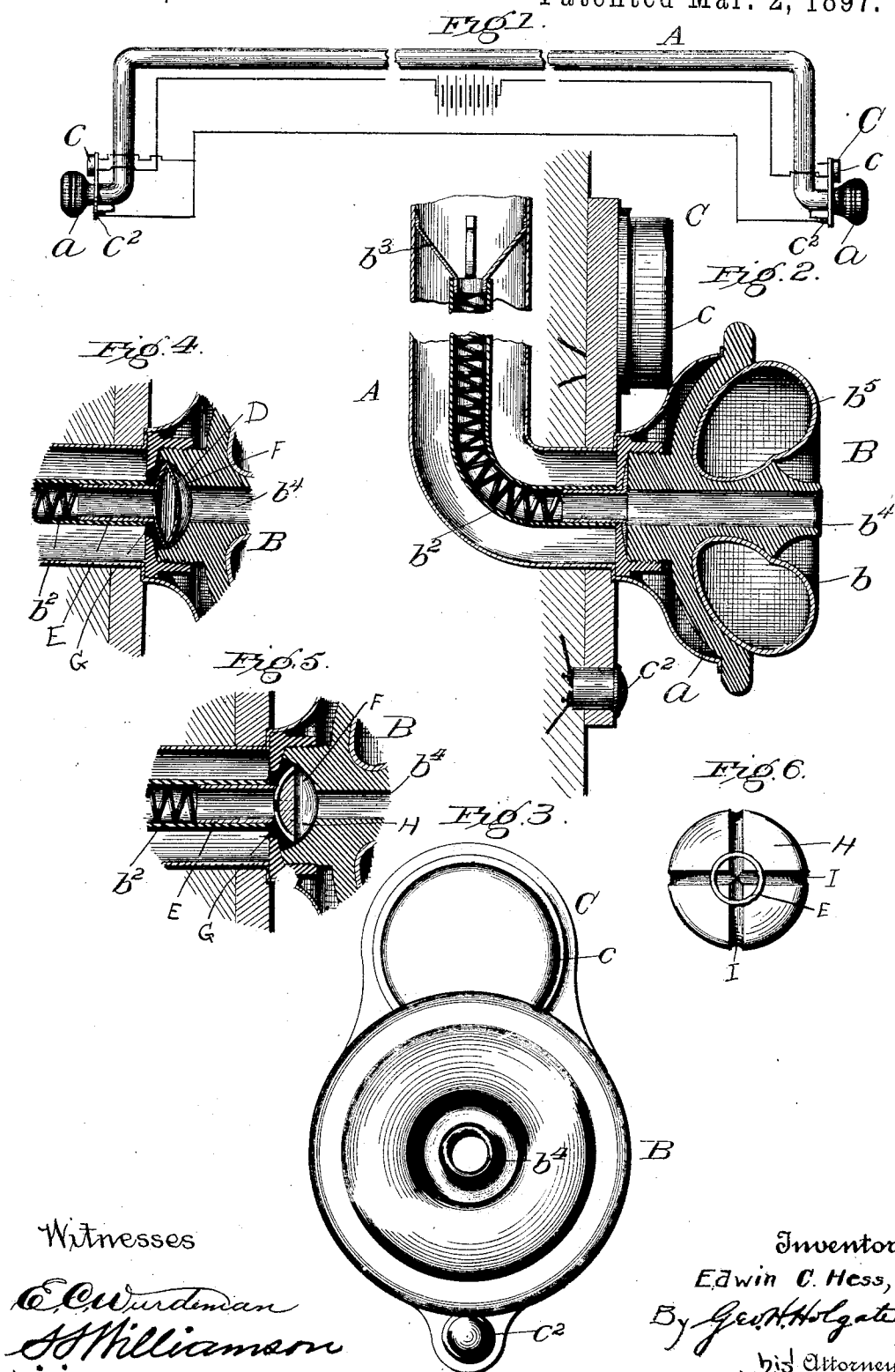


(No Model.)

E. C. HESS.
SPEAKING TUBE ATTACHMENT.

No. 578,101.

Patented Mar. 2, 1897.



Witnesses

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SPEAKING-TUBE ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 578,101, dated March 2, 1897.

Application filed February 15, 1896. Serial No. 579,369. (No model.)

To all whom it may concern:

Be it known that I, EDWIN C. HESS, a citizen of the United States, residing at Camden, in the county of Camden and State of New Jersey, have invented certain new and useful Improvements in Attachments for Speaking-Tubes, of which the following is a specification.

The invention relates to attachments for speaking-tubes.

The object is to produce a device in the nature of a receiver by which the transmission of sound through the tube to the ear will be facilitated in being rendered clear and distinct and free from interference with all other sound-waves, and, further, to apply the attachment in a manner whereby messages may be simultaneously transmitted and received through a single tube.

With this object in view the invention consists in an improved construction and certain novel combinations and arrangements of parts to be hereinafter described and claimed.

In the accompanying drawings, forming part of this specification, similar letters of reference indicate corresponding parts in the several views.

Figure 1 is a view in elevation showing one embodiment of the invention applied. Fig. 2 is an enlarged sectional view in detail of one end of the tube with the device applied. Fig. 3 is a view in elevation thereof. Fig. 4 is a fragmentary sectional view in detail of a modification. Fig. 5 is a similar view of a further modification, and Fig. 6 is a view in detail of the grooved button shown in Fig. 5.

In the drawings, A represents a speaking-tube such as is now in common use, and *a* the mouthpiece thereof.

B represents the attachment, comprising a cushioned receiver *b*, of a size to be seated in a manner so as to normally close the mouthpiece of the tube. Forming a continuation of this receiver is a second tube, preferably of rubber, which extends into the tube proper and is secured thereto at its inner end *b*² by a spider *b*³. To strengthen this tube and at the same time render it more durable, a helical spring is placed therein and connected at one end with the spider and at the opposite end with the receiver, and serves, further, as a retractile spring in retaining the receiver

seated, as shown in the drawings. As the receiver proper has been fully described in a former patent, No. 473,256, granted to me April 19, 1892, a detailed description of the construction thereof is not here deemed necessary. Suffice it to say it consists in a tube *b*⁴, provided with an annular flange, which forms a seat for an air-cushion *b*⁵. The receiver B is adapted to be withdrawn from the mouthpiece against the action of the spring and elastic tube, so that it may be applied to the ear of the operator while the mouth is close to the mouthpiece, as in the ordinary form of telephone, and when it is released it is drawn into the mouthpiece by the spring.

C represents electrically-operated calls, which are placed at the ends of the tube. Each bell, vibrator, or buzzer *c* is wired to be controlled by a push-button *c*², as indicated in Fig. 1, and as a means of reducing the cost in applying the device to a speaking-tube it is at times found convenient to utilize the tube as a conductor for the current.

If found desirable, the electrically-operated call may be replaced by a whistle, arranged as illustrated in Fig. 4.

Fig. 4 illustrates a modification of my device in which the receiver is secured to the flexible tube by means of a whistle with a tubular extension E, fitting in the tube and held in a pocket F in the receiver by engaging the walls of the opening G, which is of greater diameter than the tubular extension and smaller diameter than the whistle, thereby forming a universal joint between the tube and receiver to allow the receiver being turned at any angle to the tube without closing the opening.

In Fig. 5 I replace the whistle of the receiver just described with a button H, having a tubular extension E similar to that of the whistle and provided with grooves I, crossing its inner surface, which serve to keep the passage clear when the receiver is turned on the joint formed by the button and the walls of the opening G.

Having thus described my invention, what I claim as new is—

1. An attachment for speaking-tubes comprising an extensible tubular section arranged within the tube proper with a space therebetween, a mouthpiece on the tube proper and

a receiver on the tubular section adapted to be drawn within the mouthpiece as and for the purpose described.

2. An attachment for speaking-tubes, comprising an extensible tubular section arranged within the tube proper, so as to leave a space therebetween, a spider on the inner end of the extensible section to permit said space, a receiver on the other end of the extensible section and a mouthpiece on the end of the tube proper, as and for the purpose described.

3. In a device of the character described, a tube proper, a mouthpiece on the end thereof, a flexible tubular section arranged within the tube proper, a spider on the end of the flexible section adapted to connect it with the tube proper, and a receiver on the other end of the flexible section adapted to fit within the mouthpiece, as and for the purpose described.

4. An attachment for speaking-tubes comprising an extensible tubular section arranged within the tube proper with a space therebetween, a spiral spring secured within the tubular section, a mouthpiece on the tube proper and a receiver on the tubular section as and for the purpose described.

5. In a device of the character described a flexible tube having a button secured thereon and a receiver journaled on said button as and for the purpose described.

6. In a device of the character described a flexible tube having a grooved button secured thereon and a receiver having a pocket in

which said button is inclosed whereby the receiver may be turned at different angles to the tube as and for the purpose described.

7. An attachment for speaking-tubes consisting of an extensible tube secured within the ordinary tube, a grooved button secured on the end thereof, a mouthpiece on the ordinary tube and a receiver journaled on the button as and for the purpose described.

8. In a device of the character described a tube proper, a spider secured therein, an extensible tube of smaller diameter than the tube proper attached to the spider, a spiral spring within the extensible tube, a mouthpiece on the end of the tube proper, a grooved button having a tube-section secured within the end of the extensible tube and a receiver having a pocket containing the button and an opening to the pocket of greater diameter than the tube-section and less diameter than the button through which the tube-section projects forming a universal joint between the extensible tube and the receiver and said receiver being normally contained within the mouthpiece by means of the action of the spiral spring as and for the purpose described.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

EDWIN C. HESS.

Witnesses:

S. S. WILLIAMSON,
MARK BUFORD.