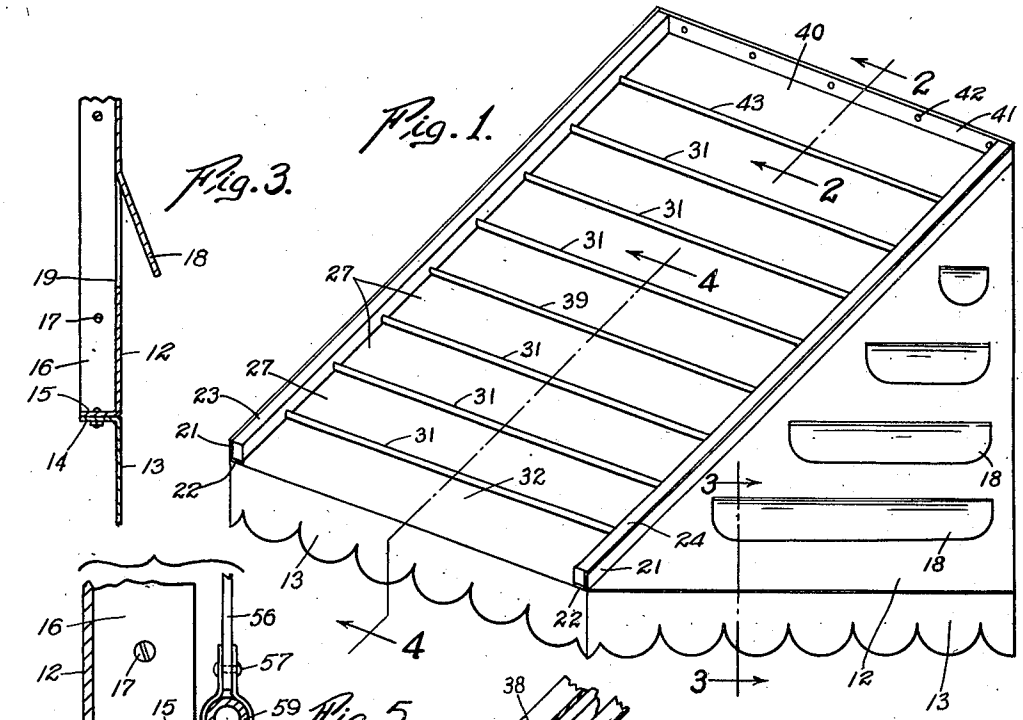
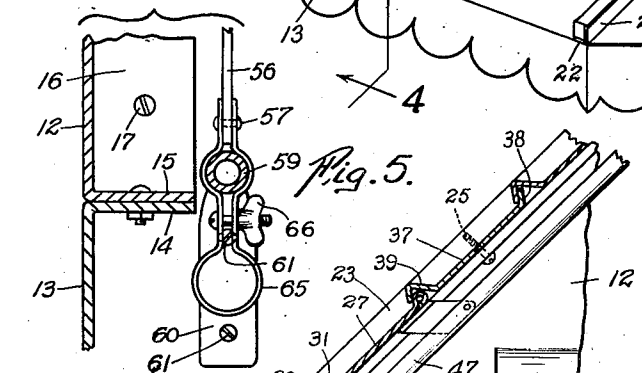
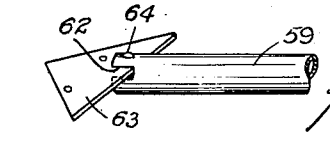
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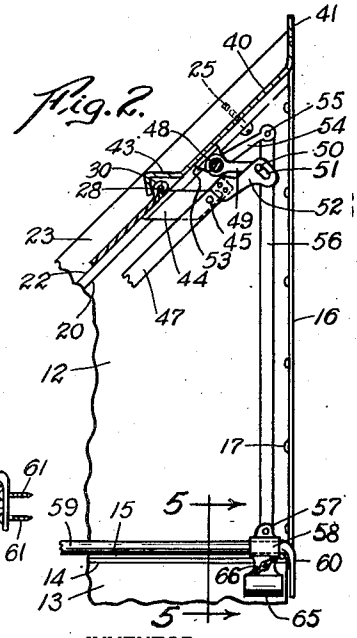
VENTILATED AWNING

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INVENTOR
James N. Dugan
BY Zugelter and Zugelter
ATTORNEY

Sept. 22, 1942. J. N. DUGAN 2,296,467

VENTILATED AWNING

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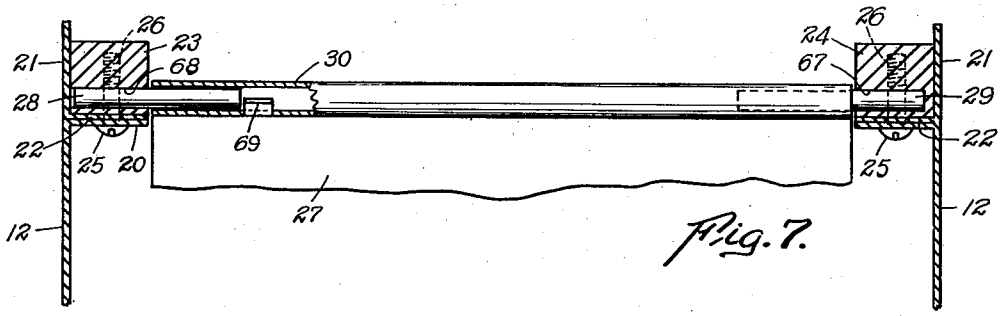


Fig. 7.

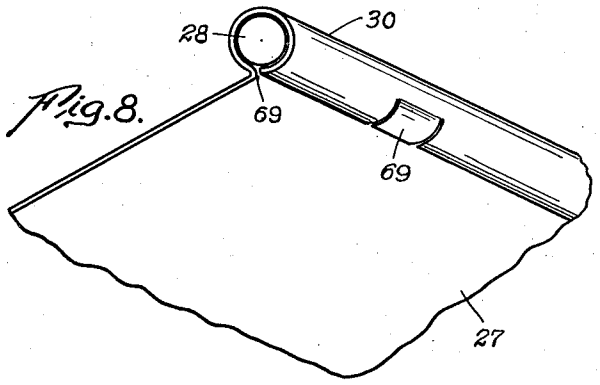


Fig. 8.

INVENTOR
James N. Dugan
BY Zugelter and Zugelter
ATTORNEY

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VENTILATED AWNING

James N. Dugan, Cincinnati, Ohio

Application August 15, 1940, Serial No. 352,699

14 Claims. (Cl. 156—15)

This invention relates to a ventilated awning, and particularly to one which is fabricated chiefly of sheet metal.

An object of the invention is to provide a sheet metal awning of the ventilated type, embodying simple, effective and durable means for ventilating the sloping front of the awning, and also the triangular sides thereof.

Another object of the invention is to provide an awning of the character stated, embodying an improved arrangement of shutters for selectively ventilating and closing the sloping front of the awning, which shutters may be applied to the framework of the structure after the framework has been mounted upon the side of a building and about a window or other aperture.

A further object is to provide an awning of the character referred to, which may be shipped in knocked-down condition and mounted upon the building in sections so that the entire weight of the awning need not be lifted as a whole, in placing the awning.

Another object of the invention is to provide an improved shutter actuating means for a ventilated awning.

A further object is to provide bearing means for the individual shutters of the awnings, whereby is greatly facilitated the assembly of the awning after the main body portion thereof has been mounted, this being accomplished without the aid of a scaffold or ladder, and making possible the mounting and assembly of the awning through the window over which the awning is to be suspended.

The foregoing and other objects are attained by the means described herein and disclosed in the accompanying drawings, in which:

Fig. 1 is a perspective view of an awning embodying the invention.

Fig. 2 is a fragmental cross-sectional view taken on line 2—2 of Fig. 1.

Fig. 3 is an enlarged fragmental cross-sectional view taken on line 3—3 of Fig. 1.

Fig. 4 is a fragmental cross-sectional view taken on line 4—4 of Fig. 1.

Fig. 5 is an enlarged cross-sectional view taken on line 5—5 of Fig. 2.

Fig. 6 is a fragmental perspective view showing a detail of the invention.

Fig. 7 is a cross-sectional view taken transversely through the sloping front of the awning structure.

Fig. 8 is a fragmental perspective view of a shutter, showing in detail certain means employed for mounting one end of a shutter.

Referring to the accompanying drawings, the character 12 indicates a substantially triangular side panel for the awning structure, one being provided at each side of the structure. Each side panel may be furnished with a valance or trim section indicated at 13, which, as shown in Fig. 5 may include an inwardly turned flange 14 adapted to be bolted or otherwise secured flatwise against a complementary flange 15 along the lower edge of the side panel. As shown in Figs. 1 and 4, the valance may be scalloped or otherwise artistically shaped or cut, for decorative purposes. Along the rear vertical edge of each side panel 12, there may be provided a flange turned at right-angles, as indicated by the character 16, and adapted to carry screws, bolts or other fastening devices 17 for mounting the side panel to the frame of a window or other aperture, or to the face of a building in the absence of a frame. The flanges 16 of the side panels may be turned inwardly toward one another as indicated, or where necessary they may be turned outwardly.

Each side panel 12 may be furnished with a series of ventilating louvers 18 formed by punching cuts in the sheet metal sides, and pressing outwardly the metal defined by the cuts, substantially as illustrated by Fig. 3. Thus, each louver has associated therewith an opening 19, Fig. 3, which serves as a ventilator, but which is protected against entry of rain or the like by the overhanging louver 18.

Along the forward sloping edge of each side panel 12, there may be provided an inwardly directed flange running substantially the full length of said edge, and serving as a shelf or support for the shutter mounting means. Each flange may consist of an inwardly turned leg 20, (Fig. 7), an outwardly turned leg 22, and an upstanding leg 21, all of these being integral parts of the side panel 12. The legs 22 of the angle members are adapted to support the spaced parallel bars or beams 23 and 24, which may rest against the side legs 21 as illustrated in Fig. 7. As will readily be understood, the upstanding legs 21 may be omitted, if desired, however, these members perform as trimming strips and also as reinforcing elements when included in the combination. The bars or beams 23 and 24 preferably extend the full length of the sloping front of the awning structure, and they may be securely fastened to the flanges 20 and 22 by means of screws or bolts 25, which may pass through the flanges and into threaded bores 26 provided in the material of the bars or beams. A limited

number of bolts or screws 25 is indicated in the drawings, but it will be understood that the number of them may be increased when necessary, to furnish a substantially rigid structure. The nature and function of the bars or beams 23 and 24 will be explained more fully hereinafter.

The several characters 27, indicate sheet metal shutters or movable panels which are mounted on axles or journals 28—29 so that all of the shutters or panels may be rocked about their pivotal mountings to assume substantially the open positions indicated by the character 270 of Fig. 4. By utilizing means to be hereinafter referred to, the shutters or panels may be selectively shifted to the open and closed positions unitarily, through the manipulation of a single actuator which is accessible through the window or other opening.

Referring to Fig. 4, it will be noted that each shutter 27 is provided along one of its longitudinal edges with a cylindrical bead 30 that not only reinforces the shutter lengthwise, but also furnishes sockets for the reception and support of the short axles or stud shafts 28—29 (Fig. 7). Along the opposite longitudinal edge of each shutter, there is formed an open channel or hood 31, which may be of an inverted V or U-shaped configuration, this channel or hood in each instance being adapted to cover the bead 30 of the next adjacent shutter when the shutter is in the closed position indicated by Fig. 4. It will accordingly be understood that the open channels or hoods 31 of the various shutters furnish substantially tight joints at the sloping front of the awning structure, precluding leakage or entry of water and other foreign materials into the enclosure formed by the awning.

At the lower end of the sloping front, there may be furnished a fixed transverse panel 32 having an inturned flange 33 adapted to be bolted or otherwise fixed as at 34, to the transverse horizontal flange 35 of the front valance member. This fixed panel may include an upstanding transverse bead or rib 36 adapted to be engaged by the open channel or hood 31 of the lowermost shutter 27. It is preferred also that the sloping front of the awning be furnished, at a location substantially midway between its upper and lower ends, with a second stationary panel 37, the upper longitudinal edge of which may be turned outwardly to form a rib indicated at 38 to be engaged by the movable shutter next above it. A stationary open channel or hood 39 may be furnished lengthwise of the lower edge of stationary panel 37, to cover and seal the pivotal mounting of the shutter 27 next below it.

As shown in Figs. 1 and 2, a third stationary panel 40 may be provided for spanning the side panels 12, this part 40 having formed integrally therewith an upstanding vertical flange 41 suitably apertured for the reception of screws or bolts 42 which serve to attach the flange to the window frame or to the wall of the building immediately above the window. The lower longitudinal edge of stationary panel 40 preferably carries an open channel or hood 43 similar to those indicated at 31 and 29, for covering and sealing the bead of the next adjacent shutter against entry of water, dust and other foreign matter. In the preferred construction, all of the shutters and the stationary panels 32—37—40 will rest substantially in a common plane when the shutters are in the closed position. When the shutters are opened as indicated by the broken lines 270 of Fig. 4, the planes of the shutters may be disposed substantially at right angles to the plane of the sloping front of the awning structure.

To the under faces of the shutters, and substantially at locations midway between the ends of the shutters, suitable links or arms 44 are fastened securely by welding, riveting, or the like, these elements 44 forming part of the actuating mechanism for the shutters. As shown herein, each link may be in the form of a parallelogram formed from sheet metal, and having along one of its edges a right angled flange 45 that abuts the under face of the shutter so that the elements 44 of all the shutters rest in a common plane which is normal or perpendicular to the under faces of all the shutters. As previously stated, all of the elements 44 preferably are located midway between the ends of the shutters. It may be noted also that they are preferably, though not necessarily, fastened close to the pivotal mountings of the shutters, and that every shutter which is adapted to move will carry one of the link members 44.

At one corner of each link member or plate 44, there is provided a pivot 45 whereby each may be pivotally connected to a reciprocable connecting rod or bar 47. In the preferred construction the connecting rod or bar 47 is a longitudinal sheet of metal bent along its longitudinal axis in order that it will be substantially U-shaped in cross section, the legs of the U serving to embrace the plate-like elements 44. As will be understood, the pivots 45, which may be in the form of rivets or small bolts, or perhaps clevis pins with cotter pins at their ends, extend through the spaced parallel legs of the U-shaped connecting member 47, and also through the several plate links 44 embraced therebetween. This furnishes a neat and substantial actuating connecting structure whereby reciprocating movement of the part 47 will result in opening and closing all of the shutters, depending upon the direction of reciprocation.

The means for reciprocating the connecting bar or member 47 may consist of a rock shaft 48, (Fig. 2), having a lever 49 fixed thereto, said lever having a free end furnished with a pivot or stud 50 adapted to work within a slot 51 of an extension of the bar 47. While it is possible to form the slot directly in the material of bar 47, better practice may be to fix a separate bracket 52 upon the bar end for carrying the slot 51; however, it is considered immaterial whether the pivot 50 be associated with the bar 47 one way or the other. The only requirement is that there be a pivotal connection between bar 47 and lever 49.

As the bar 47 extends along the middle points of the shutters, the rock shaft must reach approximately half way across the awning structure, from one of the side panels 12. Accordingly, it is considered desirable to journal one end of the shaft in a bearing carried by one side panel 12, while the opposite end is supported within a bearing member 53 fixed to the under face of part 40.

At a location near one of the side panels 12, the rock shaft 48 carries a second fixed lever 54, the outer end of which carries a pivot 55 that connects it with a swing bar 56. This swing bar 56, in the normally closed condition of the shutters, stands approximately vertical, and it has its lower end pivoted as at 57 to a slide 58. The slide is adapted to be moved horizontally along a guide 59, which guide may be in the form of

a rod, shaft, or bar having its opposite ends anchored securely in any suitable manner. For example, if the guide be made of tubular stock, its rear end may be flattened as at 60, and perforated to receive lag screws, bolts or the like 61 (Fig. 5) for fixing that end of the rod to the window frame or other part of a building, or to the flange 16 of a side panel 12. The opposite end of the rod may be bifurcated as at 62 (Figs. 4 and 6) and fitted onto an edge of a gusset plate 63 or the like, and pinned or bolted thereto at 64. The plate 63 may be formed triangular to fit within a forward corner of the awning structure, where it may be bolted to flanges 33 and 35, or otherwise secured.

The slide 58 may include a handle portion 65 to be gripped and shifted by a person desiring to open or close the shutters. The slide may be moved freely and easily along the guide or rod 59 by means of the handle 65, but because of the fact that any force applied to the slide by the bar 56 is bound to be a downward or an upward force, movement of the slide by any forces initiated at the shutters is impossible. In other words, the slide structure may be considered irreversible in the sense that force properly applied to the slide for shifting it along the rod 59, will actuate the shutters, whereas force applied to the shutters in the attempt to shift the slide will be ineffective. This is considered an advantage, in that the effects of wind and vibration upon the shutters will not disturb the adjusted position of the slide.

Another advantage of the actuating means herein disclosed, is that ample leverage is available for moving the shutters due to the fact that a rather long stroke of the slide 58 is required for effecting the relatively lesser movement of the shutter connector 47. This results in easy effortless operation, which is further enhanced by the fact that the leverage ratio becomes greater as the slide approaches the front of the awning, at which time the links or plates 44 approach the limit of their turning movement and the force necessary to advance them further by means of bar 47 increases. It should be noted also that a straight downward pull upon member 56 would be effective to rotate the rock shaft 48 a lesser amount, than is the case where the member 56 is swung forwardly at its lower end during the shutter-opening movement, as specified herein. Therefore, it should be evident that the actuating mechanism of the invention is so constructed as to have a great range of movement for opening the shutters wide, while at the same time a leverage ratio is provided for in the interest of effortless manipulation. Finally, the structure of the actuating means is seen to be extremely simple and trouble-free.

Although the slide 58 may be made as a casting or otherwise, it is possible to form it merely from a properly shaped sheet metal blank turned upon itself at the handle to provide the handle, the slide portion, and the ears for supporting the pivot 57. Should it be considered desirable to provide for a positive fixation of the slide upon the bar or rod 59, a bolt and thumb nut may be furnished as indicated at 66 to preclude unintentional or unauthorized adjusting of the awning shutters against the wishes of the owner or person in charge thereof.

Earlier herein was mentioned the ease with which the awning structure may be shipped in knock-down condition, and mounted upon a building in sections which are not too heavy or unwieldy for one workman to handle. It should be noted, in this connection, that the side panels 12 may readily be mounted upon a building by means of the screws or bolts 17, independently of the shutter structure. Once the sides are fixed in place, without the shutters, it is a simple matter to attach the shutters and their actuating mechanism, due to the means to be presently described. In this connection, the reader is referred to Figs. 7 and 8 of the drawings.

As will be understood, the side panels 12 carrying the bars or beams 23 and 24, will be in substantial spaced parallelism when mounted upon the building. The bars or beams 23 and 24 are to be bored transversely, at the factory, for reception of the stud shafts or axles 28 and 29 of the shutters. The stud or axle 29 preferably is fixedly supported in the end of bead 30, whereas the other stud or axle 28 is loose in its bead section.

The first step in mounting one of the shutters 27, is to insert the fixed stud 29 into the bore 67 of beam or bar 24, while the other stud 28 rests wholly within its own bead section (Fig. 8); then upon aligning the outer end of stud 28 with the bore 68 or bar 23, it is necessary only to insert a blade or a pick in the small crack of the bead, indicated at 69 of Fig. 8, for contacting the loose stud 28 and shifting it longitudinally outwardly and into the bore 68. Thereafter, it is necessary only to punch in a tab 69, provided in the bead 30, until the tab extends into the bead sufficiently to block retractile movement of the stud. This completes the work of mounting a shutter, and it should be noted that all this can be accomplished by a workman reaching through the window covered by the awning. All of the shutters are to be applied as above explained, and of course the necessary connections for the actuating mechanism may be made likewise, without the use of scaffold or ladder. As indicated by Figs. 7 and 8, the tabs 69 are located at the under side of the shutters, making accessibility easy.

From the foregoing, it should be evident that the improvements herein set forth result in the provision of a simple and durable workable structure which may be installed with a minimum of time and effort, and without resort to ladders or scaffolds which are expensive and troublesome to erect at the higher windows of a building. Labor costs in applying the awnings are materially reduced, and awnings of the kind herein disclosed present no appreciable problems of maintenance and repair. They are fire-proof and hurricane-proof, will not readily take on a soiled or worn appearance, and they afford complete control of rain, wind, and sunshine directed at a window or other opening of a building. Moreover, the use of awnings constructed in accordance with the present invention results in the elimination of noises and squeaks which are inherent in other types of awnings when subjected to high winds, and they are practically indestructible. Other and further advantages will be evident to persons familiar with the subject.

Whereas for the sake of convenience and simplification of disclosure, the actuating mechanism for the shutters is shown applied to the far side of the awning structure, it is evident that greater convenience may result if it be applied to the opposite side, especially for right-handed operators. This consideration is of course immaterial from the patent standpoint, as the means utilized will be identical.

In conclusion, it is to be understood that var-

ious modifications and changes in the structural details of the device may be made, within the scope of the appended claims, without departing from the spirit of the invention.

What is claimed is:

1. In a ventilated awning structure of the class described, the combination of a pair of side panels including means for mounting same in spaced parallelism upon a building, shutter supporting means on said panels, and a series of movable shutters including operating means accessible from a location within the confines of the awning for operatively connecting the shutters to said supporting means.

2. An awning structure for application to a window opening, comprising a pair of side frame elements, with means thereon for supporting a series of shutters, and a series of movable shutters all of which include means accessible through the window opening for operatively connecting the shutters to said supporting means.

3. In a ventilated awning structure, the combination which comprises a pair of side frames, a series of shutters each pivoted thereto for movement to open and closed positions, and an actuator for the shutters, including means for increasing the power of the actuator progressively as the shutters move toward the open position.

4. In a ventilated awning structure, the combination which comprises a pair of side frames, a series of shutters each pivoted thereto for movement to open and closed positions, and an actuator for the shutters, including a shiftable handle and a system of links operatively connected to the shutters, arranged to increase the ratio of movement between the handle and the shutters as the handle is shifted in one direction to open the shutters.

5. In a ventilated awning structure, the combination which comprises a pair of side frames, a series of shutters each pivoted thereto for movement to open and closed positions, and an actuator for the shutters, said actuator including a slide shiftable by hand to move the shutters and locked against shifting movement when influenced by force applied to the shutters.

6. In a device of the class described, the combination of a pair of spaced parallel supports each having a transverse horizontal bearing bore disposed in horizontal alignment, a shutter having a longitudinal edge with a substantially cylindrical portion along it, providing opposed sockets at opposite ends of said shutter, a stud shaft fixed in one of said sockets, for extension into the bearing bore of one of said supports, a second stud shaft in the other socket and loosely resting therein for lengthwise shiftability into the bearing bore of the other support, and means projectable into the last mentioned socket behind the loose stud after said stud has been shifted to enter the bearing bore of the adjacent support, for obstructing retractile movement of the loose stud away from said bore.

7. In a device of the class described, the combination of a pair of spaced parallel supports each having a transverse horizontal bearing bore disposed in horizontal alignment, a shutter having a longitudinal edge with a substantially cylindrical portion along it, providing opposed sockets at opposite ends of said shutter, a stud shaft fixed in one of said sockets, for extension into the bearing bore of one of said supports, a second stud shaft in the other socket and loosely resting therein for lengthwise shiftability into the bearing bore of the other support, and means in the form of a bendable tab struck from the material of the socket at a distance from its end less than the length of the loose stud, said tab to be deformed and projected laterally into the interior of the socket and behind said stud, after the stud has been shifted axially into the bearing bore of the adjacent support.

8. A shutter for a ventilated awning, comprising a sheet of metal having ends and a pair of longitudinal side edges, substantially cylindrical bead sections along one of the longitudinal edges and terminating at the ends of the metal sheet, a fixed shaft extending from the bead section at one end of the sheet, a loose short shaft shiftable axially in the other bead section for extension beyond the outer end of said section, and a deformable tab formed in the bead section which contains the loose shaft, at a distance from the outer end of said section less than the length of the loose shaft, whereby upon deforming and projecting said tab into the section behind the loose shaft, said shaft is precluded from retractile movement to a position wholly within its surrounding bead section.

9. In a ventilated awning structure, the combination which comprises a pair of spaced side panels each including means for mounting same upon a building, a sloping front section for the awning, a series of transverse shutters on the sloping front section pivoted for movement to open and closed positions, a series of links each of which is fixed to an under face of a shutter, a connecting bar and means pivoting each link thereto for effecting unitary movement of the shutters upon longitudinal shifting movements of said bar, a rock shaft journaled for rotation upon an axis normal to the connecting bar, a lever fixed on said shaft and having a free end pivoted to the connecting bar, a second lever fixed on the rock shaft, a depending swing bar having an upper end pivoted to the free end of the second lever, a slide, means pivoting the lower end of the swing bar upon the slide, and a guide for the slide, extending toward the lowest portion of the sloping front section of the awning, said guide being disposed substantially horizontally and at an acute angle to the connecting bar for the shutter links.

10. In a ventilated awning structure, the combination which comprises a pair of spaced side panels each including means for mounting same upon a building, a sloping front section for the awning, a series of transverse shutters on the sloping front section pivoted for movement to open and closed positions, a series of links each of which is fixed to an under face of a shutter, a connecting bar and means pivoting each link thereto for effecting unitary movement of the shutters upon longitudinal shifting movements of said bar, a rock shaft journaled for rotation upon an axis normal to the connecting bar, a lever fixed on said shaft and having a free end pivoted to the connecting bar, a second lever fixed on the rock shaft, a depending swing bar having an upper end pivoted to the free end of the second lever, a slide, means pivoting the lower end of the swing bar upon the slide, and a guide for the slide, extending toward the lowest portion of the sloping front section of the awning, said guide being disposed substantially horizontally and at an acute angle to the connecting bar for the shutter links, a handle depending from the slide to a position beneath the guide, and means associated with a portion of the handle for clamping

the slide at selected positions of adjustment upon the guide.

11. In a ventilated awning structure, the combination of a pair of apertured side panels each including means for mounting same upon a building, a series of spaced parallel connecting panels spanning and spacing the side panels in substantial parallelism, a sloping front section for the awning structure including a pair of spaced parallel beams disposed exteriorly and including pairs of spaced bearings intermediate the fixed panels, a series of transverse shutters each having a pivoting edge and a swinging edge, shaft means at opposite ends of the pivoting edges for reception in the bearings of the beams, a series of linkage plates fixed one to each shutter at substantially the middle point of each shutter, and depending therefrom in a common vertical plane, a channel-shaped reciprocable connecting member having spaced legs for receiving therebetween a portion of each linkage plate, means passing through said linkage plate portions and said legs for pivoting said portions between the legs mentioned, a horizontal rock shaft supported for rotational movement transversely of the awning structure, means including a fixed lever on the shaft for longitudinally reciprocating the linkage plate connecting member upon rocking of said shaft, a sliding actuator extending substantially horizontally along the length of one side panel and movable bodily along a line of convergence toward the linkage plate connecting bar, and connecting means joining said sliding actuator and said rock shaft, for translating linear movement of the actuator into rotational movement of the rock shaft.

12. In a ventilated awning structure, the combination of a pair of apertured side panels each including means for mounting same upon a building, a series of spaced parallel connecting panels spanning and spacing the side panels in substantial parallelism, a sloping front section for the awning structure including a pair of spaced parallel beams disposed exteriorly and including pairs of spaced bearings intermediate the fixed panels, a series of transverse shutters each having a pivoting edge and a swinging edge, shaft means at opposite ends of the pivoting edges for reception in the bearings of the beams, an inverted channel formed along the swinging edge of each shutter for overlapping a portion of the next adjacent shutter, a series of links fixed one to each shutter at substantially the middle point of each shutter, and depending therefrom in a common vertical plane, a reciprocable connecting bar extending in substantial parallelism with the sloping front section of the awning, means pivoting each link to said connecting bar, a horizontal rock shaft extending from the region of the upper end of the connecting bar to one side panel of the awning structure, means including a fixed lever on the rock shaft for longitudinally reciprocating the connecting bar upon rocking of the shaft, a horizontal guide rod extending in substantial parallelism with that side panel which is nearest the rock shaft, a slide on the guide rod for manual shifting bodily along the guide rod toward the sloping front of the awning, and means including a second lever on the rock shaft and a rigid connecting rod pivoted to said lever and to the slide, for translating linear movement of the slide into rotational movement of the rock shaft.

13. In a ventilated awning structure, the combination which comprises a pair of side frames each of substantially triangular formation and each including a sloping front edge and a lower edge meeting said front edge at an angle, a series of shutters each pivoted to said frames for movement to open and closed positions, and actuating means for the shutters, including a system of shutter moving links operatively connected to the shutters, and a slide shiftable by hand, and operatively connected to said shutters, for movement along a line which meets the sloping front edge of a side frame at an acute angle, and locked against shifting movement when influenced by force applied to the shutters.

14. In a ventilated awning structure, the combination which comprises a pair of side frames each of substantially triangular formation and each including a sloping front edge and a lower edge meeting said front edge at an acute angle, a series of shutters each pivoted to said frames for movement to open and closed positions, and an actuator for the shutters, including a shiftable handle and a system of links operatively connected to the shutters, arranged to increase the ratio of movement between the handle and the shutters as the handle is shifted in one direction to open the shutters, and means guiding the shiftable handle for substantial horizontal movement toward and from the junction forming the acute angle aforesaid.

JAMES N. DUGAN.