

C. McVEETY.

VENTILATOR.

APPLICATION FILED MAR. 4, 1910,

969,554.

Patented Sept. 6, 1910.

FIG. 1.

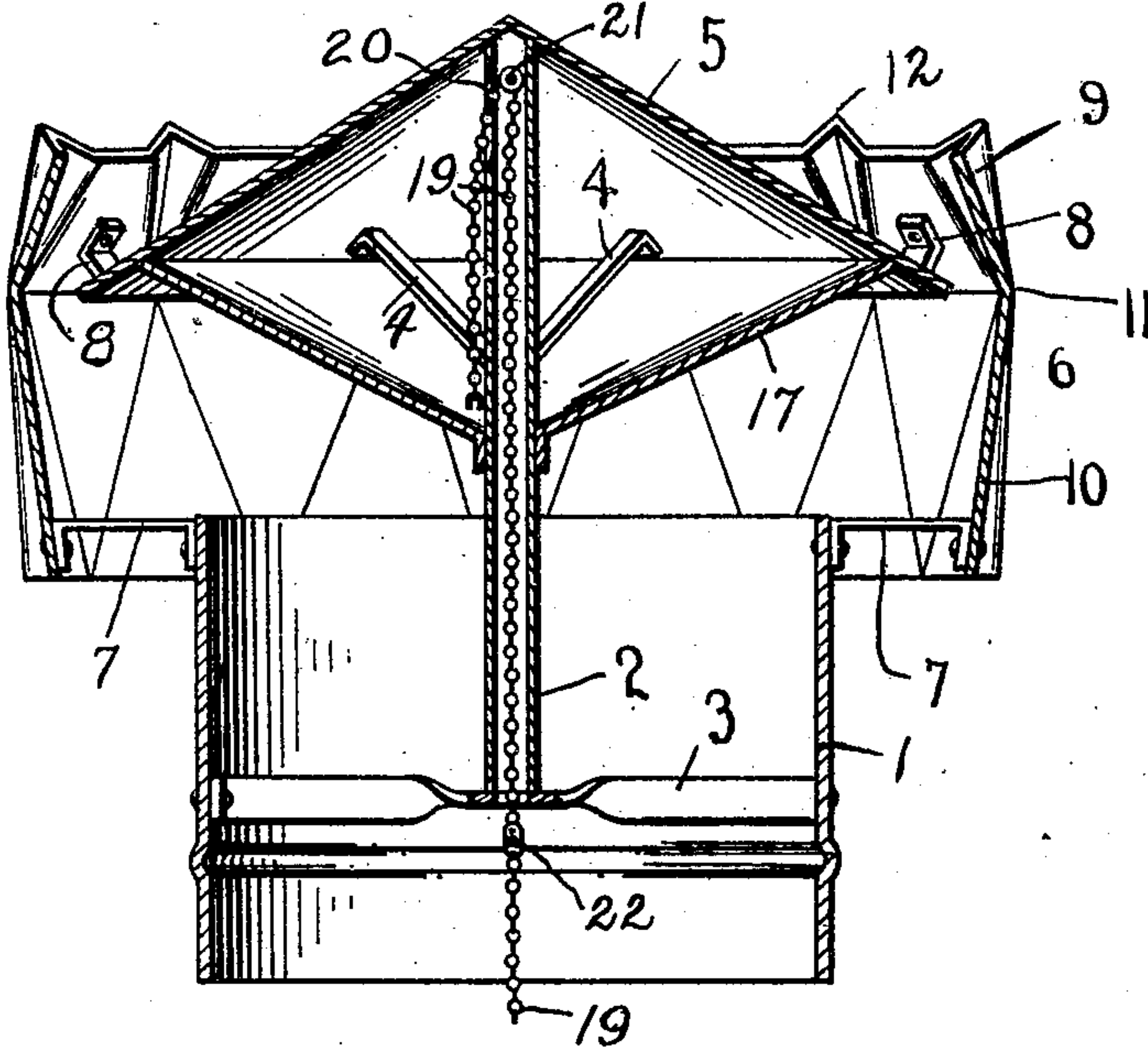
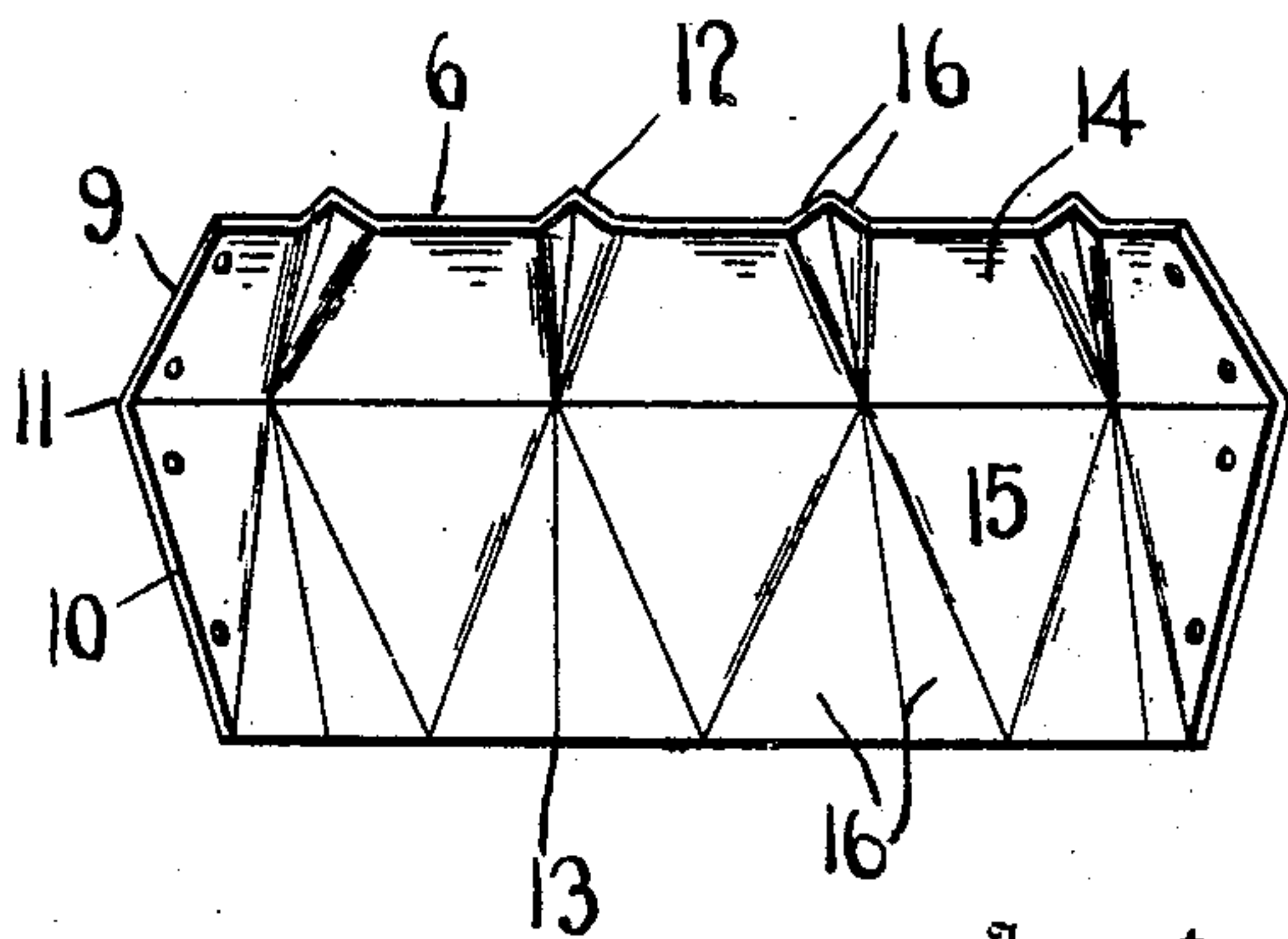
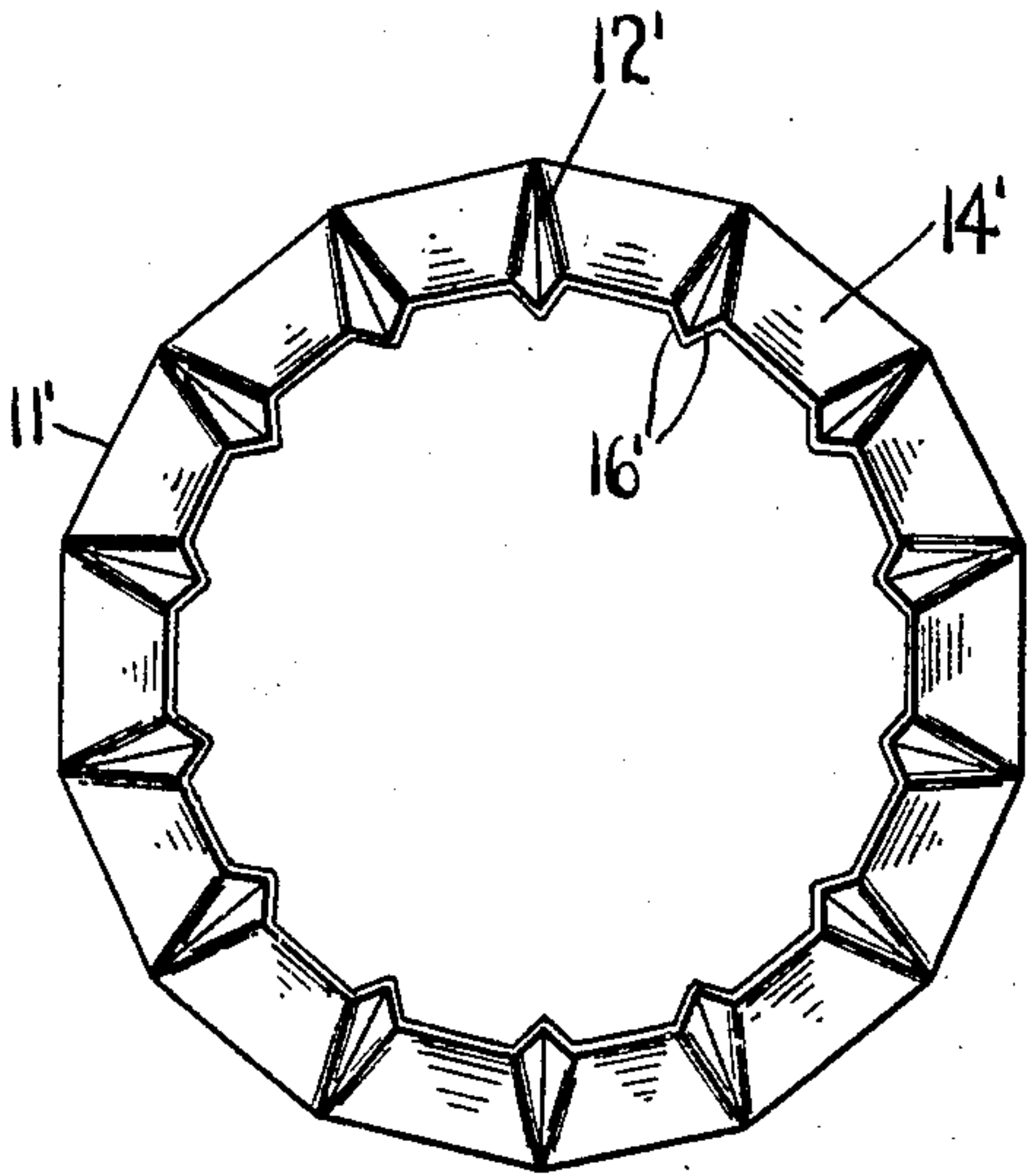


FIG. 2.



Witnesses

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FIG. 3.

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UNITED STATES PATENT OFFICE.

CHARLES McVEETY, OF PLAINFIELD, NEW JERSEY.

VENTILATOR.

969,554.

Specification of Letters Patent.

Patented Sept. 6, 1910.

Application filed March 4, 1910. Serial No. 547,197.

To all whom it may concern:

Be it known that I, CHARLES McVEETY, a citizen of the United States, residing at Plainfield, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Ventilators, of which the following is a specification.

This invention relates to certain new and useful improvements in ventilators for use on school houses, churches, factories and other buildings.

The object of the invention is to provide ventilators, particularly those of the short collar type, with dampers, means being provided whereby the dampers may be cut into and out of action either manually or, in case of fire, automatically by means of a fusible link or plug.

Reference will be had to the accompanying drawing forming part of this specification and wherein like numerals of reference designate corresponding parts throughout the several views, in which:

Figure 1 is a vertical sectional view, Fig. 2 an elevation of a section of the deflecting hood, and Fig. 3 a top plan view of a modified form of deflecting hood.

Reference numeral 1 designates a short collar or pipe section which is adapted to be secured in any suitable and well known manner to the vent pipe of a building. Arranged centrally within said collar or pipe section is a tubular member 2, the same being held in proper position by means of spider or radial arms 3. The central tubular member 2 extends somewhat beyond the upper end of the collar or pipe section 1 and from its upper end radiate upwardly and outwardly arms 4, three in number, and upon the upper ends of these arms is mounted a conical top 5, a space being provided between the latter and the upper edge of the collar or pipe section 1 for the passage of air currents. The said conical top is also mounted at its apex upon the upper end of the said central tubular member 2 and completely closes the extreme upper end thereof. Of course it will be understood that the said arms 4 are not absolutely essential and may be omitted if desired.

Encircling said collar or pipe section 1 and top 5 is an annular deflecting hood 6 supported by and spaced from the said collar and top by radial arms 7 and 8 respectively. This deflecting hood comprises upper and lower portions 9 and 10, the former

being inclined inwardly and upwardly substantially parallel with the top 5 and the top thereof being open; and the latter being slightly inclined downwardly and inwardly and the bottom thereof being open. This hood 6 may be formed of a single piece of sheet metal or may embrace a plurality of joined sections, one of which is seen in Fig. 2. Each section of the hood 6 is formed with a longitudinal bend 11 and the portions above and below which comprise the afore-mentioned portions 9 and 10 respectively. These upper and lower inclined portions 9 and 10 are corrugated to deflect the wind and to cause upward draft when in position. At regular intervals, the portions 9 and 10 are crimped to form angular corrugations or ribs which project outwardly, these ribs or corrugations being designated by numerals 12 and 13 respectively, and it will be noted that the ridges of the ribs or corrugations of the upper and lower portions 9 and 10 aline. The corrugations or ribs, it will be noted, taper toward the point of bend 11, thereby producing the contracted portions 9 and 10. Between the ribs or corrugations 12 and 13, the upper and lower portions 9 and 10 present flat depressed faces 14 and 15 respectively, each face of the upper series 14 being angularly related to its neighbor, as is also the case with the faces 15 of the lower series. The flat sides 16 of the ribs or corrugations 12 and 13 are inclined and gradually taper toward the bend 11, and where the sides join the flat faces 16, a decided angle is produced. Thus it will be seen that the entire deflecting hood is polygonal in shape, the annular shape being imparted thereto by the angular crimping and there not being a single curved face or edge thereto.

The modified form shown in Fig. 3, differs from the preferred form, in that the ribs or corrugations are disposed inwardly; and these are designated by numeral 12', the flat sides thereof by numeral 16', the flat depressions between the ribs by numeral 14', and the point of bend by numeral 11'. In both forms, the degree of taper of the upper and lower portions 9 and 10 depends upon the degree of association of the flat sides of the ribs or corrugations, and it will be noted that no matter how closely they are associated, the intermediate flat faces or depressions are not affected in area.

Concentrically with and between the up-

per edge of collar or pipe section 1 and the conical top 5, and of slightly greater diameter than the former, is an inverted conical damper 17, the apex of which is truncated to form opening 18 for the reception of the vertical tubular member 2 upon which the damper 17 slides vertically to open and close the upper end of the collar or pipe section 1 thereby establishing or cutting off the circulation of air. Secured to the upper face of the damper 17 near its apex is a flexible cord or chain 19 which passes through an opening 20 in the vertical tubular member 2 near its top. The cord or chain then passes over a pulley 21 journaled within the said tubular member 2 adjacent the opening therein, and thence passes downwardly through the tubular member 2 to a suitable point within the building where the cord or chain may be operated by hand to completely or partially raise or lower the damper. Within the length of the cord or chain is placed a fusible link or plug 22 which will part in case of fire or intense heat should the ventilator or rather damper be in open position, thereby permitting the damper to fall to close the upper end of the collar or pipe section 2 to cut off circulation. When the damper is completely raised, the fusible link will be adjacent the lower end of the tubular member 2, but when the damper is at any other point beneath its full open position, the fusible link will be drawn within the tubular member 2, however, the opening 20 in said tubular member 2 will be of sufficient size to permit enough overheated air to pass up through the tubular member to melt the fusible link or plug and cause the damper to close in case of fire. On the other hand, the opening 20 would not permit enough draft to materially affect the temperature of the room.

From the foregoing it will be seen that the ribs or corrugations form small flue like minor deflectors, that is the currents of air are broken up by the splitting action of the sharp angles of the ribs or corrugations and such currents are concentrated into pencil like blasts before they pass over the upper and lower edge portions 9 and 10 respectively, thus producing a partial vacuum on the windward side of deflector which allows the air in the collar 1 to move up to occupy this space of emptiness and is then carried away by the direct wind currents across the top of the ventilator when the winds are in a horizontal direction. It will also be seen that when the wind is blowing in a

downward direction it is deflected by the cone 5 to the bend 11 in a thin sheet like blast and is then deflected advantageously to accelerate the flow of escaping gases from the ventilator. The corrugation 10 being an area of low pressure makes back drafts within the collar 1 impossible.

Having fully described the invention, what is claimed as new and useful and desired to be secured by Letters Patent, is:

1. In a ventilator, in combination, a collar and a deflector hood concentrically associated with the upper end of the collar and having a polygonal peripheral bend and upper and lower portions tapering upwardly and downwardly respectively from the bend, the said upper and lower portions being characterized by flat faced correspondingly arranged corrugations stamped thereinto and tapering to the bend, and by quadrilateral flat faced portions intervening between the corrugations, the apices of adjoining corrugations being coincident with one another and with the bend.

2. In a ventilator, a collar, a tubular member concentrically arranged therein, a damper slidable on the said tubular member and adapted to close the upper end of the collar, means for operating the damper arranged within the tubular member, a fusible element for said means, said element being adapted at times to be drawn into the tubular member, said tubular member being provided with an opening near its upper end to permit a slight draft through the central member.

3. In a ventilator, a pipe section or collar, means for closing the upper end thereof, a central tubular member arranged within the pipe section and upon which the said means is slidable, an opening in the tubular member near its upper end, a flexible cord having connection with the said means and passing through said opening and down through the tubular member for operating said means, and a fusible element for said cord adapted to be drawn into said tubular member at times, said opening in the tubular member being sufficient to permit sufficient circulation of overheated air through the tubular member to melt the fusible element when the latter is drawn therein.

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

CHARLES McVEETY.

Witnesses:

GEORGE BALL,
JOS. R. NEWMAN.