

No. 891,485.

PATENTED JUNE 23, 1908.

A. J. LEITCH.
STATIONARY EJECTOR VENTILATOR.

APPLICATION FILED APR. 11, 1908.

2 SHEETS—SHEET 1.

Fig. 1.

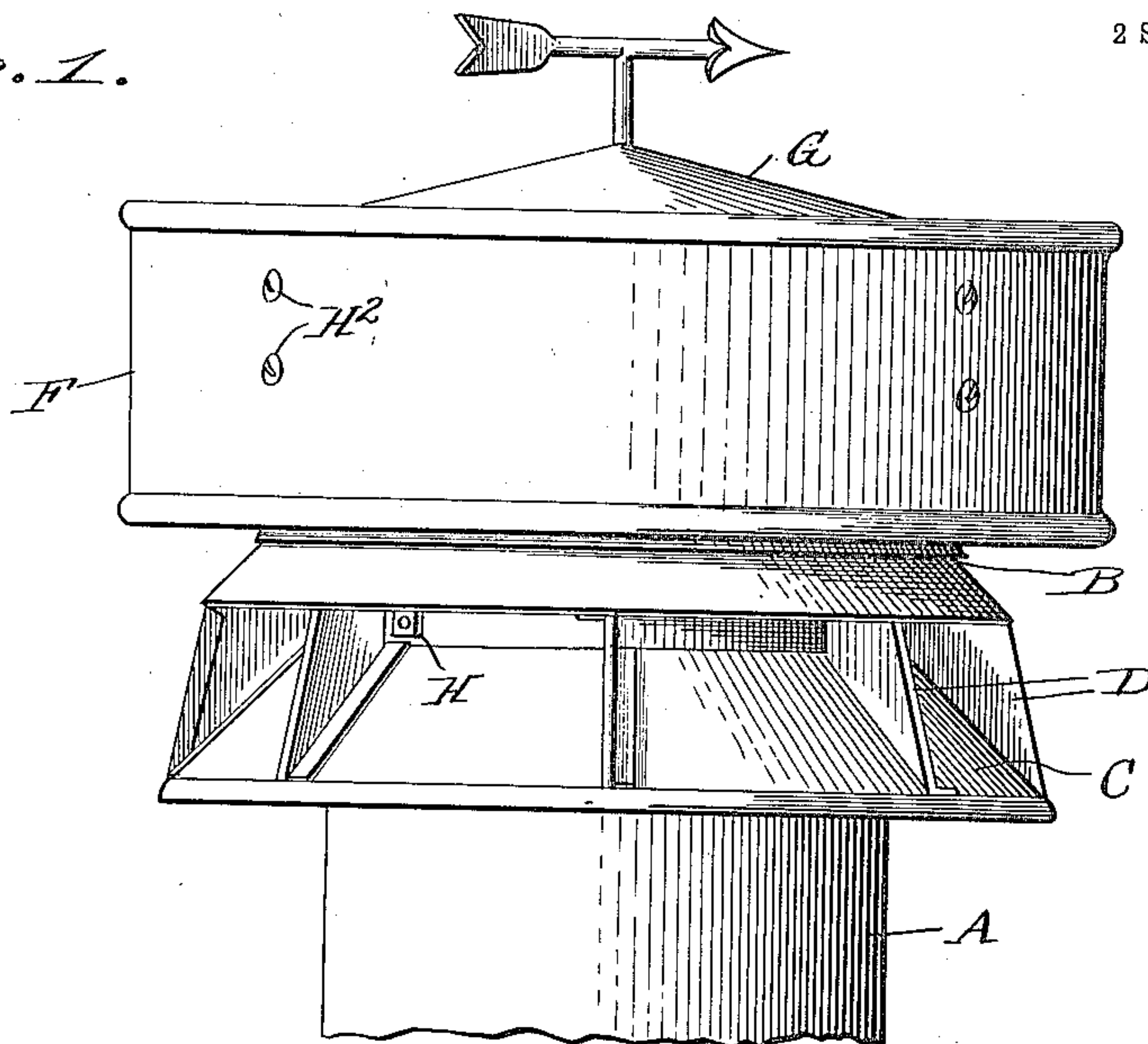
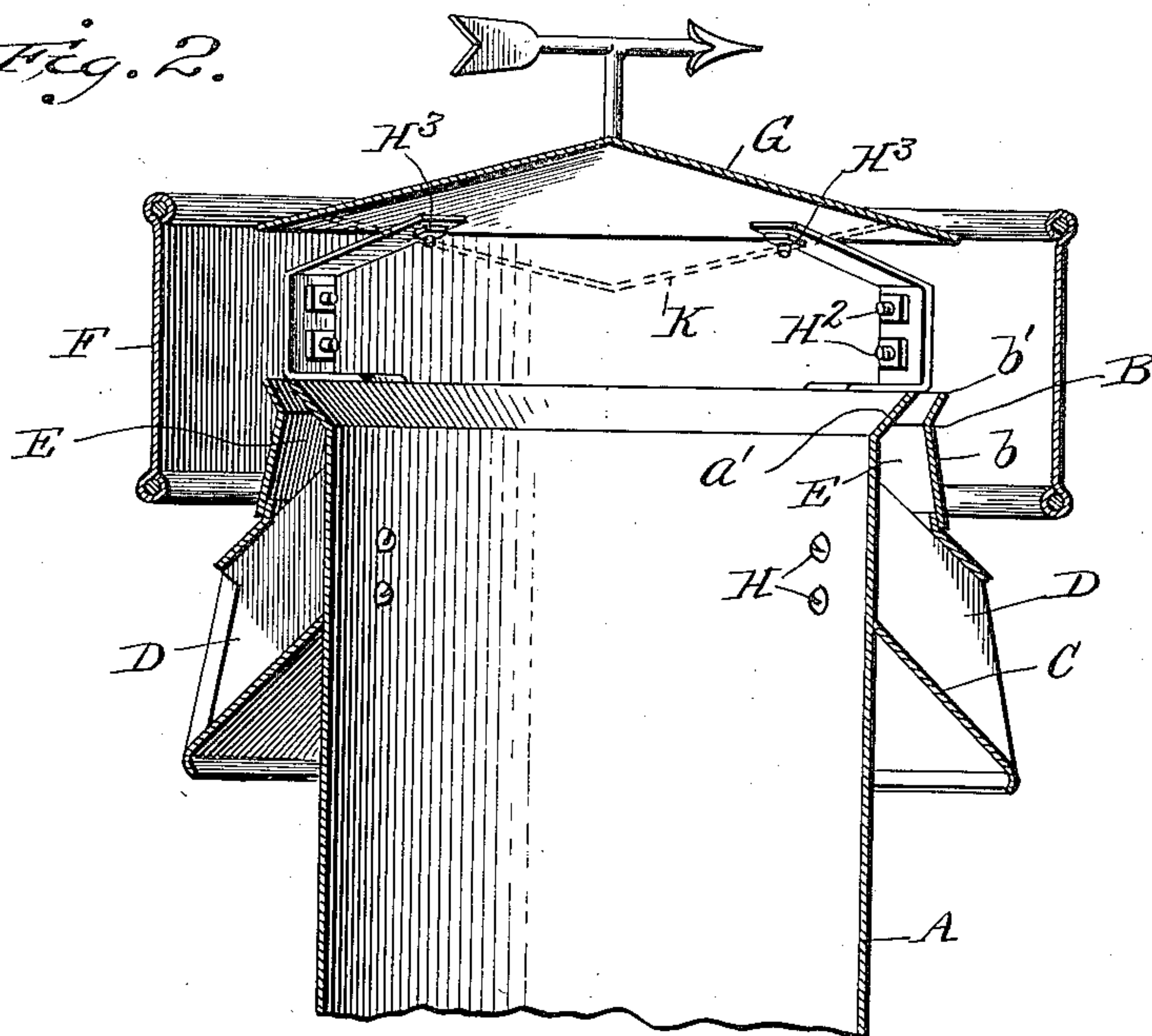


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

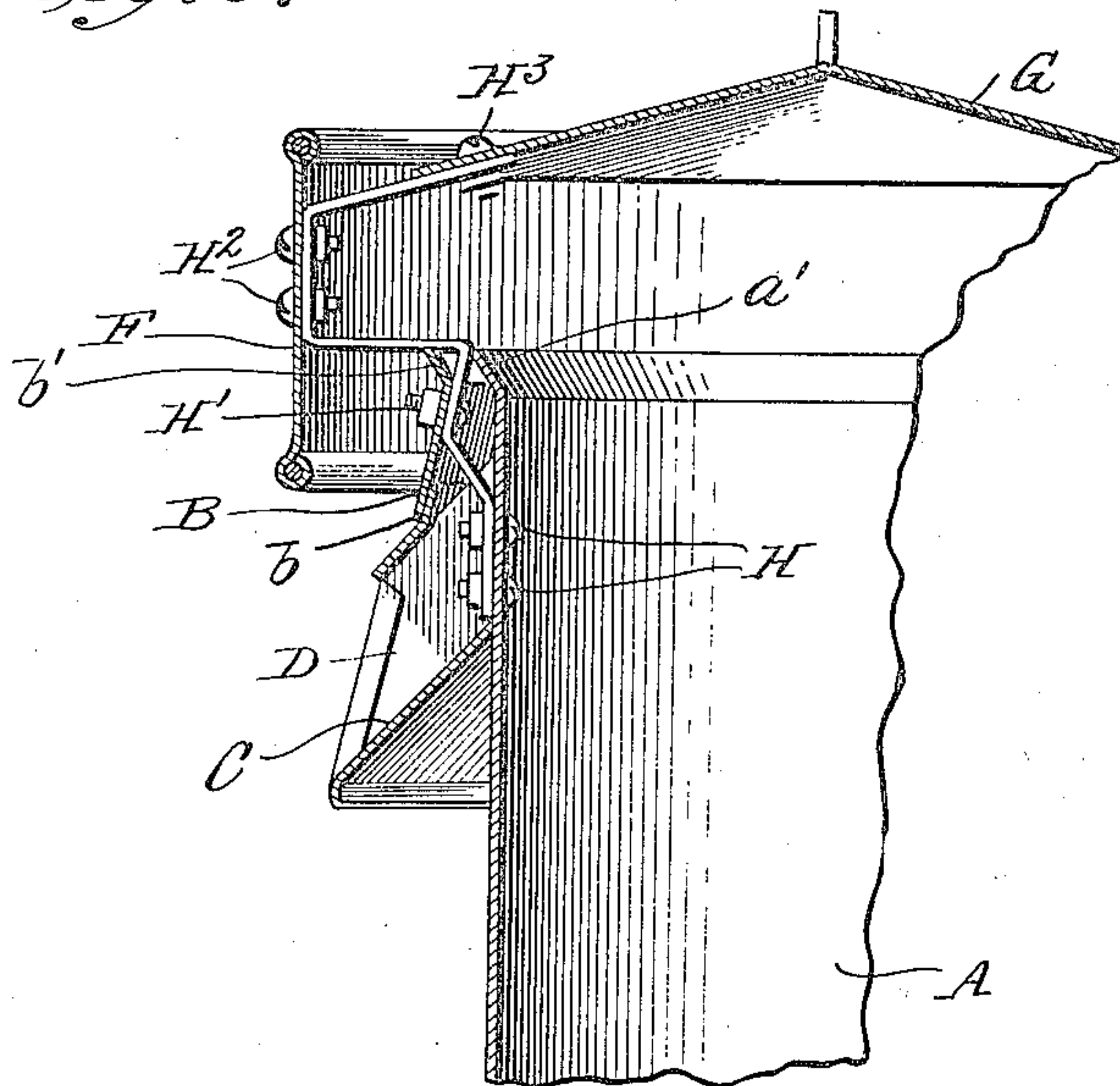
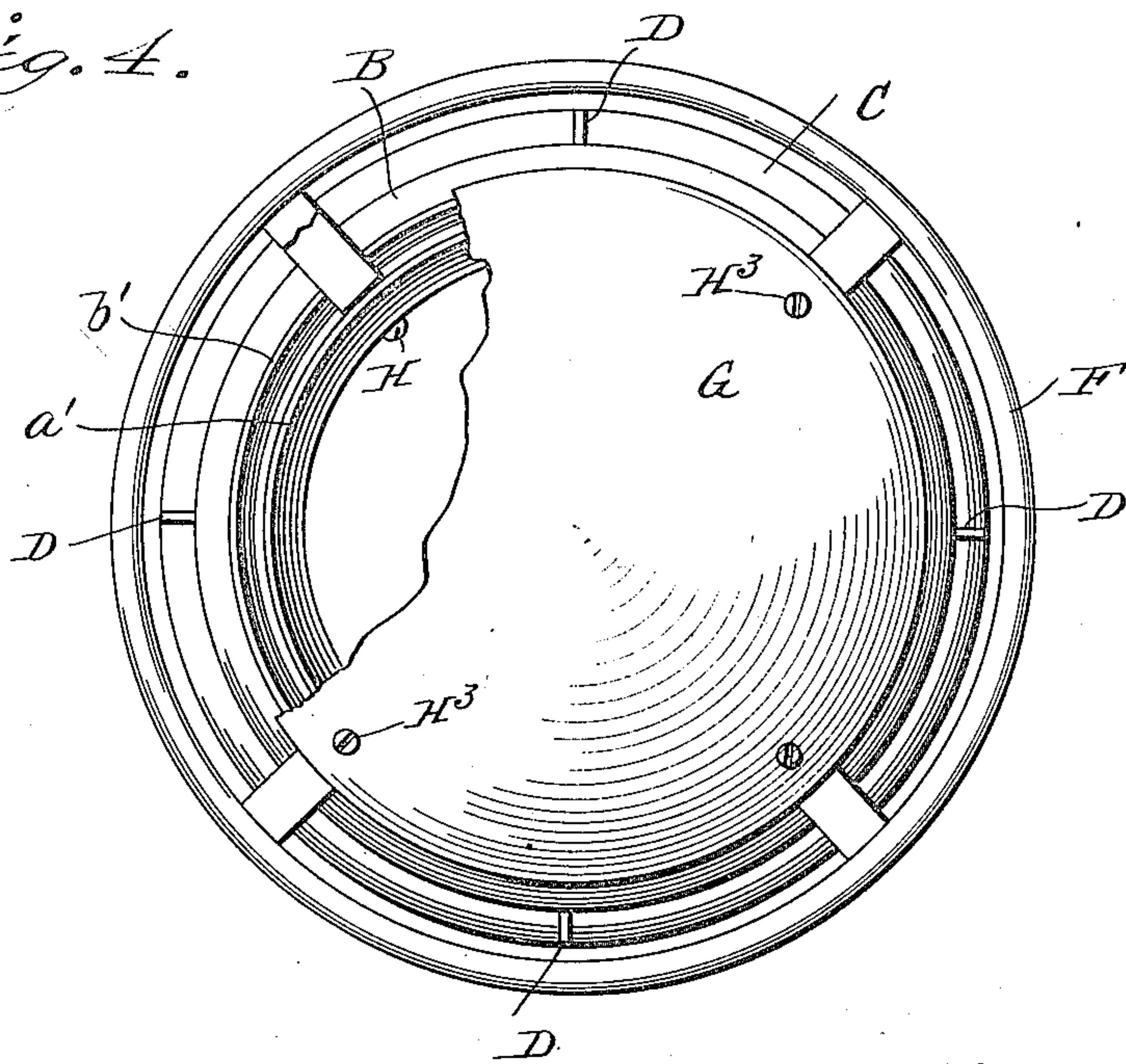


Fig. 4.



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UNITED STATES PATENT OFFICE.

AMOUS J. LEITCH, OF RICHMOND, VIRGINIA, ASSIGNOR TO VIRGINIA BLOWER & MANUFACTURING COMPANY, INCORPORATED, OF RICHMOND, VIRGINIA.

STATIONARY EJECTOR-VENTILATOR.

No. 891,485.

Specification of Letters Patent.

Patented June 23, 1908.

Application filed April 11, 1908. Serial No. 426,570.

To all whom it may concern:

Be it known that I, AMOUS J. LEITCH, of Richmond, in the county of Henrico, State of Virginia, have invented a certain new and useful Improvement in Stationary Ejector-Ventilators; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures and letters of reference marked thereon.

This invention relates to ventilators particularly such as are designed for use on the upper ends of flues or pipes for ventilating apartments or cars or for carrying off smoke and products of combustion, the objects of the invention being to provide a simple, compact and relatively inexpensive structure with which transverse air pressure, due to wind or to the passage of the ventilator through the air when mounted on a car for instance, will create a uniform and powerful suction upwardly through the flue or pipe.

In the accompanying drawings—Figure 1 is an elevation of a ventilator embodying the present invention. Fig. 2 is a vertical section on a central plane. Fig. 3 is a detail section showing one of the connecting and supporting frames in elevation. Fig. 4 is a top plan view with a portion of the cover broken away.

Like letters of reference in the several figures indicate the same parts.

The ventilator is designed to form the terminal or discharge end of a flue or pipe of ordinary construction and its base or neck A is made of appropriate size to fit the upper end of said flue or pipe. In the preferred construction, the base or neck is cylindrical and extends up into and forms the inner wall or body of the ventilator to which all of the other parts are directly or indirectly secured.

Surrounding the upper end of the inner wall is an ejector cone B, the lower portion b of which flares outwardly and downwardly and the upper edge b' of which flares outwardly and upwardly. The portion b' forms the outer edge wall of the annular ejector nozzle and the upper edge a' of the body, which is similarly flared upwardly and outwardly, form the inner edge wall of the said annular ejector nozzle.

Extending below the ejector cone B is a deflector cone C, forming with said ejector cone an upwardly extending converging air

passage terminating in the annular ejector nozzle and adapted to concentrate air entering by transverse movement between the cones and discharge the same upwardly and outwardly in a direction best calculated to create a suction through the flue and to discharge the products in the most advantageous manner, as will presently appear.

To increase the efficiency of the annular ejector nozzle and provide for a distribution of the discharge of air around the whole nozzle under the influence of a transverse movement in any direction, a series of partitions or flanges D are arranged radially on the deflector cone and bridge the space between the cones for a short distance. The partitions or flanges terminate, however, a sufficient distance below the nozzle discharge to form an annular equalizing chamber at the point indicated by the letter E, whereby air entering through any one or more of the converging pockets is free to equalize or distribute itself around the nozzle prior to its discharge.

A ring or band F having a substantially vertical wall surrounds the nozzle at a considerable distance therefrom and extends well above and below the same, the upper edge, however, being so located that the annular ejector nozzle will direct its discharge above the same, whereby a direct and unobstructed discharge of the ejector nozzle is provided for and the creation of eddy currents is avoided. A conical cover G is located immediately over the flue opening and the edge of this cover is brought down within the surrounding ring a sufficient distance to prevent rain driving into the flue opening, but care should be taken to leave a clear annular escape opening in line with the discharge of the annular ejector nozzle.

The parts are connected and the whole structure made rigid by frames secured to the central body or flue wall at H, extending thence up through the annular equalizing chamber, preferably in contact with the ejector cone to which it is attached at H'; thence extending radially outward and attached to the surrounding ring at H² and thence extending radially inward and secured at the ends to the cover or cap at H³. These frames may be conveniently bent up from strips of metal and in those portions passing through the equalizing chamber should be as thin as is consistent with the necessary

strength in order that they may not obstruct the equalization of the air before it discharges through the nozzle.

In some instances it is desirable to provide an upwardly and outwardly extending conical surface for the inner side of the cover as indicated by the dotted lines K in Fig. 2, and it is obvious that the form and dimensions of the cover and external inclosing ring may be changed to accord with well known practice, provided the free and unobstructed annular space through which the annular ejector nozzle discharges is preserved.

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

1. A stationary ejector ventilator embodying a central circular discharge flue having an outwardly flaring upper edge, an ejector cone surrounding said flue and having a similar outwardly flaring upper edge, said edges forming an annular ejector nozzle, a deflector cone located below the ejector cone and forming therewith an upwardly converging air passage and radial flanges on the deflector cone terminating within the ejector cone to provide an annular equalizing chamber between the cones above the partitions.

2. A stationary ejector ventilator embodying an annular ejector nozzle directed upwardly and outwardly, an ejector cone flaring downwardly and outwardly, a deflec-

tor cone extending below and forming with the ejector cone an upwardly converging air channel and radial flanges on the deflector cone terminating in the lower portion of the ejector cone whereby an annular equalizing chamber is formed above the flanges.

3. A stationary ejector ventilator embodying an annular ejector nozzle directed upwardly and outwardly, an ejector cone flaring downwardly and outwardly, a deflector cone extending below and forming with the ejector cone an upwardly converging air channel, radial flanges on the deflector cone and an external inclosing ring having a vertical wall with its upper edge below the line of discharge from the annular ejector nozzle.

4. A stationary ejector ventilator embodying an upwardly and outwardly directed annular discharge and a transversely arranged outwardly flaring entrance, an external inclosing ring having a vertical wall, and a cover having its edge within and below the upper edge of the ring, the annular space between the ring and edge of the cover being in line with and forming an unobstructed discharge opening for the air issuing from the ejector nozzle; substantially as described.

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Witnesses:

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