Aug. 19, 1952 L. CHARTOFF 2,607,090

DUSTLESS BLIND STRUCTURE

Filed Nov. 30, 1948 2 SHEETS—SHEET 1

Fig. 1.

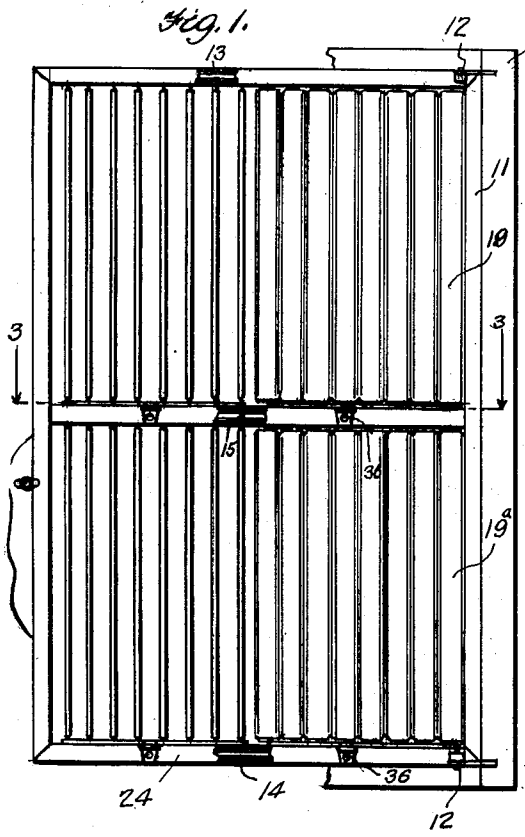


Fig. 2.

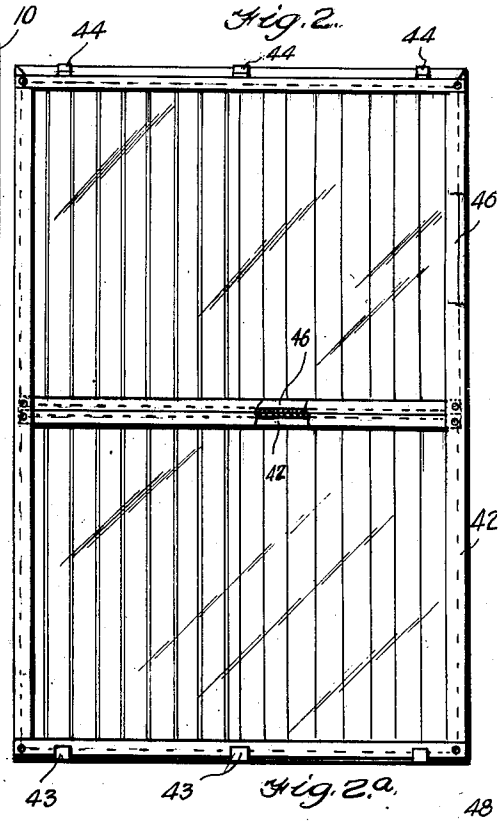


Fig. 2a.

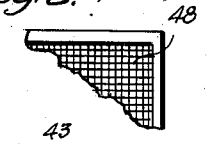


Fig. 3.

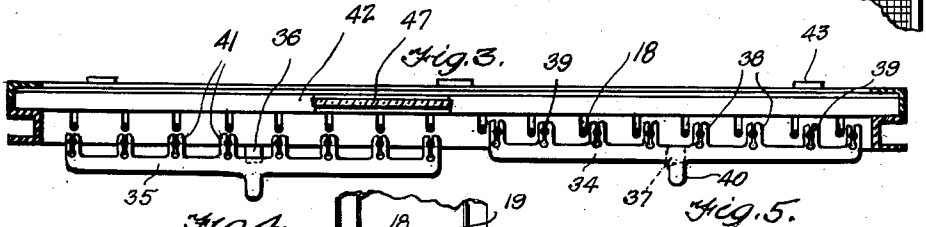


Fig. 4.

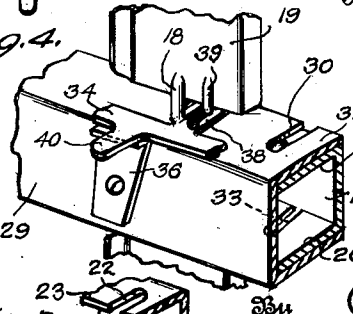


Fig. 5.

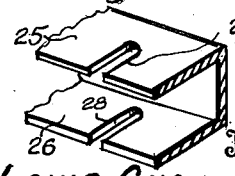


Fig. 6.

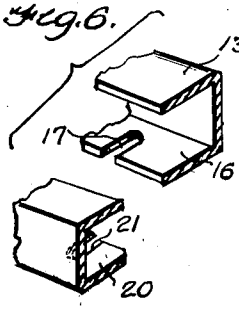
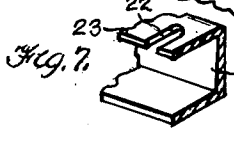


Fig. 7.



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Aug. 19, 1952 L. CHARTOFF 2,607,090

DUSTLESS BLIND STRUCTURE

Filed Nov. 30, 1948 2 SHEETS—SHEET 2

Fig. 8.

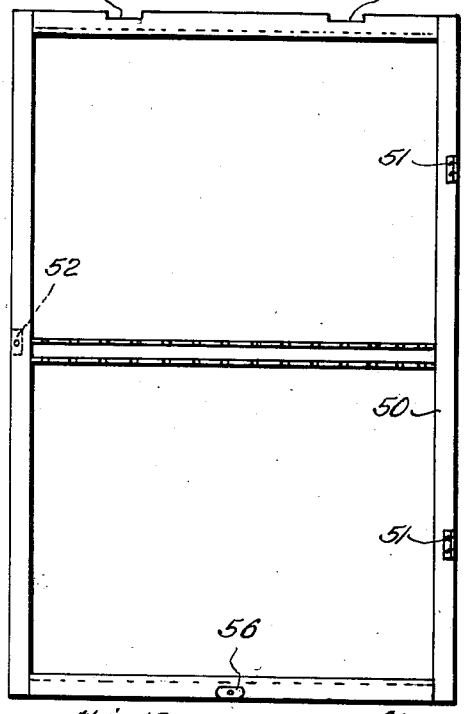


Fig. 9.

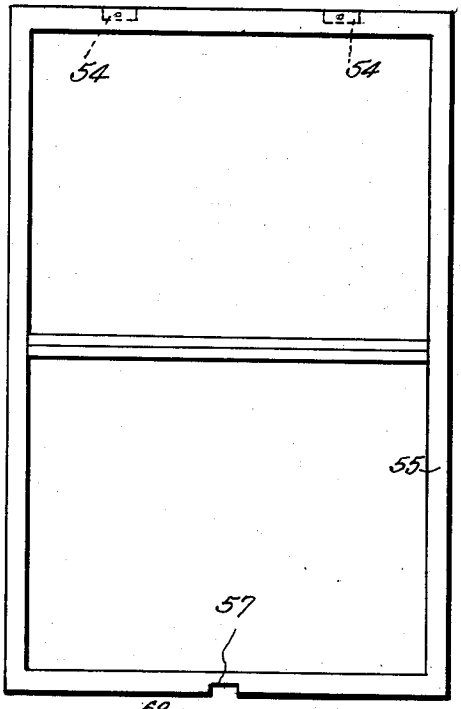


Fig. 10.

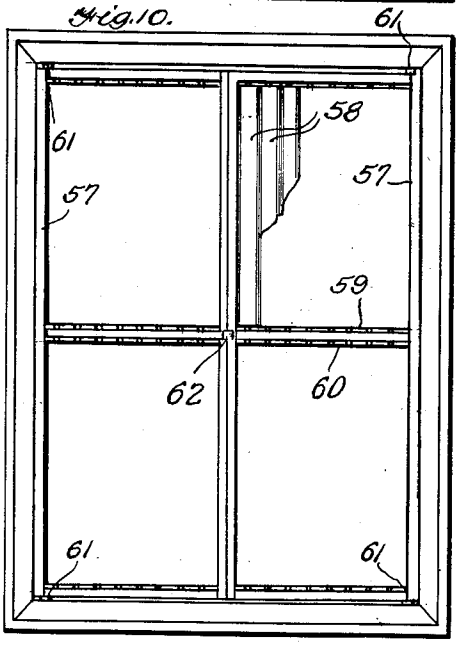


Fig. 12.

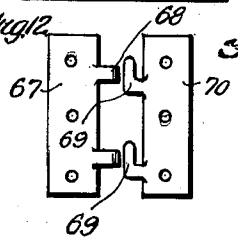


Fig. 13.

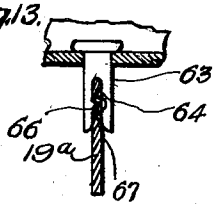


Fig. 11.

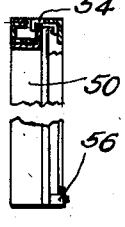
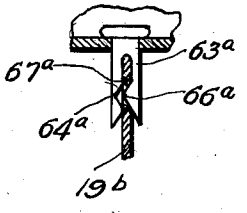


Fig. 14.



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DUSTLESS BLIND STRUCTURE

Louis Chartoff, New Haven, Conn.

Application November 30, 1948, Serial No. 62,780

4 Claims. (Cl. 20—62)

1

This invention relates to a dustless blind structure, and has for one of its objects the production of a simple and efficient blind, storm sash, and window screen assembly wherein the storm sash may be easily replaced by the window screen and vice versa when desired.

A further object of this invention is the production of a simple and efficient actuating means for shifting the louvers or slats to and from an open or closed position.

Another object of this invention is the production of a simple and efficient means for locking the removable louvers or slats in an operative position upon the supporting frame.

Other objects and advantages of the present invention will appear throughout the following specification and claims.

In the drawings:

Figure 1 is an elevational view of the blind looking at the inside face thereof, a certain portion of the window frame also being shown;

Figure 2 is an elevational view looking at the outside face of the blind, and showing the storm sash in position;

Figure 2ª is a fragmentary elevational view of a window screen panel which may replace the storm sash panel;

Figure 3 is an enlarged horizontal sectional view of the blind structure taken on line 3—3 of Figure 1;

Figure 4 is a fragmentary sectional perspective view showing portions of an upper and lower slat or louver, the actuating bar and the central slat supporting means;

Figure 5 is a fragmentary sectional perspective view of the central slat journal channel member;

Figure 6 is a group fragmentary sectional perspective view of the top slat journal channel member and closure channel;

Figure 7 is a fragmentary sectional perspective view of the bottom slat journal channel member of the blind assembly;

Figure 8 is a plan view of a slightly modified form of slat supporting frame;

Figure 9 is a plan view of a slightly modified form of screen and storm sash supporting frame;

Figure 10 is a plan view of a further modified form of a blind supporting frame, illustrating a pair of oppositely hinged sections;

Figure 11 is a fragmentary vertical sectional view illustrating the manner in which the frame shown in Figure 9 is assembled with the frame shown in Figure 8;

Figure 12 is a group elevational view illustrating a modified type of hinge which may be used to hinge the blind frame to a window frame;

2

Figure 13 is a fragmentary vertical sectional view of a slat showing a modified type of slat supporting journal pin;

Figure 14 is a fragmentary perspective vertical sectional view of a slat showing a still further modified type of supporting journal pin.

By referring to the drawings, it will be seen that 10 designates a conventional window frame, within which is hinged the blind frame 11 by means of suitable hinges 12. The blind frame 11 includes a top slat journal channel 13, a bottom slat journal channel 14 and an intermediate slat journal channel 15, shown in detail in Figures 5, 6 and 7. The channel 13 is provided with a bottom flange 16 having inwardly extending slots 17 into which the journal ends 18 of the vertical slats 19 removably fit. After the journal ends 18 have been placed in the slots 17, the retaining channel 20 is fitted over the front open face of the journal channel 13. The retaining channel 20 is provided with transverse slots or notches 21 which register with the notches or slots 17 and lock the journal ends 18 of the slats 19 within the notches 17. The notches 21 and 17 extend in overlapping relation when the channels 13 and 20 are assembled, the notches 21 having their open ends extending in a direction opposite to the open ends of the notches 17, as shown in Figure 6. The journal ends 18 are of sufficient length to be retained within the notches 17 and thereby prevent accidental displacement of the slats or louvers 19. The retaining channel encases the open face of the channel 13 when the channels are assembled. The bottom channel 14 is constructed in a manner similar to the channel 13 with the exception that the journal end receiving notches 22 are formed in the upper flange 23 thereof. The open face of the bottom channel 14 is encased by a closure channel 24 similar to the channel 20 and is provided with suitable notches to register with the notches 22 to facilitate the locking of the bottom slat journals in position upon the bottom channel 14.

The intermediate channel 15 is provided with upper and lower parallel flanges 25 and 26. The flange 25 is provided with a plurality of spaced notches 27 and the lower flange 26 is provided with similar spaced notches 28 in vertical alignment with the notches 27. A closure channel 29 encases the open face of the channel 15 and is provided with suitable notches 30 in the upper flange 31 thereof which register with the notches 27 to lock the journal ends of the slats 19 in position. The lower flange 32 is provided with similar notches 33 which register with the notches 28 to hold the top journal ends of the lower group of slats 19ª in place.

The slats 19 are preferably divided into two groups, one group being secured to an actuating bar 34 and the other group being secured to the actuating bar 35, as shown in Figure 3. These actuating bars 34 and 35 are slidably mounted upon the top flange 31 of the retaining channel 29. Bracing brackets 36 and 37 are secured to the front face of the channel 31 to provide a support for the actuating bars when they are moved outwardly upon the channel 29, note the position of bar 35 in Figure 3. The actuating bar 34 is provided with inwardly extending split spring fingers 38 which releasably engage the depending actuating pins 39 carried by the slats 19. A suitable operating handle 40 extends outwardly of the actuating bar 34 to facilitate the operation of the bar. The pin 39 of each slat 19 is off-set laterally relative to the journal end 18 thereof so as to act as a crank in conjunction with its engaging finger 38 to rotate the slat 19 as the actuating bar 34 is pulled outwardly and shifted laterally of the frame or longitudinally upon the top flange 31 of the channel 29. This operation will rotate the slats 19 from a closed to an open position, as will be obvious. A reverse operation of the actuating bar 34 will close the slats. The adjacent group of slats are actuated by the bar 35 and this bar 35 is connected to said adjacent group of slats by means of the split spring fingers 41 in a manner as described with respect to fingers 38.

A storm sash and screen supporting frame 42 is detachably secured to the frame 11 and rests upon the upturned hook 43 at the bottom of the frame 11. Securing hooks or means of any suitable type 44 secure the upper end of the frame 42 to the frame 11. A central brace 45 is carried by the frame 42. A removable storm sash 46 is carried by the upper half of the frame 42, and a removable storm sash 47 is carried by the lower half of the frame 42. These sashes 46 and 47 may be replaced when it is desired by screen panels such as the panel 48 a portion of which is shown in Figure 2a.

In Figure 8 there is shown a modified form of blind frame 50 having hinges 51 at one side edge, and a latch 52 at the opposite side edge. The frame 50 is provided with notches 53 at the top edge thereof for receiving the overhanging hooks 54 which are carried by the sash frame 55 of the type substantially similar to the frame 42. The frame 50 is provided with a suitable lock 56 for receiving the notch 57 of the frame 55 to lock the frame 55 against accidental displacement. This lock 56 may be of any suitable construction to retain the frames in assembled relation.

In Figure 10 there is shown a modified form of blind wherein the window frame carries a pair of hinged frames 57, each of which supports an upper group of vertical slats 58, and a similar group of lower slats, one group being supported in the upper frame section 59 and the other in the lower frame section 60. The frames 57 are preferably hinged, as at 61, to the window frame and preferably are latched together by means of a suitable lock or latch 62 at the center.

By hinging the blind frame or frames to the window frame, it should be noted that the blind frame or frames may be swung to provide an opening in the window frame when it is desired, and to permit access to the conventional window carried by the conventional window frame.

In Figure 13 there is shown a modified type of journal pin 63 having an irregular slot 64 for receiving the end of a slat 19a. A tapering tongue 66 extends laterally of the longitudinal axis of the slot 64 and is adapted to fit into the aperture 67 formed in the slat 19a to fasten the journal pin 63 to the slat 19a and thereby avoid the necessity for soldering.

In Figure 14 a further modified form of a journal pin 63a is shown having a zig-zag slot 64a defining a tapering tongue 66a for fitting into the aperture 67a formed in the slat 19b, to avoid soldering. The tongue 66a extends laterally of the longitudinal axis of the slot 64a to lock the pin in position.

The present invention constitutes an improvement upon the structure shown in my co-pending application relating to a Dustless Blind, Serial Number 39,113, filed July 16, 1948, now Patent No. 2,552,406, dated May 8, 1951.

The slats or louvers, by being mounted vertically in the supporting frame will tend to resist the settling of dust thereon, as is the case with transversely supported slats. As will be noted, the slats are so mounted in groups as to turn about their axes by shifting the actuating bars, thereby permitting the adjustment of selected groups to a desired position. For instance, one group may be opened and another group closed, or a selected group may be partly opened at the will of an operator.

Having described the invention, what is claimed as new is:

1. A Venetian blind structure comprising a frame, vertical slats rotatably mounted on said frame upon vertical axes, a depending actuating pin carried by each slat, an actuating bar shiftable laterally of said frame, and a plurality of protruding slotted spring pin engaging fingers detachably engaging said pins of said slats for rotating said slats as said actuating member is shifted laterally.

2. A Venetian blind structure comprising a frame, vertical slats rotatably mounted on said frame upon vertical axes, a depending actuating pin carried by each slat, an actuating bar shiftable laterally of said frame, a plurality of protruding slotted spring pin engaging fingers detachably engaging said pins of said slats for rotating said slats as said actuating member is shifted laterally, and a transverse bar carried by said frame, said actuating bar resting upon said transverse bar and slidable longitudinally and outwardly of the transverse bar and transversely of said frame.

3. A Venetian blind structure comprising a frame, vertical slats rotatably mounted on said frame upon vertical axes, a depending actuating pin carried by each slat, an actuating bar shiftable laterally of said frame, a plurality of protruding slotted spring pin engaging fingers detachably engaging said pins of said slats for rotating said slats as said actuating member is shifted laterally, a transverse bar carried by said frame, said actuating bar resting upon said transverse bar and slidable longitudinally and outwardly of the transverse bar and transversely of said frame, and a bracing bracket carried by said transverse bar and projecting therefrom for supporting said actuating bar beyond the area of the transverse bar.

4. A Venetian blind structure comprising a frame, vertical slats rotatably mounted on said frame upon vertical axes, a depending actuating pin carried by each slat, an actuating bar shiftable laterally of said frame, a plurality of protruding slotted spring pin engaging fingers de-

tachably engaging said pins of said slats for rotating said slats as said actuating member is shifted laterally, and the slot in each finger being irregular in contour to resist accidental detachment from said pins.

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