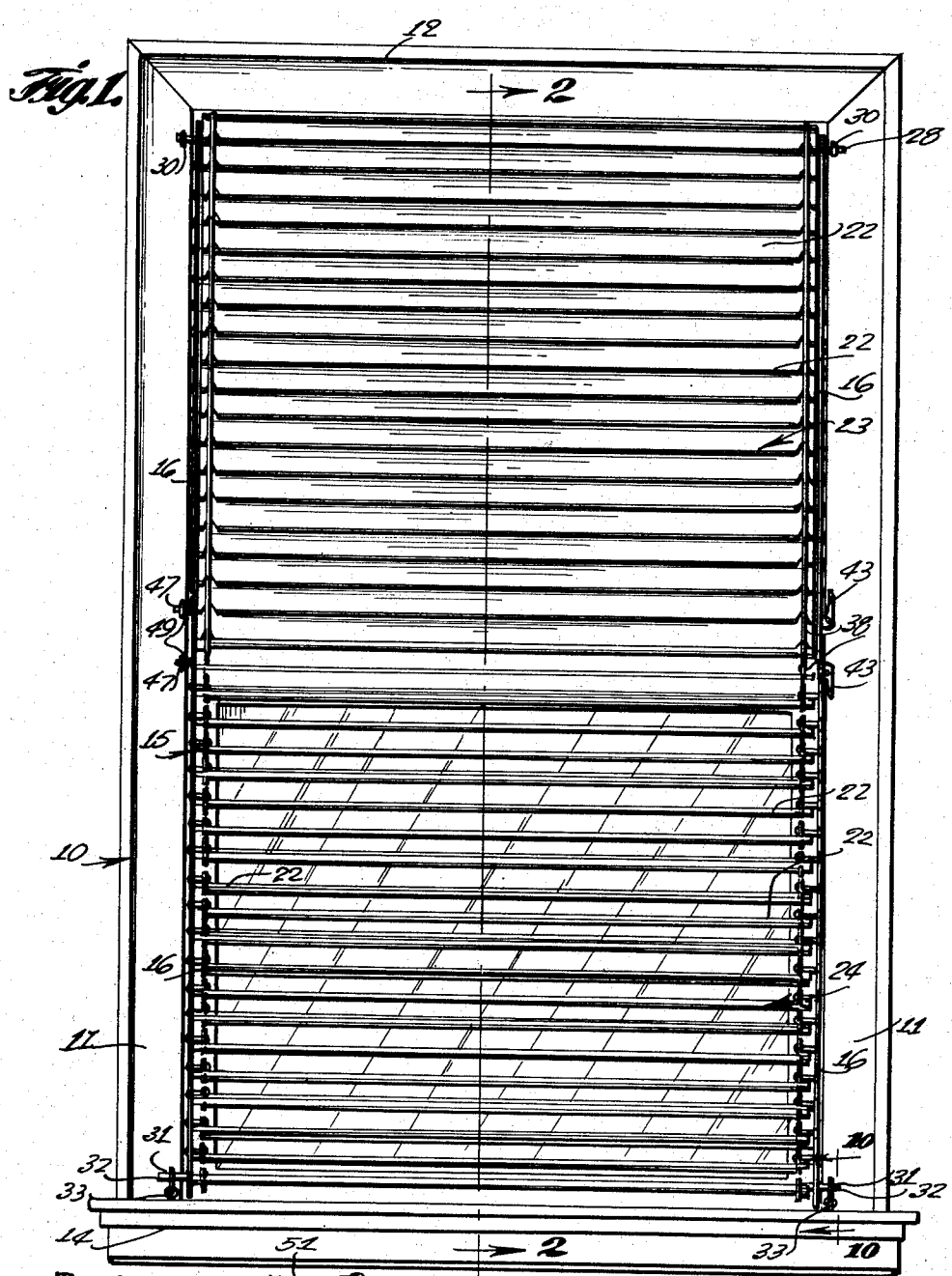
March 3, 1959 W. C. STRASZER 2,875,480

WINDOW SHADE

Filed Nov. 26, 1954

2 Sheets-Sheet 1

Fig. 1.



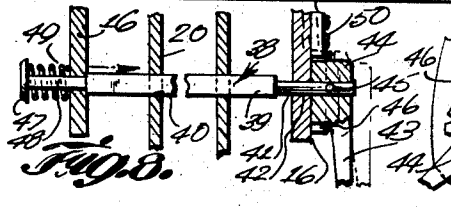


Fig. 8.

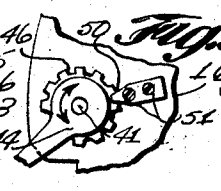


Fig. 9.

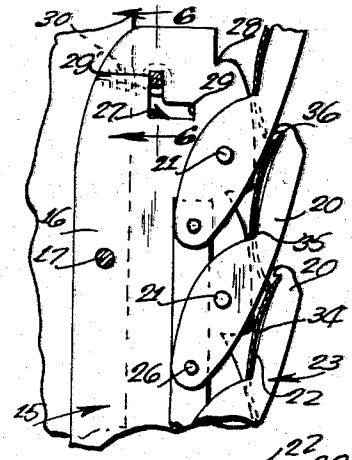
INVENTOR.
Walter C. Straszer
BY Victor J. Evans & Co.
ATTORNEYS

March 3, 1959 W. C. STRASZER 2,875,480

WINDOW SHADE

Filed Nov. 26, 1954

2 Sheets-Sheet 2



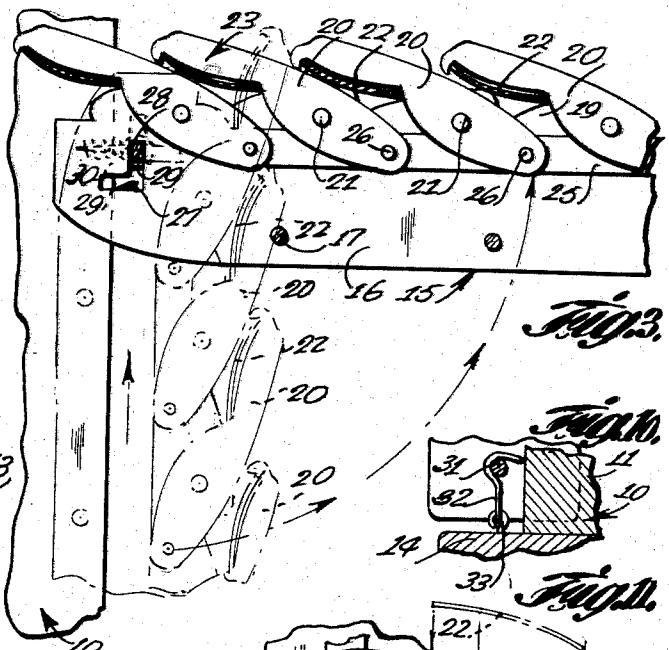


Fig. 3.

Fig. 10.

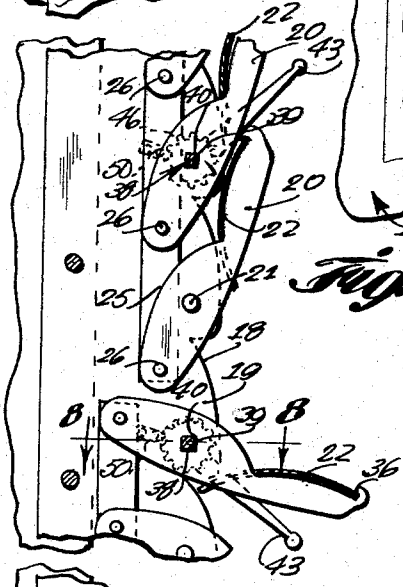


Fig. 2.

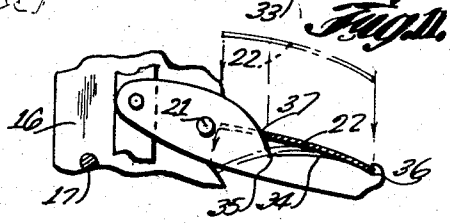


Fig. 11.

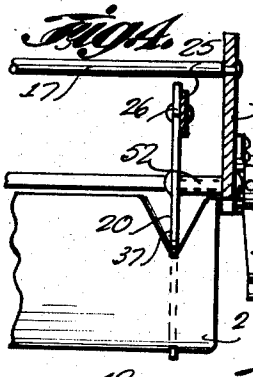


Fig. 4.

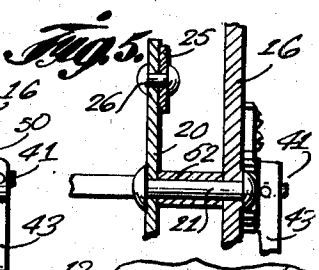
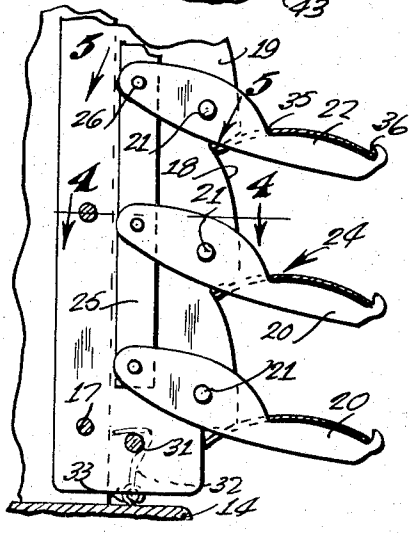


Fig. 5.



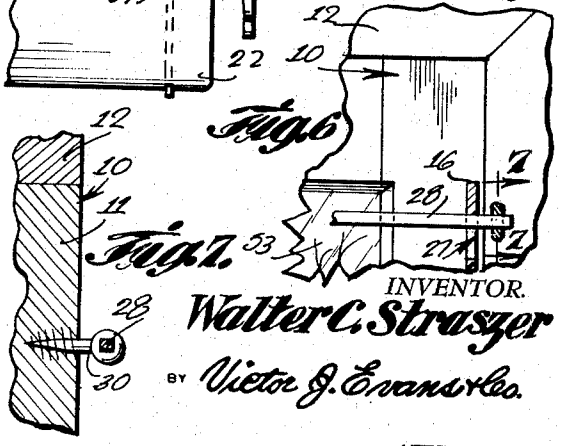


Fig. 6

Fig. 7.

INVENTOR.

Walter C. Straszer

BY Victor J. Evans & Co.

ATTORNEYS

United States Patent Office 2,875,480 Patented Mar. 3, 1959

2,875,480

WINDOW SHADE

Walter C. Straszer, Los Angeles, Calif.

Application November 26, 1954, Serial No. 471,215

1 Claim. (Cl. 20—62)

This invention relates to a window shade.

The object of the invention is to provide a window shade which will effectively block the rays of sunlight when desired, and wherein the entire shade assembly can be readily raised when a window is to be opened or cleaned.

Another object of the invention is to provide a window shade which includes an upper group or set of slats and a lower group of set of slats, the slats of each set adapted to be simultaneously adjusted to any desired angular position, and wherein the sets of each slat can be opened or closed independently of each other.

A further object of the invention is to provide a window shade which is extremely simple and inexpensive to manufacture.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings, forming a part of this application, and in which like numerals are used to designate like parts throughout the same:

Figure 1 is a front elevational view showing the window shade of the present invention mounted on a window frame, and with the upper slats in closed position and the lower slats open.

Figure 2 is a sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a fragmentary elevational view showing the frame of the window sash raised as when access is to be gained to the window for opening or washing the window or the like.

Figure 4 is a sectional view taken on the line 4—4 of Figure 2.

Figure 5 is a sectional view taken on the line 5—5 of Figure 2.

Figure 6 is a sectional view taken on the line 6—6 of Figure 2.

Figure 7 is a sectional view taken on the line 7—7 of Figure 6.

Figure 8 is a sectional view taken on the line 8—8 of Figure 2.

Figure 9 is a fragmentary elevational view showing the ratchet and pawl.

Figure 10 is a fragmentary sectional view showing the hook for engagement with the rod at the bottom of the shade.

Figure 11 is a fragmentary sectional view illustrating the method of removing or replacing the slats from their supporting arms.

Referring in detail to the drawings, the numeral 10 designates a portion of a conventional window which includes vertically disposed spaced parallel side rails 11 which are interconnected together at their upper ends by a top member 12, there being a bottom member 14 extending between the lower ends of the side rails 11. The present invention is directed to a window shade, and the window shade includes a swinging frame which is indicated by the numeral 15. The frame 15 includes a pair

of movable spaced parallel side bars 16 which may be interconnected together by crosspieces 17, Figure 2.

Each of the side bars 16 is provided with a plurality of indentations or cutouts 18 which define superimposed ears 19. Pins 21 pivotally connect arms 20 to the ears 19, and the arms 20 carry slats or lattices 22. The slats 22 are arranged as a first or upper set or group 23, and a lower or second set 24. The slats of the upper set 23 all move in unison, and similarly the slats of the lower set 24 move in unison. However, the slats of the upper set can be adjusted independently of the slats of the lower set as for example as shown in Figures 1 and 2 wherein the upper slats 23 are in closed position blocking passage of the sun's rays through the upper portion of the window, while the slats of the lower set 24 are open to permit the passage of the sun's rays or the passage of light rays therethrough.

For causing the slats of each set to move in unison, there is provided operating rods 25 which are pivotally connected to the slats of a set by means of pins 26. It will be seen that for each of the side bars 16 there are two of the operating rods 25, one for the upper set and one for the lower set of slats.

The upper end of each of the side bars 16 is provided with an L-shaped slot 27 which includes a first portion 29 and a second portion 29' which is arranged at right angles thereto. A rod 28 of square cross section extends through the pair of slots 27 in the side bar 16, and the rod 28 is held stationary by means of eyebolts 30 which extend into the rails 11 of the window frame 10. Due to the provision of the square shaped rod 28 and the L-shaped slots 27, the frame 15 can be supported in a vertical position as shown in Figure 2 as when the window shade is being used. Or, the frame 15 can be raised or swung to a horizontal position as shown in Figure 3 so that the entire assembly will be supported in an out-of-the-way position to permit opening of the window or cleaning of the glass.

Extending between the lower ends of the pair of side bars 16 is a cylindrical rod 31. Hooks 32 releasably engage the rod 31, and the hooks 32 are connected to bolts 33 which are secured to the bottom member 14 of the window frame. The hooks 32 serve to help maintain the frame 15 in its operative or vertical position as shown in Figure 2, and when the frame is to be swung to the position shown in Figure 3, the hooks 32 can be readily disengaged from the rod 31.

The construction of the arms 20 is such that each pair of arms 20 supports one of the elongated flexible slats 22 which can be made of any suitable material such as plastic or metal. Each of the arms 20 is provided with a recessed portion 34 of curved or arcuate formation which defines in each arm a pair of shoulders 35 and 36. The slats 22 have V-shaped cutouts 37 which are adapted to engage the shoulder 35 and when the slats are being inserted in the arms, the slats are compressed or bent slightly so that when pressure on the slats is released, the slats will be firmly held by the pairs of opposed arms.

A manually operable means is provided for adjusting the position of the slats in each set, whereby the amount of light passing through the space between the slats can be varied as desired. This manually operable means comprises a pair of shafts 38 which each have an intermediate portion 39 of square cross section, Figure 8. It will be seen from Figure 2 that there is one of the shafts 38 for the upper set of slats 23, and there is also one of the shafts 38 for the lower set of slats 24. The intermediate square shaped portion 39 of the shaft 38 extends through square shaped holes or openings 40 in the arms 20 so that as the shaft 38 is rotated, the arms 20 will be turned or moved. Since the arms carry the slats, then

this movement of the shaft and arms will result in a corresponding movement of the slats. Extending from one end of the shaft 38 is a cylindrical trunnion 41 which projects through a circular opening 42 in one of the side bars 16 and is rotatable therein. A handle 43 has a bushing 44 secured to the trunnion 41 by means of a suitable set screw 45. The bushing 44 is provided with gear teeth 46 which are engaged by a pawl or dog 50 which may be secured to one of the side bars 16 in any suitable manner, as for example by means of screws 51, Figure 9. The shafts 38 are longitudinally shiftable in their various openings so that by pulling on the handle 43, the shaft 38 can be shifted longitudinally whereby the teeth 46 will clear the pawl 50 to permit manual rotation of the shaft. For normally urging the shaft 38 into its inward position so that the pawl 50 will prevent accidental movement of the slats, there is provided a head 47 on an end of a trunnion 48 which projects from the opposite end of the shaft 38, Figure 8. A coil spring 49 is circumposed on the trunnion 48, and the coil spring 49 abuts the head 47 and normally urges the parts to the position shown in Figure 8. However, by gripping the handle 43 the shaft 38 can be moved longitudinally to compress the coil spring 49 whereby the teeth 46 will clear the pawl 50 to permit manual rotation of the shaft.

The numeral 52 designates sleeves or spacer members which are mounted on the pins 21, Figure 5, whereby the arms 20 will be maintained in their proper spaced apart relation with respect to the side bars 16. The numeral 53 designates a portion of the window pane which may be mounted in the window frame 10.

From the foregoing it is apparent that there has been provided a window shade and when the window shade is being used the parts are in the position shown in Figures 1 and 2. When access is to be gained to the window as for washing or opening the window, then the frame 15 can be first raised slightly vertically so that the rod 28 moves to a different position with respect to the slot 27. Thus, with the frame 15 and side bars 16 in the vertical position of Figures 1 and 2, the rod 28 is in the portion 29' of the slots 27. By moving the frame 15 upwardly, the slots 27 will be in such a position that the rod 28 is in the portions 29 of the slots rather than portions 29' so that the frame will be supported in a horizontal position as shown in Figure 3 to provide clearance for gaining access to the window. With the parts arranged as shown in Figures 1 and 2, the slats can be adjusted to any desired angular position. The slats 22 all moves in unison in a particular set. That is the slats 22 in the upper set 23 all move in unison, while the slats 22 in the lower set 24 all move in unison. However the slats in the upper set are moved independently of the slats in the lower set as previously described. To adjust the slats, it is only necessary to grip one of the handles 43 and then move the handle laterally so that the shafts 38 will be slid longitudinally and this will compress the spring 49 and also the teeth 46 will clear the pawl 50. Then the handle 43 can be used for rotating one of the shafts 38 whereby the slats in the upper or lower set can be adjusted to any desired angular position. When pressure on the handle 43 is released, the coil spring 49 will return the parts to the position shown in Figure 8 so that the pawl 50 will engage the teeth 46 and prevent accidental movement of the slats from their adjusted positions. The hooks 32 engage the rod 31 to help maintain the frame immobile when in its vertical position as shown in Figure 2. The slats 22 can be readily disengaged from the arms by compressing

the slats slightly so that they clear the shoulders 35 and 36. As shown in Figures 1 and 2 the slats of the upper set 23 can be moved to one angular position as for example to a closed position, while the slats int he lower set 24 can be moved to an open position so that occupants of a room or building can accurately and easily control the light entering a room.

The window shade of the present invention will provide better vision and there is no tape or cords utilized so that the device will not have to have its cords or tape replaced or cleaned. The lattices can be easily removed as shown in Figure 11 for cleaning and the entire assembly is readily attached to a window frame such as the frame 10. There are two controls for each window so that the upper and lower half of the slats can be independently adjusted. The parts can be made of any suitable material such as a rust proof metal. The shade is suspended from the upper bar or rod 28, and the rod 28 is supported by the screw eyes 30. Due to the provision of the V-shaped cutouts 37 in the slats 22, the slats 22 will not accidentally shift longitudinally or from side to side.

I claim:

In a window shade, a frame including a pair of spaced parallel side bars, a plurality of crosspieces extending between said bars and secured thereto, each of said bars being provided with a plurality of cut outs which define superimposed ears, an arm pivotally connected to each of said ears, said arms being arranged in a first set of upper arms and a second set of lower arms, operating rods pivotally connecting together the arms of the upper set, operating rods pivotally connecting together the arms of the lower set, flexible slats carried by said arms, manually operable means for simultaneously adjusting the angular position of all the slats in each set, the slats in each set being independently adjustable, said manually operable means comprising a shaft having an intermediate portion of square cross section engaging certain of said arms, cylindrical trunnions extending from the ends of said shaft and journaled in said side bars, a head on one of said trunnions, a coil spring abutting said head, a handle secured to the other of said trunnions and provided with a bushing having a plurality of teeth therein, a pawl arranged in engagement with said teeth in said bushing, said handle adapted to be manually actuated to compress the coil spring whereby the teeth can selectively clear the pawl said shaft being mounted for longitudinal shifting movement in said side bars, a cylindrical rod extending between the lower ends of said bars and secured thereto, hooks arranged in engagement with said cylindrical rod, each of said arms being provided with a curved recessed portion defining a pair of shoulders, there being V-shaped cutouts in said slats for engaging one of said shoulders.

References Cited in the file of this patent

UNITED STATES PATENTS

465,395	Stoeppelwerth et al.	Dec. 15, 1891
891,235	Diehl	June 23, 1908
1,914,571	Jones	June 20, 1933
2,332,339	Pratt	Oct. 19, 1943
2,422,704	Russell et al.	June 24, 1947
2,485,263	Digby	Oct. 18, 1949
2,565,217	Frank	Aug. 21, 1951
2,570,199	Brown	Oct. 9, 1951
2,631,341	Pettigrew et al.	Mar. 17, 1953
2,647,291	Russell et al.	Aug. 4, 1953