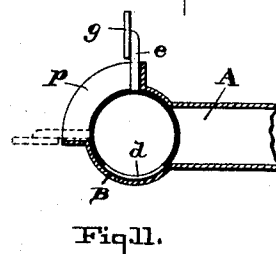
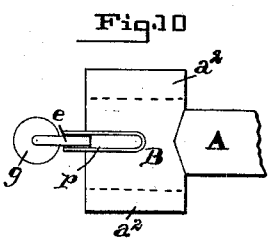
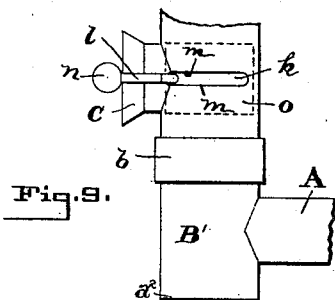
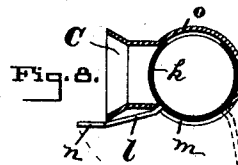
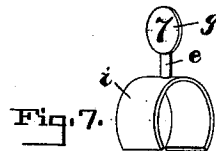
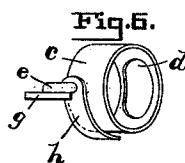
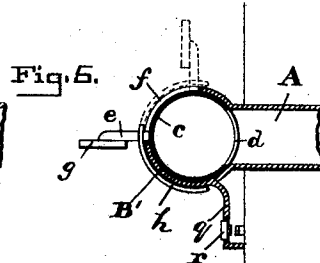
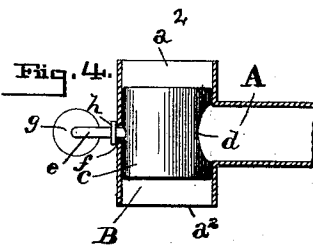
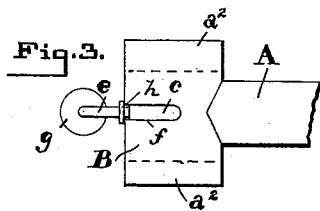
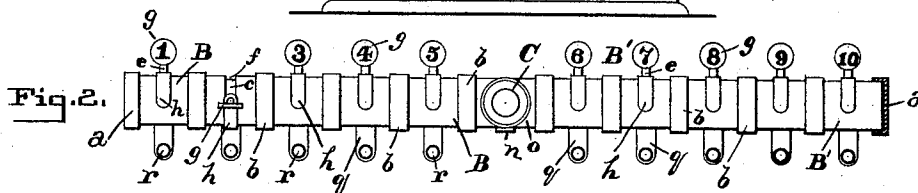
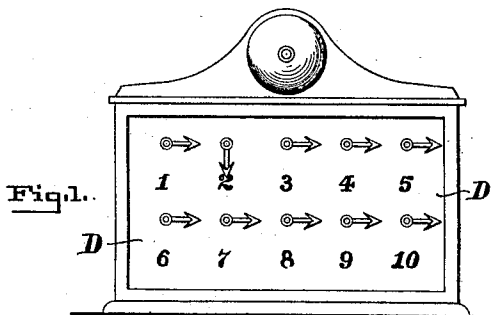


(No Model.)

L. STROUSE. SPEAKING TUBE.

No. 484,982.

Patented Oct. 25, 1892.



Witnesses:—
A. O. Babendreier.
J. Parker Davis.



Inventor:—
Leopold Strouse
By Chas B. Mann
Att.

UNITED STATES PATENT OFFICE.

LEOPOLD STROUSE, OF BALTIMORE, MARYLAND.

SPEAKING-TUBE.

SPECIFICATION forming part of Letters Patent No. 484,982, dated October 25, 1892.

Application filed July 6, 1892. Serial No. 439,133. (No model.)

To all whom it may concern:

Be it known that I, LEOPOLD STROUSE, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Speaking-Tube Exchanges, of which the following is a specification.

This invention relates to an improvement in speaking-tube exchanges, and is illustrated in the accompanying drawings, in which—

Figure 1 shows a front view of an annunciator employed in connection with the exchange. Fig. 2 shows a front view of the exchange. Fig. 3 shows a top view of one of the tube-sections composing the exchange-tube with the speaking-tube valve in open position. Fig. 4 shows a horizontal section of the same with the valve in full. Fig. 5 shows a cross-section with the valve open. Fig. 6 shows a perspective view of the valve detached. Fig. 7 shows a similar view of another form of valve. Fig. 8 shows a cross-section of the middle portion of the exchange-tube and the mouth and ear piece with the valve controlling the latter in closed position. Fig. 9 shows a bottom view of the parts seen in Fig. 8. Fig. 10 shows a top view of a modified form of exchange-tube section. Fig. 11 shows a cross-section of the same. Fig. 12 shows a perspective view of a ring or collar employed to connect the exchange-tube sections together.

Speaking-tubes A from various parts of a building meet at the exchange and each has a cross-tube section B at the end and forming a short branch connection on each side. All the said tube-sections B are fitted with their short branch connections a^2 together and form one continuous exchange-tube B', which is closed at the ends by caps a . Where the tube-sections unite, they are held together by suitable rings or collars b , fitting closely over their ends.

In each of the tube-sections B there is an oscillatory valve which, as illustrated in Figs. 4, 5, and 6, consists of a ring c , fitting closely the bore of the branch-connection tube and having a circular opening d at one part to register with the speaking-tube A. The said ring-valve has a stem e , which projects through a slot f , preferably in the upper side of the tube, and has a finger-piece or knob g on its

end and bearing a number. The normal position of parts is with the valve c , cutting off the speaking-tube A from the exchange-tube B', the stem e extending vertically and having position at the upper end of the slot f and the number on the knob facing front in full view. A curved shield h is fastened to the valve-stem and fits over the exchange-tube and covers and conceals the slot f . It will be observed that when the knob is turned downward to a position where the stem occupies the lower end of the slot f , as in Fig. 5, the valve-opening d coincides with the speaking-tube A and opens communication between the latter and the exchange-tube B'.

In Fig. 7 a form of valve to be similarly located and employed is illustrated and consists of a portion of a ring i , the space between whose ends serves as the opening to register with the speaking-tube. A mouth and ear piece C is attached to the exchange-tube in any preferred location. In the present instance it is attached at the middle section o , and an oscillatory valve k , similar to those employed at the speaking-tubes, is employed to open and close the mouthpiece. It has a stem l , which projects through a slot m in the lower side of the tube and has a finger-piece n at the end and which in the normal closed position of the valve projects horizontally in front of the mouth and ear piece.

Figs. 10 and 11 illustrate a modified construction of the exchange-tube section, which has a mouth p in place of the slot f . The valve-stem projects through this mouth and may move from one end to the other of the same. An annunciator D, of suitable construction, is located above the exchange-tube to call the attention of the person in attendance. A call-bell is employed in connection with each speaking-tube A. Each tube-section has a casing q secured to its under side for an electric push-button r , which is to close an electric circuit, and thereby ring a bell at the opposite end of the speaking-tube, and serves to call the person there in attendance. Any other call device may be employed instead of the bell.

The operation is as follows: If communication is desired from a certain one of the speaking-tubes, this will be indicated by a number

on the annunciator and the attendant at the exchange will turn the stem of the valve bearing that number so as to open the valve, and also turn back the stem of the mouth and ear piece valve, thereby opening communication from said speaking-tube to the mouth and ear piece through the exchange-tube. The exchange attendant through the mouth-piece ascertains with which tube the person calling desires to communicate and thereupon turns down the stem of the valve of such tube and closes the mouth and ear piece valve. This places the two speaking-tubes in communication with each other through the exchange-tube B', the valves of all the other tubes remaining closed and not interfering in any way with the communication. In this way any two of the speaking-tubes may be put into communication. It is evident any number of tube-sections may be joined together, making one continuous exchange-tube, and that the arrangement of parts here shown is susceptible of variations without departing from the invention.

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

1. In a speaking-tube exchange, the combination of speaking-tubes having ends each provided with a cross-tube section having side branches which connect together and form a continuous exchange-tube and a valve in each tube-section to open and close the speaking-tubes to the exchange-tube and at all times leave the exchange-tube open throughout.

2. In a speaking-tube exchange, the combination of speaking-tubes having ends each provided with a cross-tube section having side branches which fit together and form a continuous exchange-tube, rings or collars holding said tube-sections together, and valves controlling communication between the speaking-tubes and the exchange-tube.

3. In a speaking-tube exchange, the combination of speaking-tubes, an exchange-tube common to all said speaking-tubes, and an os-

cillatory valve for each speaking-tube located in the exchange-tube and controlling communication between the speaking-tube and the exchange-tube.

4. In a speaking-tube exchange, the combination of speaking-tubes, an exchange-tube common to all said speaking-tubes, and oscillating ring-shaped valves fitting the bore of the exchange-tube, one for each speaking-tube, and each valve having an opening to register with the speaking-tube.

5. In a speaking-tube exchange, the combination of speaking-tubes, an exchange-tube common to all said speaking-tubes, and oscillatory valves fitting the bore of the exchange-tube, one for each speaking-tube, and controlling communication between the speaking-tubes and exchange-tube, each of said valves having a stem projecting through the exchange-tube and provided with an indicating finger-piece or knob.

6. In a speaking-tube exchange, the combination of speaking-tubes, an exchange-tube common to all said speaking-tubes, and oscillatory valves fitting the bore of the exchange-tube, one for each speaking-tube, and controlling communication between the speaking-tubes and exchange-tube, each of said valves having a stem projecting through a slot in the exchange-tube, and a shield attached to it and covering the said slot.

7. In a speaking-tube exchange, the combination of speaking-tubes, an exchange-tube common to all said speaking-tubes and having a mouth and ear piece, an oscillatory valve fitting the bore of said exchange-tube and controlling the communication therewith of the mouth and ear piece, and a valve for each speaking-tube.

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

LEOPOLD STROUSE.

Witnesses:

J. E. DIEFFENDERFER,
J. C. MATTOON.