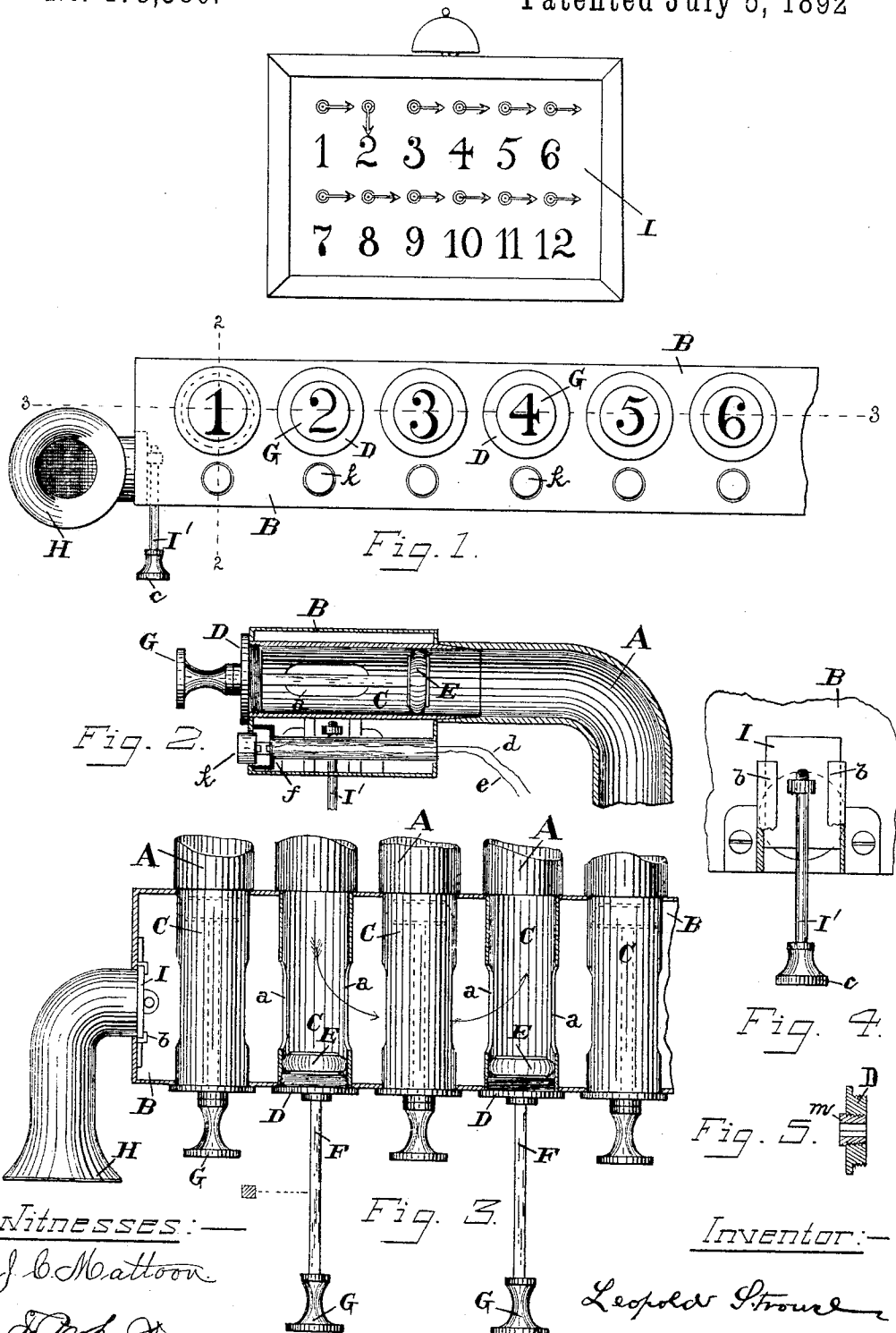


(No Model.)

L. STROUSE.
SPEAKING TUBE EXCHANGE.

No. 478,380.

Patented July 5, 1892



Witnesses:—

J. b. Mattoon

J. Parker Davis.

Fig. 3.

Inventor:—

Leopold Strouse

By Chas B. Mann
Attorney.

UNITED STATES PATENT OFFICE.

LEOPOLD STROUSE, OF BALTIMORE, MARYLAND.

SPEAKING-TUBE EXCHANGE.

SPECIFICATION forming part of Letters Patent No. 478,380, dated July 5, 1892.

Application filed March 5, 1892. Serial No. 423,813. (No model.)

To all whom it may concern:

Be it known that I, LEOPOLD STROUSE, a citizen of the United States, residing at Baltimore city, 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 exchanges for speaking-tubes in buildings, the object being to provide for putting in communication any two or more tubes from different rooms, floors, or parts of the building.

To this end the invention consists in the novel features of construction and combinations of parts hereinafter described and claimed.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 shows an outside face view of the exchange and an annunciator-box used in conjunction therewith; Fig. 2, a vertical cross-section on line 2 2 of Fig. 1; Fig. 3, a horizontal section on line 3 3 of Fig. 1, showing two tubes in communication; Fig. 4, a detail inside view of the slide at the exchange mouthpiece. Fig. 5 shows a section of one of the screw-caps which close the ends of the speaking-tubes.

The letter A designates the tubes which lead from the various rooms, floors, or parts of the building to the exchange. A box or casing B, of any desired shape or form—in the present instance rectangular—and closed on all sides, is provided, and in it are arranged a series of short parallel tubular sections C, one for each speaking-tube A and each having an end projecting from the casing B to receive the speaking-tube A. Their front ends are closed by caps D, which screw up against the front of the assembly case or tube B. Each tubular section C extends through the tube B and has side openings *a*, by which communication is had with the interior of the assembly case or tube B. A sliding piston-valve E fits closely in each tube-section C and has a square stem F, which passes through the screw-cap D and carries on its outer end a knob G, with a number inscribed on its face to indicate the room or floor with which the speaking-tube connects. When the knobs G are pushed in, the valves are at the back ends of the tubular sections C and in the rear of

the side openings *a*, and thus close communication between the conducting-tubes A and the case or tube B. The case B is fitted at one end with a mouthpiece or ear-piece II, which is closed where it connects with the case by a slide-valve I, working in vertical guides *b*, secured to the inside of the casing. The slide-valve has a stem I', extending through the bottom of the case, and is provided with a knob *c* on the end. The slide-valve may be opened by moving upward the said knob, and then the mouthpiece may be used. The assembly case or tube B is also provided with a series of push-buttons *k*, which are located at the front, one push-button being below each valve-knob G. Each push-button is in a socket in the assembly-tube and is arranged to contact with electric wires *d e*, leading through an insulation *f* in the assembly-tube and connecting with an ordinary call-bell at the room or floor which is in communication with the particular speaking-tube A whose valve-knob G is above the push-button. Any desired number of speaking-tubes A may thus be connected with the assembly-tube B.

The operation is as follows: An annunciator L, suitably located adjacent to the assembly-tube B, will indicate a call coming from any one of the rooms or floors which is in communication by one of the several tubes A. If, for instance, No. 2 calls, the attendant at the assembly-tube pulls out knob numbered "2" to bring the piston-valve E in front of the openings *a* and at the same time pushes up the knob *c* to open communication between the mouthpiece II and speaking-tube No. 2 through the interior of the assembly-tube B and the side openings *a* in the tubular section C. The attendant now answers the call of No. 2, speaking into the mouthpiece II, and learns that No. 2 wishes to communicate with No. 4, for instance. The attendant then pulls out knob numbered "4" and presses the push-button *k* below it. This, it will be observed by reference to Fig. 3, puts Nos. 2 and 4 in communication through the openings *a* and the interior of the case B, as indicated by the two arrows. The slide-valve I is now allowed to drop by its gravity and close the mouthpiece, so that the communication between Nos. 2 and 4 will be uninter-

rupted. In like manner any two of the speaking-tubes A may be put in communication with each other.

My invention will be found very useful in business houses or manufacturing establishments where each floor is provided with a speaking-tube and communication between the different floors, as well as with the office, is desired.

The apparatus is simple and occupies comparatively little space and may be very readily applied where a number of speaking-tubes come out together.

The screw-caps D render the valves easily removable for inspection or repair. Each screw-cap has a bushing *m* screwed into its center and having a square opening to receive the stem of the piston-valve. With this construction a new bushing may be substituted when one becomes worn out, and the cap does not have to be thrown aside.

It is evident that the construction and arrangement of parts here shown are susceptible of numerous changes. Hence I do not confine myself strictly thereto in the claims which follow.

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 an assembly-case of suitable form, a number of speaking-tubes having end portions extending through said assembly-case

and inclosed thereby, each tube having communication with the interior of the assembly-case through openings *a* in two opposite sides of its end portion, which is within the said case, and a piston-valve for each tube, having a stem and a knob thereon outside the assembly-case and arranged to slide in the tube and open and close communication between the said tube and the interior of the assembly-case through the side openings in the tube.

2. In a speaking-tube exchange, the combination of an assembly-case of suitable form, having a mouth and ear piece opening out of it at one part, a cut-off slide-piece fitting in vertical guideways inside the case and closing the inner end of said mouth and ear piece and provided with a suitable handle by which to slide it upward and open the mouth and ear piece, a number of speaking-tubes having end portions extending through the assembly-case and communicating therewith through side openings in the tubes, and piston slide-valves in the tubes controlling communication between them and the assembly-case and having suitable stems and knobs thereon outside the said case.

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

LEOPOLD STROUSE.

Witnesses:

F. PARKER DAVIS,
WM. H. H. RALEIGH.