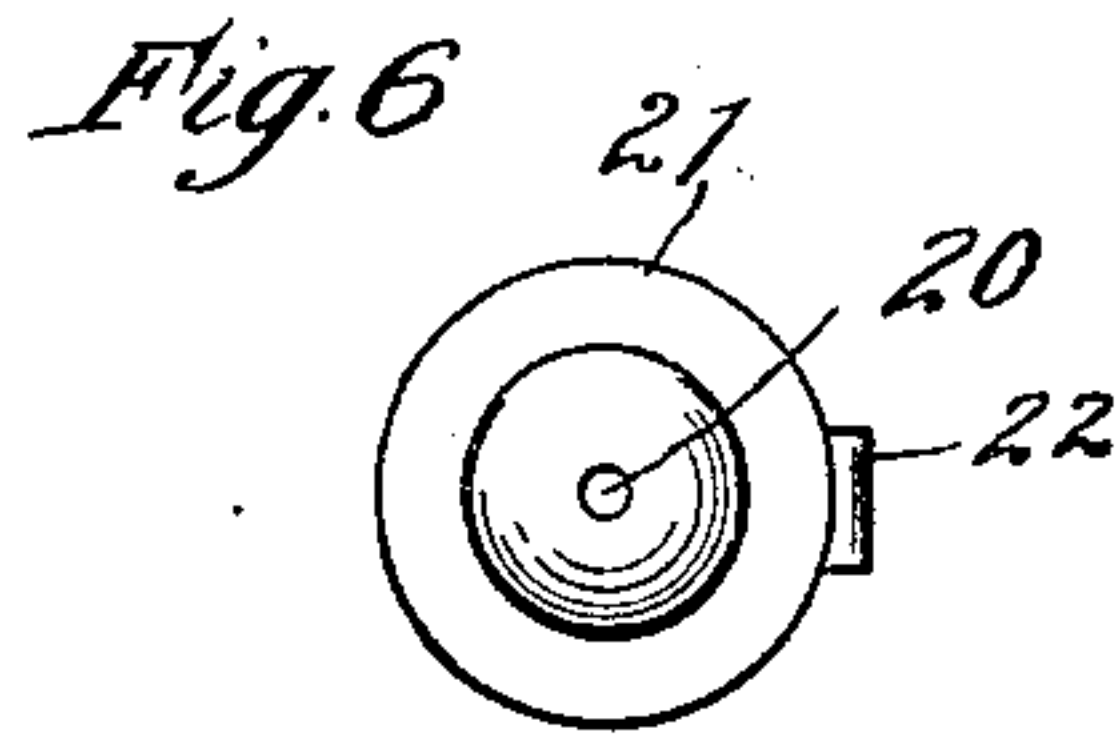
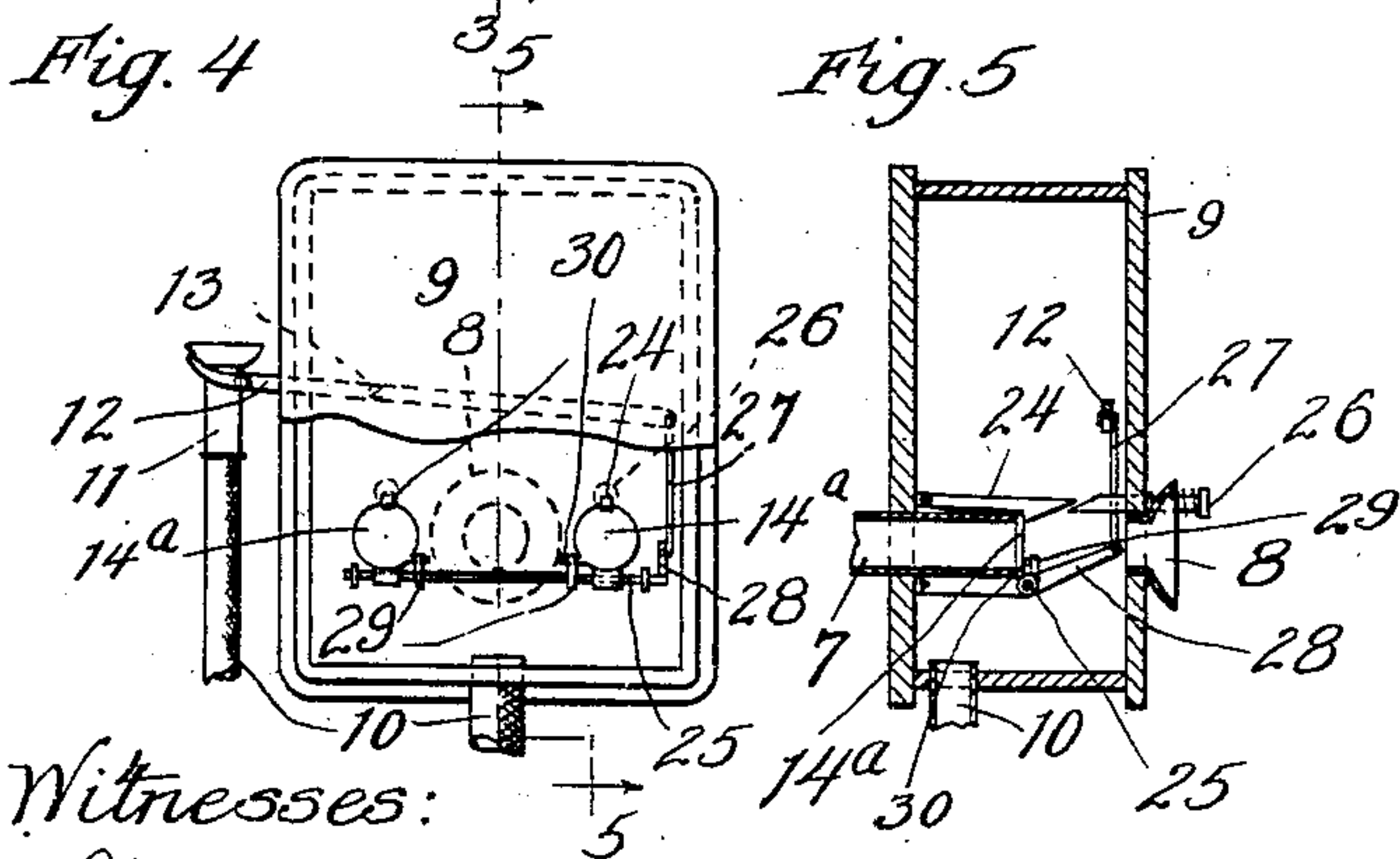
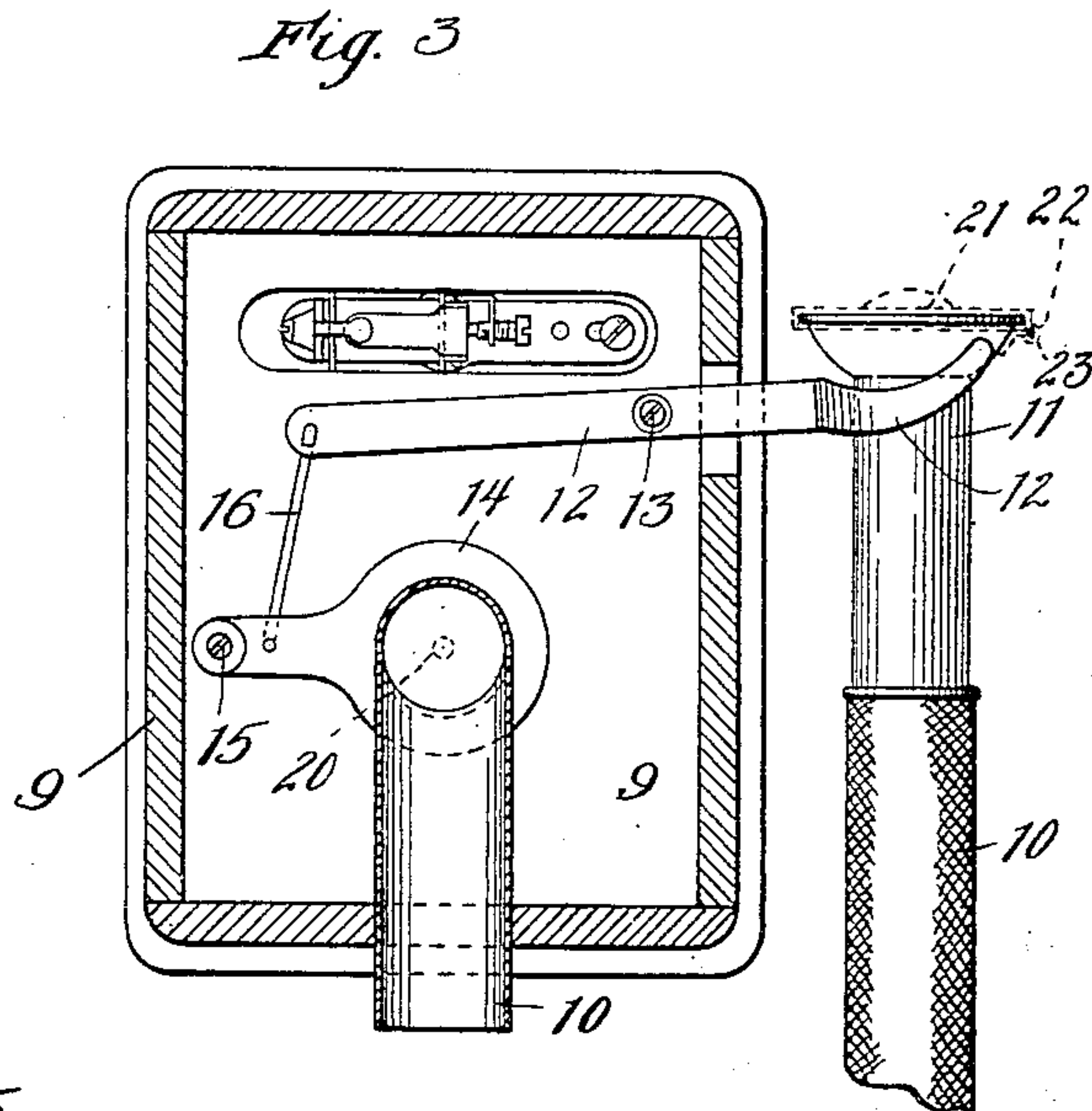
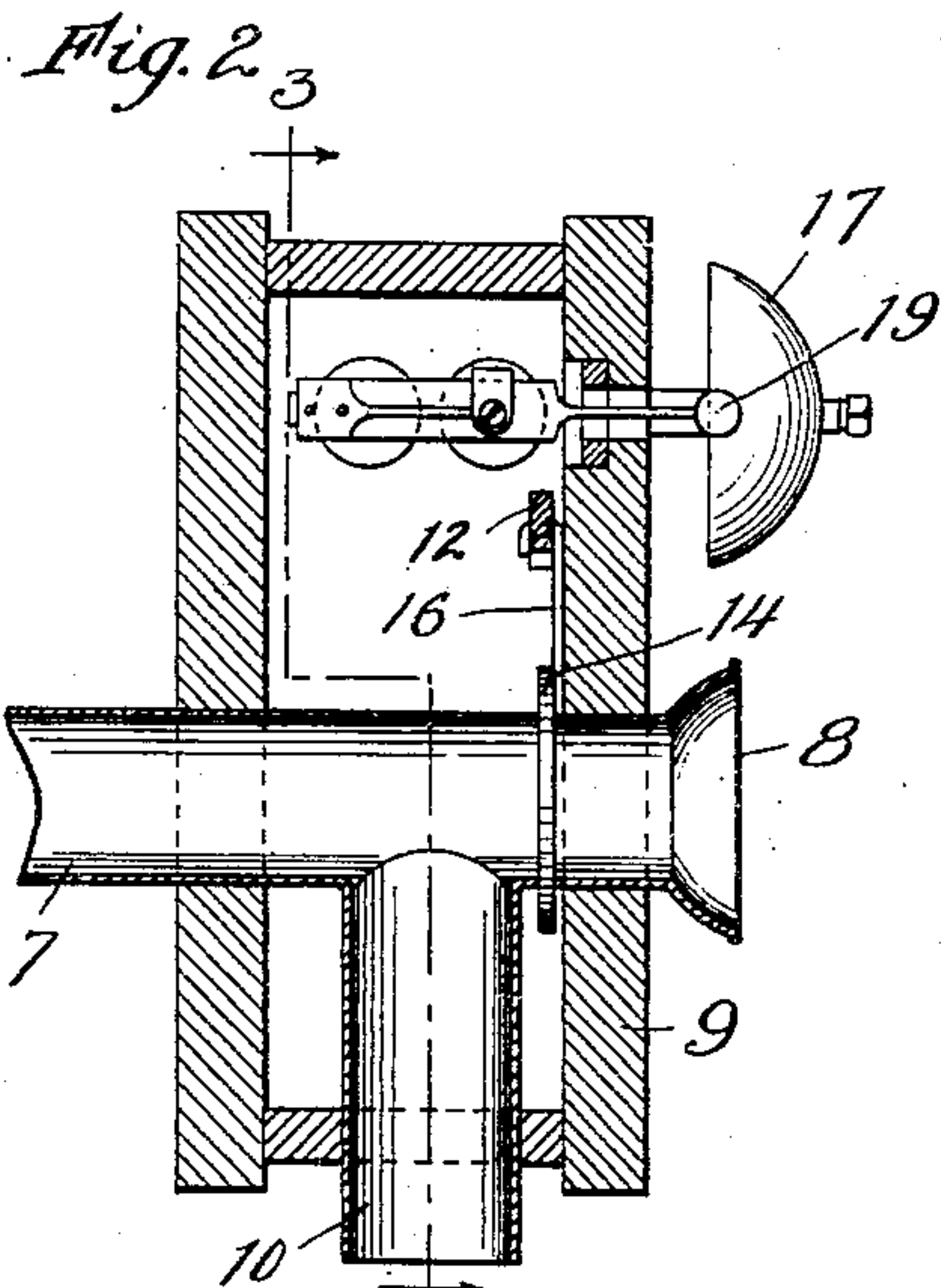
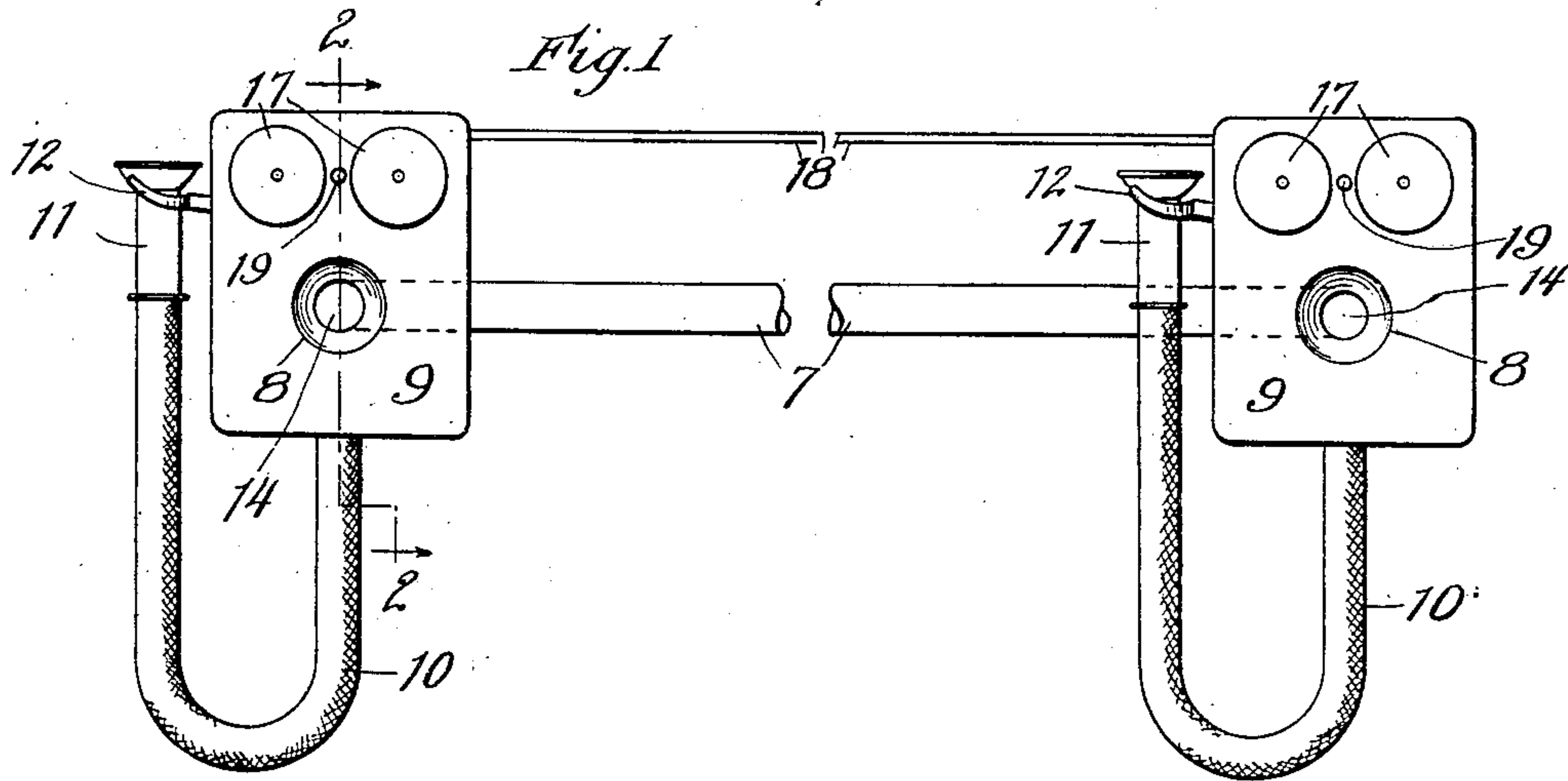


B. M. GRAYBILL.
SPEAKING TUBE.

APPLICATION FILED AUG. 18, 1903.

NO MODEL.



Witnesses:
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UNITED STATES PATENT OFFICE.

BIRD M. GRAYBILL, OF CHICAGO, ILLINOIS, ASSIGNOR TO WILLIAM J. McWADE, OF CHICAGO, ILLINOIS.

SPEAKING-TUBE.

SPECIFICATION forming part of Letters Patent No. 762,900, dated June 21, 1904.

Application filed August 18, 1903. Serial No. 169,875. (No model.)

To all whom it may concern:

Be it known that I, BIRD M. GRAYBILL, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Speaking-Tubes, of which the following is a specification.

In the use of the ordinary speaking-tube it is necessary for the user to place his mouth and his ear to the tube alternately, frequently changing from one to the other many times during the single use of the tube. This is not only inconvenient, but a person is liable to miss some portion of the conversation while changing from one to the other, and the missed portion of the conversation may be important. My effort in this invention has been to remove this objection, and I accomplish it by providing the speaking-tube with a branch for the ear, so the user may keep his ear to the latter while his mouth is at the mouthpiece of the main tube, and this branch pipe is preferably flexible, so that it may be held to the ear in the same manner as the receiver of a telephone is held.

The invention is adapted to be used with any speaking-tube and with either a whistling-signal or an electric-bell signal, and its nature is fully disclosed in the description given below.

In the accompanying drawings, forming a part of such description, I show at Figure 1 a view in elevation of the terminals of a speaking-tube. Fig. 2 is a section on the line 2 2 of Fig. 1, and Fig. 3 is a section on line 3 3 of Fig. 2. Fig. 4 is an elevation, partly broken away, of a modified construction; and Fig. 5 is a section on the line 5 5 of Fig. 4. Fig. 6 is a detail of a portion of the invention.

In said drawings, 7 represents the speaking-tube, and 8 8 its mouthpieces, which may be located in different rooms or different parts of the same room. The mouthpieces are supported in boxes or casings 9, resembling the ordinary telephone-box.

10 represents the branch tubes for use with the ear, and they are provided with receivers 11. As already stated, the tubes 10 are preferably flexible, so as to permit the receivers

11 to be placed to the ear in the ordinary manner of positioning the receivers of telephones. The pipes 10 are joined to the speaking-tubes 7 near the mouthpieces 8, as will be understood from Fig. 2. By the use of these branch tubes and receivers 11 the user need not change his position while using the tube, and inasmuch as his ear is in constant communication with the tube he loses no part of the conversation.

A device is also provided for supporting the ear-tube when not in use, and I prefer that this device shall be a pivoted hook 12 very similar to those used with telephones. It extends into the box 9, and its pivot is shown at 13, and it may be, and preferably is, made the means of operating the cut-off or valve 14, pivoted at 15 and joined to the inner end of the hook by the link 16. This cut-off is inserted transversely in the speaking-tube, and its main purpose is to exclude dirt and dust from the tube. It may also serve to prevent the use of the tube except when the ear-tube is taken down, being normally held in the position of Fig. 3 when the hook is depressed by the ear-tube. When the ear-tube is removed from the hook, the weight of the cut-off 14 causes it to move down, overcoming the weight of the outer end of the hook, this movement carrying the cut-off far enough to open the speaking-tube and allow talking through it. When the ear-tube is again hung up in the hook, the cut-off will be returned to its normal or closing position, which is the one illustrated at Fig. 2. The cut-off may be located at either side of the branch pipe, as desired.

My invention may be used with either a whistling signal or an electric-bell signal. It is shown in connection with the latter in Figs. 1 to 3, the bells being indicated at 17, the electric wires at 18, and the striker at 19. These bells are placed upon the same box with the mouthpiece and are caused to sound by a push-button or other device customarily employed in electric signaling apparatus. Instead of using the bells an opening 20 may be made in the center of the cut-off 14, through which the user may whistle, or instead of such open-

ing the receiver may be furnished with a cover 21, having a similar opening 20 in its center, and an arm 22, whereby it may be secured to the receiver. Of course when used as last
 5 described the cover should be capable of being turned out of the way on its pivot, which may be inserted in the opening 23, so that it may not interfere with the use of the receiver in the ordinary way after the calling-signal
 10 has been given.

The invention is also adapted to be used at the entrances of vestibules of apartment buildings, a single mouthpiece and receiver serving for the speaking-tubes leading to a number of different apartments. This form of
 15 the invention is illustrated at Figs. 4 and 5. A single casing 9 is provided with a single mouthpiece 8 in connection with a plurality of speaking-tubes 7, and a single ear-tube 10 connects with the mouthpiece or
 20 main tube. The speaking-tubes all communicate with the mouthpiece, and each is provided with a valve or cut-off 14^a at its outer end, where it connects with the mouthpiece,
 25 and these valves are opened by gravity when released by the latches 24, holding them closed at the top. The valves are freely hinged at the bottom on a rod 25, and the latches are released by push-buttons 26, which may be
 30 the same push-buttons which sound the signal-bells and of which there is one for each speaking-tube. The ear-tube hook 12 is connected to the rod 25 by a link 27 and a crank 28 on the rod, so that when the ear-tube is
 35 removed from the hook a rocking motion will be imparted to the shaft, by which the stops 29 on the shaft will be lowered from the position at Fig. 5, so as to allow the valves to open. These stops 29 engage the arms 30 on
 40 the valves. It will be seen that if a person desires to call up the occupant in a particular apartment he has only to put the ear-tube to his ear and push in the button 26 of that apartment. By removing the receiver from
 45 the hook he swings the stop 29 out of the way, and when he pushes in the button he

releases the latch 24, so that the valve may then open by gravity, as already stated, and place the person in communication with the apartment. It will be understood that when
 50 the weight of the receiver is taken off from the hook the inner end of the hook and the parts attached to it will have sufficient gravity to operate the rod 25; but if necessary to insure action a spring may be employed. 55

I claim—

1. The combination with a speaking-tube, of a branch ear-tube, the pivoted hook for supporting the free end of the ear-tube, a valve adapted to close the main tube, and a connection between the valve and the inner end of the hook, whereby the valve is automatically opened when the ear-tube is removed from the hook. 60

2. The combination with a speaking-tube, 65 a branch ear-tube and pivoted hook supporting the ear-tube, of a cut-off or valve adapted to close the speaking-tube, this valve being operated in one direction by said hook and also held closed by said hook when the ear-tube is hung in it, substantially as specified. 70

3. The combination of a plurality of speaking-tubes each provided with a cut-off, of a single mouthpiece and an ear-tube serving all the speaking-tubes, substantially as specified. 75

4. The combination of a plurality of speaking-tubes the terminals of which are in close proximity to each other, and each provided with a cut-off, a single mouthpiece serving all the tubes, an ear-tube also serving all the 80 tubes, and a device for each tube whereby the user may open the cut-off, substantially as specified.

5. The combination with a speaking-tube and a branch ear-tube, of a cut-off valve closing the speaking-tube, said valve being closed by the ear-tube and opening by gravity, and means for opening said cut-off at will. 85

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Witnesses:

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