

C. C. KNAUSS.
VENTILATOR.

APPLICATION FILED APR. 14, 1908.

911,541.

Patented Feb. 2, 1909.

2 SHEETS—SHEET 1.

FIG. I.

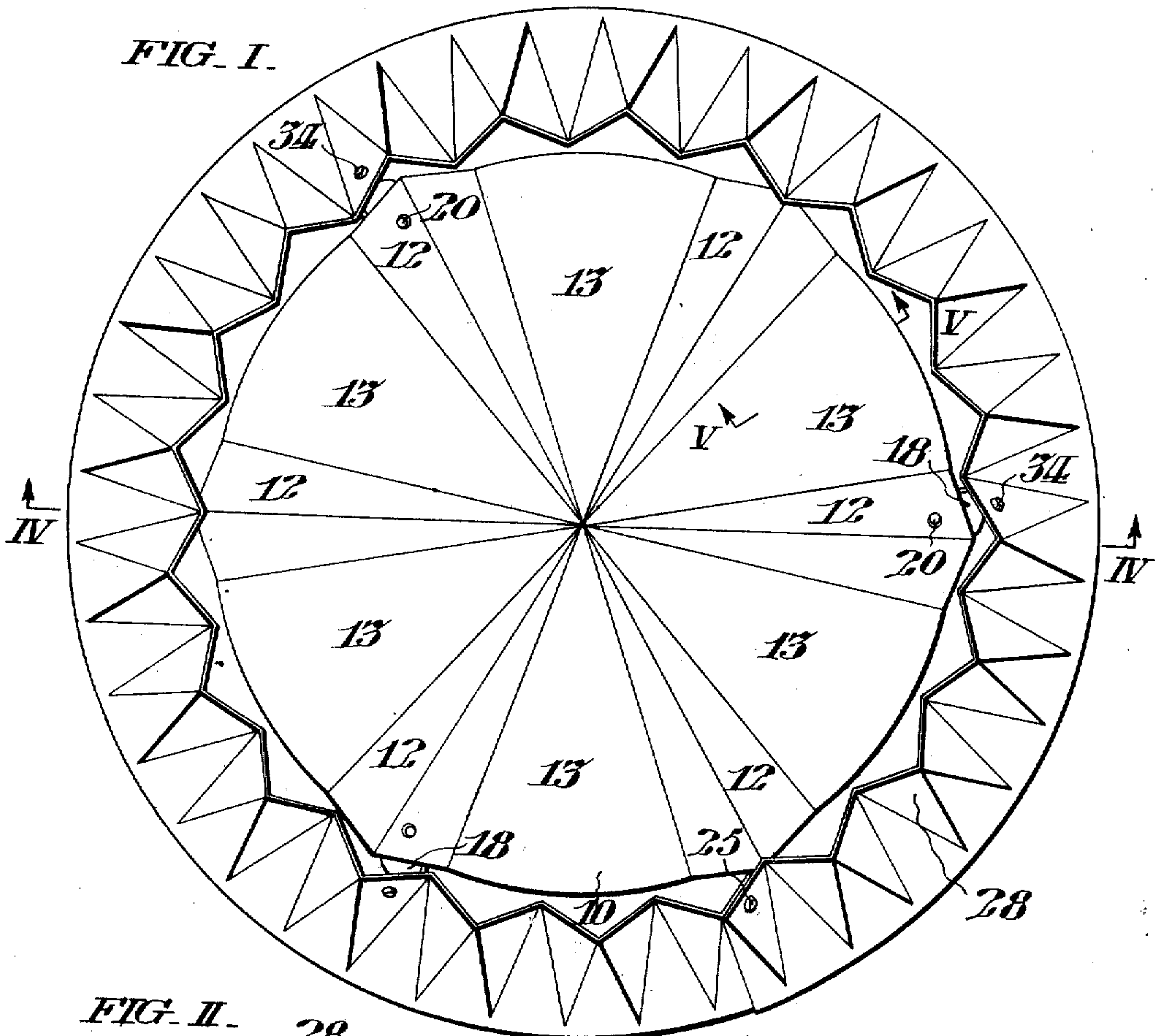
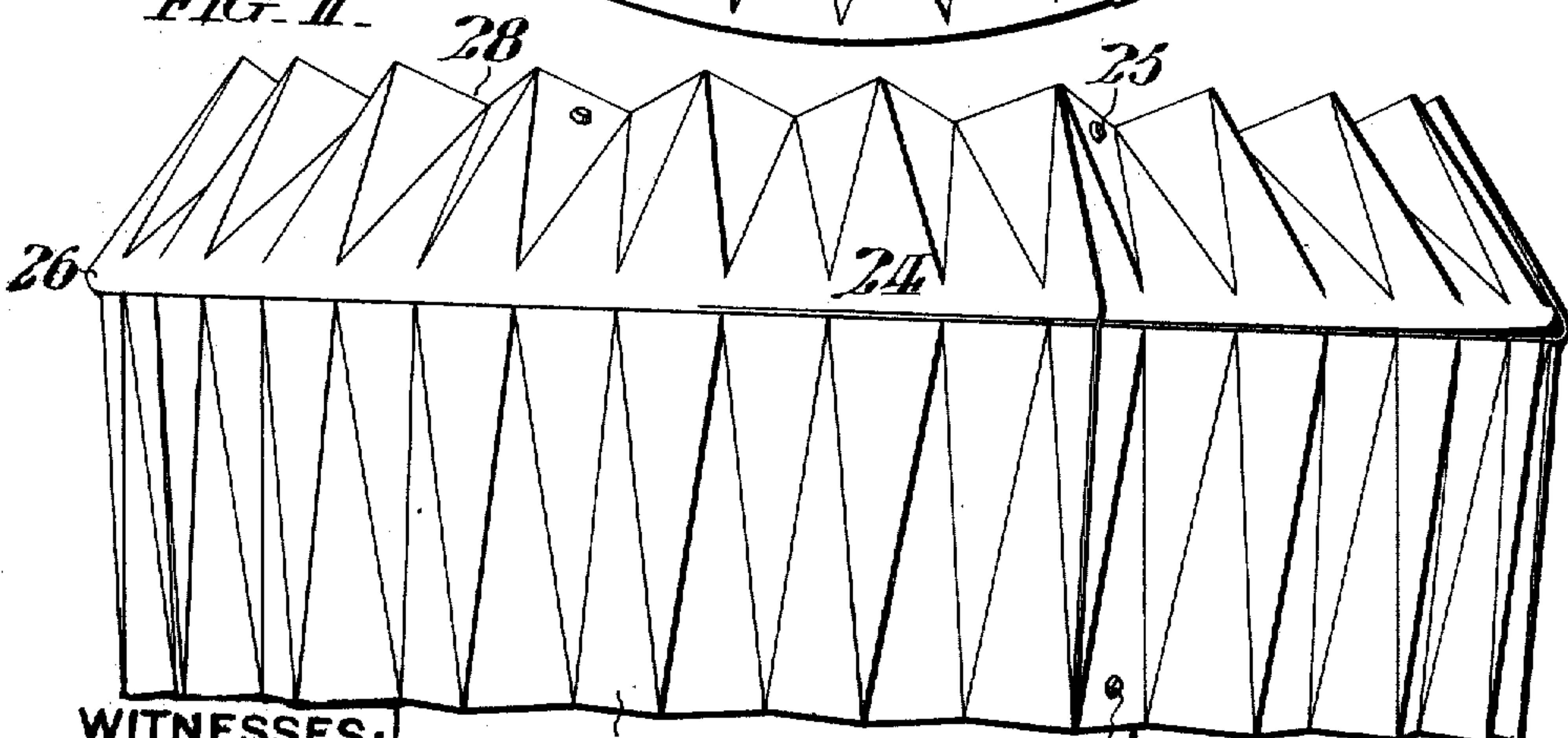


FIG. II.



WITNESSES:

Clifton C. Hallowell
Thomas D. Kerr

INVENTOR:

CHARLES C. KNAUSS,

By William E. Baig
Att'y.

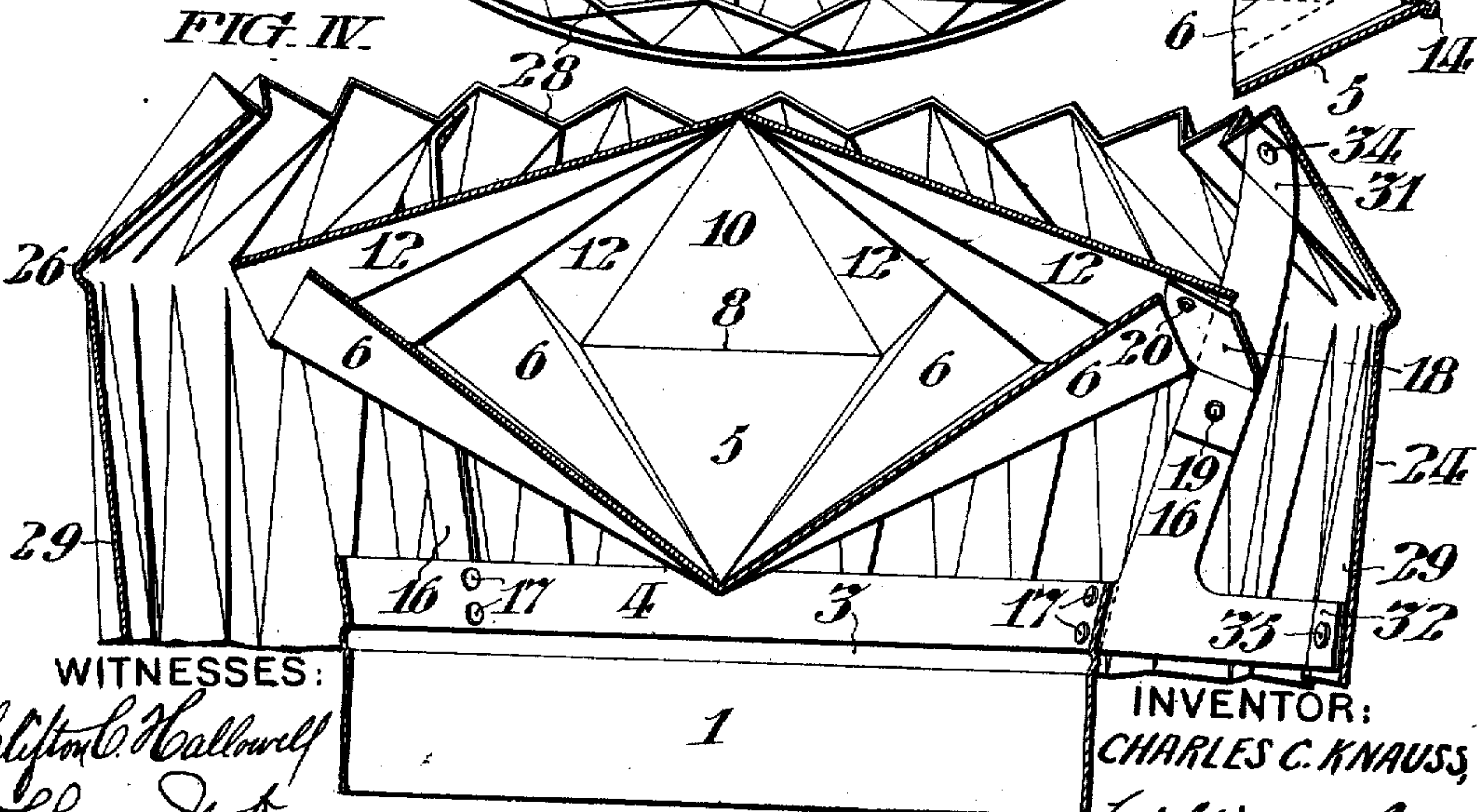
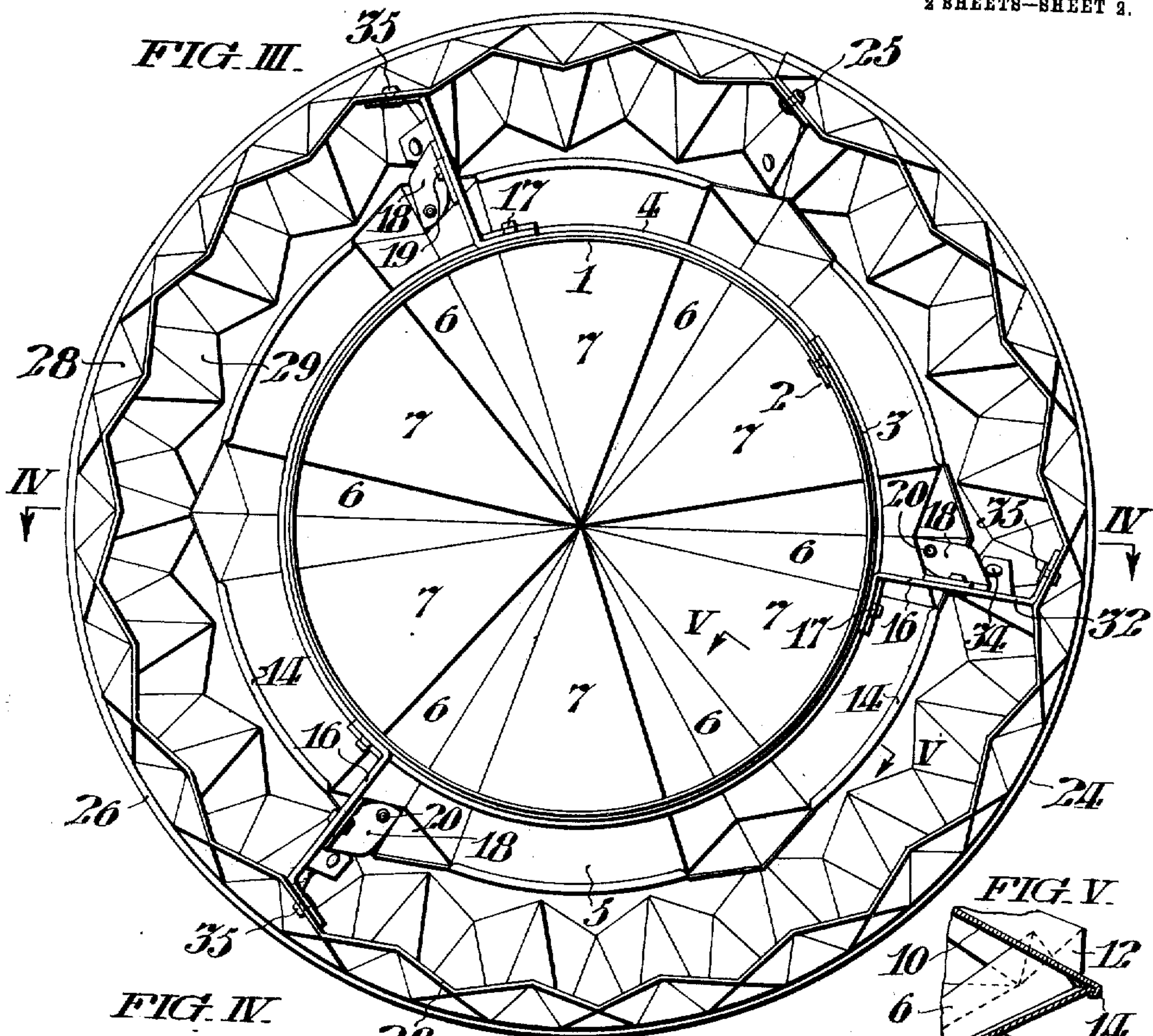
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2 SHEETS—SHEET 2.



WITNESSES:

Clifton C. Hallaway
Thomas H. Hare

INVENTOR:

CHARLES C. KNAUSS,

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UNITED STATES PATENT OFFICE.

CHARLES C. KNAUSS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO TUBULAR HEATING & VENTILATING COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

VENTILATOR.

No. 911,541.

Specification of Letters Patent.

Patented Feb. 2, 1909.

Application filed April 14, 1908. Serial No. 427,003.

To all whom it may concern:

Be it known that I, CHARLES C. KNAUSS, of Philadelphia, in the State of Pennsylvania, have invented a certain new and useful Improvement in Ventilators, whereof the following is a specification, reference being had to the accompanying drawings.

My improvement relates to cowls for ventilating shafts, chimneys, etc., of the class comprising a tubular base surmounted by an inverted conical deflector having a conical hood, and inclosed by a double truncated conical tubular deflector. It is usual to form the annular members of such ventilators by spinning or drawing die pressing operations, which necessarily make the metal thinner in some regions and thicker in others in accordance with the extent and nature of the distortions to which the primarily flat metal is subjected. With such construction the several annular members of the ventilator must be made of comparatively thick metal to withstand the strains to which they are subjected. Therefore, my invention is advantageous in that it provides a construction in which the annular and conical members heretofore formed of primarily annular plates are formed of primarily rectangular plates; the spinning and drawing operations characteristic of the prior devices being dispensed with, and the conical configuration attained without straining or distorting the metal, by simply folding it in corrugations; with the result that with a given thickness of metal, a much more rigid construction can be made at less cost, both for material and manufacture, than hitherto.

My invention comprises the various novel features of construction and arrangement hereinafter more definitely specified.

In the drawings; Figure I, is a plan view of a ventilator embodying my improvement. Fig. II, is a side elevation of said ventilator. Fig. III, is an inverted plan view of said ventilator. Fig. IV, is a vertical sectional view, taken on the line IV, IV, in Figs. I and III. Fig. V, is a fragmentary vertical sectional view taken on the line V, V, in Figs. I and III.

In said figures; the cylindrical tubular base 1, which is formed of a primarily rectangular sheet having its ends overlapped and riveted as shown at 2, is reinforced by the outwardly projecting rib 3, and outwardly flared flange 4. Said base 1, sup-

ports in concentric relation therewith, the deflector plate 5, formed of a primarily flat circular sheet of metal fashioned into inverted conical form by forming therein a circular series of triangular corrugations 6, which, as shown in Fig. IV, extend upwardly and inwardly from the conical surfaces 7, and form a series of serrations extending above the upper plane 8, of said plate. Said deflector plate 5, is covered by the hood plate 10, formed of a primarily flat sheet metal plate fashioned into the conical form indicated in Fig. IV, by forming therein a circular series of triangular corrugations 12, which extend upwardly and outwardly from the conical faces 13, forming recesses within which the outer ends of the corrugations 6, are fitted. Said two conical plates 5 and 10, are interlocked in rigid relation by the inwardly turned sectoral flanges 14, which as shown in Fig. V, are in unitary relation with the hood 10, and overlap the edges of the deflector 5. Said interlocked deflector 5 and hood 10, are supported in concentric relation with the base ring 1, above the latter, by the metal braces 16, which are riveted to said base 1, as indicated at 17, and provided with brackets 18, secured thereon by the rivets 19, and, extending within the corrugations 12, of the hood 10, and rigidly connected to the latter by the rivets 20. Said deflector 5 and hood 10, are inclosed by the annular tubular deflector 24, which is formed of a single primarily flat rectangular strip of sheet metal, having its ends overlapped and connected by the rivets 25, as shown. Said deflector 24, has the outwardly projecting circumferential rib 26, and is fashioned as a double truncated cone by providing it above said rib 26, with a circular series of converging triangular corrugations 28, and, providing it below said rib 26, with a circular series of oppositely converging triangular corrugations 29. Said deflector 24, is supported in concentric relation with the base plate 1, by the braces 16, which have flanges 31 and 32, respectively fitted in the upper corrugations 28, and lower corrugations 29, and rigidly connected therewith by the rivets 34 and 35.

I do not desire to limit myself to the specific details of construction and arrangement above described, as it is obvious that various modifications may be made therein

without departing from the essential features of my invention as defined in the appended claims.

I claim:—

5 1. In a ventilator, the combination with a circular tubular base formed of a strip of sheet metal having its ends joined; of an inverted conical deflector plate supported above said base in concentric relation there-
10 with, comprising a circular series of radial corrugations extending upwardly and inwardly; a conical hood plate fitted over said deflector plate and having corrugations extending upwardly and outwardly, fitted over
15 the corrugations in said deflector plate; a marginal flange on said hood overlapping the edges of said deflector and rigidly connecting them; a conical tubular deflector extending exterior to said base and hood in concentric
20 relation therewith, formed of a strip of sheet metal having its ends joined, fashioned as a double truncated cone, having corrugations oppositely converged in its opposite ends; and, means maintaining said base, hood
25 and deflectors in rigid relation, comprising braces connecting them.

2. In a ventilator, the combination with a circular tubular base; of an inverted conical deflector plate supported above said base in
30 concentric relation therewith, comprising a circular series of radial corrugations extending upwardly and inwardly; a conical hood plate fitted over said deflector plate and having corrugations extending upwardly and
35 outwardly, fitted over the corrugations in said deflector plate; a marginal flange rigidly connecting the edges of said deflector and hood; a conical tubular deflector extending exterior to said base and hood in con-
40 centric relation therewith, fashioned as a double truncated cone having corrugations oppositely converged in its opposite ends; and, braces connecting said base, hood and deflectors in rigid relation.

45 3. In a ventilator, the combination with a tubular base; of an inverted outwardly flared deflector plate, supported above said base in concentric relation therewith, comprising a series of corrugations extending
50 upwardly and inwardly; an outwardly flared hood plate fitted over said deflector plate and having corrugations extending upwardly and outwardly, fitted over the corrugations in said deflector plate; a marginal
55 flange rigidly connecting said hood and said deflector; a tubular deflector extending exterior to said base and hood in concentric relation therewith, having its upper and lower edges inwardly and oppositely converged

and corrugated; and, means maintaining 60 said base, hood and deflectors in rigid relation.

4. In a ventilator, the combination with a circular tubular base; of an inverted conical deflecting plate in concentric relation with 65 said base, supported above the latter, comprising a circular series of radial corrugations extending upwardly within the hollow of the cone; a hood plate mounted in concentric relation with said deflector plate and 70 having upwardly extending corrugations fitted over the corrugations in said deflector; a marginal flange on said hood overlapping and rigidly engaging the edges of said deflector; a tubular deflector extending ex- 75 terior to said hood and base in concentric relation therewith, fashioned as a double truncated cone having oppositely converged corrugations in its opposite ends; and, means maintaining said base, hood and deflectors in 80 rigid relation, comprising braces riveted thereto.

5. In a ventilator, the combination with a circular tubular base; of an inverted conical deflector plate supported above said base in 85 concentric relation therewith; a conical hood plate fitted over said deflector plate; means maintaining said hood and deflector in rigid relation, comprising a marginal flange on said hood overlapping and turned 90 inwardly around the edge of said deflector; and, means rigidly connecting said base and hood.

6. In a ventilator, a hood comprising radial corrugations; and a deflecting plate 95 disposed in concentric relation therewith, and comprising corrugations interengaged with the corrugations in said hood, substantially as set forth.

7. In a ventilator, the combination of two 100 conical members formed of sheet metal with corrugated edges; said members being disposed with their apices presented in opposite directions, and with their corrugations interengaged. 105

8. In a ventilator, a hood 10, comprising upwardly extending radial corrugations 12; and a deflecting plate 5, connected with said hood and comprising radial corrugations 6, respectively extending into the corrugations 110 12, in said hood, substantially as set forth.

In testimony whereof, I have hereunto signed my name at Philadelphia, Pennsylvania, this 30th day of March 1908.

CHARLES C. KNAUSS.

Witnesses:

ARTHUR E. PAIGE,

ANNA F. GETZFREAD.