Dec. 25, 1951 H. W. FERGUSON ET AL 2,579,485

SECTIONAL VENETIAN BLIND

Filed May 11, 1949 2 SHEETS—SHEET 1

FIG. 1.

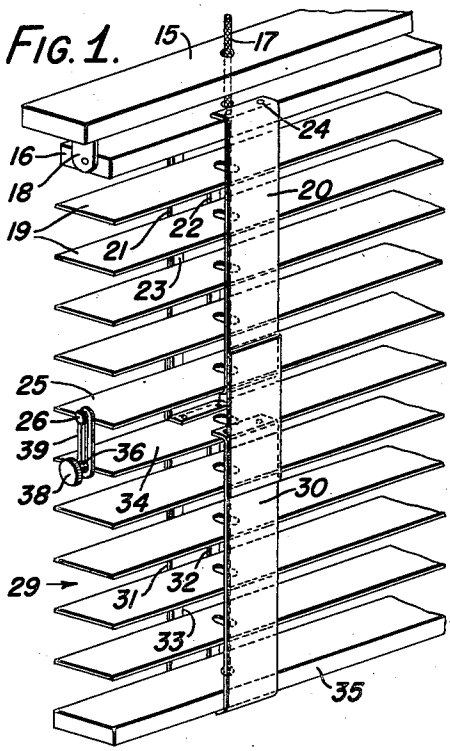


FIG. 2.

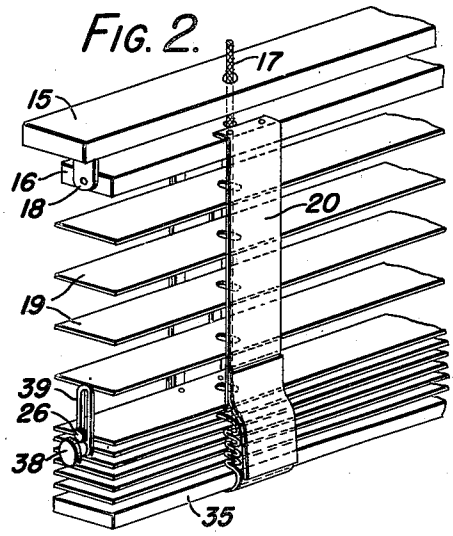


FIG. 3.

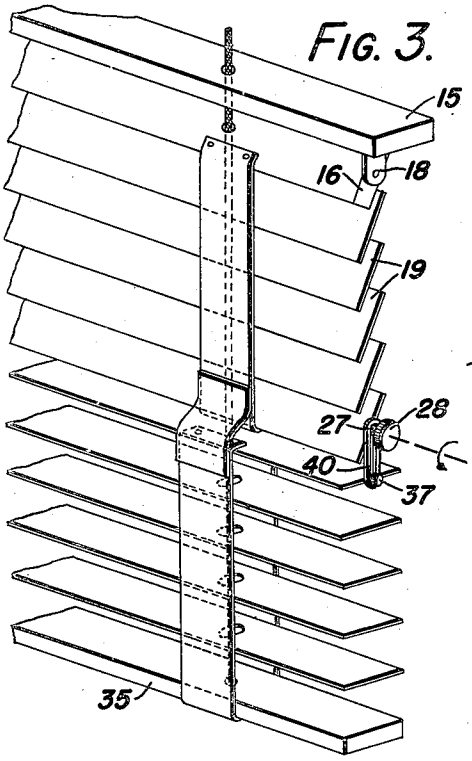
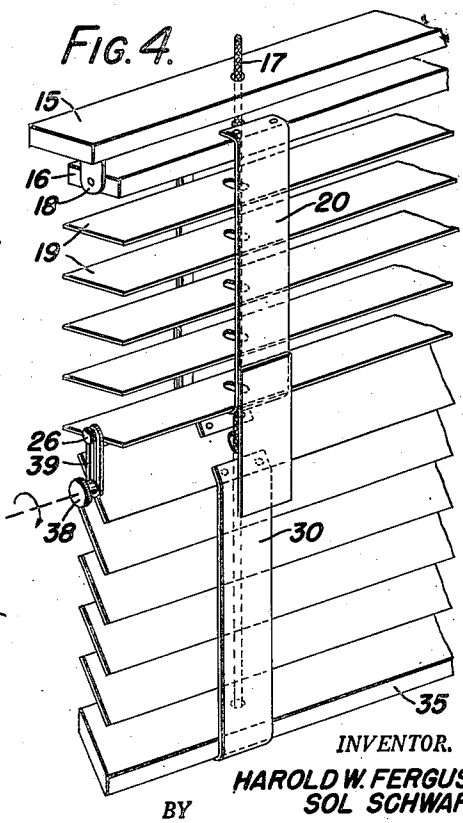


FIG. 4.



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FIG. 5.

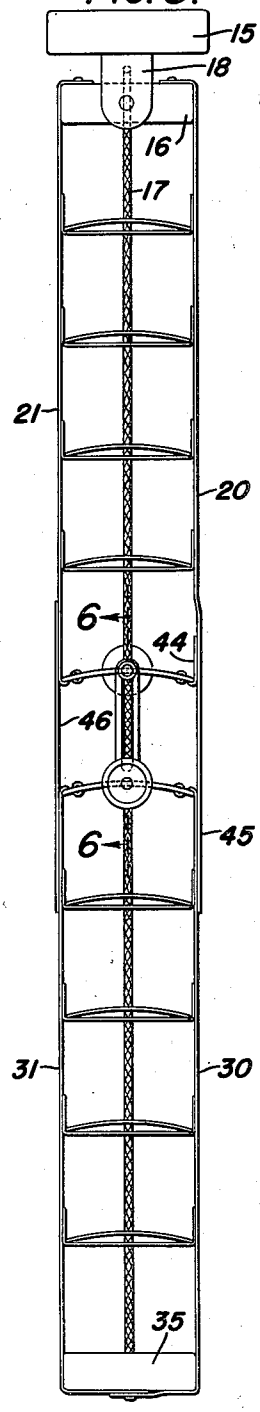


FIG. 6.

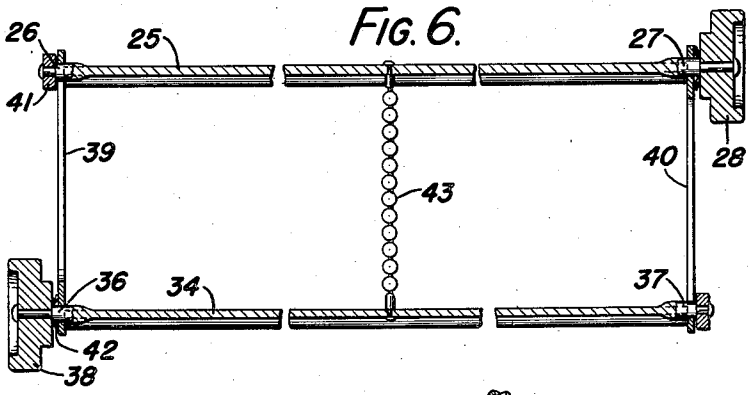


FIG. 7.

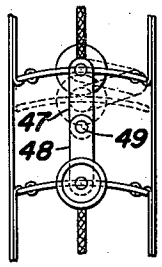


FIG. 8.

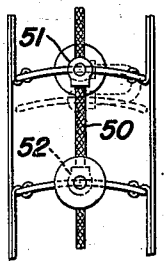


FIG. 9.

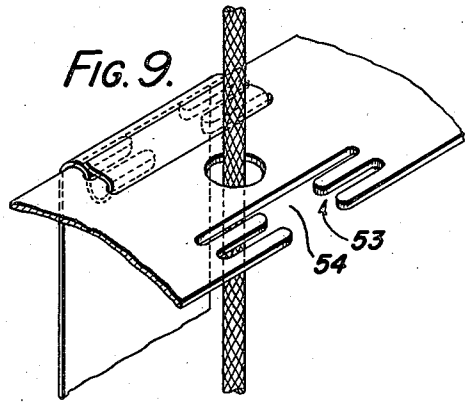
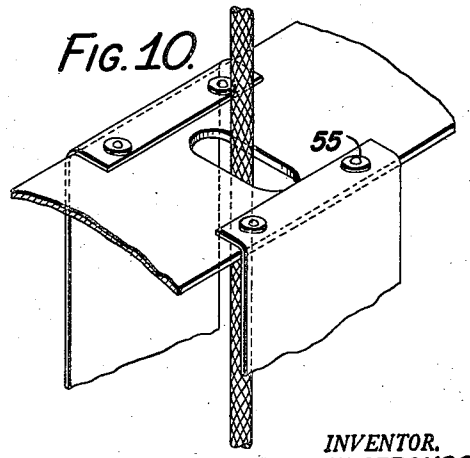


FIG. 10.



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UNITED STATES PATENT OFFICE

2,579,485

SECTIONAL VENETIAN BLIND

Harold W. Ferguson and Sol Schwartz,
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Application May 11, 1949, Serial No. 92,678

5 Claims. (Cl. 160—115)

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This invention relates to Venetian blinds and, more particularly, to the sectional variety having their superposed louvers, or slats, arranged in superposed groups or sections adapted to be tilted independently of one another for selectively varying the amount of transmitted light and visibility at different portions of a window. The known sectional blinds have commonly lacked full independence in the tilting adjustment of the slats of one section relative to another, or have involved complicated, cumbersome and expensive constructions, or had other objectionable features tending to limit their general adoption and use, and one object of the present invention is to provide an improved blind of the character indicated having a more simple, practical and convenient type of construction.

Another object is to provide such a blind in which the slats of each section may be tiltably adjusted with full independence of the tilting adjustment of the slats of other sections so as to afford a more adaptable and convenient control of the admitted light.

Another object is the provision of a blind of the above character in which the slats of each section may be adjusted by direct manual engagement, so as to obviate the necessity for tilting control cords, as well as for guide pulleys, gears and similar devices in the head casing for accommodating such cords.

A further object is to provide a blind having the above advantages and in which the slats of all of the sections may be elevated and lowered by a common lift cord means to variably expose the window opening.

Still a further object is to provide a Venetian blind construction which is more simple, adaptable and convenient to operate and pleasing in appearance.

To these and other ends the invention resides in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings:

Fig. 1 is a perspective elevation of portions of a Venetian blind embodying the present invention and showing all of the slats in lowered and horizontal position;

Fig. 2 is a similar view showing the slats of the lower section elevated to collapsed position;

Fig. 3 is a perspective elevation showing the slats all lowered with the slats of the lower section tilted to open position and the slats of the upper section tilted to partly closed position;

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Fig. 4 is a view similar to Fig. 3, but showing a reversely tilted arrangement of the slats of the two sections;

Fig. 5 is an enlarged side elevation with the slats lowered and all tilted to fully open position;

Fig. 6 is an enlarged, sectional elevation on the line 6—6 in Fig. 5, showing in more detail the pendent collapsible connection between sections;

Fig. 7 is a view similar to a portion of Fig. 5, but showing a modified form of connection between sections;

Fig. 8 is a view similar to Fig. 7, but showing a further modified connection between sections;

Fig. 9 is an enlarged, perspective, detailed view of a modified means of attachment between the side tapes of a ladder tape and a slat, and

Fig. 10 is a view similar to Fig. 9, but showing a further modification of this feature.

The invention is embodied in the present instance, by way of illustration, in a Venetian blind having a head support, or casing, adapted to be positioned at the top of a window frame and comprising a fixed head plate or board 15 pivotally supporting a rocker bar 16 for tilting the slats and through which cords 17 for elevating the slats are passed upwardly around pulleys or other guide means and to one side of the blind within convenient reach, as well understood in the art. The rocker bar 16 is preferably provided with studs projecting from the centers of its opposite ends and pivotally mounted in brackets 18 depending from the plate 15, to support the bar for tilting movement about a central longitudinal axis.

The superposed blind louvers, or slats, 19, are made of one of the thin and light materials commonly used for such purposes and of generally rectangular shape, as shown, and are arranged in two or more superposed groups or sections, the slats of each section being supported by a pair of spaced ladder tapes of known construction, one located adjacent each side of the blind. Since these ladder tapes are the same in construction, a description of one will suffice for both. Thus, the left hand tape of the upper pair (Fig. 1) comprises a front side tape 20 and a rear side tape 21, these tapes being connected together by cross or rung tapes 22 and 23 of narrower width and positioned alternately adjacent opposite edges of the side tapes, as shown, and as well understood in the art. The upper ends of the side tapes are tacked or otherwise secured to the top of the rocker bar 16, as at 24, while the lower ends of these side tapes are riveted or similarly fixed to the lowest slat 25 of the upper section, this slat

25 being provided at the centers of its opposite ends with longitudinally projecting studs, 26 and 27 (Figs. 1 and 3), the stud 27 carrying a turning knob 28 by which it may be tilted. Such tilting of slat 25 serves to effect opposite vertical movements of the side tapes 20 and 21 and to tilt the rocker bar 16 and all of the intermediate slats of the upper section and these slats may be tilted in either direction from the horizontal to project the transmitted light upwardly, or downwardly, or to close that portion of the blind.

The slats of the lower section, indicated generally at 29, are supported by a pair of spaced ladder tapes similar to those described above for supporting the upper section. These lower ladder tapes, one adjacent each side of the blind, are the same in construction comprising, as shown in Fig. 1, front side tapes 30 and rear side tapes 31 connected by staggered cross or rung tapes, 32 and 33. The upper ends of these side tapes are fixed to the upper slat 34 of this section and their lower ends are fixed to the bottom board 35. Means are provided for pendently and collapsibly connecting the lower section of slats to the upper section, as will now be described.

The upper slat 34 of the lower section is provided at the centers of its ends with longitudinally extending studs 36 and 37 (Figs. 1 and 3), the stud 36 carrying a turning knob 38 by means of which the slat 34 and all of the slats of the lower section and the bottom board 35 may be tilted in either direction from a horizontal position, independently of the slats of the upper section. This tilting support of the slats of the lower section is accomplished by a pivotal and collapsible connection between the corresponding end studs of the adjacent slats 25 and 34 of the upper and lower sections. This connection may take the form of slotted links 39 and 40 (Figs. 1 and 3), pivotally and slidably engaging the studs so that either of the connected slats may be turned independently of the other, and the lower slat may be raised in the collapsing of the blind as shown in Fig. 2. The preferred details of this form of connection are best shown in Figs. 5 and 6 from which it will be seen that stud 26 of the slat 25 is extended beyond the link 39 and provided with a washer 41. The slot in the link is terminated above the lower end of the link which is provided with a bearing opening for the stud 36 of the slat 34 and a spring friction washer 42 is provided between the end of the link and the knob 38 to yieldably hold the parts in alinement. As shown, this turning knob 38 of the lower slat 34 is located on the opposite side of the blind from the turning knob 28 of the upper slat 25, the connection being otherwise the same for both sides of the blind. In cases where the slats are of unusual length, they may be supported by a flexible, central connection with each other, such as a light chain 43, or other suitable flexible element.

To cover the discontinuity of the vertical side tapes, the lower ends of these tapes of the upper section, instead of being fixed directly to its lower slat 25, may be connected to the slat by an extra piece of tape 44 (Fig. 5) fixed to the side tape and to the slat, the end of the side tape being extended and hanging freely downwardly, as at 45, so as to overlap the top of the side tape of the lower slat section. Or the lower ends of the side tapes of the upper section may each have a tape flap 46 (Fig. 5) fixed thereto and allowed to depend and overlap the top of the corresponding side tape of the lower section, as shown, or it may be preferred, as a matter of appearance, to cover the gap on one side of the blind in one of these ways and the gap on the other side of the blind in the other way, as shown in Fig. 5.

The above described connection between the adjacent slats of the upper and lower sections may take the modified form shown in Fig. 7 in which a pair of links, 47 and 48, are pivotally mounted at one end of the studs, as 26 and 36, respectively, the links being pivotally connected to each other at 49. These links afford independent tilting movement between the slats 25 and 34 and when the slats are elevated to collapsed position, the links are moved pivotally to overlie one another and permit the lower slat to approach the upper. Or this connection may have the further modified form shown in Fig. 8 in which a flexible cord 50 is provided at its ends with collars, 51 and 52, pivotally mounted on the studs 26 and 36, respectively, to simultaneously permit independent tilting movement of the slats and to flex or bend to permit the elevation of the lower slat against the upper.

The side tapes, instead of being riveted to the slats 25 and 34, may be secured thereto by interlocking engagement in the serrated sides 53 of edge recesses 54 in these slats, as shown in Fig. 9. Or, the ends of the tapes and slats may be provided with snap fasteners 55, of any known and suitable variety these modifications serving to provide more convenient detachability for removing and cleaning the tapes.

It is evident from the above description that the invention affords a sectional construction of an exceedingly simple, efficient and convenient nature by means of which the slats of either section may be tilted in either direction with full independence of the tilting of the slats of the other section, as frequently desirable for either opening or closing one section or the other to transmit or obstruct the light, or vary the degree of visibility through the blind with its slats in lowered position. This adjustment is accomplished by direct manual operation of the conveniently positioned turning knobs 28 and 38 at the sides of the blind, thereby eliminating, by this simple construction, the tilting control cords commonly employed, as well as the guide means therefor in the head casing. Furthermore, this advantageous construction is obtained without disturbing the arrangement or operation of the common elevating means comprising the cords 17 which may be operated as usual to elevate the slats and collapse the blind as a whole against the head casing. This arrangement materially reduces the number of depending and unsightly control cords and otherwise enhances the appearance and convenience of the blind. While the blind has been disclosed in the present instance with its slats grouped in but two sections, it will be understood that the number of sections may be increased and operated by similar means.

It will thus be seen that the invention accomplishes its objects and while it has been herein disclosed by reference to the details of preferred embodiments, it is to be understood that such disclosure is intended in an illustrative, rather than a limiting sense, as it is contemplated that various modifications in the construction and arrangement of the parts will readily occur to those skilled in the art, within the spirit of the invention and the scope of the appended claims.

We claim:

1. A Venetian blind comprising supporting means, a plurality of superposed slats, a plurality of pairs of spaced ladder tapes, each of said

pairs supporting a section of said slats and being movable independently of the other of said pairs for tilting the slats of one section independently of the slats of the other of said sections, the adjacent slats of said sections having pivot studs projecting centrally from the ends thereof, slotted links engaging the adjacent studs for pendently and collapsibly connecting the lower of said sections to the upper thereof, and a common means for elevating all of said slats to collapsed position to clear a window on which said blind is positioned.

2. A construction as defined in claim 1, further comprising an adjusting knob on the pivot stud at one end of one of said adjacent slats, and a second adjusting knob on the pivot stud at the opposite end of the other one of said adjacent slats, both adjusting knobs lying beyond the respective ends of the slats so that they will not contact with any slats when the blind is collapsed and so that upon collapse of the blind the adjacent slats of the two sections will come substantially as close to each other as any two adjacent slats of either one of the two sections.

3. A multi-section Venetian blind structure including a plurality of slats in superposed relation to each other to form an upper blind section, a plurality of slats in superposed relation to each other to form a lower blind section, flexible supporting means for supporting the slats of the upper section from a point near the top of such section, flexible supporting means for supporting the slats of the lower section from the top slat of the lower section, link and pivot means located approximately midway of the widths of the slats for supporting the top slat of the lower section from the bottom slat of the upper section so that the top slat of the lower section may be tilted about its longitudinal axis relative to the bottom slat of the upper section, said link and pivot means being so located beyond the ends of the slats as to lie outside of the space between the top slat of the lower section and the bottom slat of the upper section so that said respective top and bottom slats of the two sections may be brought relatively tightly against each other when the blind is collapsed, means for tiltingly adjusting the slats of the lower section as a group independently of the tilting of the slats of the upper section, and means for tiltingly adjusting the slats of the upper section as a group independently of the tilting of the slats of the lower section.

4. A construction as defined in claim 3, in which said means for tiltingly adjusting the slats of the two sections includes a manually operable adjusting knob secured to one end of the lower slat of the upper section and a second manally operable adjusting knob secured to the opposite end of the upper slat of the lower section.

5. A construction as defined in claim 3, further including a spring friction washer associated with said link and pivot means to tend to maintain the upper slat of the lower section and the lower slat of the upper section frictionally in the tilted positions to which they may have been set relative to each other.

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