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2,465,724

METAL AWNING

Filed April 18, 1947

3 Sheets-Sheet 1

Fig. 1.

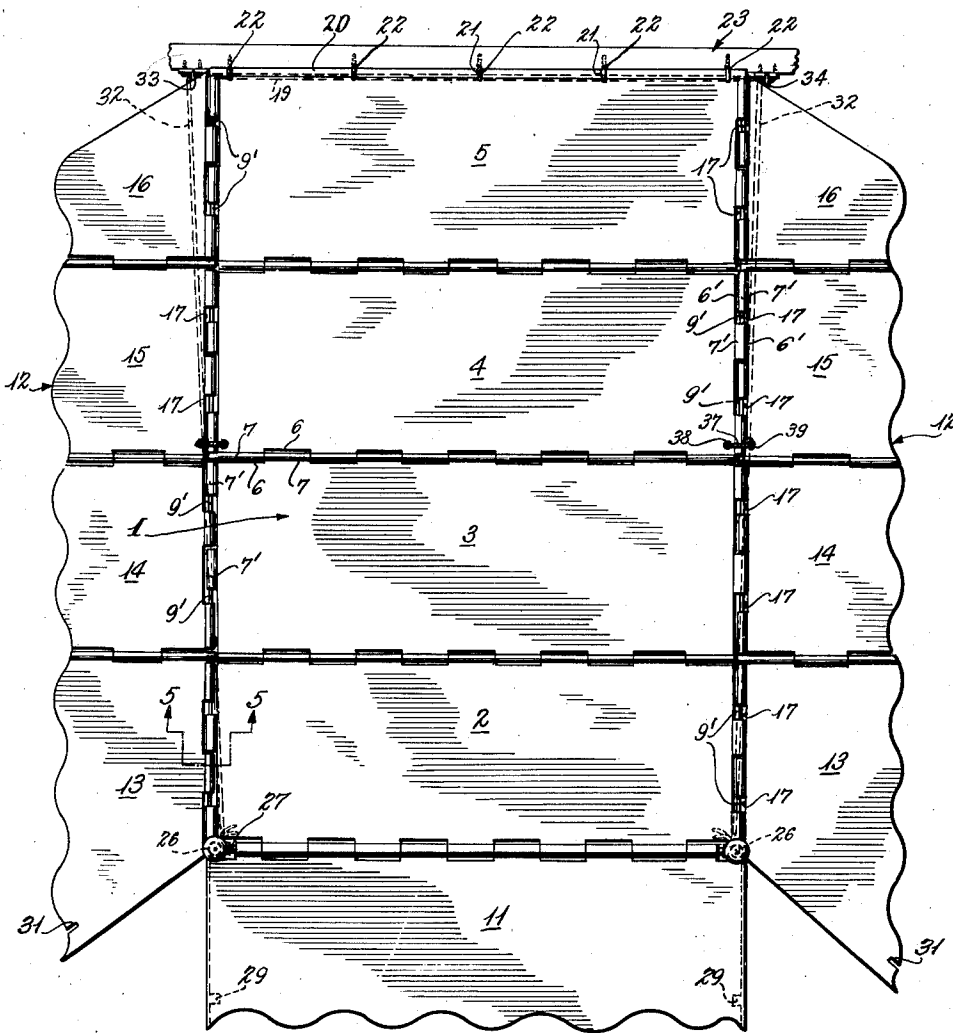
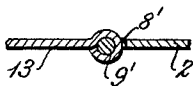


Fig. 5.



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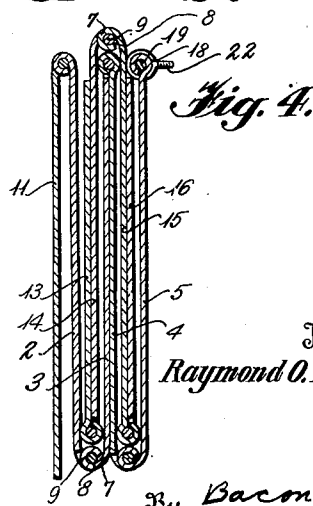
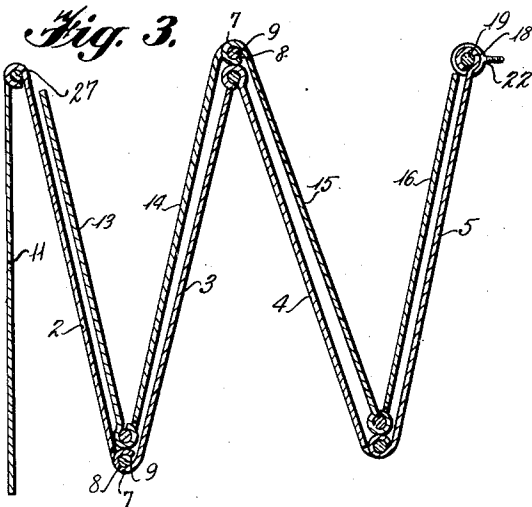
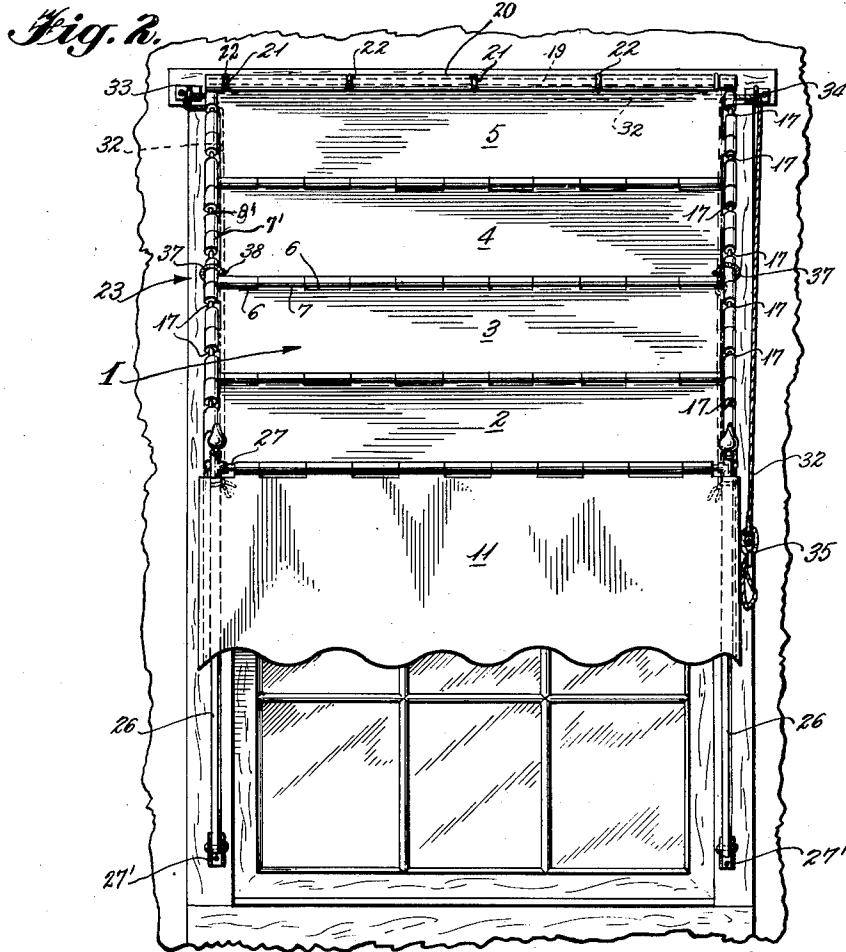
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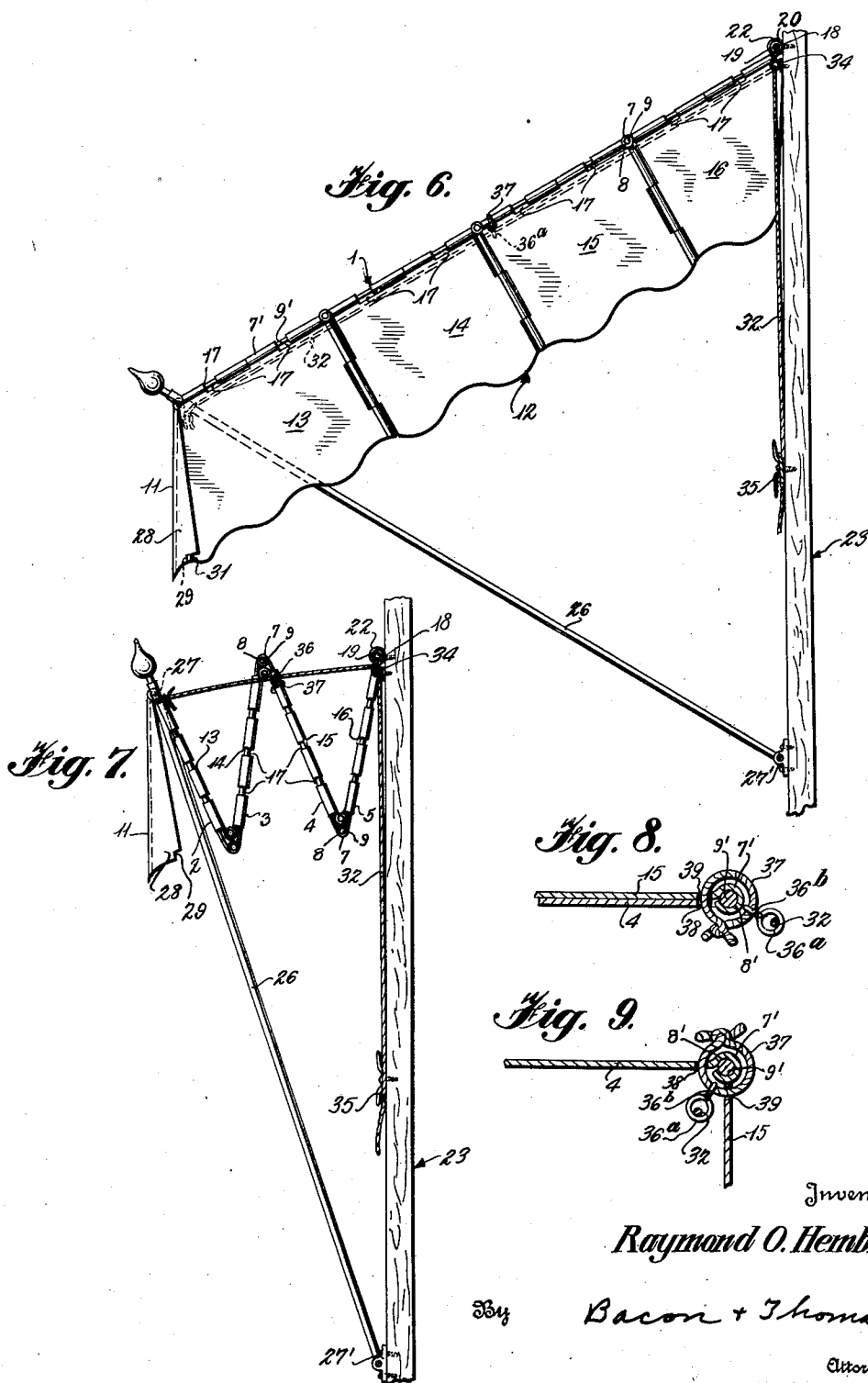
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METAL AWNING

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UNITED STATES PATENT OFFICE

2,465,724

METAL AWNING

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8 Claims. (Cl. 160—62)

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The present invention relates to an awning construction and, more particularly, to one composed entirely of metal.

A primary object of the invention is to provide a metal awning which will not sag or dip at any point.

A further object of the present invention is to provide a metal awning, which when in extended position will conceal in a large measure the draw cords and appurtenant structures.

A still further object of the present invention is to provide a metal awning which will remain firmly in position without swaying or buckling under all conditions even during high winds.

Another and further object of the invention is to provide a metal awning having ornamental front and side valances also formed entirely of metal, which form an integral part of the structure and yet interfere in no way with the raising and lowering of the awning.

A still further object of the present invention is to provide a metal awning of simple, durable and economical construction which, however, will be of an extremely ornamental and pleasing appearance.

Other and further objects of the invention will be readily apparent from the following detailed description of the same, taken in conjunction with the drawings, in which:

Fig. 1 is a plan view of the awning with the various portions thereof extending in a single plane to better illustrate their individual structure;

Fig. 2 is a front elevational view showing the awning in extended position mounted over the window of a house;

Fig. 3 is an enlarged sectional view of the awning in a partially folded position with a side valance thereof turned back over the upper surface of the awning;

Fig. 4 is a view similar to that of Fig. 3, but with the awning in completely folded position;

Fig. 5 is a sectional view taken on the line 5—5 of Fig. 1;

Fig. 6 is a side elevational view of the awning mounted on the frame of a window and in completely extended position;

Fig. 7 is a view similar to Fig. 6, but with the side valances folded back upon the upper surface of the awning and with the awning in partially closed position.

Fig. 8 is an enlarged sectional view showing a preferred draw cord guide means with a side valance folded back on the upper surface of the awning as when the awning is being raised or lowered; and

Fig. 9 is a view similar to Fig. 8, but with the side valance in depending position as when the awning is in a completely extended position.

Now, referring with greater particularity to

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the drawings, it is seen that the body portion of the awning designated generally by the numeral 1 is made up of a plurality of metal panels, 2, 3, 4, and 5 hingedly connected so that they may be folded upon each other in pleat fashion when effecting raising of the awning. An awning comprising four panels has been chosen for illustrative purposes, but it is to be understood that the awning may be made up of any convenient even number of panels which may be of a desired width and length.

The individual panels making up the body portion of the awning are preferably connected by means of hinged members formed integrally with the panels. For this purpose spaced portions of the edges of each panel are removed so as to leave alternating recess portions 6 and tongue portions 7. The tongue portions are folded over so as to form circular apertures 8 to serve as guide means for a hinge pin 9 serving to hold the individual panels in assembled position. It is to be noted that the alternating recesses 6 and tongue portions 7 are so arranged that the tongue portions of one panel are aligned with the recess portion of an adjacent panel, thus forming an elongated circular aperture for the reception of the hinge pin 9. The hinge pin may conveniently be maintained in place by crimping the surrounding metal down over the opposite ends thereof in a manner not shown in the drawings.

Figs. 3 and 4 of the drawings best illustrate a very important feature of the present invention with respect to the hinged interconnection of the individual panels. It will be seen by reference to these figures that alternate rows of hinged connections are formed so that when the awning is in lowered position the plane of the awning passes closely adjacent the central axis of the hinge pin 9 of one row and offset below the axis of the hinge pin of the next adjacent row. Thus, it is seen that in the hinge structure interconnecting panels 2 and 3 the plane surface of the awning when extended passes through a series of points considerably below the center of the hinge pin 9; that in the hinged connection between the panels 3 and 4 the plane of the awning passes through a series of points closely adjacent the central axis of the hinge pin, and that alternately in the hinged connection between the panels 4 and 5, the central axis of the hinge pin is again offset above the plane of the awning when extended.

Henceforth, for convenience of description, the hinge construction in which the extended plane of the awning passes closely adjacent the axis of the hinge pin will be referred to as the flat type of hinge, and that in which the plane is offset from the hinge pin axis will be designated the raised type. Even in the flat type of hinge it

is better that the plane of the lowered awning does not pass directly through the hinge pin axis, as such a construction would necessarily cause some springing of the parts when the awning is completely folded.

The importance of the above-described arrangement will be brought out hereinafter in connection with the description of the side valances of the awning and the manner in which they are turned back upon the upper surface of the awning for raising or lowering.

Hingedly connected to the main body portion of the awning are a front valance 11 and side valances generally designated by the numeral 12. The front valance 11 may comprise a single sheet of metal and have the lower edge thereof scalloped for an ornamental effect. The hinge members connecting the front valance 12 with the panel member 2 of the main body portion 1 of the awning are similar in construction to those described above for hingedly interconnecting the panel portions 2, 3, 4, and 5 and are preferably of the raised type in which the axis of the hinge pin is offset below the plane of the awning when extended.

The side valances 12 are composed of a plurality of sections 13, 14, 15, and 16 corresponding to the panel sections 2, 3, 4, and 5, respectively of the body portion of the awning. The upper edges of the sections 16 are shaped so as to conform, when the awning is lowered, with the wall to which it is secured. The lower edges of the sections 13 are shaped so that when the awning is lowered and the side valances are in depending position, these edges will lie in a substantially vertical plane. The outer edges of the side valances 12 may also be scalloped for ornamental effect.

The individual sections 13, 14, 15, and 16 are hinged together by means of a structure similar to that described above in connection with the hinging of the panels 2, 3, 4, and 5, but it is to be noted, and this is an important feature of the present invention, that transverse rows of valance hinge structures of the flat type are aligned with transverse rows of the opposite or raised type in the main body portion 1 of the awning, and conversely hinges of the raised type in the side valances are aligned with those of the flat type in the body portion of the awning.

Each of the sections of the side valances 13, 14, 15 and 16 are also hinged along their inner edges to the corresponding panels 2, 3, 4, and 5 of the main body portion of the awning. This is accomplished by hinge structures quite similar in nature to those described above in that portions of the abutting edges of panel members 2, 3, 4, and 5 and sections 13, 14, 15, and 16 of the side valances are removed to form recesses 6' and tongue members 7' which may be bent to form circular apertures 8' adapted to receive hinge pins 9'.

However, in every case by removing a portion of the tongue member 7' of the panel members or sections of the side valances a space 17 is provided between tongue members on the side valances, and the next succeeding tongue member on the panels forming the body portion of the awning in a direction towards the edges of panel members 2, 3, 4, and 5, which are uppermost when the awning is raised or folded. This spacing is necessary to allow the tongue members of the side valances to slip on their hinge pins 9' when the awning side valances are turned back upon the upper surface of the awning and the sections thereof are folded with the panels of the main

body portion of the awning. The slip-joint hinge construction is clearly illustrated in Fig. 1 of the drawings.

All of the hinge structures interconnecting the side valances 12 and the main body portion 1 of the awning are preferably of the flat type as shown in Fig. 5 of the drawings.

Referring particularly to Figs. 3 and 4, the importance of the above described arrangement of the various hinge structures will become readily apparent. Thus it is seen that when the awning with the side valances turned back upon its upper surface is folded, the alternately flat and raised types of hinge constructions provide a folded structure in which adjacent panels will be maintained in alternately spaced and side by side relationship. The described hinge construction allows adjacently disposed sections of the side valances 12 to be received by spacedly disposed panels of the main body portion 1 and spaced sections of the side valances to encompass adjacently disposed panels of the main body portion of the awning. This permits a neat and compact folding of the awning with all stresses and strains totally absent.

The metal awning of the present invention may be readily mounted at its upper end on a window frame or wall by folding upon itself a portion 20 of the upper edge of the panel member 5 to form an elongated aperture 18 adapted to receive a rod member 19. Spaced slots 21 are provided in the overturned portion 20 to allow for the reception of screw eyes 22 through which the rod member 19 may be passed to secure the upper edge of the awning in place, the screw eyes in turn being fastened in the window frame or wall indicated generally by the numeral 23.

The lower edge of the awning is supported by a frame structure comprising two parallel staff members 26 interconnected adjacent their upper ends by a rod 27 which may and preferably will comprise the hinge pin for interconnecting the panel member 2 and front valance 11. The lower ends of rods 26 are pivotally secured to the window frame 23 by bracket members 27'.

In the event that the awning is a very large one, such as a porch awning, it is possible that its weight would bend the rod 27 and cause the awning to sag in the middle. In this case additional bracing members may be applied to transverse rod 27 as necessary.

When the awning is lowered and the side valances 12 swung to a depending position they will lie against the staff members 26 and be held against swinging inwardly. To prevent an outward swinging of the side valances 12 the front valance 11 is provided with an inturned generally triangular flange portion 28 at each of the ends thereof to form a channel-shaped structure which encompasses the side valances. To prevent the front valance from swinging outwardly in the case of a high wind to release the side valances, a tongue member 29 is provided by slitting and bending inwardly a small portion of the triangular portion 28 adjacent its lower free edge. A slot 31 is provided in the lower edge of the sections 13 of valances 12 to receive the tongues 29 and thus secure the structure together.

To effect raising and lowering of the awning a draw cord 32 is passed through an eyelet 33 secured to window frames or wall 23 adjacent one of the upper corners of the awning and fastened at each end to the rods 26 just below and adjacent to the cross bar 27. The draw cord 32 is then looped and passed through an eyelet 34

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also secured to window frame 23 adjacent the other upper corner of the awning. A cleat 35 is provided on the window frame 23 about which the looped portion of the cord 32 may be wrapped to maintain the awning in any desired position.

In order to prevent sagging of the awning during an intermediate stage between the raised and the lowered position of the same, rope guides 36 comprising two loop portions 36a and 36b with their planes disposed at right angles to each other are provided on each of the outer edges of the awning adjacent the central hinge construction between the panels 3 and 4 with the cord 32 passing through loop portion 36a. The guides 36 are secured to the awning by passing rings 37 of cord or other flexible material, which will interfere in no way with the close folding of the awning through loop portion 36b of guide 36 and through apertures 38 and 39 in the panel member 4 and section 15 of the body portion of the awning and side valances, respectively.

In view of the above description, it is felt that the actual raising and lowering operations of the awning will be readily understood. Assuming that the awning is in its completely extended position, it will first be necessary to disengage the tongue member 29 from the slot 31, swing the front valance outwardly and then fold each of the side valances back upon the upper surface of the main body portion 1 of the awning. Then by pulling on the draw cord the awning may be folded against the house or wall in a neat and compact manner because of the hinged construction described in detail above, and then maintained in place by merely wrapping the looped draw cord 32 around the cleat 35.

To again lower the awning, it is merely necessary to release the draw cord from the cleat and permit the awning to fall of its own weight to completely extended or open position. The side valances are then rotated to a depending position. During this last mentioned operation, it will be noted that the draw cord 32 is transferred from an external visible position to one in which it is concealed by the side valances for the entire length of the awning.

When the awning is in fully lowered or extended position, the downwardly depending side valances 12 serve as effective braces for the sides of the awning and prevent the awning from sagging at any point thus resulting in a structure which is extremely durable and pleasing to the eye.

It is thus seen that I have provided an awning made entirely of metal with all its attendant advantages of durability, economy, and strength, and yet one which is easily raised or lowered and of a highly ornamental nature.

Having thus described my invention, I claim:

1. A metal awning, comprising: a main body portion including a plurality of panel members hinged to each other; a pair of side valances each including a plurality of sections hinged to each other and aligned with said panel members of said body portion; and hinge means connecting said side valances with said body portion of said awning, said hinge means providing for limited relative longitudinal movement between said side valances and said body portion of said awning when said sections of said side valances are folded with said panel members of said main body portion of said awning, after said side valances have been rotated from a depending position to one in which said side valances overlie

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the upper surface of said main body portion of said awning.

2. A metal awning, comprising: a main body portion including a plurality of panel members hinged to each other; a pair of side valances each including a plurality of sections hinged to each other and aligned with said panel members of said main body portion; hinge means providing limited relative longitudinal movement between said side valances and said main body portion of said awning, said side valances being rotatable on said hinge means from a depending position in which said side valances serve to prevent sagging of said body portion of said awning to a position overlying the upper surface of said body portion of said awning for folding therewith; and a front valance hingedly secured to said body portion of said awning, said front valance having rearwardly extending flange portions at each of the ends thereof adapted to encompass the forward edges of said depending side valances and restrain said side valances against outward swinging movement until said front valance has been lifted.

3. A metal awning, comprising: a main body portion including a plurality of panel members hinged to each other; a pair of side valances each including a plurality of sections hinged to each other and aligned with said panel members of said main body portion; hinge means connecting said side valances with said main body portion of said awning, said hinge means providing limited relative longitudinal movement between said side valances and said main body portion of said awning, said side valances being rotatable on said hinge means from a depending position in which said side valances serve to prevent sagging of said body portion of said awning to a position overlying the upper surface of said body portion of said awning for folding therewith; and a front valance hingedly secured to said body portion of said awning, said front valance having rearwardly extending flange portions at each of the ends thereof adapted to encompass the forward edges of said depending side valances and restrain said side valances against outward swinging movement until said front valance has been lifted, said rearwardly extending flange portions having intumed tongue members and said side valances having slots therein adapted to receive said tongue members to prevent accidental separation of said front and side valances.

4. A metal awning, comprising: a main body portion including a plurality of panel members successively hinged to each other; at least one side valance including a plurality of sections successively hinged to each other and alignable with said panel members of said body portions; and means rotatably connecting said side valance with said body portion for movement of said side valance from a depending position in which said side valance serves to prevent sagging of said body portion to a position overlying said body portion, said means providing for limited relative longitudinal movement between overlying panel members of said body portion and sections of said side valance upon the folding of said awning, after said side valance has been moved to a position overlying said body portion.

5. A metal awning, comprising: at least four substantially planar panels, a pair of said panels being hingedly joined along an axis substantially parallel to their surfaces, the second pair of said panels being hingedly joined along a second axis, said second axis being substantially parallel to

the plane defined by the surfaces of said second pair of panels; and means hingedly joining said first pair of panels to the said second pair of panels along axes substantially normal to said first and second axes, said means providing for relative movement of said first pair of panels to the said second pair of panels in a direction substantially parallel to said substantially normal axes.

6. A metal awning, comprising: at least four substantially planar panels, a pair of said panels being hingedly joined along an axis substantially parallel to their surfaces, the second pair of said panels being hingedly joined along a second axis, said second axis being disposed laterally of the planes defined by the surfaces of said second pair of panels but substantially parallel thereto; and means hingedly joining said first pair of panels to the said second pair of panels along axes substantially normal to said first and second axes, said means providing for relative movement of said first pair of panels to said second pair of panels in a direction substantially parallel to said substantially normal axes.

7. A metal awning, comprising: at least four substantially planar panels, a pair of said panels being hingedly joined along an axis substantially parallel to their surfaces, the second pair of said panels being hingedly joined along a second axis, said second axis being disposed laterally of the planes defined by the surfaces of said second pair of panels but substantially parallel thereto; and means hingedly joining said first pair of panels to the said second pair of panels along axes substantially normal to said first and second axes, said means including integral extending portions of adjacent edges of said first pair of panels and said second pair of panels encompassing common hinge pins, said integral extending portions of said first pair of panels and said second pair of panels being axially spaced to provide for relative movement of said first pair of panels to said

second pair of panels in a direction substantially parallel to said substantially normal axes.

8. A metal awning, comprising: a main body portion including a plurality of panel members successively hinged to each other; at least one side valance including a plurality of sections successively hinged to each other and alignable with said panel members of said body portion, with at least one pair of adjoining sections and panel members having adjacently disposed apertures therein; means rotatably securing said side valance to said body portion for movement of said side valance from a depending position to a position overlying said body portion, said means providing for limited relative longitudinal movement between overlying panel members of said body portion and sections of said side valance upon folding of said awning, after said side valance has been moved to a position overlying said body portion; a ring member passing through said adjacent apertures in said panel member and said section of said side valance; and guide means secured to said ring member for supporting a draw string from raising and lowering said awning when said side valance is folded back upon said body portion of said awning, said guide means being disposed within the confines of said body portion and said side valance when said awning is in its extended position.

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