April 24, 1956 R. C. GOODWYN 2,742,681

WINDOW BLINDS

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Fig. 1

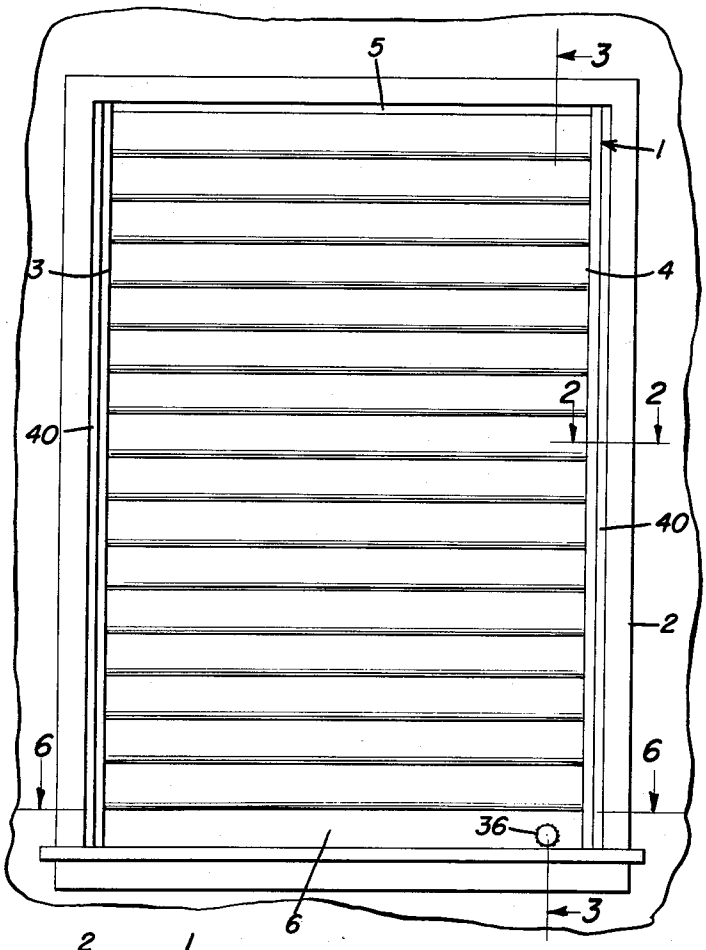


Fig. 2

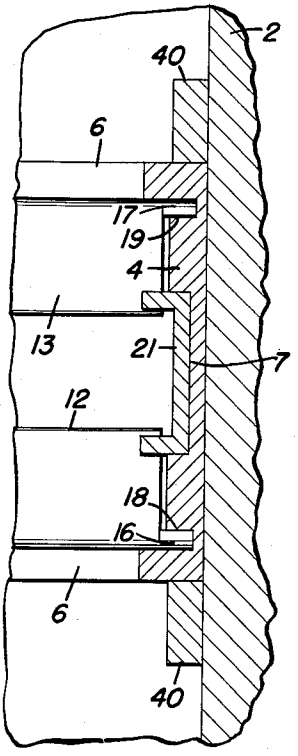
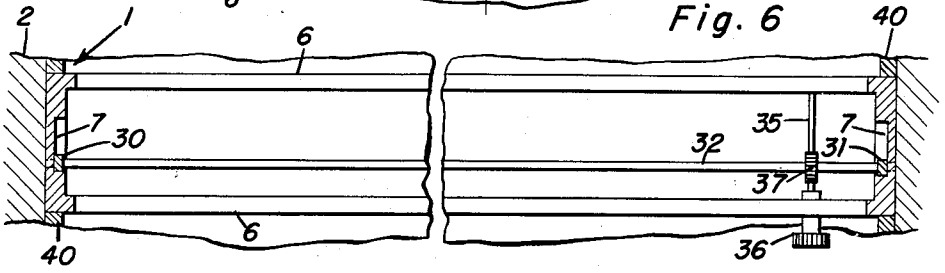


Fig. 6



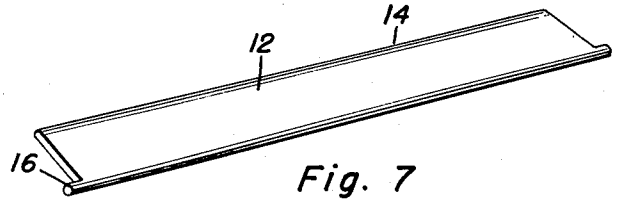


Fig. 7

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Fig. 3

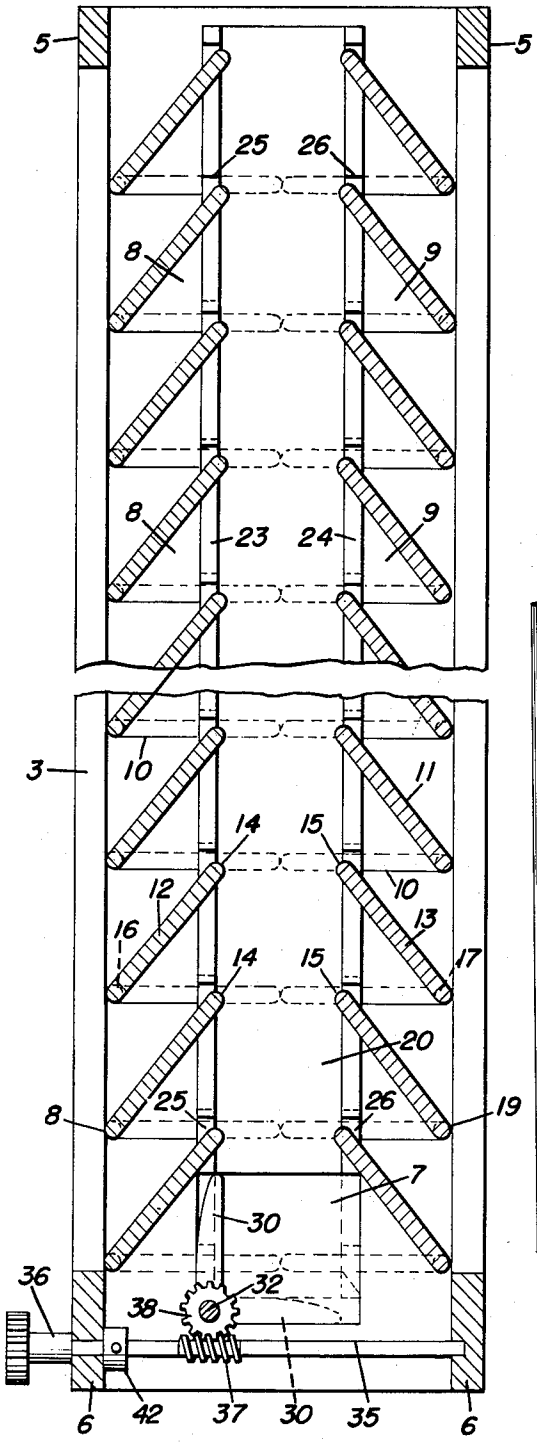


Fig. 4

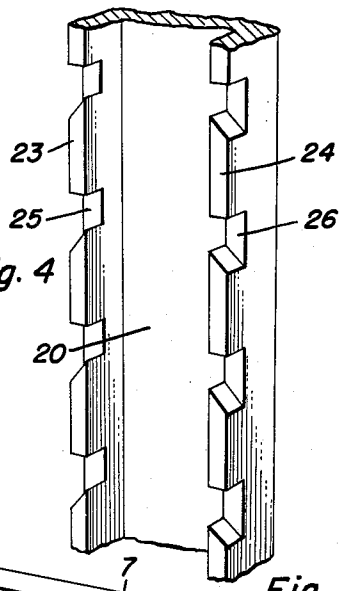
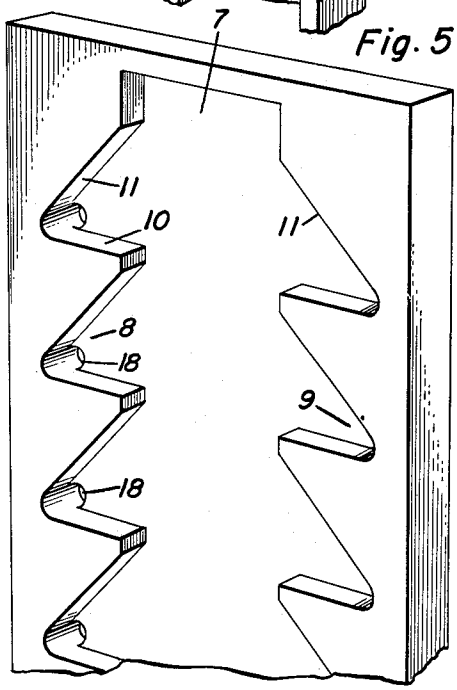


Fig. 5



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WINDOW BLINDS

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Application August 4, 1952, Serial No. 302,513

2 Claims. (Cl. 20—62)

My invention relates to improvements in window blinds of the pivoted slat type.

The primary object of my invention is to provide a blind in which the ends of two opposite series of vertically spaced window blind slats are mounted in notches in the side stiles of a frame for vertical swinging into upward and downward limits of movement established by the notches and such that in the downward limit of movement of the slats clear vision and maximum ventilation may be had through the blind, whereas, in the upward limit of movement of the slats ventilation may be had through the blind but the blind cannot be seen through from either side thereof.

Another object is to provide operating bars for the slats guided for vertical sliding movement in the stiles and each operatively connected to both series of slats, and worm operated cranks for lifting the operating bars to swing the slats upwardly and permitting the bars to lower under the influence of gravity to swing the slats downwardly.

Still another object is to provide such a blind which is simple in construction and comparatively inexpensive to manufacture and install.

Other and subordinate objects, within the purview of my invention, together with the precise nature of my improvements will be readily understood when the succeeding description and claims are read with reference to the drawings accompanying and forming part of this specification.

In said drawings:

Figure 1 is a view in elevation of my improved blind, in the preferred embodiment thereof installed in a window frame, the view being taken looking at the inside of the window;

Figure 2 is an enlarged fragmentary view in transverse section taken on the line 2—2 of Figure 1;

Figure 3 is an enlarged view in vertical section taken on the line 3—3 of Figure 1 and illustrating the blind detached;

Figure 4 is a fragmentary view in perspective of one of the operating bars for the slats;

Figure 5 is an enlarged fragmentary view in perspective of one of the side stiles;

Figure 6 is a view in horizontal section taken on the line 6—6 of Figure 1 and partly broken away, and

Figure 7 is a view in perspective of one of the slats.

Referring to the drawings by numerals, the window blind of my invention comprises a rectangular frame 1 adapted to fit in a window frame 2, for installation therein, and including a pair of like side stiles 3, 4 and top and bottom crossbars 5, 6 connecting said side stiles at the corners thereof with inner sides facing.

The side stiles 3, 4 are provided, in facing sides thereof, respectively, with a vertical central recess 7, and, as shown in Figure 3, in connection with side stile 3, with vertical opposite series of triangular notches 8, 9 at opposite sides of the recess 7 forming pairs spaced oppositely, horizontally, in the pairs and having horizontal

bottoms 10, and sides 11 converging upwardly in the pairs.

Opposite series of vertically spaced, transverse slats 12, 13 in said frame 1, forming pairs oppositely spaced horizontally have the ends thereof extending into said recesses 7 and pairs of notches 8, 9, and are provided with free longitudinal edges 14, 15 extending out of said notches 8, 9.

Trunnions 16, 17 on the ends of the slats 12, 13 at the other longitudinal edges of said slats are rotatably fitted in sockets 18, 19 in said stiles 3, 4 at the apices of the notches 8, 9 whereby said slats 12, 13 are vertically swingable into downward and upward limits of movement. Downward movement of the slats 12, 13 is limited by engagement of said slats with the bottoms 10 of said notches 8 and 9. Upward movement of the slats 12, 13 is limited by engagement of the same with the sides 11 of the notches 8, 9.

As shown in Figure 3, in dotted lines, in the downward limit of movement of the slats 12, 13, the slats of the pairs are disposed horizontally edge to edge so that maximum ventilation and clear vision is provided for between the pairs of slats. In the limit of upward movement of the slats 12, 13, the slats of the pairs converge relatively upwardly, as shown in full lines in Figure 3, the arrangement being such that the pivoted longitudinal edges of each pair of slats 12, 13 are below the free edges 14, 15 of the next lower pair. Therefore, as will be seen, while ventilation between the pairs of slats is provided for, said slats are so arranged that vision is prevented through the blind from either side thereof.

Operating means for swinging the slats 12, 13 upwardly is provided comprising a pair of upright operating bars 20, 21 vertically slidable in the recesses 7 of the side stiles 3, 4 in which said bars are fitted. The operating bars 20, 21 are operatively connected to the slats 12, 13 by means of longitudinal flanges 23, 24 on said bars having vertically spaced notches 25, 26 therein straddling the ends of the slats 12, 13 adjacent the free edges 14, 15 of said slats so that upward movement of said bars 20, 21 swings the slats 12, 13 upwardly.

A pair of crank arms 30, 31 are fixed on a horizontal shaft 32 in the frame 1 journaled at its ends in the side stiles 3, 4 beneath the lowermost pair of slats 12, 13 and the lower ends of the operating bars 20, 21, said arms being vertically swingable upwardly and downwardly, in the recesses 7 in engagement with the lower ends of the operating bars 20, 21, said arms wipingly engaging said ends of the operating bars 20, 21 upon upward swinging of said arms to slide said bar 20, 21 upwardly.

A cross shaft 35 journaled in the bottom crossbars 6 and provided with an operating knob 36 at the inner side of the frame 1 is operatively connected to said shaft 32 by a worm 37 on the cross shaft 35 meshing with the worm wheel 38 on said shaft 32. Upward swinging of the crank arms 30, 31 is limited by engagement of the same with the side stiles 3, 4 at one side edge of the recesses 7, whereas, downward swinging of said arms 30, 31 is limited by engagement of the same with said side stiles at the lower end of the recesses 7.

The frame 1 may be secured in the window frame 2 by any suitable means, for instance, vertical stop strips 40 at opposite sides of said frame 1 suitably secured in the window frame 2.

The cross shaft 35 is held against end play in the frame 1 by the knob 36, and a set collar 42 on said shaft engaging opposite sides of one of the bottom crossbars 6.

The operation of my invention will be readily understood. By turning the cross shaft 35 in one direction, the shaft 32 will be rotated to swing the crank arms 30, 31 into the downward limit of movement thereof, as shown in dotted lines of Figure 3, whereupon the operat-

ing bars **20, 21** will slide downwardly in the recesses **7**, under the influence of gravity, and swing the slats **12, 13** into their downward limit of movement on the bottoms **10** of the notches **8, 9** so that the blind is fully opened for maximum ventilation and clear visibility therethrough. Upon rotation of the cross shaft **35** in the opposite direction, the crank arms will be swung into their upward limit of movement in wiping engagement with the lower ends of the operating bars **20, 21** to slide said bars upwardly, said bars thereby swinging the slats **12, 13** into their upward limit of movement against the sides **11** of the notches **8, 9**. As has heretofore been explained, in this position of the slats **12, 13**, visibility through the blind is prevented, in a manner already described. However, the blind is still partly open to permit ventilation therethrough. Obviously, the slats may be swung upwardly in varying degrees between the downward and upward limits of movement thereof, by operation of the cross shaft **35** to vary the spacing between the slats for varying ventilation through the blind and the crank arms **30, 31** will hold the operating bars **20, 21** in different upwardly slid positions to hold the slats **12, 13** at the desired inclination, the worm **37** and worm wheel **38** acting to lock the crank arms **30, 31** in differently upwardly swung positions.

The foregoing will, it is believed, suffice to impart a clear understanding of my invention, without further explanation.

Manifestly, the invention, as described, is susceptible of modification, without departing from the inventive concept, and right is herein reserved to such modifications as fall within the scope of the appended claims.

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

1. In a window blind, a frame having a pair of vertical side stiles each provided with a central vertical recess therein, a series of vertically spaced notches in each side stile at each side of the recess in the stile and opening into the recess, the notches in each side stile being horizontally spaced in pairs, and being triangular in shape with horizontal bottoms coplanar in each pair of notches and sides converging upwardly in each pair of notches, two series of vertically spaced slats at opposite sides of the recesses horizontally spaced in pairs with ends extending into the pairs of notches and pivoted in the apex portions of the notches for vertically swinging movement, said ends upon upward and downward swinging of each pair of slats engaging the sides and bottoms of the pair of notches into which said ends extend whereby each pair of slats is limited to upward swinging into converging relation and downwardly swinging into horizontal position, a pair of operating bars for said slats slidably fitted in said recesses for vertical guided movement and each operatively connected to both series of slats, and manipulative means for sliding said bars upwardly in unison.

2. The combination of claim 1, said means comprising a pair of cranks pivoted in said recesses and swingable to lift said bars, and a worm drive operatively connected to said cranks.

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