

No. 841,377.

C. M. A. COSTELLO & F. H. HART.  
ELECTRIC SIGNAL FOR SPEAKING TUBES.  
APPLICATION FILED AUG. 24, 1906.

PATENTED JAN. 15, 1907.

Fig. 2

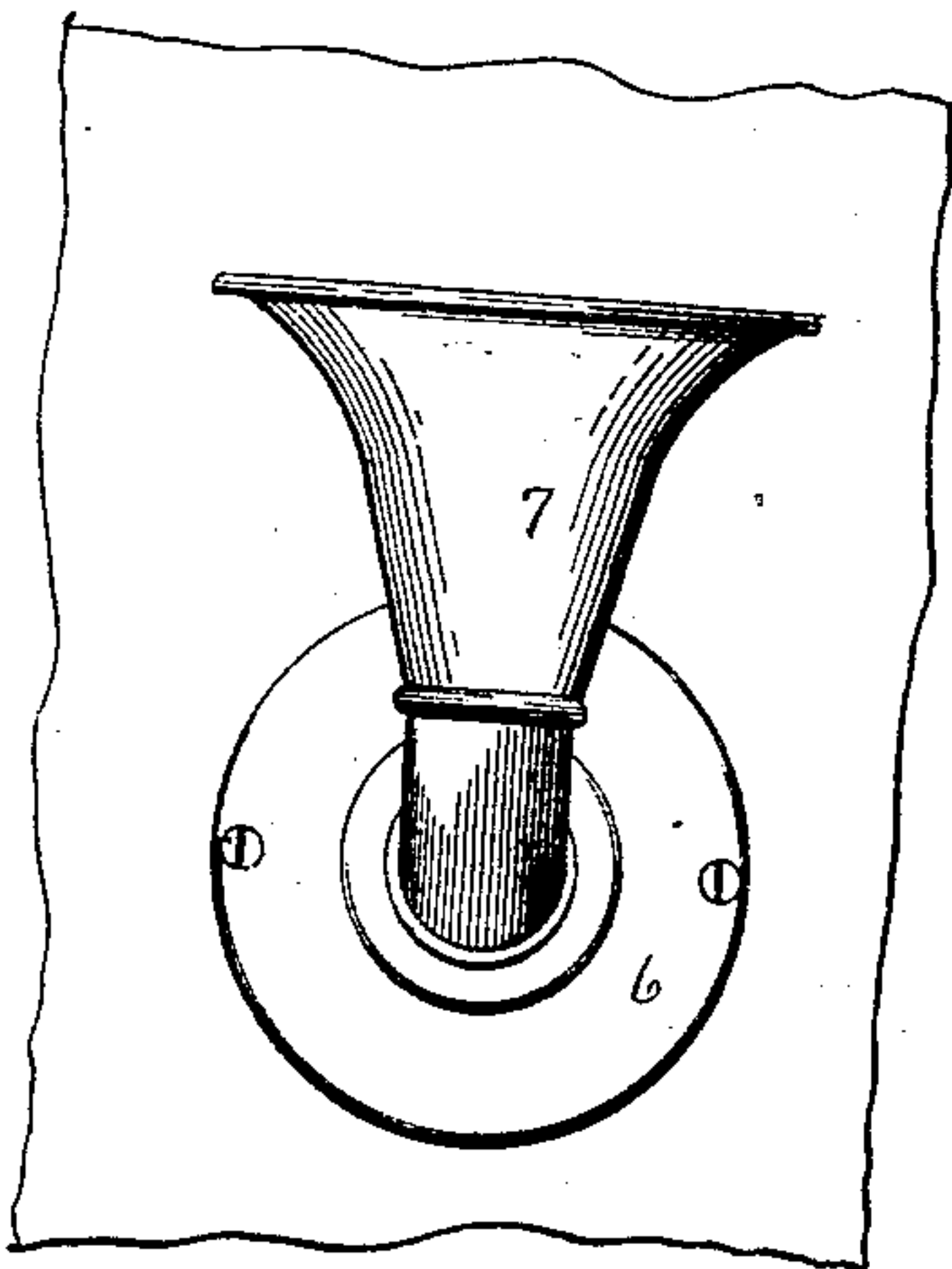


Fig. 1

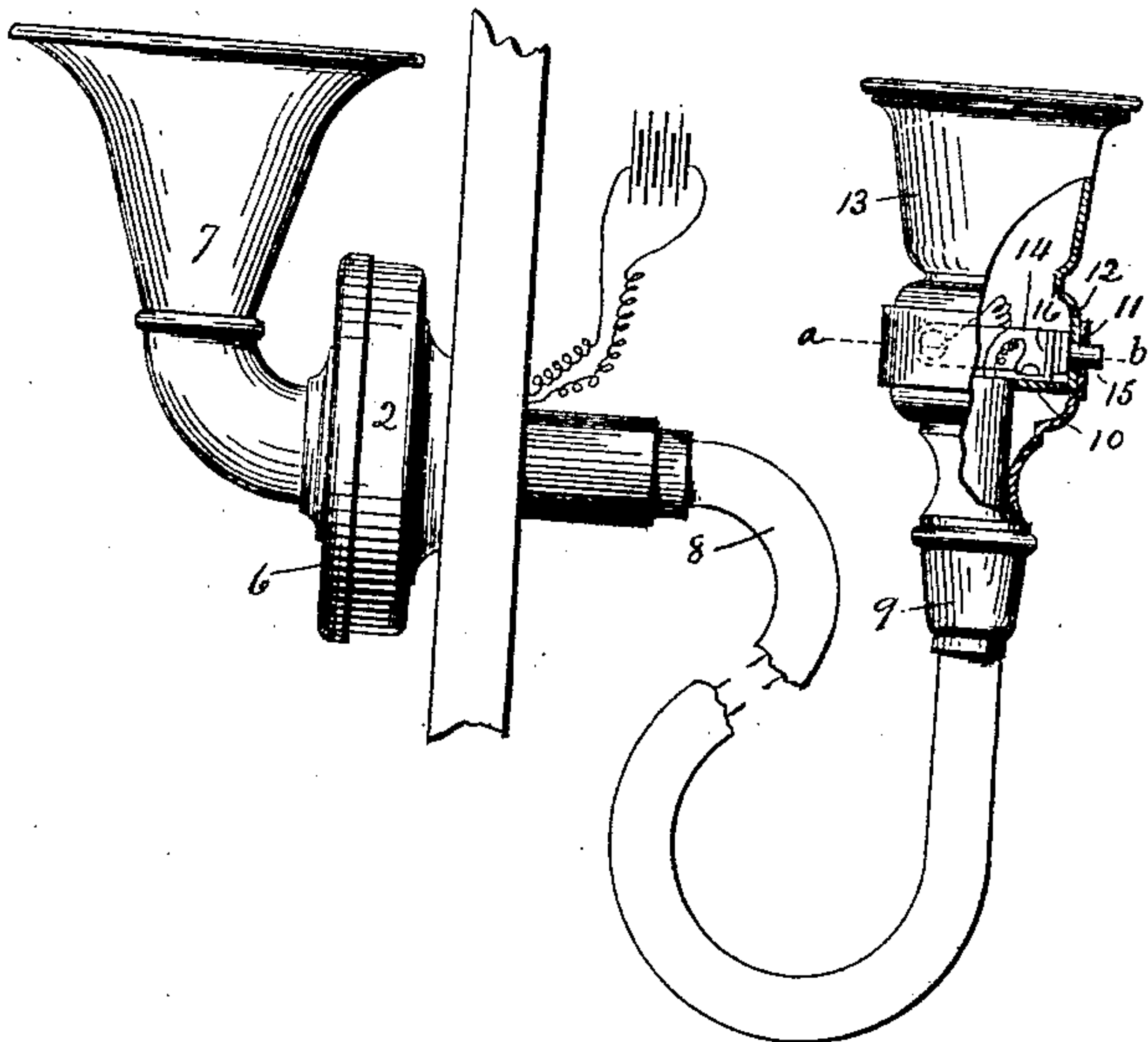


Fig. 3

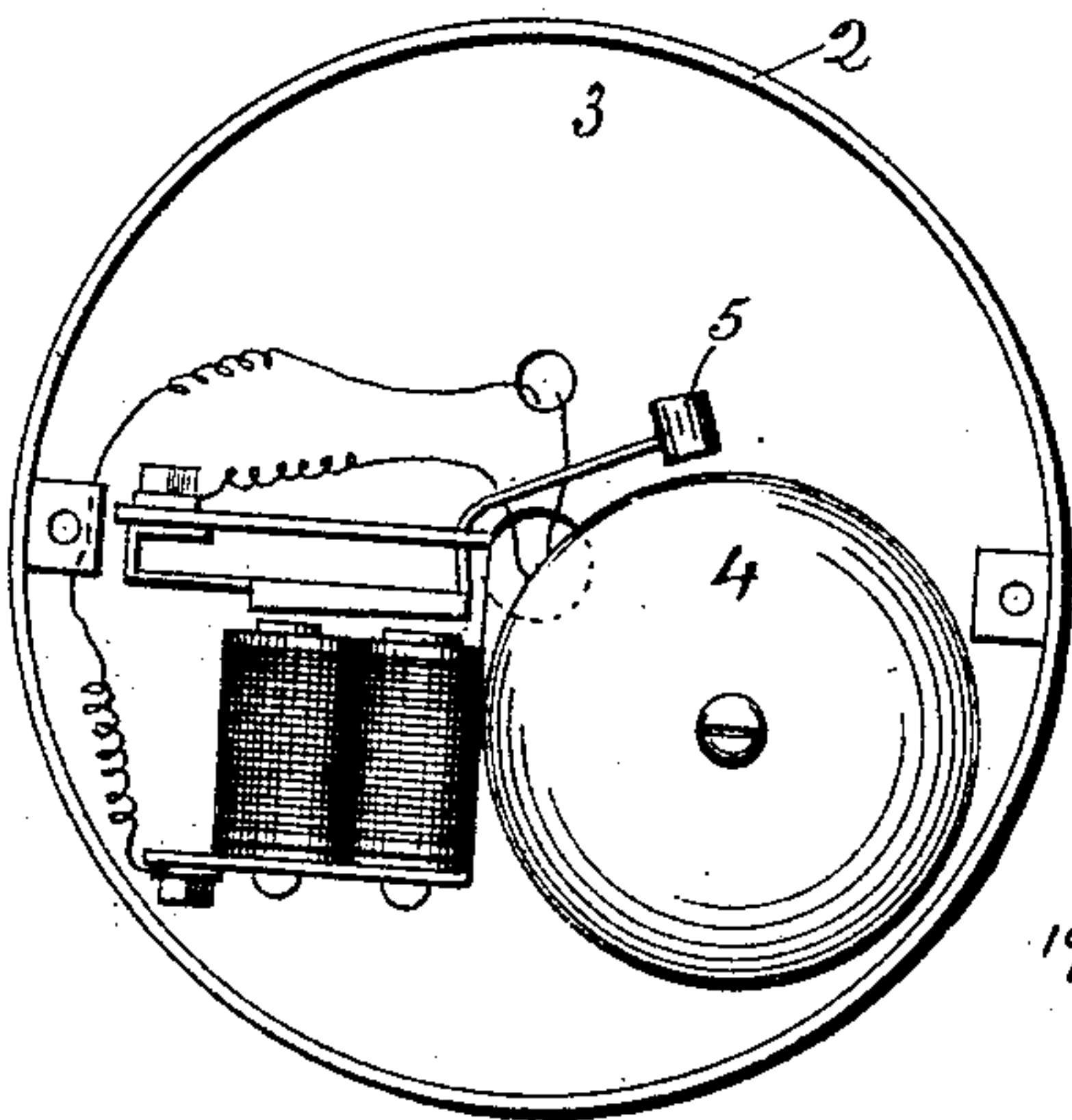


Fig. 4

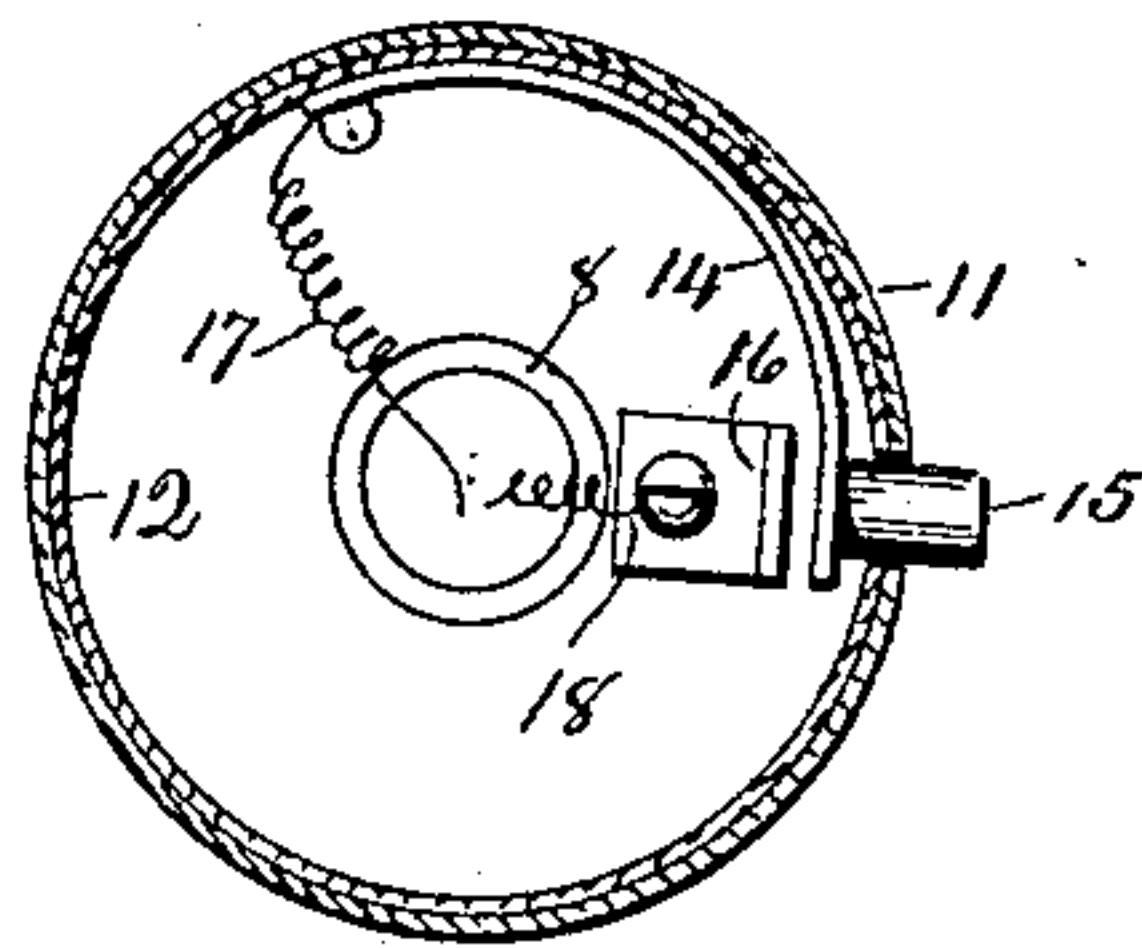
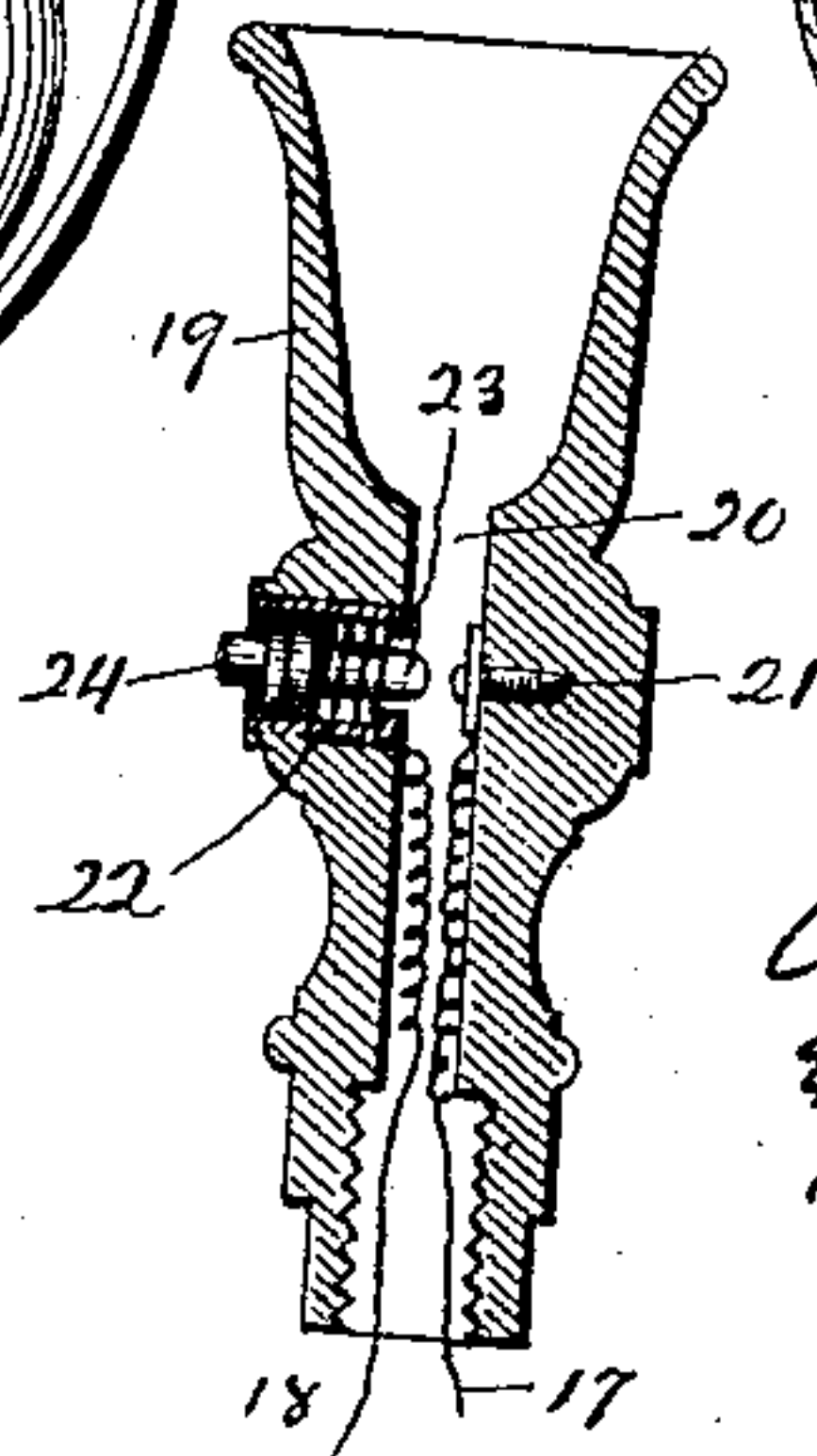


Fig. 5



Witnesses.  
J. H. Shumway  
R. J. Underhill.

Charles M. A. Costello  
& Frank H. Hart.  
Inventors.

By Seymour & Early



# UNITED STATES PATENT OFFICE.

CHARLES M. A. COSTELLO AND FRANK H. HART, OF NEW HAVEN,  
CONNECTICUT, ASSIGNORS TO C. COWLES & CO., OF NEW HAVEN,  
CONNECTICUT, A CORPORATION.

## ELECTRIC SIGNAL FOR SPEAKING-TUBES.

No. 841,377.

Specification of Letters Patent.

Patented Jan. 15, 1907.

Application filed August 24, 1906. Serial No. 331,859.

*To all whom it may concern:*

Be it known that we, CHARLES M. A. COSTELLO and FRANK H. HART, citizens of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Electric Signals for Speaking-Tubes; and we do hereby declare the following, when taken in connection with the accompanying drawings and the numerals of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view of a speaking-tube constructed in accordance with our invention, a portion of the mouthpiece broken away to illustrate the manner of closing the electric circuits; Fig. 2, a front view of the sound-box and trumpet; Fig. 3, an enlarged plan view of the sound-box with the cap removed; Fig. 4, a sectional view on the line *a b* of Fig. 1, enlarged; Fig. 5, a sectional view of a modified form of mouthpiece.

This invention relates to an improvement in electric signals for speaking-tubes, and particularly for speaking-tubes adapted for use in coaches or carriages where the party inside wishes to communicate with the driver. In the more general arrangement of speaking-tubes for this purpose a whistle is arranged near the mouthpiece, blowing through which will attract the attention of the driver; but the effort necessary to sound this whistle is disagreeable, and difficulty is found in making sufficient noise to attract the attention of the driver.

The object of this invention is to arrange an electrically-operated bell within a sound-box and a push-button adjacent to the mouthpiece for operating said bell; and the invention consists in the construction as hereinafter described, and particularly recited in the claims.

In carrying out our invention we arrange a sound-box 2, preferably cylindrical, and adapted to be attached at a convenient point outside the coach or carriage. This sound-box is made from metal and comprises a chamber 3, within which a small bell 4 is arranged, adapted to be struck by an electrically-operated hammer 5 in the usual manner of electric bells. This chamber 3 is closed

by a cap 6, in which is mounted a trumpet or megaphone 7. Entering the rear of the box is a tube 8, which, like the usual speaking-tube, is made of flexible material and of the required length to extend into the carriage and enter a sleeve 9; which is flaring at its outer end to receive a plate 10, having an opening into which the tube extends. This sleeve terminates in an annular flange 11, which receives the inner end 12 of the usual mouthpiece 13.

Secured to the inner wall of the end 12 is a spring-arm 14, terminating in a push-button 15, which extends outward through the wall 12 and flange 11 and adjacent to a post 16, secured to the plate 10. An electric wire 17 is connected to one end of the spring 14, while another wire 18 is connected with the post 16, these wires extending through the tube 8 to the bell-operating mechanism and to suitable batteries in the usual way for making an electric circuit, which is closed by pressing inward on the button 15, so as to force the spring 14 into contact with the post 16. When the attention of the driver is desired, the push-button 15 is pressed, sounding the bell 4 within the box 2, the sound of the bell escaping through the trumpet or megaphone within the hearing of the driver. When attention is called, the speaking-tube is used in the usual way for transmitting the sound of the voice, the wires passing through the tube in no wise interfering with such transmission of sound. By employing the box 2 and making it from metal a very small bell may be used, as the box will act, in a sense, like a sounding-board.

Instead of forming the mouthpiece from metal in two parts it may be made from a single piece of wood, rubber, or other suitable material. Thus, as shown in Fig. 5, the mouthpiece is formed in a single piece having a longitudinal bore 20, into which the wires 17 and 18 extend, the wire 17 being connected to a screw 21, while the other wire 18 is attached to a plug 22, containing a spring-pin 23, operated by a push-button 24, the pin being adapted to be forced into contact with the screw 21, so as to close the circuit, the opening in the said mouthpiece for the reception of the plug 23 giving access to the interior of the mouthpiece for the insertion or removal of the screw 21.

We claim—

1. The combination with a speaking-tube, of a box into which said tube extends, a trumpet opening from said box, an electric bell  
5 within said box, a mouthpiece at the opposite end of the tube, electric connection between said bell and mouthpiece, and means at the mouthpiece for closing the electric circuit and sounding said bell, substantially as de-  
10 scribed.
2. The combination with a speaking-tube, of a sound-box into which one end of a tube extends, a megaphone-trumpet opening from said box, a sleeve secured to the other end of  
15 said tube, a mouthpiece connected with said

sleeve, an electric bell in said box, wires from said bell extending through said tube into said mouthpiece, and a push-button in said mouthpiece and adapted to close the electric circuit through said wires, substantially as 20 described.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

CHAS. M. A. COSTELLO.  
FRANK H. HART.

Witnesses:

FRANCIS A. FORD,  
M. S. BOTHUNE.