Aug. 8, 1950 R. E. MATTISON 2,518,044

METAL AWNING

Filed July 2, 1947 2 Sheets-Sheet 1

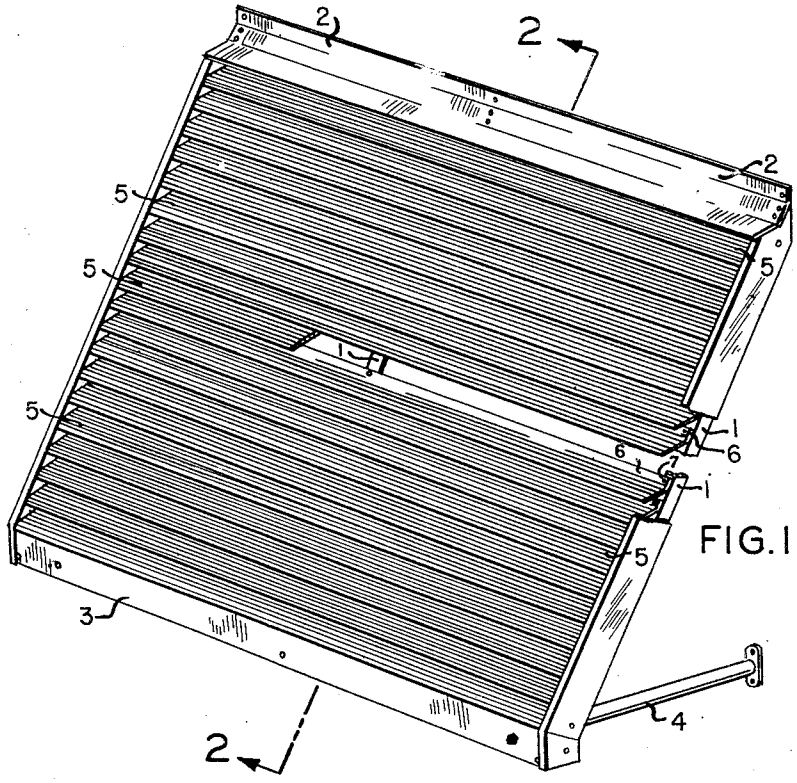


FIG. 1

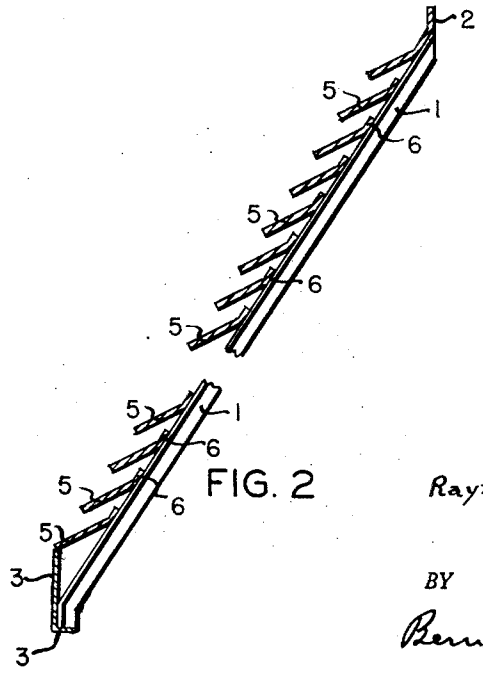


FIG. 2

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METAL AWNING

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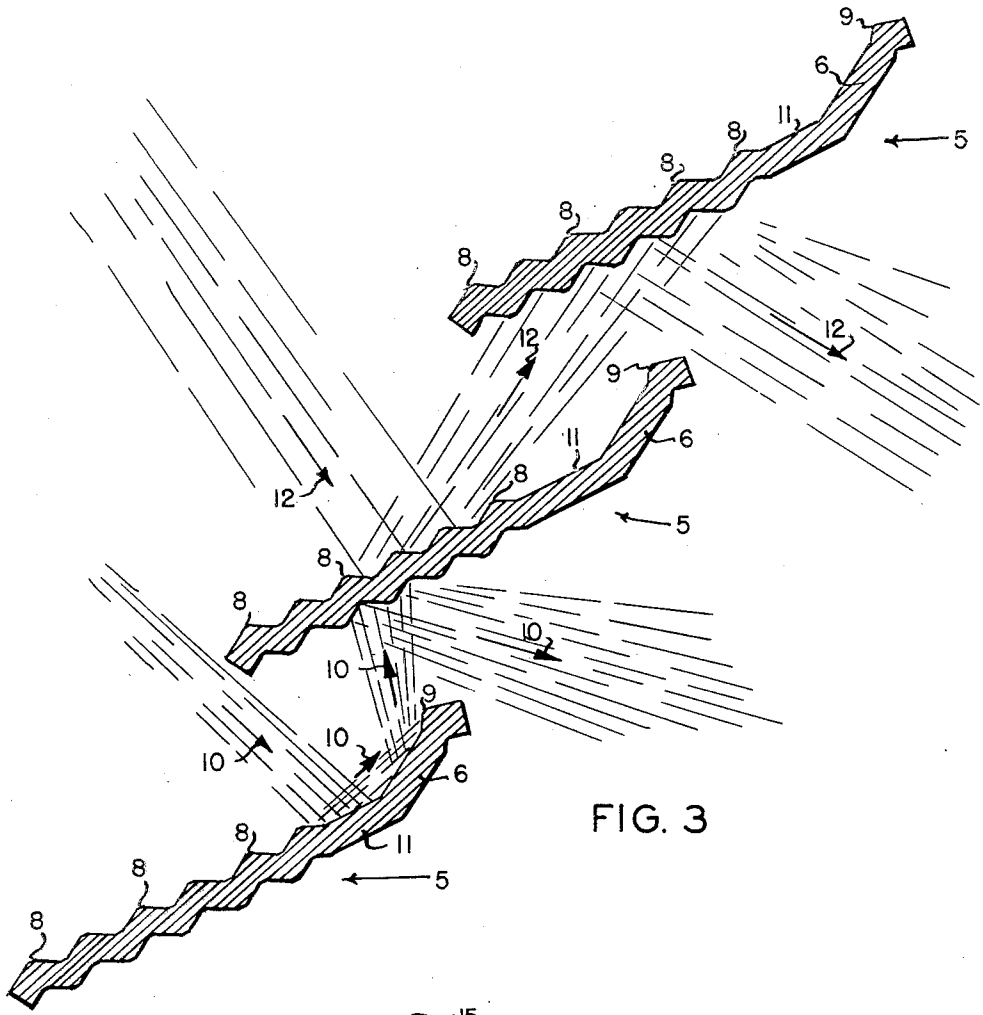


FIG. 3

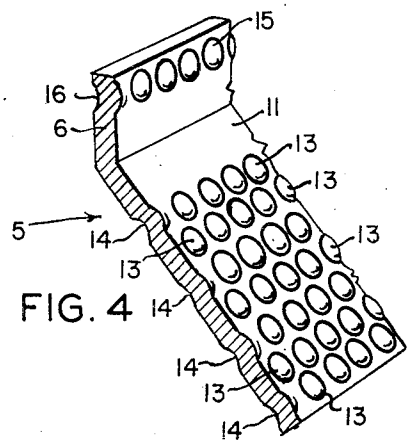


FIG. 4

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UNITED STATES PATENT OFFICE

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METAL AWNING

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Application July 2, 1947, Serial No. 758,632

3 Claims. (Cl. 88—57.5)

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My invention relates to sheet metal awnings of the ventilating type wherein horizontally disposed sheet metal slats or strips are spacedly disposed in parallel relation for admitting air circulation therebetween, and for simultaneously excluding direct rays of the sun.

The invention more particularly relates to slatted awnings of the hood-type, wherein the sheet metal slats are rigidly mounted, in contra-distinction to the adjustable lower-type awnings wherein the slats are permitted pivotal movement upon their own longitudinal axes.

In most sheet metal slatted awnings of the hood-type, the sun's rays striking the upper surfaces of the slats, are reflected off said surfaces directly into the building opening or window between the inner edge portions of the slats.

It is therefore necessary for the designers of such awnings, in order to defeat such reflection, to dispose the slats at a comparatively steep angle with relation to the vertical, and to mount them fairly close together.

The principal object of the present invention, is to so design, or form, the sheet metal slats, that the directly reflected rays are excluded from entering the window.

Another principal object of the invention is to so deform the upper surface of each slat, that direct reflection of the rays is broken up and diffused before the rays are permitted to enter the window.

The combined result of such design, and such deformation, is to prevent glare when a person within the room looks toward the window. The combined object, therefore, is to obtain a well lighted room, yet one in which window glare is eliminated.

The present invention allows substantially all of the reflected sun rays to enter the room, but prevents their entry until after they have been diffused. The slat structure also extracts heat from the sun's rays during each successive diffusion or reflection thereof.

A further object is to provide an awning of this type, which will not only accomplish the desired light ray diffusion, but one which may be manufactured at a reasonable cost.

Other objects will be apparent from the following description when taken in conjunction with the accompanying two sheets of drawings, wherein:

Figure 1 is a perspective view of a hood-type awning made in accordance with the present invention, a portion being broken away to disclose construction.

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Figure 2 is a vertical sectional view taken substantially along the line 2—2 of Figure 1;

Figure 3 is an enlarged vertical sectional view illustrating the relationship of three of the slats, and diagrammatically illustrating the light reflection and diffusion; and,

Figure 4 is an enlarged fragmentary perspective view of a sheet metal slat in which a different embodiment of the surface deformations has been used.

Like characters of reference designate like parts in those figures wherein they occur.

In the drawings:

The reference numeral 1 indicates a plurality of downwardly and outwardly sloping stringers or joists which are parallel with each other and which have their upper ends rigidly connected to a horizontal member 2, which is adapted to be attached to a building wall above a window therein. One of the stringers is provided at each end of the member 2, and as many are spacedly positioned therebetween as is necessary to accommodate the width of the window opening above which the member 2 is to be installed. The lower ends of the stringers 1 are all rigidly connected to a horizontal beam 3, and suitable braces 4 are provided between the beam 3 and the building wall in order to anchor the beam against movement.

Extending across the upper surfaces of the stringers 1, and spaced vertically therealong in parallel relation to each other, is a plurality of sheet metal slats or strips 5.

The slats 5 are identical with each other, and each has a co-extensive integral upper flange portion 6 which lies flatly upon the stringers 1, and all of which flanges are rigidly connected to the stringers. Suitable rivets 7 are preferably used for this purpose.

As best illustrated in Fig. 3, the major portions of the slats 5 are each provided with a series of longitudinally extending parallel upwardly projecting deformations, corrugations, or ribs 8, and the extreme upper edge portion of each flange 6 is provided with at least one elongated deformation 9 which is similar to the deformations 8.

In Fig. 3 is illustrated by dash-lines and heavy arrows two problematical paths in which the sun's rays may travel before they enter a window through the open space between the slats 5.

In following the possible path of light rays illustrated by the lowermost dash-lines, and by the heavy arrows 10, it may be seen that when the rays strike the flat portion 11 of the lowermost slat, which portion lies above the upper-

most rib 8 and below the flange 6, they are reflected into the flange 6 and against the lowermost side of the deformation 9. The flange 6 and deformation 9 bend the rays upwardly to strike against the nether surfaces of the deformations 8 of the next slat 5 thereabove, from which the rays are reflected over the upper edge of the lower slat 5. Each successive reflection of the rays causes them to be diffused or scattered, and therefore their brightness has been diminished before they leave the second slat 5 in their travel toward the window.

Another possible path of the rays is shown in said Fig. 3, and is illustrated by the dash-lines accompanied by the heavy arrows 12.

In this second instance, the rays are shown as first being projected against the deformations of the next to the bottom, or middle slat 5. Rays so projected are turned upwardly by the lowermost faces of the deformations 8, and are reflected in a direction in which they reach the nether deformed surface of the next slat thereabove. These latter deformations, on the uppermost slat 5, again bend the rays to direct them toward the window, over the upper edge of the next slat 5 therebelow.

In the present instance, as pointed out above with relation to the first example, the rays are all bent, scattered, or diffused at least twice before they travel toward the window.

It is thought to be obvious from the above description, that the particular formation of the slats 5, including the deformations 8, the flanges 6, the deformations 9, and the flat portions 11, reaches a light ray deflecting and diffusing result which prevents directly reflected rays from entering a window equipped with the awning. It is also obvious that an awning constructed of slats so formed, causes the rays to be bent and diffused at least twice before they reach the window.

In Fig. 4 is shown fragment of a slat 5 which in general cross-sectional configuration is substantially the same as the slats of Fig. 3. However, in this embodiment of the slat, instead of the rib-like deformations 8, the major portion of the slat is provided with longitudinally extending rows of rounded bumps, pimples or nodules 13 are provided on its upper surface, and similarly arranged dimples or rounded indentations 14 which are formed in the nether surface of the slat.

In this latter embodiment, the upper surface of the upper portion of the flange 6 is formed with a row of nodules 15, and the lower surface thereof is equipped with similarly arranged dimples 16.

In this embodiment it is preferable that the nodules 13 and dimples 14 of each row be staggered in relation to those of the next adjacent row.

The light diffusing effect of this embodiment is somewhat similar to that obtained in the first embodiment, except that greater diffusion is obtained from the multiplicity of rounded reflecting surfaces of the deformations 8 and 9.

It is obvious that the invention could well be embodied in forms other than the specific one shown in the drawing and described herein, without defeating its practicability, and I therefore do not wish to be limited to specific structure further than I am limited by the scope of the appended claims.

I claim:

1. In a hood-type metal awning adapted to be mounted in slanting position on a building wall, the combination with a panel formed of fixed spaced substantially parallel slats which are positioned transversely of the panel, of: light diffusing deformations carried by the upper surfaces of said slats for reflecting light rays without appreciable glare against the bottom surface of the next slat thereabove; angular baffles extending along the slats for directing light rays without appreciable glare against the bottom surface of the next slat thereabove; and deformations carried by the bottom surfaces of said slats for receiving light rays from the next slat therebelow and directing them without appreciable glare past the inner edges of said baffles.

2. In a hood-type metal awning adapted to be mounted in a slanting position on a building wall, the combination with a panel formed of rigidly spaced substantially parallel slats which extend transversely of the panel, and with angular baffles extending along the slats, of: light diffusing deformations carried by those surfaces of the slats which face in the direction in which the baffles are located, said deformations and baffles directing light rays without appreciable glare against the adjacent surface of the next slat, the light rays which are thus received by said adjacent surfaces being directed beyond the edges of the baffles.

3. In a hood-type metal awning adapted to be mounted in slanting position on a building wall, the combination with a panel formed of spaced substantially parallel slats which are fixedly positioned transversely of the panel, of: light diffusing deformations carried by the upper surfaces of said slats for reflecting light rays without appreciable glare against the bottom surfaces of the next slats thereabove; and deformations carried by the bottom surfaces of said slats for reflecting without appreciable glare light rays thus received and directing them past the inner edges of the subjacent slats.

RAYMOND E. MATTISON.

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

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