

June 5, 1934.

J. L. BARTH

1,961,327

SHUTTER CONSTRUCTION

Filed June 8, 1931

2 Sheets-Sheet 1

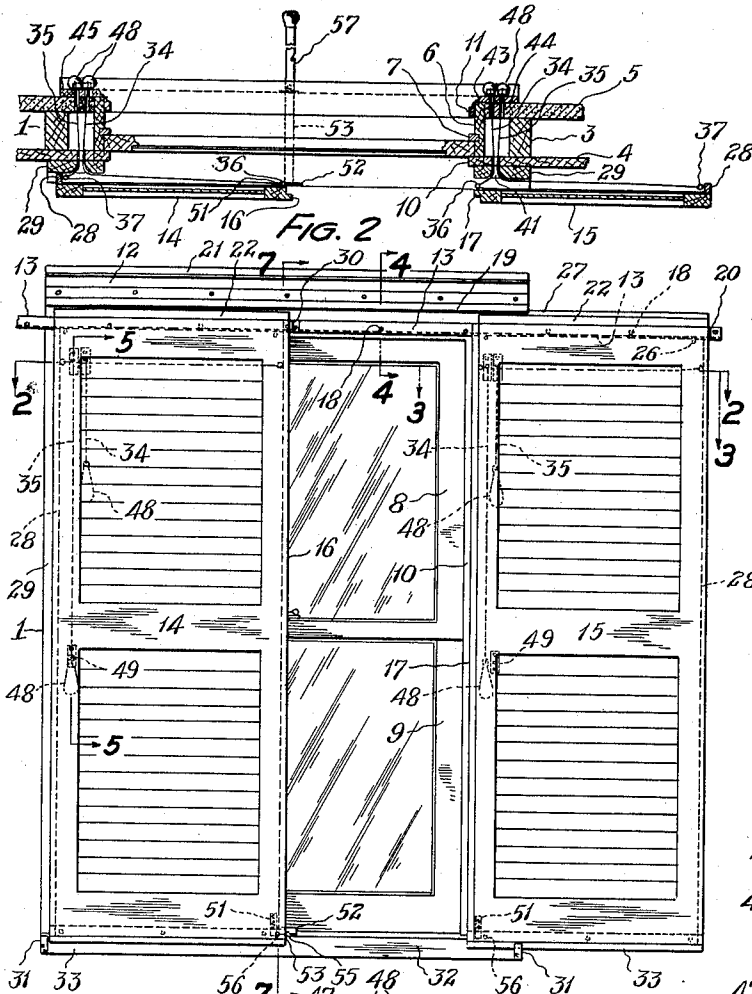


FIG. 1

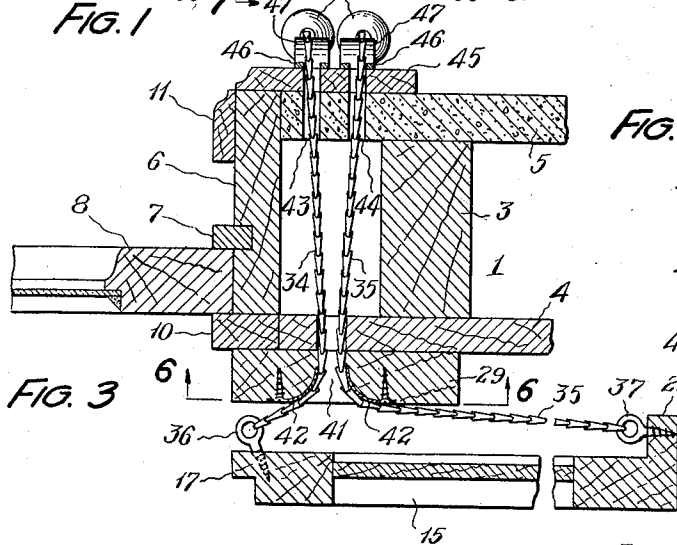


FIG. 3

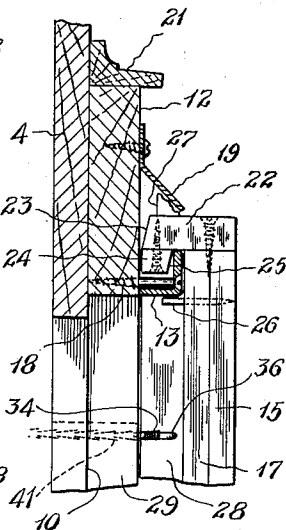


FIG. 4

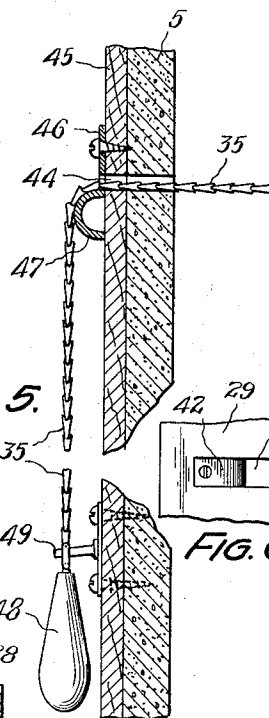


FIG. 5

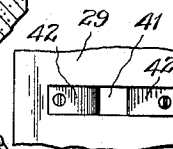


FIG. 6

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2 Sheets-Sheet 2

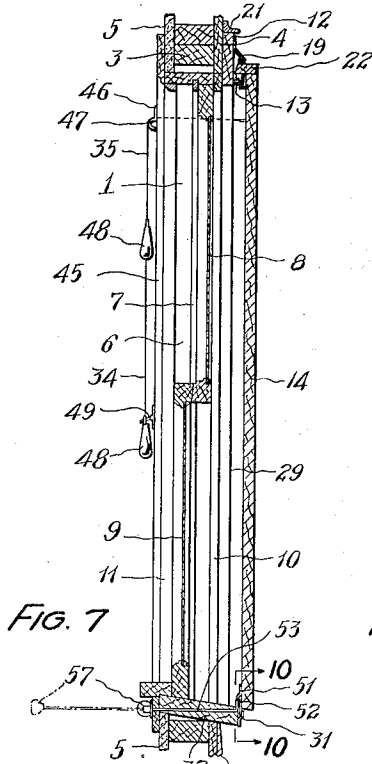


FIG. 7

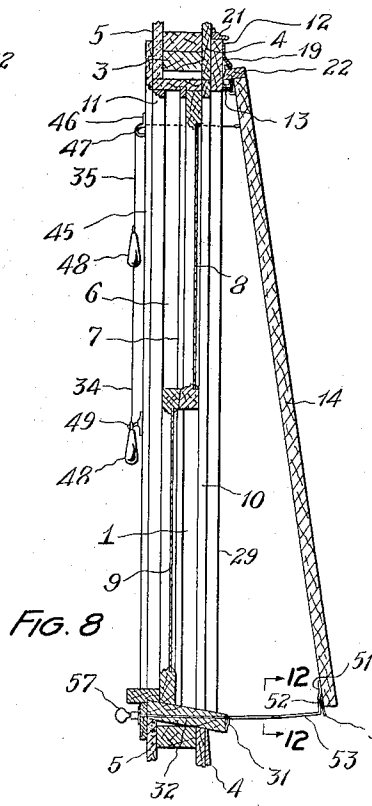


FIG. 8

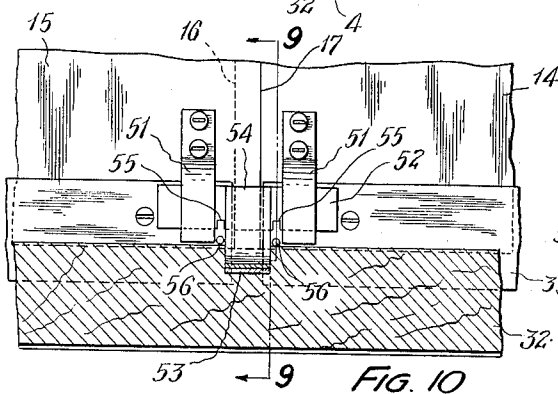


FIG. 10

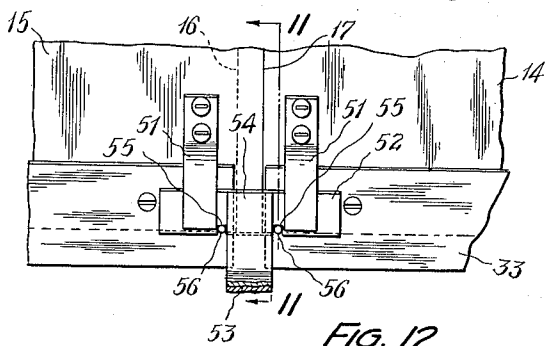


FIG. 12

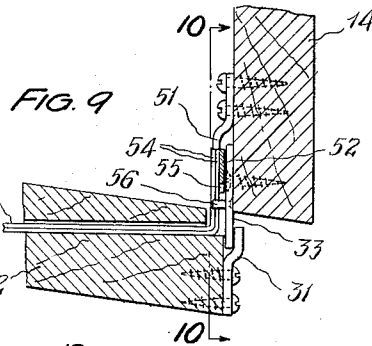


FIG. 9

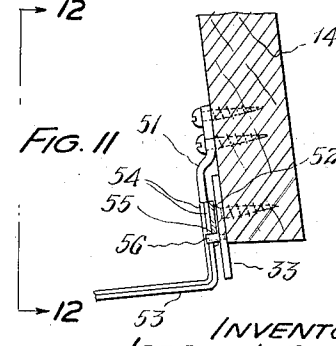


FIG. 11

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1,961,327

SHUTTER CONSTRUCTION

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by mesne assignments, to The National City
Bank, Cleveland, Ohio, and Elizabeth W. Vail,
Cleveland Heights, Ohio, co-trustees under the
will of George I. Vail, deceased

Application June 8, 1931, Serial No. 542,833

14 Claims. (Cl. 20—59)

This invention particularly relates to improvements in shutter constructions of the character shown in a co-pending application Serial No. 531,270 assigned to The Guardian Trust Company of Cleveland, Ohio, as executor of the estate of George I. Vail, the applicant.

This invention relates to blinds or shutters adapted to be moved laterally or to be swung outwardly at the bottom after the manner of an awning as is disclosed in said pending application, but has in view a simplified construction of the supporting means for the blinds, as well as a simplified and partially concealed operating means therefore, and an interlocking construction preventing either lateral movement of the shutters after outward movement has commenced or outward movement after lateral movement has commenced.

This shutter construction is adapted to cover an opening into the chamber of a dwelling or to be applied to a porch or like structure associated with a dwelling, or to be used in connection with any building wherein control of the access of light and air into the interior thereof is desired, or where ventilation and a measure of protection from the elements is of advantage. Such device is supported over the opening into the building or other structure by means of a supporting trackway secured above the opening, which permits the shutter to be moved parallel to the plane of the trackway to substantially the usual position of a shutter blind at the side of the window, or to be moved outwardly from the base of the window to an inclined position, such as is usually provided by an awning, thus providing ventilation without uncovering the window.

The shutter blinds may have a skeleton frame and a plurality of spaced overlapping plates pivoted at their ends in the frame so that such plates may be utilized in the manner and for the purposes customary for devices of this character and modify the degree of ventilation or protection from direct sunlight according to the desires of the user of the structure.

The improvements in the device herein shown, described and claimed have all of the advantages above referred to in addition to permitting economical manufacture and easy operation and furnishing a rigid mounting to prevent injury to the structure in the event of severe weather conditions. Other improvements shown, described and claimed in this application relate to a novel positioning device for the awning shutter which may be operated from within the building and which carries certain interlocking elements to

prevent interference between the two distinct directions of adjustment of the shutter blinds, laterally and outwardly, respectively.

The annexed drawings and the description set forth in detail certain means embodying my invention, such means constituting, however, but one of various mechanical forms in which the principle of the invention may be illustrated.

In said annexed drawings:

Fig. 1 is an elevation of one side of a window provided with the improved shutter construction, a cooperating pair of the shutter blinds being shown, one in closed and one in laterally adjusted open position;

Fig. 2 is a horizontal section, taken in the plane indicated by the line 2—2, Fig. 1, looking in the direction of the arrows;

Fig. 3 is an enlarged partial horizontal sectional view taken in the plane indicated by the line 3—3, Fig. 1, looking in the direction of the arrows;

Fig. 4 is an enlarged partial vertical section and a partial side elevation taken in the plane indicated by the line 4—4, Fig. 1, looking in the direction of the arrows;

Fig. 5 is an enlarged fragmentary vertical broken sectional view taken in the plane indicated by the line 5—5, Fig. 1, looking in the direction of the arrows;

Fig. 6 is a fragmentary side elevation taken in the plane indicated by the line 6—6, shown in Fig. 3, looking in the direction of the arrows, certain cable elements being omitted;

Fig. 7 is a vertical sectional view taken in the plane indicated by the line 7—7, Fig. 1, looking in the direction of the arrows;

Fig. 8 is a view similar to Fig. 7, but showing the shutters swung outwardly;

Fig. 9 is an enlarged fragmentary sectional view of a portion of the structure shown in Fig. 7, as seen in the plane indicated by the line 9—9, Fig. 10, looking in the direction of the arrows, showing the lower edge of the shutter and the operating elements connected therewith;

Fig. 10 is an enlarged view partially in section taken in the plane indicated by the line 10—10, Fig. 9, looking in the direction of the arrows;

Fig. 11 is an enlarged fragmentary sectional view of a portion of the structure shown in Fig. 8, as shown in the plane indicated by the line 11—11, Fig. 12, looking in the direction of the arrows, showing the lower edge of the shutter and the operating elements connected therewith in interlocking position; and,

Fig. 12 is an enlarged view partially in section

taken in the plane indicated by the line 12—12, Fig. 11, looking in the direction of the arrows.

Referring to the annexed drawings, in which the same parts are indicated by the same respective numbers in the several figures, a window frame or casing 1 is fitted to a building wall having suitable opening therefor. The casing may include a trimmer member 3 to which sheathing 4 and a plaster wall 5 are attached, and against the ends of which the inner frame member 6 is seated. A parting strip 7 extends vertically the full length of said frame between the upper and lower sashes 8 and 9, respectively. A blind stop 10 and inside stop 11 are also shown. An upper frame member 12 serves as a means of attachment for an angular runway 13 forming a support and track for a pair of shutters or blinds 14, 15 adapted to abut and interfit at their inner side edges, through the provision of offsets, 16, 17, on their inner and outer margins, respectively, for overlapping engagement.

The trackway 13, as best seen in Figure 4, comprises a strip of angle iron held by screws 18, so as to present an upwardly projecting flange in spaced relation to the outer surface of the frame member. A visor, 19, formed of a metal strip is positioned in spaced relation above said trackway to prevent moisture entering the space between the shutters and the building from above. The upper portion 21 of the outer window frame may be formed with an ornamental effect of any desired character.

The means for slidably supporting the shutters upon the trackway comprise inwardly projecting strips, 22, of wood or other suitable material secured to the upper edge of each of the blinds suitably beveled at their free inner edges 23, to provide greater clearance between the upper inner edge of said strip and the adjacent outer surface of the casing. A guard strip 24 which may be formed of wood or other suitable material, is secured to the under face of said inwardly projecting strip in spaced relation to the inner face of the shutter to provide a channelway for engaging over said trackway. The guard strip is beveled on its outer surface 25 so as to provide greater clearance adjacent its lower portion than at its upper portion from the adjacent upstanding edge of said trackway.

The beveling of the inwardly projecting strip and the guard strip provides sufficient clearance to allow each shutter to be swung about the trackway as a pivot when the shutters are to be used in the manner of awnings and moved outwardly from the base of the window without uncovering the area of the window. A stop member in the form of a pin 26, is engaged in the upper portion of the shutter at a point spaced slightly below the lower edge of the trackway, to prevent upward disengagement of the shutter from the trackway. The inwardly projecting strip extends the full length of the top edge of each of the shutters and thus serves to prevent the entrance of dirt or moisture between said shutters and the adjacent wall of the building, together with the protection afforded by the visor 19, heretofore described. To increase this protective effect a strip 27 is mounted on the upper face of the inwardly projecting strip, with a beveled outer face spaced with small clearance from the inner face of the visor to form an even more effective weather protection than would be afforded by the inwardly projecting strip itself.

At the outer vertical edge of each of the shutters a rearwardly extending strip or flange 28, is pro-

vided, which when the shutters are closed lie closely adjacent to the frame member 29 as is clearly shown on the lefthand side of Fig. 2 of the drawings. However, these edge strips 28, are not so deep as to contact with the building or the frame member 29 when the shutters are moved, inasmuch as the construction is such as to provide a slight space between the extreme rearward edge of the strip and the frame member.

The trackway is formed with end stops 20, which determine the extreme limit of opening movement of the shutters in a lateral direction, and a central stop 30 mounted on said trackway serves to prevent the shutters moving past the center line of the window. For guiding the shutters at their bottom edges during these lateral opening and closing movements, guide clips 31, are provided, which are secured by screws to the window sill 32, and have angular, outwardly extended upper portions which thus provide recesses between sill and the end portions within which may slide guide plates 33, secured by screws to the inner faces of the blinds and adjacent the bottom edges of the latter and downwardly extending beyond the extreme bottom edges of the shutters, as shown in Figure 1. The guide clips 31, are simply straps, as is clearly shown in Figure 1, and cooperate with the guide plates 33, only after the shutters have been shifted laterally to some extent from their central position.

The means for shifting the shutters transverse-ly of the trackway will now be described. Such means preferably comprises a pair of flexible members 34, 35, which may be designated cables and which may be in the form of chains, wires, cords, or any other suitable flexible members. These members are used in pairs, the ends of which are connected, respectively, with the respective inner and outer edges of each of the shutters adjacent their upper portions, but spaced a slight distance below the trackway. They may be secured to the shutters by means of screw eyes, as shown in Figures 2, 3, and 4, the screw eye 36, of one of said flexible members being secured to the inner face of the shutter adjacent its inner edge, and the screw eye 37, of the other flexible member being secured to the rearwardly projecting flange strip 28, provided adjacent the outer edge of such shutter as heretofore described.

The operating cables are led into the interior of the building through a passageway 41, formed in the casing adjacent the upper portion thereof. Said passageway may be formed as an outwardly flared opening protected by a pair of metal lining members 42, secured by screws, as is shown in Figures 3 and 6, which provide a metal to metal contact for the cables and reduce the amount of friction at that point. A pair of holes, 43, 44, is provided for the cables through which they pass into the interior of the building, through the inner wall 5, and finishing strip 45. An apertured metal bearing plate 46 is mounted on said strip for each of said cables to pass through, such plate having a rounded bearing member 47 over which the chain easily slides. The free end of each chain is provided with an operating member which may be in the form of a weighted handle 48. A pin 49 mounted on a base plate secured to the window frame beneath each bearing member may be used as a locking member against lateral movement of the shutters by engaging a link of each chain over its respective pin when the shutters are closed.

For guiding and holding the shutters at the bottom when they are entirely closed, or just

commencing their opening movement, or just finishing their closing movement, clips 51 are provided, secured by screws to the inner face of the shutters, adjacent the respective inner, lower edges of the latter, and having angular, inwardly extended end portions adapted to engage an adjacent exterior transverse plate 52, secured intermediate its ends to a two-part spring plate member 53 which controls the opening movements of the shutters at the bottom.

The spring plate member is preferably formed as a two-part structure comprising a superposed pair of plates, each of thin flexible material, and disposed in a transverse hole formed in the sill 32 and having vertically extended angular end portions 54 passed through and upwardly of a recess in the sill and secured to the transverse plate 52 centrally thereof by riveting or other suitable means. The lower edge of the transverse plate 52 is positioned in a horizontal plane spaced above the top surface of the sill.

This transverse plate 52 intersects the plane of the abutting inner edges of the shutters, as seen in Figures 1, 2, and 7 to 12, and, therefore, serves as a guide plate for both of the clips secured to the pair of shutters. This construction permits the spring plate member to push the bottom of both shutters outwardly and to close them by pulling upon them through the clips 51. The transverse plate as is clearly shown in Figures 10 to 12, inclusive, is formed at its lower edge with a pair of spaced notches 55 at either side of the edges of the upturned portions 54 of the two-part spring plate member 53. Immediately beneath the lower edge of the transverse plate in vertical alinement with each of the notches 55 when the shutters are closed, an inwardly projecting pin 56 is provided, said pins being mounted on the respective guide plates 33 at the lower inner edge of the shutters.

When the spring plate is forced outwardly the transverse plate 52 is held in the narrow space provided between the clips 51 and the adjacent surface of the shutter and the notches 55 are engaged against the pins 56 respectively as the lower edge of the shutter describes an outward arc of movement (see Figures 11 and 12), and the transverse plate is held in firm interlocking engagement with the lower inner edges of the shutters during the outward movement of the shutters. When the transverse plate is thus interlocked with the shutters, neither shutter may be moved transversely. The central stop 30 also prevents lateral movement of the pairs of shutters when thus interlocked. Thus the shutters are safe against injury through accidental pulling on the chains as transverse movement cannot be caused when the shutters are in the outward position. When drawn inwardly the spring plate member is freed of the interlocking engagement with the adjacent spring clips (see Figures 9 and 10) and each of the shutters may be moved laterally without any interference whatsoever from the spring plate member or its associated transverse plate, as the lower edge of the transverse plate 52 is above the position of the pins 56.

The inner ends 57 of the two-part spring plate member 53 are jointed to the main plate bodies, and extend inwardly of the room for which the window is provided, this arrangement permitting the adjustment of the shutters from within the room and also permitting the turning laterally of the inner plate ends substantially parallel with the window frame when the shutters are closed.

The two-part spring plate member 53 is formed of plates so thin that they will flex easily to describe the necessary arc through which they must travel during the opening and closing of the bottom of the shutters. As stated, when moved outwardly the transverse plate 52 and its notches 55 is held in engagement with the pins 56 and is also positioned within the clips 51, and the flexibility of the outer ends of the two-part plate member permits this movement to be had with the greatest freedom of action.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:

1. A shutter construction for building openings comprising a supporting trackway adapted to be positioned above a building opening, a pair of shutter blinds each having means for slidably and pivotally engaging said trackway, means for selectively moving said blinds bodily along said trackway or outwardly with said trackway as a pivot, and automatically-acting means to prevent lateral movement of said blinds after said movement outwardly has commenced.

2. A shutter construction for building openings comprising a supporting trackway adapted to be positioned above a building opening, a pair of shutter blinds each having means for slidably and pivotally engaging said trackway, means for selectively moving said blinds bodily along said trackway or outwardly with said trackway as a pivot, and automatically-acting means to prevent any other direction of movement of said blinds when the selected direction of movement has commenced.

3. A shutter construction for building openings comprising a frame about said opening, a supporting trackway positioned on said frame above said opening and having an upstanding edge portion spaced outwardly therefrom, a shutter blind having a wooden frame, an inwardly projecting wooden strip attached to the upper edge of said blind, a guard strip secured to the under face of said first-named strip in spaced relation to the inner surface of said blind to provide a channelway for engaging said trackway, a downwardly and inwardly beveled face on said guard strip to permit said trackway to serve as a pivot member for the outward movement of said blind, means to prevent upward disengagement of said blind from said trackway, and means adjacent the lower edge of said blind to move the same outwardly and to hold said blind in a predetermined position of outward adjustment.

4. A closure construction comprising a frame about a building opening, a supporting trackway positioned on said frame above said opening and having an upstanding track portion spaced outwardly from the adjacent surface, a closure, an inwardly projecting strip attached to the upper edge of said closure and extending over substantially the entire width and length thereof, a guard strip secured to the under face of the first-mentioned strip in spaced relation to the inner surface of said closure to provide a channelway for engaging said track portion, and means to prevent upward disengagement of said closure from said trackway.

5. A closure construction comprising a supporting trackway adapted to be positioned above

a building opening, a closure having means for slidably and pivotally engaging said trackway, and means for moving said closure outwardly about said trackway as a pivot and also for locking said closure against slidable movement along said trackway as the closure is moved outwardly.

6. A closure construction comprising a supporting trackway adapted to be positioned above a building opening, a plurality of closures having means for slidably and pivotally engaging said trackway, means for moving said closures outwardly about said trackway as a pivot, means adapted to cooperate with the second-mentioned means for locking said closures together, and means for preventing sliding movement of said closures when locked together.

7. A closure construction comprising a supporting trackway adapted to be positioned above a building opening and at the outer side of the building, a closure adapted for slidably and pivotally engaging said trackway, means for sliding said closure along said trackway, said means including a part adapted to be positioned inside the building for controlling said means, and means for moving said closure outwardly about said trackway as a pivot, the last-mentioned means including a part adapted to be positioned inside the building for controlling the last-mentioned means.

8. The closure construction specified in claim 7 characterized in that one of said means is prevented from moving the closure after the other means has begun its movement of the closure.

9. A closure construction comprising a supporting trackway adapted to be positioned above a building opening, a closure adapted for slidable movement along said trackway and for movement outwardly from said opening, means for sliding said closure along said trackway, means for moving said closure outwardly from said opening, and means for preventing each of the first two mentioned means from moving the closure after initial movement thereof by the other of said first two mentioned means.

10. The closure construction specified in claim 9 characterized in that said closure is positioned at the outer side of the building and in that said

first two mentioned means include parts adapted to be positioned inside the building for controlling said first two mentioned means.

11. A closure construction comprising a supporting trackway adapted to be positioned above a building opening, a closure adapted for slidably and pivotally engaging said trackway, means for sliding said closure along said trackway, means for moving said closure pivotally about said trackway, and means for preventing one of the first two mentioned means from moving the closure after initial movement thereof by the other of said first two mentioned means.

12. A closure construction comprising a supporting trackway adapted to be positioned outside and above a building opening having a closure associated therewith, said closure being movable into open and closed positions relative to said opening, a second closure adapted for slidable movement along said trackway and for movement outwardly from said opening, and means for imparting the slidable and outward movements to said second closure, said means being controllable from inside the building regardless of the position of the first mentioned closure.

13. A closure construction comprising a supporting trackway adapted to be positioned outside and above a building opening having a closure associated therewith, said closure being adapted to close said opening, a second closure adapted for slidable movement along said trackway and for movement outwardly from said opening, means for sliding said second closure along said trackway, said means being controllable from inside the building when said opening is closed by the first mentioned closure, and means for moving said second closure outwardly from said opening, the last mentioned means also being controllable from inside the building when said opening is closed by the first mentioned closure.

14. The closure construction specified in claim 13 characterized in that one of said means is prevented from moving said second closure after the other of said means has begun its movement of said second closure.

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