

July 20, 1943.

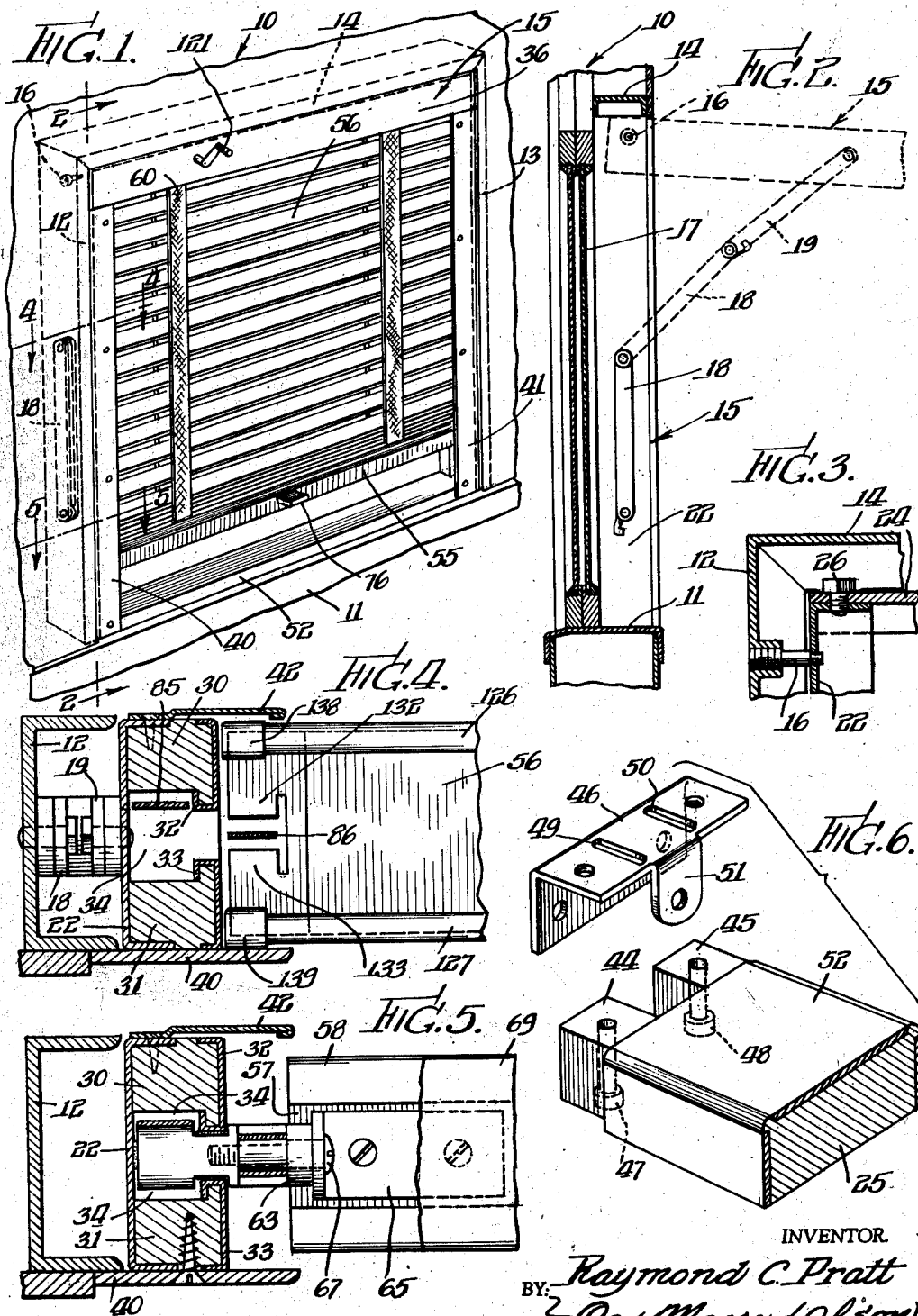
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2,324,536

CLOSURE STRUCTURE

Filed Jan. 19, 1942

4 Sheets-Sheet 1



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July 20, 1943.

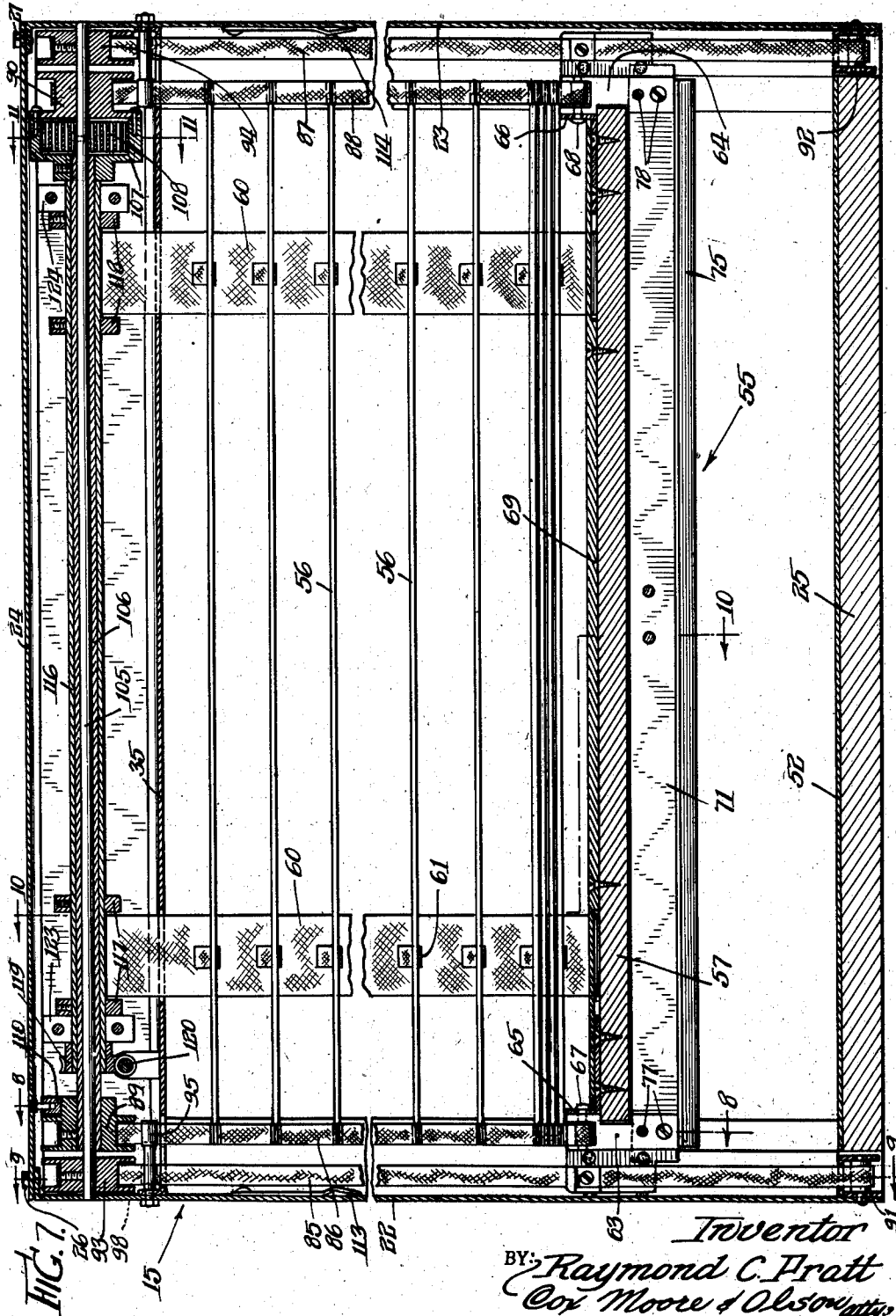
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2,324,536

CLOSURE STRUCTURE

Filed Jan. 19, 1942

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July 20, 1943.

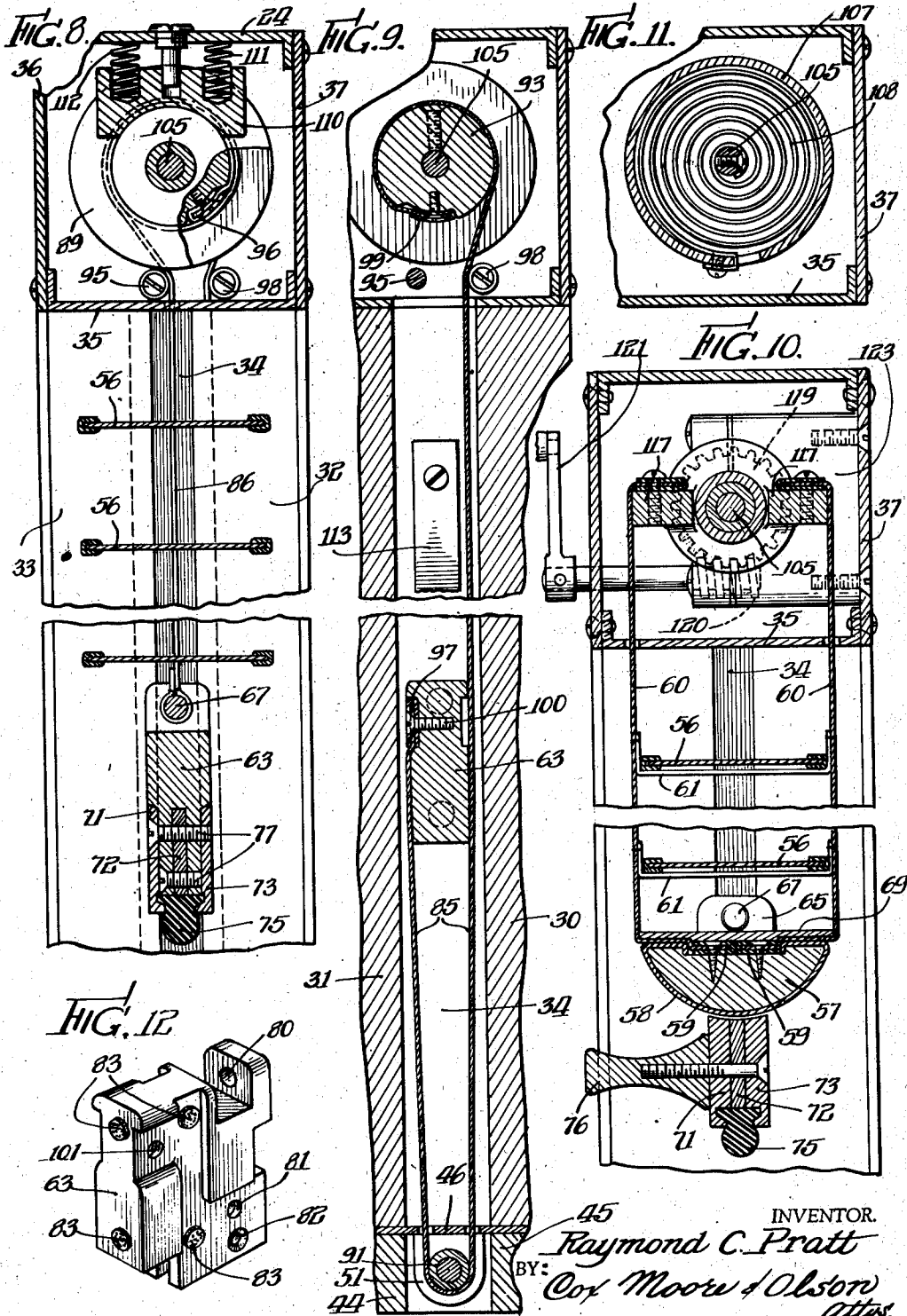
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2,324,536

CLOSURE STRUCTURE

Filed Jan. 19, 1942

4 Sheets-Sheet 3



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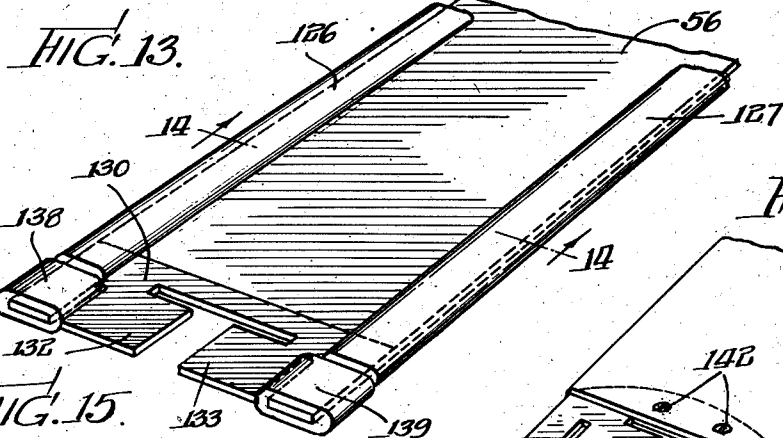
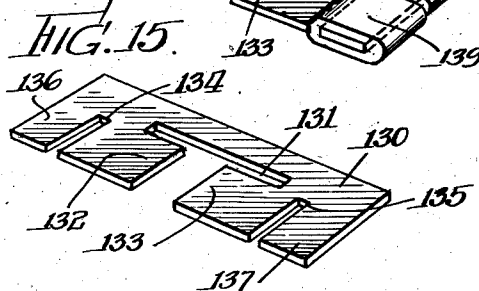
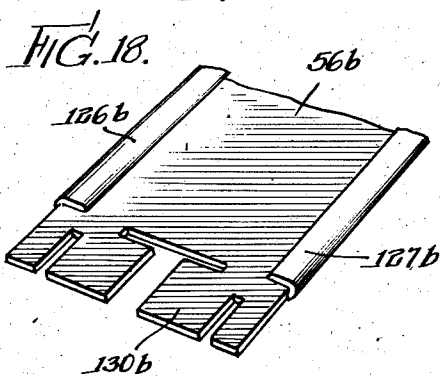
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CLOSURE STRUCTURE

Filed Jan. 19, 1942

4 Sheets-Sheet 4



UNITED STATES PATENT OFFICE

2,324,536

CLOSURE STRUCTURE

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Application January 19, 1942, Serial No. 427,243

20 Claims. (Cl. 160—172)

This invention relates to closures, and more particularly to that class of closures known as Venetian blinds or the like.

It is an object of the invention to provide a closure or blind structure of improved construction and improved operating characteristics.

More specifically, it is an object of the invention to provide a Venetian blind or the like having improved means for guiding and shifting the blind to its various positions of adjustment, and for holding the blind parts, including the slats thereof, in proper position at all times. In accordance with the invention the blind or closure may be shifted to any predetermined position merely by the application of suitable force to the bottom or operating bar at any point along the length thereof and without the manipulation of special locks or latching devices, means being provided for precluding the jamming or tilting of the parts, and also for automatically holding the parts in the new or adjusted position. During shifting of the blind the structural parts including the slats are properly guided and retained in position at all times, and the shifting may be readily effected either with the slats in tilted or horizontal position.

A further object of the invention is to provide a closure and specifically a blind structure mounted within a self-contained frame so that it may be readily moved or shifted to an inoperative position to facilitate cleaning or other maintenance operation on structural elements with which the blind may be associated, or if desired removed as a unit from its support structure.

A still further object of the invention is to provide in a Venetian blind structure, an improved composite slat construction of light weight but of greater strength and of improved appearance.

A still further object of the invention is to provide an improved slat end structure and associated guide means operable to guide the slats in their movements, which end structure facilitates the guiding operation, is noiseless, and permits ready blind adjustment with the slats in maximum tilted position.

Various other objects, advantages and features of the invention will be apparent from the following specification when taken in connection with the accompanying drawings wherein certain preferred embodiments of the invention are set forth for purposes of illustration.

In the drawings, wherein like reference numerals refer to like parts throughout:

Fig. 1 is a general assembly view of a closure, specifically a Venetian blind structure, constructed in accordance with the principles of the invention;

Fig. 2 is a vertical, sectional view through the structure of Fig. 1, on the line 2—2 thereof, and illustrating the manner in which the blind frame may be shifted as a unit with respect to its support structure;

Fig. 3 is a detail, sectional view of a part of the blind frame;

Figs. 4 and 5 are partial, sectional views on the lines 4—4 and 5—5 of Fig. 1, illustrating the guiding columns and associated parts, Fig. 4 showing one of the blind slats, and Fig. 5 illustrating a part of the bottom bar construction;

Fig. 6 is a composite or exploded view, in perspective, illustrating a detail of the blind frame sill member;

Fig. 7 is a general sectional view through the blind and showing the blind frame separated from its support structure;

Figs. 8, 9 and 10 are vertical, sectional views on the lines 8—8, 9—9 and 10—10 respectively of Fig. 7;

Fig. 11 is a detail sectional view through the spring structure, on the line 11—11 of Fig. 7;

Fig. 12 is a detail, perspective view of one of the guide blocks operable along the guiding columns;

Figs. 13 and 14 are perspective and sectional views, respectively, of one of the slats, Fig. 14 being taken on the line 14—14 of Fig. 13;

Fig. 15 is a detail, perspective view of the slat end guiding attachment or insert;

Figs. 16, 17 and 18 illustrate modified forms of slat structures;

Fig. 19 is a sectional view showing the positions which the slats will assume when in superposed relation; and

Fig. 20 is a view illustrating the manner in which the slat parts cooperate to reinforce each other in the operation of the structure.

In the drawings the invention has been illustrated applied to a Venetian blind for vehicle use such, for example, as a railway car or the like, as the invention in certain of its aspects may be particularly adapted for uses of this character.

It is to be understood, however, that the invention in many other aspects is adapted for use with closures generally, including blind struc-

tures in other types of installations and for other purposes.

Referring more particularly to the drawings, and first to Fig. 1, a vehicle wall structure is generally indicated by the numeral 10, which wall structure comprises or includes a support rail 11, a pair of upstanding wall frame members 12 and 13, and a cross frame member 14 connecting members 12 and 13 at their upper ends.

The parts 11, 12, 13 and 14 together define an opening in the vehicle wall into which the blind frame, generally indicated by the numeral 15, may be inserted and within which it is pivotally supported in a manner which will be best understood by reference to Figs. 2 and 3. More specifically, the two upstanding wall members 12 and 13 carry aligned hinge pins 16, screw-threaded into the wall members, and pivotally engageable at their inner ends within openings formed in the blind frame. By this means the frame 15 may be swung from its operative full line position, as shown in Fig. 2, to an inoperative position as illustrated in dotted lines, and when in inoperative position the windows or the like 17 which may be associated with the wall 10, are rendered readily accessible for cleaning or other maintenance operations. A toggle mechanism comprising a link 18 pivotally connected to the wall member 12, and a link 19 pivotally connected to the frame 15, see Figs. 2 and 4, are preferably provided for maintaining the frame in raised or inoperative position as may be desired. As will also be understood, by removal of the hinge pins 16, and disconnection of the toggle links, the blind frame 15 is removable as a unit from the support wall. This construction facilitates assembly of the parts, and also facilitates replacement or substitution of the blind structure, as may be desired.

The details of the blind frame are best shown in Figs. 4, 5 and 7, and are also illustrated in Figs. 3, 6, 8, 9 and 10. Referring to Fig. 7, it will be seen that the frame 15 comprises a pair of upstanding side frame members 22 and 23 connected at their upper ends by a cross frame member 24 and at their lower ends by a sill frame 25, a rigid rectangular frame for the blind thus being provided. The cross frame member 24 may be secured to the side frames by means of suitable screws such as indicated at 26 and 27, Figs. 7 and 3. The frame members 22 and 23 also form a part of the guiding column structures arranged at each side of the blind and provided for guiding the blind parts in their slidable movements and for holding them in proper position. The guiding column structure for the left side of the blind is illustrated in Figs. 4 and 5, and it is to be understood that the guide columns are the same for both sides of the blind.

Referring to Figs. 4 and 5, it will be seen that the frame member 22 forms a facing and retention member for a pair of column pieces 30 and 31 preferably of wood or the like, these column pieces being faced on their inwardly extending surfaces by sheet metal facing pieces 32 and 33. The column pieces are spaced apart whereby to provide a vertically extending slot or track 34.

The column pieces 30 and 31, and their associated facing members 32 and 33, terminate somewhat short of the upper end of the blind, and a cross frame member 35, Fig. 7, secured at its opposite ends to the frame pieces 22 and 23, rests on the upper ends of the column pieces. The cross frame members 24 and 35, together with a pair of front and rear plates 36 and 37, 75

Fig. 8, secured thereto, form a box-like housing structure extending across the blind at its upper end for housing the blind roller mechanism later to be described. The frame piece 35 has openings arranged therein at suitable points to accommodate the several control tapes of the structure.

The front of each side column is provided with a facing member, the member for the left-hand column being indicated at 40, Figs. 1, 4 and 5, and the member for the right-hand column being indicated at 41, Fig. 1. The facing members 40 and 41 not only form a finishing means for the front of the blind frame, but they also form part of the guiding means for guiding the blind slats in their movements, as will be best understood by reference to Fig. 4. In cooperation with these members engageable with the front edges of the blind slats, each side column is also provided with vertically extending rear guide members for guiding the rear slat edges, the guide member for the left-hand column being indicated at 42 in Figs. 4 and 5.

The manner of attaching the sill member 25 to the side guide columns and to the side frame members 22 and 23 is best illustrated in Fig. 6. As indicated, the sill member which is preferably of wood or the like, is bifurcated at each end whereby to provide a pair of extensions 44 and 45. A bracket 46 rests on these extensions, and the wooden column pieces, such as 30 and 31, Fig. 4, are in turn supported upon the bracket. Bolts, as indicated at 47 and 48, Fig. 6, hold the parts in position. The bracket 46 is provided with a pair of slots 49 and 50, and with a depending flange or ears 51 for a purpose later to be described. It is to be understood that the constructions at each end of the sill are similar. The sill member is preferably faced with sheet metal as indicated at 52.

The movable closure elements of the blind comprise a vertically shiftable bottom or operating bar 55, and the usual series of superposed slats 56. The bottom bar is composed of several separate parts, including both oscillatable and non-oscillatable elements, and to that end has been given a general reference numeral in Fig. 7. More specifically, the oscillatable element of the bottom bar comprises a cross piece 57, Figs. 7 and 10, preferably of wood or the like. This member is generally semi-cylindrical in cross section and extends across the blind structure. The cross piece 57 is faced with sheet metal, as indicated at 58, the upper ends of the sheet metal facing being anchored within a trough running longitudinally along the upper face of the member. This trough forms the receiving means for clip brackets 59 which anchor the ends of the slat tilting tapes 60. In the particular embodiment illustrated there are two pairs of these tilting tapes juxtaposed to each side of the blind structure. As will be understood, these tilting tapes carry cross webs 61, Fig. 10, for supporting the slats, so that as the tapes are operated by means later to be described, the slats and the member 57 may be adjusted to predetermined angular positions.

The member 57 is pivotally mounted for its oscillating movement in a pair of guide brackets 63 and 64, Fig. 7, which guide brackets are mounted for sliding movement along the guiding columns at either side of the blind. To effect this pivotal mounting the member 57 is provided with angle brackets 65 and 66, Fig. 7, at each of its ends, the angle brackets being anchored

within the trough of the cross piece 57 and pivotally connected to the guide brackets by means of pivot pins 67 and 68. A cover plate 69 overlies the upper surface of the member 57 and is secured thereto. This cover plate is shaped to extend into the trough formed longitudinally of the cross piece 57, but is suitably recessed to accommodate the clips 59 and the brackets 65 and 66. The left-hand end of the member 57, and its connection with the guide bracket 63 is specifically illustrated in Fig. 5 of the drawings, to which reference may be made for a further showing of the nature of the construction.

In addition to the oscillatable member 57, the bottom bar structure also includes a series of non-oscillatable cross pieces 71, 72 and 73, Figs. 7 and 10, secured together and arranged beneath the cross piece 57. As best shown in Fig. 10, the upper surfaces of these members are arcuately shaped so that they may be closely positioned with respect to the member 57, the arrangement being such that light will not be transmitted between the parts while at the same time permitting the angular adjustment of the cross piece 57. Members 71 and 73 cooperate to grip and retain in position a bumper and sealing member 75 of rubber or the like arranged along the extreme lower edge of the bottom bar structure. When the bottom bar is in its lowermost position, the bumper member 75 will be brought into engagement with the facing 52 of the sill structure. The bumper absorbs impact, insuring noiseless operation, and also provides a light-tight contact connection between the sill and the bar constructions. To facilitate the vertical positioning of the bottom bar a handle piece 76, Figs. 1 and 10, is connected to the central portion thereof. Members 71, 72 and 73 are connected at their ends to the guide brackets 63 and 64 by means of suitable screws 77 and 78, Fig. 7. The connection to the left-hand guide bracket 63 is specifically illustrated in Fig. 8.

The guide brackets 63 and 64 are of similar construction and one of them, the bracket 63, is illustrated in perspective detail in Fig. 12. It will be seen that the bracket is provided with an opening 80 for the reception of the pivot bolt 67, and screw-threaded openings 81 and 82 for the reception of the screws or bolts 77. As previously stated, the guide brackets are longitudinally slidable along the guide columns at either side of the blind, and to this end it will be noted, see particularly Fig. 5, that the guide brackets are so shaped as to conform to the vertically extending tracks, such as the track 34, extending longitudinally of the guide columns. The arrangement is such that the guide brackets move longitudinally of the column but are prevented from withdrawal therefrom. To facilitate the sliding movement, the guide brackets are provided with non-metallic inserts 83, of fiber or the like. These inserts engage the track surfaces of the guiding columns insuring noiseless and smooth operation.

In accordance with the principles of the invention the guide brackets 63 and 64 are so interconnected and controlled that tilting or jamming of the bottom bar 55 is prevented at all times and under all conditions of operation. To this end bracket 63 has connected to it two tape members 85 and 86, Fig. 7, for controlling its operation, and the bracket 64 is similarly provided with controlling tapes 87 and 88. The tapes 86 and 87 extend upwardly from the brackets, and at their upper ends are anchored, respectively, to

rollers 89 and 90 constituting a part of the roller structure of the blind. On the other hand the tapes 85 and 87 extend downwardly from the guide brackets, over idler rolls 91 and 92, and thence upwardly to be anchored at their upper ends to rollers 93 and 94. The means for anchoring and guiding the tapes will be best understood by reference to Figs. 8 and 9 wherein the details of construction for the left side of the blind are illustrated, it being understood that the structures for both sides are similar. Referring to Fig. 8, it will be seen that the tape member 85 is anchored at its lower end to the pivot pin 67, extends upwardly through the track 34 of the guide column, passes over an idler guide roller or pin 95, and then is wrapped around the roller 89 and anchored thereto by means of a clip 96. Referring to Fig. 9, it will be seen that the tape 85 is connected to the guide bracket by means of a clip 97, extends downwardly through the track 34, around the idler roll 91, then upwardly through the track, over the guide pin or idler roller 98, and then around the roller 93, being anchored thereto by means of a clip 99. The clip 97 is secured to bracket 63 by means of a bolt 100 adapted to fit into a screw-threaded opening 101, Fig. 12, formed in the bracket. The idler roll 91 is journaled within the metal bracket 46, Fig. 6, which has previously been described, the tape passing through the openings 49 and 50 of the bracket.

The rollers 93 and 94 are fixed to a shaft 105, Fig. 7, extending across the blind and journaled at its ends in the side frames 22 and 23, the rollers thus being rigidly connected for corresponding movement at all times. A sleeve 106 is loosely journaled on shaft 105, and the roller 89 is secured to this sleeve at its left-hand end. The right-hand end of the sleeve 106 is in turn secured to a spring housing 107, and the roller 90 is fastened to this spring housing, so that rollers 89 and 90 are thus similarly rigidly connected together for simultaneous and corresponding movement. A coil spring 108, Figs. 7 and 11, is arranged within the spring housing 107, being connected at its outer end to the spring housing and at its inner end to the shaft 105. The spring is so arranged that it tends to rotate the shaft and the rollers 93 and 94 counterclockwise as seen in Fig. 9, and the sleeve 106 and the rollers 89 and 90 clockwise as seen in Fig. 8, whereby to continuously apply a predetermined tension to the tapes 85, 86, 87 and 88. Tapes 85 and 87 are wound counterclockwise on rollers 93 and 94, whereas tapes 86 and 88 are wound clockwise on rollers 89 and 90.

By virtue of the construction provided, as the bottom bar is raised or lowered, the tapes 85, 86, 87 and 88, and their associated roller devices, together with the spring 108, will at all times prevent the bar from tilting or jamming; and this is true even though the operating force to raise or lower the bar is applied non-symmetrically as for example at one end thereof. Assume, for example, that the left-hand end of the bar is raised, this will result in a pulling action on the tape 85 and a release of the tape 86. As tape 85 is pulled, a similar increment of movement is imparted through the interconnected rollers to the tape 87 at the right-hand end of the blind, thus freeing the right-hand end of the bottom bar for upward movement. Simultaneously, as the tape 86 is released, the spring 108 acts upon tape 88 to impart a lifting action thereto, thus imparting an upward lift to the right-hand end

of the bottom bar and maintaining the bar in horizontal position. Similar actions occur as the operating bar 55 is moved either upwardly or downwardly, so that the bar is at all times maintained in horizontal and proper position even though non-symmetrical operating forces are manually applied to the bottom bar structure.

As the blind is raised or lowered, slight relative motion takes place between the two sets of rollers, as for example between the rollers 90 and 94, due to possible differences in roller size, thickness of tapes, et cetera. The spring 103 takes care of this relative movement, which is small in proportion to the capacity of the spring so that the spring tension is not materially changed.

A friction block 110, Figs. 7 and 8, urged into engagement with roller 89 by means of a pair of compression springs 111 and 112, applies a predetermined frictional resistance to movement of the bottom bar. This frictional resistance, which is uniform in all adjusted positions of the structure, insures the maintenance of the bottom bar in proper adjusted position. In the event that it may be desirable to releasably latch the bottom bar in its uppermost position, a pair of friction latches 113 and 114, Fig. 7, may be additionally employed. These latches engage guide blocks 63 and 64, and releasably maintain the bottom bar in its extreme uppermost position.

To effect the tilting of the slats and the cross piece 57 to various desired angular positions of adjustment, an additional sleeve 116, Fig. 7, is provided loosely journaled upon the sleeve 106. Fixed to the sleeve 116, adjacent its opposite ends, is a pair of brackets 117 and 118, Figs. 7 and 10, which support the upper ends of the tilting tapes 60. It will be seen that as the sleeve 116 is rotated in one direction or the other, the tapes 60 will be operated by brackets 117 and 118 to effect the desired angular adjustment of the slats.

To effect the rotational movements of sleeve 116, the left end of the sleeve, as seen in Fig. 7, is provided with a worm gear 119, Figs. 7 and 10, operable by a worm 120 and an associated manually operable crank member 121, Figs. 10 and 1. Bearing brackets 123 and 124, fixed to the rear plate 37, rotatably support the sleeve 116, thus providing additional bearing support for the sleeves 106 and 116 and for the shaft 105.

The detailed structure of the slats or closure members is shown in Figs. 13 and 14. As illustrated, these slats or closure members comprise main elongated body portions 56, the opposite longitudinal edges of which are provided with binding members as indicated at 126 and 127. In accordance with the principles of the invention the elongated bodies 56 of the closure members are preferably formed of metal or plastics, whereas the binding members are preferably of wood; and the manner in which the bodies and binding members cooperate to produce a composite slat structure of improved strength and operating characteristics is illustrated in Fig. 20. Metals and plastics materials possess certain properties which are very desirable for use in the closure members of blind structures. For example, metals may be polished or plated whereby to provide highly reflective and ornamental slat surfaces. Plastics materials may be produced in various desired colors and surface effects, and they may be made translucent to enhance their ornamental and functional characteristics. However, slats of metal or plastics materials, when made of thin light-weight con-

struction, have the disadvantage that they tend to sag or bend, although they are resistant to forces tending to produce breakage or rupture in localized areas. On the other hand, wood while subject to breakage or splitting within localized areas, is resistant to over-all bending or sagging, particularly when it is formed in cross section like the binding members 126 and 127. Accordingly it will be seen that in accordance with the principles of the invention, the composite slat structure is of improved strength and operating structural characteristics. More particularly, the binding members keep the slat from sagging or bending, whereas the bodies, which as stated are resistant to rupture or sharp bending within localized areas, reinforce the wooden binding members along their lengths whereby to prevent their rupture or breakage. In Fig. 20 the composite slat structure is shown in solid lines, whereas the body 56, as it would be subjected to bending in the absence of binding members, is illustrated in dotted lines.

To further improve the operating structural characteristics of the closure members, each slat at the opposite end thereof is provided with an end attachment member, one of which is illustrated in Figs. 13 and 15 and indicated by the reference numeral 130. In Fig. 15 the detailed structure of the attachment member is illustrated, and in Fig. 13 the member is shown as a part of the slat structure. The attachment member, which is held in position at the end of the slat by means of the binding members 126 and 127, is preferably formed of fiber or the like, and of light-weight or thin construction. A slot 131 extends transversely of the attachment member, and cooperates with a central cutout to form a pair of oppositely disposed tab portions 132 and 133. Due to the slot 131, and the light-weight or thin construction of the attachment member, the tabs 132 and 133 are flexible so that they may be relatively easily bent from their normal coplanar position. These tabs lie on opposite sides of the tapes 86 and 88, Figs. 4 and 7, and it will thus be seen that as the slats are tilted to extreme angular positions, approximately a vertical position, the tabs 132 and 133 will readily yield slightly whereby to avoid binding with the tapes. Accordingly, the slats may be vertically shifted without frictional drag, even when in substantially vertical position, insuring ready and easy operation of the blind structure in all angular positions of adjustment of the closure members.

The attachment members are further provided with slots as indicated at 134 and 135, Fig. 15, whereby to provide tab portions 136 and 137 upon which bumper rings 138 and 139 of rubber or like material may be mounted. These bumper rings engage the guide surfaces such as indicated at 40 and 42, Fig. 4, of the guiding columns, insuring noiseless operation of the structure. The bumper rings are also slightly thicker than the binding members 126 and 127, as best shown in Fig. 19, whereby to preclude contact between the slats, even when brought into directly superposed position.

In Figs. 16 and 17 an embodiment is illustrated wherein the slats 56a are entirely of one material, such as wood, rather than of composite construction, and the attachment members 130a are seated within slots 140 formed arcuately within the ends of the slats. To this end the attachments are provided with arcuate projecting inner portions as indicated at 141 which fit into the slots 140, the attachment

members being held in position by screws or the like as indicated at 142.

In Fig. 18 a still further embodiment is illustrated wherein the slat is of composite construction, being formed of a body 56b and binding members 126b and 127b, but wherein the attachment member or piece 130b is formed integrally with the slat body.

The operation of the blind structure is believed to be clear from what has heretofore been said, but may be briefly summarized as follows:

The blind, and more particularly the bottom bar 55, will be held in any adjusted position by the friction shoe 110, and additionally may be releasably latched in the uppermost positions by the latch devices 113 and 114. The bottom bar may be adjusted vertically by application of manual force thereto, and this force may be applied at any point along the length of the bar without bar tilting or jamming, due to the action of the tapes 85, 86, 87, 88 and the associated roller and spring structures. In other words, the bottom bar structure is self-aligning at all times and under all conditions of operation. Immediately as the operating force tending to move the bottom bar is released, the movement of the bar will immediately and automatically stop, and thereafter be retained in the proper adjusted position. The bottom bar and the slats or closure members 56 will be retained and guided at all times by the guiding columns with which the ends of the slats are interengaged, and by the guide blocks 63 and 64 to which the ends of the bottom bar are connected. This guiding arrangement precludes either the bottom bar or the slats from moving away from proper operating position, and also precludes rattling and insures noiseless operation. The bumpers 138 and 139 further insure noiseless operation of the slats, and the flexible tabs 132 and 133 of the attachment members permit ready vertical shifting of the slats even when in extreme tilted position. The slats and the cross piece 57 of the bottom bar structure may be adjusted to desired angular position by means of the crank 121. The bumper piece 75 associated with the bottom bar and the cooperating curvatures of the bottom bar members 57 and 71, 72 and 73 insure a light-tight bottom bar construction, so that when the slats 56 are shifted into substantially vertical position, a light-tight blind structure is provided. When it is desired to move the blind structure to inoperative position, the blind with its associated frame may be pivoted bodily into and retained in inoperative position as indicated in Fig. 2. By removal of the hinge pins 16 and the toggle control links, the entire blind frame structure 15 is removable as a unit from the wall support.

It is to be understood that the blind structure may be adapted for horizontal rather than vertical operation, or, if desired, the bar herein referred to as the bottom bar could be arranged at the top of the blind structure, and be movable upwardly to extend the slats or move them to spaced position. If desired, power means could be substituted for mechanical force, in the operation of the structure.

It is obvious that various changes may be made in the specific embodiments of the invention set forth for purposes of illustration, without departing from the spirit of the invention. Accordingly the invention is not to be limited

to the precise embodiments shown and described, but only as indicated in the following claims.

The invention is hereby claimed as follows:

1. A closure structure comprising a closure member adapted to be drawn across an opening to be closed, said closure member being slidably shiftable in opposite directions of travel, a frame for supporting the closure member and for guiding it in its movements, and a support structure for supporting the frame, said frame and closure member being bodily shiftable as a unit with respect to said support structure from an operative to an inoperative position.

2. A closure structure comprising a closure member adapted to be drawn across an opening to be closed, said closure member being slidably shiftable in opposite directions of travel, a frame for supporting the closure member and for guiding it in its movements, a support wall for supporting and enclosing the frame, and means for pivotally mounting the frame upon the wall whereby the frame is pivotally movable with respect thereto as a unit with the closure member between operative and inoperative positions.

3. A Venetian blind structure comprising a series of superposed slats and an operating bar disposed beneath said slats and vertically reciprocable to control the lifting of said slats, means for guiding the operating bar in its movements, and control means associated with said guide means for maintaining the opposite ends of the bar in relatively horizontal disposition, said control means comprising a control member connected to each end of the bar for controlling the movement thereof, and means resiliently connecting said control members.

4. A closure structure comprising a series of aligned closure members adapted to be moved across an opening to be closed, a bar for controlling the movements of said closure members, said bar being slidably shiftable in opposite directions of travel, guide means for guiding the movements of the bar, and control means associated with the guide means for preventing jamming or tilting of the bar, said control means comprising a pair of elongated flexible members connected to each end of the bar and extending in opposite directions therefrom, and means interconnecting corresponding elongated flexible members at each end of the bar for simultaneous movement.

5. A closure structure comprising a series of aligned closure members adapted to be moved across an opening to be closed, a bar for controlling the movements of said closure members, said bar being slidably shiftable in opposite directions of travel, guide means for guiding the movements of the bar, and control means associated with the guide means for preventing jamming or tilting of the bar, said control means comprising a pair of elongated flexible members connected to each end of the bar and extending in opposite directions therefrom, and means comprising connected rollers upon which the ends of the elongated flexible members are wound, and a spring interconnecting the rollers, for interconnecting corresponding elongated flexible members at each end of the bar for simultaneous movement.

6. A closure structure comprising a series of aligned closure members adapted to be moved across an opening to be closed, a bar for controlling the movements of said closure members, said bar being slidably shiftable in opposite directions of travel, guide means for guiding the movements of the bar, and control means associated with the

guide means for preventing jamming or tilting of the bar, said control means comprising a pair of elongated flexible members connected to each end of the bar and extending in opposite directions therefrom, interconnected rollers upon which the ends of the elongated flexible members are wound, and a friction brake member associated with at least one of said rollers.

7. A blind structure comprising a series of superposed slats, an operating bar for controlling the movements of the slats, said bar being reciprocally shiftable in opposite directions of travel, and said bar including oscillatable and non-oscillatable portions, means interconnecting the oscillatable portion of the bar with the slats, and means for adjusting said last named means whereby said oscillatable bar portion and said slats may be adjusted to various angular positions.

8. A blind structure comprising a series of superposed slats, an operating bar for controlling the movements of the slats, said bar being slidably shiftable in opposite directions of travel, and said bar having an oscillatable portion and a non-oscillatable portion, a guide frame, guide tracks in the guide frame arranged along the path of travel of the operating bar, guide brackets adapted for movement along the guide tracks and interengaged therewith, and means for connecting the opposite ends of the operating bar to said guide brackets.

9. A slat for blinds and the like comprising an elongated relatively flat body member of one material, attachment members at the ends of the body of different material, and binding members disposed along the opposite edges of the slat, said binding members being provided as elements separate from the slat body and serving to hold the attachment members in position.

10. A slat for blinds and the like comprising an elongated, relatively flat, metallic body member, and wood binding members disposed along the opposite edges of the body and secured thereon.

11. A slat for blinds and the like comprising an elongated, relatively flat, body member of plastics material, and wood binding members disposed along the opposite edges of the body and secured thereon.

12. A blind structure comprising a series of superposed slats, said slats being shiftable in opposite directions of travel and said slats also being pivotally mounted for movement on their longitudinal axes to various adjusted positions, aligned openings in said slats, an elongated member extending through the openings for controlling the movements of the slats, said openings comprising a principal aperture through which said elongated member extends and a cut away opening juxtaposed to the principal aperture and extending transversely of the slat whereby to provide flexible tab portions adjacent the principal aperture to facilitate angular adjustment of the slats.

13. A blind structure comprising a series of superposed slats, said slats being shiftable in opposite directions of travel and said slats also being pivotally mounted for movement on their longitudinal axes to various adjusted positions, attachment members connected to the ends of the slats, aligned openings in said attachment members, an elongated member extending

through the openings for controlling the movements of the slats, said openings comprising a principal aperture through which said elongated member extends and a cut away opening juxtaposed to the principal aperture and extending transversely of the slat whereby to provide flexible tab portions adjacent the principal aperture to facilitate angular adjustment of the slats.

14. A closure structure as defined in claim 2, wherein latch means is provided for retaining the frame in inoperative position.

15. A Venetian blind structure as defined in claim 3, wherein said control members comprise elongated flexible members extending longitudinally of the guide means.

16. A blind structure comprising a series of superposed slats, an operating bar for controlling the movements of the slats, said bar being slidably shiftable in opposite directions of travel, a guide frame, said guide frame having guide tracks arranged along the path of travel of the operating bar and the slats, guide brackets longitudinally slidable in said guide tracks, and means interconnecting the guide brackets and the ends of said operating bar, said guide brackets being provided with projecting non-metallic inserts adapted for sliding engagement with the guide tracks.

17. A blind structure comprising a series of superposed slats, an operating bar for controlling the movements of the slats, said bar being reciprocally shiftable in opposite directions of travel, and said bar including oscillatable and non-oscillatable portions, the oscillatable portion being mounted for oscillating movement about an axis extending longitudinally of the bar and being provided with a curved surface substantially concentric with said axis, and said non-oscillatable bar portion being mounted in juxtaposition to said curved surface, and means interconnecting the oscillatable portion of the bar with the slats for oscillatable movement therewith.

18. A blind structure as defined in claim 17, wherein the surface of the non-oscillatable bar portion juxtaposed to the curved surface of the oscillatable bar portion is recessed to conform thereto and is in close proximity therewith whereby to preclude the penetration of light between the oscillatable and non-oscillatable bar portions.

19. A slat for blinds and the like comprising an elongated relatively flat body member, binding members disposed along the opposite edges of the body member, and bumper members of rubber-like material provided individually at each side of the body and at each end thereof in alignment with said binding members.

20. A slat for blinds and the like comprising an elongated relatively flat body structure, the body structure being provided at each end thereof with cut away sections juxtaposed to each side edge of the body and extending longitudinally thereof whereby to provide tabs at each end of the body structure and at each side thereof extending longitudinally of the body, and a ring of rubber-like material mounted on each of said tabs to provide bumper means for the ends of the slat.

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