

Dec. 26, 1933.

M. C. INDAHL

1,941,308

AWNING

Filed Sept. 9, 1932

3 Sheets-Sheet 1

FIG. 7.

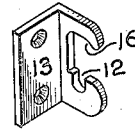


FIG. 1.

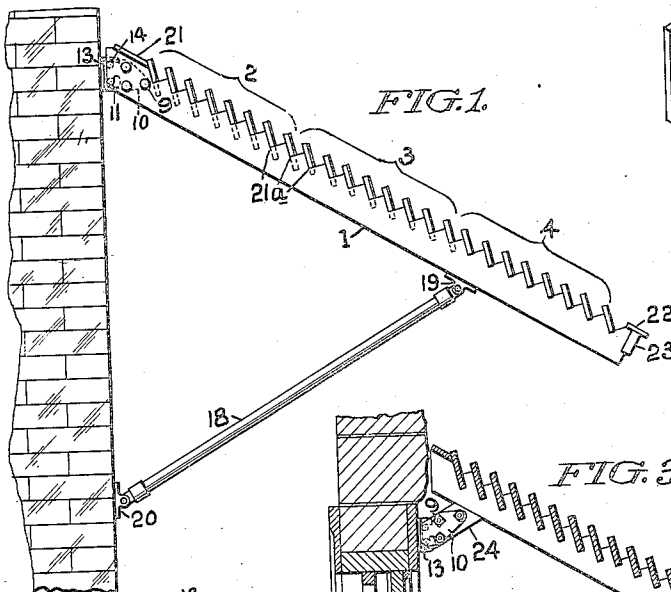


FIG. 8.

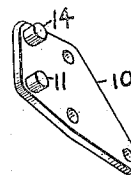


FIG. 3.

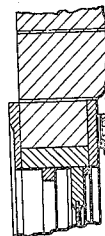


FIG. 2.

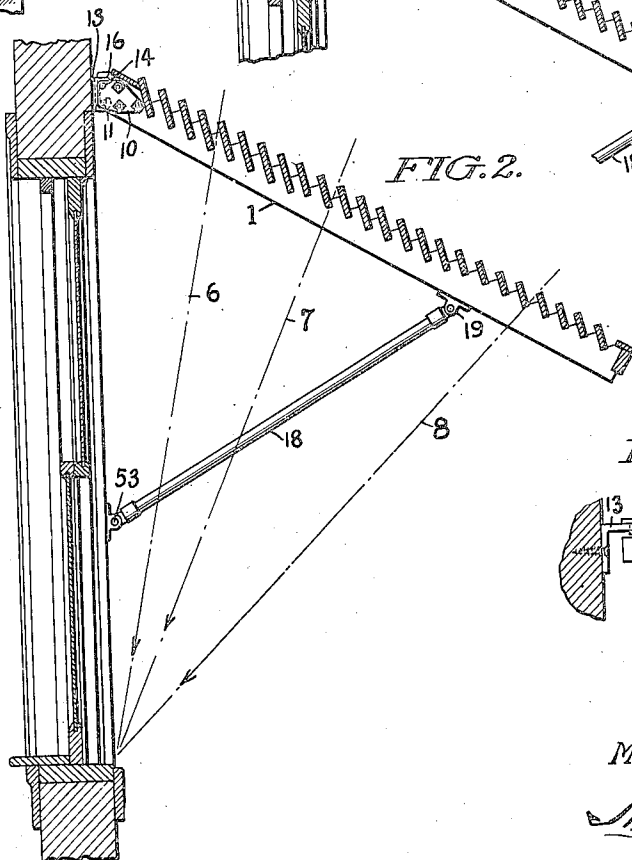
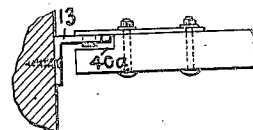


FIG. 9.



INVENTOR:
Mauritz C. Indahl,

M. C. Indahl
Attorney.

Dec. 26, 1933.

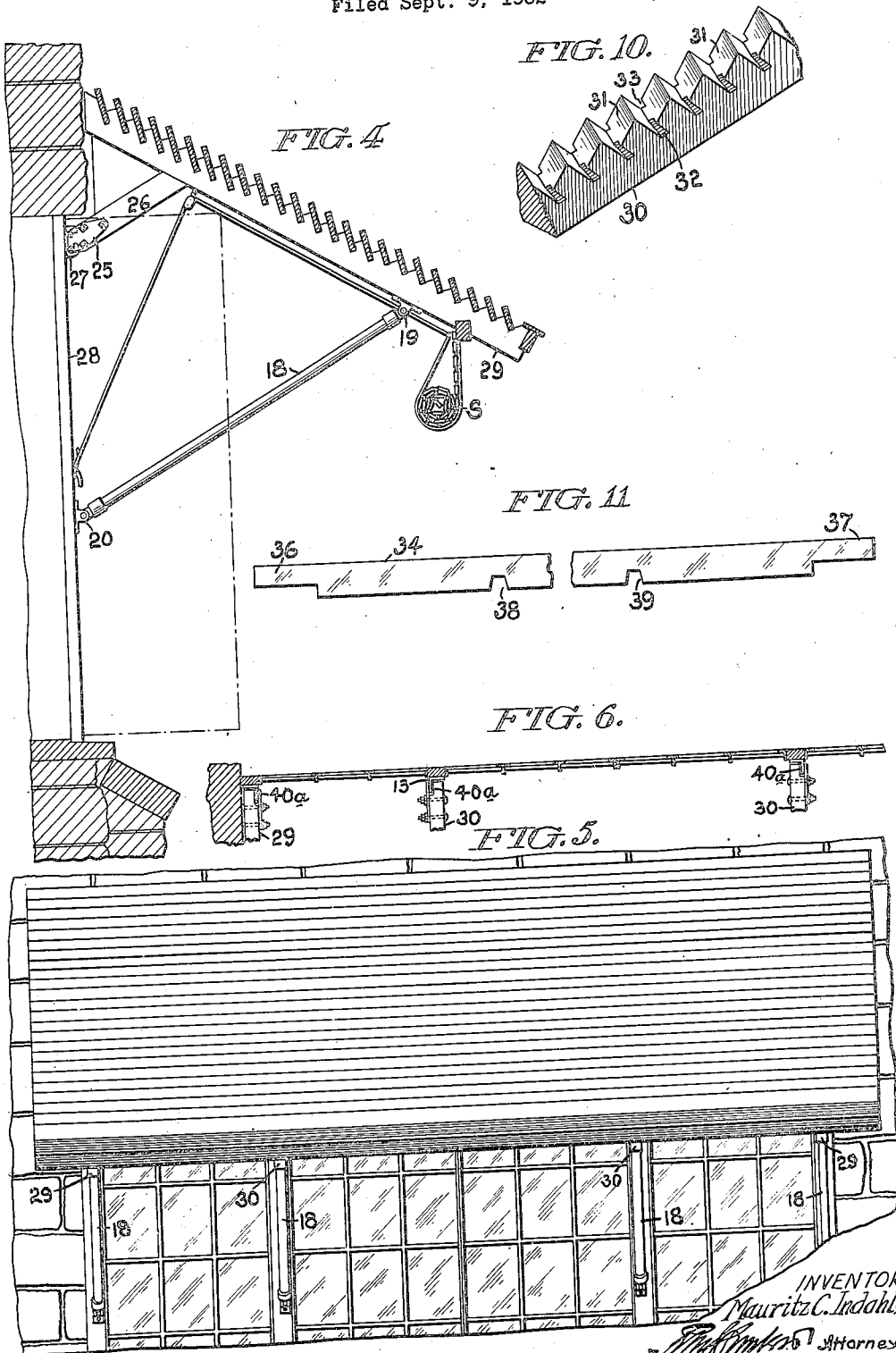
M. C. INDAHL

1,941,308

AWNING

Filed Sept. 9, 1932

3 Sheets-Sheet 2



INVENTOR:
Mauritz C. Indahl,
Attorney.

Dec. 26, 1933.

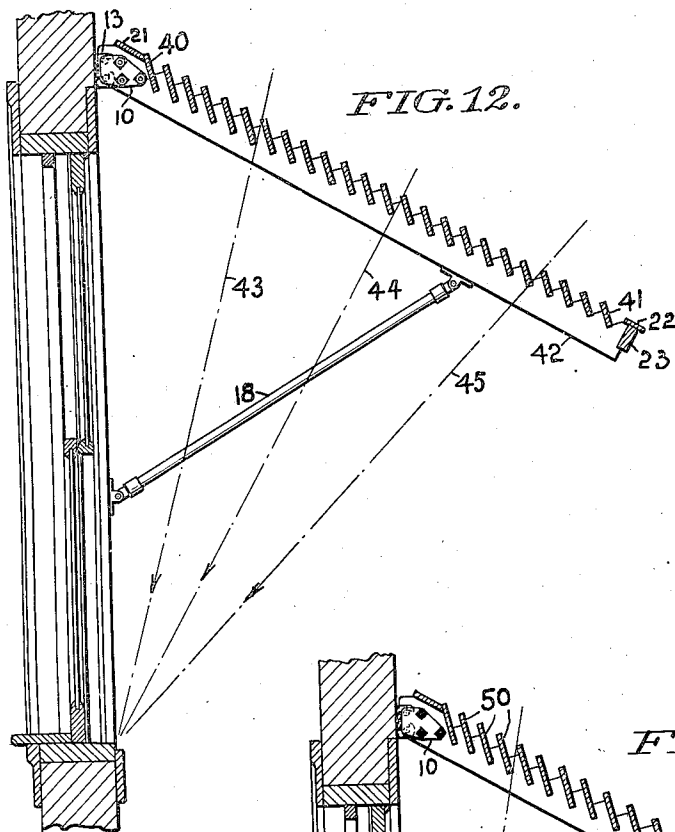
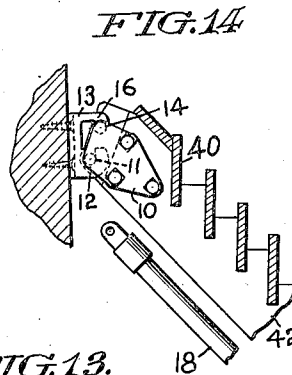
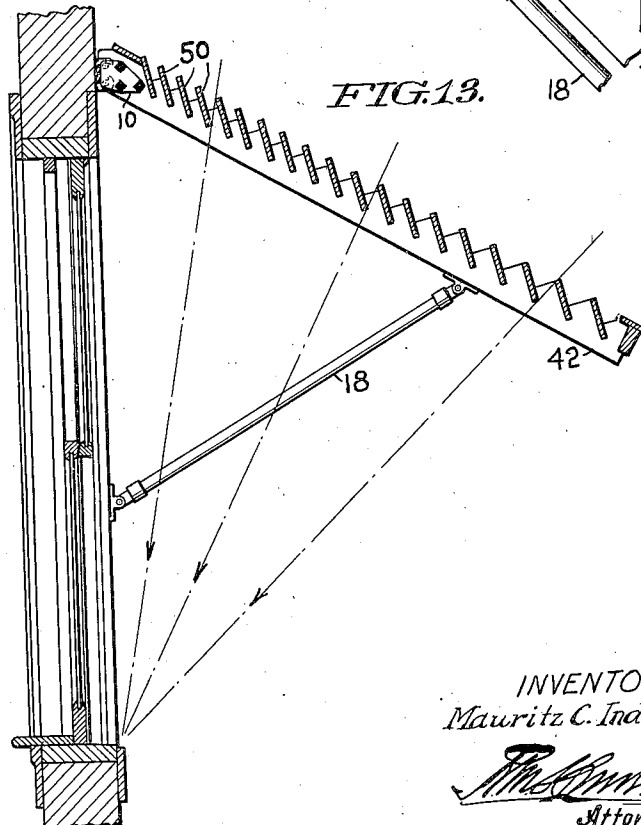
M. C. INDAHL

1,941,308

AWNING

Filed Sept. 9, 1932

3 Sheets-Sheet 3



INVENTOR:
Mauritz C. Indahl,

The Gruber
Attorney.

UNITED STATES PATENT OFFICE

1,941,308

AWNING

Mauritz C. Indahl, Rydal, Pa.

Application September 9, 1932. Serial No. 632,328

11 Claims. (Cl. 156—15)

My invention relates to improvements in house or building accessories generally referred to as awnings.

Awnings are usually constructed of textile material and have collapsible frames, whereby they may be folded and with a primary object in use to prevent the direct entrance of the sun's rays through windows or other openings in the wall of the building. They also tend to keep the rooms as cool as possible. Being made of woven material, their use usually constitutes a barrier against a free and effective ventilation of the rooms, thus protected, and to such an extent as to almost defeat their own object. They furthermore, are easily damaged by inclement weather.

Awnings of this character, made of closely woven fabric or of any solid or compact material, not only protect the windows or openings from the sun's rays and from rain, but also shield the ground and window sills, thus preventing the proper growth of shrubbery or plants in window boxes.

One of the objects of my invention is to provide a construction useful as an awning or sun shade, but made in a manner and of suitable material which will permit of such variation in detail treatment as required to create a harmonious ensemble with the building itself, both architecturally and in color scheme.

A further object is to provide a construction that will give permanent protection from direct sunlight to predetermined areas of windows or other openings.

Another object is to provide a construction that will allow a limited amount of both sunshine and rain to reach window boxes or other outside plants directly under the awning, while at the same time providing reasonable assurance that rain will not enter the windows or openings thus protected.

The invention has for a further object the provision of suitable methods of fastening that will be secure and rigid when in place but easily mounted and demounted.

The awning of this invention can be painted or stained and blended with the scenic construction of the building, thus appearing as a substantial part of said building.

During storms with high wind velocity, the awnings made of fabric are frequently torn and dismantled due to their failure to permit wind to freely pass through vents which allow escape of wind and lowering of the pressure upon the awning.

My invention comprises in an awning, a trans-

verse support associated with a plurality of longitudinal strips or slats arranged thereon in parallel relation, said strips or slats providing a series of oblique passages for the rays of the sun and a corresponding series of light obstructing walls whereby all rays of the sun directed upon the awning are obstructed except those passing through the passages during a continued rising of the sun from points between the horizon and zenith and concentrating upon a predetermined area below the awning.

My invention is further embodied in an awning having transverse supports upon which are arranged a plurality of longitudinal strips or slats, the same evenly spaced in parallel relation and of greatly increasing depth in one embodiment.

My invention also includes an awning structure comprising an obliquely arranged frame providing apertures through which the sun's rays successively pass while assuming positions from horizon to zenith or vice versa, said apertures opening obliquely downward through the awning and bounded by upper and lower edges which shut off or exclude the sun's rays except those thereof which reach a predetermined fixed area below the awning.

My improvements, including the nature and objects already stated and hereinafter referred to, are fully illustrated in the accompanying drawings; and these are used for purposes of illustrating the general features of my improvements and without limiting the invention to the particular forms so illustrated, by way of example.

Referring to the drawings: Fig. 1 is a side elevation of one form of an awning embodying my invention; Fig. 2 is a vertical cross sectional view through the center of the awning shown in Fig. 1; Fig. 3 is a vertical sectional view of one modification of my invention, with a short strut holding wall brackets and plates; Fig. 4 is a vertical cross sectional view of another modification of my invention applied to a casement window with stone work over-hanging and brackets fastened to the casement window; Fig. 5 is a front elevation of Fig. 4, with the roll screen removed; Fig. 6 is a partial plan view of Fig. 4, showing method employed to fasten the brackets to prevent side movement; Fig. 7 is a perspective view of one of the brackets employed against wall; Fig. 8 is a perspective view of one of the plates which are fastened to the awning; Fig. 9 is a partial plan view, enlarged, showing one side of structure employed in Figs. 1 and 2; Fig. 10 is a perspective view of a portion of one of the intermediate lon-

gitudinal transverse strips used on long window construction; Fig. 11 is a view of one of the longitudinal strips employed to construct the awning shown in Figs. 4 and 5; Fig. 12 is a modification of my invention, showing longitudinal strips of varying depths; Fig. 13 is another modification of my invention, showing the use of longitudinal strips of same depth throughout, the space between each strip varying; and Fig. 14 is a view depicting the method of removal of the awning as a whole.

As will be seen in Figs. 1 and 2, inclined transverse supports 1 (one at each end of the awning) support three groups of longitudinal strips 2, 3, and 4, the same being respectively of different depths but relatively evenly spaced apart upon the supports, and so constructed that the strips 2 of the first group are deeper than the strips 3 and 4 of the second and third groups. Strips 4 of the third group are of the smallest depth. By this construction, it will be readily seen that sunlight will pass through the awning only to fall upon or in the vicinity of the window sill and not through the window, as shown by the dot and dash lines 6, 7, and 8, of Fig. 2. The window and room back of the window are protected against entrance of the sun's rays by the depth, spacing and angular relation of the longitudinal strips 2, 3, and 4, to each other. It will be noted that the longitudinal strips do not overlap each other, thus allowing the sunlight to pass (obliquely to perpendicularly) directly through the spaces between the strips as the altitude of the sun changes.

As illustrated, the longitudinal strips 2, 3 and 4, allow sunlight to directly strike upon the sill outside of the window and not elsewhere. This design may be varied so that sunlight will reach the sill inside of the window so as to aid in the growth of conservatory plants placed thereon. The place of sunlight reception can be readily determined by the angular pitch, spacing, width or depth of the strips and the slope of the awning as a whole. A desirable average for the width of the strip and pitch is secured by making the upper pair of strips cut off the sun's rays as it reaches the zenith; next, one-third the distance down, ascertain the depth of the strip that will cut off or eliminate the sun's rays at said point; and two-thirds down ascertain the depth required to cut off or eliminate the sun's rays at this point. These results provide three widths or depths of strips as illustrated. For convenience of illustration, the awning slopes 30 degrees, while the longitudinal strips incline toward the building approximately 15 degrees. The longitudinal strips having this angular relation also assure the elimination of rain entering an open window, under the awning, even when rain is accompanied by a reasonably strong wind.

Securely fastened by bolts 9 to upper portion of the inclined transverse supports 1 are plates 10. Lower lugs 11 of plate 10 rest in recesses 12 of the wall bracket 13, while the upper lugs 14 ride in guides 16 of the wall bracket 13. The wall brackets 13 may be securely fastened to the wall or framing of the building in any manner desired. The lower portion of the awning may be held in angular position by rods 18 held in place by awning hinges 19 and wall hinges 20. As will be noted from Fig. 1, the inclined transverse supports 1 have a V cut 21a (also see Fig. 10). The bottom of the V cut is parallel with the bottom edge of the inclined transverse support 1. The longitudinal strips 2, 3 and 4 have their ends cut

to provide an equal depth and are fastened securely to said inclined transverse supports 1. This construction allows the upper edges of the longitudinal groups of strips 2, 3 and 4 to be parallel with the bottom edge of inclined supports 1, so that the bottom edges of longitudinal strips are irregular. As this irregularity is inside the construction of the awning, the appearance of the awning is not marred. For windows of moderate length, the longitudinal strips are not supported at the center; but for windows of great length there may be one or more intermediate inclined transverse supports employed.

In the construction of the awning as shown in Figs. 1 and 2, the first longitudinal strip is some distance from the wall and a wide strip 21 may be fastened across to close the gap, while at the bottom is secured another strip 22 and a finishing strip 23. Strips 21, 22 and 23 not only act as a finish but also serve to make the construction of the awning more rigid.

As also shown in Figs. 1 and 2, the awning is fastened to the brick wall. This construction allows for the awning as a whole to blend with buildings having a sloping roof construction and acts as a finish to said building. The same design may be fastened to the window frame, if so desired.

Another form of my invention is shown in Fig. 3, in which 24 is a small strut carrying the plate 10, but in an inverted position from that shown in Figs. 1 and 2. When the window frame is recessed inwardly and the stone work is slightly irregular, the strut 24 can be made of any length so as to use the window frame to hold wall brackets 13, as is further shown in Fig. 4, where the strut 26 and inverter plates 25 are fastened in brackets 27 of similar character to those shown in Fig. 7, said brackets being secured to the casement window 28.

Referring now to Figs. 4, 5 and 6, wherein a large casement window is shown and where the awning is of corresponding great length. As the end inclined transverse supports 29 are a great distance apart, the longitudinal strips would have a tendency to bend, and to prevent this, intermediate transverse supports 30 are interposed. These latter may be made as shown in Fig. 10, in which the V cuts 31 are of the same depth as those on the end inclined transverse supports 29, but have grooves 32 and 33 cut angularly on each side. One of the longitudinal strips 34, is shown in Fig. 11, and as will be seen, the ends 36 and 37 of the longitudinal strips are of an even depth, but along the length of the strips the depth is varied according to its location in the awning. To compensate for the even depths on ends, cuts 38 and 39 allow the longitudinal strip to retain its even top construction. These notches or cuts 38 and 39 of the strips 34 (Fig. 11) have beveled sides which fit into grooves 32 and 33 (Fig. 10) of intermediate transverse strips or supports 30 and afford a rigid construction; that is to say, the notches 38 and 39 so fit upon the supports or strips 30 that the bars 34 are held against longitudinal displacement as well as held at the proper angle to prevent the rays of the sun passing through the awning except to a given extent, as hereinbefore explained. To retain the awning as a whole in place and to prevent side motion, the struts are recessed as at 40, in Figs. 6 and 9. The awning so constructed is rigidly held in place against side thrust by pinning the rods 18 in brackets 19 and 20.

A roll screen S may be provided for further

protection against excessive sunlight, when the sun is very low or near the horizon, at which time the sunlight would tend to enter the windows or openings if not thus protected by the awning, as will be more clearly seen from Fig. 4.

As has been explained, the depths of the longitudinal strips is such as to cause the sunlight to be shut off except that directed downwardly upon the window sill and ground below. For commercial purposes, the longitudinal strips are preferably of three depths. They are, however, not limited to this construction, but may be varied as seen in Fig. 12. The first longitudinal strip 40 is of the greatest depth while the last or bottom longitudinal strip 41 is of the smallest depth. The tops of all of the strips are parallel with the bottom of the inclined transverse supports 42, but the depths of the various longitudinal strips between 40 and 41 are all of different depths or heights. A line drawn from 40 to 41 at the bottom edges would indicate this construction. The dot and dash lines 43, 44 and 45 indicate the sun's rays striking in the same relation as with the awning shown in Figs. 1, 2, 3 and 4.

Another modification is shown in Fig. 13, wherein the depths of the longitudinal strips 50 are equal, but the distance between each strip 50 varies so that the sunlight is similarly shut off, as previously described and with the same results.

The removal of the awning is accomplished by removing pins 53 (Fig. 2) from the bracket 20, and swinging rod 18 upward as seen in Fig. 14. The awning as a whole is then swung toward the building and rides on its lug 11, in recess 12 of wall bracket 13. The upper lug 14 of the plate 10 rides in the guide 16 of wall bracket 13 until the lug 14 clears the wall bracket 13, and then by a slight upward movement of the awning as a whole, it is released.

It will now be apparent that I have devised a novel and useful construction of apparatus which embodies the features of advantage enumerated as desirable, and while I have in the present instance shown and described the preferred embodiments thereof which have been found in practice to give satisfactory and reliable results, it is to be understood that I do not restrict myself to the details stated as the same are susceptible of modification in various particulars without departing from the spirit or scope of the invention.

I claim:

1. The awning structure of claim 11, wherein also the upper edges of the strips lie in a common plane and the lower edges are arranged in groups, each group lying in a separate plane.
2. The awning structure of claim 11, wherein also the upper edges of the strips lie in a common plane and the lower edges lie in different planes.
3. The awning structure of claim 11, wherein also the longitudinal slat-like strips form a series of unobstructed parallel passages of different lengths through which the rays of the sun may pass the passages of greater length being arranged at the rear of the awning and gradually decreasing in length toward the front of the awning.
4. An awning sloping downwardly from rear to front, comprising inclined transverse supports, combined with a plurality of longitudinal slat-like strips arranged thereon in parallel relation and spaced apart, said strips providing a series of obliquely arranged passages for the rays of

the sun and a corresponding series of light obstructing walls forming said passages, whereby all rays of the sun directed upon the awning are obstructed except those passing successively through the passages upon a predetermined area below the awning during intervals in ascension of the sun from points between the horizon and the zenith.

5. An awning sloping downwardly from rear to front, comprising inclined supports, combined with a plurality of longitudinal slat-like strips fastened transversely thereon, said longitudinal strips evenly spaced apart in parallel relation to and providing ray obstructing surfaces of different depths angularly positioned on the supports at the free end of the awning for eliminating the sun's rays projected in an oblique direction while permitting the use of the sun's perpendicular rays for diffused illumination of various rooms or openings therein thus protected from the oblique direct rays.

6. An awning sloping downwardly from rear to front, comprising inclined supports, combined with a plurality of longitudinal slat-like strips of the same depth arranged in parallel relation upon the oblique supports, said strips progressively increasing toward the outer edge of the awning and having their upper and lower edges in respectively different parallel planes and the strips angularly positioned to a horizontal plane to eliminate the sun's rays in one direction but permitting the sun's downward rays to pass between adjacent strips at predetermined points in the sun's ascension while allowing the light filtering downward through the awning for indirect diffusion illumination of various rooms or openings otherwise protected from direct rays.

7. An awning sloping downwardly from rear to front, comprising inclined supports, combined with a plurality of longitudinal slat-like strips fastened transversely upon said supports, said longitudinal strips evenly spaced and arranged in groups, each group having strips of progressively smaller depth adjacent to the outer edge of the awning said strips also being each positioned by one longitudinal edge resting obliquely upon the supports.

8. The awning structure of claim 7, wherein further, the oblique supports are provided with oblique grooves in which the longitudinal strips fit and are supported in an inclined position.

9. An awning sloping downwardly from rear to front, comprising a series of inclined supports, combined with a plurality of longitudinal slat-like strips fastened to and at right angles to said supports, said strips spaced apart for permitting passage of a portion of the sun's rays obliquely downward at predetermined intervals while preventing the simultaneous passage of the rest of the rays falling upon the awning, the awning as a whole held in inclined position to provide oblique parallel passages of progressively less depth between the longitudinal strips and adjacent to the outer edge of the awning through which the sun's rays pass successively as it assumes changed positions from the horizon to the zenith.

10. An awning sloping downwardly from rear to front, comprising an obliquely arranged frame provided with a series of elongated apertures therein through which the sun's rays pass successively, said apertures provided with walls extending obliquely downward and having upper and lower parallel bounding edges out of vertical alignment which obstruct the passage of the sun's rays except those which pass through the apertures

upon a predetermined place beneath the awning as the sun moves from horizon to zenith positions, and vice versa.

11. An awning sloping downwardly from rear to front, comprising inclined transverse supports, combined with a plurality of longitudinal

slat-like strips of different depths evenly spaced in parallel relation and so arranged that the strips of smaller depth are positioned at the front edge of the awning, and gradually decreasing in depth toward the rear of the awning.

MAURITZ C. INDAHL.

80

10	85
15	90
20	95
25	100
30	105
35	110
40	115
45	120
50	125
55	130
60	135
65	140
70	145
75	150