

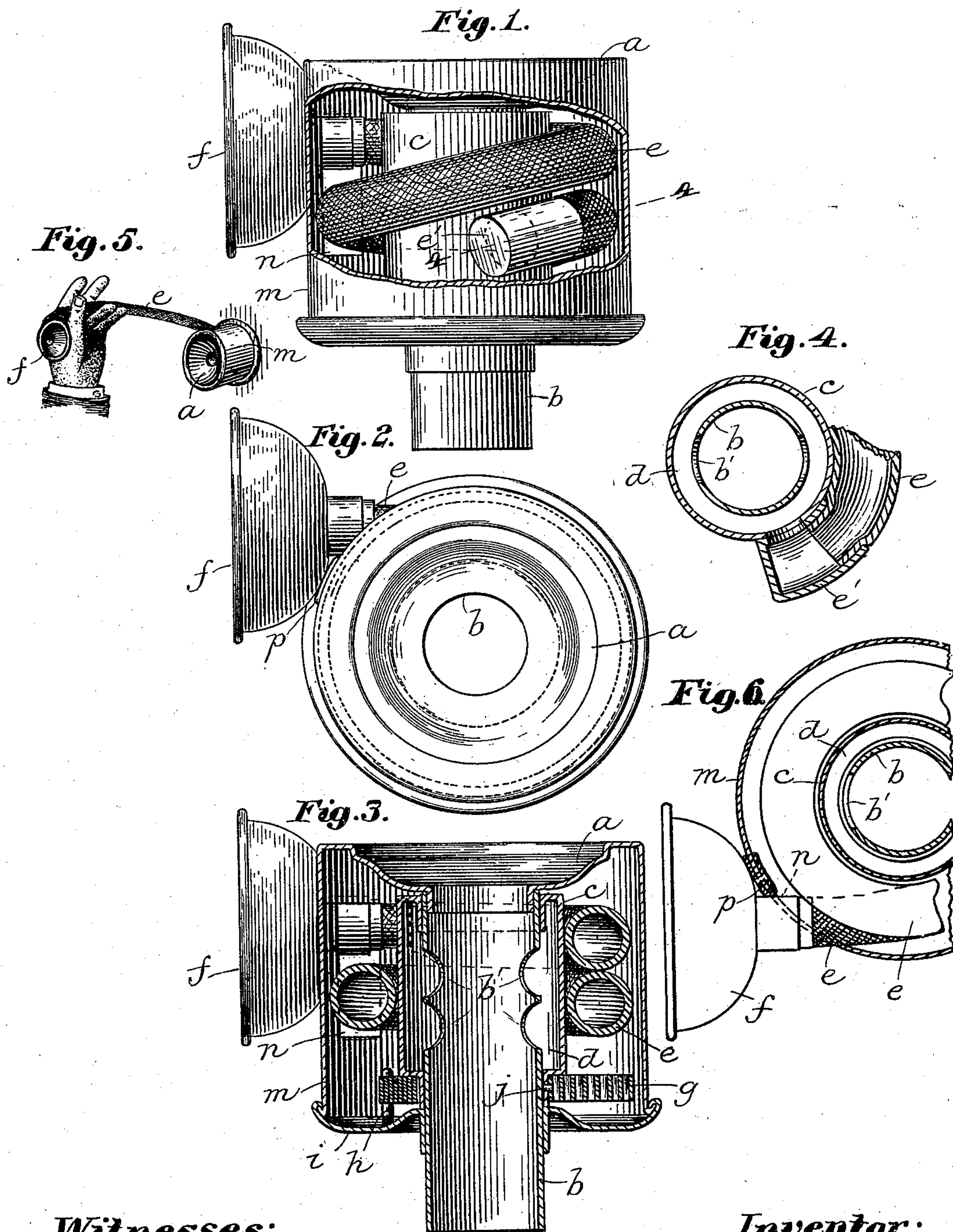
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J. O. BROWN.
TERMINAL FOR SPEAKING TUBES.

(Application filed May 16, 1901.)

(No Model.)



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UNITED STATES PATENT OFFICE.

JAMES OTIS BROWN, OF BOSTON, MASSACHUSETTS.

TERMINAL FOR SPEAKING-TUBES.

SPECIFICATION forming part of Letters Patent No. 690,557, dated January 7, 1902.

Application filed May 16, 1901. Serial No. 60,476. (No model.)

To all whom it may concern:

Be it known that I, JAMES OTIS BROWN, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Terminals for Speaking-Tubes, of which the following is a specification.

This invention consists in a terminal for speaking-tubes comprising a mouthpiece, a rigid tube-section extending therefrom and forming a part of the stretch of tubing, a rotary holder or drum journaled on the said tube-section and communicating with the interior of the latter, a flexible tube secured at its inner end to said drum and having an earpiece at its outer end, and means, such as a spring, for yieldingly rotating the drum to wind the flexible tube thereon and permit the unwinding of the tube therefrom, the object of the invention being to enable a person speaking through the tube to hold the earpiece at the same time in contact with his ear, the earpiece and the flexible tube to which it is attached being drawn back and held out of the way when they are not required for use.

The invention also consists in a speaking-tube terminal comprising a mouthpiece, a main-tube section extending therefrom and having a perforated portion, a drum surrounding said perforated portion and forming the outer wall of a chamber communicating with the main-tube section, and a branch-tube section connected at its inner end with said drum and having an earpiece at its outer end, said drum making more distinct at the earpiece of the branch tube the sound-waves sent through the main tube from the distant end thereof.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side elevation of a speaking-tube terminal embodying my invention, a portion of the inclosing casing being broken away. Fig. 2 represents an end elevation of the same. Fig. 3 represents a sectional view. Fig. 4 represents a section on line 4 4 of Fig. 1. Fig. 5 represents a perspective view showing the terminal on a smaller scale, with the earpiece held in operative position. Fig. 6 represents a partial transverse section.

The same reference characters indicate the same parts in all the figures.

In the drawings, *a* represents a speaking-tube mouthpiece, and *b* a fixed section of tubing affixed to the mouthpiece and forming a part of the main line of tubing.

c represents a rotary drum journaled upon the tube-section *b* and made of sufficient diameter to form a chamber *d* between the drum and tube, the tube *b* having one or more orifices *b'*, connecting its interior with the chamber *d*.

e represents a flexible branch tube having at its inner end a metal end piece or terminal *e'*, which is secured to the drum *c* and communicates with the latter through an orifice formed in the drum. To the outer end of the flexible tube *c* is affixed an earpiece *f*.

g represents a coiled spring attached at one end to a fixed support, which, as here shown, is a stud or pin *h*, secured to a flange *i*, formed on or attached to the fixed tube-section *b*. The opposite end of the spring is riveted or otherwise attached at *j* to the drum *c*. The tendency of the spring *g* is to rotate the drum *c* in the direction required to wind the flexible tube *e* on the drum, and thus hold the earpiece *f* in close proximity to the mouthpiece *a*. When the tube is in use, the person speaking grasps the earpiece *f* with one hand and draws it outwardly, unwinding the flexible tube *e* from the drum, the length of the tube *e* being such that the user can conveniently apply the earpiece *f* to his ear while holding his mouth at the mouthpiece *a*. When the earpiece is released, the spring *g* acts to draw it back to the position shown in Figs. 1, 2, and 3, so that the flexible tube and earpiece are closely confined and do not dangle loosely. It is obvious that any other suitable means may be employed for yieldingly rotating the drum *c* in the direction required to wind the flexible tube *e* thereon—such, for example, as a weight attached to a cord wound upon the drum. The spring is preferable, however, because of its compactness.

m represents a casing which surrounds the drum *c* and the portion of the flexible tube wound thereon, said casing having a longitudinal slot *n*, through which the flexible tube passes. The casing constitutes a neat and desirable cover for the drum and tube and also constitutes a stop or holder to con-

fine the earpiece *f* when in the position shown in Figs. 1, 2, and 3, the edges of the slot *n* bearing against opposite sides of the tube close to the earpiece *f*, and thus holding the latter in a predetermined position. The length of the slot *n* is such that any part of the flexible tube may pass tangentially through it from the drum *c*.

The terminal *e'* of the flexible tube *e* is affixed to the drum *c* in an oblique position, so that it constitutes the beginning of a helix of which the flexible tube is a continuation when wound on the drum. This arrangement of the terminal *e'* insures the helical winding of the tube on the drum. One edge of the slot *n* in the casing *m* may be provided with a yielding cushion *p*, of rubber, cork, felt, or other suitable material, to cushion the blow caused by the contact of the earpiece with the casing when the tube *e* is being wound upon the drum.

I find that the drum *c*, forming the outer wall of the chamber *d*, surrounding the main-tube section, intensifies the sound-waves sent through the main tube from the distant end, so that the sounds can be much more distinctly heard at the earpiece of the branch tube *e* than would be possible without said drum. This sound-intensifying function of the drum is not dependent on its rotatability.

I claim—

1. A speaking-tube terminal comprising a mouthpiece, a rigid tube-section extending therefrom, a rotary holder or drum journaled on the said tube-section and communicating with the interior of the latter, a flexible tube secured at its inner end to said drum and having an earpiece at its outer end, and means for yieldingly rotating the drum to wind the flexible tube thereon and permit the unwinding of the tube therefrom.

2. A speaking-tube terminal comprising a mouthpiece, a rigid tube-section extending therefrom, a rotary holder or drum journaled on the said tube-section and communicating with the interior of the latter, a flexible tube secured at its inner end to said drum and having an earpiece at its outer end, and a spring connected at one end with said drum and at the other end with a fixed support, whereby the drum is yieldingly rotated to wind the flexible tube thereon, the spring permitting the unwinding of the tube from the drum.

3. A speaking-tube terminal comprising a mouthpiece, a rigid tube-section extending therefrom, a rotary holder or drum journaled on the said tube-section and communicating with the interior of the latter, a flexible tube secured at its inner end to said drum and having an earpiece at its outer end, means for yieldingly rotating the drum to wind the flexible tube thereon and permit the unwinding of the tube therefrom, and a fixed casing surrounding the drum and having a slot through which the flexible tube extends.

4. A speaking-tube terminal comprising a mouthpiece, a rigid tube-section extending therefrom, a rotary holder or drum journaled on the said tube-section and communicating with the interior of the latter, a flexible tube secured at its inner end to said drum and having an earpiece at its outer end, and means for yieldingly rotating the drum to wind the flexible tube thereon and permit the unwinding of the tube therefrom, said tube having an inner end terminal affixed obliquely to the drum.

5. A speaking-tube terminal comprising a mouthpiece, a rigid tube-section extending therefrom, a rotary holder or drum journaled on the said tube-section and communicating with the interior of the latter, a flexible tube secured at its inner end to said drum and having an earpiece at its outer end, means for yieldingly rotating the drum to wind the flexible tube thereon and permit the unwinding of the tube therefrom, and a fixed casing surrounding the drum and having a slot through which the flexible tube extends, said casing having a cushion for the earpiece.

6. A speaking-tube terminal comprising a mouthpiece, a main-tube section extending therefrom and having a perforated portion, a drum surrounding said perforated portion and separated therefrom by a space forming a chamber communicating with the main-tube section, and a branch-tube section connected at its inner end with said drum and having an earpiece at its outer end.

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

JAMES OTIS BROWN.

Witnesses:

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