Oct. 18, 1949. L. S. ESCHRICH 2,484,987

LOUVERED AWNING

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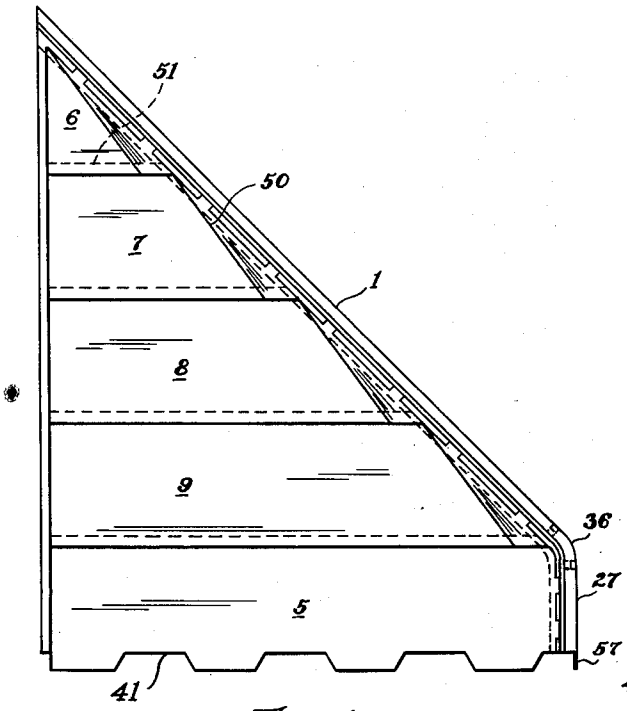


Fig. 1

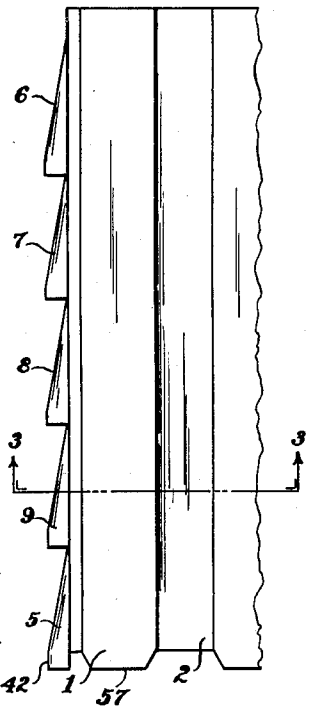


Fig. 2

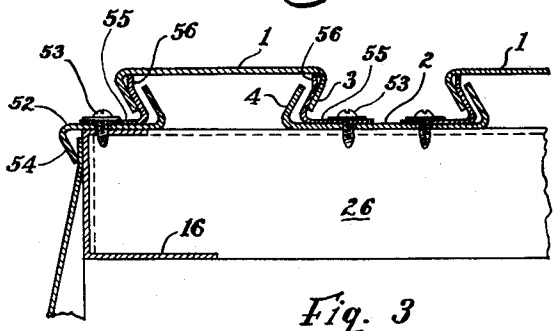


Fig. 3

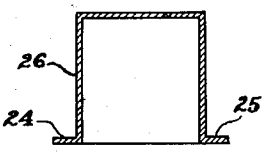


Fig. 4

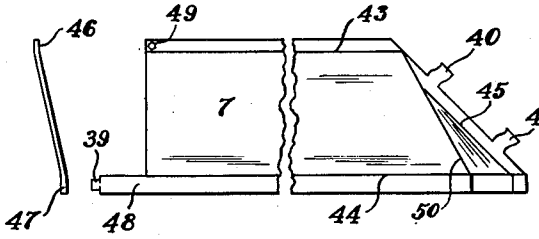


Fig. 6

Fig. 5

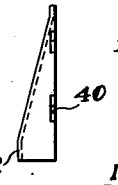


Fig. 7

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LOUVERED AWNING

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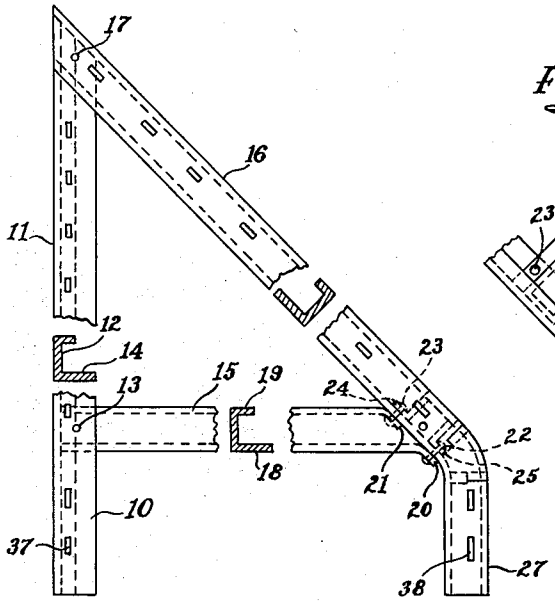


Fig. 8

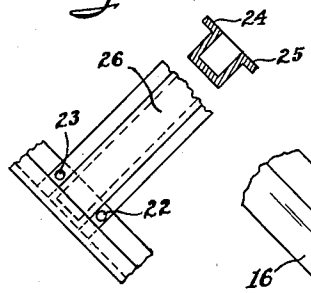


Fig. 9

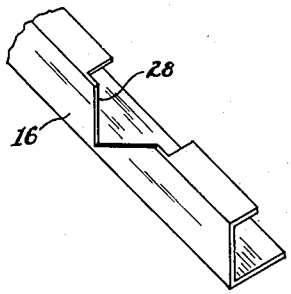


Fig. 12

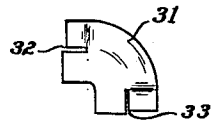


Fig. 14

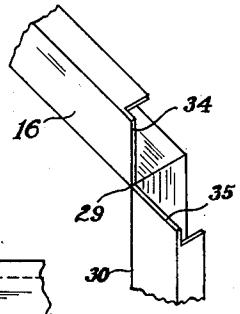


Fig. 13

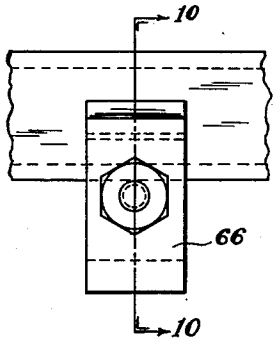


Fig. 11

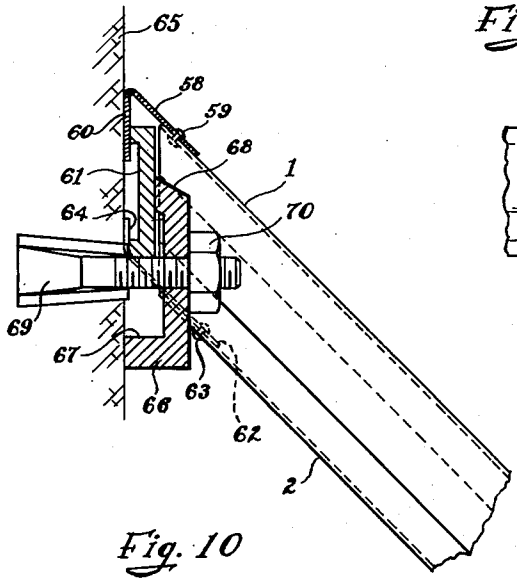


Fig. 10

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UNITED STATES PATENT OFFICE

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LOUVERED AWNING

Leroy S. Eschrich, Pittsburgh, Pa.

Application August 20, 1946, Serial No. 691,832

5 Claims. (Cl. 20—57.5)

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This invention relates to awning structures, more particularly window canopy and patio awnings in which the canopy or overhanging portion and sides are constructed of louvers of sheet metal or other sheet material.

It is among the objects of the invention to provide an awning structure which is constructed of prefabricated parts comprising building channels, projection channels, rafter channels and girder channels and preshaped louvers that are readily assembled with a minimum of fastening or clamping parts.

Another object of the invention is the provision of an awning in which the side and top louvers are bent to shape by assembly on the supporting structure.

Another object of the invention is the provision of a louvered awning in which the parts are constructed for maximum light admission, while excluding rain from all directions.

These and other objects of the invention will become more apparent from a consideration of the accompanying drawings, constituting a part hereof, in which like reference characters designate like parts, and in which

Fig. 1 is a side elevational view of a louvered awning embodying the principles of this invention;

Fig. 2 a front elevational view of an end portion thereof;

Fig. 3 a cross-sectional view taken along the line 3—3, Fig. 2;

Fig. 4 a cross-sectional view of a girder;

Fig. 5 a front elevational view of a side louver;

Fig. 6 an end elevational view as viewed from the left-hand side of Fig. 5;

Fig. 7 a front elevational view as viewed from the right-hand side of Fig. 5;

Fig. 8 a side elevational view of the channeled supporting structure, partially broken away, and shown in section to illustrate the shape of the girders;

Fig. 9 a front elevational view of the portion of the rafter channel and girder channel, the latter being partially shown in section;

Fig. 10 an enlarged cross sectional view, partially in elevation, of the louver clamping assembly to a building wall taken along the line 10—10, Fig. 11;

Fig. 11 an enlarged front elevational view of the clamp of Fig. 10;

Fig. 12 is a view in perspective of an end of the rafter channel notched out to form the valance of the awning;

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Fig. 13 a similar view with the end of the rafter channel broken down to form the valance; and

Fig. 14 a side elevational view of a curved guide and brace for spanning the notched portion of the rafter channel and bottom louvers when broken down to its valence position.

With reference to Figs. 1 and 2 of the drawings, the numeral 1 designates a top louver, the numeral 2 a bottom louver, the top and bottom louvers being alternately spaced to have their flanges 3 and 4 interact as shown in Fig. 3. The numeral 5 designates a bottom side louver, 6 a top side louver, and 7, 8 and 9 intermediate side louvers.

With reference to Figs. 8 and 9 of the drawings, the canopy louvers and side louvers are mounted on a channel structure consisting of the following members: A building channel 10, which is mounted flush with the building wall along the line 11, the channel being provided with suitable perforations for fastening bolts or screws in the web 12 of the L-shaped channel section. Secured through a perforation 13 in the leg 14 of the building channel is a projection channel 15 of L-shape as shown. A rafter channel 16 is fitted into the L-shaped building channel 10 and secured thereto by screws or bolts projecting through perforations 17 formed in the rafter and building channels. The projection channel is cut away at its extended end and has the channel walls 18 and 19 bent to form attaching flanges 20 and 21 for engaging the face of the rafter channel to which it is secured by bolts 22 and 23. The girder channel 26, which is of U-shape, as shown in Fig. 9, is provided with flanges 24 and 25 which are perforated to receive the bolts 22 and 23 with which they are united to both the rafter channel 16 and the projection channel 15 as shown in Fig. 8. There are two end structures as shown in Fig. 8 joined by the girder channel 26 to constitute the channel framework a rigid supporting structure.

The rafter channel 16, as shown in Fig. 8, is bent to form a valance 27 by notching the rafter channel 16, Fig. 12, at the lower end thereof, the notch, designated by the numeral 28, being V-shaped. The end is then bent to a sharp break as shown at 29 in Fig. 13, to form the drop or valance portion 30. A shaping and supporting guide 31, Fig. 14, having slotted ends 32 and 33, is inserted in the edges 34 and 35, Fig. 13, of the rafter channel 16 to brace the valance portion and also to act as a guide surface on which the end top louvers are bent to the proper shape as shown at 36, Fig. 1.

The bottom louvers 2 are also provided with notches 28 in their flanges 4 to permit breaking them downward to form the valance of the awning. The shaping and supporting guides 31 are inserted in the notched ends the same as on the end rafter channels 16. In addition to bracing the valance ends of the lower louvers 2 the curved braces 31 also function as a guide on which the top louvers 1 are bent to the valance shape. The top louvers 1 have their flanges 3 notched to break over the curve of the lower louver flange braces 31. In this manner the awning is provided with a uniform artistic valance.

After the supporting channels are mounted and assembled as shown in Fig. 3, the side louvers 5 to 9, Fig. 1, are assembled on the building and rafter channels as follows. The named channels are provided with slotted perforations 37 and 38 and the louvers are provided with lugs 39 and 40, Fig. 5. The bottom louver 5 is cut out at 41 to form scallops that are bent down as shown at 42, Fig. 2. The top of the side louver is scored at 43, 44 and 45 to permit bending into straight flanges, such as are shown at 46 and 47, Fig. 6. The louvers at their rear or left-hand end are provided with spacer straps 48, Fig. 5. The louvers are assembled to the building and rafter channels by bolts extending through perforations 49 at the top left-hand corner of the side louvers, a similar perforation being provided in the building channels. The spacer straps 48 are then bent at right angles and the lugs 39 inserted in the slots 37 of the building channel. This bends the louver outward as shown in Fig. 7. The front end of the louver is then drawn back to insert the lugs 40 into the perforations 38 of the rafter channel, and in doing so it is curved outward at 50, Fig. 5, to conform it to the angular shape of the rafter portion and to give it a bulged effect.

As shown in Fig. 1, the side louvers overlap, the top louver overlapping the adjacent louver as shown by the dotted lines 51, the flanged members 46 and 47 being the overlapping portions of adjacent louvers. In this manner, as shown in Fig. 2, light and air are freely admitted beneath the canopy from the sides, but falling rain from the sides is excluded.

The canopy portion of the awning is assembled as shown in Figs. 1, 2, 3, 10 and 11 as follows. A Z-shaped strip 52 is fastened by a sheet metal screw 53 to the rafter channel 16 with a dove-tailed flange 54 depending and engaging the ends of the side louvers 5 to 9. A dove-tailed shaped clamping bracket 55 is superposed on the end bracket 52 and also held by the screw 53. The top louver 1 is held in place by the flange 56 of the clamping bracket 55. The bottom louver 2 is dove-tailed shape and is fastened to the girder 26 by a sheet metal screw 53 and a clamping bracket 56 engages the top louver 1 so that it is held at both flanges. As shown in Fig. 3, the top and bottom louvers have their flanges interacting to act as splash plates to exclude rain, but are spaced to admit light and air beneath the canopy. The bottom ends 57, Figs. 1 and 2, of the top louvers are cut to form the scallops around the front of the awning to create an ornamental effect.

The top ends of the louvers 1 and 2 are secured to the building wall in the manner shown in Figs. 10 and 11 as follows. The top louvers 1 are provided with clamping brackets 58 which are riveted or otherwise fastened to the louver as shown at 59. The clamping bracket 58 is bent downward to form a flange 60, which is engaged

by a clamping bar at 61, which is of U-shape to form a clearance space between the seating faces thereof. The bottom louvers 2 are provided with clamping brackets 62 riveted at 63 to the louvers and having a bent-up portion 64 that lies flat against the building wall 65. Clamps 66, Figs. 10 and 11, having a leg 67 for seating against the wall, and a clamping head 68 for engaging the clamping bar 61, are bolted against the wall in a suitable manner as by expansion bolts 69. The clamps 66 are disposed underneath the top louvers 1 and are placed in clamping position before the louvers are inserted in the manner shown in Fig. 10. In other words, the clamping bar 61 rests on the bolt 69 and the top and bottom louvers are alternately inserted beneath the clamping bar, leaving the nuts 70 of expansion bolt 69 accessible for turning to apply clamping pressure on the clamping bar to securely hold the ends of the top and bottom louvers in place.

By this construction the upper ends of the louvers are sealed with the building wall, thus sealing the entire awning. Also, by clamping the top ends of the louver to the wall the entire structure is supported independently of the building channel 10.

It is evident from the foregoing description of the invention that louvered awnings constructed in accordance therewith may be prefabricated and assembled to a wall in a simple and expedient manner without excess clamping fixtures to provide an awning that will admit maximum light and air while excluding rain, and which creates a highly ornamental and pleasing effect. The channels may be made of light gauge metal, and the louvers may also be constructed of relatively thin sheet metal to bend and stress them in the manner needed for assembly. Also the louvers may be preshaped and made of plastic or other suitable materials and in various color schemes.

Although one embodiment of the invention has been herein illustrated and described, it will be evident to those skilled in the art that various modifications may be made in the details of construction and in the selection of materials without departing from the principles herein set forth.

I claim:

1. In an awning structure a plurality of channel members for mounting on a building wall, rafter members secured to the top of the channel members, cross members connected to the wall and rafter members to support the lower ends of said rafter members, a girder secured to said rafters at the point of connection with the cross members, a plurality of overlapping louvers secured to the end frames constituted by said wall, rafter and cross members, said louvers being shaped to overlap and being spaced at their overlapping portions, top louvers secured adjacent their lower ends to the girder, said top louvers comprising channel members with alternate louvers oppositely disposed and with their flanges overlapping to form splash plates excluding rain, the upper ends of said top louvers being secured to a building wall by means including clamping brackets attached to the ends of the louvers and shaped to conform to the wall surface, the ends of the top and bottom louvers being oppositely disposed, a clamping bar for engaging the wall-engaging ends of said louver clamps, and a plurality of bolt clamps anchored in the building wall disposed beneath the upper top louvers for engaging the clamping bar to clamp the louvers on the building wall.

2. An awning comprising vertical building channels, sloping rafter channels and a girder channel connecting the rafter channels, side louvers secured to the building and rafter channels, said side louvers having spaced straps and end lugs, said building and rafter channels having perforations for receiving said lugs to interlock therewith, said side louvers being of a dimension to bulge when mounted on said building and rafter channels within the limits of the spacing lugs, and louvers mounted on the top of the girder and being clamped to the building wall by means disposed beneath the top louvers.

3. In a supporting structure for window awnings a plurality of L-shaped wall channels, a plurality of L-shaped rafter channels connected at one end to the top of the wall channels and connected to a projecting L-shaped channel adjacent the extended ends thereof, said last-named channel being secured to the wall channel and having its short and long channel wall portions slit and bent to conform to the inclination of the rafter channel for engagement of one flange of said channel that is secured thereto, a girder of substantially U-shape inserted in the rafter channels at their point of connection with the projecting channels and secured thereto, side louvers for said channel support having attaching means interlocking with the building and rafter channels, and top louvers forming the canopy of the awning secured to said U-shaped girder at one end and clamped directly to the building wall at the top ends thereof underneath the top louvers.

4. A window awning as described in claim 3 in which the top louvers are channel shaped members with alternate louvers having their flanges oppositely disposed and interacting with the flanges of adjacent louvers, the louvers with the upturned flanges being secured direct to the girder, and the louvers with the depending flanges being secured by clamps having flanges interacting with the flanges of the louvers, said clamps being secured to said girder.

5. In an awning structure having preformed side and top louvers mounted on a supporting frame as described in claim 3, characterized by said frame and top louvers being bent downwardly to form a valance, and said top louvers comprising channel members having alternate channels with their flanges oppositely disposed and having the top members with their depending flanges extending beyond the ends of the alternate upstanding flanged members, said extending ends being chamfered to form a scalloped edge on the valance of the awning.

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