a valve on said whistle automatically closed by the movement of said whistle to the closed position and capable of being opened by air-pressure from the other end of the line, substantially as and for the purposes set forth.

4. In a speaking-tube apparatus, in combination with a transmitter and a receiver, means for closing the main tube against air-currents and moisture, comprising, a diaphragm in said receiver, a whistle in said transmitter, means for moving said whistle to the closed position by hanging up said receiver, and means for automatically closing the whistle-opening upon moving the whistle to the closed position and still permitting said whistle to perform its normal function, substantially as and for the purposes set forth.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

CHAS. G. JARDINE.

Witnesses:
J. H. MADDEN,
KATHERINE MCCARTHY.