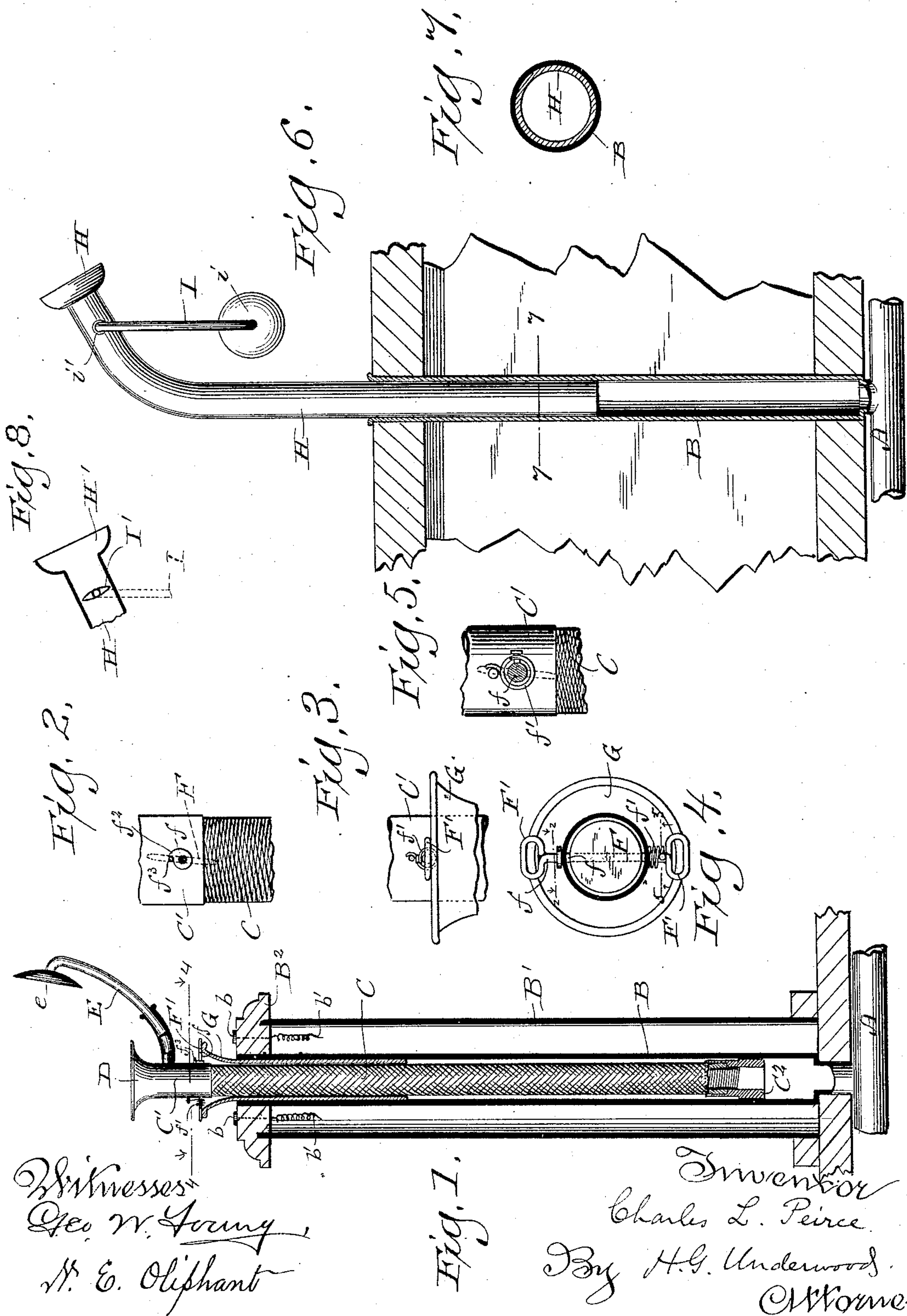


(No Model.)

C. L. PEIRCE.
SPEAKING TUBE.

No. 486,681.

Patented Nov. 22, 1892.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES L. PEIRCE, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO DAVID S. WEGG, OF CHICAGO, ILLINOIS.

SPEAKING-TUBE.

SPECIFICATION forming part of Letters Patent No. 486,681, dated November 22, 1892.

Application filed February 5, 1892. Serial No. 420,434. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. PEIRCE, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Speaking-Tubes; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to certain new and useful improvements in speaking-tubes; and it consists in the matters hereinafter described, and pointed out in the appended claims.

In the accompanying drawings, illustrating my invention, Figure 1 is a central vertical sectional view of a device embodying my invention. Fig. 2 is a detail sectional view taken on the line 2 2 of Fig. 4. Fig. 3 is a detail side elevation of a portion of the device. Fig. 4 is a horizontal sectional view taken on line 4 4 of Fig. 1. Fig. 5 is a detail sectional view taken on line 5 5 of Fig. 4. Fig. 6 is a vertical sectional view illustrating a different form of my improved device. Fig. 7 is a cross-section of the same, taken on line 7 7 of Fig. 6. Fig. 8 is a sectional view of the upper portion of the same, illustrating the arrangement of a cut-off valve for automatically closing the tube.

In said drawings, A represents a main line of speaking-tube; B, a tubular post communicating therewith and with which is connected a movable section provided with a mouthpiece. In the form illustrated in Fig. 1 this movable section is composed of a flexible tube C, to the upper end of which is secured a short section of metallic tube C', provided with a mouthpiece D. To the lower end of this flexible tube C is secured a weight C², which is provided with a central bore, as shown, said bore being arranged to communicate with the bore of the said flexible tube. A branch E is preferably arranged to communicate with the tubular section C' adjacent to the mouthpiece D, and said branch E is provided with an ear-piece e, adapted to be placed to the ear of the user. A valve F is provided in the tube C' below the point of connection between the branch E and the said tube, said valve being arranged upon a transverse rod f, which extends to the outside of the tube C' and is pro-

vided with substantially-T-shaped ends F' F', as shown. A sleeve G is preferably provided within the upper end of the post B, said sleeve being of such a diameter as to permit the flexible tube C to slide freely within it and conveniently formed with a flaring upper end. A spring f' is provided upon one end of the transverse rod f, one end of said spring being engaged with a stud or pin on said rod, and the other end of said spring being engaged with a stud upon the outside of the tube C', the arrangement being such that when the valve is free to turn the spring f' will operate to rotate said valve into the position indicated by the dotted lines in Figs. 2 and 5, so as to open the tube for use.

As illustrated more particularly in Figs. 1, 3, and 4, the T-shaped outer ends of the rod f are arranged to come into engagement with the upper end of the sleeve G when the flexible tube C is lowered within the post B, so as to act in opposition to the spring f' to turn the valve F, so as to cause it to stand across the tube and shut off communication between the mouth and ear pieces and said tube. Upon the end of the rod f opposite to the spring f' is provided a suitable laterally-projecting piece f², arranged so as to come into engagement with a stud or stop f³ on the outside of the tubular section C' at the time when the valve F is fully opened and to limit the movement of said valve and leave the T-shaped ends of the rod f in proper position to engage with the upper end of the sleeve G, so as to again close the valve in the manner before described when the flexible tube is lowered.

In the particular form of construction illustrated in Fig. 1 of the drawings a post B' of larger diameter than the post B is arranged concentrically around said post B, and a cap B² is provided at the top of said outer post. Upon the top of the cap B² are located any convenient number of electric push-buttons b b, connected, respectively, with wires b' b', leading to signaling devices at points remote from the post and adapted to notify persons near other branches or stations along the line of the main tube A when a person operating said push-buttons wishes to talk with them; or, if desired, the ordinary whistle-signals

may obviously be employed. By this construction the operation of opening the valve to establish communication between the mouth and ear pieces and the flexible tube is automatically effected at the time when said flexible tube is raised for use, and said valve is automatically closed again to shut off such communication when the said flexible tube is lowered after use. By the construction described, also, the upper end of the sleeve G, being made flaring, permits the flexible tube C to be easily drawn upward without liability of its binding within said sleeve. This construction of said sleeve also permits the flexible tube to be bent toward either side desired without forming a sharp or abrupt bend in said tube.

The weight C² is preferably made of larger diameter than the flexible tube to which it is attached, so that when said flexible tube is drawn upwardly sufficiently to bring its weighted lower end near the upper end of the post said weight will engage with the lower end of the sleeve G and prevent the flexible tube from being pulled out of the post.

In the form of construction illustrated in Figs. 6, 7, and 8 of the drawings a rigid tube H is telescoped within the post B, said tube being snugly fitted in said post and adapted to maintain its adjusted positions in the same by frictional engagement with the walls of said post. This tube H is preferably given a lateral bend, as shown, at its upper end, so as to bring the mouthpiece H' at its top into convenient position for use. In this form of construction the tubular branch I, to which the earpiece *i* is secured, is revolvably engaged with a short sleeve *i'*, which communicates with the bore of the tube H, and a valve I' is pivotally secured within the said tube and operatively engaged with said revolvable branch I. The arrangement of said valve is such that when the revolvable branch I is in the position illustrated in Figs. 6 and 8 of the drawings the valve I' will stand across the bore of said tube H; but when the said branch is raised so as to bring the earpiece into position for applying it to the ear said valve will be moved into a position to open the tube H for use. When the user is through talking, he simply releases the earpiece and permits it to fall into its original position, when the valve will be automatically closed, thus rendering the operation of the valve automatic, as in the form of construction first described.

As a further and separate improvement in

the form of construction illustrated in Fig. 1 of the drawings, the sleeve upon the section C' at the top of the flexible tube C may be made of considerable length and curved upwardly, as shown, and the branch E, to which the earpiece is secured, telescoped within said sleeve, thus rendering the said branch extensible, so as to afford means for adjusting the earpiece to suit the convenience of the user.

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

1. The combination, with the main tube, of a tubular post communicating therewith, a tube provided with a mouthpiece and extensibly engaged with said post, a valve in said tube, suitable means for automatically opening said valve when the tube is extended, and suitable means for automatically closing said valve when the tube is retracted, substantially as set forth.

2. The combination, with a main tube, of a tubular post communicating therewith, a weighted flexible tube provided with a mouthpiece and having a sliding engagement with said post, and a valve in said tube, provided with a spring for automatically opening it when the tube is raised, and one or more angular extensions upon the outside of said tube, adapted to automatically close said valve when said tube is lowered, substantially as described.

3. The combination, with a main tube, of a tubular post communicating therewith, a flexible tube provided with a mouthpiece and having a sliding engagement with said post, a cut-off valve in said flexible tube, means for automatically operating said valve when the flexible tube is extended, means for automatically closing said valve when said tube is retracted, a tubular post of larger diameter than the first-mentioned post and located outside of the same, and a plurality of electric push-buttons connected with wires extending through the space between said posts to suitable signaling-instruments, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

CHARLES L. PEIRCE.

Witnesses:

H. G. UNDERWOOD,
JOHN E. WILES.