Sept. 18, 1951 C. J. FREETH 2,568,679

AWNING

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Fig. 1.

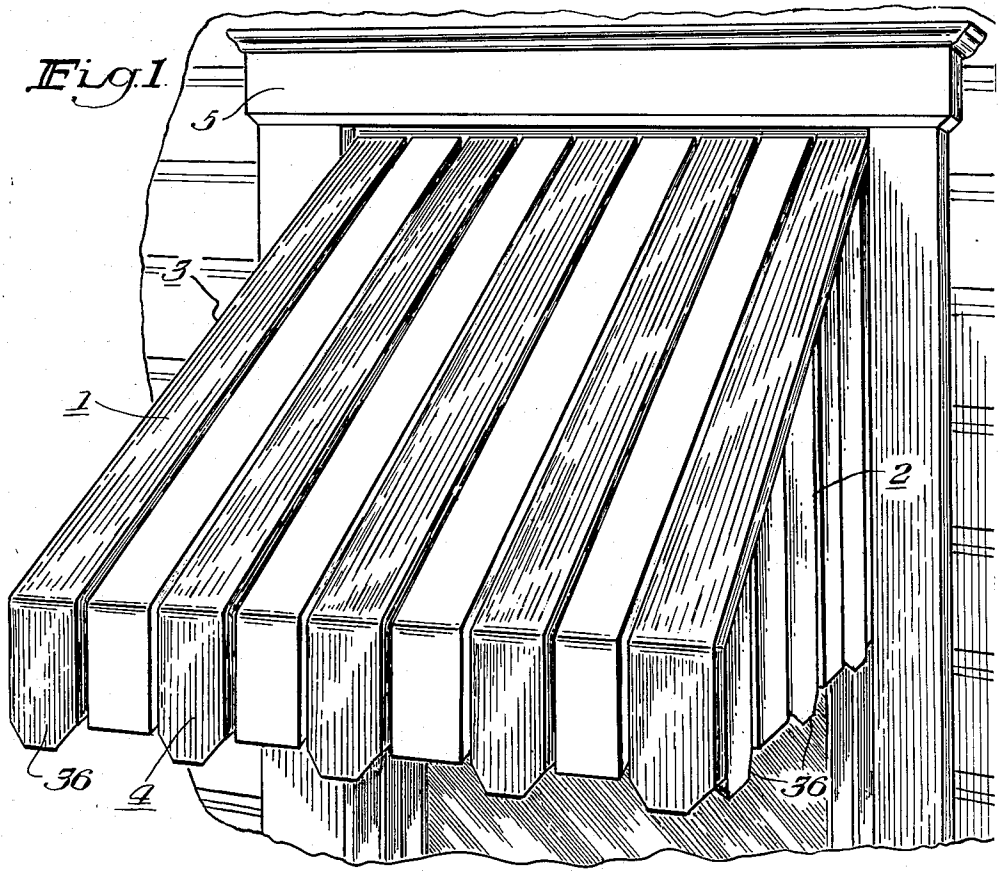


Fig. 4.

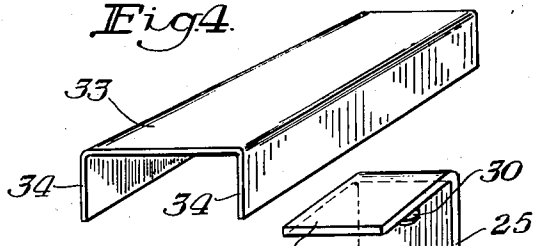
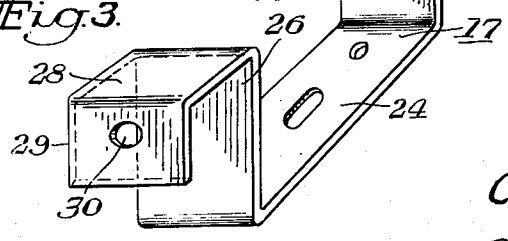


Fig. 3.



INVENTOR
CHARLES J. FREETH
BY
William D Carothers
HIS ATTORNEY

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Fig. 2.

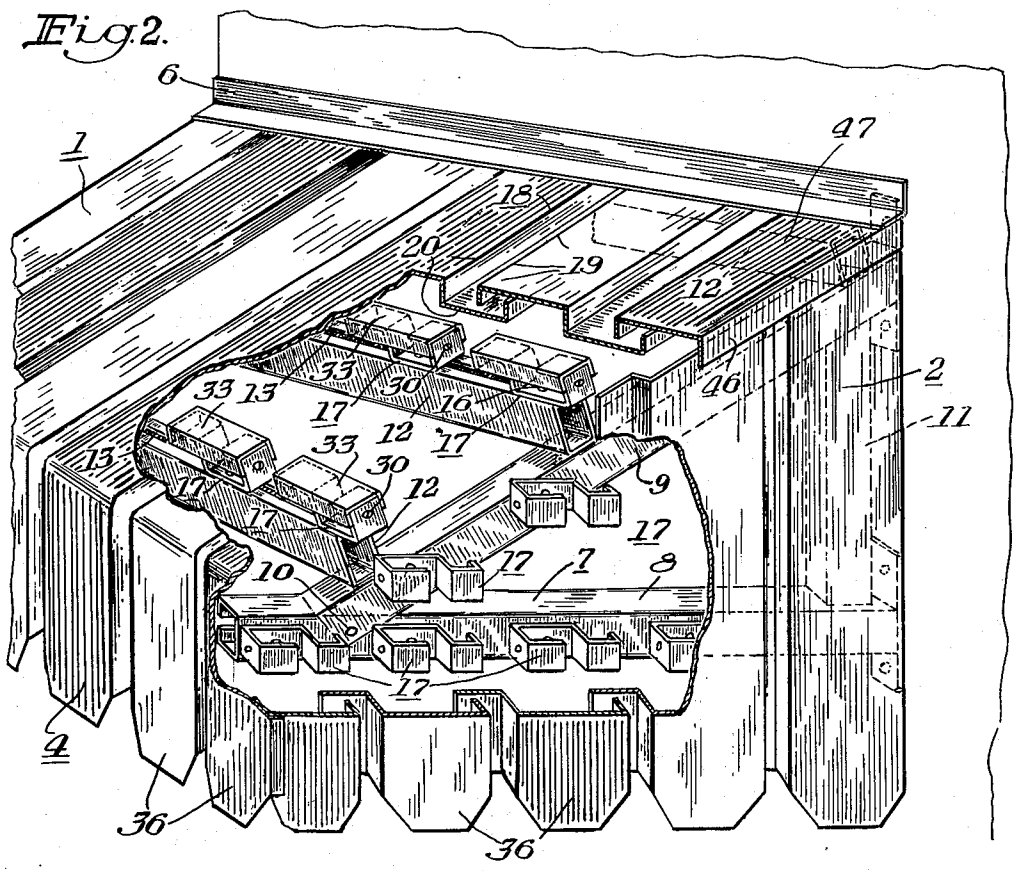
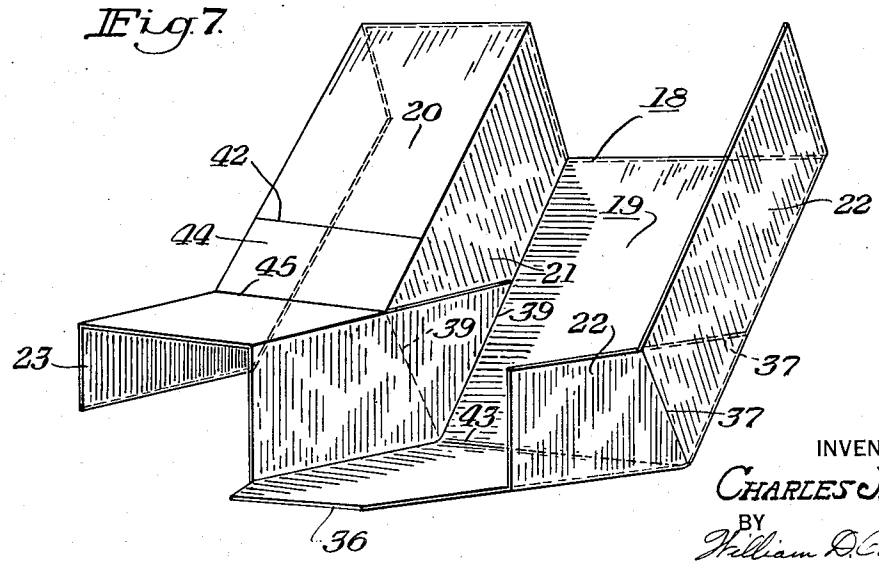


Fig. 7.



INVENTOR
CHARLES J. FREETH
BY
William D. Carothers
HIS ATTORNEY

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Fig. 5.

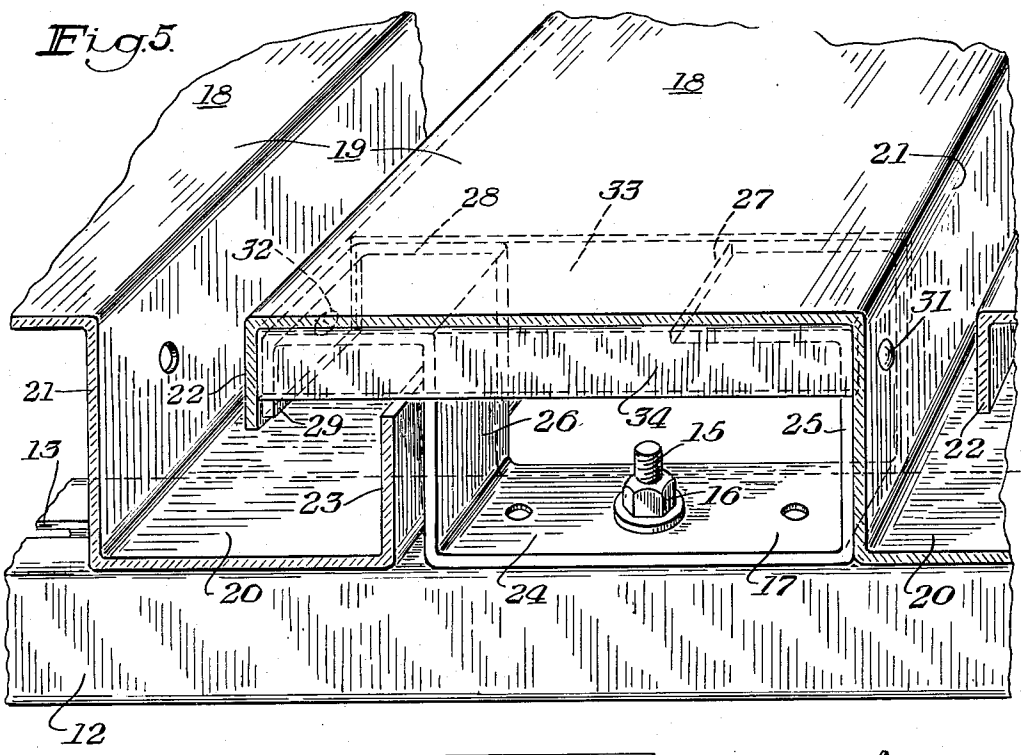
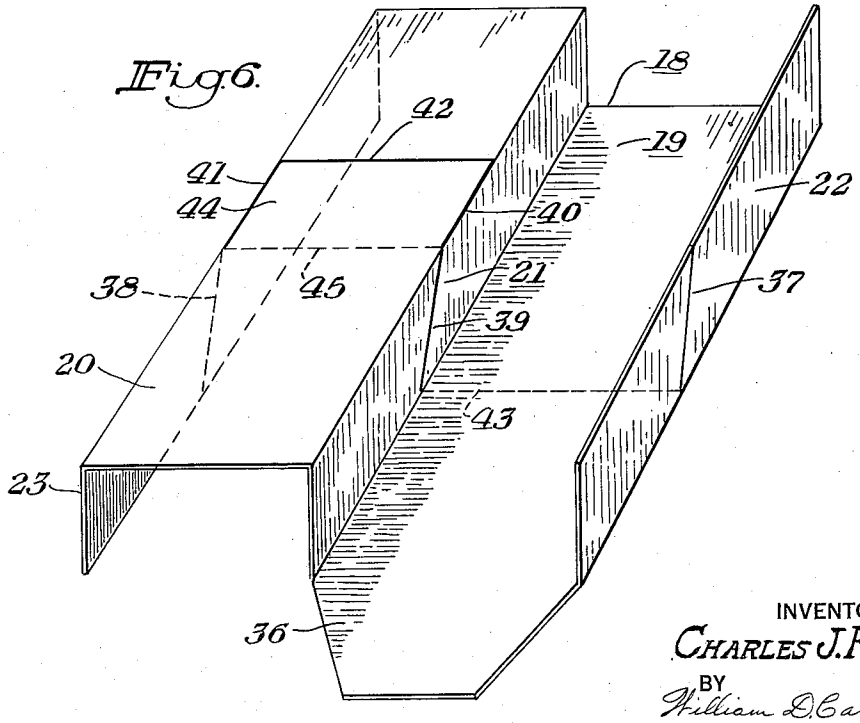


Fig. 6.



INVENTOR
CHARLES J. FREETH
BY
William D. Carothers
HIS ATTORNEY

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Fig. 8.

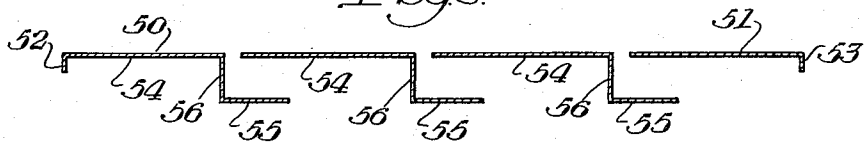


Fig. 9.

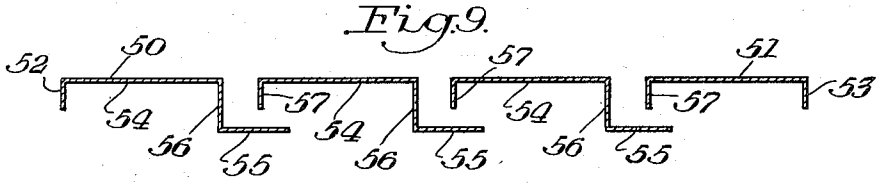


Fig. 10.

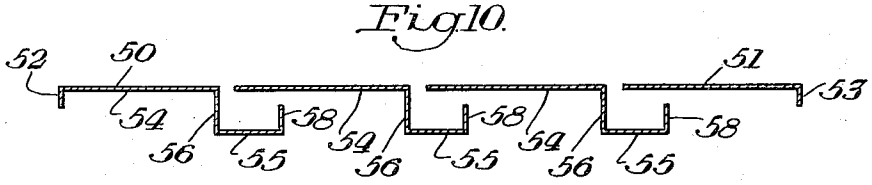


Fig. 11.

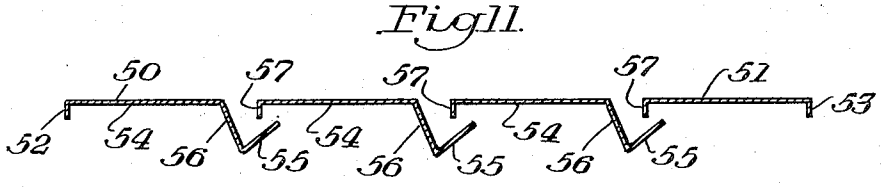
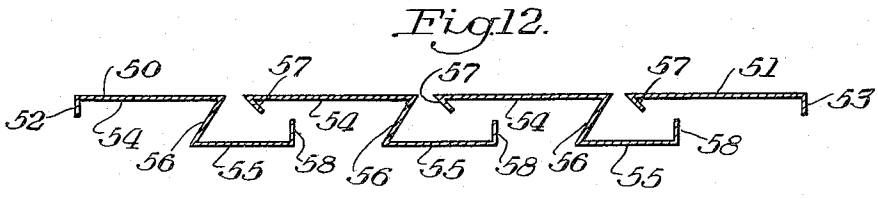


Fig. 12.



INVENTOR
CHARLES J. FREETH
BY
William D Carothers
HIS ATTORNEY

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UNITED STATES PATENT OFFICE

2,568,679

AWNING

Charles J. Freeth, Pittsburgh, Pa.; Margaret Freeth, executrix of said Charles J. Freeth, deceased, assignor to Margaret Freeth

Application January 22, 1947, Serial No. 723,484

2 Claims. (Cl. 20—57.5)

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This invention relates generally to closures and more particularly to a ventilated closure made up of a plurality of rigid strips or shakes which when assembled provides a ventilated structure.

This invention may be advantageously employed for use in constructing fly roofs, awnings, canopies and other similar structures which are employed for the purpose of shading or otherwise protecting an area from the elements of the weather but permit the flow of air upwardly therethrough to ventilate the shaded area.

The principal object of this invention is the provision of an improved plural shake closure structure arranged to protect the area which it covers from the elements and provide ventilation therefor.

Another object is the provision of a plural shake closure structure which readily lends itself for decorative purposes.

Another object is the provision of a plural shake closure structure which is simple in design, economical to manufacture, yet is rugged, and will stand the elements.

Another object is the provision of a plural shake closure that requires a minimum number of parts.

Another object is the provision of a plural shake awning, the panels of which have neat and uniform marginal edges and the parts present the same appearance when viewed at an angle or directly.

Other objects and advantages appear hereinafter in the following description and claims.

Practical embodiments illustrating the principles of this invention are shown in the accompanying drawings wherein:

Fig. 1 is a perspective view of a plural shake closure member employed as an awning.

Fig. 2 is a perspective view similar to that shown in Fig. 1 with parts broken away to illustrate the supporting structure of the awning shown in Fig. 1.

Fig. 3 is a perspective view of a supporting bracket.

Fig. 4 is a perspective view of a reinforcing channel.

Fig. 5 is a sectional view illustrating the application of the supporting bracket and the reinforcing channel.

Fig. 6 is a perspective view of the underside of a shake showing the lines along which it is to be cut for bending to produce the front drop.

Fig. 7 is a view similar to Fig. 6 showing the structure bent and fastened.

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Fig. 8 is a sectional view of a plural shake structure of modified form.

Fig. 9 is a sectional view of a shake structure employed in the sides of the awning shown in Fig. 1.

Fig. 10 is a sectional view of another modified form of a shake structure.

Fig. 11 is a sectional view of another modified form of a shake structure.

Fig. 12 is a sectional view of a shake structure similar to that shown in Fig. 5 with the flanges bent at a different degree.

In making up closure structures from rigid plural shakes, it will ordinarily be found convenient to provide a frame on which is mounted one or more roof panels and one or more side panels. The character of the supporting frame structure of course must be designed and fabricated to suit the particular needs of the closure structure. If the closure structure is in the nature of a fly roof or a canopy, it must be constructed to provide roof panels corresponding to the roof structure which it covers. The form of the roof will of course determine the character of the closure member as to whether or not it is a shed roof, double pitch or hip roof. However for the purpose of simplifying this disclosure, an awning is employed for the purpose of illustrating the basic structure of this improvement.

Referring to Figs. 1 and 2 of the drawings, 1 represents a top panel of the awning which is provided with the sides or panels 2 and 3. The vertical drop 4 at the front of the awning is integral with the top panel 1. The upper edge of the top or roof panel 1 may be inserted under the coping 5 or eave of the structure to which the awning is to be attached or it may be provided with a flashing plate 6 such as shown in Fig. 2, the upper portion of which is attached to the building or other structure. If the closure member is made in the form of a double pitch roof, the flashing member 6 may be turned so that the included angle thereof covers both roof panels acting as a rigid member for the purpose of trimming and sealing both panels.

A supporting structure as shown in Fig. 2 may be made of angle irons or channel box members as shown. It is preferable to provide a triangular frame member 7 on each end of the awning which is constructed of the horizontal channel member 8 and the sloping channel member 9 that are attached adjacent their outer ends by cutting away the under flange and permitting the web section of the channel member 9 to

extend over the web section of the channel member 8 and riveting the two members as indicated at 10. Adjacent the wall of the bulding a channel member 11 may be secured to the upper surface of the horizontal channel member 8 and the under surface of the channel member 9 as by welding to complete the triangular frame structure.

The roof panel 1 of the awning may be supported on tie channel members or purlins 12, the ends of which are secured to the top surface of the sloping channel members 9 to produce a trihedral frame structure. The purlin may be suitably spaced along the sloping channel member 9 so as to properly support the roof channel section. In the structure shown only three purlins are illustrated. However additional purlins and triangular frame members 7 may be added in accordance with the need of the structure to be supported.

As best shown in Fig. 5, the channel members forming the purlins 12 may be box-shaped with the flanges open along their top surface to produce the slot as indicated at 13 to receive the stems of the bolts 15. The opening 13 may be placed closely adjacent one side of the channel section so that the latter prevents the head of the bolt from turning when the nut 16 is screwed on the bolt for the purpose of securing the bracket member 17 to the purlin. If drive screws are employed as the fastening members, the box-shaped purlins 12 may be turned to face the open slot 13 outwardly. The bracket members 17 are secured in alignment on the purlins to provide a supporting means for the plural shakes 18 which when assembled produces the complete roof panel 1. These shakes are shown in Fig. 5 of the drawings and comprises an upper plate 19 and a lower plate 20 disposed parallel thereto and integrally connected along their adjacent marginal edges by the web section 21 which may be disposed normally or angularly relative to the surfaces of the plates 19 and 20. The other marginal edge of the plate 19 is preferably provided with a depending flange member 22 and the other marginal edge of the plate 20 is provided with an upwardly projecting flange 23. The flanges 22 and 23 are preferably made approximately one-half the distance between the parallel planes of the plates 19 and 20 so that the flange 23 may be adequately spaced from the surface of the plate 20 when a series of these shakes are fabricated in assembled relation with the depending flange 22 positioned closely adjacent the integral web connection 21 and provide adequate space for the air to circulate from the underside of the panel, over the upwardly extending flange 23 and under the depending flange 22 where it may escape to above the roof panel 1.

As shown in Figs. 3 and 5, the bracket member 17 is preferably provided with a base section 24 having its ends bent upwardly to form the sections 25 and 26. The section 25 is preferably bent to fit the inner face of the integral section 21 as shown in Fig. 5 and is provided with an inturn flange 27 at the top thereof. The upwardly extending end 26 of the bracket 17 is provided with an outwardly projecting section 28 which is in the same plane as the flange 27 and is provided with a depending section 29 bent to fit the inner surface of the depending flange 22 of the shake 18. When the section 25 is secured to the inner face of the integral connection 21 of the shake 18, the upwardly extending section 26 is spaced from the flange 23 on the lower plate 20

of the next consecutive shake. Thus the upwardly projecting sections 25 and 26 of the bracket 17 are arranged to support the shakes 18 on the purlins. The upwardly extending section 25 of the bracket 17 and the depending flange 29 are provided with aligned holes 30 for the purpose of receiving the bolts or rivets 31 and 32 which secure the bracket to the integral connecting section 21 and the depending flange 22 respectively and permit the lower plate 20 to rest upon the top of the purlins 12.

If the width of the upper plate 19 is extensive it is preferable to provide the reinforcing channel member 33 shown in Fig. 4 which is constructed to fit down over the parallel sections 27 and 28 of the bracket member and support the underside of the plate 19. The reinforcing channel member 33 extends between and its ends are cut to fit the integral connection 21 and the flange 22 and its depending flanges 34 snugly fit down over the upward projections 25 and 26 of the bracket 17 but they stop short of the upwardly projecting flanges 23 of the next adjacent shake in order that the bracket member 17 will be the sole support of the shake 18, the lower plate 20 being arranged to rest directly on the purlines of the supporting structure and need not be fastened. In this manner the reinforcing channel members 33 will provide adequate strength for a wide plate 19 and properly functions in assembled relation between the bracket member 17 and the shake member 18 without any fastening members.

The roof panel 1 is made up of a series of shakes 18 starting from one end of the structure and continuing until the whole of the structure forming the panel is completed with the exception of the last plate. The slotted openings in the base 24 of the bracket 17 or the slot 13 in the purlin permits each shake of the series to be adjustably positioned relative to each other so as to equalize the spacing between the integral web connection 21 and the depending flange 22 of the next adjacent plate. However this spacing may vary depending upon the total length of the structure but it is preferable to have these parts of the shakes relatively close together as it is frequently desirable to paint adjacent plates in different colors. It is preferable to use a third color of paint on the upper surface of the plate 20 to harmonize but not detract from the contrast between the coloring of adjacent plates 19.

To form the vertical depending panel 4 at the front of the awning, the ends of the flanges 22 and 23 and the integral connection 21 of each shake together with the panel 20 are cut away so as to provide an ornamental extension 36 to produce a serrated marginal edge along the bottom of the awning. Each plate may be formed in this manner or alternate plates may be cut straight as shown in Fig. 1 to produce any desired effect.

In order to produce the bend in the shakes, the flanges 22 and 23 together with the integral connection 21 are cut along the parallel lines 37, 38 and 39 respectively. The plates 20 are cut along the corners as shown at 40 and 41 respectively, which cuts are connected by the transverse cut 42 across the plate 20. Thus the only material holding the severed sections together is the material across the plate 19 as indicated by the dotted line 43 which when bent permits the flange 22 of the panel section 5 to lap underneath the flange 22 of the roof panel

section of the shake until the angle of the cut 37 engages along the corner between the plate 19 and the depending flange 22 as shown in Fig. 7. These overlapping flange sections may be spot-welded to hold them in bent relation or they may be secured by means of rivets or drive screws or the like. The portion 44 of the plate 20 is bent along the line 45 extending between the cuts 38 and 39 to form a flap which portion of the shake is a part of the panel section 4 and is permitted to overlap the underface of the plate 20 of the panel 1 and be welded or otherwise fastened in place. The integral web section 21 and the flange 23 also overlap each other along their respective cuts 38 and 39 and are likewise secured together by means of welding, riveting or other suitable securing means. When the ends of the shakes 18 are cut and formed by bending in this manner they produce the vertical panel 4 at the outer lower edge of the roof panel 1.

The side of the end panels 2 and 3 may be made of the same shake structure as that making up the roof panel 1 and supported in the same manner by the brackets 17 which are mounted in aligned spaced relation on the horizontal and sloping frame members 8 and 9. The upper edges of the shakes making up the panels 2 and 3 are cut at an angle of the same degree as the sloping member 9 and the panel 2 is arranged to fit up under the depending flange 46 of the last or right-hand channel 47 which is in the form of a plate. The panel 3 is formed and supported in the same manner and its top sloping edge is arranged to fit up under the depending flange 22 of the first of a series of shakes. It is preferable to match the marginal sides of the panels 2 and 3 with the marginal plates of the roof panel 1 as shown in Fig. 1.

The construction of the shakes making up panels may be changed to suit the various needs in the application of this plural strip closure as shown in Figs. 8 to 12. In the structure of Fig. 8, the end shakes 50 and 51, which form the marginal sides of a panel, are each provided with an outer depending flange 52 and 53 respectively. The shake 50 represents the first in a series of shakes having an upper plate 54 and a lower plate 55, each of which are spaced in parallel planes and are integrally connected by the web section 56. The lower plate 55 of the last shake in the series is overlapped by the plate of the marginal shake 51. These shakes may be supported by the bracket 17 and the reinforcing channel member 33 by the rivets 31.

In the structure shown in Fig. 9 the marginal shakes 50 and 51 are provided with the same marginal flanges 52 and 53 respectively and each of the upper plates is also provided with the depending flange 57 which corresponds to the flange 22 of the structure shown in Figs. 1 and 2.

In the structure shown in Fig. 10 the upwardly projecting flange 58 is provided on the edge of each of the lower plates 55 of the plural shakes forming the series in the panel. The upwardly projecting flange 58 corresponding with the upwardly projecting flange 23 in the structure shown in Figs. 1 and 2.

In the structures of Figs. 1, 2, 5, 10 and 12 the upwardly projecting flanges along the edge of the lower plates provide a trough shaped member. However a trough may be constructed by preshaping the lower plate 55 and the integral connection 56 in the form illustrated in Fig. 11. The trough produced in the shake of the structure shown in Fig. 11 utilizes the lower plate 55 and the integral connection 56 in a manner that

eliminates the upwardly projecting flange 58 and still provides a ventilating structure. The projection 25 of the brackets 17 may be bent to fit the web 56 and support the shakes in the same manner.

The structure shown in Fig. 12 is quite similar to that shown in Figs. 1 and 2 with the exception that the integral connection 56 between the plates 54 and 55 slopes at an angle relative to the upper and lower plates. The depending flanges 57 are like wise bent inwardly and thus provide a shake having a dovetail cross section. The brackets 17 are shaped to correspond with the shape of the integral connection 56 and the depending flanges 57 and may be secured in the same manner as previously described. The heads of the fastening bolts 31 and 32 which secure the plates in the bracket member 17 are partially protected from the elements due to the fact that the dove construction produces an overhanging surface.

Although each of the structures shown in Figs. 8 to 12 differ slightly from one another they are basically the same as each shake provides an upper and lower plate and when mounted in a series permit the upper plate to overlap the lower plate of the next consecutive shake. The upper plates may be positioned relatively close together to substantially mask the lower plate from view thereby permitting the upper plates to be used in alternate or different colors in a series and thus produce the effect of a striped plural strip closure which when viewed from many angles will present the varying contrast in colors yet provides all the attributes of an air-vented closure.

One of the important attributes of this plural strip closure is that the ventilating opening between adjacent shakes is always on one side of the upper plates and not on both sides which is common in the art. This is advantageous because the series of shakes may be started from the right or left of the panel and still provide the same appearance but the ventilating opening is placed away from the direction of the prevailing winds and storms which cause them to act as injector nozzles permitting the wind blowing across the top of the panel to draw the air upwardly from under the closure without fear of a driving rain forcing water down through shakes. With the exception of the configuration of Fig. 8, each of the shake structures shown will not permit the direct rays of the sun or light to pass down through a roof panel but each of them allows the indirect light to be transmitted to the underside of the roof panel. These features form an important object of this invention.

I claim:

1. In an awning, the combination of a supporting frame, brackets having horizontally spaced projections and adjustably mounted in aligned spaced relation on said frame, a series of shakes each comprising a plate section with longitudinal depending portions, a channel member positioned over and resting on the spaced projections of each bracket and bearing against the under surface of the shake plate, and means securing the longitudinal depending portions of each shake to their respective adjacent spaced projections on said brackets for supporting the shakes in predetermined spaced relation on the frame.

2. An awning comprising a frame with cross bars, a series of parallel overlapping shakes each having a cross section simulating an S in a horizontal position, each shake having upper and lower plates with outer marginal flanges and with

a connecting central portion, the lower plate of each shake resting on said cross bars, an end shake having depending flanges along its marginal edges, a plurality of upstanding brackets each bracket having a transversely extending portion and adjustably secured on its respective cross bar under the upper plate of its respective shake and under said end shake, and means fastening the central portion of each shake and one of the flanges of said end shake to their respective brackets to maintain said shakes in assembled relation, said brackets positioning the edges of the marginal flanges in spaced relation to the flanges adjacent thereto.

CHARLES J. FREETH.

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