July 8, 1952 L. M. KENDALL 2,602,199

ASSEMBLED AWNING STRUCTURE

Filed April 8, 1948 3 Sheets-Sheet 1

FIG. 1

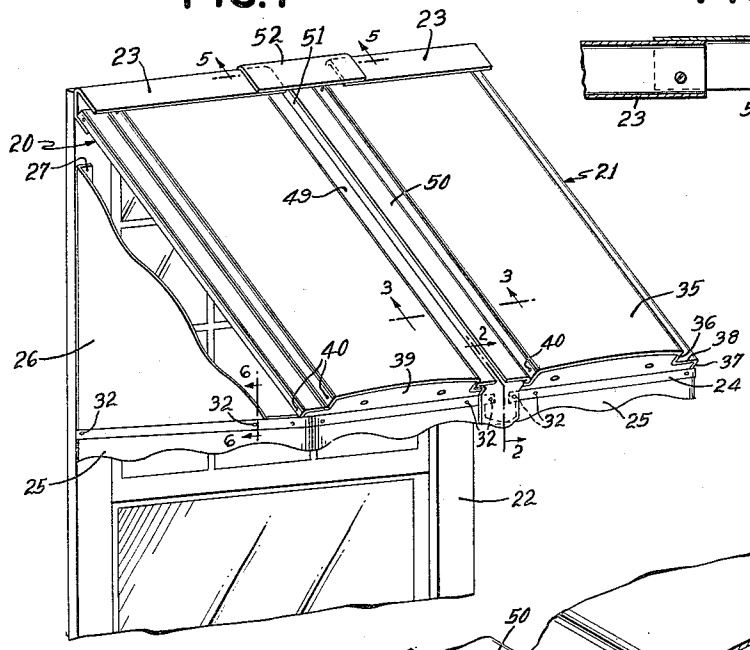


FIG. 5

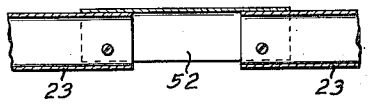


FIG. 4

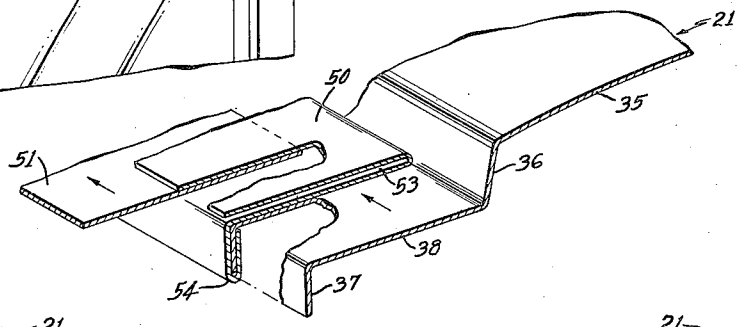


FIG. 2

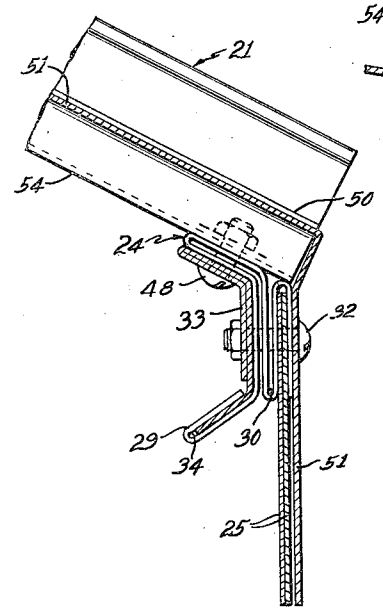


FIG. 3

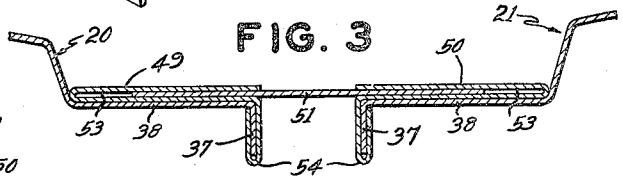
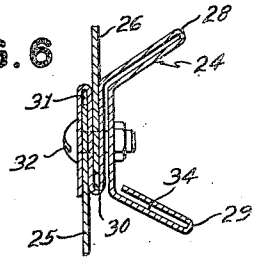


FIG. 6



INVENTOR
Leon M. Kendall
BY
Dennis, Edmonds, Morton and Parsons
ATTORNEYS

July 8, 1952 L. M. KENDALL 2,602,199

ASSEMBLED AWNING STRUCTURE

Filed April 8, 1948 3 Sheets-Sheet 2

FIG. 7

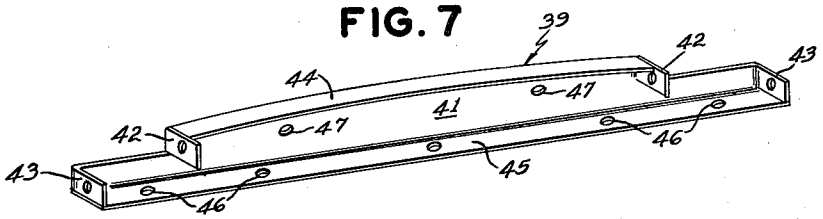


FIG. 8

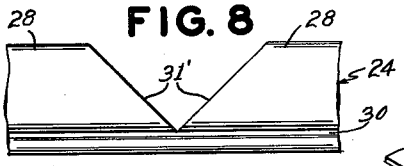


FIG. 10

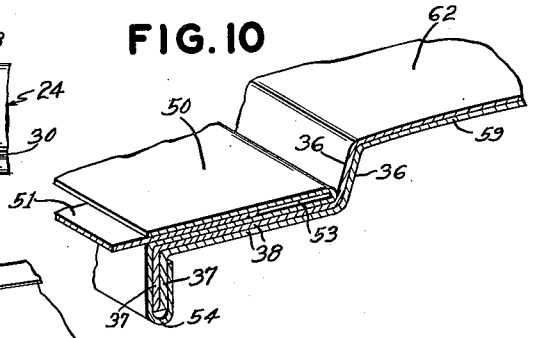


FIG. 9

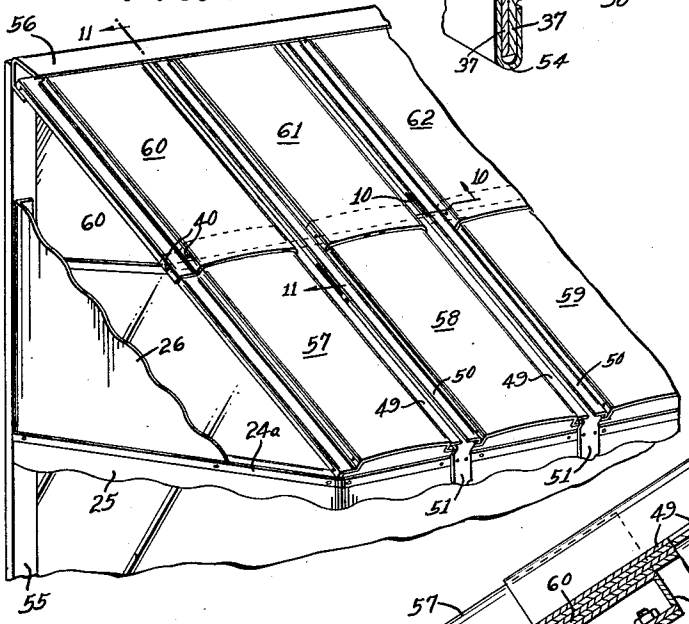
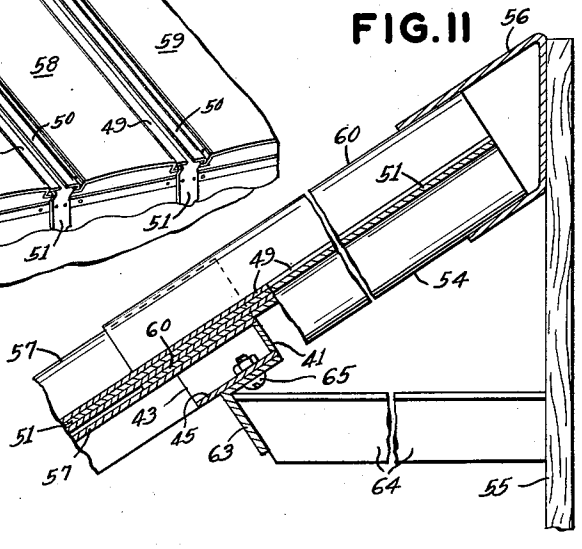


FIG. 11



INVENTOR
Leon M. Kendall
BY
Dennitt, Edmonds, Mynton and Barrows
ATTORNEYS

July 8, 1952 L. M. KENDALL 2,602,199

ASSEMBLED AWNING STRUCTURE

Filed April 8, 1948 3 Sheets-Sheet 3

FIG. 12

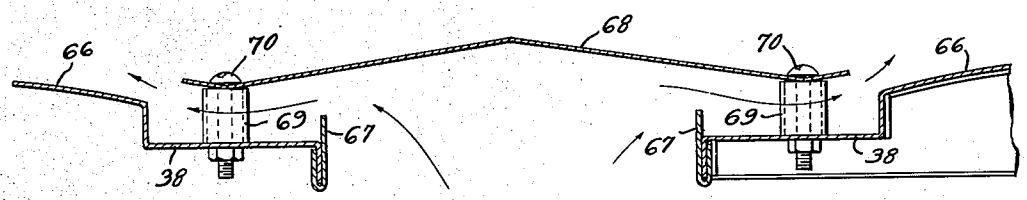


FIG. 13

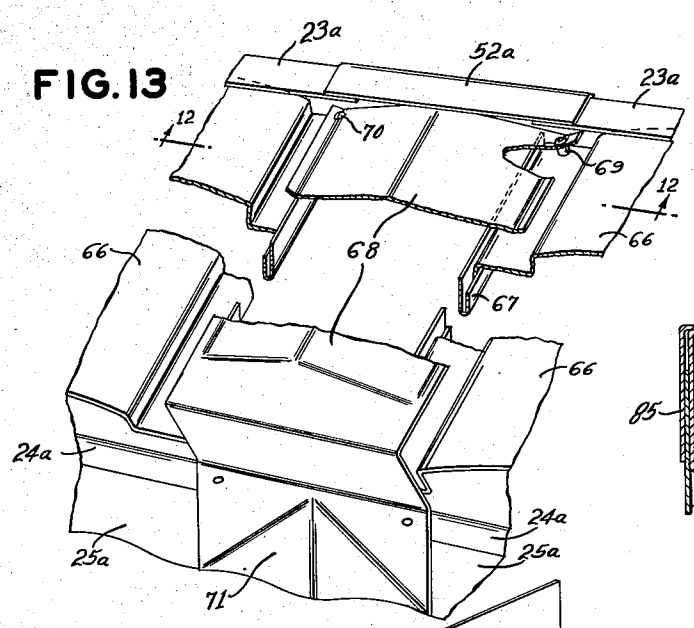


FIG. 15

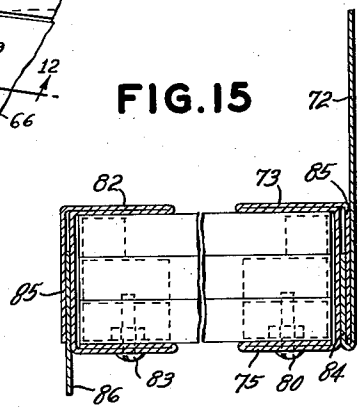
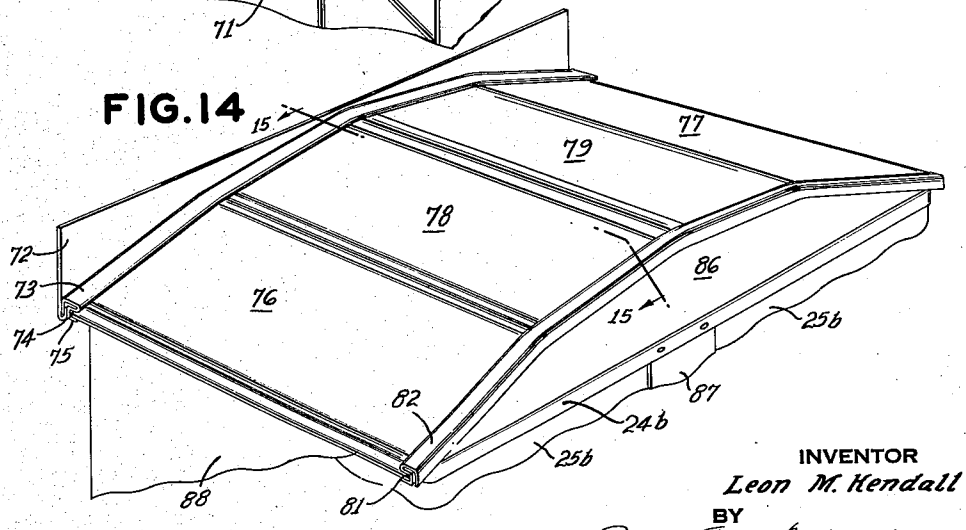


FIG. 14



INVENTOR
Leon M. Kendall
BY
Dennis, Edmonds, Morton and Barrows
ATTORNEYS

Patented July 8, 1952 2,602,199

UNITED STATES PATENT OFFICE

2,602,199

ASSEMBLED AWNING STRUCTURE

Leon M. Kendall, Manchester, Maine, assignor to Kenlane Manufacturing Company, Inc., Gardiner, Maine, a corporation of Maine

Application April 8, 1948, Serial No. 19,693

16 Claims. (Cl. 20—57.5)

1

This invention relates to improvements in sheet metal awnings of versatile character which are to be secured to a house or other building over windows, doors, and porches, etc. The new awnings constructed in accordance with the present invention include a novel panel structure disclosed in my pending application Serial No. 730,911, filed February 26th, 1947, for "Adjustable Window Blind" of which the present application is a continuation-in-part.

This pending application discloses the improved structure of the panel of the present invention in connection with its use in the making of blinds adapted to be secured to a house at the sides of the windows. In accordance with the disclosure of said application, each blind is made of two panels each of which is made of flexible sheet metal and includes an elongated central section with an offset narrow parallel side section on each side of the central section and united thereto by short sections at right angles to the side sections. The outer edges of the narrow sections are inturned at right angles to give longitudinal stiffness to the panel. The two panels used to make up a blind are provided with transverse reinforcing members of wood or metal at the top and bottom of the blind and at the position of the intermediate overlapping portions, for securing the blind to the house and providing transverse stiffness to the blind. The transverse reinforcing member is left out of one end of one panel so that it may overlap a portion of the other panel to provide a blind of a height adapted to match the window for which it is made.

The transverse reinforcing members, according to the pending application, are shaped to conform with the cross-section of the sheet metal panels and they may be separately provided and applied at the time the panels are used, for example, in making up a blind, or they can be applied to the metal sheets of the panels at the time they are made. In the latter case, two of the transverse reinforcing elements or ribs are applied to the respective ends of one panel, and one to only one end of the other panel when two panel sections are used in overlapping relationship to make a blind or other structure. The omission of the rib from the end of one panel leaves that end, for example the lower end of the upper panel, unobstructed so that it can slide over and overlap the lower panel to the desired extent to give a blind of the proper height for the window by which it is mounted. When the transverse reinforcing elements or ribs are made of wood they are secured to the sheet metal of

2

the panel by nails or screws advantageously applied at the turned edges and at the narrow angle sections between the central and side sections of the panel. When the ribs are made of metal, such for example as sheet metal, they are shaped to conform to the cross-section of the panel and may be secured thereto by welding, riveting, metal screws, etc. In either case the rib advantageously has an arced central section so that the central portion of the panel is bowed out.

The awning of the present invention is characterized by exceptional versatility because of its adjustability in several respects and because it may be made from a few standardized elements. The improved awning can be applied to any height or width of window, and properly balanced or styled therefor, by carefully sizing the different dimensions of the awning. Since the elements of the awning are comprised primarily of a few standard elements, it is economical to manufacture, and for the manufacturer or dealer to keep the component parts in stock.

As an example of an awning constructed in accordance with the features of the present invention, a plurality of standard panels are arranged side by side in the same plane and in spaced relation so that they properly cover the width of the window or other building features to which the awning is applied. One end of these panels is secured to the frame above the window and mounted at the selected slope by attaching the lower ends of the panels to a frame structure extending out from the side of the building or window frame. The space between adjacent panels, regardless of its width, which is usually considerably less than the width of a panel, is taken care of by a spacer unit which includes elements attached to the sides of the adjacent panels and which includes a sheet metal strip overlapping the space between the adjacent panels.

A feature of the awning structure includes standard supporting frame elements and decorative scalloped strips associated therewith for providing a horizontal frame to support the lower end of the awning panels. This frame structure is advantageously made of thin sheet metal which is bent into the form of a flaring channel member having longitudinal slots or recesses for receiving the decorative strips and other elements.

The principal standard element of the improved awnings of the present invention comprises a standard panel made of a single sheet of metal bent to form a wide central longitudinal section and an offset parallel relatively narrow section

on each side, the offset bent portion being at about right angles to the side sections. The longitudinal edges of the panel are bent at right angles to form a reinforcing flange extending toward the back. This sheet metal panel member as described is normally provided with end transverse reinforcing members or ribs made of wood or sheet metal, having a contour which fits inside the ends of the sheet metal portions of the panel, the opposite or back edge being straight.

The wide central section of the standard panel is advantageously made slightly oval while the bordering offset parallel sections are flat and in the same plane with each other. The sheet metal of the panels as well as other sheet metal parts of the ownings are preferably of aluminum and they may be painted or enameled in any desired color or color combination. It has been found that awnings made in accordance with the invention may be readily given a surface comparable to that applied to automobiles, by baking on the paint or enamel.

While the panel elements used in making the awnings are the standard length, they may be overlapped end-to-end so that two or more panel lengths may be used in each panel section of an awning where a long awning is required. In such a case the lower transverse reinforcing member of the upper standard panel is removed so that the sheet metal of the panel directly overlaps the next lower panel.

Various other changes and adjustments may be made in constructing awnings in accordance with the present invention, some of which will be included in the following detailed description made in accordance with the accompanying drawings illustrating certain embodiments of the invention and specific awning structures, it being understood that the invention is illustrated by the drawings, but not limited to the specific structures and modifications shown therein.

In the drawings:

Fig. 1 is a perspective view showing an awning applied to the window of a house, the awning being made up of a pair of standard panels mounted side-by-side and arranged in accordance with the features of the present invention.

Fig. 2 is a broken vertical sectional view on an enlarged scale, taken on the line **2—2** of Fig. 1.

Fig. 3 is a broken sectional view on an enlarged scale taken on the line **3—3** of Fig. 1, showing the spacer unit between panels.

Fig. 4 is a broken perspective view of an enlarged scale showing in greater detail the structure and arrangement of the parts of the spacer unit shown in Fig. 3.

Fig. 5 is a sectional view on an enlarged scale taken on the line **5—5** of Fig. 1.

Fig. 6 is a vertical sectional view on an enlarged scale taken on the line **6—6** of Fig. 1.

Fig. 7 is a perspective view from the inside of a panel reinforcing rib made from a single sheet metal blank.

Fig. 8 is a broken horizontal view on an enlarged scale showing the method of cutting the angle bar frame stock in forming an awning corner.

Fig. 9 is a view similar to that of Fig. 1, showing a modified form of awning in which one standard panel overlaps another to provide an awning of suitable length for a large window.

Fig. 10 is a broken sectional view on an enlarged scale taken on the line **10—10** of Fig. 9 at the position of the overlap of the panels.

Fig. 11 is an enlarged broken view taken on the line **11—11** of Fig. 9.

Figs. 12 and 13 illustrate a modified form of spacer construction adapted to cover the space between the sides of adjacent parallel panels of an awning, Fig. 12 being an enlarged sectional view taken on the line **12—12** of Fig. 13.

Fig. 14 is a perspective view of a modified form of awning or canopy including a plurality of standard panels arranged in a structure suitable for mounting over a door or doorway of a building.

Fig. 15 is a broken sectional view on an enlarged scale taken on the line **15—15** of Fig. 14.

The roof portion of the improved awning shown in Fig. 1 of the drawings comprises a pair of standard panels **20** and **21** mounted side-by-side and generally in the same plane over a window **22**, the panels being spaced apart so that their outside edges extend respectively to the outer edges of the window frame. The upper ends of the panels **20** and **21** are attached to and supported in individual metal channel flashing brackets **23** attached to the upper part of the window frame, a portion of each bracket projecting under the panels while the upper portion extends over the upper ends of the panels to shed rain.

The panels **20** and **21** are mounted at the desired slope with respect to the window, for example 45 degrees, and they have their lower ends attached to and supported away from the house by a metal frame **24** made of angle or channel bars of generally spreading U-shape in cross-section, as shown in Figs. 2 and 6. The frame **24** is U-shaped and mounted in a horizontal position with the ends of the legs of the U being attached to the side frame members of the window. A decorative scalloped skirt made up of scalloped strips **25** are secured in the supporting frame **24** and overlap each other in the front center of the awning as indicated in dotted lines in Fig. 1. Strips **25** of suitable length are provided so that they will be sufficiently long to be used for windows of various widths. The side portions of the awning each include a triangular shaped scalloped side brace **26** attached to the window frame by screws extending through flange **27**. Scalloped side brace **26** has a lower edge extending into a fold of the channel frame **24** to which it is fastened by metal screws. The scalloped hypotenuse of each brace **26** is spaced from the sloping portion of the awning, that is, the outer edge of the panels **20** and **21**, respectively, to provide suitable ventilation for the awning.

The structure of the channel bar frame member **24** and its relationship to the scalloped skirt **25** and brace **26** is shown in section in Fig. 6, from which it will be noted that the channel or bar **24** is made of thin sheet metal bent upon itself to provide flanges **28** and **29** at an angle of about 135° to the vertical portion of the bar. The sheet metal of the front portion of the member **24** is bent to form an upwardly extending slot **30** into which the lower edge of the scalloped side brace **26** fits, and a downwardly extending slot **31** into which the upper edge of the scalloped skirt **25** extends. This assembly is fastened together to form a rigid structure by means of small bolts **32** of the type of stove bolts. Metal engaging screws may be used in place of bolts.

The channel bar framing members **24** are advantageously made up in standard straight lengths, two sections being used to make the

frame in Fig. 1, each section of which has an end attached to the side frame of the window, is bent to form a corner, and includes a portion extending to a point adjacent the front center portion of the awning. The corner bends in the frame members 24 are made in a manner illustrated in Fig. 8 of the drawings, wherein a right angle cut-out 31' is made through the flanges 28 and 29 so that the vertical portion of the channel stock, including the inserted skirt 25, is not cut, but can be readily bent to form a 90° turn.

Where an awning is made by providing two panels, such as 20 and 21, directly adjacent each other, the channel bars 24 should be sufficiently long to overlap slightly so that they may be secured together. Otherwise, as illustrated in connection wtih Figures 1 and 2, a short section of channel shaped splicing bar 33 is utilized as a center splice and is attached to the respective ends of the frame members 24 at the front center portion of the awning. It will be noted that the flange 29 in Fig. 6 and also in Fig. 2, forms a slot 34 into which an edge of the splicing stock 33 is inserted from the end. Otherwise, the splicing stock 33 has generally the cross-section of the channel bar stock 24 into which it fits, in the manner shown in Fig. 2. The channel splicing stock 33 is made of thin sheet metal, with the upper flange and vertical section of double stock, while the lower flange fits into the slot 34. The splicing piece 33 is bolted to the respective ends of the channel frame members 24 by two bolts 32 at each end.

The improved panel structures 20 and 21 used in making the awning shown in Fig. 1 are made from a single flat oblong sheet of thin sheet metal such as aluminum or sheet steel by bending it lengthwise symmetrically on each side of a central relatively wide panel section 35 extending from end-to-end of the sheet or panel. Two bends are made on each side, including an offsetting bend or section 36 and a flange bend 37, both of which are in the same direction and between which is provided a flat surface or section 38 in a plane generally parallel to the wide central section 35. The long narrow flat surfaces 38 at the respective edges of the panel are in the same plane, while the bent sections 36 and 37 provide longitudinal stiffness to the panel. As an example, the section 35 of the panel sheet may be fourteen inches wide, the sections 38, two inches, and sections 36 and 37, one-half inch. The panels may be from three to five feet or more in length.

A transverse reinforcing member or rib 39 cut to the desired contour is set in each end of each panel and secured thereto by means of screws 40. These end reinforcing ribs may be made of wood but are advantageously made of thin sheet metal cut in blank form from a single sheet and bent to have the structure and elements shown in Fig. 7 of the drawings. In this view the rib 39 includes a central end section 41, the upper portions of which fit the general contour of the upper surface of the panel, such for example as the panel 21. The rib includes bent-in sections 42 which fit inside the downwardly bent surfaces 36 of the panel, and similarly bent-in sections 43 which fit inside the downwardly bent flanges 37. The sections 42 and 43 have holes, as shown, for reception of the screws 40. The rib includes a bent-in top or front section 44 which fits under the central section 35 of the panel sheet, which in the form shown is slightly arced, this arc also being provided in the central end

section 41 of the rib. As an example, the amplitude of this arc may be approximately one-half inch in a width of fourteen inches for the panel section 35. The rib 39 also includes a bent-in back or bottom flange 45 which extends to and within the bent-in sections 43, this flange having a row of holes 46 for use in securing the panel, such as 21, to a supporting structure. The central section of the rib 39 also includes a pair of spaced holes 47 for use in certain special instances. In Fig. 1 of the drawings, the panels 20 and 21 are secured to the lower flange of the flashing brackets 23 by screws which extend into some of the holes 46 of the upper ribs of these panels, the lower ribs of the panels being secured in a similar manner by bolts or screws 48 to the flanges 28 of the channel bars 24, in the manner indicated in Fig. 2 of the drawings.

In constructing and installing the awning shown in Fig. 1 of the drawings in which the standard panels 20 and 21 are spaced apart to fit the window, the space between the panels is taken care of by providing side locking elements 49 and 50, of the same structure, attached respectively to the adjacent edges of the panels 20 and 21, and between which is mounted a spacer sheet 51 extending down over the lower ends of the panels, the frame member 24, and the lapping portions of the scalloped edge 25. This overlapping portion of the spacer sheet 51 is secured to the central front assembly by means of a pair of screws or bolts 32. The upper portion of the spacer sheet 51 and side locks 49 and 50 are covered by a bent flashing splicer 52 which overlaps the flashing channels 23.

The detailed construction of the central portion of the awning is shown more particularly in Figs. 3 and 4, in which the side locks 49 and 50 are shown to be of the same structure, each including a horizontal folded portion lying on the section 38 of the panel and providing a slot 53 for the reception of the spacer sheet 51 which is slid into the slots 53 and pushed to the top of the awning. The side lock also includes in integral downwardly bent vertical folded section 54 which extends around and locks onto the flange 37 at the edge of the panel. The side locking members 49 and 50 are made from thin sheet metal of the type of that used in making the panels, bent into the shape shown in Fig. 3, and slipped onto the edges of the respective panels from one end by simply removing screws 40 extending through the flange 37. After the side locking member 49, for example, is pushed up into place, the screw 40 may be reinserted by merely providing matching holes through the folded portions 54. Where the panels, such as 20 and 21, are made up in the shop, for use in making awnings, one edge of each may be provided with a side lock such as 49 or 50. Spacer sheets, such as the sheet 51, may be provided in different standard lengths and widths, for use in accommodating different spacings between awning panels.

The spacing structure shown in Figs. 1, 3 and 4, provides an effective adjustable joint, since any rain entering the portion of the awning between the panels 20 and 21 will be effectively drained off. Should any rain water get in under the side locking members onto the panel sections 38, it will be trapped in the folds 54 and discharged at the lower end of the awning. Any number of panels may be arranged side-by-side and in approximately the same plane, to provide an awning of any desired width, and where adja-

cent panels are mounted directly adjacent to each other, the adjacent flanges 37 may be simply locked together by providing a simple U-shaped channel member which extends around and under the adjacent flanges 37 in the same way that the folded section 54 extends around the single flange 37, as shown in Fig. 3. In such a case, any water entering the channel will be discharged at the bottom of the lower end of the awning.

Figs. 9, 10 and 11 of the drawings show a form of construction which is slightly modified with respect to the awning of Fig. 1, so that it is suitable for use as a commercial type awning or for shading relatively large windows, portions of terraces, sun decks and other structures. In Fig. 9 the awning is shown as applied over a large window 55 to the upper frame of which is attached a flashing channel member 56 which extends entirely across the window and has the same cross-section as flashings 23 of Fig. 1. The awning includes a U-shaped frame 24*a* made from the spreading channel frame stock such as the frame 24, shown in Figs. 1 and 6. The awning in Fig. 9 includes the scalloped edging or skirt 25 and the scalloped triangular shaped bracket 26 which acts as a brace for the frame as well as a decoration. The front portion of the frame 24*a* may be spliced in approximately the same manner as in Fig. 1 except that the central splice may extend across the width of one or more panels.

The principal feature of the awning shown in Figs. 9, 10 and 11, is the combination of two overlapping panels to form one panel length for the roof of the awning. In Fig. 9, lower panels 57, 58 and 59 are attached to the front of the frame 24*a* in regularly spaced relationship in the manner described above in connection with Fig. 1 of the drawings. Above these panels are panels 60, 61 and 62 which respectively overlap the upper portion of the lower panels to the extent desired to provide an awning having the proper sized roof structure for the particular installation. The panels 60, 61 and 62 are attached to the lower flange of the flashing channel member 56 by bolts or metal screws extending through the back of the reinforcing rib as in Fig. 1. It will be noted that the panels 60, 61 and 62 have ribs removed from their lower ends so that the metal sheet of the panels fit snugly over and lap upon the respective lower panels. When the desired lap is determined the screws 40 may be removed from the upper ends of the lower panels and reinserted through the sheet metal of the upper panel so that the two panels forming the long panel structure of the awning are suitably tied together.

In making large awnings of the type shown in Fig. 9, it is usually advisable to brace the roof of the awning at the position of the overlap. This may be accomplished in the manner illustrated in Figs. 9 and 11 in which an angle member 63 extends across the awning under the overlapping portions of the panels to which it may be secured. In any case, the angle member which may be made of aluminum or rustless steel is supported by end horizontal braces 64 which extend back and engage the frame of the window 55. The angle member 64 may be attached to the triangular shaped bracing 26 as shown in Fig. 9. The angle bar 63 can be fastened to the back flange portions of the upper ribs of the panels 57, 58 and 59 as by bolts 65 shown in Fig. 11. The angle bars 63 and 64 may be attached together by any suitable means, not shown.

When the width of the awning illustrated in Fig. 9 is determined, it is relatively simple to decide upon the number of panel units for the roof, the space left over being divided equally between adjacent panel units, and this space sealed up in the manner described in connection with the awning of Fig. 1. Fig. 10 illustrates this construction at the position of the panel overlap to show that at this point the folded locking section 54 is spread sufficiently to accommodate both flanges 37 of the lapping panels for the short distance where the panels overlap. It will also be understood that the folded locking edge 54 rests directly on the angle cross bar 63.

With awnings such as shown in Figs. 1 and 9, it is desirable to have them ventilated so that any heat created by the sun beating on the roof of the awning will be dissipated. In the awnings shown in these figures this is taken care of by the spacing between the triangular scalloped braces 26 and the edge of the roof panels. This space also takes care of gusts of wind which otherwise might tend to damage the awning.

Figs. 12 and 13 illustrate a modified spacer arrangement combined with the adjacent panels in such a way that the awning will have more ventilation, the structure being illustrated for example in connection with an awning such as that shown in Fig. 1 of the drawings.

In Fig. 13 the flanges 37 of the adjacent spaced awning panels 66 carried by flashings 23*a* and frame 24*a* are provided with a folded water baffle 67 which folds around the flange 37 and extends above the level of the section 38 of the panel, as shown more distinctly in Fig. 12. A ventilating spacer sheet 68 having the contour shown in Fig. 12 extends over the space between the panels 66 and overlaps the water baffles 67. This spacer 68 extends under the flashing elements 23*a* and 52*a* and is supported substantially above the water baffles 67 by means of tubular spacer elements 69 on which the spacer sheet 68 rests. Screw bolts 70 pass through holes in the ventilating spacer 68 through the tubular spacers 69 and the portions 38 of the panels 66. The path of the air is shown by the arrows in Fig. 12. The tubular spacers are preferably used at least at the upper and lower portions of the awning, but also may be used at intermediate points to properly secure the spacer sheet 68 to the panels. At the lower end of the awning the spacer sheet may terminate in line with the ends of the panels, but it is advantangeously provided with an extension 71 which is bent in the form shown in Fig. 13, so that it extends down and overlaps the scalloped edging or skirt 25*a*, for example at the position where the edges overlap as in Fig. 1. This construction gives an appearance somewhat similar to but slightly more attractive than that shown in Fig. 1.

Figs. 14 and 15 of the drawings show a modified form of awning in which the improved standard panels are employed to provide a canopy of the type for mounting over a door. In Fig. 14 the canopy or awning includes a thin sheet metal flashing 72 of special construction which is attached to the wall of the building over the door or doorway. If desired, the upper edge of the flashing 72 may be inserted under a clapboard of a house, or bent into the mortar space between the brick. The lower part of the flashing has locked or hooked thereto a folded structure 73 having the configuration illustrated in Fig. 15,

which includes a laterally extending channel 74 extending upwardly to the ridge of the canopy and then symmetrically downwardly on the opposite side. The channel 74 has a lower flange 75 for carrying the ends of panels.

Standard panels having the raised center and side wing structure described and illustrated above have their ends mounted in the channel 74 and secured to the flange 75. As illustrated, the eave sections of the canopy are made up of laterally or forwardly extending panels 76 and 77, while the ridge section is formed of panels 78 and 79. These four panels are mounted in adjacent or overlapped relationship to each other in the manner shown, and their ends which extend into the channel 74 are secured to the lower flange 75 by the use of screws or bolts 80 which extend through the back rib holes 46.

The outer ends of the panels 76 to 79 extend forward into a laterally extending channel 81 of a folded mounting 82 having the same structure as the panel retainer 73, the end ribs of the panels being bolted to the lower flange of this structure by bolts 83 as shown in Fig. 15. The detailed structure of the elements 72, 73 and 82 are shown in detail in Fig. 15 in which it will be seen that the flashing member 72 has an upturned folded flange 84 providing a slot into which a flange 85 of the member 73 hooks for supporting the inner ends of the panels. The sheet metal forming the panel retainer 73 is folded as shown to form a complete metal channel member, the flange-like sides of which overlap the end portions of the panels, each of these side portions including two thicknesses of metal as shown. The panel retainers 73 and 82 which serve to tie the panels together have the same structure and they are mounted so that their channels directly face each other. The flange 85 of the retainer 82 provides a slot for receiving a front plate 86 which has an upper contour fitting the contour of the panel retainers.

The canopy shown in Fig. 14 includes a horizontal U-shaped frame 24b, the ends of the legs of which are attached to the building. This frame has the same structure as the frame 24 shown in Fig. 6, and the front plate 86 extends into the upper slot 30 in the same manner as the plate 26, while a scalloped edging 25b, made up of two overlapping sections, is secured in the upwardly extending slot corresponding to the slot 31 in Fig. 6. The lapping portion of these edging sections is covered by a plate 87 which is also inserted in the slot in the frame member 24b and secured therein by screws or bolts. The plate 87 is also scalloped along its lower edge so as to fit into the pattern of the scalloped edgings 25b.

The frame 24b may be braced by an upwardly inclined brace, not shown, extending from each side of the building upwardly to the frame, if desired, such a brace being covered by a triangular shaped sheet 88 having a flange secured to the wall, and an upper edge which is inserted into the downwardly extending slot of the frame 24b. The sheet 88 is scalloped along its lower inclined edge and serves as a bracing support for the frame and the structure carried thereon.

Various modifications may be made in making up the canopy type awning shown in Fig. 14, and more, or less than four standard panels may be used. In the case of four panels, the lower edge wings of the upper panels 78 and 79 advantageously overlap the respective upper edge wings of the lower panels, and a cap may be provided over the adjacent edge wings of the upper panels to shed rain. The adjacent edges of the respective panels may be mounted close together and sealed in any convenient way. A seal may be constructed by having a U-shaped channel or grip overlap the flanges 37 of adjacent panels, and in addition the seam may be filled with caulking compound or paint so that rain will flow readily off the canopy without leaking through the seams between the panels. In some cases caulking compound is sufficient alone for effecting a waterproof seal between adjacent panel edges, and caulking compound may be used at other points, if desired.

The standardized elements used in making the awnings of the present invention may be provided in various standard colors or in standard contrasting colors harmonized or in contrast with the usual paint colors used in painting houses, thereby giving the customer a selection to meet his particular needs.

The new awnings constructed in accordance with the features of the present invention are versatile to a high degree and adaptable to a great variety of uses including private dwellings and commercial buildings. The awings have the advantage over canvas or wooden awnings in that they do not tear, warp, crack or become distorted in shape. Where the elements of the awnings are made up in standard colors the paint or enamel may be baked on so that the awnings will last almost indefinitely without the necessity of repairs or replacement.

Since the awnings are made of thin sheet metal, preferably aluminum, or other light metal or alloy, their initial expense will be relatively low, and since they are made up of readily installed elements or sub-assemblies, their installation cost is also low. The new awnings have the advantage that they may be readily assembled if desired by the customer by following simple instructions. Furthermore, where an awning is used over a window or terrace during certain seasons of the year it may be readily taken down and stored away at the end of the season and put up again the following year. On the other hand the awnings are durable and withstand any kind of weather conditions, whereas canvas awnings might be completely wrecked and the elements of wooden awnings might become split and warped, and work loose.

It will be understood that variations and modifications may be made in the specific form and shape of the awnings, in the panel sections used as elements in making up such awnings, and in the structure for bracing or supporting the awning. It will be seen that while the awnings of the present invention are made of thin flexible sheet metal, the principal elements comprising the panels or panel sections will be given longitudinal rigidity by the special shape of the sheet metal of the panel, transverse rigidity being provided by the transverse reinforcing elements or ribs.

Where awings are made with one panel overlapping another, they can be made slightly different in size so that one panel fits perfectly into the other. However for most work, this refinement is not essential.

The panel structures disclosed herein are claimed generically in the applicant's pending application Serial No. 19,694, filed April 8, 1948, for "Panel and Panel Structures."

What I claim as new is:

1. In an awning arranged for mounting on a side wall of a building, a roof portion composed primarily of a plurality of similar rectangular

oblong-shaped panels mounted side-by-side in parallel relationship crosswise of the awning, each panel comprising a single sheet of metal bent to form flange-like edge sections lengthwise of the sheet and extending toward the back of the panel, a central relatively wide section extending lengthwise of the panel spaced inwardly from the bent edges uniformly and offset with respect to the surfaces of the sheet adjacent to the bent flange-like edges by substantially right-angle bends extending parallel to the flange-like edges of the sheet, the offset bends extending from the surfaces of the sheet adjacent to the flanges in a direction opposite to that of the flanges, means for securing one end of each panel to the wall, means for supporting the opposite ends of the panels in position away from the wall, said panels being spaced laterally with respect to each other, and means attached to the adjacent edges of adjacent panels for covering the space therebetween.

2. In an awning arranged for mounting on a building structure, a sloping roof structure composed primarily of a plurality of rectangular oblong-shaped panels mounted in parallel relationship in about the same plane crosswise of the awning, each panel comprising a single sheet of metal forming the surface of the panel, a flange on each lengthwise edge of the sheet extending toward the back of the panel, a central relatively wide section lengthwise of the panel spaced inwardly from the side edges uniformly and offset with respect to the surfaces of the sheet adjacent to the edges, flashing means for securing the upper ends of the panels to the building structure, frame means for supporting the lower ends of the panels in position away from the building structure, said panels being spaced laterally with respect to each other, and means attached to the adjacent edge portions of adjacent panels for rain-proofing the space therebetween.

3. An awning as claimed by claim 2 in which the means attached to adjacent edge portions of adjacent panels comprises a spacer sheet covering the space between adjacent panels and mounted in spaced relation to the upper surfaces of the adjacent panels.

4. In an awning arranged for mounting on a building structure, a sloping roof structure composed primarily of a plurality of rectangular oblong-shaped panels mounted in parallel laterally spaced relationship and in about the same plane crosswise of the awning, each panel comprising a single sheet of metal forming the surface of the panel, a flange on each lengthwise edge of the sheet extending toward the back of the panel, a central relatively wide section lengthwise of the panel spaced inwardly from the side edges uniformly and offset with respect to the surfaces of the sheet adjacent to the edges, flashing means for securing the upper ends of the panels to the building structure, frame means for supporting the lower ends of the panels in position away from the building structure, said frame means comprising a U-shaped channel structure made of folded thin sheet metal having an upwardly and a downwardly-extending slot, a decorative border strip secured in the downwardly-extending slot, and means attached to the adjacent edge portions of adjacent panels for rain-proofing the space therebetween.

5. An awning comprising a sloping roof section composed primarily of a plurality of similar standard oblong rectangular shaped sheet metal panels mounted in about the same general plane and in parallel relationship across the roof portion of the awning with their lengthwise dimension extending in the direction of the slope of the awning, each panel comprising a relatively wide single sheet of thin metal having narrow parallel longitudinal edge reinforcing flanges extending toward the back of the panel, spaced flat longitudinal sections in a common plane on the respective sides of the panel adjacent said flanges, an intervening longitudinally extending relatively wide central section raised toward the front of the panel with respect to the flat side sections and joined thereto by integral relatively narrow reinforcing sections of the panel sheet, a transverse reinforcing rib secured in each end of each panel sheet, means for securing the upper end of each panel to the wall of a building, means for supporting the lower ends of the panels away from the building structure, said panels being spaced laterally with respect to each other, and means attached to the adjacent edge portions of adjacent panels for rainproofing the space therebetween.

6. An awning comprising a sloping roof section composed primarily of a plurality of similar standard oblong rectangular shaped sheet metal panels mounted in spaced relation side-by-side across the roof portion of the awning with their lengthwise dimension extending in the direction of the slope of the awning, each panel comprising a relatively wide single sheet of thin metal having narrow parallel longitudinal edge reinforcing flanges extending toward the back of the panel, spaced flat longitudinal wing sections in a common plane on the respective sides of the panel adjacent said flanges, an intervening longitudinally extending relatively wide central section raised toward the front of the panel with respect to the flat side sections and joined thereto by integral relatively narrow sections of the panel sheet, a transverse reinforcing rib secured in the upper end of each panel sheet, means attached to said rib for securing the upper end of each panel to the wall of a building, a channel frame of folded thin sheet metal for supporting the lower ends of the panels away from the building structure, and a spacer sheet attached to the adjacent edge portions of adjacent panels for covering the space therebetween.

7. An awning as defined by claim 6 in which said frame includes flanges of two thicknesses of metal and a front having a reverse fold forming an upwardly and a downwardly extending slot, a border strip in the downwardly extending slot, a triangular shaped brace at each side of the awning roof having its lower edge secured in said upwardly extending slot.

8. An awning as defined by claim 6 in which a transverse reinforcing rib is secured in the lower end of each panel sheet, and means securing the ribs in the lower ends of the panel sheets to the upper flange of the channel frame.

9. An awning structure having a sloping roof composed primarily of a plurality of relatively long oblong rectangular shaped sheet metal panels laterally spaced from each other with their lengthwise dimension extending in the direction of the slope of the roof, each panel having narrow longitudinal edge flanges extending toward the back of the panel, and a spacer unit for covering the space between adjacent panels including a forwardly extending member for each of the adjacent edges of adjacent panels attached thereto and extending therealong, and a spacer plate extending over said members and

the space between the adjacent panels in spaced relation to said members and to the respective edges of the adjacent panels to provide for ventilation of the awning, said spacer plate being attached to and supported on the surfaces of the adjacent panels by intervening spacer elements.

10. An awning as defined by claim 9 in which the longitudinal edges of the spacer plate are turned upwardly so as to substantially prevent drainage of water therefrom onto the adjacent panels.

11. An awning structure having a sloping roof composed primarily of a plurality of relatively long and wide oblong rectangular shaped thin sheet metal panels in the same plane and laterally spaced from each other with their lengthwise dimension extending in the direction of the slope of the roof, each panel having narrow longitudinal edge reinforcing flanges extending toward the back of the panel, a spacer unit for covering the space between adjacent panels including a forwardly extending rain trap member attached to each of the adjacent edges of adjacent panels, and a thin sheet metal spacer plate extending over said members and the space between the adjacent panels, and a horizontal U-shaped frame supporting the lower portion of the panels comprising standard channel members of folded thin sheet secured together at the front of the awning.

12. An awning as defined by claim 11, in which the channel members of the frame include flanges at 135 degrees to the front of the channel, a folded front forming an upwardly and downwardly extending slot, a scalloped edging in the latter slot, and awning side plates each having an edge secured in the upwardly extending slot of the legs of the U-shaped frame.

13. In an awning having a sloping roof structure, the combination comprising a roof structure including a plurality of laterally spaced relatively wide panels extending in the direction of the slope of the roof and parallel to each other, each panel including downwardly projecting edge reinforcing flanges, a spacer unit connecting adjacent panels including a locking member locked onto each adjacent flange of adjacent panels and extending somewhat over the adjacent panel surface to provide a lateral slot, the slots in the adjacent locking members facing each other, and a spacer sheet mounted in said slots and extending the full length of the awning.

14. An awning as defined by claim 13 in which each locking member is of thin sheet metal and is folded over and around the panel flange and includes an integral slot-forming fold lying on the surface of the panel adjacent the flange.

15. An awning having a roof structure comprising a pluraity of relatively wide oblong-shaped panels extending outwardly from the structure on which it is mounted and parallel to each other, each panel including downwardly

projecting edge flanges, and a mounting channel member into which one end of each of the panels extends and to which they are secured, said channel member being formed of thin sheet metal folded to form the flanges of the channel and a connecting web having on the side opposite the flanges a layer of metal forming a downwardly projecting slot.

16. In an awning arranged for mounting on a building structure, the combination of a sloping roof structure composed primarily of a plurality of rectangular oblong shaped panels mounted side-by-side in about the same plane crosswise of the awning roof with their lengthwise dimension extending in the direction of the slope of the roof, each panel comprising a single sheet of thin metal forming the surface of the panel, an integral reinforcing flange on each lengthwise edge of the panel sheet extending toward the back of the panel, an integral central relatively wide section lengthwise of the panel sheet uniformly spaced from the side edges and offset with respect to the surfaces of the sheet adjacent to its lengthwise edges, means for securing the upper ends of the panels to the building structure, a U-shaped frame supporting the lower ends of the panels away from the building structure comprising a channel frame structure mounted edgewise with the legs of the U-shaped frame extending substantially horizontally and attached to the building structure, said panel frame being formed of a folded sheet of thin metal including a double lapped front portion forming an upwardly and a downwardly-extending slot, a decorative edging in the latter slot, and a triangular-shaped sheet of thin metal mounted on each side of the awning roof with its lower edge secured in the upwardly-extending slot of the leg of the U-shaped frame, its vertical edge secured to the building structure and its hypotenuse edge spaced from and approximately parallel to the sloping edge of the awning roof.

LEON M. KENDALL.

REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
801,154	Pioch	Oct. 3, 1905
1,241,281	Reiss	Sept. 25, 1917
1,868,158	Bonsall	July 19, 1932
1,868,191	Bonsall	July 19, 1932
1,870,731	Isaacson	Aug. 9, 1932
1,901,976	Martin	Mar. 21, 1933
2,078,478	Allen	Apr. 27, 1937
2,204,493	Henry	June 11, 1940
2,211,644	Buck et al.	Aug. 13, 1940
2,442,891	Harrison et al.	June 8, 1948
2,474,011	Overly	June 21, 1949
2,486,660	Kurtz	Nov. 1, 1949