Jan. 9, 1962 A. G. HUPP 3,015,861

ONE PIECE MOLDED AWNING

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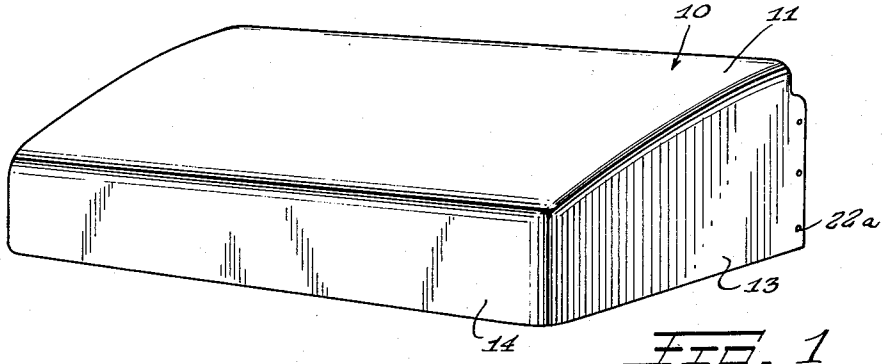


Fig. 1

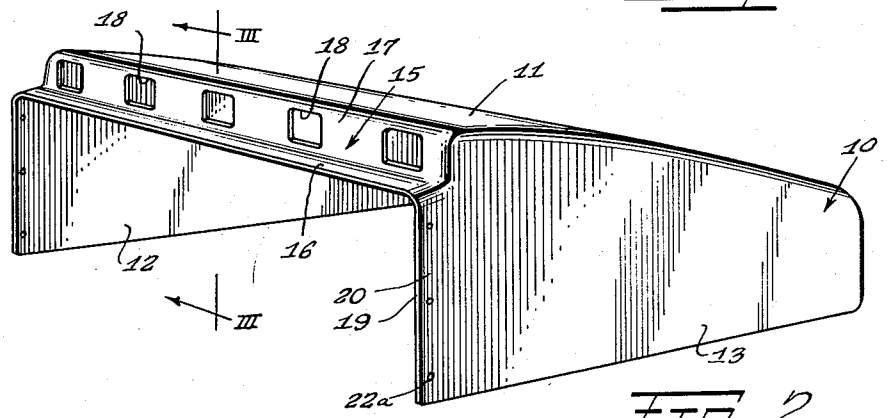


Fig. 2

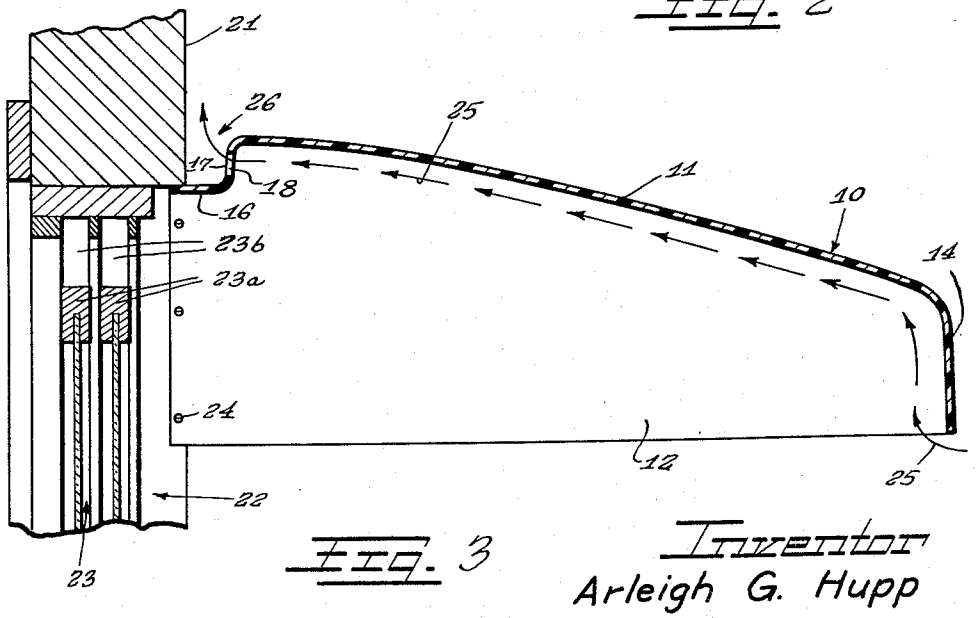


Fig. 3

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The present invention relates generally to an awning structure. More particularly, the present invention concerns a new and improved method and apparatus for cooling an awning structure mounted over a window on a building to prevent the travel of heated air through the open window into the building and for controlling the drainage of rain water.

An important object of the present invention relates to the provision of a low cost ventilated awning structure.

To the end of providing a low cost ventilated awning structure the instant awning is manufactured from a single piece of molded material such as synthetic plastic and the like. Still further, the awning is also provided with ventilation means by which a convection current of air will continuously cool the awning and remove the heated air underneath the awning through ports or openings at the rear of the awning and thereby prevent the heated air underneath the awning from flowing directly into the upper part of an open window provided in a building wall.

Still another object of the present invention is to provide means on the awning for controlling the flow of rain water, which means provides an effective way to keep water from entering windows during a rain storm.

Yet another important object of the present invention is to provide a ventilated awning structure having a clean cut aesthetic appearance whereby the upper surface or roof area and the side areas are substantially unbroken in contour.

According to still more specific features of the present invention, there is provided a method of cooling an awning structure including the steps of heating the top surface area of the awning with the heat passing through the awning to the underneath surface area of the awning thereby heating the air under the awning, controlling the flow of an air stream resulting from the cooling of the underneath surface and the heating of the air by the underneath surface area of the awning by allowing the heated air stream to move in a generally vertically rearward and upward direction, and further controlling the movement of the heated air stream by allowing the heated air stream to move vertically away from the window and through the awning at a locality above the window.

According to still other specific features of the present invention the awning is provided with a stepped area including generally horizontal and vertical stepped areas with the vertical step area having air ports and with the stepped area being disposed generally at the rear edge of the inclined roof of the awning whereby air may be heated as it moves underneath the awning by the roof area and allowed to move rearwardly and vertically upwardly through the air ports at the rear of the awning to cool the awning structure.

On the drawings:

FIGURE 1 is a front isometric view of my awning structure according to the principles of the present invention;

FIGURE 2 is a rear isometric view of the awning shown in FIGURE 1; and

FIGURE 3 is a fragmentary cross-sectional view of a window structure including a building wall and with the awning shown mounted on the wall over the window structure, the awning being shown in cross-section as taken on the lines III—III of FIGURE 2.

As shown on the drawings:

The reference numeral **10** indicates geenrally an awning or sun and water shade which is preferably comprised of a single piece of molded material such as synthetic plastic and the like.

The awning **10** is preferably generally scoop-shaped and includes a roof or roof area **11** which is inclined rearwardly and vertically upwardly. The awning **10** also includes transversely spaced sidewall areas **12** and **13** which are joined together at the transverse edges of the roof area **11**. The awning has a downwardly turned front area disposed at the front edge of the roof area **11**. Disposed at the rear edge of the inclined roof area **11** is a stepped area **15** including horizontal and vertical step areas **16** and **17**. The vertical step area is connected directly to the roof area **11** and a series of transversely spaced ports or openings **18** are disposed along the transverse width of the step area **17**. In this connection it will be noted that the stepped area **15** including the step areas **16** and **17** are coextensive in width with the roof area **11**.

The awning is provided with a U-shaped edge **19** or U-shaped side edge **20**. The edge **19** as well as the side edge **20** include portions of the sidewall areas **12** and **13** as well as portions of the step area **16**. These edges **19** and **20** together comprise generally a surface area which may be attached in any suitable fashion to a building wall which is indicated generally at **21** in FIGURE 3. As shown, however, holes **22***a* are extended through the side edges **20**.

A window opening is indicated generally at **22** in FIGURE 3 and within the opening **22** is mounted a diagrammatically illustrated window structure **23**. As illustrated, the window structure **23** includes vertically movable sashes **23***a*—**23***a* which are mounted within grooved areas indicated at **23***b*—**23***b*. As illustrated, the window sashes **23***a*—**23***a* are shown in an open position.

Fasteners or screws **24** have been provided to attach the awning to the wall **21** in a manner whereby the side edge area **20** is telescoped internally of the window opening **22** in the wall **21**.

The stepped area **15** is preferably disposed above the window opening **22** in order to prevent heated air from flowing into the house through the opening at the top of the window when the window sashes **23***a*—**23***a* are lowered as is shown.

When the awning structure **10** is heated from sunlight and the like the heat is transmitted from the top surface of the roof area **11** to the bottom surface of the roof area **11** whereby the air immediately under the underneath or bottom surface of the room area **11** is also heated. Since the roof area is inclined in a vertically upwardly and rearwardly direction and further since the openings or ports **18** have been provided at the uppermost end of the roof area **11** a convection air current will be created as indicated by arrows **25** in FIGURE 3. It will be appreciated that since heated air has a tendency to rise the heated air will be permitted to move along the vertically upwardly and rearwardly inclined roof area **11** and allowed to pass through the openings or ports **18** away from the awning structure **10**.

The stepped area **15** including steps **16** and **17** as well as the building wall **21** define a rain water trough area **26**. During a rain storm water will have a tendency to strike the building wall **21** and such water will either be deflected through the ports **18** in the trough **26** or else the water will flow transversely of the awning and fall to the ground after passing over the side areas **12** and **13**. The water will be prevented from passing into the area of the window since the fasteners operate to sustain the awning in sealed engagement upon the building wall **21**.

By disposing the stepped area **15** as well as the ports **18** at the rear of the awning **10** and below the uppermost area of the inclined roof area **11**, the stepped area

15 and the openings 18 may be substantially concealed. In view of the foregoing it will be noted that the ventilation means as well as the rain water control means are not generally visible when the awning is installed upon a house and therefore the clean cut aesthetic appearance of the awning including the upper roof surface area and the side surface areas remain substantially undisturbed. It may also be noted that the means for providing ventilation and rain water drainage in a molded awning is literally nearly cost free in the production of the awning.

It will be understood that modifications and variations may be effected without departing from the scope of the novel concepts of the present invention.

I claim as my invention:

1. In a window structure including a building wall having a window opening, an awning having spaced side wall areas and a vertically inclined roof area joining the spaced side wall areas at its opposite roof edges, the awning having a stepped area joined with the inclined roof area below a rear edge of the roof area with the stepped area being disposed above the window opening, the stepped area including generally horizontal and vertical step areas and the vertical step area having air ports whereby air may be heated as it moves rearwardly and vertically upwardly along an underside of the inclined roof area through the air ports to cool the awning structure, the awning having a surface area defined by portions of the side wall areas and the horizontal step area for abutment against the building wall about the window opening, and means between the building wall and the surface area sustaining the awning on the wall.

2. As an article of manufacture, an awning comprised of a molded material, the awning having spaced side wall areas and a vertically inclined roof area joining the spaced side wall areas at its opposite roof edges, the awning having a stepped area joined with the inclined roof area at its rearmost edge and positioned below the rearmost edge of the roof, the stepped area including generally horizontal and vertical step areas and with the vertical step area having air and rain ports disposed below the rear edge of the roof and sheltered by the inclined roof whereby as air is heated the heated air is guided by the inclined roof area as it moves rearwardly and vertically upwardly through the air ports to cool the awning structure, the stepped area when mounted on a building wall cooperating with the wall in providing a trough for transporting rain to opposite sides of the awning, the ports providing means permitting rain driven against the wall to be deflected through the ports at an area remote to a window covered by the awning to prevent driven rain from entering the window from the ports.

3. As an article of manufacture, a one-piece scoop shaped awning comprised of synthetic plastic and the like, the awning including an inclined roof and a stepped area connected to and disposed below a rear edge of the roof, and vent areas spaced along the length of a vertical step of the stepped area to permit a hot air stream to flow from under the inclined roof through the vent areas and with the vent areas being sheltered by the inclined roof to prevent rain from being driven through the vent areas against a window covered by the awning, the vertical step being joined with the rear edge of said roof at its upper end.

4. As an article of manufacture, an awning including spaced side wall areas and a vertically inclined roof area joining the spaced side wall areas at its opposite roof edges, the awning having a stepped area joined with the inclined roof area at a rear edge of the awning, the stepped area including generally horizontal and vertical step areas,

the vertical step area being joined with a rear edge of the inclined roof area and extending downwardly therefrom, the horizontal step area extending rearwardly of the vertical step area with the side wall areas extending rearwardly beyond the vertical step area and joined with the horizontal step area and the vertical step area having transversely spaced air and rain ports disposed between the rear edge and the horizontal step area.

5. In a window structure including a building wall having a window opening, an awning having spaced side wall areas and a vertically inclined roof area joining the spaced side wall areas at its opposite roof edges, the awning having a stepped area joined with the inclined roof area below a rear edge of the roof area with the stepped area being disposed above the window opening, the stepped area including generally horizontal and vertical step areas and the vertical step area having air ports whereby air may be heated as it moves rearwardly and vertically upwardly along an underside of the inclined roof area through the air ports to cool the awning structure, the awning having a surface area defined by portions of the side wall areas and the horizontal step area for abutment against the building wall about the window opening, and means between the building wall and the surface area sustaining the awning on the wall, the awning being comprised of a one-piece molded material and by the stepped area being cooperable with the building wall providing a trough for discharging water at the side of the awning.

6. In a window structure including a building wall having a window opening, an awning having spaced side wall areas and a vertically upwardly and rearwardly inclined roof area joining the spaced side wall areas at its opposite roof edges, the awning having a stepped area joined with the inclined roof area at a rear edge of the inclined roof area with the stepped area being disposed above the window opening, the awning having an awning surface area for abutment against the building wall about the window opening, fastener means cooperable with the surface area sustaining the awning on the wall, and the stepped area including generally horizontal and vertical step areas and the vertical step area having ports providing means whereby rain water which strikes the building wall may be deflected through the ports onto the ground below, the horizontal and vertical step areas providing means extending transversely of the awning and the window for cooperating with the wall in defining a trough for rain water to be carried to the sides of the awning, the vertical step area bearing the ports being disposed below the upper rear edge of the vertically upwardly and rearwardly inclined roof area whereby the ports are substantially concealed from view.

7. As an article of manufacture, an awning comprised of synthetic plastic and the like, the awning including an inclined roof presenting an unbroken water impervious surface and a stepped area connected to and disposed below a rear edge of the roof, and vent areas spaced along the length of a vertical step of the stepped area, the vertical step being joined with the rear edge of said roof at its upper end.

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