

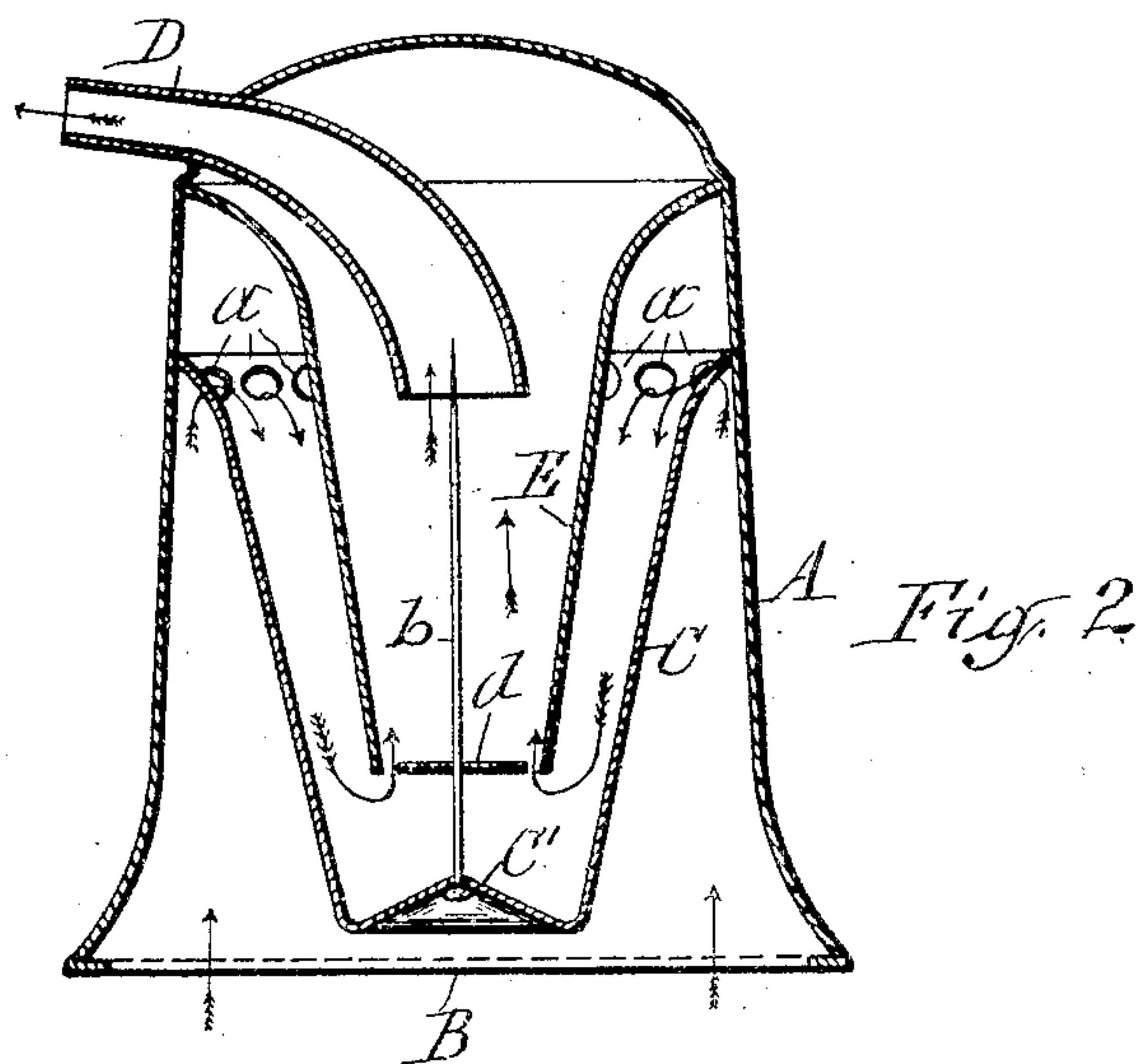
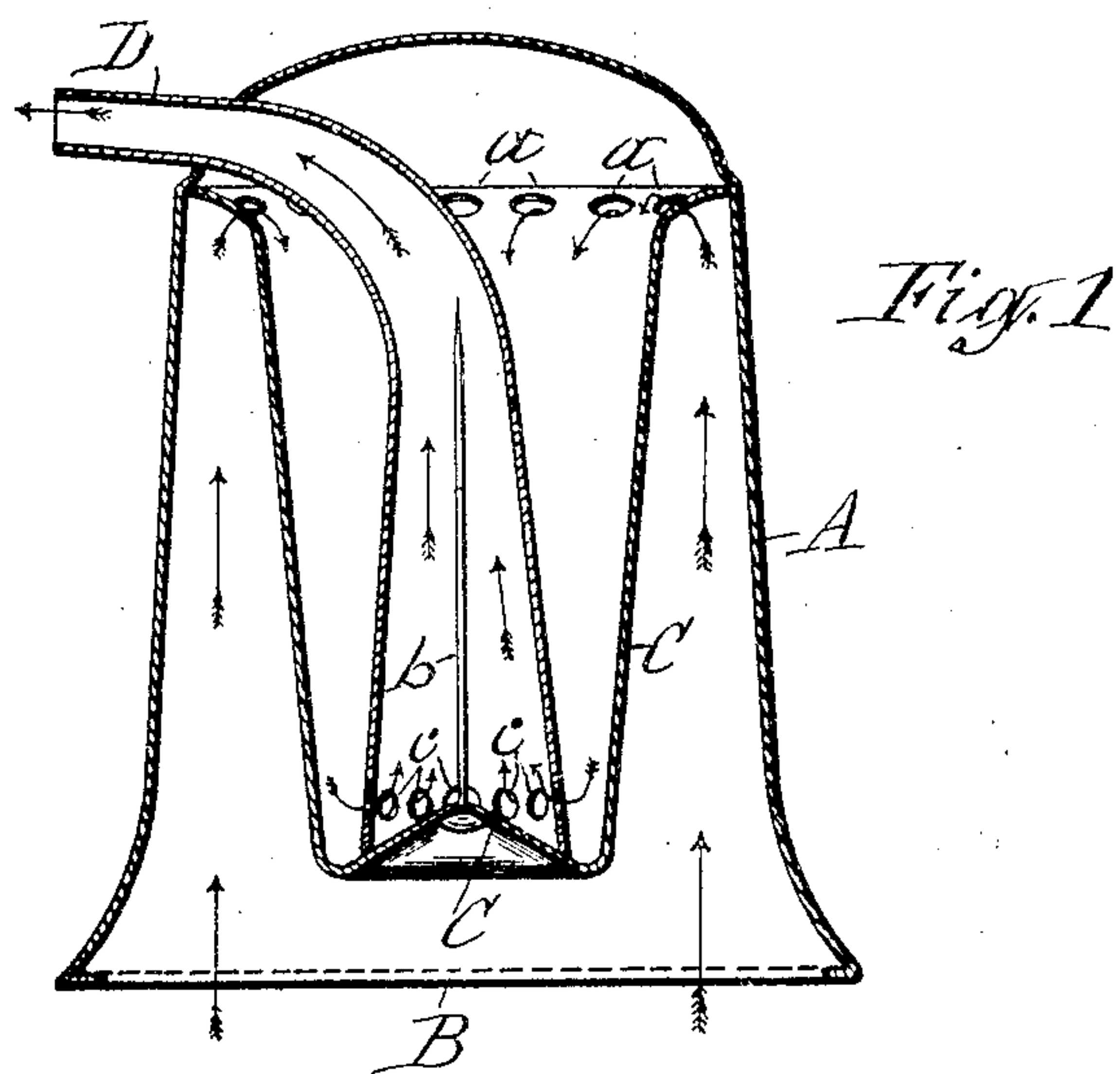
No. 803,892.

PATENTED NOV. 7, 1905.

R. W. GOERS.  
AURIPHONE.

APPLICATION FILED APR. 18, 1905.

2 SHEETS—SHEET 1.



WITNESSES:

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2 SHEETS—SHEET 2.

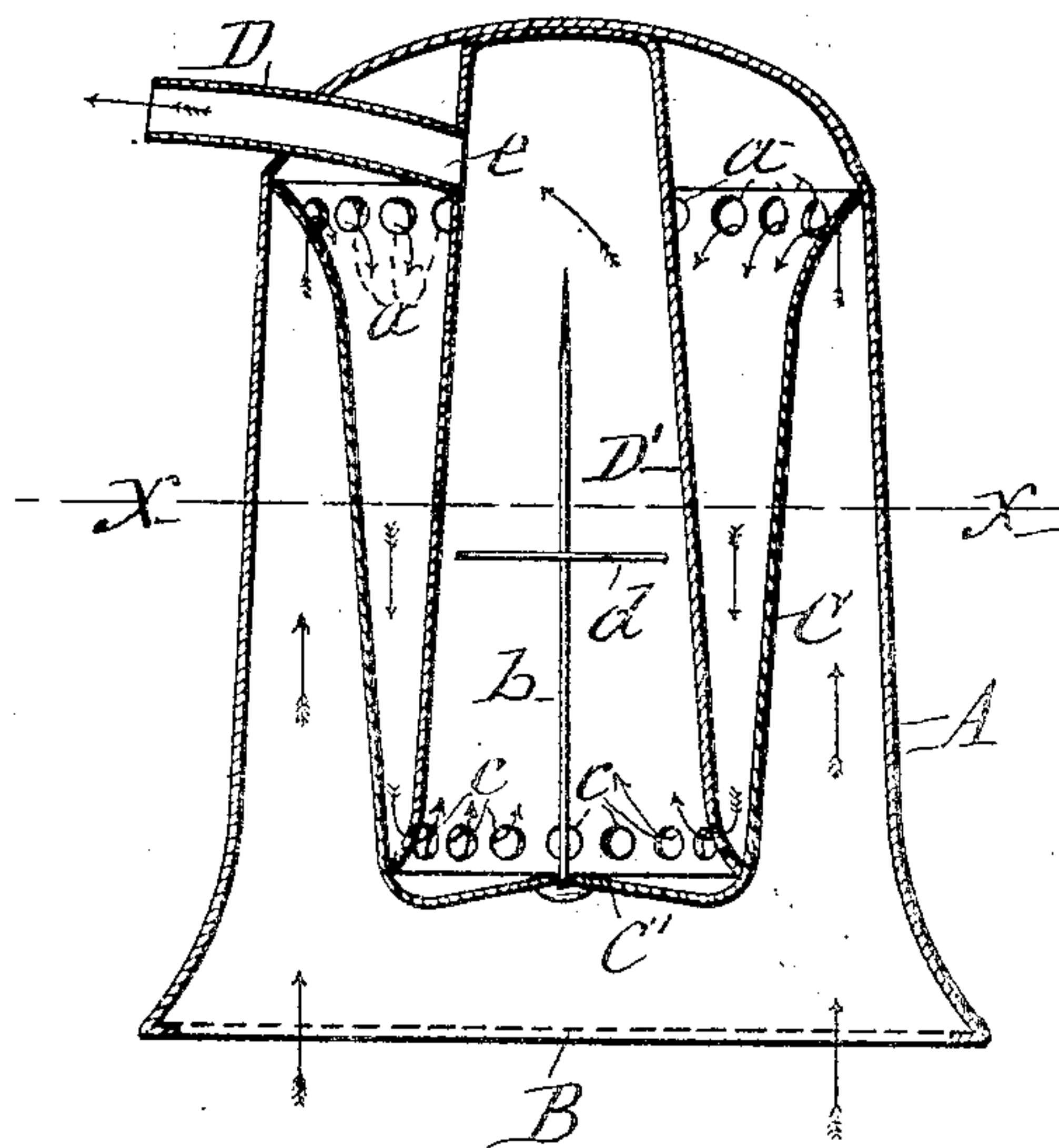


Fig. 3

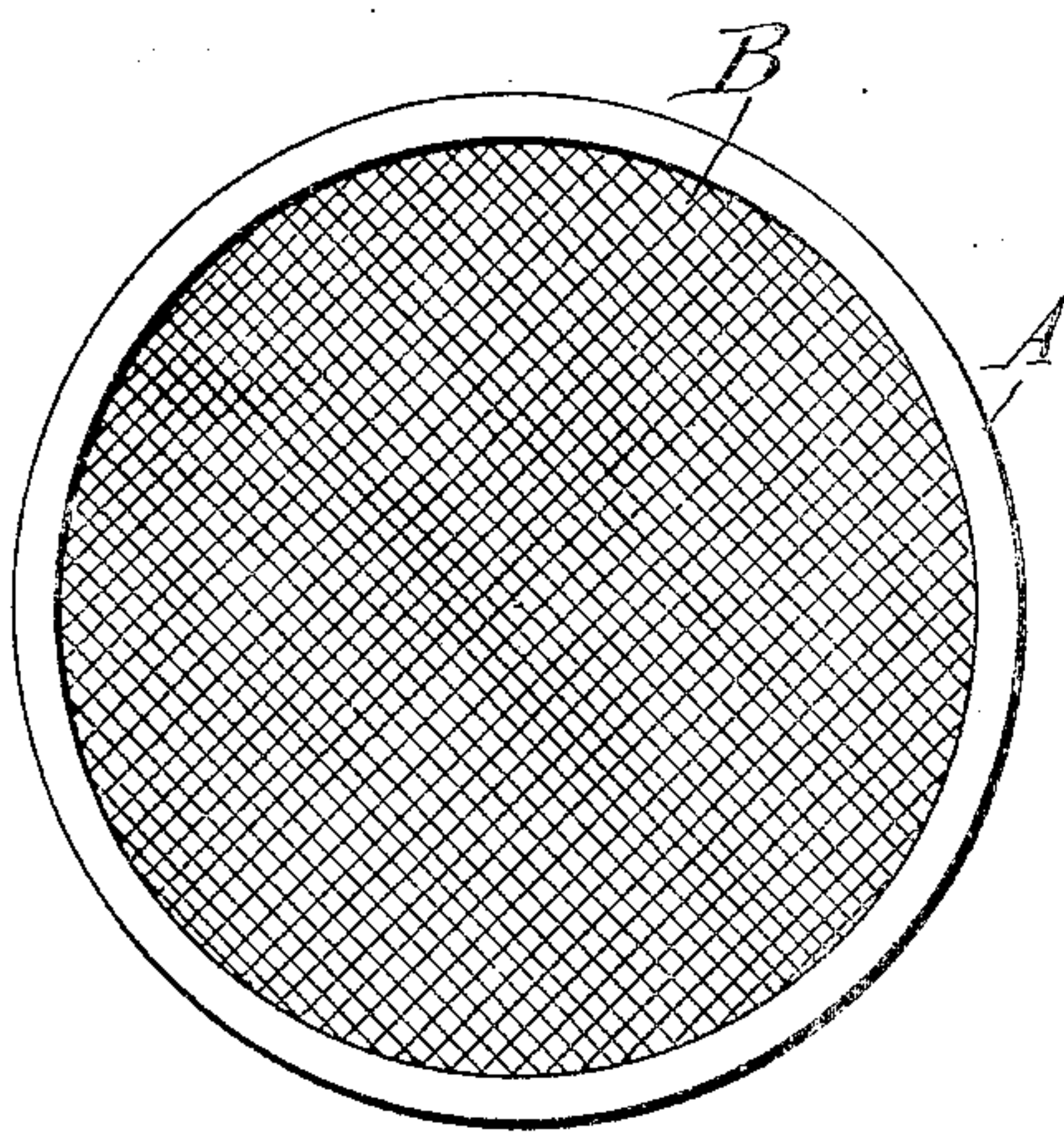


Fig. 4

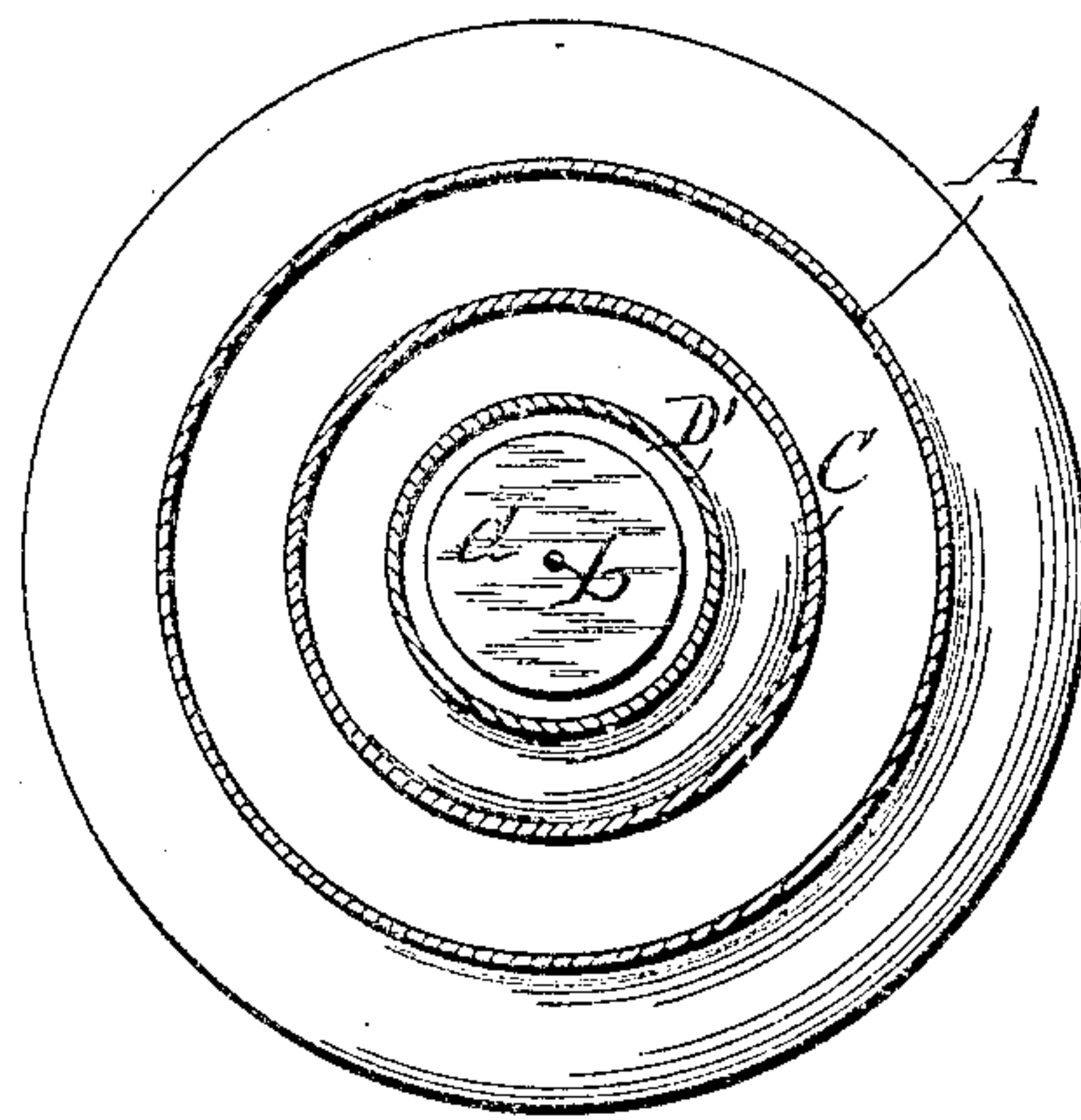


Fig. 5

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# UNITED STATES PATENT OFFICE.

ROBERT W. GOERS, OF SYRACUSE, NEW YORK.

## AURIPHONE.

No. 803,892.

Specification of Letters Patent.

Patented Nov. 7, 1905.

Application filed April 18, 1905. Serial No. 256,257.

*To all whom it may concern:*

Be it known that I, ROBERT W. GOERS, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Auriphones, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the class of aural instruments which are designed to be applied to the ear of a person of defective hearing for the purpose of perceptibly transmitting sounds to said person.

The object of the invention is to provide an aural instrument of superior efficiency without materially increasing the cost of its manufacture; and to that end the invention consists in the improved construction and combination of the component parts of the instrument, as hereinafter described, and as illustrated in the accompanying drawings, in which—

Figures 1, 2, and 3 are longitudinal sectional views of aural instruments embodying my invention. Fig. 4 is a face or front view of the receiving end of said instrument, and Fig. 5 is a transverse section on the line X X in Fig. 3.

Similar letters of reference indicate corresponding parts.

A denotes the outer or sound-receiving shell of the instrument, which shell is bell-shaped and formed from suitably thin sheet metal or other resonant material. The front or receiving end of the said shell is covered by means of wire-netting or a foraminous sheet B to protect the interior of the instrument.

C represents the reverberant shell, which is preferably bell-shaped and is disposed concentric and in a reversed position in the main shell A and has the periphery of its large rear end corresponding to the interior of the main shell adjacent or in proximity to the closed end thereof and attached thereto. The said attached rear end of the shell C is provided with a series of perforations *a a*, distributed around the periphery thereof to allow the sound to pass from the interior of the main shell A to the interior of the reverberant shell C, as represented by arrows in Figs. 1, 2, and 3 of the drawings.

The closed outer end of the shell C is formed with an inward depression, as shown at C', and to the center thereof is attached an inwardly-extended attenuated wire spin-

dle *b*, the inner or free end of which terminates either directly in or in proximity to the interior of the inner end of the transmitting-tube D, which protrudes through crown or closed end of the main shell A and is suitably shaped at its outer end to allow it to be conveniently inserted into the ear of the person desiring to use the instrument.

To allow the sound to pass from the interior of the reverberant shell C into the transmitting-tube D, the inner portion of said tube may be gradually enlarged and extended to the closed end of the reverberant shell C and suitably fastened thereto to sustain said tube in position, as shown in Fig. 1 of the drawings, in which construction I provide the said attached end portion of the tube with a circumferential row of perforations *c c* for passages of the sound, as indicated by arrows. The spindle *b* is susceptible of vibration and serves to contribute to the transmission of sound, the jars of which I moderate or obviate by means of a suitable diaphragm *d*, attached to the spindle *b* and preferably composed of mica.

The diameter of the diaphragm is sufficiently reduced to allow the sound to pass across the edges thereof.

The transmitting-tube D may be formed separate from the inclosed portion thereof, as shown in Fig. 3 of the drawings, in which case the said inclosed portion is of the shape of a deep bell D', closed at its rear or inner end and attached thereto to the crown of the outer shell A. The opposite end of the said bell-shaped portion D' is attached to the closed end of the reverberant shell C and provided with the perforations *c c*, as heretofore described. The inner end of the protruding portion of the transmitting-tube D is attached to the side of the bell-shaped portion D' near the closed end thereof and communicates with the interior thereof through an aperture *e* in the side thereof and registering with the interior of the attached end of the tube D, as shown in Fig. 3 of the drawings. The construction of the instrument may be further modified to suit persons of different degrees of defectiveness of hearing. One of such modifications is illustrated in Fig. 2 of the drawings, in which a forwardly-tapering shell E is interposed between the reverberant shell C and transmitting-tube D. Said interposed shell is arranged concentric in the shell C and attached at the periphery of its large rear end to the shell A adjacent to the crowned



end thereof. The opposite smaller end of the shell E is open and surrounds the diaphragm d. This modified construction of the instrument causes the sound in transmission to pass from the perforations *a a* of the reverberant shell C toward the front end of said shell and thence through the interposed shell E into the transmitting-tube D.

What I claim as my invention is—

- 10 1. The combination, with the main shell, of a reverberant shell attached at the periphery of its rear end to the main shell adjacent to the closed end thereof and provided thereat with a series of perforations and having  
15 its opposite end closed, an inwardly-extending spindle attached to the center of the closed end of the reverberant shell, and the transmitting-tube disposed in proximity to said spindle as set forth.
- 20 2. The combination, with the main shell, of the reverberant shell having the periphery of its rear end corresponding to the interior of the main shell and attached thereto and provided with perforations thereat and hav-  
25 ing its front end closed and formed with an inward depression, an inwardly-extending spindle attached to the center of the said depression, and the transmitting-tube disposed

in proximity to said spindle as set forth and shown.

3. The combination, with the main shell, and transmitting-tube, of the reverberant shell closed at its front end and communicating at its rear end with the main shell, an inwardly-extending spindle attached to the closed end of the reverberant shell, and a diaphragm attached to said spindle as set forth.

4. The combination, with the main shell and transmitting-tube, of the reverberant shell closed at its front end and attached at the periphery of its rear end to the main shell and provided thereat with a circumferential row of perforations, an inwardly-extending spindle attached to the center of the closed end of the reverberant shell, a diaphragm attached to said spindle, and a forwardly-tapering shell interposed between the reverberant shell and transmitting-tube and attached at the periphery of its rear end to the main shell adjacent to the crown thereof substantially as set forth.

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Witnesses:

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