April 17, 1951 H. J. BRUBAKER 2,549,167

LIGHT CONTROLLING MEANS

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Fig. 1.

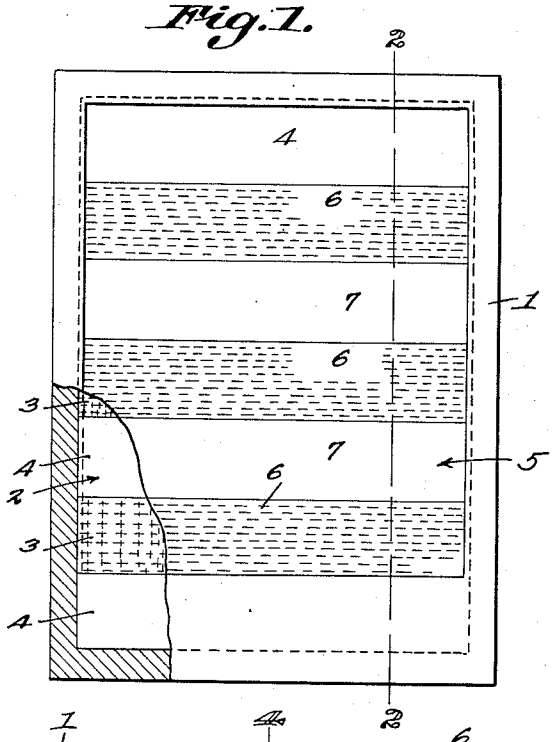
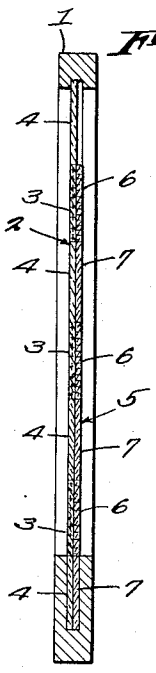


Fig. 2.



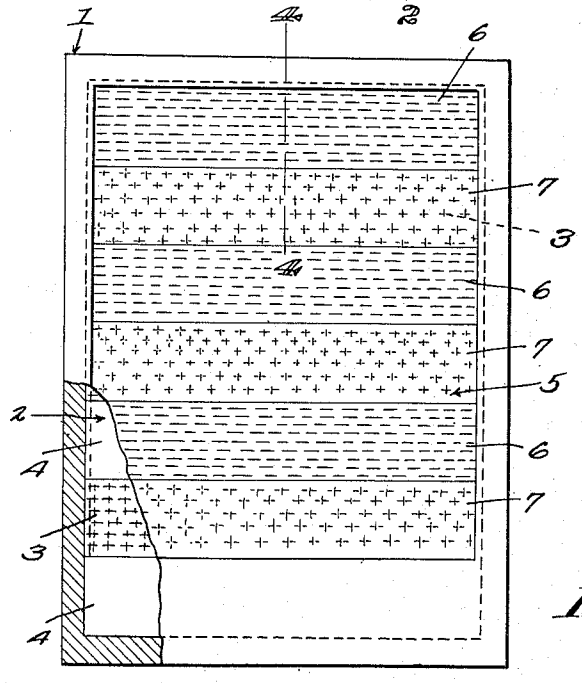


Fig. 3.

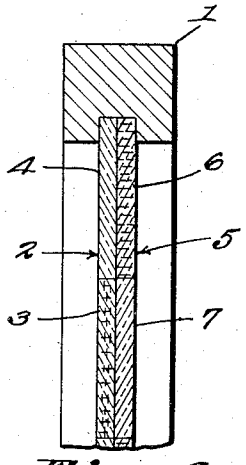


Fig. 4.

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Fig. 5.

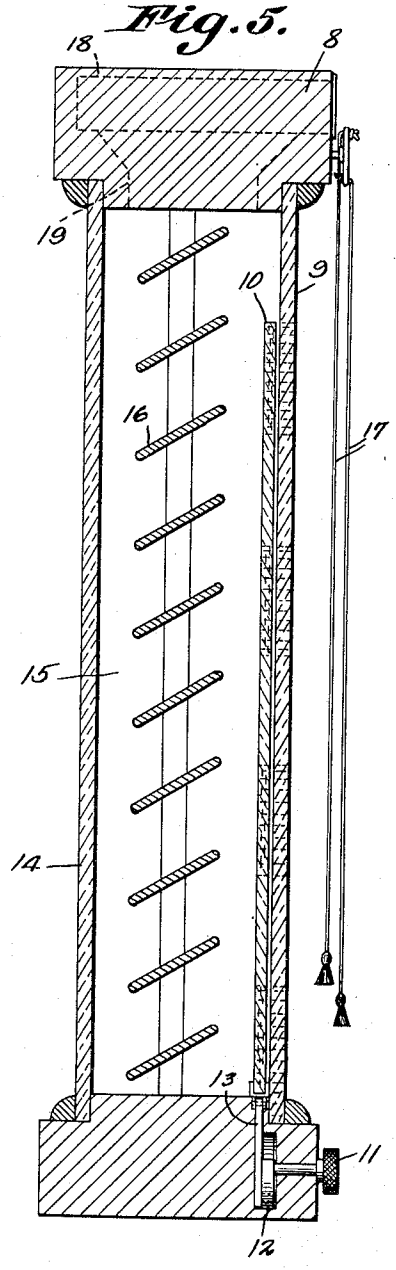


Fig. 6

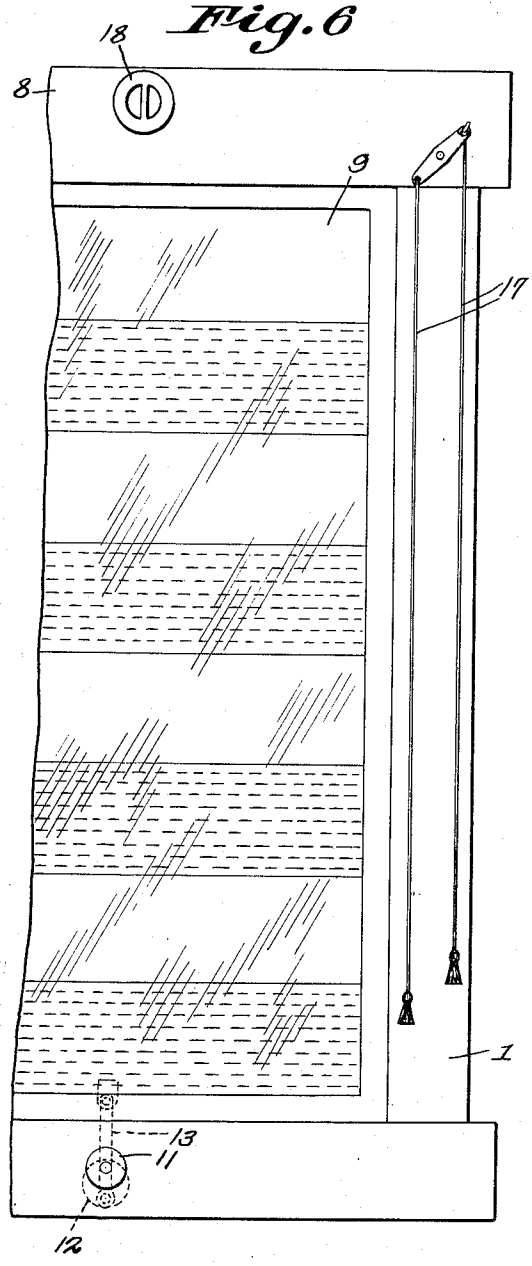


Fig. 7.

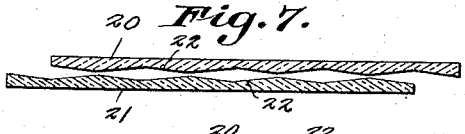




Fig. 8.

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2,549,167

LIGHT CONTROLLING MEANS

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Application November 15, 1945, Serial No. 628,837

1 Claim. (Cl. 20—60)

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This invention relates to light controlling means for use in window frames, door frames, and wherever it might be desired to produce an effect simulating that produced by Venetian blinds.

It is an object of the invention to produce a device made up of separate relatively movable panels disposed in lapped relation, each panel being formed of successively arranged strip-like areas of transparent and translucent or opaque material whereby, by shifting one of the panels in one direction relative to the other panel, the transparent portions thereof can be brought into position where they lap and are shut off by the translucent or opajue portion, thereby to entirely or partly exclude light rays from passage through the structure.

It is a further object also to so mount these panels that when they are moved to another position, the transparent portions of the two panels will coincide so that the result will be the formation of spaced translucent or opaque areas between which are located transparent areas.

Another object is to provide a structure of this character with which ordinary Venetian blinds can be combined if so desired.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claim, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

In the accompanying drawing, the preferred forms of the invention have been shown.

In said drawing,

Figure 1 is a front elevation of a structure embodying the present invention, a portion being broken away.

Figure 2 is a section on line 2—2, Figure 1.

Figure 3 is another view similar to Figure 1, showing the relative positions of the panels when shifted to exclude or reduce the flow of light rays through the structure.

Figure 4 is an enlarged section on line 4—4, Figure 3.

Figure 5 is a vertical section through a modified construction which includes a Venetian blind.

Figure 6 is a front elevation of a portion of the structure shown in Figure 5.

Figure 7 is a section through two relatively

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movable thicknesses of sheet material which could be used in lieu of the arrangement shown in Figures 1–4 inclusive, these being positioned relative to each other in such a manner as to prevent vision therethrough.

Figure 8 is a similar view showing the sheets positioned to permit vision through them.

It is to be understood, of course, that the present improvements have many applications. They can be used to simulate Venetian blinds in window openings, door openings, and at other desired points. In the drawings, there has been shown a window frame 1 having the usual panel-receiving opening and continuous groove for mounting a panel within the opening, and fixedly mounted in this frame is a panel 2 formed of glass, plastic, or any other material through which light rays can flow freely. Portions of this panel, however, are etched, colored, or otherwise formed so as to exclude or break the light rays, these light excluding or retarding portions being in the form of strips 3 extending across the panel and spaced apart distances equal or substantially equal to the width of these strip-like portions. The remaining portions of the panel which are located between the portions 3 retain the characteristic of permitting the flow of light rays therethrough and also simulate strips 4 extending along lines parallel with the strip-like portions 3. The strip-like portions 3 can completely or only partially obstruct the passage of light rays therethrough while the remaining strip-like portions 4 can be transparent or translucent. It is merely essential that the strip-like portions 3 differ from the strip-like portions 4 either in color, configuration, or otherwise so that light rays flowing through the portions 4 will differ from those, if any, permitted to flow through the portions 3.

A second panel 5, preferably though not necessarily like the panel 2, is mounted in the same groove of frame 1 and this panel, in the structure illustrated, not only bears against the panel 2 but is also slidable therealong on lines perpendicular to the length of the portions 3 and 4. Thus when panel 5 is in one extreme position, the light excluding or retarding portions 6 thereof will be located upon the corresponding portions 3 of panel 2 while the clear or translucent portions of the two panels will be supported one upon the other. Thus a slat effect such as produced by Venetian blinds, will be secured inasmuch as light rays can flow freely through the lapping clear or translucent portions while the light rays will be greatly retarded

or cut off altogether by the remaining portions 3 and 6. By shifting the movable panel 5 away from the position shown in Figure 2, the dark portions of the two panels can be caused to overlie the clear or translucent portions either entirely or partially, thereby controlling the flow of light rays through these latter portions 4 and 7. These relative positions of the parts have been indicated at Figures 3 and 4 wherein the flow of light rays has been interrupted by the location of the opaque or dark portions back of the clear or translucent portions. It is to be noted that these results are obtained without variance from conventional frame construction other than to make the panel-receiving groove of the window frame sufficiently wide transversely to receive the two panels, the panels each comprising a stop limiting front-to-back deviation of the other.

To secure a desired contrast between the portions 3 and 4 and the portions 6 and 7 of the panels, some of these portions can be mottled, etched or colored while the remaining portions can be left untreated. Obviously, various modifications may be made and in any case it is designed that relative movement of the two panels will result in partial or entire cutting off of light rays to a degree dependent at all times upon the extent of the transparent or translucent areas exposed between the dark or opaque areas of the opposed panel.

The panels can be shifted relative to each other by any suitable means provided for that purpose.

It has been found in practice that by equipping windows with relatively movable panels made up of slot-like portions, a very satisfactory Venetian blind effect is obtained.

While this invention as thus far described is designed for the purpose of dispensing with the use of Venetian blinds, it is to be understood, that, if desired, a Venetian blind can be combined therewith as shown, for example, in Figures 5 and 6. In those figures, the window casing or frame has been indicated at 8 and the relatively fixed and movable panels 9 and 10 respectively are located in one side of the frame. These panels are of the same construction as has already been described in connection with panels 2 and 5 so that by shifting panel 10 relative to panel 9 the passage of light rays through the window can be controlled. A means for operating the movable panel has been indicated in Figures 5 and 6 where a knob 11 rotates a disk or crank 12 connected by a link 13 to the panel 10. By rotating the knob, this panel can be moved upwardly or downwardly relative to the fixed panel. In this modified structure, the other side of the window frame is closed by a panel 14 of ordinary transparent glass and the space 15 thus defined by the panels contains an ordinary Venetian blind 16 suspended from the top of the frame 8 and adapted to be actuated by the usual control cords 17. Thus the frame is equipped not only with means for controlling the flow of light as heretofore explained, but also with a Venetian blind by means of which better control of light is effected than should the panels only be employed. In other words, all light can be shut out, all light can be admitted without vision, all or partial light can be admitted and all or partial vision through the window can be permitted.

For the purpose of preventing accumulation of moisture in the sealed space 15, a cartridge of air drying material can be inserted in the frame at a point where it is in communication with the space 15. In the drawing this cartridge has been indicated at 18 and the passage through which it communicates with space 15 has been indicated at 19.

In Figures 7 and 8 there has been shown a structure which can be used in lieu of the form illustrated in Figures 1 and 2. In this modified structure, two relatively movable sheets of glass or the like have been indicated at 20 and 21. Each of these sheets has a prismatic surface 22. The two sheets are duplicates and one is disposed oppositely to the other. Thus, when the sheets are located as in Figure 7 so that their prismatic surfaces are not complementary to each other, the vision through the sheets is interrupted. However, by bringing the two sheets into positions where their prismatic surfaces are complementary, as in Figure 8, it is possible to see clearly through the sheets.

What is claimed is:

The combination, with a window frame having a rectangular panel-receiving opening, there being a single continuous groove formed in the inner surface of the frame and in communication with said opening, of fixed and movable panels mounted in said groove, the fixed panel having all its edges supported within the groove for restraint against up-and-down and side-to-side movement, the movable panel being formed shorter in length than the fixed panel for up-and-down sliding within the groove, said panels bearing against each other and being fitted snugly into the groove and each comprising a stop against front-to-back movement of the other, each panel having spaced parallel light-ray retarding areas and interposed areas affording less obstruction to the passage of light rays, all of the areas being of slat-like proportions, said areas respectively extending in depth through the full thicknesses of the respective panels and being of identical width, the movable panel being adjustable upwardly and downwardly a distance equal to the width of one of said areas.

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