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A. E. BLUMENTHAL ET AL

2,742,677

AWNING AND PARTS THEREFOR

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2 Sheets-Sheet 2

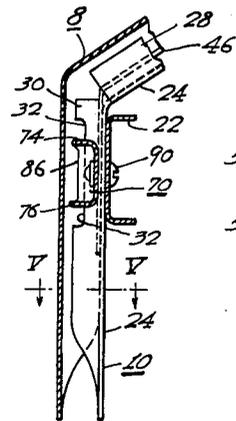


Fig. 9.



Fig. 10.

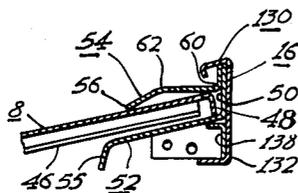


Fig. 11.

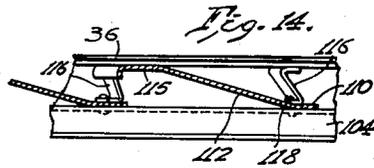


Fig. 14.

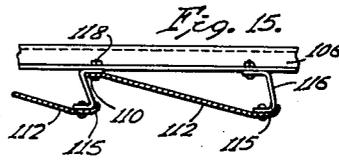


Fig. 15.

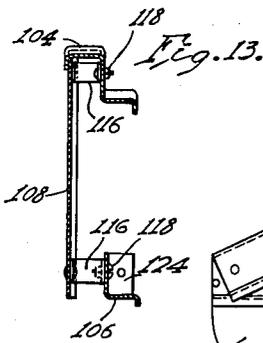


Fig. 13.

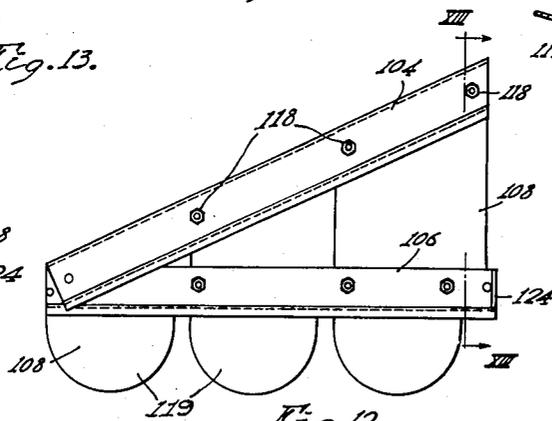


Fig. 12.

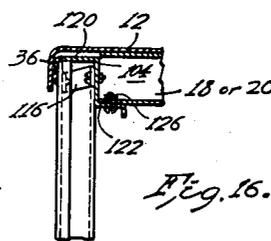


Fig. 16.

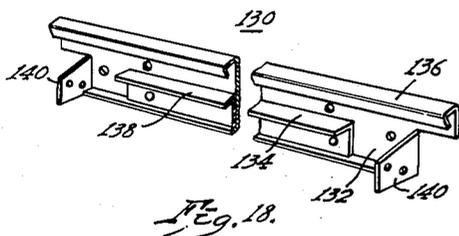


Fig. 18.

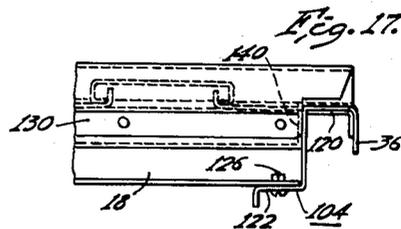


Fig. 17.

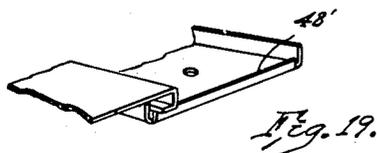


Fig. 19.

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AWNING AND PARTS THEREFOR

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5 Claims. (Cl. 20—57.5)

More particularly, this invention is directed to improvements in awnings of the type comprising a top, roof or central panel made of spaced upper and lower metal pans having oppositely directed flanges, and in constructional features adapted to be used with such awnings. Such awnings have an especially attractive appearance when painted in suitable colors or color-combinations.

An object of this invention is to provide an awning of a type described having novel fastening means for at all times tightly holding the upper and lower pans together, in proper relation, and without exposing screw heads or other parts on the visible outside part of the awning. An important feature of the invention resides in the novel fastening means for holding overlapped, staggered pans firmly together.

An important object of the invention is to provide an awning of a type described which has a central panel that can be either air-tight or provided with a plurality of ventilating spaces along the oppositely directed flanges of its upper and lower pans, the size of the ventilating spaces being selectable, within limits.

An awning in accordance with the preferred mode of our invention comprises a main central subassembly section or panel, and two side subassembly sections or panels. The panels can be easily assembled and disassembled by means of a few bolts and nuts.

A further object of the invention is to provide an awning of the type described which can be easily hung on an awning-supporting wall where it is to be used. To this end, a small light awning-supporting building plate is permanently secured to the wall, and caulked, if desired. A flashing strip at the top of the central or roof panel of the awning has an expedient which permits the awning to be hung therefrom without further securing means. Preferably, however, the bottoms of the side panels, near the wall, can receive appropriate securing means, such as expansion plugs, wood screws, or the like, by means of which the lower ends of the awning can be further secured to the wall.

A broad object of this invention is to provide an awning of a type described which is easy and economical to build, and which comprises a few subassembly panels and other parts made at a manufacturing plant, the parts being such that they can be compactly shipped to and quickly assembled at the place of use, and disassembled and reassembled at such times as desired.

Still another object of this invention is to provide an awning of a type described which is rainproof and resists high winds, and which is substantially free from creaks, rattles and similar noises that occur in prior awnings of the type described when they are subject to temperature changes or high winds.

Additional objects, features and innovations of the invention will be discernible from the following description of preferred constructions thereof. The description is to be taken in conjunction with the attached drawings, on different scales, in which:

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Figure 1 is a perspective view of an awning embodying our invention;

Fig. 2 is a plan view of the roof or central panel of the awning;

5 Fig. 3 is a perspective view of the top parts of an upper pan and a lower pan of the central panel, that fit into the flashing strip of Fig. 10;

10 Figs. 4, 5 and 6 are sectional views substantially on the lines IV—IV, V—V and VI—VI, respectively, of Fig. 2; Fig. 5 being on the line V—V of Fig. 9 also;

15 Fig. 7 is an enlarged view of part of Fig. 4, and better illustrates the manner in which our novel fastener means holds the oppositely directed flanges of an upper pan and associated lower pans securely together in a spaced relation that provides a ventilating space therebetween;

20 Fig. 8 is a perspective view of a bar of the fastener means, part of the bar being broken away for better illustrating its construction;

25 Fig. 9 is an enlarged sectional view substantially on the line IX—IX of Fig. 1;

30 Fig. 10 is an enlarged top view of the preferred form of flashing strip at the top of the central panel of the awning;

35 Fig. 11 is a partial sectional view substantially on the line XI—XI of Fig. 1, that illustrates the top part of an upper pan in the flashing strip of Fig. 10, the associated lower pan having been omitted from the figure in the interests of clarity;

40 Fig. 12 is an inner broadside view of a side panel of the awning;

45 Fig. 13 is a sectional view substantially in the line XIII—XIII of Fig. 12;

50 Figs. 14 and 15 are sectional views substantially on the lines XIV—XIV and XV—XV, respectively, of Fig. 1;

55 Fig. 16 is a fragmentary sectional view of joining portions of a side panel and the central panel of the awning;

60 Fig. 17 is a fragmentary rear view of a top corner of the awning, with parts omitted for better illustrating the manner in which a side panel is secured to the central panel of the awning;

65 Fig. 18 is a perspective view of a building plate which holds the awning; and

70 Fig. 19 is an enlarged view of top parts of modified forms of an upper pan and a lower pan adapted to fit inside of the flashing strip of Fig. 10.

The preferred awning embodying our invention comprises a central or roof, section or panel 2 and two side sections or panels 4. The side panels are constructed in the same way, but are symmetrical so as to go on opposite sides of the awning.

The central panel and parts thereof

With more particular reference to Figs. 1–6, the central panel 2 comprises one or more similar spaced upper channels or pans 8, one or more similar intermediate, lower channels or pans 10, and a pair of symmetrical, lower channels or pans 12 at the edges or sides of the central panel 2. In Fig. 1, a single pan 10 is shown for simplicity, but it is to be understood that as many similar lower pans 10 and upper pans 8 are used as the width of the awning demands. In the embodiment shown, the pans 8, 10 and 12 are shaped to provide a front vertical valance or apron portion and a slanting roof-portion, as is clear from Fig. 1. The upper and lower pans are in overlapping staggered relation as is customary in awnings of the type described. The central panel 2 also comprises a flashing strip 16 across the tops of the pans, and reinforcing and fastening means comprising a plurality of parallel, reinforcing bars 18, 20 and 22, and fasteners associated therewith.

The intermediate, lower pan 10 comprises a relatively

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wide flat body-portion 24 and upwardly and outwardly extending narrow single-sided edge-flanges 26 at each longitudinal side of the pan. As indicated in Fig. 9, each edge-flange 26 has a portion 28 along the roof part of the pan, and a portion 30 along the apron part of the pan, each of which is continuous along its respective awning part. The roof portion 28 is of uniform width, and the apron portion 30 is of uniform width, within manufacturing tolerances. The apron-portions 30 of the flanges 26 are slightly narrower than the roof-portions and have notches 32 for reasons that will later be apparent.

Each of the lower pans 12 has an inner upwardly and outwardly extending flange 34 on its inner longitudinal edge which is like the flange 26, and has a downwardly and inwardly directed, comparatively deep flange 36 at its outer edge which is adapted to overhang a side panel 4. As a rule, it is desirable to make the lower pans 12 slightly wider than the intermediate lower pans 10.

Each upper pan 8 has a relatively wide body-portion 40 between longitudinal double-bend flanges 42. Each flange 42 comprises a narrow flange-portion 44 which extends at right angles downwardly and inwardly from the body-portion 40. Each flange 42 also comprises a narrow flange edge-portion 46 which is at right angles to the flange portion 44 so that it extends in a direction substantially parallel to the overlying part of the body-portion 40. The flanges 42 are continuous on the valance portion and on the roof portion of each pan 8, with a notch between the two portions. As better shown in Fig. 3, the top edge of the central body-portion 40 of each pan 8 has a bent-downward part as a spacer 48. In a direction transverse of the pans, each spacer 48 has a length which is less than the distance between the two lower pans between which it lies. As will be apparent later, the height of a spacer 48 in a direction perpendicular to the body-portion 40 of the associated pan 8 is subject to choice in design. For a ventilated central panel 2, the spacer-height is greater than that of the associated flanges 26 and 34 of the lower pans 10 and 12. For a non-ventilated central panel, the spacer-height is less.

In an assembled central panel, the upwardly directed flanges of the lower pans 10 and 12 are parallel to the downwardly directed flanges of the upper pans 8, the sets of flanges being horizontally spaced. The arrangement of the flanges is such that the flanges 26 and 34 of the lower pans are inwardly of the pair of flanges 42 of the overlying upper pan, and rain water is completely prevented from passing through the central roof portion of the assembled central panel. For want of a better term, we identify each set of associated flanges, one on an upper pan and the other on a lower pan, as "interlocked" flanges, although the flanges are not necessarily in contact.

The tops of the pans are held by the flashing strip 16 of the central or roof panel 2 which extends parallel to the valance of the awning, and which, in the embodiment described, is horizontally perpendicular to the longitudinal or length direction of the pans. As shown in Figs. 10 and 11, the flashing strip 16 comprises a vertical hanger member 50 from which two continuous, spaced strip members 52 and 54 extend. The lower strip member 52 is generally flat, except for a bent reinforcing edge 55; and the upper strip member 54 is springy or resilient. The upper strip member 54 has an edge 56 which is spaced from the lower strip 52 a distance which is less than the depth of the spacers 48 of the upper pans 8.

The top ends of the pans of the central panel 2 are held between the strip members 52 and 54, the upper strip 54 preventing rain from passing through the top end of the panel. The upper strip member 54 has a concave-up bend 60 at the vertical hanger member 50 and a second bend 62 which is concave-down and is located further away from the hanger member 50. The hanger member 50 and the bends 60 and 62 are parallel. The lower strip 52 has a plurality of equally spaced holes 64. The upper end of each of the lower pans 10 and 12 has a central

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hole 66 (Fig. 3) which can be placed in registry with a hole 64, for receiving a bolt and nut means 68 (Fig. 1) that fastens the associated lower pan to the flashing strip 16.

The pans 8, 10 and 12 of the central panel 2 are further spaced, positioned and securely held together by fastening or positioning means comprising a plurality of fasteners including straddle bars 70, a preferred form of which is shown in Fig. 8. Each straddle bar 70 comprises a bar which is channel shaped, for strength. Each bar 70 has a base wall provided with a threaded hole or eye rivet 72 at its center, and side walls 74 and 76. Each bar 70 also has a pair of grooves 78 and 80 near its ends. The parts of the straddle bar beyond the grooves 78 and 80, at the extreme ends of the straddle bar, form shoulders or holding lugs 82 and 84, preferably of equal length. The straddle bar 70 has integral bridge walls 86 and 88 between the side walls 74 and 76, at the grooves 78 and 80.

Preferably, except for the eye 72, the straddle bar 70 is die formed. When the straddle bar is die formed, the bridge walls 86 and 88 protrude slightly beyond the side walls 74 and 76; and the straddle bar has slots 89 between the bridge walls and the base wall of the bar.

The total length of a straddle bar 70 is preferably only very slightly less than the width of the inside of an upper pan 8 which receives it; the bar being inserted sideways and twisted into place. The height of the straddle bar preferably is only slightly less than the distance between the central portion 40 of an upper pan 8 and the associated flange edge-portion 46. The length of the lugs 82 and 84 in the length-direction of the straddle bar is preferably greater than the width of each flange edge-portion 46 of the upper pan. For a ventilated central panel of the type shown in the drawings, the depth of the grooves 78 and 80 is less than that of the flanges 28 and 34 of the lower pans.

Each fastener, comprising a straddle bar 70, also comprises a fastener device in the form of a screw 90 that screws into the eye 72 of a straddle bar. For receiving the screws for the straddle bars 70, the bars 18, 20 and 22 are provided, although other means can be used. The bar 18 is associated with the upper part of the central panel 2, the bar 20 with the lower part of the central panel, and the bar 22 with the apron or valance part of the central panel. The bars 18, 20 and 22 extend transversely with respect to the length direction of the pans 8, 10 and 12, and have a length which is less than the width of the central panel 2, as indicated in Fig. 2. By terminating these bars short of the extreme side-edges of the central panel, spaces 92 (Fig. 4) are provided for receiving the side panels 4 immediately inside the outside flanges 36 of the lower pans 12 of the central panel.

As shown in Figs. 6 and 7, each of the channel bars 18 and 20 comprises a base 94 and opposite legs 96 and 98. The legs 96 of the bars are adjacent to the pans and are provided with spaced holes that receive screws 90 that fasten into eyes 72 of straddle bars 70. As indicated in Fig. 7, there is such a hole between each pair of spaced lower pans, the hole being located transversely midway of the span of an upper pan. The heads of the screws 90 rest on the legs 96 so that the screws 90 can be tightened and loosened, as desired. When a screw 90 is tightened, it draws the associated upper pan toward the lower pans which the upper pan straddles, through the intermediary straddle bar 70. The lower legs 98 of the channel bars 18 and 20 have enlarged holes 100 through which the blade of a suitable screw driver may freely pass for tightening the screws 90. The lower bar 22 has its base resting on the valance-part of the pans, as shown in Fig. 9, so that it needs no spaced holes, such as 100, for reaching the screws 90.

Assembly of the central panel

The central panel 2 can be assembled in several different ways. It can be assembled so as to be airtight or

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so as to have labyrinth ventilating spaces between pans.

For a preferred construction for a ventilated central panel, the spacer means 48 of the upper pans 8 are deeper than the flanges of the lower pans. In assembling such a central panel, the upper ends of the spaced lower pans 10 and 12 are bolted to the flashing strip 16 by the fasteners 68; and then the upper ends of the upper pans 8 are forcibly inserted between the lower strip 52 and the upper rainshedding spring strip 54 of the flashing strip 16, with the flange-edges of each upper pan overlapping the flange-edges of two adjacent lower pans. This requires flexing of the upper strip 54 which thereafter presses on the upper pans 8. The spacers 48 of the upper pans 8 are wide enough to raise the upper ends of these pans 8 so that pan-flanges 42 thereat are clear of and spaced above the associated lower pans, as is clear from Fig. 3. Also the spacing of the lower pans is chosen so that the free edge of one or both of the flange-portions 46 of the flanges 42 of an upper pan is spaced from a facing upright flange 26 or 34, as the case may be, of an associated lower pan. Consequently, rainproof ventilating labyrinths are provided in the central panel.

In fastening the pans together, a straddle bar 70 is placed in the valance part of each upper pan 8, with the grooves 78 and 80 of the straddle bar seating in the elongated notches 32 in the valance portions 30 of the flanges 26 and 34 of the lower pans. The fastening bar 22 and straddle bars 70 thereat are aligned, and the screws 90 inserted. As each screw 90 is tightened in the eye 72 of a straddle bar at the apron-part of the panel 2, the end lugs 82 and 84 of the straddle bar ride down on the flange-portions 46 of the associated upper pan, tending to bow the upper pan and draw it toward the adjacent lower pans until the edges of the notches 78 and 80 of the straddle bar seat tightly on the edges forming the notches 32 in the flange-portions 30 in such lower pans. The bridge walls 86 and 88 distribute the force acting on the notch- or flange-edges over a wider area.

By sliding the apron-portions of the upper pans on the apron-portions of the lower pans, before the screws 90 thereat are fully tightened, the contiguous roof portions of the upper-pan flanges 42 can be placed closer or farther from the roof body-portions of the lower pans, within the limits of the length of the notches 32. In a sense the bottom edges of the spacers 48 at the tops of the upper pans act as pivots or fulcrums about which the upper pans turn as their apron-portions are raised or lowered. This adjustment permits an increase or decrease in the separation between the lower part of the roof-portions of the flanges 42 from the underlying parts of the lower pans. After the desired adjustment, the screws 90 at the apron-part of the awning are fully tightened. Obviously, by making the spacers 48 wider, the ventilation space can be increased.

The two ends of the upper and lower pans 8, 10 and 12 are positioned and fastened by the flashing strip 16, the bar 22 and the associated straddle bars 70 and screws 90; and in a sense the central panel 2 is assembled. However, we prefer to provide a plurality of additional intermediate cross bars 18 and 20 and associated fastening straddle bars 70 at spaced distances along the roof of the central panel 2 for greater strength and rigidity of the panel; the number of such cross bars depending on the size of the awning. Furthermore, the cross bars 18 and 20 serve as a convenient means by which to secure the side panels 4 to the central panel 2 when the awning is set up.

The cross bars 18 and 20 and associated straddle bars 70 and screws 90 hold the roof-portions of the upper pans in proper position with respect to the roof-portions of the lower pans in a manner similar to that described in connection with the apron portion of the awning. Since the top ends of the pans are held in position by the spacers 48 and fastening means 68, and the bottom ends of the

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pans are held in position by the tightened fastening means (comprising the bar 22 and straddle bars 70 at the apron-part of the awning), the tightening of the screws 90 associated with the cross bars 18 and 20 tends to draw the intermediate spans of the upper pans and lower pans together, with each straddle bar 70 pressing down on the flange-portions 46 of the associated upper pan. Tightening of the screws 90 can continue until the walls 86 and 88 press on the underlying edges of the flanges 28 and 34 of the lower pans 10 and 12. As a result, the upper pans and lower pans are firmly held together at all times with the roof portions of their interlocked flanges providing ventilating labyrinths, as indicated in Figs. 3 and 7. The depths of the grooves 78 and 80 of the straddle bars relative to the depths of the flanges of the lower pans can be chosen in accordance with the spacing desired between the flanges 46 of the upper pans 8 and the body-portions, such as 24, of the lower pans.

If ventilation is not desired, the width of the spacers 48 of the upper pans can be decreased and the upper pans dropped fully on the lower pans. In other words, the top parts of the upper pans will have their flanges resting directly on the lower pans, after the fashion shown in Figs. 5 and 9.

It is to be observed that no parts of the bars 18, 20 and 22 and the associated straddle bars 70 and screws 90 are exposed on the outside of the panel. In a sense, a straddle bar 70 and an equivalent underlying length of a channel bar 18, 20 or 22 form a clamping means that draws the upper and lower pans together, when the associated screw 90 is tightened, the drawing force being continuous in the assembled awning, so that creaking and scraping are substantially entirely eliminated even with pans that are made of metal, such as aluminum strip.

Instead of providing turned-down spacer-portions such as 48 at the tops of upper pans 8, these may be omitted and turned-up spacer-portions 48' can be provided at the upper edges of the lower pans, on which the upper pans can rest, as illustrated in Fig. 19.

Side panels

Each side panel 4, shown in detail in Figs. 12-15, comprises a pair of angularly related bars 104 and 106. Shaped overlapped louvres 108 are fastened to the outsides of the bars.

Each louvre 108 has an upright body portion which is bent to provide a flat inner side portion 110 that abuts the bars 104 and 106, an intermediate slanting portion 112 and a bent-out side portion 115. The portion 112 is wide and flat and is the main part of the louvre. Ends of narrow connector straps 116 are welded to the side portions 110 and 115; these straps having their other ends fastened to the bars 104 and 106 by bolt fasteners 118. The outer side portion 115 of a louvre is spaced from and overlaps the inner side 110 of a next adjacent louvre so as to provide ventilation.

The bottoms 119 of the intermediate portions 112 of the louvres 108 are deeper than the side portions 115, and are shaped to correspond to the valance of the central panel 2.

The upper bar 104 is shaped as shown in Figs. 16 and 17, the shape resembling the letter Z with lines perpendicular. The upper bar 104 comprises an upper channel-like portion 120 into which the top-ends of the louvres seat, and an inwardly directed lug or flange portion 122.

The back end of the lower bar 106 has a small plate 124 secured thereto which is parallel with the back end of the awning, and has one or more holes or other means for receiving a screw or other means by which it can be secured to the wall from which the awning is hung.

Assembled awning

The side panels 4 are secured to the central panel 2 by first placing the channel portions 120 of the side panels in the spaces 92 of the central panel, these spaces lying between the ends of bars 18, 20 and 22 of the central

panel and the outside flanges 36 of the lower pans 12 of the central panel. In such positions of the panels, the portions 122 of the bars 104 of the side panels 4 are against the bottoms of the bars 18 and 20 and are fastened thereto in any suitable manner, such as by releasable bolt-fasteners 126 shown in Figs. 16 and 17.

The awning, comprising the assembled central panel 2, side panels 4 and building strip 16, is hung from a building wall or other structure where it is to be used, by a building plate 130 (Fig. 18). This building plate 130 has a back plate 132 that is securely fastened to the wall in any suitable way and caulked if desired. The back plate 132 has a seat 134 that receives the vertical hanger member 50 of the flashing strip 16. This seat 134 is formed by a bent-down portion 136 of the back plate 132 and a lower protruding support plate 138. The bentdown portion 136 acts also as a rain shed preventing rain from flowing between the awning and building plate.

In inserting the awning, it is tilted upwardly as the hanger member 50 is pushed into the bentdown portion 136 of the building plate 130. It is then twisted downwardly, and dropped until the hanger member 50 is flush with the back plate 132 and the bottom of the strip 16 of the awning rests on the lower support plate 138. If desired, the weight of the awning may press the hanger member 50 against the turneddown portion 136 of the back plate, while the bottom edge of the strip 16 rests on the support plate 138. The awning is removed from the building plate by reverse operations. Accordingly, the hanger member 50 of the flashing strip 16 and the seat 134 of the building plate 130 form an attachment means by which the awning is removably hung from the building plate.

If desired, lugs 140 can be provided on the building plate 130 which can be bolted to the bars 104 of the side panels after the awning is hung from the building plate. Also suitable fasteners can be driven into the building wall, the fasteners, such as expansion plugs, passing through the plates 124 of the lower bars 106 of the side panels 4.

While we have described our invention in a preferred form, it is obvious that its principles are applicable to other embodiments of awnings and apparatus.

We claim as our invention:

1. In structural combination, a building plate, an awning comprising a central panel and side panels, said awning having a flashing strip across its top, said building plate having an overhang member and seating means, said seating means and overhang member forming a seat removably receiving said flashing strip.

2. A structural combination as defined in claim 1 but further characterized by said flashing strip comprising an upstanding member seating in said seat, and comprising a pair of vertically spaced strip-members extending away from said member, and by said central panel comprising

a plurality of staggered overlapped pans having upper ends in the space between said strip-members.

3. An awning of a type described comprising a central panel comprising a plurality of staggered upper and lower pans having overlapping edge-portions provided with oppositely directed flanges, strip means transversely along the top of said pans, a number of said pans having turned portions at their top edges contacting said strip means for spacing the last said pans with respect to said strip means, a bar spaced from said strip means and transverse to said pans, and means securing said plurality of pans to said bar with said flanges in spaced relation.

4. An awning of a type described comprising a central panel having a number of staggered upper and lower pans having overlapped edges spaced to provide ventilating spaces, means for receiving the upper ends of said pans comprising a pair of spaced horizontal strips transverse to said pans, a first of said strips being resilient, a plurality of said pans between and engaging said strips, the last said pans having turned portions engaging a horizontal surface of one of said strips, and means securing the remaining pans between said strips to the last said strip.

5. An awning of a type described comprising a central panel comprising a plurality of staggered upper and lower pans having overlapping edge-portions provided with oppositely directed longitudinal flanges, said pans having bent-down lower ends, a number of flanges along said bent-down portions having elongated notches, means positioning the upper ends of said pans, a bar across said bent-down portions, and straddle bar fasteners cooperating with said bar and bent-down portions for securing said pans with their flanges in spaced ventilating relation, said straddle bar fasteners being partially in said notches and having screw means permitting the adjustment of the relative position of said notches and fasteners.

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