April 16, 1957 R. H. ANDREWS 2,788,550

VENTILATED AND LIGHT DIFFUSIVE AWNING OR SCREENING STRUCTURE

Filed Dec. 3, 1954 2 Sheets-Sheet 1

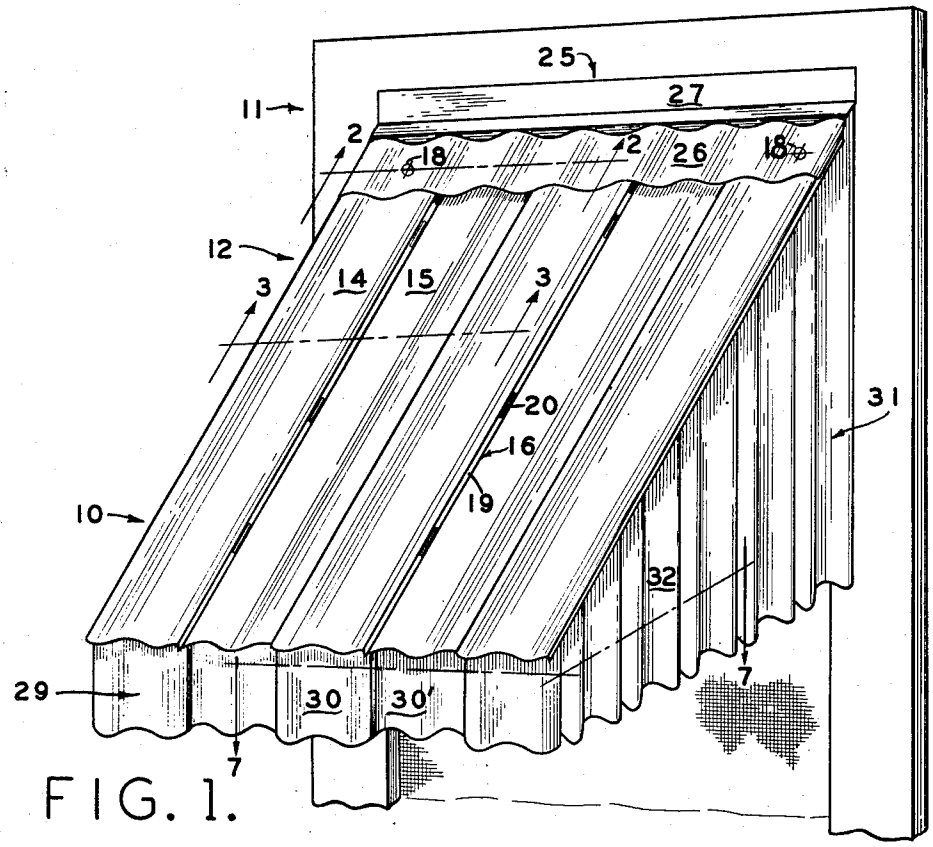


FIG. 1.

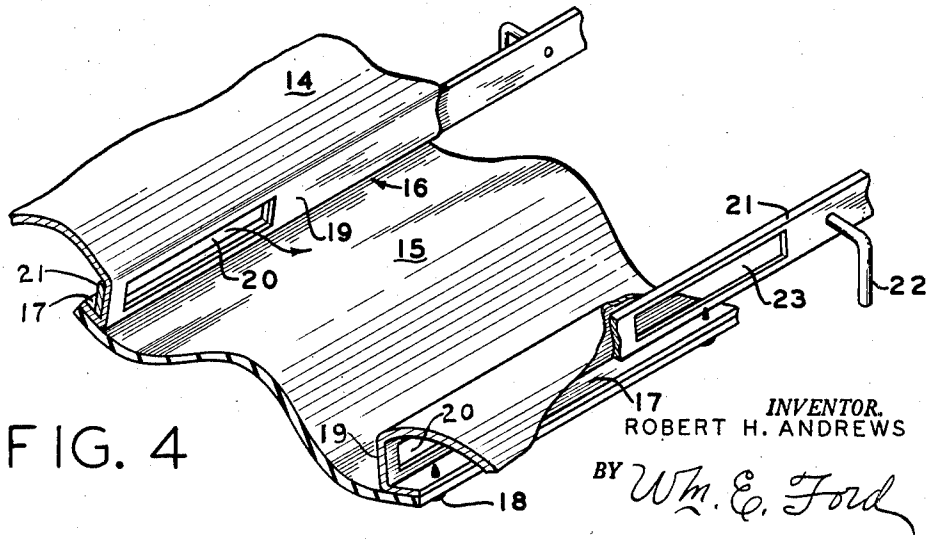


FIG. 4

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VENTILATED AND LIGHT DIFFUSIVE AWNING OR SCREENING STRUCTURE

Filed Dec. 3, 1954 2 Sheets-Sheet 2

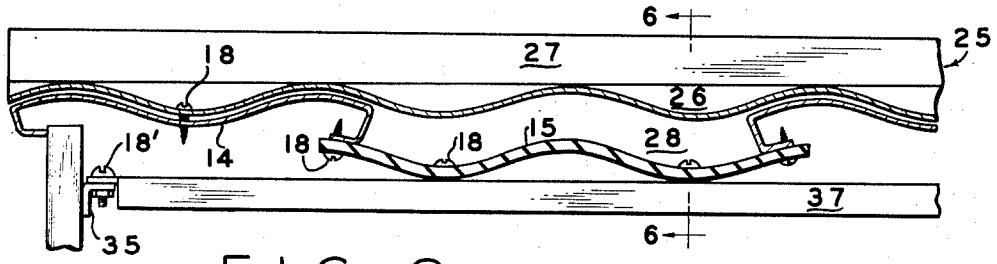


FIG. 2.

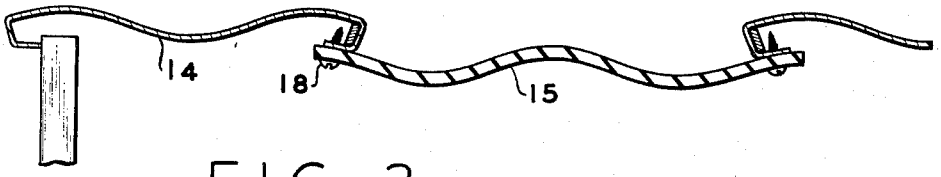


FIG. 3.

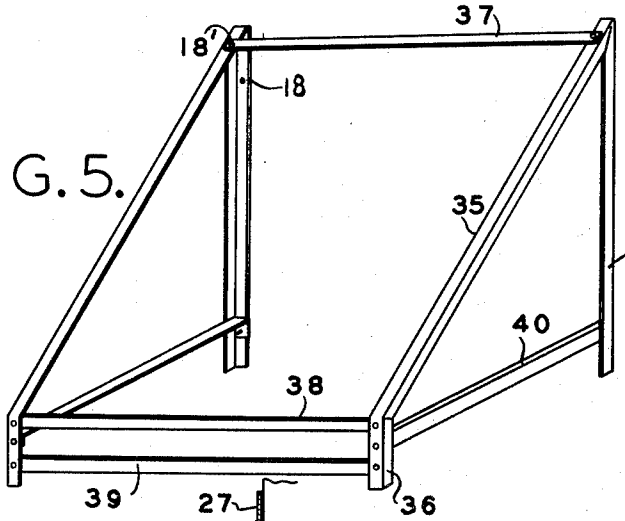


FIG. 5.

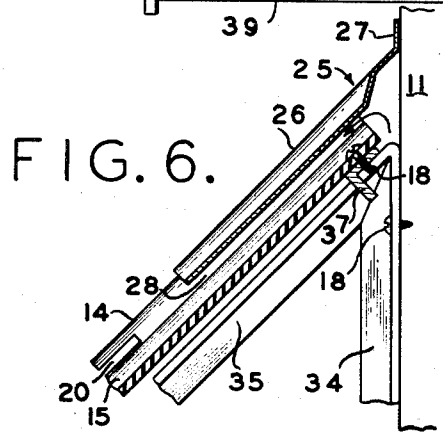


FIG. 6.

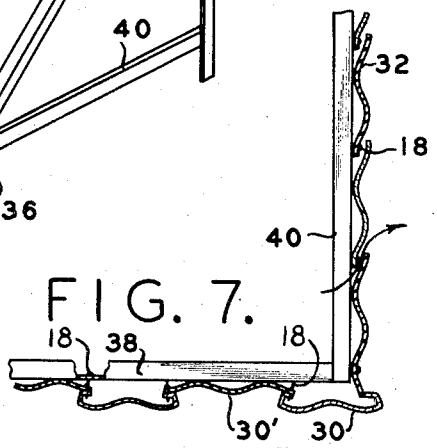


FIG. 7.

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VENTILATED AND LIGHT DIFFUSIVE AWNING OR SCREENING STRUCTURE

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5 Claims. (Cl. 20—57.5)

This invention relates to a ventilated and light diffusive awning or screening structure, having alternate opaque and translucent roof section panels whereby light in proper degree is admitted beneath the roof section while heat is externally reflected by the opaque panels and the heat transmitted below the translucent panels is disposed of by proper ventilation.

Heretofore it has been found that awnings and the like fabricated entirely of translucent material will transmit too much light into the space beneath the roof section, thereby defeating one of the main purposes of such structures, that of shading. Also the purpose of heat reflection is defeated, since the heat of light is transmitted in full degree by the translucent material with the result that special and expensive ventilation means may be required beneath the roof section to expel such heat, such special means on occasion amounting to fans or blowers.

This invention therefore has as an object the provision of an awning, screening structure, and the like, which employs an arrangement of roof section panels of alternate opaque and translucent materials, or a diffused pattern thereof, whereby light in degree and in proper diffusion is admitted below the roof section.

As a further object this invention provides such a structure which is adapted to dispel or dissipate the heat of light transmitted through the translucent panels by virtue of the ventilation channels provided in the static arrangement of the various elements of the structure.

It is also an object of this invention to provide such a structure having adjustable means to control the ventilation openings at the abutment of the alternate opaque and translucent panels whereby the degree of ventilation may vary with the degree of heat of light transmitted or with seasonal temperatures.

It is yet another object of this invention to provide such a structure in which the benefits of a roof section arrangement of alternate opaque and translucent elements, or a diffused pattern thereof, may be carried further to obtain obvious advantages by providing side louvers and front valance sections of similar materials and arrangement.

Other and further objects will be apparent when the specification hereinbelow is considered in connection with the appended drawings in which:

Fig. 1 is a perspective view of an embodiment of this invention in the form of an awning;

Fig. 2 is a sectional view taken along line 2—2 of Fig. 1;

Fig. 3 is a sectional view taken along line 3—3 of Fig. 1;

Fig. 4 is a fragmentary perspective view showing the arrangement whereby the degree of ventilation at the abutment of the alternate panels may be varied;

Fig. 5 is a perspective view of the awning frame;

Fig. 6 is a sectional view taken along line 6—6 of Fig. 2; and

Fig. 7 is a sectional view taken along line 7—7 of Fig. 1.

Referring to the drawings in which like reference numerals are applied to corresponding elements in the various views, in Fig. 1 an awning 10 is shown attached to a building structure, as a window frame 11. The roof section 12 of the awning comprises alternately arranged opaque panels 14 and translucent panels 15.

The opaque panels 14 are of aluminum or a similar weather resistant material metal or alloy, and additionally may be painted over with a heat reflective coating to enhance the inherent heat reflective qualities thereof. Such panels are shown corrugated and have the inherent workable characteristics of any conformable material and for reasons to be set forth hereinbelow side edges 16 thereof are best formed to overlie the translucent panels 15 in abutment.

The translucent panels 15 are best constructed of a material as corrugated fiberglass, although a wide range of other translucent materials may be employed as well. Because of the brittle nature of most translucent materials, and because forms of such materials are best manufactured such as by molding, it is best that the panel which provides an overlapping abutment flange 17 through which connection to the adjacent panel is made, as by screws 18, should be the panel of the most workable material, as a light gauge aluminum panel 14, see Fig. 4.

In order that the heat of light transmitted through the panels 15 into the space below the roof section 12 may be better dissipated and expelled by ventilation, an upstanding flange 19 connects the abutment flange 17 with the main body of the opaque, workable panel 14, and this flange 19 has openings 20 spaced therealong. At the abutment of an opaque and translucent panel a bar 21 is provided having a handle 22 connected thereto, and openings 23 are provided in such bars 21 of sizes and spacing corresponding to the openings 20 in the flanges 19. Thus the handles 22 may be engaged to slide the bars 21 in direction parallel with the longitudinal axes of the panels to vary the overlapping of the openings 22 and 20 and thereby vary the degree of ventilation provided through which air may escape outwardly from below the roof section as indicated by the arrow in Fig. 4.

A cowl 25, preferably of the same opaque material as the panels 14, is shown in Fig. 1 as having a corrugated apron 26 to overlie the corrugations of the panels 14 and 15 and to provide an upstanding facing 27 to bear against a structure as a window frame 11. The corrugations of the apron 26 overlie the corrugations of the panels 14 in close abutment, as best seen in Fig. 2, and connection is made between the cowl and roof section by means of screws 18 extending through such abutting corrugations. On the other hand the corrugations of the apron 26 are spaced above the corrugations of the panels 15. Then since, as best seen in Fig. 6, the panels 14 and 15 do not extend to abut the window frame 11, air may follow the course indicated by the arrow in Fig. 6, and pass through air spaces 28 provided between the corrugations of the apron 26 and the corrugations of the panels 15, and in this manner heat may be additionally expelled from beneath the roof section 12.

The invention may be used in any type of construction as part of a roof, or as shown, used as an awning. In details of construction, the awning 10 is shown in Fig. 1, as having a front or valance 29 comprising valance sections 30, 30' extending downwardly from the forward or outer end of the roof section 12, and a side or lower section 31, comprising louvers 32 extending downwardly from the sideward panels of the roof section 12.

A frame 33 is provided, as shown in Fig. 5, on which the roof section, valance, and louver sections are assembled, and by means of which the awning is connected to the window frame 11. The frame comprises uprights 34 through which screws 18 extend into the window

frame 11, and from the top of which members 35 extend angularly downwardly to shorter front uprights 36. Cross-members 37, 38, and 39 connect the opposed sides of the frame, and side members 40 connect the front uprights 36 and rear uprights 34.

As best seen in Fig. 2, panels 15 are connected to the cross-member 37 by screws 18, and as best seen in Fig. 7 screws 18 connect valance sections 30' to the cross-member 38, and screws 18 connect the louvers 32 to the side uprights 40. The various frame elements are themselves interconnected, as by the nut and bolt arrangement by which the member 35 is shown connected to the member 37 in Fig. 2.

The valance sections 30 are shown of the same cross-sectional construction as the panels 14, and are preferably of the same opaque material, while the valance sections 30' are shown of the same cross-sectional construction and of the same translucent material as the panels 15. The outer or lower end of the roof section 12 overhangs the valance 29 in degree to avoid the beating in of weather, as rain.

The louvers 32 are assembled so that successively from front to rear adjacent louvers overextend, thereby providing ventilation passages as indicated by the directional arrow in Fig. 7, while at the same time providing against the beating in of rain, and otherwise protecting against weather. The louvers 32 may preferably be constructed of alternate opaque the translucent materials to conform with the pattern of roof section and valance.

The scope of this invention is not limited to the embodiment of the invention hereinabove described and shown in the drawings, but is suspceptible of including other arrangements of opaque and translucent elements and in various patterns. It also includes various methods of abutment, assembly, and overlap. Also, it is within the spirit of this invention to provide light diffusion by provding only the roof section of opaque and translucent panels, whereas the valance and louver sections, or either of them may have elements of the same material, either translucent or opaque.

It is therefore asserted that this invention includes all ventilated screening structures, awnings, and the like having roof section, valance, and louver sections, or any of these, arranged to provide light diffusion through an arrangement of alternate opaque and translucent elements, or through any diffused pattern arrangement of such elements as may fall within the broad spirit of the invention, and the broad scope of interpretation claimed for and merited by the appended claims.

What is claimed is:

1. An awning structure and the like adapted for attachment to a building and including a roof section of panels sloped downwardly and outwardly from adjacent said building, said panels being corrugated each to include at least one valley extending longitudinally thereof with alternate panels being of opaque metal and translucent plastic, and with said metallic edges including a downwardly extending flange and a flange extending therefrom toward the longitudinal center line of its panel whereby the longitudinal edges of said plastic panels may underextend said second mentioned flanges adjacent thereto and whereby said plastic panels may be connected to said metallic panels by connection means included by said structure and extending through said second mentioned flanges, said connection means thereby being weather protected and invisible from outwardly of said structure, a cowl adapted upwardly to bear against a building structure for connection thereto, and having a lowermost corrugated apron member extending over said metal panel to interfit within the corrugations thereof and connected thereto to space said panels from said building structure whereby ventilating air may pass through ports provided below said cowl and above said plastic panels.

2. An awning structure as claimed in claim 1 which also includes a valance of alternate opaque metallic and translucent plastic sections in sideward abutment and extending downwardly from the lower, outer ends of said panels.

3. An awning structure as claimed in claim 1 in which said first mentioned flanges have longitudinally spaced apart slots therein and said structure including bars supported by said second mentioned flanges to slide along said first mentioned flanges and having slots therein longitudinally spaced apart so that said bars may place bar slots and flange slots in communication to increase ventilation below said roof section or said bars may occlude said flange slots to decrease such ventilation.

4. An awning structure as claimed in claim 1 which includes a louver extending downwardly from each of the outermost panels and cowl edge on each side of said roof section, each louver being comprised of downwardly extending louver sections successively overlapping from front to rear to provide weather protected ventilation openings.

5. An awning structure as claimed in claim 1 which includes a louver extending downwardly from each of the outermost panels and cowl edge on each side of said roof section, each louver being comprised of downwardly extending, alternately opaque metal and translucent plastic sections successively overlapping from front to rear to provide weather protected ventilation openings.

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