April 12, 1949. A. W. ROTH 2,466,827

ROOF VENTURA FOR FANS

Filed Sept. 9, 1947 2 Sheets-Sheet 1

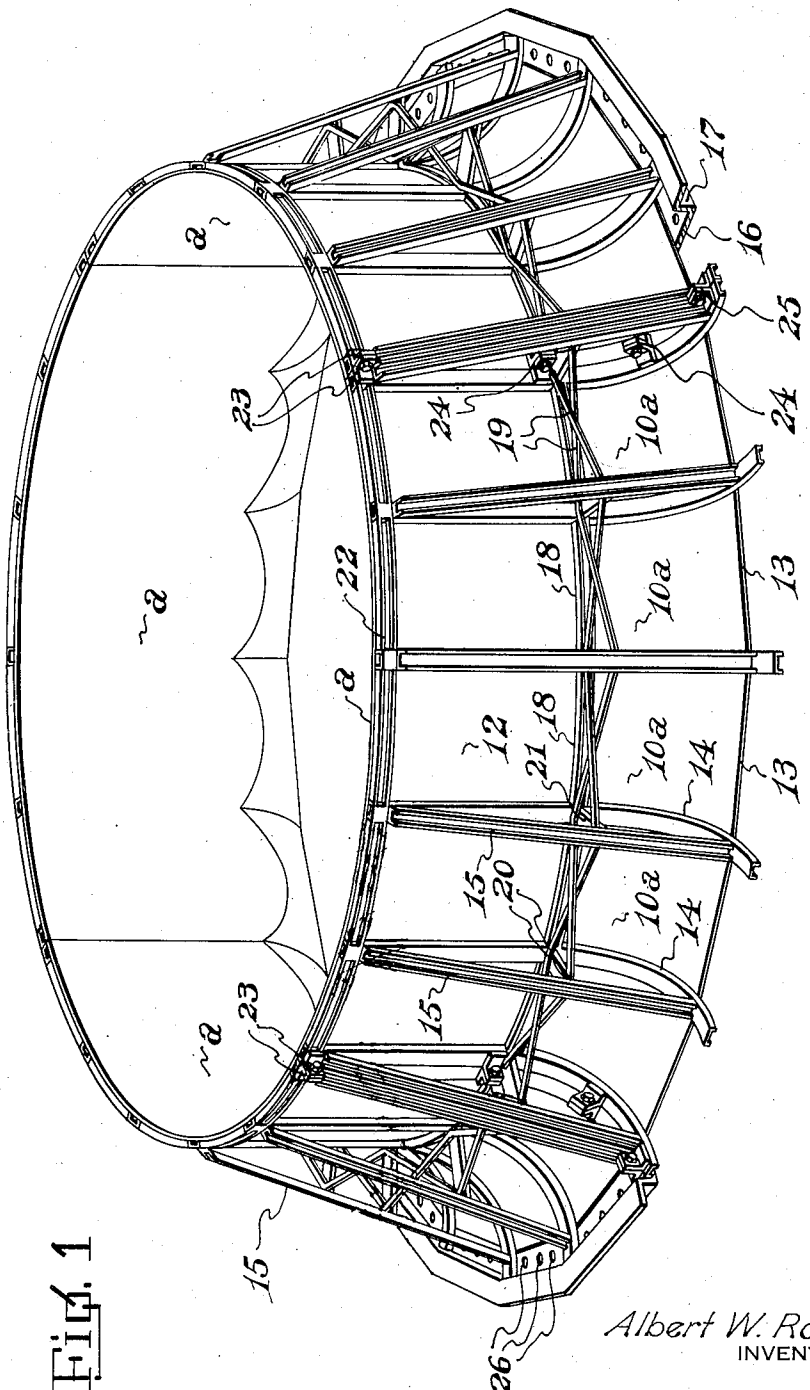


FIG. 1

Albert W. Roth
INVENTOR.

BY Philip A. Ferrell
ATTORNEYS.

April 12, 1949. A. W. ROTH 2,466,827

ROOF VENTURA FOR FANS

Filed Sept. 9, 1947

2 Sheets-Sheet 2

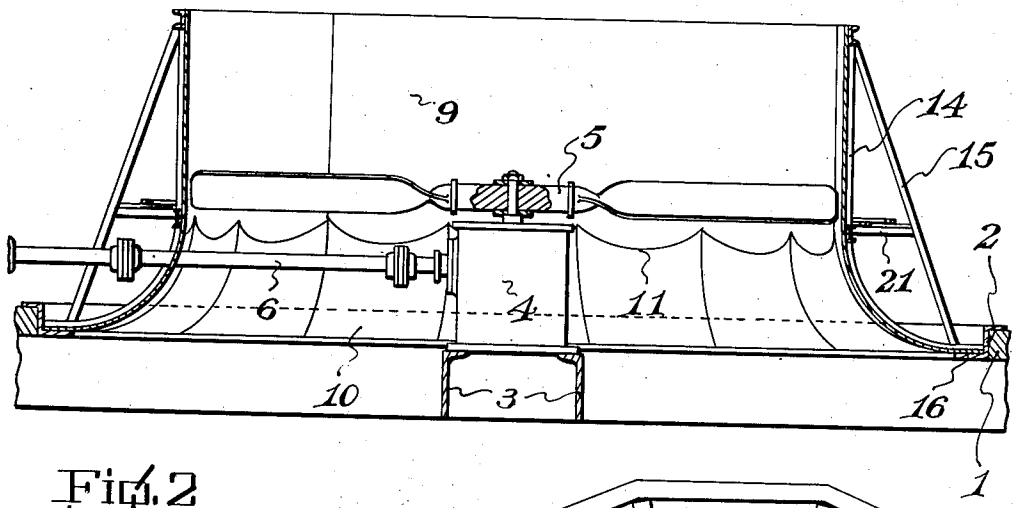


Fig. 2

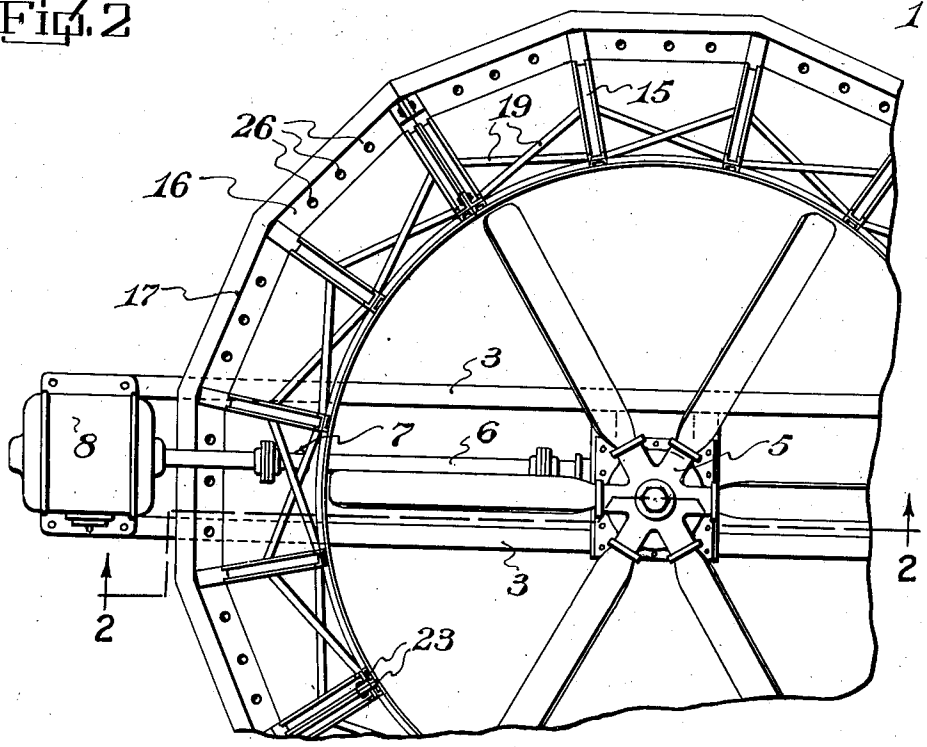


Fig. 3

Albert W. Roth
INVENTOR.

BY Philip A. Terrell

ATTORNEYS.

Patented Apr. 12, 1949

2,466,827

UNITED STATES PATENT OFFICE

2,466,827

ROOF VENTURA FOR FANS

Albert W. Roth, Tulsa, Okla.

Application September 9, 1947, Serial No. 772,959

2 Claims. (Cl. 230—133)

1

The invention relates to roof venturas for fans, and has for its object to form the ventura from a plurality of plates curving upwardly and inwardly in flat transverse cross sectional form and merging into a round body forming the upper portion of the ventura, thereby forming compound curves at the intersection of the plurality of flat segments where the flat segments merge into the lower end of the round body.

A further object is to mount the base of the ventura on a roof supported ring, and to brace the vetura in a manner whereby it will be positively held against distortion.

A further object is to form the ventura from a plurality of segments, each segment being provided with brace bars extending downwardly and curving outwardly, and by upwardly and inwardly inclined brace bars rigidly connecting the ends of the first mentioned brace bars, and to further brace the said bars by horizontally arranged crossed truss bars. Also to provide means whereby the ventura sections may be secured together at the point of assembly.

A further object is to provide a roof fan ventura having the lower part of its casing formed in a polygonal shape, the sides of which curve upwardly and inwardly and merge into the round upper portion of the body, thereby providing a more perfect air flow.

With the above and other objects in view the invention resides in the combination and arrangement of parts as hereinafter set forth, shown in the drawings, described and claimed, it being understood that changes in the precise embodiment of the invention may be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings:

Figure 1 is a perspective view of the ventura.

Figure 2 is a vertical transverse sectional view through the ventura showing the same in a roof opening.

Figure 3 is a partial top plan view of the ventura, showing a fan therein.

The present device is particularly adapted for use where large venturas are used, hence the ventura is formed in sections and transported to the point of installation on a roof 1. The roof 1 is provided with a polygonal shaped opening 2 for the reception of the ventura. Extending across the opening 2 are angle bars 3, which bars support the fan drive mechanism 4, for driving the fan 5, which fan is operated through the medium of a driven shaft 6, extending

2

through an opening 7 in the side of the ventura and driven by the motor 8.

The ventura body comprises an upper round portion 9 and the lower polygonal shaped portion 10, the sides of which are welded or otherwise secured to the lower end of the portion 9 at 11. By this particular construction involving the round portion 9 and the polygonal lower portion 10, the maximum dynamic air flow efficiency is obtained by the fan 5.

The ventura body is built up from prefabricated sections *a*, four sections being shown in Figure 1, for purposes of illustration. Each section comprises a segmental plate 12, and it will be noted that the lower ends of the panels 10*a* forming the lower end of the ventura curve downwardly and outwardly and terminate in straight edges 13, and where the panels 10 join each other, the ventura has welded, or otherwise secured thereto downwardly and outwardly extending brace bars 14, the ends of which are connected together by inclined brace bars 15, which may be welded to position. The lower ends of the brace bars 14 rest on the horizontal flange 16 of the Z-bar frame 17, mounted in the roof opening 2. It will be noted that the transverse cross sectional shape of the ventura body will be maintained and held against distortion by the brace bars 14 and 15. The brace bars 14 are further braced in relation to each other by horizontal brace bars 18 secured to the body. To further prevent distortion and increase the rigidity of each section, each section is provided with crossed horizontal truss bars 19, welded at 20 to the brace bars 14 and 15, and on cross braces 21 connecting braces 14 and 15. Where the upper ends of the brace bars 14 and 15 merge they are welded to a marginal channel iron 22 along the upper margin of each section. Channel bars 20, at their ends, are provided with ears 23 so the sections may be bolted together. Other registering ears 24 and 25 are provided for bringing together and rigidly holding the braces 14 and 15 in abutting engagement so a complete round ventura can be formed when the sections are assembled in the roof opening.

A horizontal flange 16 of the frame is preferably provided with drainage openings 26, so any water, which may accumulate in the roof frame 17, will drain therefrom.

It will be noted that all of the sections are rigidly braced, and when connected together the ventura will be a rigid structure, braced in all directions and in a manner whereby if a stack is added thereto for discharge, a substantial dis-

tance above the roof, the ventura will be sufficiently rigid to withstand the additional weight. Large venturas of this kind are fabricated and transported to the point of use, hence it will be seen that the sectional structure will accommodate itself to this system of installation, and the handling will be comparatively easy in comparison with single ring venturas as at present manufactured.

The circumferential lacing of all the spaced frames adds rigidity and maintains large venturas in proper shape when handling.

The invention having been set forth, what is claimed as new and useful is:

1. A roof ventura comprising a round body, the lower end of said body curving downwardly and outwardly, vertically and radially positioned substantially triangular brace members carried by the sides of the ventura, said brace members registering with the edges of the lower portion of the ventura, the lower ends of said braces forming supporting means for the ventura, the upper edge of said ventura having a brace ring to which the upper ends of the braces are secured, the opposite arms of said braces being connected together by crossed horizontally disposed truss bars.

2. A round sectional ventura, said ventura curving downwardly and outwardly at its lower end, said ventura being formed from a plurality of sections, each section comprising an upper marginal brace bar, downwardly and outwardly curved brace bars carried by each section in spaced relation, the ends of said curved bars being connected together by straight brace bars, means carried by the end brace bars whereby each section can be connected to adjacent sections, a horizontal crossed truss bar connection between the curved brace bars and the straight brace bars and brace members horizontally disposed connecting each set of curved and straight brace bars.

ALBERT W. ROTH.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,752,427	Fales	Apr. 1, 1930
1,875,640	Moore	Sept. 6, 1932
2,319,884	Robbins	May 25, 1943