Jan. 2, 1962 R. K. DEAN ETAL 3,015,135

VENTILATED METAL AWNING

Filed Oct. 3, 1955 4 Sheets-Sheet 1

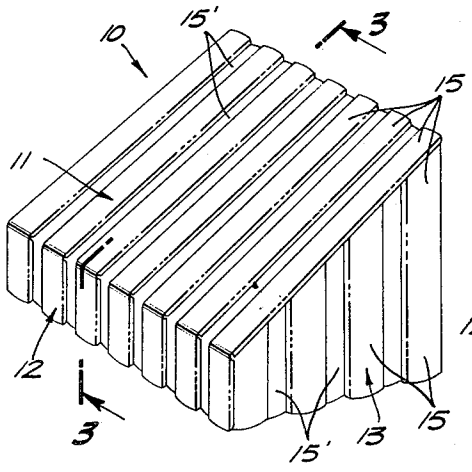


FIG. 1.

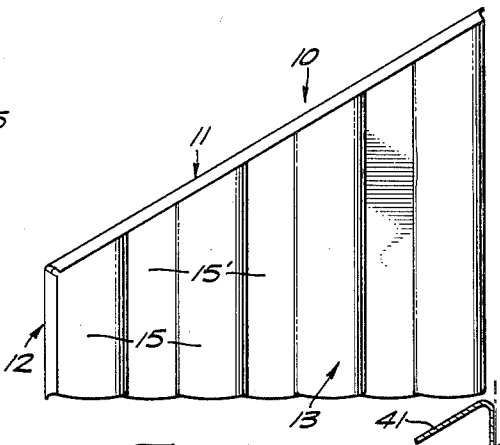


FIG. 2.

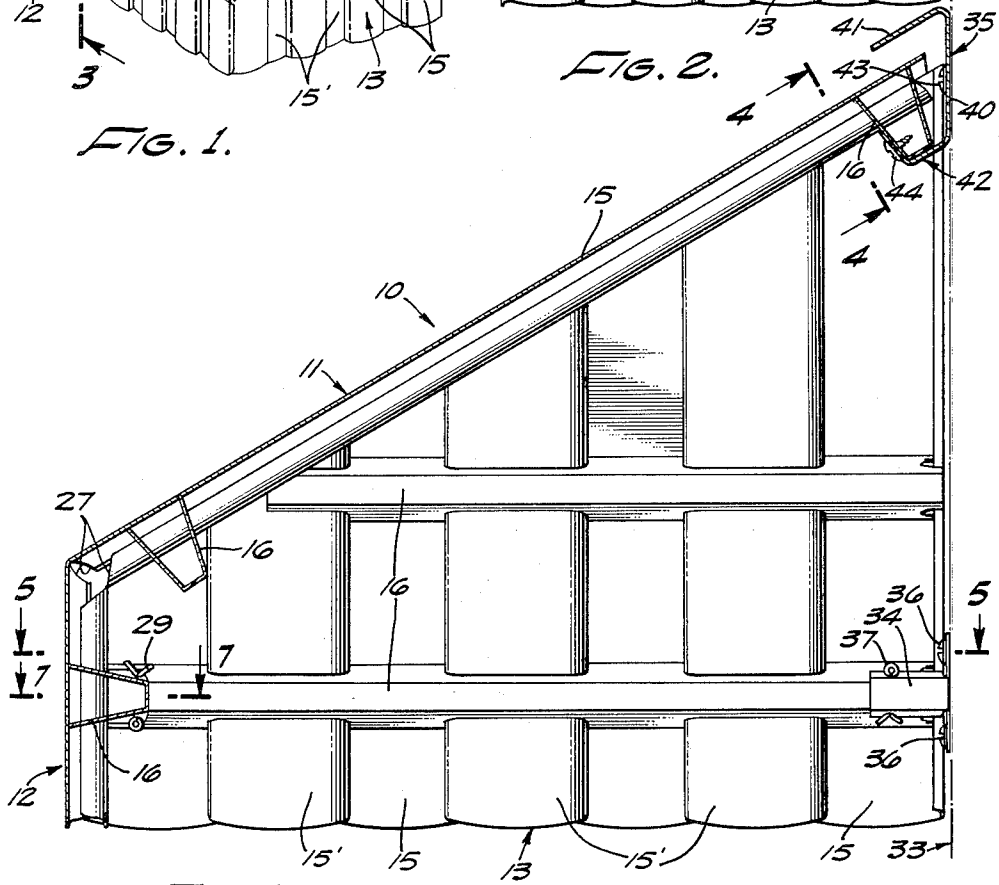


FIG. 3.

INVENTORS
RALPH K. DEAN
EMIL J. SLATKOVSKI
BY HERMAN E. WEGNER
Herbert E. Kidder
AGENT

Jan. 2, 1962 R. K. DEAN ETAL 3,015,135

VENTILATED METAL AWNING

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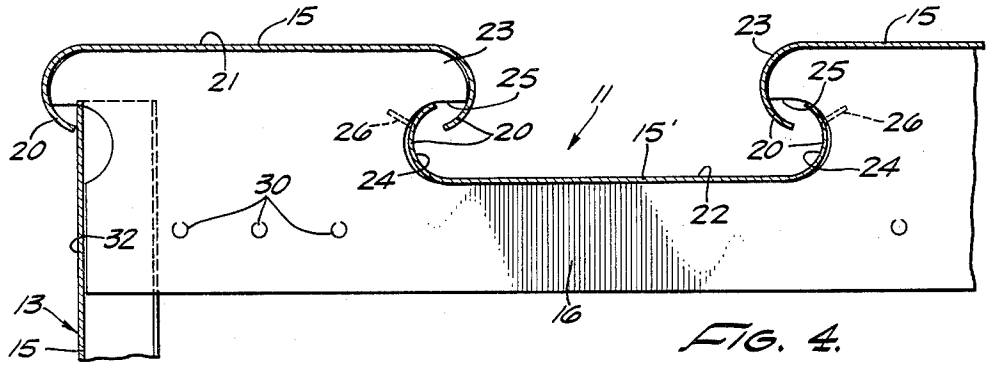


FIG. 4.

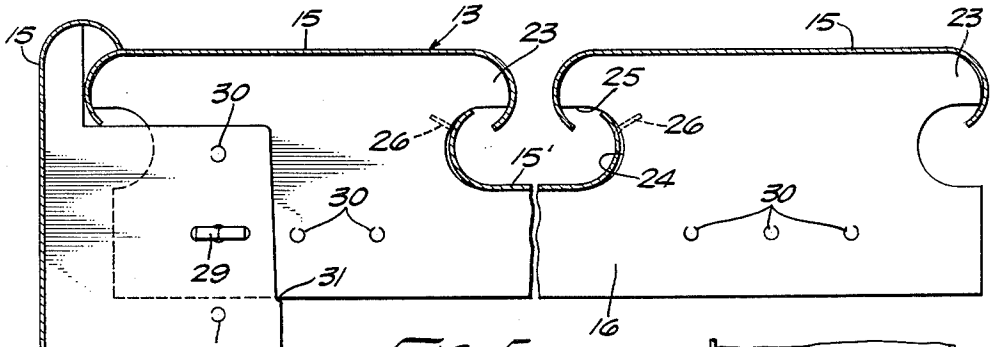


FIG. 5.

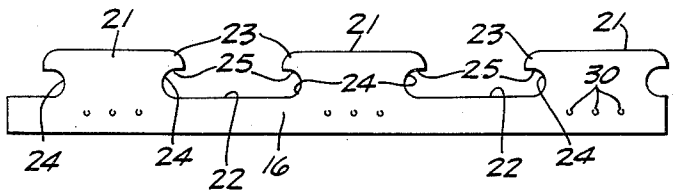


FIG. 6.

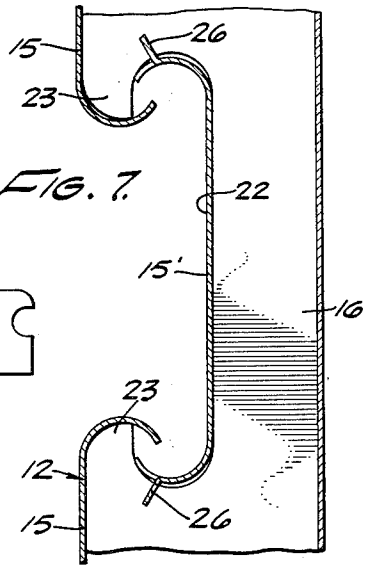


FIG. 7.

INVENTORS
RALPH K. DEAN
EMIL J. SLATKOVSKI
HERMAN E. WEGNER
BY Herbert E. Kidder
AGENT

Jan. 2, 1962 R. K. DEAN ETAL 3,015,135

VENTILATED METAL AWNING

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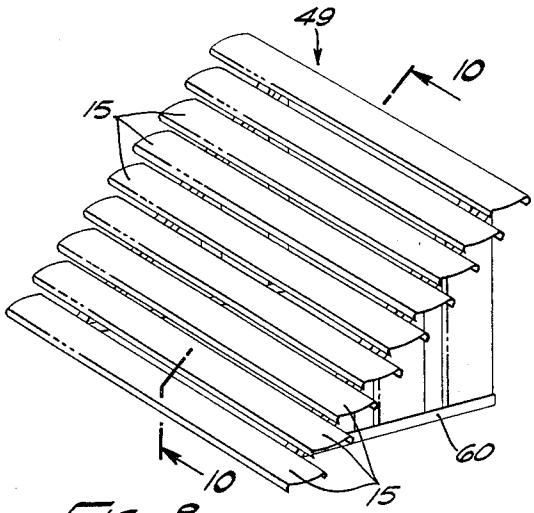


FIG. 8.

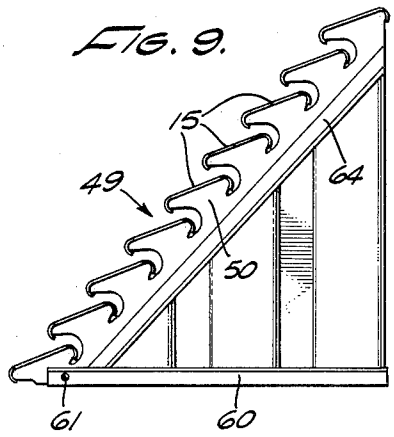


FIG. 9.

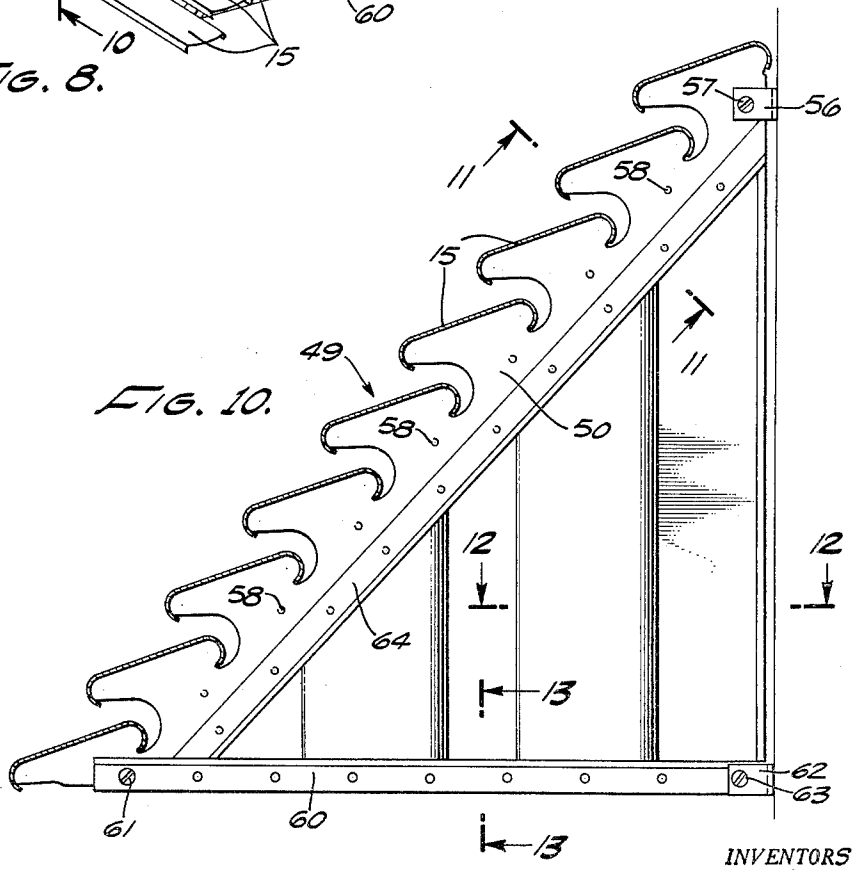


FIG. 10.

INVENTORS
RALPH K. DEAN
EMIL J. SLATKOVSKI
HERMAN E. WEGNER
BY Herbert E. Kidder
AGENT

Jan. 2, 1962 R. K. DEAN ETAL 3,015,135

VENTILATED METAL AWNING

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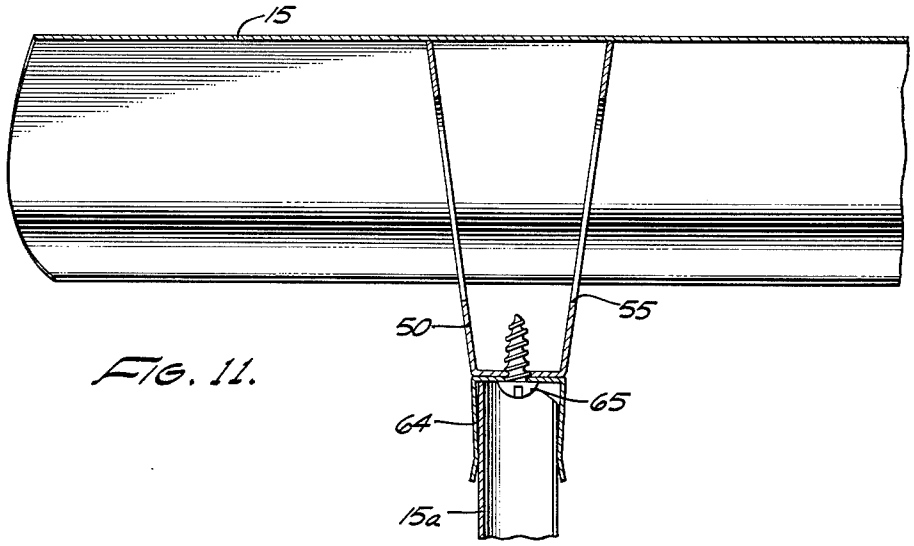
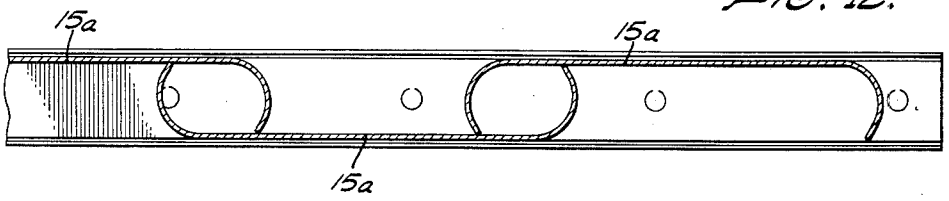


FIG. 11.

FIG. 12.



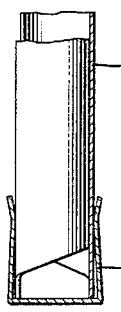


FIG. 13.

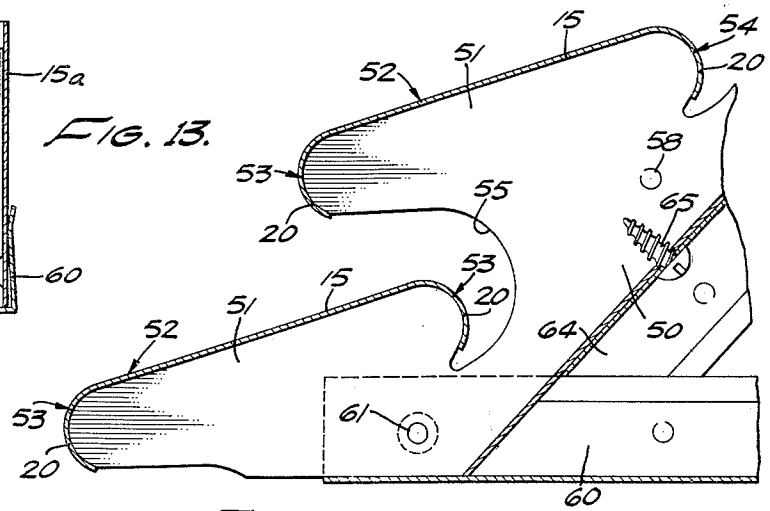


FIG. 15.

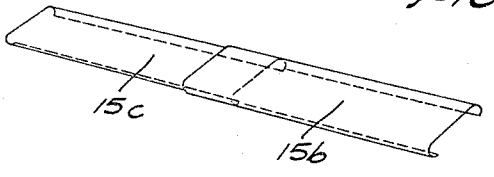


FIG. 14.

INVENTORS
RALPH K. DEAN
EMIL J. SLATKOVSKI
BY HERMAN E. WEGNER
Herbert E. Fidder
AGENT

United States Patent Office

3,015,135
Patented Jan. 2, 1962

3,015,135

VENTILATED METAL AWNING

Ralph K. Dean, Emil J. Slatkovski, and Herman E. Wegner, Riverside, Calif., assignors, by mesne assignments, to National Distillers and Chemical Corporation, a corporation of Virginia

Filed Oct. 3, 1955, Ser. No. 537,942
1 Claim. (Cl. 20—57.5)

This invention relates to metal awnings and similar overhead shelter structures, such as canopies, umbrellas, and the like, and its primary object is to provide a new and improved rigid, ventilated awning or the like embodying roll-formed sheet metal components which can be assembled quickly and easily, with a minimum of tools.

Another important object of the invention is to provide a system of awnings wherein the same panel, or slat, can be used to make either a vertical panel awning or a horizontal panel awning, by mounting the panel on one or the other of two types of stringers. Thus, with one or two additional structural members for braces and the like, it is possible to manufacture a variety of awnings to cover practically any type of window and to fit any architectural treatment.

Another object is to provide an awning panel of simple cross sectional shape which can be roll formed from prepainted, coiled strip in the awning manufacturer's plant, using relatively inexpensive machinery. This makes possible considerable savings in freight charge for shipping material from the strip factory to the awning manufacturer's plant, owing to the fact that coiled strip is a compact, high density commodity taking the lowest freight rate, whereas formed panels are a bulky, light weight commodity taking a much higher freight rate based more on volume than on weight.

A further object of the invention is to provide an awning of extremely simplified assembly, wherein most of the elements slide together or snap into place without requiring screws or other fasteners, yet which hold together with a positive grip that resists the racking and twisting forces exerted by winds of near-hurricane velocity. One important advantage of this feature is that most sizes of awnings can be put up by one man alone, which means lower labor cost for installation. The present invention minimizes the cost of assembly, which is normally the principal cost of an awning.

Still another object of the invention is to provide an awning that is particularly adapted to being shipped in knocked down condition and assembled on the job by unskilled labor.

A further object of the invention is to provide a new and improved method of mounting awnings on a wall or other supporting structure, which is simple, quick to install, and extremely strong.

The foregoing and other objects and advantages of the present invention will become apparent to those skilled in the art upon consideration of the following detailed description of the preferred embodiment thereof, reference being had to the accompanying drawings, wherein:

FIGURE 1 is a perspective view of a vertical slat awning embodying the principles of the present invention;

FIGURE 2 is a side elevation of the same;

FIGURE 3 is an enlarged sectional view, taken at 3—3 in FIGURE 1;

FIGURE 4 is an enlarged fragmentary section, taken at 4—4 in FIGURE 3;

FIGURE 5 is an enlarged fragmentary section taken at 5—5 in FIGURE 3;

FIGURE 6 is a side elevational view of one of the stringers;

FIGURE 7 is an enlarged fragmentary section taken at 7—7 in FIGURE 3;

FIGURE 8 is a perspective view of a horizontal slat awning embodying certain of the principles of the present invention;

FIGURE 9 is a side elevation of the same;

FIGURE 10 is an enlarged sectional view, taken at 10—10 in FIGURE 8;

FIGURE 11 is an enlarged fragmentary sectional view, taken at 11—11 in FIGURE 10;

FIGURE 12 is an enlarged fragmentary sectional view taken at 12—12 in FIGURE 10;

FIGURE 13 is an enlarged fragmentary sectional view, taken at 13—13 in FIGURE 10;

FIGURE 14 is an enlarged fragmentary sectional view, taken at the junction of the horizontal brace with the slat-supporting stringer; and

FIGURE 15 is a perspective view, showing how two lengths of panel or slat may be snapped together to form a continuous panel of any desired length.

In the drawings, the vertical panel awning of FIGURES 1 to 7, inclusive, is designated in its entirety by the reference numeral **10**, and is seen to comprise an inclined top **11** terminating at its lower end in a valance **12**, and sides **13**. Both the top **11** and sides **13** are made up of assemblies of elongated sheet metal panels, **15** and **15'**, mounted on stringers **16**. The panels **15**, **15'** are arranged parallel to one another and face alternately in opposite directions. In the top **11**, the panels are spaced apart vertically, with the upper panels **15** facing downwardly, and the lower panels **15'** facing upwardly, while the sides **13** consist of inwardly facing outer panels **15**, and outwardly facing inner panels **15'**.

Each of the panels **15**, **15'** is formed from flat sheet metal strip, with the longitudinal edges thereof curled roundly at **20** toward the same side of the panel thru an angle of between 90° and 180°; the preferred angle being approximately 135°, as in the drawings. With the edges thus curled up from the midsection, the panel **15** has the cross section of a shallow, flat-bottomed channel. The preferred method of carrying out the invention calls for shipping the flat, pre-painted strip in coils from the strip manufacturer to the awning manufacturer who, in turn, runs the strip thru a roll-forming machine that curls the edges at **20** and cuts the panels to length. In this manner, considerable economy is effected in shipping the panel material to the awning manufacturer, since the coils of flat strip are extremely compact for the weight, and therefore enjoy a favorable freight rate as compared to formed panels, which are extremely bulky to ship.

The stringers **16** are likewise formed of sheet metal which has been formed to the generally U-shaped cross section shown in FIGURE 3. The longitudinal edges of the stringer are cut out, as best shown in FIGURE 6, to provide vertically spaced upper and lower seats **21** and **22**, respectively, shaped to receive upper and lower panels **15** and **15'**, respectively. Each of the upper seats **21** is flat on top, with rounded end, projecting portions **23** which overhang the ends of the adjacent lower seats **22**. The upper seats **21** fit into the channel of the upper panels **15**, and the end portions **23** project into and snugly engage the edge rolls **20**.

The lower seats **22** are flat on the bottom, and their ends are curved upwardly at **24** to fit snugly around the outside of the edge rolls **20** of the lower panels **15'**. The bottoms of the overhanging end portions **23** of the upper seats are cut away at **25** to provide clearance for the edges of the lower panels.

The panels of the top section **11** are assembled on at least two, and in most cases three or more, stringers **16** which are disposed horizontally and extend transversely of the panels, with the channel opening upwardly and out-

wardly. The lower panels 15' are assembled on the stringers by sliding them endwise thru the lower seats 22. At this point, the lower panels 15' are locked to the valance stringer by means of a locking tool (not shown) which engages the curled edge of the panel between the sides of the stringer and bends a tab 26 outwardly. The tabs 26 prevent lengthwise shifting of the lower panels with respect to the stringer. The valance 12 is then bent down to the desired angle, for which purpose the curled edges 20 of the panels have V-shaped notches 27 cut out. Next, the panels 15' are locked to the upper stringers by bending out tabs 26, after which the upper panels 15 are snapped down over the upper seats 21.

The panels of the side sections 13 are likewise assembled on two or more stringers 16, and the side sections are then joined to the top section 11 by interfitting the adjacent ends of the bottom stringers, as shown in FIGURE 5, and passing a split cotter pin 29 thru aligned holes in the sides of the stringers, which are formed by punching out knockouts 30 that are provided at spaced intervals. The knockouts 30 are incompletely sheared holes punched in the stringers, and require only a moderate amount of pressure with the point of a nail or other tool to push them out. In order to interfit the ends of the stringers 16, one of the stringers is notched out at 31, and the sides thereof are spread slightly to receive the end of the other stringer.

As best shown in FIGURE 4, the top ends of the side section panels extend under and are engaged by the outer edge roll of the end panel 15 on the top section 11. The outer panel 15 of the side section 13 is also engaged on its inside surface by the end 32 of the top section stringer 16. The top edge of the side section 13 is thus confined between the edge roll of the outer panel and the end of the stringer 16, and is thereby held against lateral displacement.

The awning 10 is mounted on a wall 33 or other supporting structure by means of brackets 34 and a supporting member 35 (see FIGURE 3). The brackets 34 are secured to the wall by screws 36, and are shaped to receive the end of the bottom stringer 16 of the side sections, to which they are attached by cotter pins 37. The supporting member 35 serves as both support and flashing for the awning, and to this end is provided with a vertical back 40, a downwardly inclined drip shelf 41 at the top edge thereof overhanging the ends of the panels, and an upwardly opening channel 42 at the bottom edge to receive the top stringer 16 of the top section 11. The member 35 is secured by screws 43 to the wall, and the stringer 16 is held down in the channel 42 by a sheet metal screw 44. The distance between the adjacent edges of the drip shelf 41 and the channel 42 is slightly greater than the overall height of the upper stringer 16 and attached panels, which permits the stringer to be inserted under the drip panel and seated in the channel.

The vertical panel awning described herein can be assembled quickly and with ease, using a minimum of tools and labor. The structural members are all roll-formed sections, which are light and inexpensive, and a minimum of fasteners are required to assemble the components.

One of the important features of the invention resides in the fact that the panels 15 can be used to make up a horizontal panel awning of the type illustrated at 49 in FIGURE 8, as well as the vertical panel awning of FIGURE 1, by merely attaching the panels to a different stringer and using one or more additional structural members or attachment brackets. For an understanding of the construction of the horizontal panel awning 49, reference is had now to FIGURES 8 to 15, inclusive.

As best shown in FIGURES 10 and 11, the panels 15 are mounted on two laterally spaced, inclined stringers 50. The stringers 50 are preferably made up of sheet metal, formed into deep U-shaped channels, the sides of which diverge slightly as shown in FIGURE 11. The

longitudinal edges of the stringers are cut out to form a plurality of equally spaced, parallel seats 51 for the downwardly opening panels. Each of the seats 51 is inclined to the longitudinal axis of the stringer at an angle such that the top surface of the panel 15 is inclined downwardly at approximately 20° from the horizontal, so as to shed rain and exclude the slanting rays of the sun when the latter is low in the sky. Also, the lower end of each seat overhangs the upper end of the seat below, so that there is a certain amount of overlap of the panels. Each seat has a straight edge portion 52 that lies flat against the bottom of the panel, and rounded end portions 53 and 54 that extend into and engage the curled edges 20 of the panel. The seat 51 is undercut deeply at its lower edge, as shown at 55, to permit the curled rear edge of the next lower panel to be inserted behind and hooked under the rear end 53 of its seat.

The two stringers 50 are attached at their upper ends to the wall or window frame, by means of U-shaped brackets 56, that are connected to the sides of the stringer by sheet metal screws 57, which are screwed into knockouts 58 provided in the stringer. The lower ends of the stringers are held out from the wall by means of horizontal braces 60. The braces 60 are U-shaped channels, which open upwardly, and the outer end of the channel receives the bottom end of the stringer 50 and is attached thereto by sheet metal screws 61 that also screw into the knockouts 58. A U-shaped bracke 62 is secured by sheet metal screws 63 to the other end of the brace, and this bracket is mounted on the wall or window frame to support the awning.

The horizontal panel awning 49 may be made up without side sections, in which case, the construction as described to this point, is complete. If side sections, or returns, are desired, they may be added to the awning by attaching a downwardly opening, U-shaped channel member 64 to the underneath side of the stringer 50, using sheet metal screws 65. Vertical panels 15*a* are then inserted into the channels 60 and 64, said panels facing alternately inwardly and outwardly, as best seen in FIGURE 12. The bottom ends of the panels 15*a* are cut off square to fit within the horizontal brace channel 60, while the top ends thereof are cut to the same angle as the upper channel 64. The panels 15*a* overlap one another, and can be telescoped together or extended, as necessary, to fill the triangular area enclosed by the members 60, 64 and the vertical wall or window frame. If it is desired to make an awning of such dimension that the individual panels would be too long for convenient handling, two or more panels of shorter length may be joined together, as shown in FIGURE 15, to make an extended panel of any length. In this case, one of the panels 15*b* is snapped over the end of the other panel 15*c*. The curvature of the edge rolls 20 allows them to fit snugly over one another, to make a tight junction.

The many advantageous features of the present invention are believed to be clearly apparent from the foregoing description. While we have shown and described in considerable detail what we believe to be the preferred form of the invention, it will be understood that various changes in the shape and arrangement of the several parts may be made without departing from the scope of the following claim.

We claim:

A vertical panel awning comprising a top and sides made up of assemblies of panels and vertically spaced stringers, said panels being in the form of shallow, channel-shaped members having roundly curled edges, and said stringers being in the form of U-shaped channels having the longitudinal edges thereof cut out to form seats for alternately inwardly and outwardly facing panels, one of the lower stringers of each of said sides being attached to the adjacent end of a lower stringer on said top, the curled edge of the outer panel on said top overhanging the upper ends of the side panels and engaging the outer

surfaces thereof to hold the said side panels against outward movement, and at least one of the upper stringers of said top abutting against an inner surface of one of the side panels to hold the latter against inward movement.

References Cited in the file of this patent

UNITED STATES PATENTS

1,703,149	Joughins et al.	Feb. 26, 1929
2,428,361	Doe	Oct. 7, 1947
2,542,919	Freeman	Feb. 20, 1951
2,588,011	Kersey	Mar. 4, 1952
2,657,437	Moser	Nov. 3, 1953
2,682,689	Helt	July 6, 1954
2,684,507	Letzkus	July 27, 1954
2,735,383	Gerbracht	Feb. 21, 1956
2,739,356	Aldridge et al.	Mar. 27, 1956
2,788,548	Landers	Apr. 16, 1957