

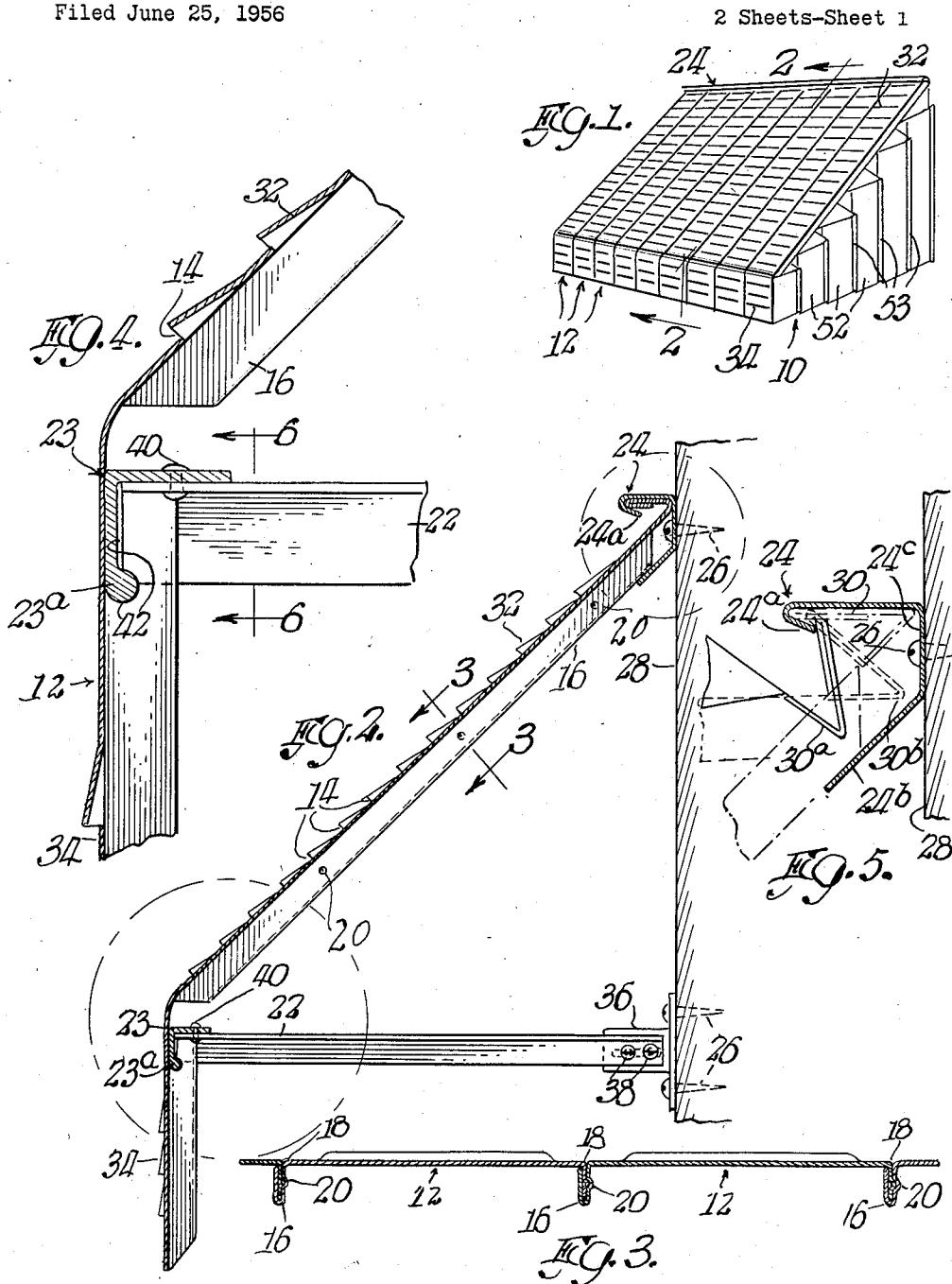
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W. D. MEAGHER

2,902,730

AWNING STRUCTURE

Filed June 25, 1956



Inventor
William D. Meagher
Thies, Allen, Nicklburger,
von Holst & Colkman
Attys

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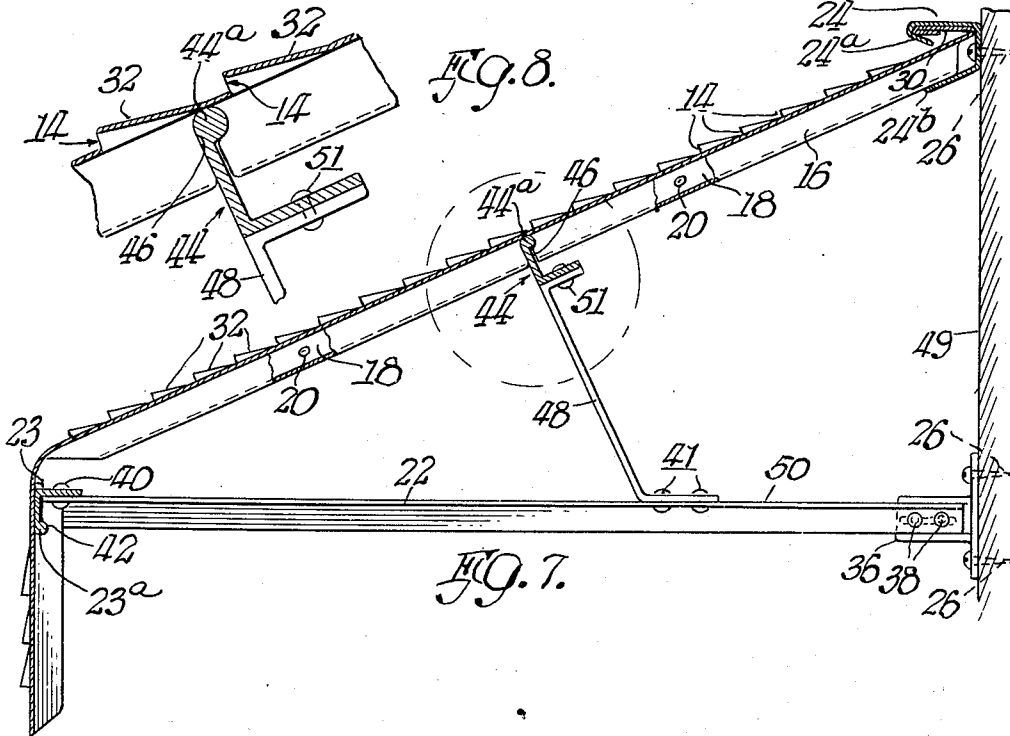
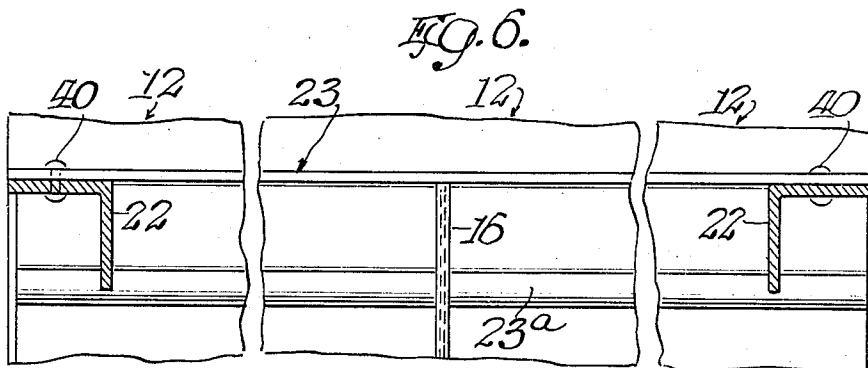
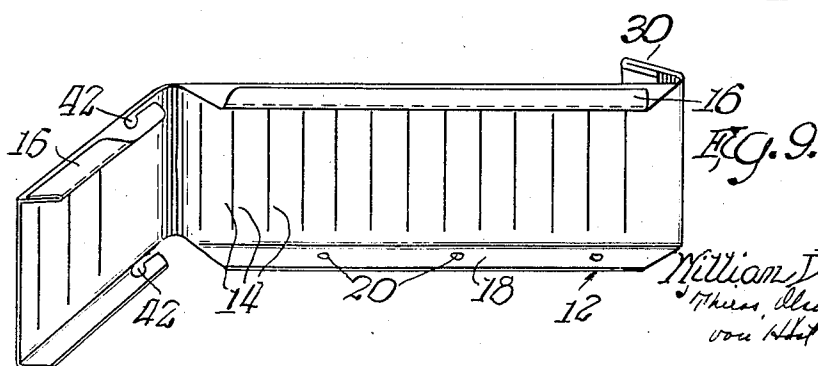
W. D. MEAGHER

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Inventor
William D. Meagher
Thomas Allen Nicklenburg
von Helt & Colman
Attys

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AWNING STRUCTURE

William D. Meagher, Peru, Ill.

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8 Claims. (Cl. 20—57.5)

This invention relates to an improved construction for an awning or the like and, more particularly, pertains to a construction which is pleasing to the eye and simple in details of construction.

The prior art discloses many varied constructions for awnings and similar assemblies, the beauty of which is marred by the appearance of a plurality of rivets, screws and other securing means projecting on the exterior surfaces of these awning components. This is the usual appearance when the awning is composed of a plurality of panel members each of which is individually secured to a supporting framework by a means which traverses the panel thickness from the exterior and then affixes itself to an underlying framework component.

It is an object of this invention to provide a multi-panel construction for an awning or the like which is of sturdy construction and yet does not utilize securing means usually employed in constructions of this type.

It is another object of this invention to provide a simplified method for assembling discrete panel members for an awning or the like to a framework as will hereinafter be explained in greater detail.

It is yet another object of this invention to provide a construction for an awning or the like which is readily adapted for continuous high speed commercial production, and yet requires no special tools or equipment apart from that ordinarily used in production of this type, and which can be produced at lower cost than prior constructions.

The above and other objects of this invention will become more apparent upon proceeding with the following detailed description and appended claims, read in the light of the accompanying drawings.

In carrying out one embodiment of this invention, a plurality of interlocking panels are provided which are utilized in combination with a supporting framework. Each of the panels is provided with a U-shaped lateral edge end limit and an opposed edge end limit disposed at right angles to the panel body which is adapted to interlock with the U-shaped edge of an adjacent panel member. The interlocking edges are disposed substantially normal to the remaining surface area of the panel member. In accordance with the teaching of this invention, a supporting framework member having an offset edge portion is slidably inserted through aligned apertures in the normally disposed edges of the interlocking panels and snugly received therein. This latter interlocking engagement provides stability of assembly, a pleasing exterior appearance and dispenses with the need for discrete panel-securing means such as rivets and bolts, as will hereinafter be made apparent.

For a more complete understanding of this invention, reference should now be made to the drawings, wherein—

Figure 1 is a perspective view of an awning member constructed in accordance with the principles of this invention.

Fig. 2 is an enlarged sectional view taken on line 2—2 of Fig. 1;

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Fig. 3 is a fragmentary sectional view taken on line 3—3 of Fig. 2;

Fig. 4 is an enlarged fragmentary view of the lower encircled portion of Fig. 2;

Fig. 5 is an enlarged fragmentary sectional view of the upper encircled portion of Fig. 2 and illustrates the procedure whereby the upper portion of the illustrated awning construction is locked to a supporting channel member;

Fig. 6 is a fragmentary sectional view taken on line 6—6 of Fig. 4;

Fig. 7 is a sectional view of a modified awning construction;

Fig. 8 is an enlarged fragmentary view of the encircled portion of Fig. 7; and

Fig. 9 is a perspective view of one panel member utilized in the formation of the awning construction illustrated in the various figures.

Referring now to the drawings, and more particularly to Fig. 1, an awning construction 10 is illustrated which is composed of a number of interlocking panel members 12, one of which is illustrated in perspective in Fig. 9. Each of the panel members 12 is louvered at 14 for purposes of insuring adequate air circulation about the awning. The panel members 12 which make up the awning illustrated in Fig. 1 possess one vertically disposed edge portion 16 of substantially U-shaped configuration and an opposed straight edge portion 18 as shown in Fig. 9 which is adapted to interlock with the U-shaped edge of an adjacent panel member in the manner illustrated in Fig. 3. It is thus seen from the latter figure that the panel members interlock by means of their edges and unite to form flange portions disposed normally to the remaining louvered surface area of the awning construction. To maintain the interlocking edges of the panels in permanent relationship, the flange defining edges are pressed inwardly or dimpled intermittently along their length as illustrated in Figs. 2, 3, and 7 by an appropriate tool. These dimples 20 serve the obvious function of preventing relative slidable movement between two interlocking edge portions of adjacent panel members 12.

As will be noted from Fig. 2, a supporting framework composed of angle members 22 (one of which is shown) function as a supporting framework in conjunction with a horizontally disposed channel member 24 which is illustrated in Fig. 2 as being secured by means of screws 26 (one of which is shown) to a supporting wall surface 28. As is apparent from Fig. 2, the flange portions are cut away from the upper end portion of each of the panel members 12 thereby enabling a flat upper end portion 30 to be bent into the angular configuration illustrated and locked within the transverse channel 24 secured to the building surface 28. The channel 24 has a U-shaped lip 24a for engaging the end limit of the panel assembly and an opposed sloping surface 24b for supporting the panel interlocking edges.

The manner in which the upper end portions of the interlocking panels 12 engage the transverse channel 24 is illustrated in Fig. 5. The dotted line representation 30a of the upper end portion of the awning construction illustrates the initial position of the awning assembly in the course of interlocking with the transverse channel 24. The position represented by the dotted line Figure 30b represents the position which the upper end limit of the awning construction assumes in the second stage of becoming interlocked with the transverse channel, and the final position of rest 30 which is also illustrated in Fig. 2 represents the final interlocking relationship between the upper portion of the awning and the supporting transverse channel member 24.

It is believed apparent that the illustrated channel mount construction of Fig. 5 which enables the upper

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end portion of the awning panels to be readily secured thereto enables great savings in time to be effected in the normal course of assembly. No discrete securing means such as bolts, screws, etc. are employed to maintain the awning panels secured to the transverse channel 24. Despite the lack of such members each and every panel is nevertheless securely held in a fixed position.

The provided awning channel mount not only assures quick assembly, but in addition the upper end portion of the interlocked panels may be readily disengaged from the transverse supporting channel 24. The latter disassembly is readily effected (if the bottom portion of the panels is free to move) by merely reversing the procedure of assembly, that is, tilting the panel assembly until the flat upper end portion 30 of the interlocked panels is free from the lip 24a of the channel 24.

It will be noted from Figs. 3 and 5 that the flat upper end portion 30 of the interlocked panels 12 is formed so as to be received in the opening defined by the lip 24a and the underside of the channel 24. The latter lip portion and channel sloping portion 24b function to supportingly engage the panels as illustrated. Vertical channel portion 24c interconnects the latter two channel portions and is disposed flush against the illustrated supporting surface 28 by means of screws 26.

It is believed obvious that the manufacture of the transverse channel may be effected in a rapid, facile manner and with a minimum of expense. The transverse channel may be readily formed from sheet metal; the various channel portions require no intricate machinery to produce the same.

As will be noted from Figs. 1 and 2, the awning construction is divided into a sloping upper portion which comprises a greater portion of the awning, angularly disposed to the supporting wall surface, and a depending lower portion 34. There are three supporting angle members in the illustrated construction, two of which are disposed at opposed lateral end limits of the awning and the other comprising the connecting link between the two projecting building engaging channel members. As will be seen from Fig. 2, the one angle member 22 which is illustrated vertically disposed to the supporting building surface 28 engages a T bracket 36 by means of a nut and bolt assembly 38. The T bracket is, in turn, secured to the supporting wall surface 28 with screws 26 or other equivalent means. Spanning the interval between the distal end limits of each of the laterally disposed channels 22 is the transverse channel 23 which is disposed parallel to the upper supporting channel member 24 and transversely disposed to the longitudinal axis of the panel members 12. The intersecting channels 22 and 23 may be secured together by means of rivets 40 or other equivalent means.

The manner in which the transverse channel 23 engages the depending portion 34 of the awning 10 and as a result supports the same is more clearly seen from Fig. 4. It will be noted from this latter figure that the projecting interlocking edge portions 18 and 16 of the panels 12 are cut away at the point of juncture between the upper portion 32 and depending portion 34. The lower interlocking edges or flange-defining portions of the bottom vertical portion 36 of the awning are apertured in the manner illustrated in Fig. 4 at 42. The latter aperture is formed at precisely the same location in each projecting flange portion. That is, the apertures 42 are in horizontal alignment.

As previously mentioned, one supporting angle which comprises part of the lowermost frame portion of the provided awning construction has an offset edge portion which in the illustrated embodiment comprises a bulbous protuberance. As will be noted from Fig. 4, the aperture 42 is of precisely the same configuration as the cross section of the arm 23a of the transverse angle 23, the latter arm having the bulbous protuberance disposed thereon. By supportingly engaging overlying peripheral

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portions of the apertures in the interlocking flange portions 12 of the awning construction the lower portion of the awning 10 may be securely supported by means of the transverse channel 23 and the supporting channels 22 without the need for separate securing means such as screws, bolts, etc. Instead of the bulb angles 23 it may be desirable to utilize other equivalent transverse frame members which may be curvilinear, rectilinear or partly curvilinear and partly rectilinear in cross section. Also the transverse interlocking member may be hollow or shell like to provide a resiliency enabling it to contract when traversing the interlocking edge portions, thereby assuring a stable assembly.

Because of the absence of the usual securing means, the front of the construction 10 as illustrated in Fig. 1 possesses an eye-appealing continuous surface which is not marred by the appearance of bolts, rivets and screws which had heretofore been utilized for securing each of the panels 12 to the supporting transverse channel 23 or equivalent member. It is apparent that in the course of assembly all that need be done is slidably insert the bulb angle 23 through the aligned apertures 42 disposed in the interlocking edge portions of the panel assembly. The upper portion of the awning 30 is interlocked with the transverse supporting channel 24, as previously mentioned, and supported thereby. The lower transverse channel 23 is connected to the laterally disposed angles 22 which are supported by the building surface 28. Thus an obvious advantage of the disclosed construction is that the parts can be assembled in operative position more quickly and at lower cost than other awning constructions heretofore employed.

In those instances in which the upper portion 32 of the awning construction is of considerable length, such as in the construction illustrated in Fig. 7, intermediate support members or brace members 48 are utilized in the manner illustrated in Fig. 7. A second transverse bulb angle 44 having bulb edge 44a engages a second plurality of aligned apertures 46 disposed in the projecting edge portions of the interlocking panels 12. The transverse bulb angle 44 is supported at opposed lateral end portions by the brace members 48, which are interposed between the transverse bulb angle 44 and an underlying angle member 50 which engages a support surface 49, by means of rivets 41; one of the angles 50 is illustrated in Fig. 7.

The enlarged detailed view of Fig. 8 illustrates the manner in which the bulb angle 44 is snugly received within the apertures 46 of the projecting interlocking edge portions of the panel members. The remaining structural features of the awning illustrated in Fig. 7 are precisely the same as those of the awning construction illustrated in Fig. 2.

If desired, panels 52 shown in Fig. 1 may be utilized with the illustrated awning constructions. The latter panels are formed so as to effect an overlapping relationship whereby a sufficient air space 53 is present between adjacent panels 52. The latter panels may be secured by rivets or other means to the depending edges of the opposed lateral panel members 12 comprising the awning construction.

It is thus apparent that a construction has been presented which is particularly adapted for awning or similar type constructions in which the exterior surface thereof is unmarred by the appearance of a plurality of securing means such as bolts and screws. Utilizing the novel interlocking relationship between the bulb angle of the provided construction and the projecting flange-forming interlocking edges of the panel members of the provided construction, a stable assembly is assured which may be readily erected with a minimum of effort and in a minimum amount of time. No special apparatus is needed during the course of assembly, and it is apparent that the slidable engagement of the bulb angle with the interlocking panels is much simpler and, productionwise, less

expensive than securing each panel member to a transverse angle by means of securing elements such as screws and bolts.

It is believed apparent that many modifications may be made in the illustrated construction which will still remain within the ambit of my inventive concept.

The facility with which all components of the illustrated construction may be fabricated is believed apparent. The individual panel members are merely cut or stamped out, and bent along appropriate lines; that is, at their upper end limits and at the point of juncture between the two panel portions, into final shape.

I claim:

1. An awning structure comprising a plurality of interlocking panel members arranged in edge-to-edge relation, a framework for supporting said panel members, said panel members defining an integral unit, said panels having projecting, interlocking edges defining opposed lateral end limits thereof, each of said edges having at least one aperture therein arranged in axial alignment with other apertures of other edges, means comprising a part of said supporting framework having a portion formed to interfit with the apertures in said projecting edges and be slidably insertable therein adapted to simultaneously support and align said engaged panel members said panel projecting edges and said supporting framework means interfitting with the flange apertures being covered by said panel exterior faces and hidden from view in the normal position of assembly.

2. An awning structure comprising a plurality of interlocking panel members arranged in edge-to-edge relation, a framework for supporting said panel members, said panel members defining an integral unit, said panels having projecting, interlocking edges defining opposed lateral end limits thereof, each of said edges having at least one aperture therein arranged in axial alignment with other apertures of other edges, means comprising a part of said supporting framework having a first cross-sectional portion in interfitting engagement with the apertures in said projecting edges and a second cross-sectional portion arranged exteriorly of said projecting edge, and a second portion of said supporting framework engageable with said second cross-sectional portion of said supporting framework whereby said interfitting means may be supported by said supporting framework second portion in the plane of engagement with said interlocking edges.

3. An awning construction comprising a plurality of interlocking panel members in edge-to-edge relation, each of said panel members having edge portions angularly disposed to the remaining portion of said panel and effecting said interlocking with edge portions of adjacent panel members, said panel members' edge portions being uniformly apertured whereby each aperture of an edge portion is in axial alignment with apertures of the other edge portions, elongate supporting means having a first portion comprising an enlarged portion and an adjacent reduced portion defining a first cross-sectional portion of the supporting means, said first portion of said elongate supporting means being substantially snugly receivable within said edge apertures, a second cross-sectional portion of said supporting means disposed exteriorly of said engaged edges contiguous with said narrow portion of said elongate means first portion, said enlarged portion of said elongate means first portion locking the same to said apertured edges whereby the same may be removed only by sliding said elongate means therethrough.

4. The awning as recited in claim 3 in which said elongate means first portion is of precisely the same cross-sectional configuration as that of said apertures only in the vicinity of panel engagement.

5. The awning as recited in claim 3 in which said apertures are of irregular configuration being partly rectilinear in configuration and partly curvilinear.

6. An awning structure comprising a plurality of interlocking louvered panel members in edge-to-edge relation, each of said panel members having one edge end limit normally disposed to the main body portion thereof thereby defining a vertical flange and a second normally disposed edge end limit of U-shaped configuration adapted to receive a vertical flange of an adjacent panel in interlocking relationship, the interlocking edge portions of said panel members having intermittent areas removed from the plane of the remaining area of said interlocking edge portions whereby relative movement between said panel members is prevented, apertures disposed in each of said interlocking edge portions, the apertures of each of said panel edge portions being in alignment with those of the remaining edge portions, support means having a first cross-sectional portion of substantially the same configuration as the periphery of the apertures in said interlocking edges snugly receivable within said apertures, said supporting means having a second cross-sectional portion disposed exteriorly of said panel edge portions, and framework means supporting said second cross-sectional portion.

7. An awning construction comprising a framework, a plurality of interlocking panel means supported by said framework, said panel means defining normally projecting flanges along one surface thereof at points of said interlocking, the upper end portion of said interlocking panel means having said projecting flange portions removed therefrom so as to define a substantially flat terminal strip, said strip being angularly disposed to the remaining portion of said panel means so as to define an acute angle with the surfaces of said interlocking panel means disposed oppositely to said projecting flanges, elongate channel means disposed transversely to said interlocking panels and adapted to supportingly engage the same, said channel having a substantially U-shaped edge portion defining one edge end limit of said channel, a rectilinear strip portion disposed at substantially right angles to said U-shaped edge portion and formed integrally therewith, and a depending strip portion angularly disposed to said rectilinear strip portion and formed integrally therewith, said panel flat strip portion engaging said transverse channel U-shaped edge and interlocking therewith, said transverse channel depending strip portion supporting said panel projecting edge portions disposed adjacent said angularly disposed strip portion in the normal assembled position.

8. An awning construction comprising a plurality of panels arranged in parallel alignment, a framework for supporting said panels, said panels having projecting edges defining opposed lateral end limits thereof, each of said edges having at least one aperture therein in axial alignment with other apertures of other edges, means comprising a part of said supporting framework having a first cross-sectional portion in interfitting engagement with the apertures in said projecting edges and a second cross-sectional portion arranged exteriorly of said projecting edge, and a second portion of said supporting framework engageable with said second cross-sectional portion of said supporting framework whereby said interfitting means may be supported by said supporting framework second portion in the plane of engagement with said edges.

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