

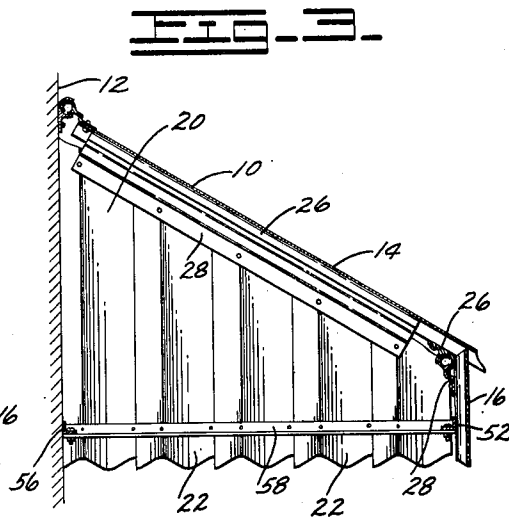
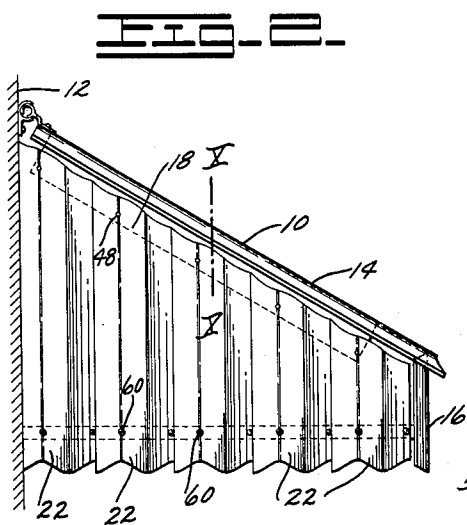
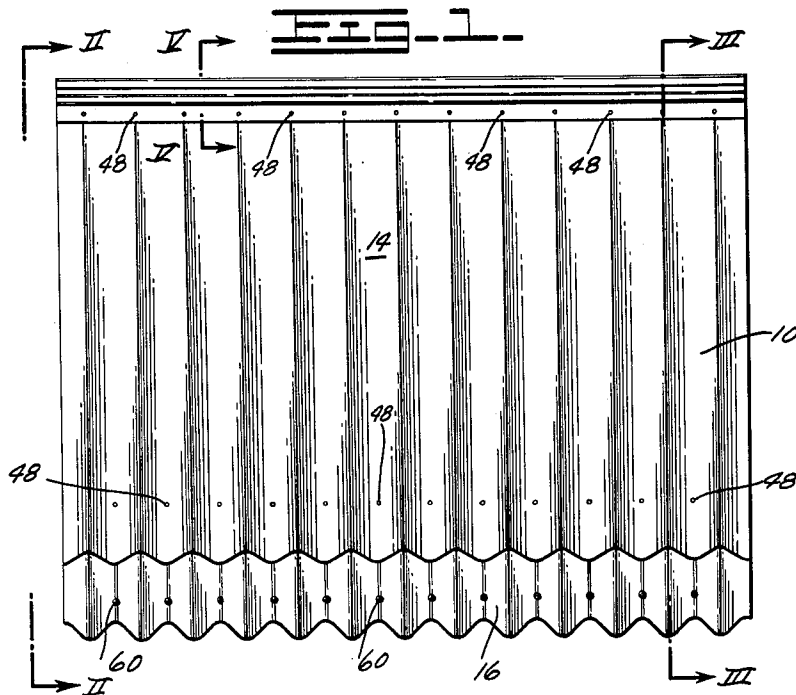
May 13, 1958

U. J. MILLER
AWNING STRUCTURE

2,834,072

Filed March 11, 1954

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

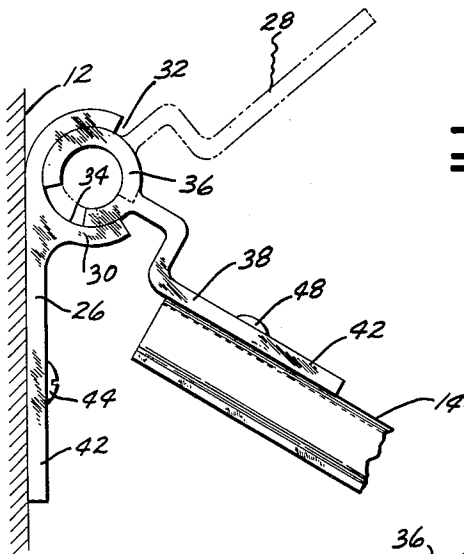


FIG. 4.

FIG. 5.

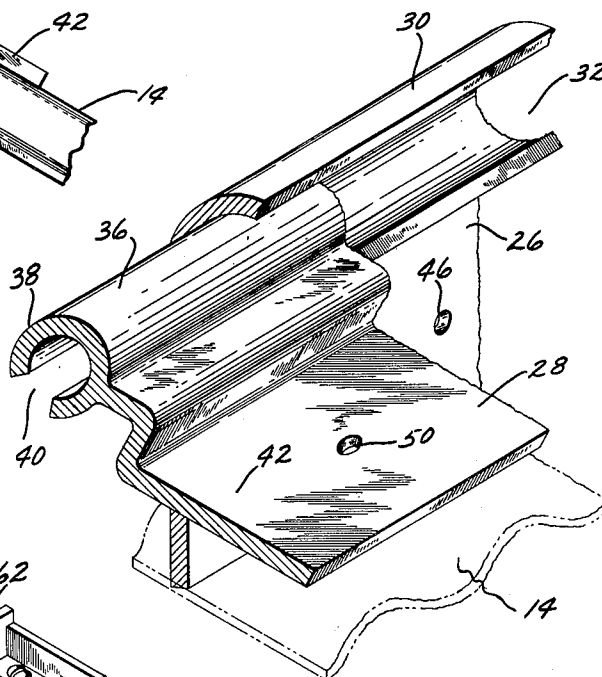
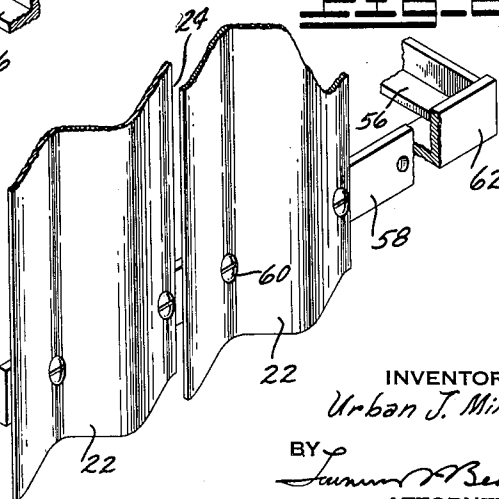
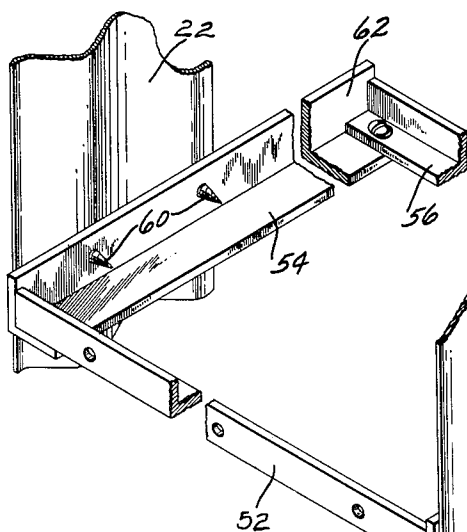


FIG. 6.



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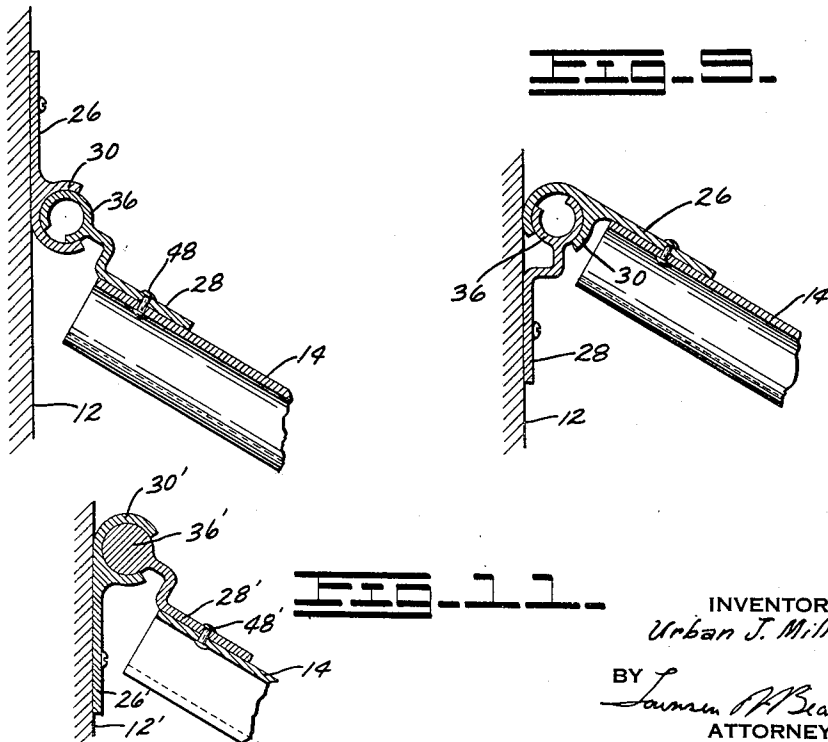
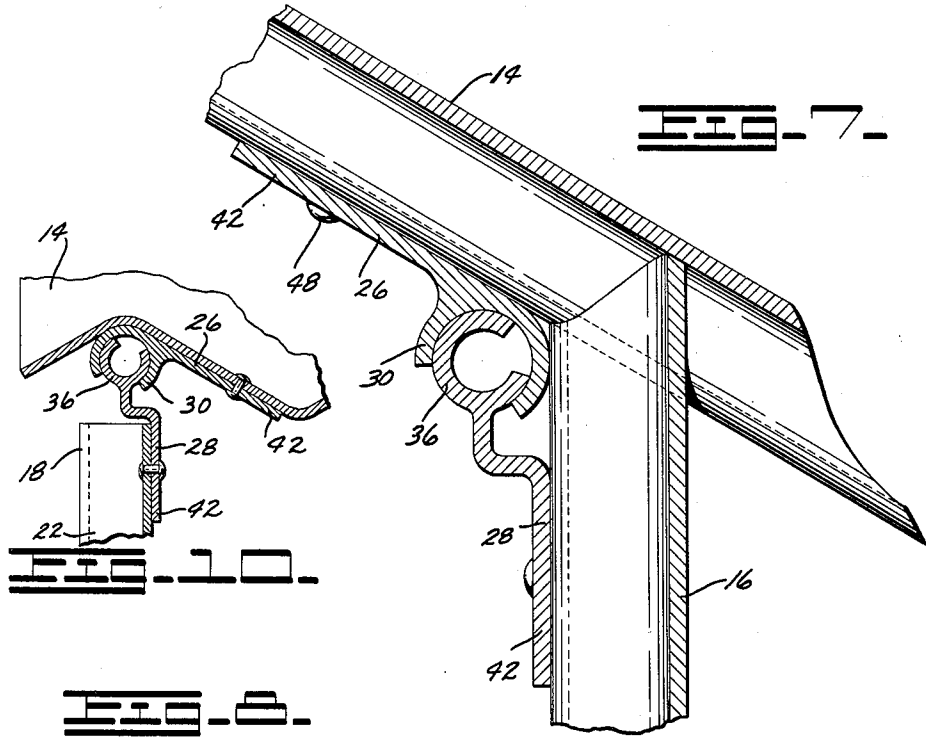
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3 Sheets-Sheet 3



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AWNING STRUCTURE

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2 Claims. (Cl. 20—57.5)

The present invention relates to improvements in awning constructions for windows, doors, canopies, patios, and the like, and particularly concerned with rigid type awnings of sheet material.

Recent developments in translucent molded sheets of fiber glass and polyester resins has made available a rigid awning material usually provided in corrugated form which is relatively indestructible. However, it is likewise relatively expensive as compared with other awning material. Because of this high material cost, it becomes of particular importance that the cost of fabrication, transportation and installation of awning fabricated from such material be reduced to the greatest possible extent. Moreover, it becomes important in the distribution and sale of such awnings to provide a construction for installation which does not require skilled persons and may be conveniently performed by the home owner.

According to the present invention, I have provided an improved awning of the rigid type of sectional construction which may be fabricated and transported as relatively flat sections yet which may be readily assembled at the time of installation of the awning upon its support structure. To this end, I have provided an improved connection which has hingedly joinable parts for attaching the sections of the awning to one another and preferably the awning structure to its support.

Thus, one of the objects of the invention is to provide an improved awning of the rigid type in which sections thereof are hingedly assembled and then held in interlocked relationship by the frame detachably connected to restrain hinging of the awning sections.

Another object is to provide an improved hinge connection between awning sections which will permit assembly thereof by lateral movement of the sections relative to each other and, thereafter, followed by a hinging movement of one section relative to the other to effect an interlock of the sections in their position of final assembly.

Another object is to provide an improved hinge connection for rigid awning sections having an elongated socket-like portion into which is received an elongated male portion, the portions being shaped to receive each other upon relative lateral movement in one position of angularity and to interlock with each other into another position of angularity.

A further object of the invention is to provide an improved sectional awning of the rigid type having connection and frame structure particularly adapted for installation upon corrugated material.

These and other objects and advantages residing in the combination, construction and arrangement of parts will more fully appear from a consideration of the following specification and the appended claims.

In the drawings,

Fig. 1 is a front elevational view of an awning embodying the present invention,

2

Fig. 2 is a side elevational view of Fig. 1 as viewed from the section II—II,

Fig. 3 is a vertical cross-sectional view taken on section line III—III,

5 Fig. 4 is a fragmentary enlarged end view of the hinge connection.

Fig. 5 is a perspective view of the structure shown in Fig. 4 shown in vertical broken section with the parts longitudinally shifted,

10 Fig. 6 is a fragmentary perspective view of certain details of frame construction,

Fig. 7 is an enlarged fragmentary vertical section of a detail of construction,

15 Figs. 8 and 9 are vertical sectional views of modified forms of the hinge connection,

Fig. 10 is a cross-sectional view taken on line X—X of Fig. 2, and

Fig. 11 is a view similar to Fig. 9 of a modified form of the invention.

20 As shown in Figs. 1 to 3, inclusive, a rigid type awning 10 is illustrated as assembled and attached to a vertical surface 12. The top section 14 and front section 16 is illustrated as fabricated from a continuous sheet of corrugated material such as molded glass fiber and resin, aluminum, stainless steel, or other suitable material. The side sections 18 and 20 may be of continuous corrugated sheet as in the manner of the front section 16, but they are preferably fabricated as a plurality of individual corrugated sheets 22 arranged as shown in Fig. 6 to provide vertical ventilation slots 24 between the individual sheets 22. My improved hinge connection between the sections 14, 16, 18 and 20 of the awning 10, as well as the attachment between the awning 10 and the surface 12, takes the form of pairs of elongated members 26 and 28 which may be economically fabricated of aluminum extrusions in long lengths which are then cut to the desired length for the fabrication of the various awning sizes.

30 As shown, the member 26 has an elongated socket-like portion 30 preferably shaped as a portion of a cylinder and defining an elongated slot 32. The cylindrical wall portion 34 is shown as being of slightly more than 180° in circumferential extent.

40 The member 28 has an elongated male portion 36 of generally cylindrical outer shape to enable it to be received within the portion 30 with a snug fit. To permit lateral or edgewise assembly of the members 26 and 28 the cylindrical exterior wall 38 of the portion 36 has been interrupted at 40 so as to reduce the width of the portion 36 at this point to enable its lateral insertion or removal through the slot 32 of the member 28 at the dotted line position of Fig. 4. Integral with each portion 30 and 36 is a frame portion 42 for effecting the attachment between the hinge connection and the associated structure. 55 In supporting the awning 10 to the surface 12, as shown in Fig. 4, the frame portion 42 of the member 26 is attached to the surface 12 by suitable fasteners 44 inserted through openings 46. Also shown in Fig. 4 is the manner in which the frame portion 42 of the member 28 is 60 attached to the top section 14 by rivets 43 or other suitable means inserted through openings 50.

Referring to Fig. 7, the portion 42 of the member 26 is shown attached along the lower edge on the underside of the top section 14 with the portion 42 of the member 28 being attached along the inside upper edge of the front section 16. In Fig. 10, the portion 42 of the member 26 is shown attached to the side of the top section 14 adjacent the side sections 18 and 20 with the portion 42 and the member 28 being attached to each side section 70 18 and 20 along the inside thereof and adjacent the upper edge.

As should be readily understood by those skilled in

the art, the awning sections 14, 16, 18 and 20 may be fabricated and transported as relatively flat elements and then assembled at the time of installation of the awning 10 by lateral insertion of the male portion 36 of each hinge connection into its mated socket portion 30 with the angularity of the connection elements being such, at the time of lateral insertion, as to conform to the relative positions shown in Fig. 5 with the frame portion 26 being in full line and the frame portion 28 in the dotted line position shown. Thereafter, the sections of the awning 10 are hinged into the position which locks the portions 36 in the portions 30 as shown in full line in Fig. 4. At the same time any necessary endwise relative adjustment of the section can be effected by endwise sliding the male portions 36 in their associated socket portions 30. This will position the sections 14, 16, 18 and 20 as shown in Figs. 1, 2 and 3. To hold them in their interlocked positions, the frame members 52, 54, 56 and 58 are provided with the member 54 being attached by screws 60 to the lower edge of section 18, the member 58 being attached by screws 60 to the lower edge of section 20 and the member 52 being attached to the lower edge of the section 16 in a similar manner. After the sections of the awning 10 have been inserted and hinged into interlocking position, the member 52 is attached at its ends to one end of the members 54 and 58 and the member 56 is attached at its ends to the other end of the members 54 and 58. This arrangement will retain the awning sections 14, 16, 18 and 20 in rigid interlocked relative positions and impart to the awning itself its final assembled form.

In Fig. 8 the arrangement for attaching the frame portion 26 to the surface 12 has been slightly altered by locating the frame portion 26 above the socket portion 30. In Fig. 9, the arrangement of Fig. 4 has been altered by reversing the position of the frame members 26 and 28 and their integrally associated parts.

In Fig. 11 is shown a modification of the invention in which the male portion 36' can only be inserted into the socket 30' by endwise telescoping relative movement. With such a construction limited hinging movement can take place between the frame portions 26' and 28' with the portions 30' and 36' being interlocked in all positions of annular adjustment. As will be apparent from Fig. 5, the form of the invention of Fig. 4 may also be assembled by endwise relative longitudinal telescoping of the socket portion 30 and the male portion 36 in lieu of the lateral edgewise association indicated by the dotted line position of the frame member 28, as shown in Fig. 4.

To install the assembled awning 10 on the surface 12, the sections 14, 16, 18 and 20 may be connected and hingedly held in their interlocked association as above described. The frame 26 of Fig. 4 is then attached to the surface 12 and the completely assembled awning 10 may be held in a position to dispose the frame 28, as shown in dotted outline and the male portion 36 of Fig. 4 may be inserted into the socket 30 by lateral edgewise movement and the awning 10 is, thereafter, bodily hinged clockwise about the horizontal longitudinal axis of the socket 30 into the position shown in Fig. 2. While the weight of the awning 10 will normally hold it in the position of Fig. 2, it is advisable to attach the lower frame members 52, 54, and 58 to the surface 12 either through the ends 62 or through the frame member 56.

It will be understood that the top section 14 may be employed as an awning without the remaining sections. In this event the use of the present invention would be confined to the hinge connection with the surface 12.

Having thus described my invention what I claim is new and desire to protect by Letters Patent is:

1. In a rigid type sectional awning, a frame and hinge structure comprising a pair of elongated extruded members of integral one-ply construction each having a flat frame attachment surface portion, one of said members having a C-shaped socket portion to which its associated flat attachment portion is generally tangential at a point opposite the throat of said socket, the inner surface of said socket being generally cylindrical and exceeding 180° in inner circumference, the other of said members having a C-shaped male portion connected to its associated attachment portion through an L-shaped offset portion, the point of connection between said male portion and said offset portion being spaced from the throat of said male portion, the outer surface of said male portion being cylindrical and having its narrowest dimension across its axis less than the width of the throat of said socket member with the inner diameter of said socket portion and the outer diameter of said male portion being approximately the same so as to permit one to have a bearing within the other, the C-shape of said socket and male portions enabling said male portion to be laterally inserted into said socket portion through the throat of said socket portion with the throat of said male portion in one relative position to the throat of said socket portion, said socket and male portions in another relative position interlocking with each other.

2. A frame and hinge structure for rigid type awning sections comprising a pair of elongated extruded metal members of C-shaped cross-section along one edge to define an outwardly opening throat, each member having an integral flat attachment portion for awning sections merging into its associated C-shaped section at a point removed from the outwardly opening throat, the inner surface of the C-shaped section of one member and the outer surface of the C-shaped section of the other member being cylindrical in form along arcs exceeding 180° but less than 360°, the diameters of said cylindrical surfaces being approximately the same to enable one surface to form a bearing with the other, the width of the opening of the throat of one member slightly exceeding the narrowest width of the C-shaped section of the other member to enable the lateral insertion of one C-shaped edge of one member through the throat of the other member with interlocking between said members being effected in all positions of relative angular association.

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