

P. MUELLER.  
VENTILATING CAP.

APPLICATION FILED DEC. 1, 1908. RENEWED MAR. 29, 1911.

993,705.

Patented May 30, 1911.

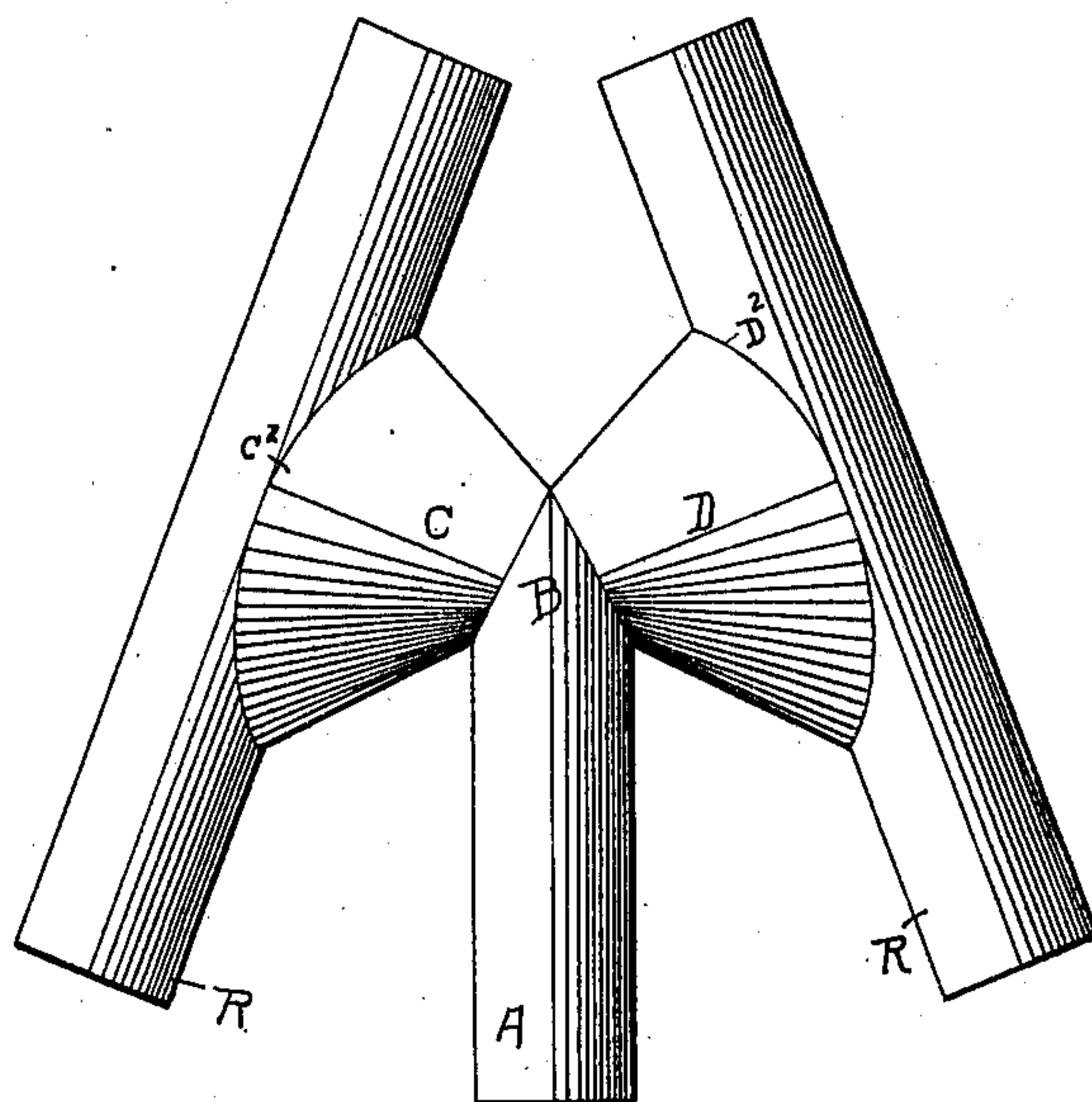


Fig. 1.

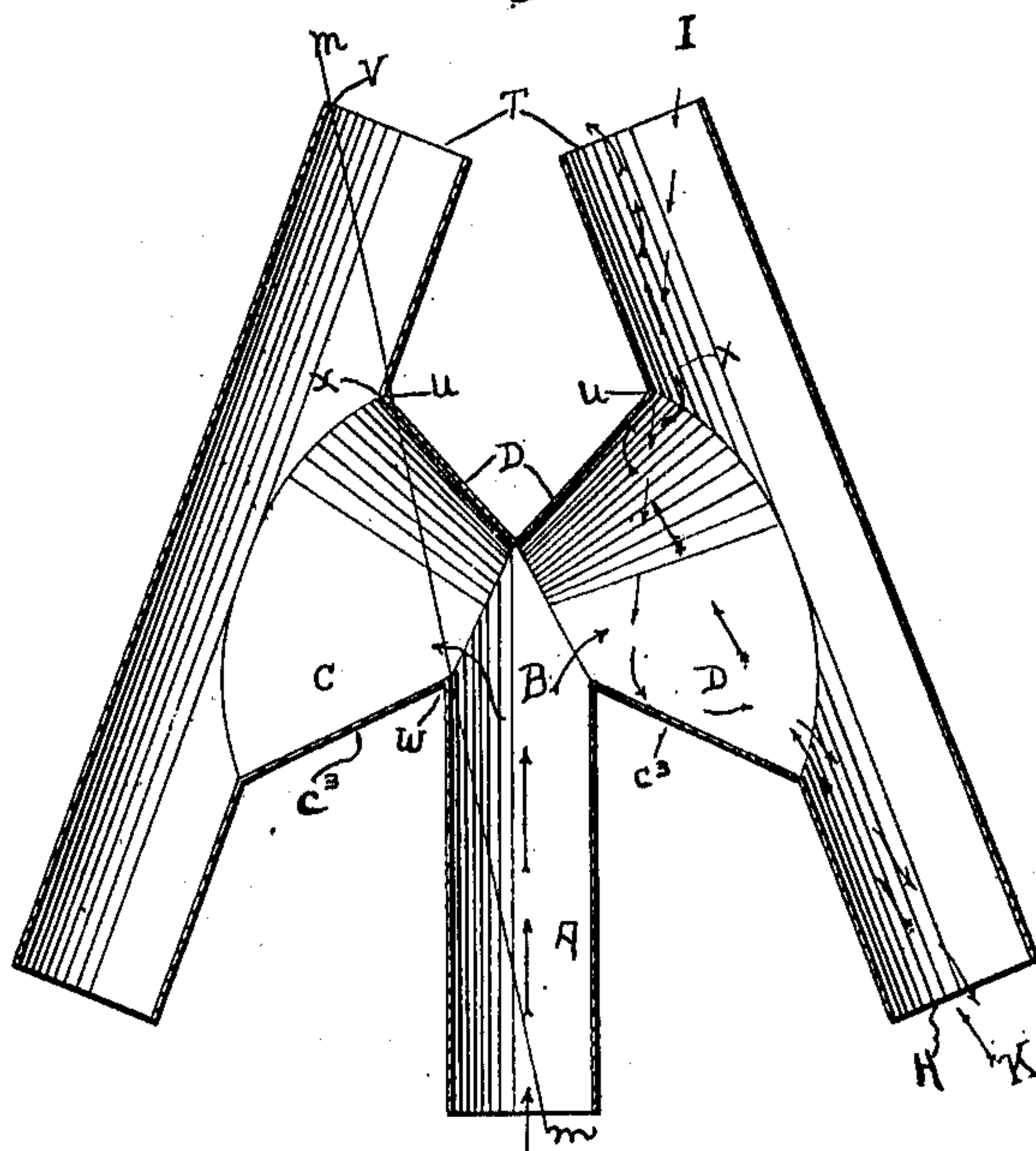


Fig. 2.

Witnesses

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# UNITED STATES PATENT OFFICE.

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## VENTILATING-CAP.

993,705.

Specification of Letters Patent.

Patented May 30, 1911.

Application filed December 1, 1908, Serial No. 465,476. Renewed March 29, 1911. Serial No. 617,739.

*To all whom it may concern:*

Be it known that I, PHILIP MUELLER, a citizen of the United States, and resident of Decatur, Macon county, State of Illinois, have invented certain new and useful Improvements in Ventilating-Caps; and my preferred manner of carrying out the invention is set forth in the following full, clear, and exact description, terminating with claims particularly specifying the novelty.

This invention relates to ventilators, and more especially to vent and air pipes, and the object of the same is to produce an improved form of a positive ventilating cap for manual application to said pipes at the time they are erected or after their erection.

The present invention consists of the detailed arrangement and shape of its connecting portions in order to facilitate the positive outward draft in the pipe to which it is applied, and to maintain a continuous draft therein, and the prevention of any downward draft in said pipes.

It also consists in detail of construction whereby a main flue is provided with branch flues positively fixed in their connection to each other and said main flue, and prevented from disconnection therewith.

The object of the invention is to create within the pipe to which the cap is applied an absolute outward draft from the fixture to which the pipe is connected and to prevent any other draft of air or water from entering the outlet opening of said pipe in a manner to enter said opening at any angle and further to provide deflecting surfaces for all said currents.

The following specification describes the simplest embodiment of these ideas and explains their use to sufficient extent to enable those skilled in the art to understand.

In the accompanying drawings forming a part of this specification, Figure 1 is an exterior view of the ventilating cap embodying my invention; and Fig. 2 is a sectional view therethrough.

This improved ventilating cap is comprised of a vertically disposed main flue A made of any suitable material and provided at one extremity in any desired manner for application to connecting pipes, chimneys or other air or gas outlets which may desire to be made, and its opposite extremity B bears two branch flues C and D which are

funnel shaped and engage the body member A on either side and connect with each other closing the top opening and inclosing the opening B. These branches are generally made separate and attached to the member A by soldering or otherwise, and when so attached extend in opposite directions therefrom, and at the outer or larger extremities D<sup>2</sup> and C<sup>2</sup> they have attached in any suitable manner each a discharge flue R and R<sup>2</sup>; by preference all parts therein are tubular in shape and form, but I do not limit myself to any particular shaped pipe or parts, as it is obvious that any parts through which is formed a channel and which are connected in this manner will perform the functions as set out in this application, regardless of the outer or exterior form thereof.

By preference the parts are constructed and connected in lengths and dimensions as to make the complete article in proportion; however the length of any of the said parts especially that of A and R and R<sup>2</sup> may vary as may suit the desire of the workman without conflicting in any way whatever with the functions of the device.

The flues or pipes R and R<sup>2</sup> are preferably of equal length and are connected to the branch flues C and D at an angle of approximately 70° when taking the free connecting end of A as a base, and approximating the angle in accordance with the inner part or portion of the wall nearest said member A, and in such diagonals, R and R<sup>2</sup> are affixed to the members C and D forming angles with the lower walls thereof at approximately 45° as at S when the inner wall of the members R and R<sup>2</sup> is taken as a base, and these members converging toward each other to an indefinite point so long as they do not interfere with their uppermost openings as T. The angle formed by the connection of the upper wall of the members with R and R<sup>2</sup> as at U when taking the wall of the channel as a base is approximately 96° and in taking the wall of the tubular members R and R<sup>2</sup> is approximately 64°.

The degrees of angles or their approximation may vary to a more or less extent without interfering with the spirit of the invention, but I want to be understood as not confining myself to any one or a number of fixed angles, but one that will perform the functions of the device; however the upper-



most portions of the members R and R<sup>2</sup>, as at the opening T must be of such height as to not permit a direct entrance of a current of air or water to pass into the member at that point, and following a straight course enter into the opening B of the flue A, in which instance it would cause a downward draft and defeat the object of the invention; but in construction the tubular members R and R<sup>2</sup> must be connected at such angles with the branch flues C and D so that the connection as formed at U extends into the channels formed therein and beyond a line *m—m* down from the point V to the angle shown at X; the angles formed in the connection of these members have been shown by experiment to be effective in the breaking of any direct currents which would otherwise pass within the space B, and by providing the deflecting walls within the branch flues C and D, all currents passing inward through the opening T as shown by line of arrows I passing downward are deflected by the wall C<sup>3</sup> and by the force of other currents K drawn out through the opening H, and likewise any currents passing upward through either of the members R and R<sup>2</sup> are deflected by the walls D<sup>4</sup> and pass again into the open channel which carry at all times direct current through them and thus compel the upward current to pass out at the openings T.

It is to be remembered that corresponding parts throughout the device are preferably proportional and equal, but in order to make the specification clear I have applied my description to only portions of the device and where in general the parts are in pairs it will be understood that like functions or actions or parts of construction are the same; the angles as U which perform one of the important functions of the device have not been exaggerated nor have I chosen to show modifications; however the inward extension of the point X at the joint U must be such as to prevent the currents of air from entering the opening B by being deflected on the walls C<sup>3</sup>.

I am fully aware that there have been many efforts made to procure effective ventilators, with the result that at present there are many complicated devices on the market but after many experiments under varying conditions with this device the placement of

the channels in relation to each other so as to have their joining walls intervening between their openings and the direct opening of the pipe to which it is attached and the provision for deflecting walls has proven effective and makes the cap a positive ventilator and an absolute protection against down draft in the ventilating pipe. Having inclosed a cap in a manner to prevent down draft the deflecting inside walls of the channels and the currents in them and the diverging members create a suction and make the upward draft in the main pipe additionally strong.

Having thus described my invention, what I claim as new is:

1. A ventilator cap comprising a main flue, funnel shaped branch flues connected at their smaller ends to the top of the main flue, the axes of said branch flues forming obtuse angles with the axis of the main flue, and outlet flues open at both ends connected intermediate their ends to the larger ends of said branch flue said outlet flues being inclined toward the extended axis of the main flue at their upper ends at such an angle that cross currents entering either end of said outlet flues are deflected by the walls of the branch flues away from the main flue.

2. A ventilator cap comprising a main flue having its upper end inclined at opposite sides toward its axis, a funnel shaped branch flue connected at its smaller end to each inclined side of the main flue with their axes directed upwardly forming obtuse angles with the axis of the main flue, and a cylindrical outlet flue open at each end and connected at an intermediate point with the larger end of each funnel shaped branch flue, said outlet flues inclining toward each other at their upper ends, the shape of said funnel branch flues and the angular disposition of the outer flues being such as to deflect cross currents of air entering said outlet flues from either end away from the inlet flue.

In testimony whereof, I have hereunto subscribed my signature, this 28th day of November A. D. 1908.

PHILIP MUELLER.

Witnesses:

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