

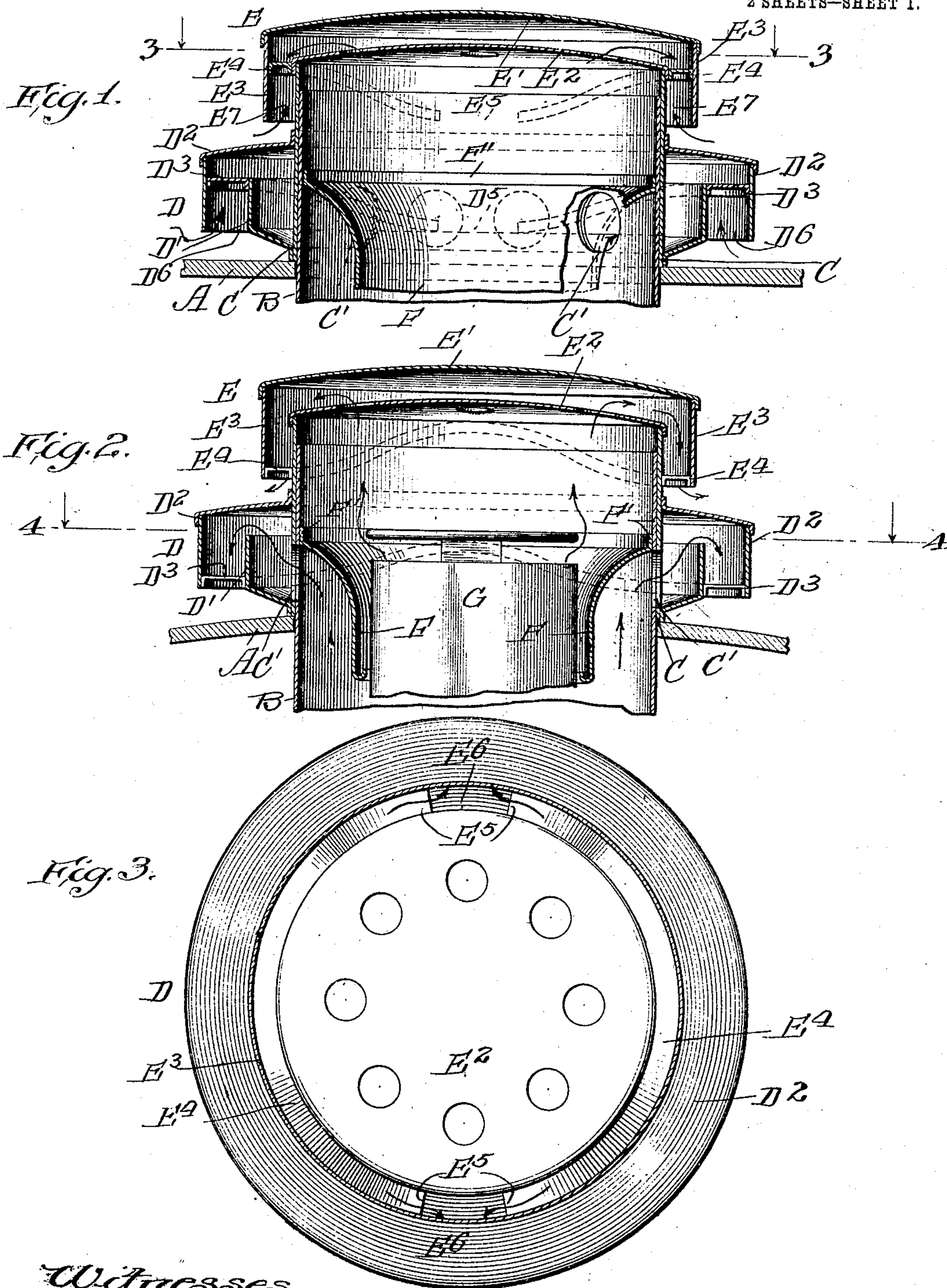
No. 855,607.

PATENTED JUNE 4, 1907.

A. BAGGALEY.  
VENTILATOR.

APPLICATION FILED FEB. 23, 1907.

2 SHEETS—SHEET 1.



Witnesses  
Harry R. White  
Ray White.

Inventor  
Arthur Baggageley  
By Morgan & Rubenstein Attys



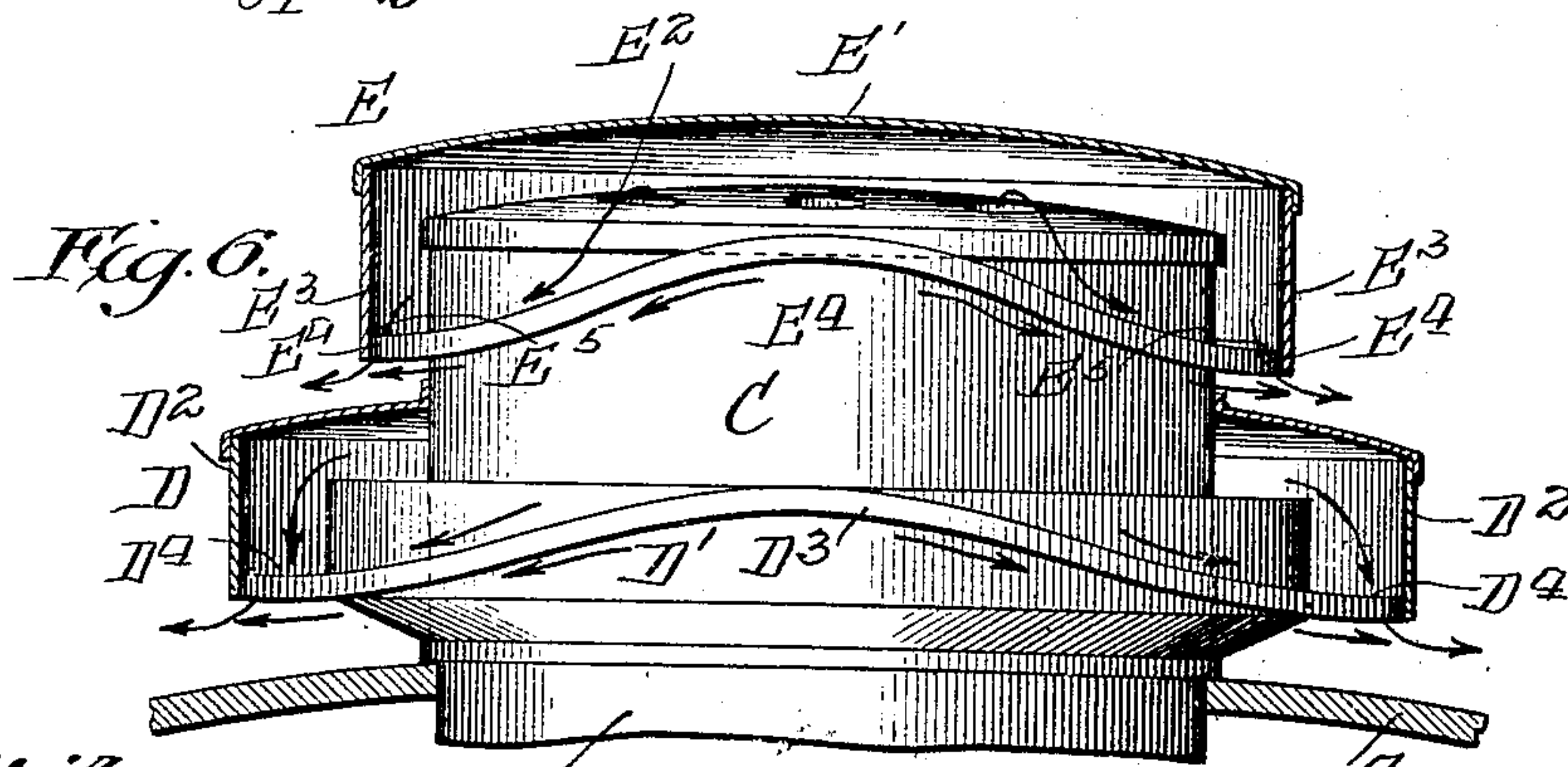
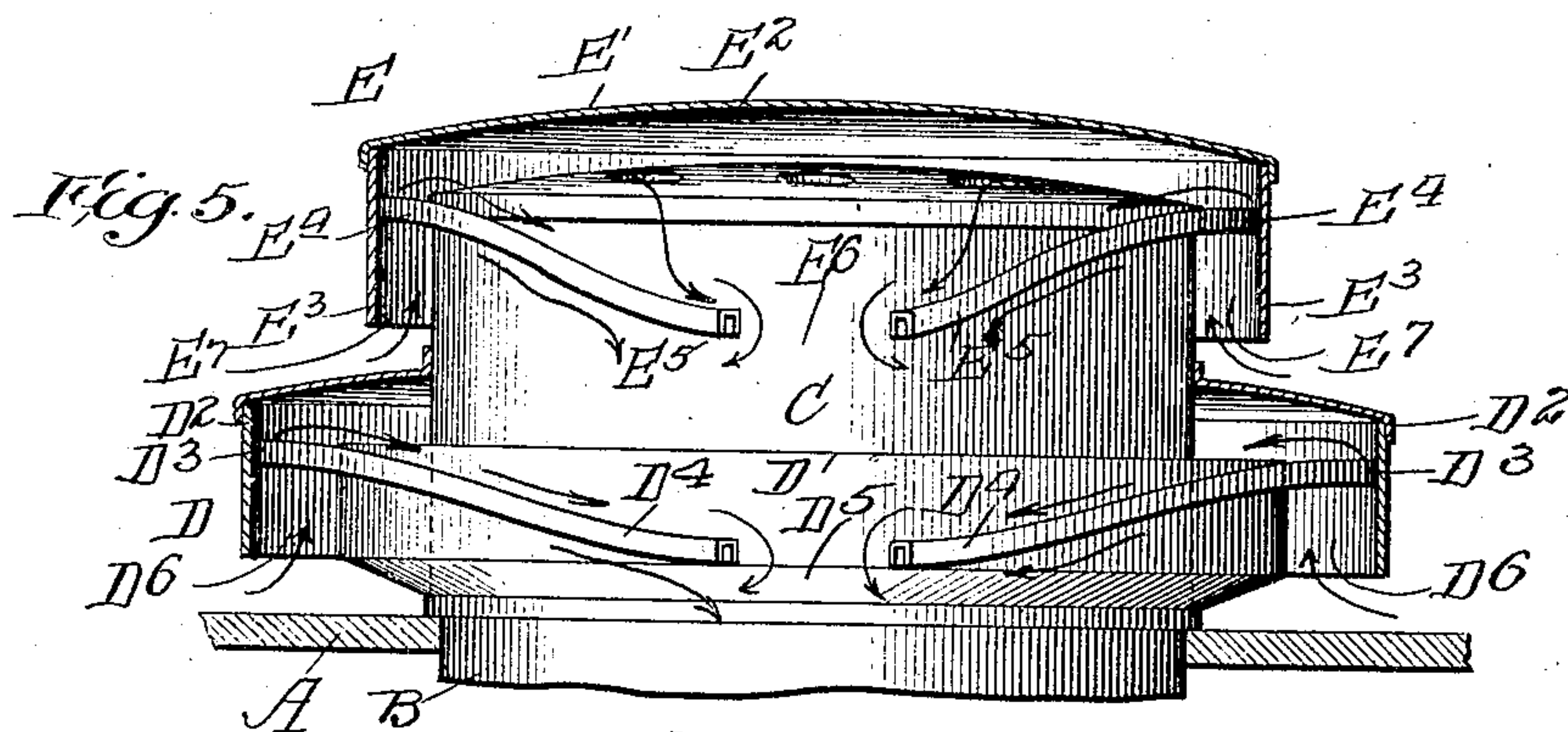
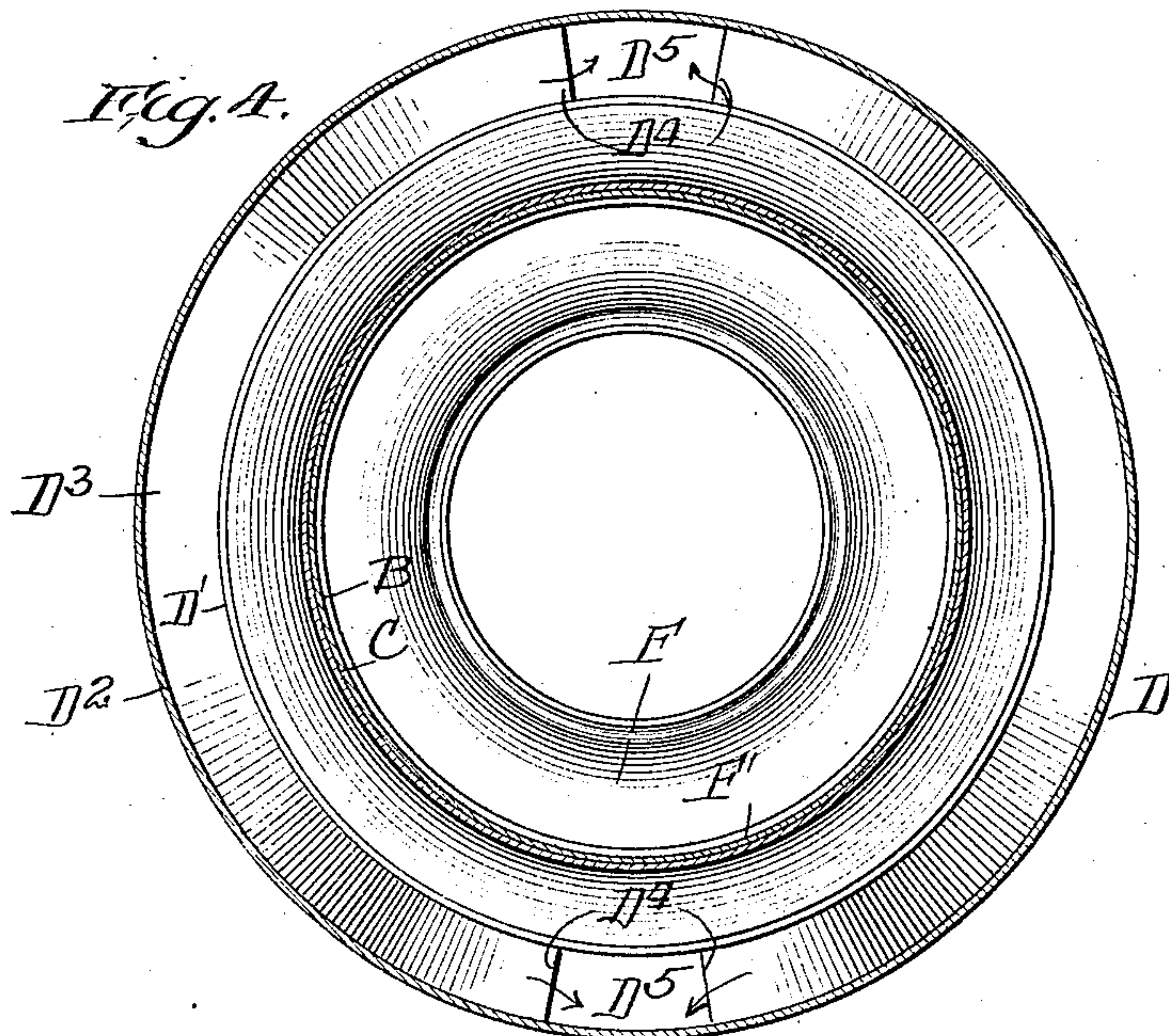
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# UNITED STATES PATENT OFFICE.

ARTHUR BAGGALEY, OF CHICAGO, ILLINOIS.

## VENTILATOR.

No. 855,607.

Specification of Letters Patent.

Patented June 4, 1907.

Application filed February 23, 1907. Serial No. 358,902.

*To all whom it may concern:*

Be it known that I, ARTHUR BAGGALEY, a citizen of the United States, residing at 11635 Yale avenue, in the city of Chicago, county of Cook, and State of Illinois, have invented a certain new and useful Improvement in Ventilators, of which the following is a specification.

My invention relates particularly to that class of ventilators used on railroad cars, which are located on those parts of the car known as the decks. But my invention is adapted for use on the top of any structure where automatic ventilation is desired. And I therefore do not limit my invention to any particular class of structures or to any particular size or material.

The object of my invention is to construct a ventilator preferably of sheet metal, which is adapted to be placed over the tube which extends from above the lamp in a car, through and above the top of the roof, and which is affixed therein for the purpose of conducting the smoke and hot air from the lamp and car; that with or without such a tube, can be placed on the roof of cars or other structures requiring ventilation; that when placed in position on a car or other structure, by the deflection of the current of air outside the ventilator will create a suction at the openings therein that will increase the draft through the ventilator; that will serve the purpose of a ventilator and smokejack on railroad cars; and that will prevent the entrance through the ventilator into the car of all cinders and dust.

The manner in which I accomplish my object is described in the following specification and illustrated in the accompanying drawings in which:—

Figure 1 is a vertical central sectional view of the ventilator in position over a tube in the roof of a car, the point of view being from the side of the car. Fig. 2 is a vertical sectional view the point of view being from the end of the car. This view differs from Fig. 1, in that an interior flanged ring is shown affixed to the interior of the tube in the roof and the top part of a lamp is also shown. Fig. 3 is a sectional plan view on the line 3—3 Fig. 1. Fig. 4 is a sectional plan view on the line 4—4 Fig. 2. Figs. 5 and 6 are elevations with parts broken away to show the deflecting curves of the plates which form the bottom of the air ducts.

In the drawings A is the roof of a car, B is a

tube affixed in the roof, this tube is preferably cylindrical and may be straight or slightly tapering to a smaller diameter above the roof to afford an easy fit for the ventilator placed thereon. When these tubes are in the roof of cars on which it is desired to place my invention, the ordinary smokejacks supported on these tubes are removed and a series of holes are punched in the tube to correspond with holes in the ventilator to be placed thereon. The main part of my ventilator is a straight cylinder C which is adapted in size to fit friction tight on the tube B. This cylinder is perforated near the lower end, the perforation C<sup>1</sup> being adapted to register with the holes in the tube B, and the top of the cylinder extends some distance above the top of the tube B. Affixed to the outside of the lower edge of the part C is an air duct D. This duct is formed of four parts, a cylindrical partition D<sup>1</sup> the vertical part of which is spaced from the part C and extends upward above the holes C<sup>1</sup>, a cylindrical partition D<sup>2</sup> the vertical portion of which is spaced from the vertical part of the partition D<sup>1</sup>. Between the vertical parts of the parts D<sup>1</sup> and D<sup>2</sup>, and affixed thereto are two semi-circular deflecting plates D<sup>3</sup>. The ends D<sup>4</sup> of each of these plates are arranged in line with the lower edge of the vertical part of D<sup>2</sup>. From these ends each plate curves upward till the top of the curve is in line with the top edge of the vertical part of D<sup>1</sup>, as shown in Figs. 1 and 6. The ends D<sup>4</sup> of each of these plates are spaced from each other to form the outlets D<sup>5</sup> of the air duct D. These openings, one on either side of the ventilator are located sidewise of the length of the car as shown in Figs. 2, 3, 4, and 5. Affixed on the top of the cylindrical part C is another air duct E. This duct is formed of an outer top E<sup>1</sup>, and inner top E<sup>2</sup>, a vertical cylindrical part E<sup>3</sup> and two deflecting plates E<sup>4</sup>. These plates are affixed to the tops E<sup>1</sup> and E<sup>2</sup> and are curved and the ends E<sup>5</sup> spaced from each other the same as in the duct D and the outlets of the duct E are located in the same direction as the outlets D<sup>5</sup>. The inner top E<sup>2</sup> is perforated to allow smoke and air to pass from the interior of the part C into the duct E. In the tube B is a curved ring F which is attached to the tube by the flange F<sup>1</sup>. The lower edge of this ring is adapted in size to engage the top G of a lamp inside the car.

When my ventilator is constructed as herein described and illustrated in the accom-



panying drawings and secured in place on the roof of a car to serve as a ventilator and smokejack it produces the several currents of air which I will now describe.

5 When the ventilator is affixed on the roof directly over a lamp and provided with the ring F, the air from the interior of the car passes upward, between the tube B and ring F through the apertures C<sup>1</sup> into the duct D  
10 and out through the outlets D<sup>5</sup>. The smoke and heat from the lamp top G passes upward through the apertures in the inner top E<sup>1</sup> into the duct E and out through the outlets E<sup>6</sup>. The outside current of air enters the  
15 spaces D<sup>6</sup> and E<sup>7</sup> under the ducts D and E and is deflected by the curved plates D<sup>3</sup> and E<sup>4</sup> downward and past the outlets D<sup>5</sup> and E<sup>6</sup>. This deflection and movement of the outside  
20 air in a downward direction past the outlets of the air ducts creates a suction proportioned to the speed of the current of air so deflected. This suction increases the natural draft of the ventilator in whichever direction  
25 the outer current of air may strike the ventilator. The location of the only exterior openings D<sup>5</sup> and E<sup>6</sup> in the ventilator being sidewise of the length of the car the downward deflection of the air from the interior  
30 of the ventilator, and the downward deflection of the outside current of air past these outlets, prevents the entrance into the ventilator and car through these outlets of cinders and dust.

It is obvious that when my improved ventilator is placed on stationary structures the  
35 outlets may be adjusted to the prevailing direction of the wind over it; that on cars in which the lighting system produces no smoke or heat, the ring F may be dispensed with,  
40 and that one or several ducts as the conditions may require can be made parts of my invention. It is also obvious that the deflectors forming the floor of the ducts D and E may be formed with straight lines forming  
45 an angle instead of the curved form shown and described the deflection of the air being substantially the same with either form.

#### Claims.

1. In a ventilating device of the kind described the combination with a central tube,  
50 of an encircling air duct affixed to the top end of said tube, said air duct consisting of an inner perforated cap, an outer cap spaced from said inner cap, a cylindrical ring affixed  
55 to said outer cap, said ring being concentric with and spaced from said tube, a pair of deflecting plates partly encircling said tube and affixed thereto, and to said ring, thereby forming the floor of said air duct, the ends of  
60 said plates being the lowest part of said floor and spaced to form the outlets of said air duct as described.

2. In a ventilating device of the kind described the combination with a central per-  
65 forated tube, and an encircling air duct af-

fixed to the top thereof, said air duct consisting of an inner perforated cap affixed to said tube, an outer cap spaced from the inner cap, a cylindrical ring affixed to said outer cap  
70 concentric with and spaced from said tube, and a pair of deflecting plates partly encircling said tube and affixed thereto and to said ring; of a lower air duct affixed on said tube over the perforations therein, said air  
75 duct consisting of an inner cylindrical flanged ring encircling and affixed to said tube, the vertical part of said ring being concentric with and spaced from said tube, an outer flanged ring encircling and affixed to said  
80 tube, the vertical part of said ring being concentric with and spaced from said inner ring, and deflecting plates partly encircling said inner ring and affixed thereto and affixed to said outer ring, said plates forming the floor  
85 of said air duct, the ends of said plates being the lowest part of said floor and spaced to form the outlets of said air ducts, as described.

3. In a ventilating device of the kind described the combination with a central perforated tube; of a plurality of air ducts encircling  
90 said tube and affixed thereto, said air ducts being arranged one above the other over the apertures in said tube, said air ducts consisting of cylindrical rings and deflecting  
95 plates concentric with said tube, said deflecting plates partly encircling said tube and forming the floors of said ducts, the ends of said deflecting plates being the lowest part of said floors and separated to form the outlets  
100 of said ducts as described.

4. A ventilator of the kind described consisting of a main body preferably of cylindrical form having a perforated cap, a flanged  
105 top, covering said cap and spaced therefrom, the flange of said top encircling and spaced from said main body, a plurality of deflecting plates affixed between said flange and main body, said plates partly encircling said main  
110 body and forming the floor of the air duct thus formed, the ends of said plates being the lowest part of said floor and separated to form the outlets of said air duct, as described.

5. A ventilator of the kind described consisting of a main perforated body, preferably  
115 of cylindrical form and having a perforated cap, a flanged top, said top covering and spaced from said cap, and the flange part of said top encircling and spaced from said main body, a plurality of deflecting plates affixed  
120 between said flange and main body, said plates partly encircling said main body and forming the floor of an air duct thus formed, the ends of said plates being the lowest part of said floor and separated to form the outlets  
125 of said air duct; and an air duct encircling said main body and affixed thereto below said air duct hereinbefore described, said air duct consisting of a lower inner flanged ring, concentric with, spaced from, and affixed to  
130 said main body; an upper outer flanged ring



concentric with and spaced from said inner ring and affixed to said main body; a plurality of deflecting plates affixed between the vertical parts of said rings, said plates partly encircling said inner ring, and forming the floor of the air duct, the ends of said plates being the lowest part of said floor and separated to form the outlets of said air duct, said air duct covering the apertures in said main body, as described.

6. A ventilator of the kind described consisting of a main perforated body; air ducts encircling said body and affixed thereto, said air ducts being arranged one above the other over the apertures in said main body, said air ducts consisting of deflecting plates and cylindrical rings concentric with said main body, said deflecting plates forming the floors of said ducts, the ends of said plates being the lowest part of said floors and separated to form the outlets of said ducts as described.

7. A ventilator of the kind described consisting of a main perforated body, preferably of cylindrical form, an encircling air duct attached to the top of said body, consisting of an encircling ring, cover, and deflecting plates said plates connecting said ring and main body; the ends of said plates being the lowest part of the floor of said air duct, the separate ends forming the outlets to said air duct, as described.

8. A ventilator of the kind described, consisting of a main perforated body, preferably of cylindrical form, an encircling deflecting air duct affixed to the top of said main body, and an air duct encircling said main body and affixed thereto covering the apertures in

said main body, said air duct consisting of two flanged rings affixed to said main body, the vertical parts of said rings being concentric with and spaced from each other and from said main body, a plurality of deflecting plates affixed to and between the vertical parts of said rings and forming the floor of said air duct, the ends of said plates being the lowest part of said floor and separated to form the outlets of said air duct as described.

9. A ventilator of the kind described, consisting of a main perforated body, preferably of cylindrical form, encircling deflecting air ducts affixed to and covering the top and apertures in said body, said air ducts consisting of deflecting plates and cylindrical rings concentric with said main body, said deflecting plates forming the floors of said ducts, the ends of said plates being the lowest part of said floors and separated to form the outlets of said ducts as described.

10. In a ventilating device of the kind described the combination with the main perforated body; of a plurality of air ducts encircling and secured to said main body; arranged one above the other, the upper duct consisting of deflecting plates and rings concentric with said main body, the lower duct consisting of deflecting plates and inner and outer rings concentric with said main body, said plates forming the floors of said ducts, the ends of said plates being the lowest part of said floors, and separated to form the outlet of said ducts as described.

ARTHUR BAGGALEY.

Witnesses:

JOSEPH STAAB,

THOMAS J. MORGAN.