

No. 685,849.

Patented Nov. 5, 1901.

J. KEANE.
VENTILATOR CAP.

(Application filed Aug. 22, 1899.)

(No Model.)

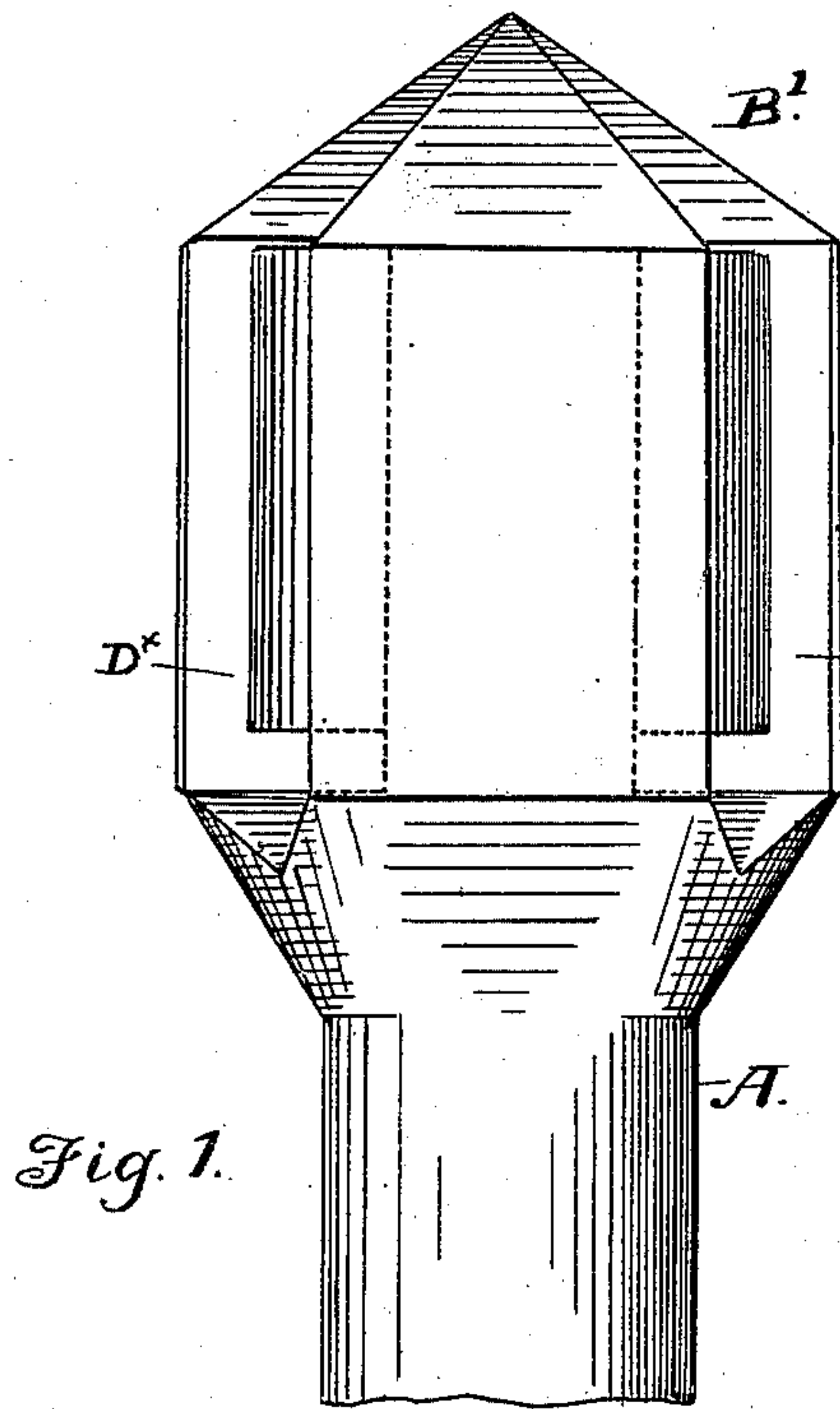


Fig. 1.

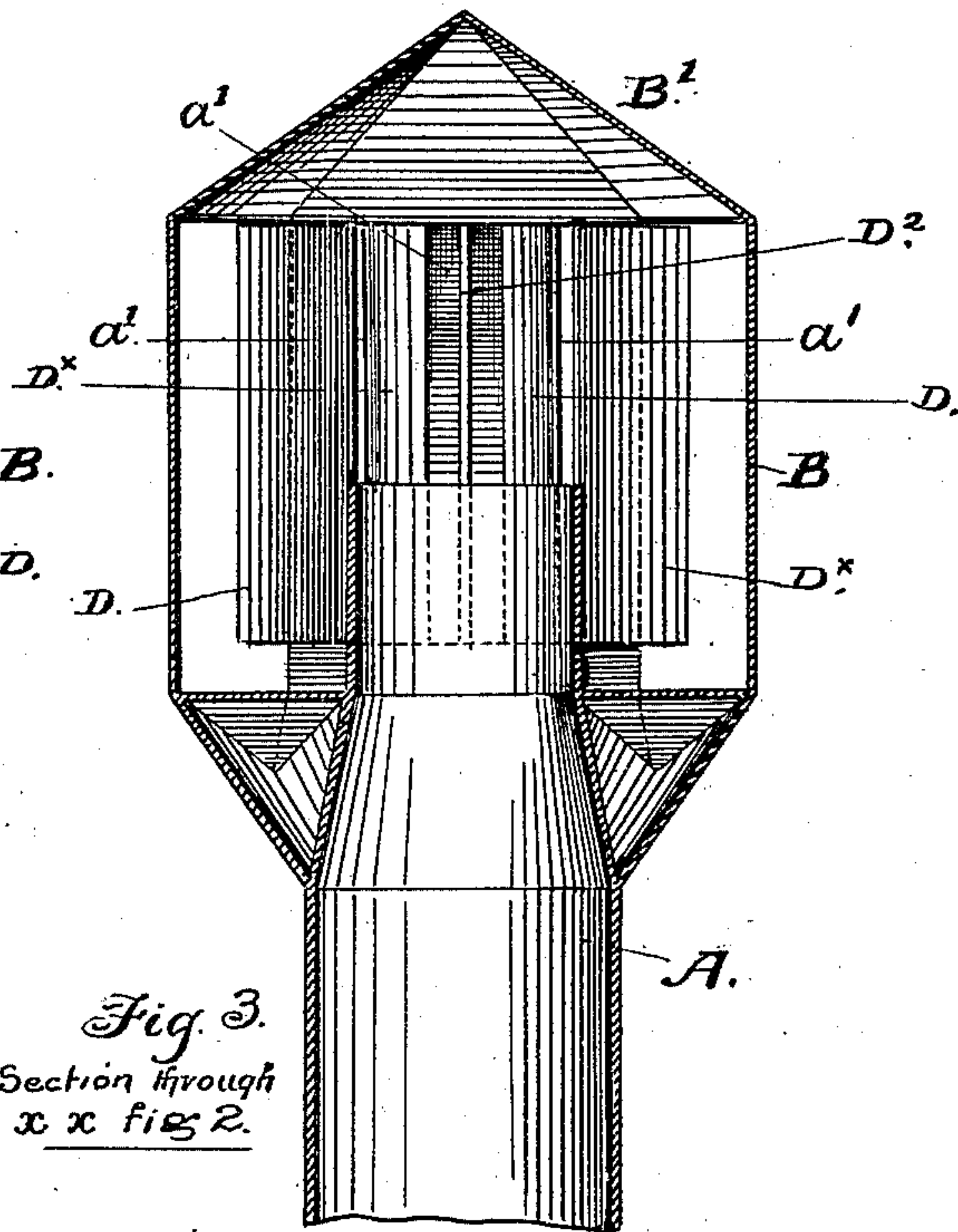


Fig. 3.
Section through
x x fig 2.

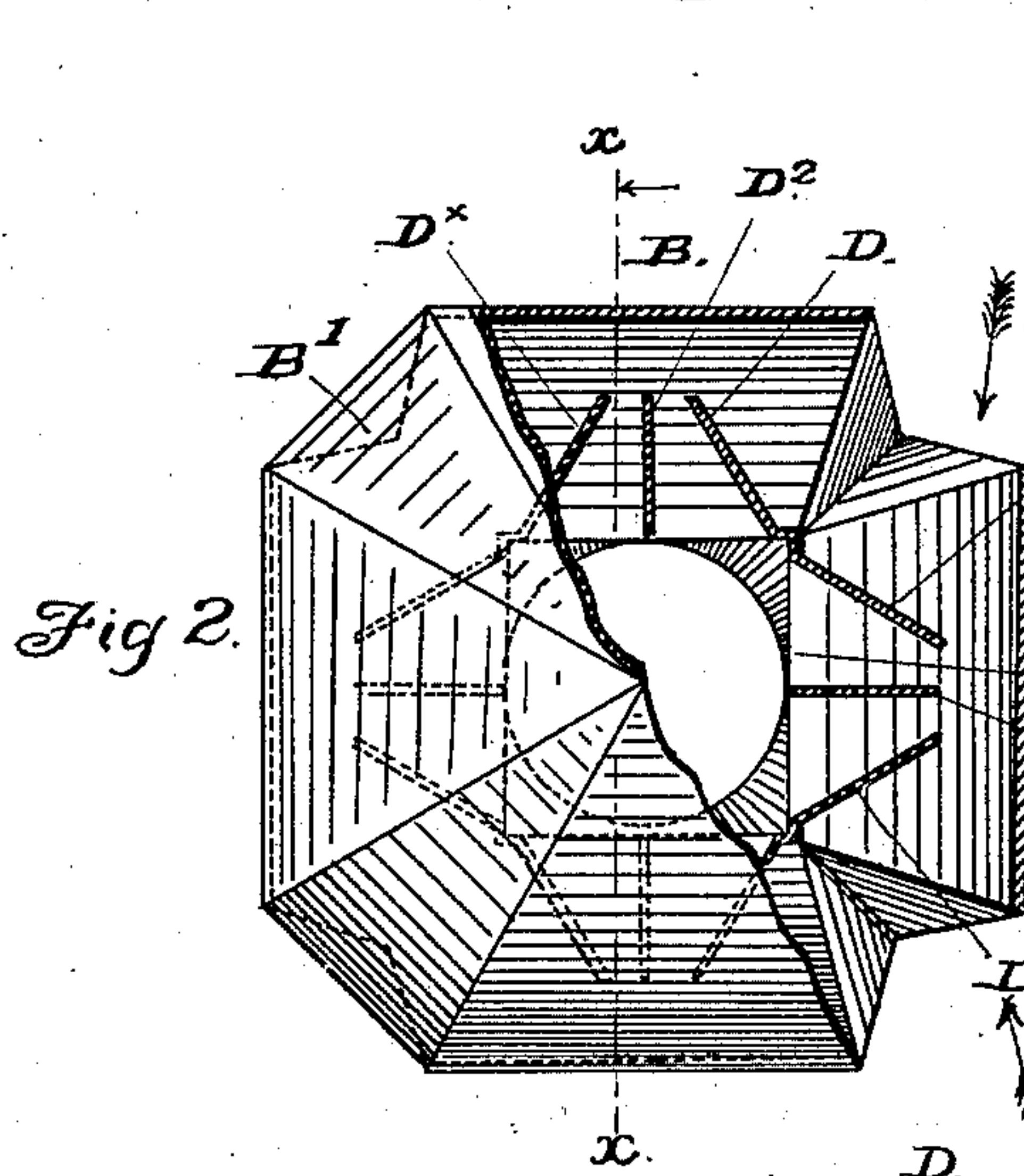


Fig. 2.

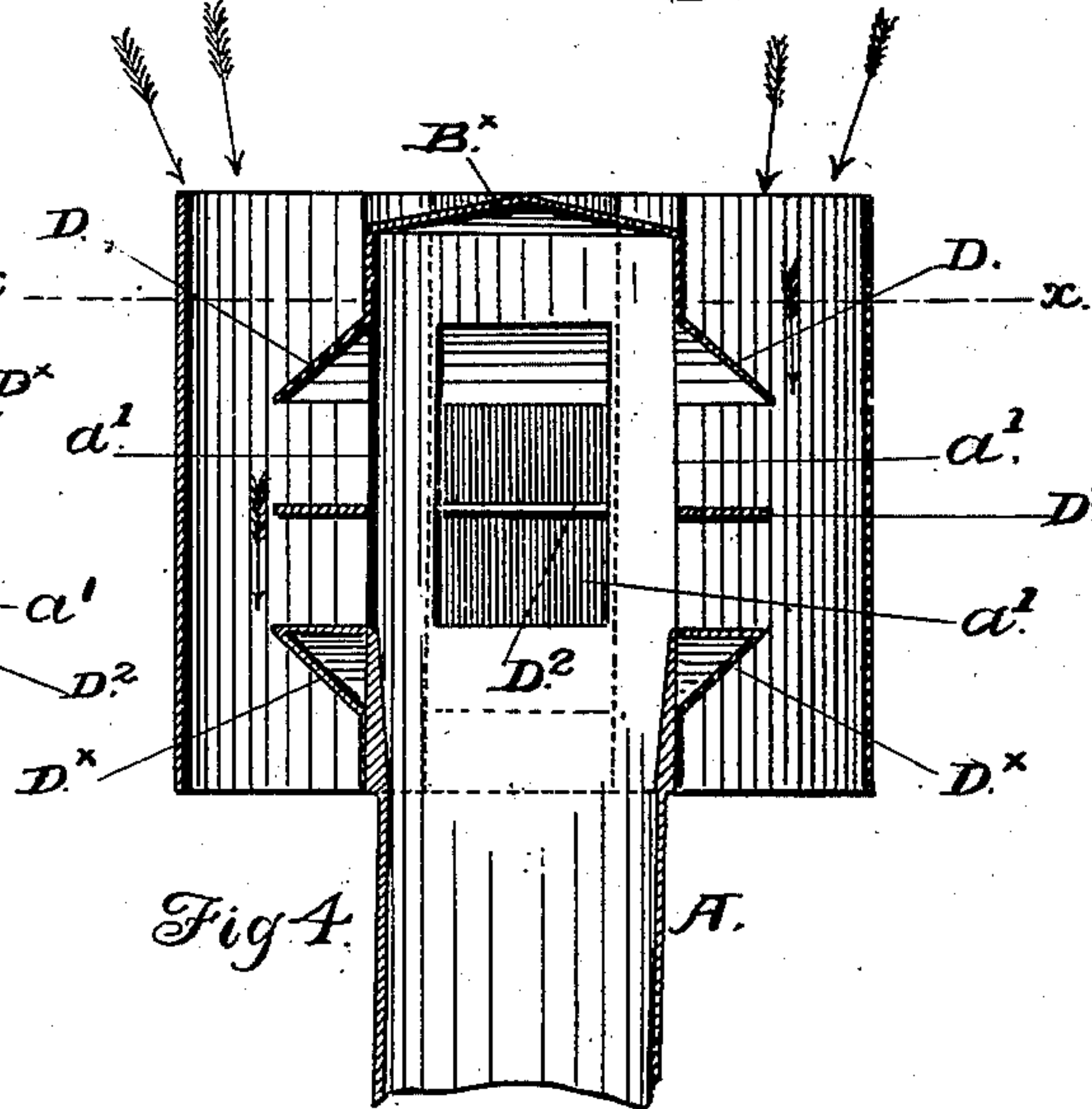


Fig. 4.

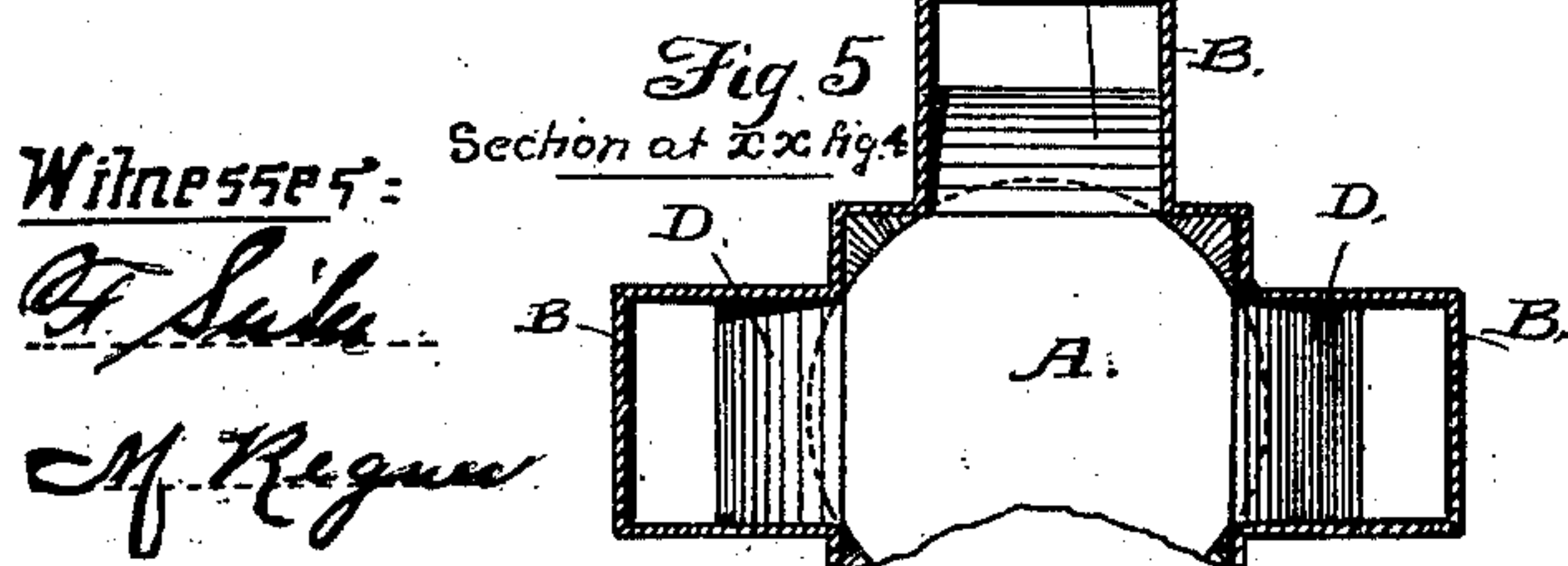


Fig. 5
Section at x x fig 4

Witnesses:

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John W. Keane
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UNITED STATES PATENT OFFICE.

JOHN KEANE, OF SAN FRANCISCO, CALIFORNIA.

VENTILATOR-CAP.

SPECIFICATION forming part of Letters Patent No. 685,849, dated November 5, 1901.

Application filed August 22, 1899. Serial No. 728,076. (No model.)

To all whom it may concern:

Be it known that I, JOHN KEANE, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented new and useful Improvements in Ventilator-Caps, of which the following is a specification.

This invention relates to improvements made in the construction of that class or description of caps or guards for ventilator-shafts for which Letters Patent of the United States were issued to me on the 27th day of September, 1892, No. 483,384; and the same have for their object, mainly, to produce a cap or guard that will operate effectively as a protector for ventilator-shafts on shipboard to prevent downdrafts and as a means of increasing the updrafts under varying conditions of impinging wind-currents, to which such ventilators by virtue of their positions are necessarily exposed.

To such ends and object my said invention consists in certain novel construction and combination of upright ventilator-shaft, casing, and deflecting-plates, as hereinafter described, and pointed out in the claim, reference being had therein to the accompanying drawings, forming part hereof.

Figure 1 of the drawings is an elevation of a cap or guard embodying the present improvements and showing a construction that is adapted for use in open or exposed situations where the prevailing air-currents travel in horizontal planes, or generally at right angles to the updraft in the shaft. Fig. 2 is a top view, partly in horizontal section, with a portion of the top of the casing broken away. Fig. 3 is a vertical cross-section taken on the line $x x$, Fig. 2. Figs. 4 and 5 represent a slight modification in which the casing and the deflecting-plates are set substantially perpendicular to the corresponding parts in Figs. 1, 2, and 3 for use in confined positions where the air-currents may impinge the outlets from above or in substantially vertical planes.

A indicates the pipe forming the top end of the air-shaft or ventilator-shaft, B the surrounding casing, and B' B^x the cover or top of the air-shaft.

D D^x D² are deflectors guarding the outlets of the air-shaft.

That portion of the air-shaft which is in-

closed by the casing is best made square or rectangular in cross-section, even where the air-shaft itself is cylindrical, and the surrounding casing has flat sides standing parallel with the corresponding sides of the air-shaft inclosed by it. In the vertical sides of the central shaft below the closed top are apertures a' opening from the inside of the shaft A into the space between the sides of the casing and the shaft A. These outlet-apertures are of rectangular shape, and they are of such size also that their combined area is equal at least to double the area in cross-section of the air-shaft.

The deflecting-plates D D^x in the wind passage or space between the closed sides of the casing B and the shaft A are set over the outlet-apertures a' at opposing angles, so as to present angular faces to the air-currents entering the passage between the casing and the air-shaft from either direction.

In the construction shown in Figs. 1, 2, and 3, where these wind-passages between the shaft and casing are closed at top and bottom and are open at the ends, these plates D D^x are set to stand at an angle of about twenty-five degrees to each other and are of proper length to cover the outlet-apertures of the shaft a' from top to bottom; but in the modification illustrated in Figs. 4 and 5, where the wind-passage between the side of the air-shaft and the casing is open at top and bottom, but closed on the sides, the angular plates are placed above the top edge and below the bottom edge of the outlet-aperture a' at opposing angles in order to present angular surfaces to the open ends of the wind-passage between the air-shaft and the casing.

Between the inclined plates D D^x are set intermediate deflecting-plates D² of the same length as the inclined plates, but standing at right angles to the outlet-apertures and extending outward to the edge of the inclined deflectors. These plates cut off or deflect the air-currents that otherwise might pass over the edges of the inclined deflectors and directly into the outlet-apertures when blowing at an angle into the openings of the casing from either direction, whether on horizontal lines, as indicated by the arrows in Fig. 2, or in a vertical direction, as indicated in

Fig. 4. In both cases these intermediate plates D^2 enable the inclined deflectors to be set much farther apart and a longer outlet-aperture to be more effectively covered by them than would be possible without the plates.

The relative positions of the deflectors and the surrounding casing with respect to the outlet-apertures to be protected are determined by the conditions under which the cap is required to work, and according as the cap is set for operation in an open or exposed situation, where the prevailing air-currents will impinge the surfaces of the cap in substantially horizontal lines, or in somewhat-confined situations, where the air-currents are deflected by surrounding surfaces or objects, so as to strike the cap from above and blow substantially in a vertical direction downward, the casing is set or adjusted to present its openings to the general direction of the air-currents, and the deflectors are set at opposing angles thereto, as illustrated in the one case in Fig. 3 and in the other in Fig. 4.

Having thus fully described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

In a cap or guard for ventilator-shafts, the combination with an upright air-shaft having outlet-apertures in the sides; of the surrounding casing forming a wind-passage between itself and the air-shaft, and having a closed side in front of and substantially parallel with each aperture, the inclined deflector-plates in the wind-passage standing outwardly from the air-shaft on each side of each outlet-aperture and at opposing angles to the wind-passage, and the intermediate deflector-plates presenting surfaces at substantially right angles to the outlet-apertures and to the wind-passage.

In testimony that I claim the foregoing I have hereunto set my hand and seal.

JOHN KEANE. [L. s.]

Witnesses:

EDWARD E. OSBORN,
M. REGNER.