R. T. MERRILL.

CHIMNEY CAP AND VENTILATOR.

APPLICATION FILED AUG. 24, 1908.

915,871.

Patented Mar. 23, 1909.

Fig. 1.

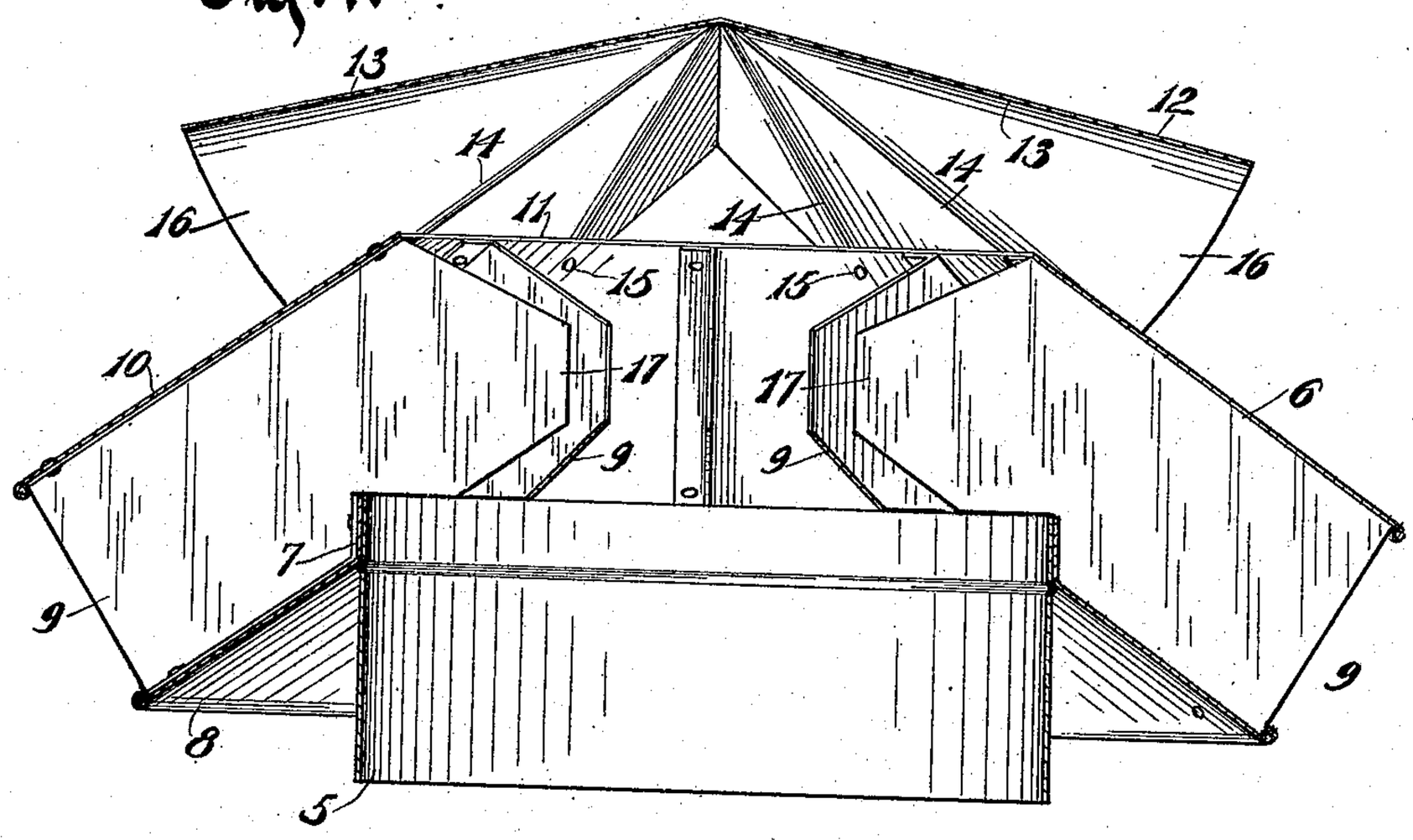
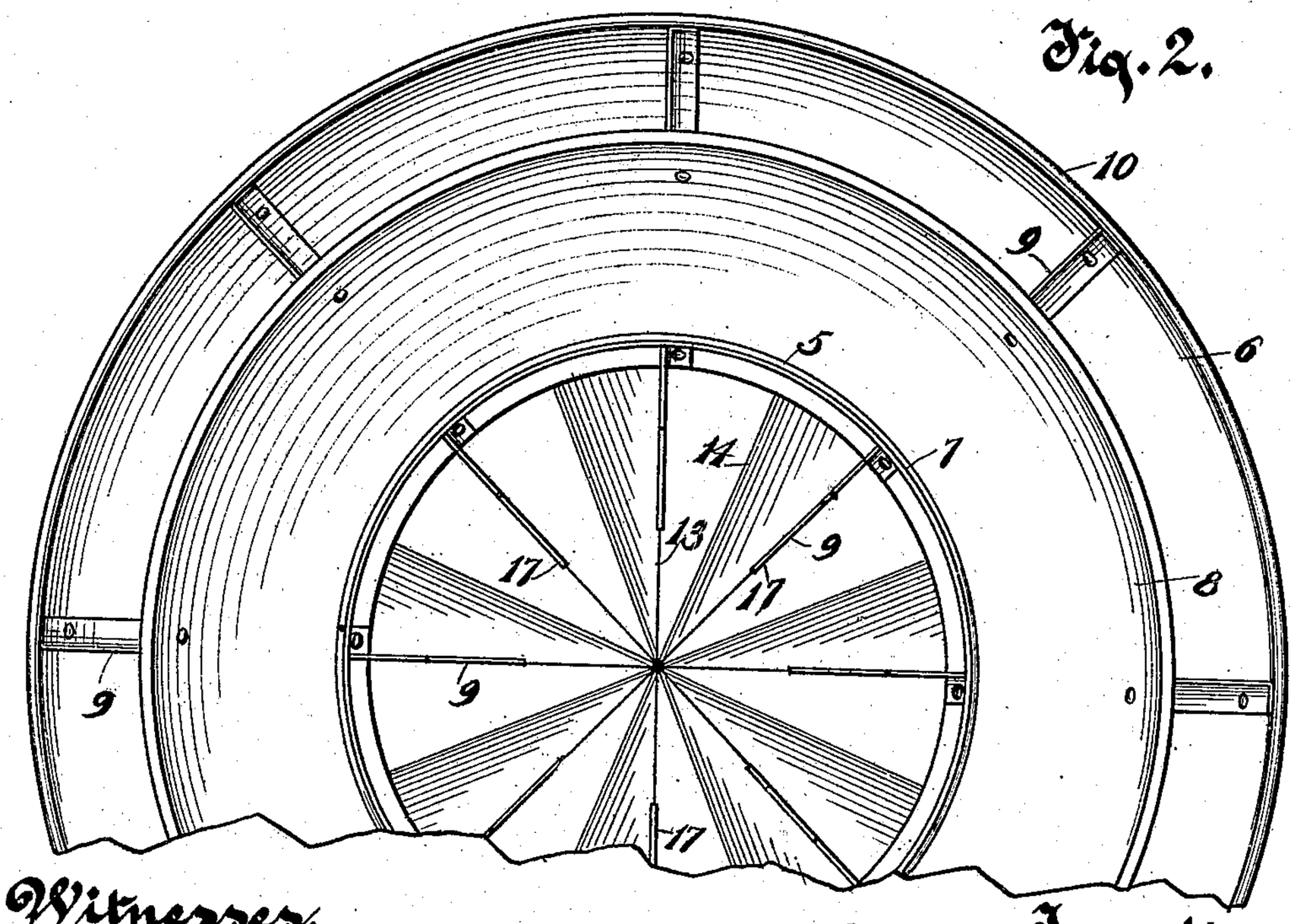


Fig. 2.



Witnesses.

C. H. Keeney.

Alma A. Klug.

Inventor.

Robert T. Merrill.

By Benedict, Morsell & Caldwell.

Attorneys.

UNITED STATES PATENT OFFICE.

ROBERT T. MERRILL, OF MILWAUKEE, WISCONSIN.

CHIMNEY-CAP AND VENTILATOR.

No. 915,871. Specification of Letters Patent. Patented March 23, 1909.

Application filed August 24, 1908. Serial No. 449,918.

To all whom it may concern:

Be it known that I, ROBERT T. MERRILL, residing in Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Chimney-Caps and Ventilators, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

This invention has relation to improvements in chimney caps and ventilators.

One of the objects of this invention is to provide an improved construction adapted to improve and maintain the draft in the chimney and prevent down drafts under varying atmospheric conditions.

A further object of this invention is to provide a device which is simple in construction and inexpensive to manufacture and is effectual in use.

With the above, and other objects in view, the device consists of the cap and its parts, or their equivalents, as hereinafter set forth.

In the accompanying drawing in which the same reference characters denote the same parts in all of the views: Figure 1 is a central vertical section of the improved ventilator cap; and Fig. 2 is an inverted plan view of Fig. 1.

Referring to the accompanying drawing, the numeral 5 indicates a draft tube or pipe which may be connected to a chimney top or ventilator tube in the ordinary way. The cap 6 is connected to the draft tube by a collar 7 provided with a conical portion or deflector 8. Supported upon and riveted to the upper surface of this deflector are a number of radial ribs or partitions 9 which are riveted to and support another conical deflector 10 of larger diameter than the deflector 8. This deflector 10 is provided with a central opening 11 slightly less in diameter than the opening in the draft tube 5. A cap 12 bent and formed with alternate radial ridges 13 and valleys 14 is positioned above and supported on the deflector 10 and connected thereto by rivets 15 passing through the deflector 10 and portions of the cap forming the valleys thus forming a series of upwardly leading radial air passages 16 above the deflector 10. The inner free portions 17 of the radial ribs or partitions 9 extend inwardly to a point near the vertical center of the cap so as to converge and guide the air currents a sufficient distance across the opening in the draft tube to improve the draft of said tube and prevent air eddies forming above the draft tubes which would retard the draft in said tube.

From an examination of the drawings it will be seen that the effect of the inclined bottom walls to the intake passageways between the converging ribs or partitions 9 and the effect of the portion of the draft tube 5 which projects into said intake passages is to deflect a current of air from a horizontal direction to an inclined direction so as to be directed toward the cap 12, the object being to cause the air draft to ascend in crossing the draft tube so as to create a suction in the draft tube by induction. With a somewhat similar construction of chimney caps and ventilators as patented to Charles Franz and myself by Letters Patent No. 530,036 dated November 27, 1894, the inclination of the bottom wall of these intake passages alone was relied upon to produce the upward deflection of the air and the present invention is designed as an improvement thereon to overcome certain defects which exist in the operation thereof during high winds. At such times it has been found that the area of the opening for the intake passages is such as to introduce more air than can be accommodated by the central opening in the upper deflecting cone and consequently instead of the air mainly passing out through said opening and the passages of the cap piece D the greater portion will be caught by the under surface of the deflecting cone C and deflected downwardly so that a considerable portion passes inside of the inner edge of the lower deflecting cone B and down into the draft tube A to cause a down draft therein. The present invention overcomes this detrimental downward deflection of the air by interposing baffle plates in the course of the air by the inwardly projecting ends 17 of the partitions 9 which extend within the space beneath the opening 11 of the upper conical deflector 10 as clearly shown in Fig. 2. There are a sufficient number of these baffle plates arranged radially to present two of them at approximately right angles to the direction of the wind whatever the direction of the wind may be and these two baffle plates though being vertical stand in the path of the ascending current of air on its way to the opening 11 and further deflect it upwardly into the cap 12. This action is most apparent upon considering the direction of the air to be upwardly toward the

center of the opening 11 in Fig. 1 and from the front, when it will be apparent that the lower part of the current which might strike the under side of the conical deflector 10 on the distant edge of the opening 11 will by striking the inwardly projecting ends of the nearest partitions 9 in this view be deflected upwardly so as to pass through the opening 11 and avoid the downward deflection of the air by the under side of the conical deflector 10 and into the draft tube 5. The portion of the deflector plates 9 which effects the upward deflection of the air through the opening 11 is so much thereof as lies within the space beneath the opening 11, for which there is no corresponding part in the former construction referred to.

What I claim as my invention is:

A chimney cap and ventilator, comprising a draft tube, a conical deflector provided with a central opening and connected to said tube, a second conical deflector provided with a central opening located above and spaced from the first mentioned conical deflector, radial ribs connecting the two deflectors and extending toward and terminating near the vertical center of the draft tube and within the space beneath the opening in the upper deflector to constitute baffle plates to deflect upwardly the air which enters between it and other ribs and direct it through the opening of the upper deflector, and a cap portion connected to the upper deflector.

In testimony whereof, I affix my signature, in presence of two witnesses.

ROBERT T. MERRILL.

Witnesses:

A. L. MORSELL,

ALMA A. KLUG.