June 23, 1953 J. J. HUTTON 2,642,635

METAL AWNING CONSTRUCTION

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Fig. 1.

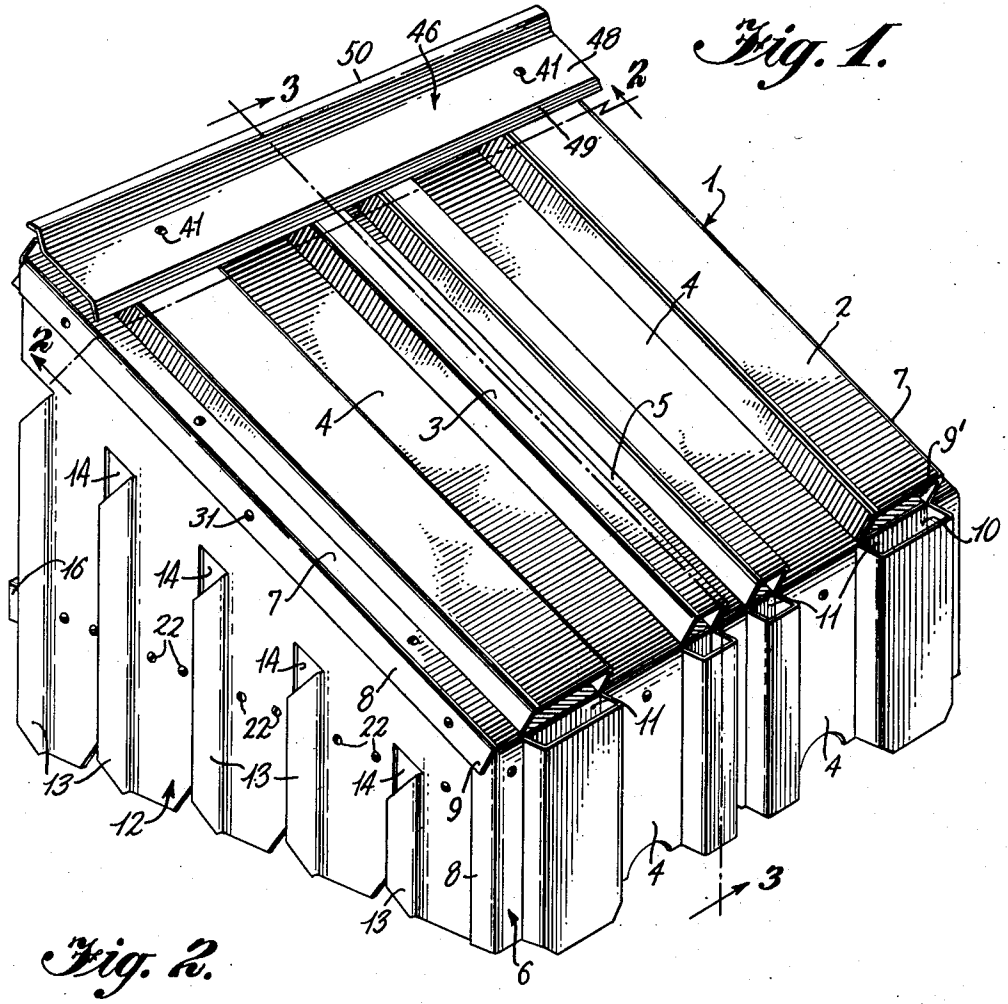
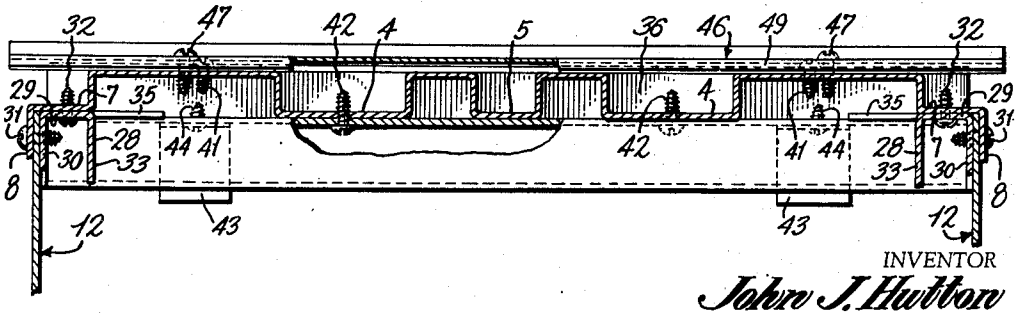



Fig. 2.




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Fig. 3.

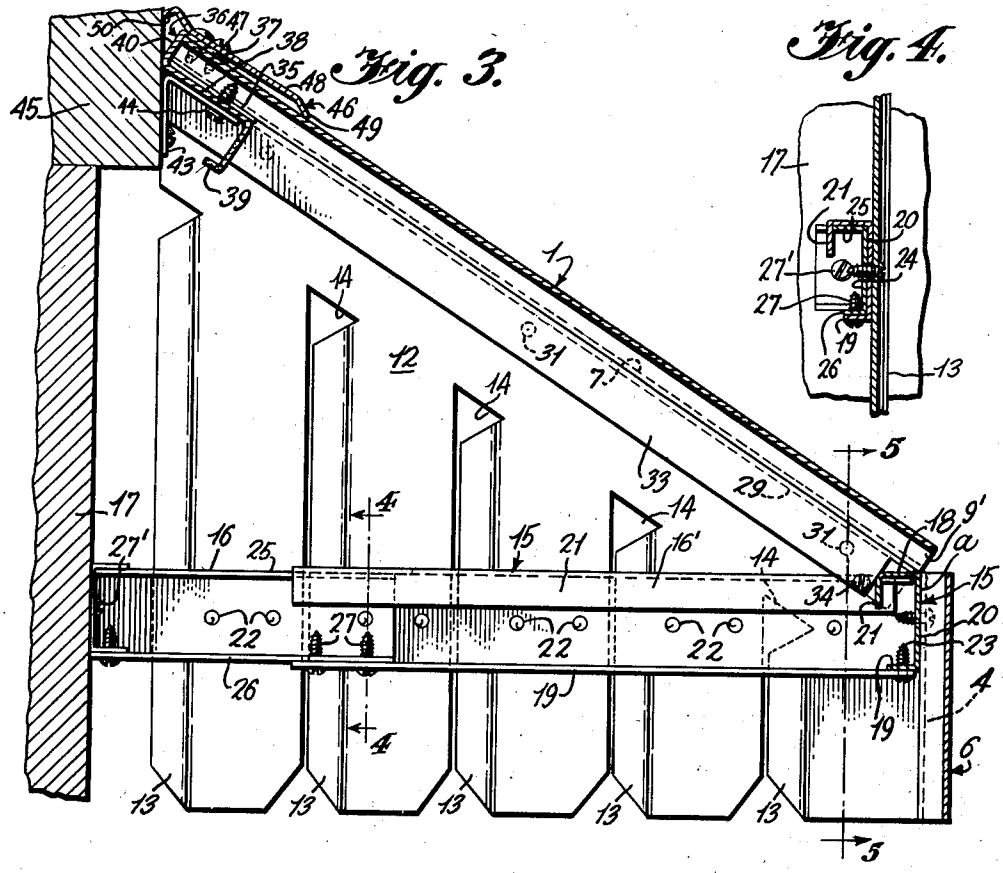
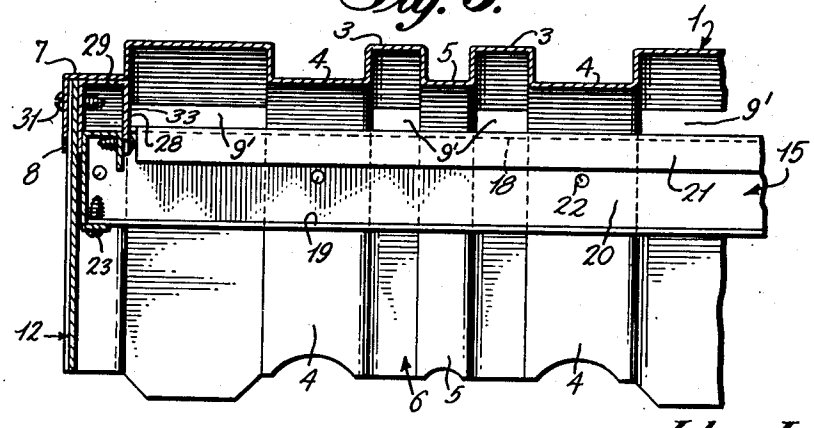



Fig. 4.




Fig. 5.




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Patented June 23, 1953

2,642,635

# UNITED STATES PATENT OFFICE

2,642,635

## METAL AWNING CONSTRUCTION

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Application October 23, 1950, Serial No. 191,601

3 Claims. (Cl. 20—57.5)

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This invention relates to metal awnings.

The roofs of sheet metal awnings are conventionally crimped to form alternating rectangular elevations and rectangular valleys, running up and down, these corrugations primarily affording reinforcement, the under sides of the elevations also providing ventilation, while the upper sides of the valleys serve for drainage. The striping effect presented by the rectangular corrugations should, for the sake of appearance, be symmetrically distributed with respect to the longitudinal middle of the roof, and it is possible to do this with stock-width awnings but there is no standard width for window openings, so that in many instances it is necessary to tailor the awning to the particular width measurements of windows. According to applicant's knowledge and belief, under the present conventional method of constructing sheet metal awnings, it is not possible to have the striping symmetrical for any widths of awnings when they deviate from the comparatively few prefabricated sizes.

The present invention provides a metal awning construction in which the roof, including the front, which is the fore part of the roof sheet, is a single piece of sheet metal separate from all the other elements of the awning, which may be cut to any desired width, and individually crimped in a suitable brake to produce symmetrical striping irrespective of the width of the roof. This makes it possible for the furnisher of metal awnings to have on hand a stock of standard parts, the size of which is invariable regardless of the width of windows, and to fabricate these with a roof and front panel tailored to the particular window.

The present invention has for its general object to provide a metal awning construction which lends itself to the formation of the symmetrically rectangular crimped roof and front panel, independently of the rest of the awning structure, the front panel being formed and the ventilating louvers being created by transversely slitting the rectangular crimped sheet through the elevations down to the plane of the bottoms of the valleys, and bending the sheet on the line defined by the bottoms of the slits.

Another object of the invention is to provide a structural frame member within the awning at the base of the roof which acts as a baffle to prevent rain from blowing inward through the ventilating slots between the roof and front panel.

Still another object of the invention is the provision of a header at the top of the roof, providing reverse channels of rectangular cross-section, in one of which the upper edge of the crimped roof fits, the tops of the elevations being secured to the upper flange of said channel and the bottoms of the elevations being secured to the lower flange, the securing points being thus separated in depth direction, resulting in greater rigidity than if they were in single linear relationship, the remaining flange of the reverse channel contributing structural rigidity to the header.

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A further object of the invention is to provide roof supporting channel members contiguous to the lateral edge flanges of the roof, forming therewith narrow spaces for snugly receiving the upper edge margins of the sides.

Another object of the invention is to provide a main supporting member of channel shaped cross-section about the inner periphery of the awning, secured to the front panel and sides, the front of which is the baffle above referred to, the same being provided with adjustable end extensions or hangers for securing the awning to the sides of the window frame.

Other objects of the invention will appear as the following description of a preferred and practical embodiment thereof proceeds.

In the drawings, throughout the figures of which the same reference characters have been used to denote identical parts:

Figure 1 is a perspective view of a metal awning embodying the principles of the invention;

Figure 2 is a cross-section taken along the line 2—2 of Figure 1;

Figure 3 is a vertical section taken along the line 3—3 of Figure 1;

Figure 4 is a fragmentary view in vertical section, taken along the line 4—4 of Figure 3;

Figure 5 is a similar section taken along the line 5—5 of Figure 3.

Referring now in detail to the several figures, the numeral 1 represents as a whole the roof sheet which is formed with alternate elevations 2 and 3, with intervening valleys 4 and 5. These elevations and valleys are preferably rectangular in cross-section for maximum strength. The roof sheet is integral with the front panel 6, and the corrugations of the roof sheet continue on to the front panel.

The front panel 6 is formed by slitting the elevations 2 and 3 down to the plane of the bottoms of the valleys 4 and 5, and bending the front panel downward about a line of fold coinciding with the bottoms of the slits. The end elevations 2 terminate laterally a short distance from the sides of the roof, leaving a lateral mar-

gin 7, which is on a level with the bottoms of the valleys, and the roof sheet including the front panel, terminates laterally on both sides in the down turned flanges 8, which lap at the angle of bend, as indicated at 9. In the awning which is used by way of example in the drawings, the extreme elevations 2 are wider than the mean elevations 3, but this is solely a matter of choice. It is important that the arrangement of elevations and valleys be symmetrical with respect to the medial vertical plane lying parallel to the corrugations, for the sake of the stripe pattern created by the elevations and valleys. By making the roof and front panel sheet separate from the rest of the awning, it is possible to make this part to order of a proper width to fit the window, and to associate it with standard parts which compose the rest of the awning, and the size of which is not affected by variations in window width. In making the combined roof and front panel, the width of the window opening is first ascertained, and then it is worked out mathematically how much sheet material must be used to make a roof of this width, having the desired number and size of the elevations and valleys, lateral margins, and terminal flanges. Then the several folds necessary to produce the corrugations, etc., are made on a simple brake.

Folding of the sheet to dispose the front panel 6 at an angle to the roof creates the louvers 9' and 10 in the elevations, respectively in the roof and in the front panel. These louvers serve as ventilating openings for relieving the inside of the awning from heated air which otherwise would collect thereunder and prevent adequate ventilation from the window. However, it is obvious that these louvers give access to rain, which if it were beating toward the face of the window, would enter the louvers on a slant and blow into the window. To prevent this, the louvers are backed by the baffle 11, part of which is visible in each of the louvers in Figure 1. Since this baffle is part of one of the main structural elements of the awning, it will be referred to later on.

The sides 12 are flat sheet members which have vertical struck out vanes 13, leaving vertical louvers 14 which provide additional ventilation for the interior of the awning. The vanes 13 shield the louvers 14 against entrance of rain. The sloping upper edges of the sides 12 are fitted and secured in a manner which will presently be described.

Referring now to Figures 3, 4 and 5, one of the principal structural members of the awning is the channel member 15 which is a three-sided rectangular frame of which the baffle 11 hitherto mentioned, is the front. The sides are sectional, comprising sections 16 which are integral with the baffle 11, and adjustable sections 16' forming hangers by means of which the lower part of the awning is secured to the window frame. In Figure 3 the window frame is indicated at 17. The part of the channel member 15 constituting the baffle 11 and section 16 is of rectangular cross-section throughout, the cross-section being indicated at *a* toward the right in Figure 3, consisting of the top and bottom flanges 18 and 19 and web 20, and a downturned flange 21 for added rigidity. The sides of the awning are secured to the sectional sides of the member 15 after the latter have been adjusted for length, by means of the sheet metal screws 22, and the front panel 6 is likewise secured to the baffle 11



by screws inserted through the bottoms of the valleys 4 of the front panel. The flanges of the channel member 15 lap at the corners, being secured by the screws 33. The adjustable sections 16 each consists of a web 24, which rests slidably against the web 20, an upper flange 25, which fits within the flange 21, and a lower flange 26 which slides upon the lower flange 19, and when the proper adjustment has been secured, is fixed by means of the sheet metal screws 27. The inner end of the extensions 16' are bent at right angles with the upper and lower flanges, overlapping in the corners, and secured to the window frame 17 by the screws 27'.

While the channel member 15 is shown as being integral throughout the length of the front, in Figure 5, the front may be in separate parts lapped so as to make it adjustable in width to compensate for different widths of roof panel.

The ends of the awning are reinforced by the channel members 28, which extend from the front panel 6 substantially to the upper edge of the roof. The web 29 of each of said channel members is in surface contact with the under side of a lateral margin 7 of the roof, with the outer flange 30 of said channel member slightly spaced from the side flange 8 of the roof, so as to provide a narrow crack or pocket in which the upper edge of the side 12 of the awning is received. Screws 31 pass through the flange 8, the side of the awning 12 and the outer flange 30 of the channel member 28, securing these parts together. Screws 32 secure the channel member 28 to the lateral margin 7 of the roof. The inner flange 33 of the channel member 28 slightly laps the downturned flange 21 of the channel member 15 at its lower end, the two parts being secured by the screw 34, (see Figure 3). At its upper end the inner flange 33 is slitted depthwise, the portion 35 above said slit being turned out to lie in the same plane as the bottoms 35 of the valleys 4 and 5.

The awning is provided with a header 36, which extends widthwise of the awning at the top, between the outer flanges 30 of the channel members 28. Said header in cross-section has the shape of reversely facing channels. Referring to Figure 3, the upper channel is defined between the upper flange 37 and the intermediate flange 38, the lower channel being defined between said intermediate flange and a short reversely turned flange 39. The upper channel is the one of greatest functional importance. The header is slipped over the crimped roof panel, the latter fitting within the upper channel, the elevations and valleys being closed at their upper ends by the web 40 of said channel. This prevents rain from driving over the top edge of the roof into the awning. The tops of the elevations are secured to the upper flange 37, by means of screws 41. The bottoms of the valleys are secured to the intermediate flange 38 by means of screws 42. The placing of these securing means at different depth levels enhances the rigidity of the construction to a much greater degree than if the header were secured to the roof solely by means lying in a single transverse line with no depth characteristics. The end portions of the intermediate flange 38 lie against the under faces of the outturned portions 35 of the channel members 28, and are supported thereby.

Hangers 43, one at each side, are secured to the intermediate flange 38 by the screws 44, and to the top member 45 of the window frame.

In order to finish the awning, the caulking pan **46** is secured to the top of the roof by means of screws **47** through the tops of the extreme elevations, at such height as to butt against the top of the window frame or adjacent wall of the building. Said caulking pan has an intermediate flat portion **48** terminating in a downwardly directed rain shed **49**, which touches the tops of the elevations, and at its top terminating in a downwardly inclined narrow flange **50**, which defines with the wall of the building a channel in which caulking putty may be placed to form a weathertight seal between the awning and building.

It will be understood by those skilled in the art that the dependence of the roof and front panel with respect to the other elements which go to make up the awning, make it possible to tailor the roof to the width of the window, making the pattern effect presented by the parallel elevations and valleys symmetrical with respect to the middle of the roof, and enabling the awning furnisher to carry a stock of the other parts ready-made, since these are invariable in size with respect to the width of the window. It will be also obvious that I have produced a structure from relatively thin sheet metal which has maximum rigidity and strength, enabling it to withstand the most intense winds or heavy snow or ice falls, without bending or other distortion. While the illustrated embodiment as described is believed to be the optimum form of the invention, it is within the purview of the invention to make such changes in the construction and arrangement of parts as the scope of the invention permits, as defined by the claims.

What I claim as my invention is:

1. Metal awning comprising an integral roof and front panel, formed with parallel alternating elevations and valleys of rectangular cross-section, said elevations being cut through transversely to the plane of the bottoms of the valleys, said front panel being bent down relative to said roof on a line at the base of the cut forming open louvers between said roof and front panel, a rectangular three-sided frame having front and side members, said frame being of channel cross-section with its web on the outside, the web of the front member contacting the bottoms of the valleys of said front panel being secured thereto, and bridging the troughs of the inner sides of the elevations of said front panel in rain baffling relation to said louvers.

2. Metal awning comprising an integral roof and front panel, formed with parallel alternating elevations and valleys of rectangular cross-section, said elevations being cut through transversely to the plane of the bottoms of said valleys, said front panel being bent down relative to said roof on a line at the base of the cut forming open louvers between said roof and front panel, said roof terminating in lateral margins in the plane of the bottoms of said valleys, and having lateral flanges turned down perpendicularly from said margins, channel members of rectangular cross-section one at each side within said awning following the slope of the roof,



each having its web against the corresponding roof margin and secured thereto, and having its outer flange parallel to and slightly spaced from the turned down roof flange, a rectangular three-sided frame having front and side members, said frame being of channel cross-section with its web on the outside, the web of the front member contacting the bottoms of the valleys of said front panel and being secured thereto, and bridging the troughs of the inner sides of the elevations of said front panel in rain baffling relation to said louvers, side members one at each side of said awning each having a sloping edge portion corresponding to the roof pitch, said edge portion being inserted within the space between the outer flange of the corresponding channel member and the adjacent turned down roof flange, securing means passing through said outer flange, said side member and said turned down roof flange, and means securing said side members to the respective side members of said three-sided frame.

3. Metal awning comprising an integral roof and front panel, formed with parallel alternating elevations and valleys of rectangular cross-section, the tops of the elevations and the bottoms of the valleys lying respectively in common spaced parallel planes, said elevations being cut through transversely to the plane of the bottoms of the valleys, said front panel being bent down relative to said roof on a line at the base of the cut forming open louvers between said roof and front panel, a rectangular three-sided frame having front and side members, said frame being of channel cross-section with its web on the outside, the web of the front member contacting the bottoms of the valleys of said front panel being secured thereto, and bridging the tops of the inner sides of the elevations of said front panel in rain baffling relation to said louvers, a header comprising a member of S-shaped cross-section extending transversely of said roof at the top defining reversely directed rectangular channels, the upper channel enclosing the ends of said elevations and valleys, having a web against which the upper end of said roof panel abuts, and having upper and lower flanges in surface contact respectively with the tops of the elevations and the bottoms of the valleys, and respectively secured thereto, the web of said lower channel constituting a reinforcement for said header.

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