

No. 660,796.

Patented Oct. 30, 1900.

G. HOGGLUND & C. M. HEDMAN.

HYGIENIC RESONATOR FOR TELEPHONES OR OTHER SOUND TRANSMITTING DEVICES.

(Application filed Dec. 18, 1899.)

(No Model.)

Fig. 1.

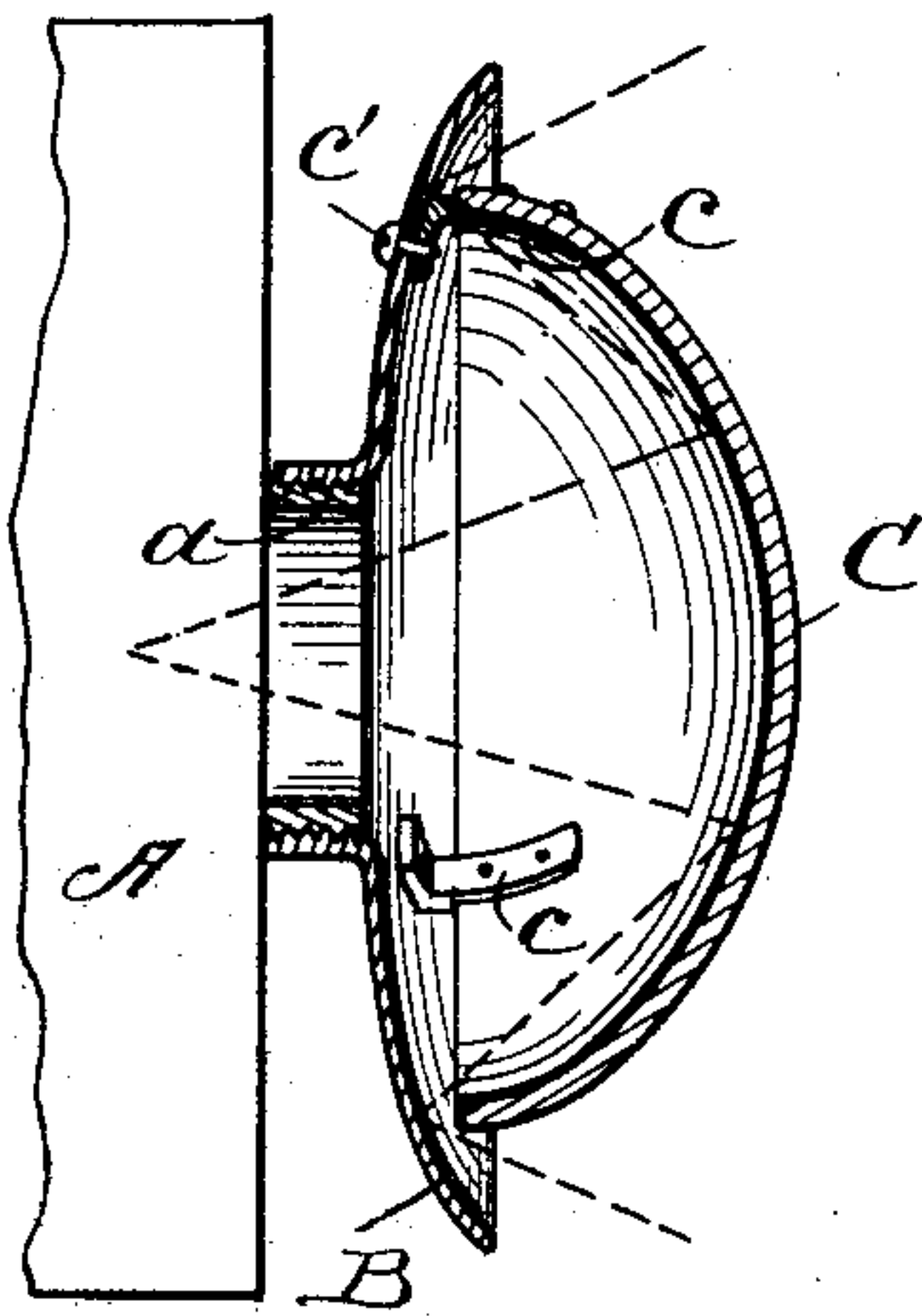


Fig. 2.

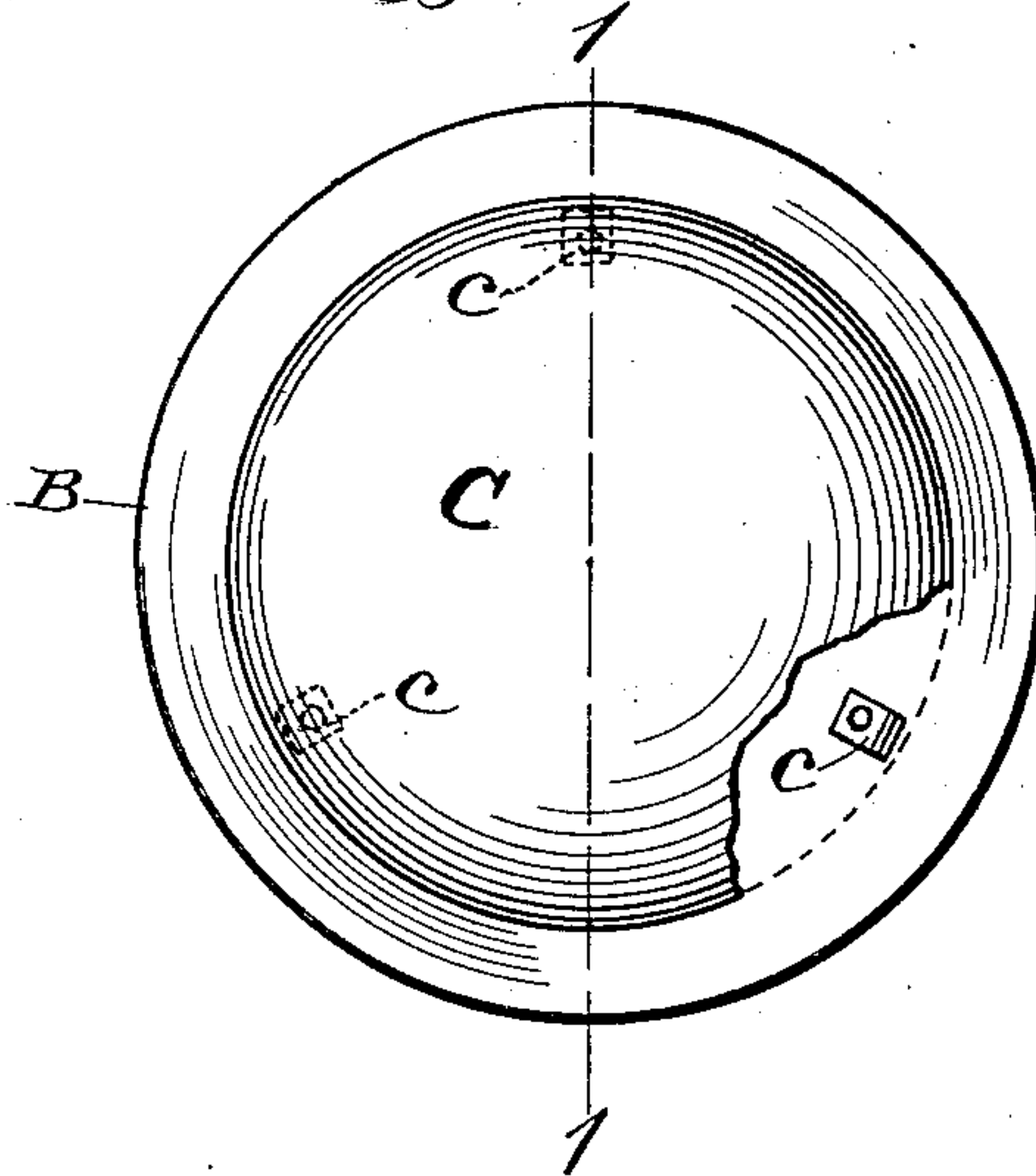


Fig. 3.

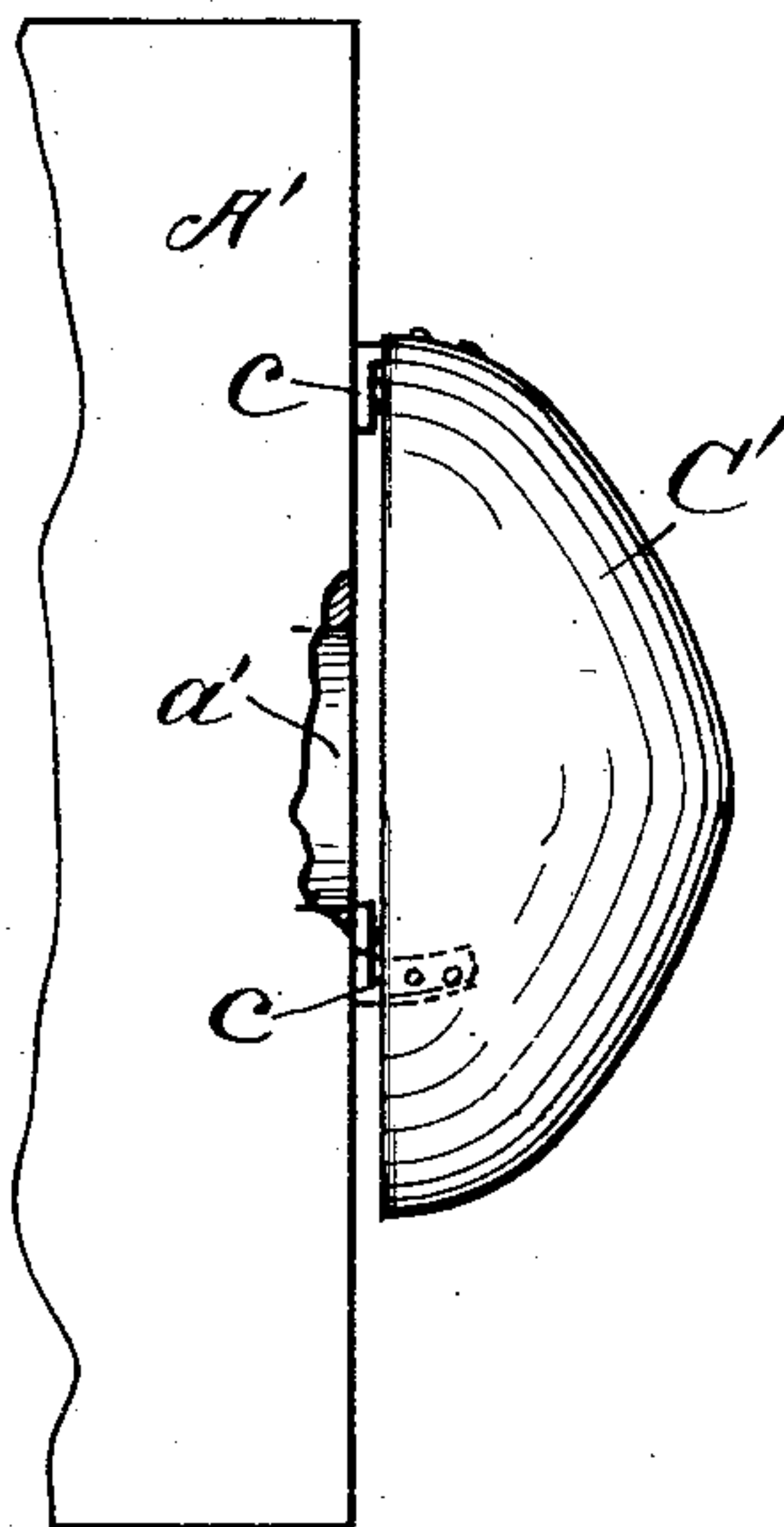
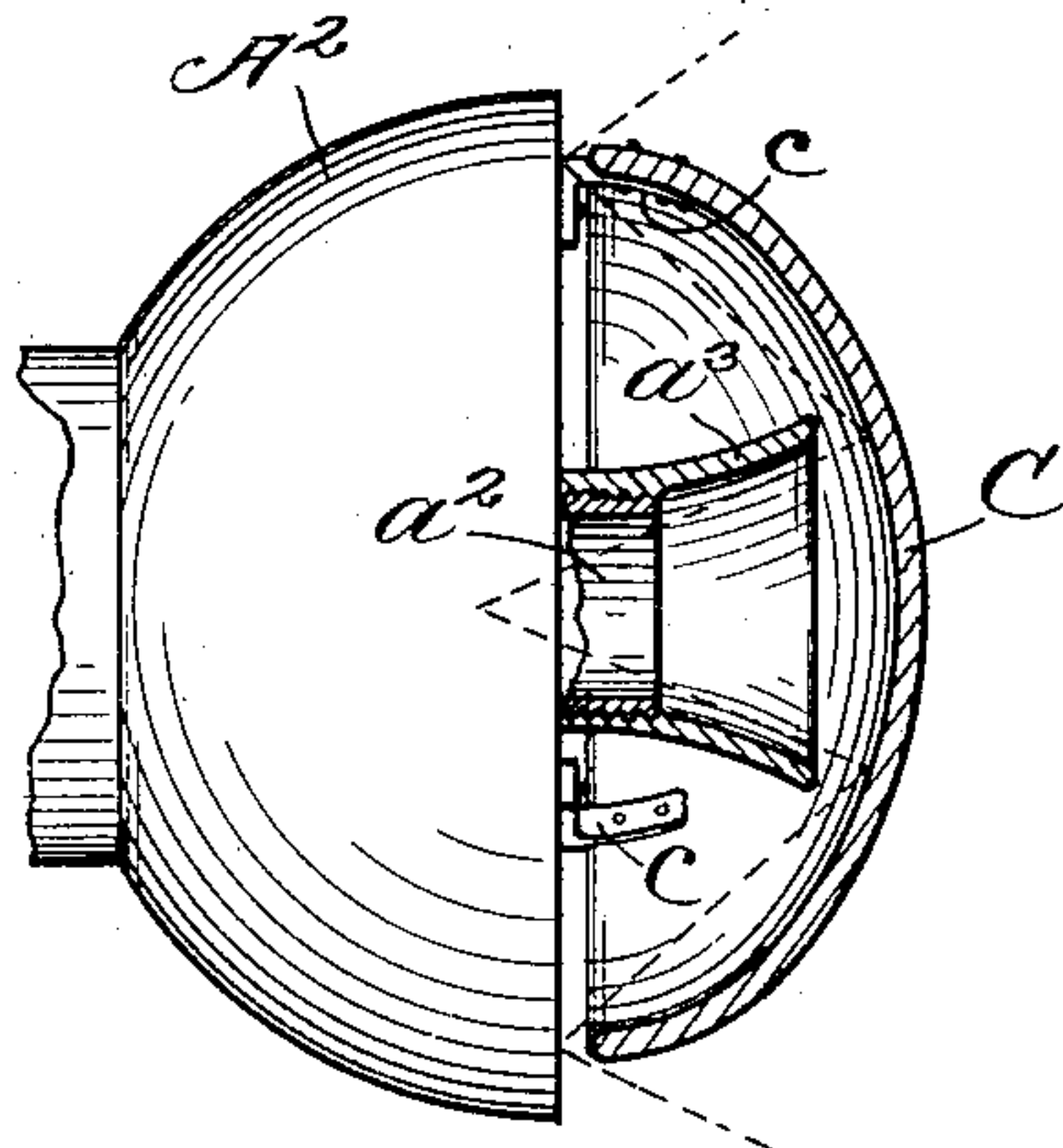


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

GUSTAVUS HOGLUND AND CARL M. HEDMAN, OF CHICAGO, ILLINOIS,
ASSIGNORS OF ONE-HALF TO CHARLES BERG AND MAURICE LUN-
DIN, OF SAME PLACE.

HYGIENIC RESONATOR FOR TELEPHONES OR OTHER SOUND-TRANSMITTING DEVICES.

SPECIFICATION forming part of Letters Patent No. 660,796, dated October 30, 1900.

Application filed December 18, 1899. Serial No. 740,663. (No model.)

To all whom it may concern:

Be it known that we, GUSTAVUS HOGLUND and CARL M. HEDMAN, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Hygienic Resonators for Telephones or other Sound-Transmitting Devices, of which the following is a specification.

10 This invention relates to improvements in devices to be used for increasing, magnifying, or reinforcing sounds and for rendering them more clear and distinct, and while it is more especially applicable to telephones, and we have shown and will describe it in connection therewith, yet it is adapted for use on various kinds of instruments employed for the transmission of sound—such as speaking-tubes, ear-trumpets, phonographs, graphophones, and analogous devices—and for this reason we do not desire to limit ourselves in its use to any specific sound-transmitting instrument, but may combine it with any suitable device for transmitting the human voice, instrumental music, or other sounds; and it consists in certain peculiarities of the construction, novel arrangement, and operation of the parts thereof, as will be hereinafter more fully set forth and specifically claimed.

30 One object of our invention is to provide a resonator which shall cause the sounds to be delivered in a clear and distinct manner and in increased volume and the timbre thereof preserved and which shall be simple and inexpensive in construction and readily attached to a sound-transmitting instrument.

Another object of our invention is to render it hygienic by so constructing it that the germs or microbes from the breath will not find ready lodgment, and the parts may be easily cleansed.

45 In order to enable others skilled in the art to which our invention pertains to make and use the same, we will now proceed to describe it, referring to the accompanying drawings, in which—

Figure 1 is a vertical central sectional view taken on line 1 1 of Fig. 2, showing our resonator as applied to a telephone-transmitter

and illustrating a portion of said transmitter 50 in elevation. Fig. 2 is a face view of the resonator, showing it attached to the mouthpiece of the transmitter. Fig. 3 is a view in side elevation of a modified form of the resonator, showing it attached to a telephone of a modified form; and Fig. 4 is a view, partly in section and partly in elevation, of our resonator, showing it attached to a telephone-transmitter of still another modification.

Similar letters refer to like parts throughout the different views of the drawings.

A represents the box or casing of a telephone-transmitter, which may be provided with a tubular extension *a*, leading to the diaphragm. (Not shown.) Secured to the extension *a* is a concave mouthpiece B, a central opening in which communicates with the opening in said tubular extension. Secured to the concave surface of the mouthpiece B is a resonator C, which may be made of any suitable size and material, but preferably of hard rubber. This piece or resonator is provided at suitable points on its edge with legs or supporting-pieces *c*, which may be fastened to the mouthpiece B by means of screws *c'* 75 or otherwise.

By reference to Figs. 1 and 2 of the drawings it will be seen that the edge or rim of the resonator or piece C is located at a slight distance from the edge and surface of the mouthpiece, so as to allow the sound-waves to pass therebetween and rebound from the mouthpiece and resonator, as indicated by dotted lines.

85 In Fig. 3 of the drawings we have shown a modification in the construction of the transmitter A' which consists in omitting the tubular extension *a* and concave mouthpiece B and providing its front portion with an opening *a'*, leading to the diaphragm, in which case we may use a resonator of the form shown in Fig. 1 of the drawings or may employ one of the shape illustrated in Fig. 3, which is somewhat conical in shape. In this modification the resonator C' is secured to the front surface of the transmitter and at a slight distance therefrom, as is clearly shown, but so that the edge or periphery of the resonator 95

will circumscribe the opening in the transmitter.

In Fig. 4 of the drawings we have shown another modified form of the transmitter A², which is provided with a tubular extension a², to which may be secured a flaring tube a³, which extends into the cavity of the resonator C, which is preferably of the same shape as that illustrated in Fig. 1 of the drawings. In this modification of the transmitter the resonator is secured to its front surface and at a slight distance therefrom, as in the other construction.

While we have shown and described the resonator as being connected with a telephone-transmitter, yet it is evident that it may be applied to speaking-tubes, ear-trumpets, and other sound-transmitting devices. We have also shown the resonator as being concave in form; but it may be made concavo-convex or convex-concavo or with a hollow or concavity in its surface adjacent to the sound-transmitting device and with its outer surface convex or conical or round. In other words, we do not desire to limit ourselves to any specific form of the resonator or to the means of connecting it with the sound-transmitting device, as we may secure it in a mouthpiece of greater size than the resonator, as shown in Fig. 1 of the drawings, or we may attach it directly to the front of the transmitter-casing, as shown in Fig. 3, or may extend the mouthpiece or flaring tube into the cavity of the resonator, as shown in Fig. 4, without departing from the spirit of our invention, the

broad idea of which is the application of a hollow piece applied to a sound-transmitting device, with the cavity of the resonator located about the opening of the transmitter.

In using our device it is only necessary to speak or create a sound in any suitable direction near the resonator, when the sound-waves striking its external surface will be carried over its rim or periphery to the surface of its support, when they will rebound or be reflected to the cavity of the resonator, from whence they will rebound or be reflected to the diaphragm or within the tube of the sound-transmitting device.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A resonator for a sound-transmitting device comprising a concave piece, with its cavity circumscribing and adjacent to the opening of the transmitter, substantially as described.

2. The combination with a concave mouthpiece, of a piece concave on one side and convex on the other secured therein at a slight distance therefrom and with its cavity adjacent to the mouthpiece and circumscribing the opening of the transmitter, substantially as described.

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