Nov. 23, 1943. G. A. HOUSEMAN 2,335,184

ADJUSTABLE UMBRELLA

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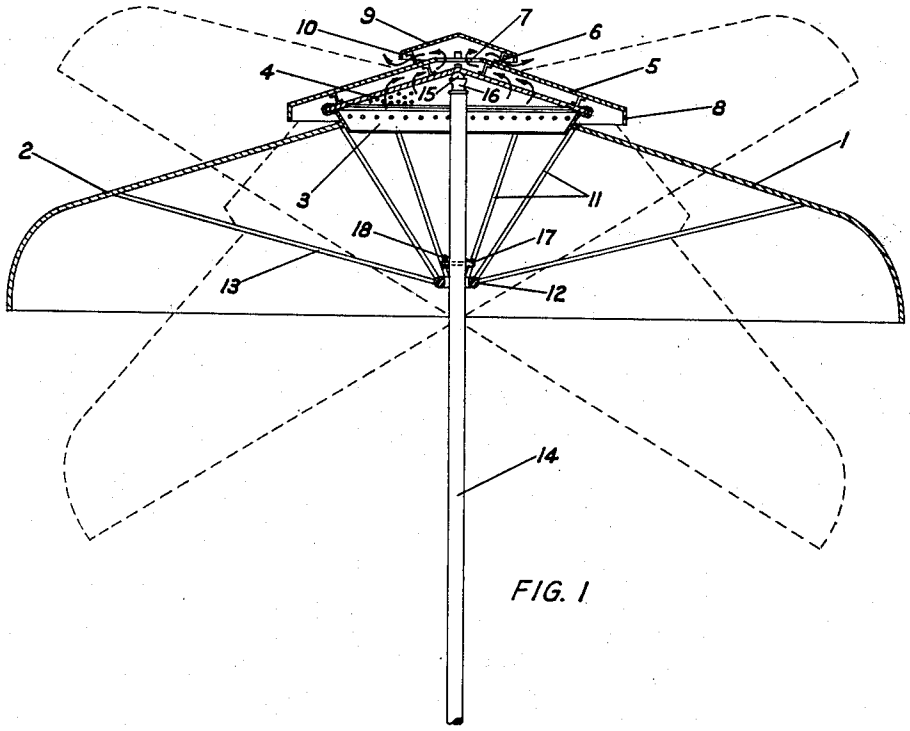


FIG. 1

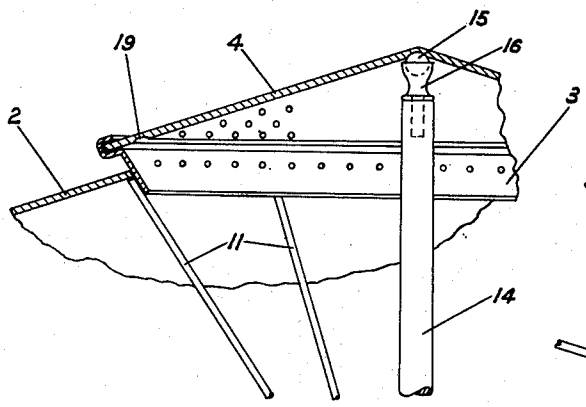


FIG. 2

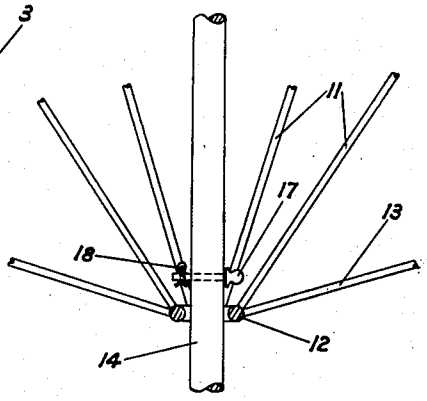


FIG. 3

Inventor

George A. Houseman

By

A. F. Flournoy Attorney

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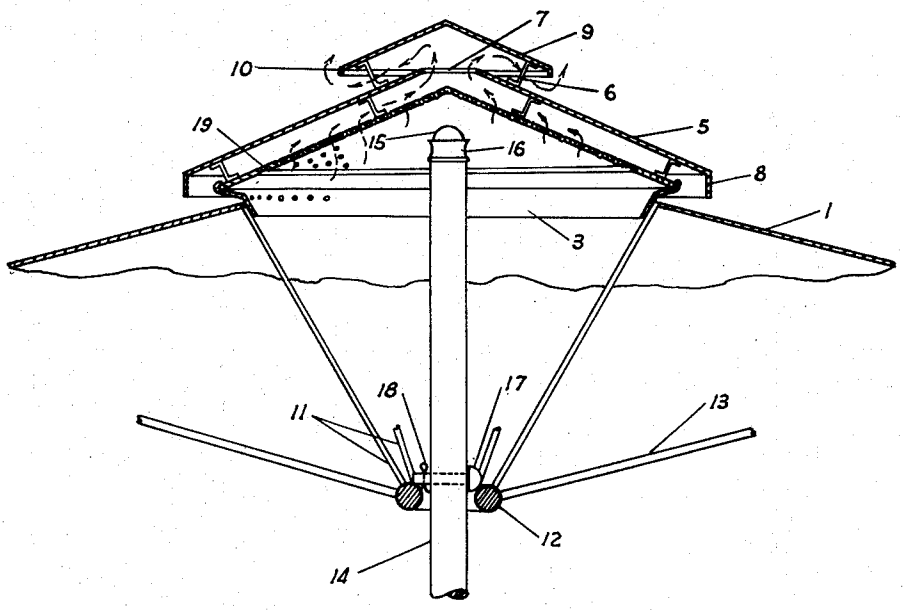


FIG. 4

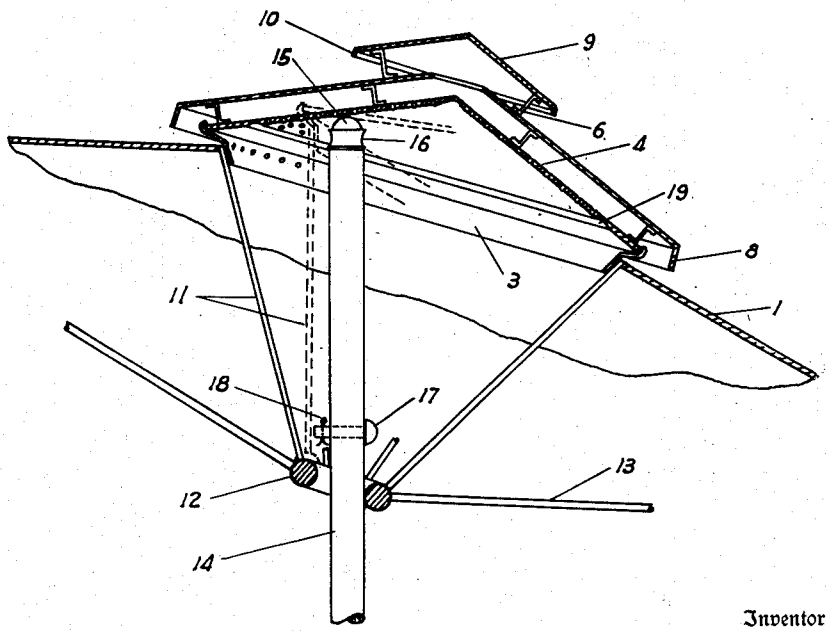


FIG. 5

Inventor

George A. Houseman

By

A. F. Flournoy Attorney

Patented Nov. 23, 1943 2,335,184

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ADJUSTABLE UMBRELLA

George A. Houseman, Shreveport, La.

Application January 19, 1942, Serial No. 427,222

8 Claims. (Cl. 135—20)

My invention relates to umbrellas and more particularly to adjustable umbrellas.

An object of my invention is to provide an adjusting means in an umbrella construction to permit the roof of the umbrella to be easily revolved about the umbrella's supporting staff in its righted position and tilted position it may assume on the supporting staff.

Another object of my invention is to provide a means for ventilating the roof portion of an umbrella.

While for the purposes of illustrating the features of my invention, I have shown in my drawings a metal, stationary lawn type of umbrella, it is to be understood that both the adjustment features of my invention in an umbrella and the ventilating features in an umbrella illustrated in my drawings may also be incorporated in cloth type umbrellas, or umbrellas made of other material, either of the stationary type or the portable type umbrella commonly seen on the streets on rainy days, without departing from the scope of my invention.

In the drawings:

Figure 1 is a cross sectional elevation view of my umbrella.

Figure 2 is an enlarged fractional view of a roof portion and roof support structure of my umbrella and,

Figure 3 is an enlarged fractional view of the supporting means of the roof of my umbrella.

Figure 4 is an enlarged fractional view of my umbrella showing its roof portion in maximum lifted position.

Figure 5 is an enlarged fractional view of my umbrella showing its roof portion in a tilted position.

Referring to the drawings:

Numeral 1 designates generally the multiple layer roof structure of my umbrella shown in Figure 1.

Numeral 2 designates the skirt portion of my umbrella. The skirt 2 is joined to the attaching band 3 which also supports a perforated cone cap 4 forming a part of the ventilating structure of my umbrella. A solid skirt cap 5 of the same cone shape as the perforated cone cap 4 is mounted above the cone cap 4 by means of spacing studs 6. The solid skirt cap 5 is provided with a central opening 7 through which air coming through the perforated cone cap 4 may pass. I preferably make the solid skirt cap 5 of a greater diameter than the cone cap 4 so that it may extend beyond the perforated cone cap 4 to prevent rain, snow and direct light rays from passing through the perforated cone cap 4. I form also a depending flange 8 on the solid skirt cap 5 to further assist the solid skirt cap 5 in keeping rain, snow and direct light rays from going through the perforated cone cap 4. The depending flange 8 is of a special advantage in preventing rain, snow and direct light rays from going through the perforated cone cap 4 when the umbrella roof structure 1 is thrown to tilted positions, such as shown by the dotted line positions of the roof structure 1 in Figure 1. To prevent snow, rain and direct light rays from coming through the central opening 7 of the solid skirt cap 5 and yet to allow air to escape, a solid cone cap 9 larger than the central opening 7 and provided with a depending flange 10, serving the same function as depending flange 8, is mounted above the solid skirt cap 5 by means of spacing studs 6. The hot air finds its way through the top of the umbrella roof structure 1, by the circuitous route shown by the arrows. The hot air after passing through the perforated cone cap 4, except at the very top of the cone cap 4, follows the under side of the solid skirt cap 5 upwardly then through the central opening 7, then along the under side of the solid cone cap 9 and finally out past the depending flange 10 to the open air.

When a breeze blows over the above described ventilating structure of my umbrella, the rising hot air trapped under the roof structure is sucked out, or to be more accurate, it should be said that the passing of the breeze according to the well known principles of aero-dynamics, reduces the pressure at the openings in the ventilating structure to thereby increase the flow of entrapped air under its own pressure.

While I take advantage of a breeze to assist in passing the hot air through my roof structure 1, due to its over-lapping members, no breeze can penetrate the roof structure 1 to buck the flow of hot air.

I brace my multiple layer roof structure 1 by means of the inner struts 11 attached to the attaching band 3 and the collar 12 and by the longer struts 13 which are attached to the collar 12, and attached directly to the skirt portion (2) of my mulitple layer roof structure 1. The whole weight of the multiple layer roof structure 1 is supported directly by the umbrella staff 14 through the ball 15 in the ball caster 16 on the upper end of the umbrella staff 14, since the collar 12 only loosely fits the umbrella staff 14. A stop pin 17 is passed through the umbrella staff 14 above the collar 12 and secured in place

by the cotter pin 18 to prevent the multiple layer roof structure 1 from being accidentally lifted entirely off of the umbrella staff 14 by a sudden gust of wind. While the force of a wind can lift the roof structure 1 up a little as allowed for in the spacing of the stop pin 17 with respect to the collar 12 a little higher than it moved in changing its angular position with respect to the staff 14, the stop pin 17 keeps the roof structure 1 from being blown away.

The structure I have thus far described embodies my invented ventilating means in umbrella construction. While I have shown and described my invented ventilating means applied to an adjustable type umbrella, it is to be understood that it is within the scope of my invention to apply these ventilating means to a simple hand type umbrella, a non-adjustable lawn type umbrella, and other structures of a kindred nature.

Broadly speaking, the adjusting means of my umbrella which allows for the easy tilting of my multiple layer roof structure 1 on the umbrella staff 14 and the ease of revolving it on the umbrella staff 14 is comprised of the perforated cone cap 4 and the collar 12 loosely fitted around the staff 14 supported at a fixed distance from the center of the perforated cone cap 4 and the attaching band 3 or an equivalent flange on the cone cap 4 to limit the movement of the cone cap 4 over the umbrella staff 14. The roof structure 1 may be shoved across the upper end of the staff 14 to an angular position as shown by Figure 5 (the point of maximum lift) or to a position where the ball 15 falls into the track 19 indicated in dotted lines. The perforations in the cone cap 4 serve no function whatever in the adjusting means. The perforations are made small enough so that they do not interfere with the travel of the perforated cone cap 4 over the ball 15 from the righted position of rest of the multiple layer roof structure 1 on the umbrella staff 14 to the tilted positions of rest limited by the attaching band 3 which positions the ball 15 in the circular ball track 19. The umbrella staff 14 could be terminated by a hard knob, such as a glass knob instead of a ball 15 and ball caster 16 if economy in construction demanded it and the circular ball track is not absolutely essential.

Having thus described my invention, I claim:

1. An umbrella comprising a roof construction including a perforated concave cap member, an umbrella staff adapted to support the roof construction, said staff being slidably connected to the roof structure, the upper end of the staff terminating at and abutting the under side of the perforated member and an imperforate concave over cap member having a central opening therein mounted on top of the said perforated concave cap member in spaced relationship to the same, positioned to deflect air passing through the perforated concave cap member.

2. The structure as claimed in claim 1 including an imperforate concave cap member of greater diameter than the opening in said imperforate over cap member mounted on said imperforate over cap member in spaced relationship to the same, positioned to deflect air passing through the over cap member.

3. In an umbrella structure of the class described, an umbrella adjusting means comprising an umbrella staff having its upper end abutting the under side of a cone shaped member bordered by a depending flange, a collar surrounding the umbrella supporting staff and a strut rigidly connected to the cone shaped member a substantial distance from its center and rigidly connected to the collar.

4. The structure as claimed in claim 3 including a ball caster mounted on the upper end of the umbrella staff.

5. In an umbrella structure of the class described an umbrella adjusting means comprising an umbrella staff having its upper end abutting the under side of a cone shaped member provided with a circular groove formed in its under face and a collar through which the umbrella staff is extended, said collar being rigidly held in spaced relationship with the cone shaped member by a strut, said strut being rigidly fastened to the cone shaped member at a point a substantial distance from its center.

6. The structure as claimed in claim 3 including a caster mounted on the end of the umbrella staff extended through the said collar to support the umbrella structure and wherein the said cone shaped member is provided with a caster track in which the caster is adapted to travel in tilted positions of the umbrella roof structure with respect to the umbrella staff.

7. An umbrella of the class described comprising a roof structure including a cone shaped member at its center, an umbrella staff having its upper end abutting the under side of the cone shaped member, a collar held in line with the center of the cone shaped member by a strut rigidly connected to the collar and to the cone shaped member at a point a substantial distance from its center, the umbrella staff having its upper end rounded and being extended loosely through the collar to the center of the cone shaped member.

8. The device as claimed in claim 7 including a stop means mounted on the umbrella staff adapted to prevent the said collar from being lifted off of the umbrella staff.

GEORGE A. HOUSEMAN.