Sept. 30, 1947. F. E. BRETZ, JR., ET AL 2,428,197

VENETIAN BLIND FIXTURE

Filed Oct. 15, 1945 2 Sheets-Sheet 1

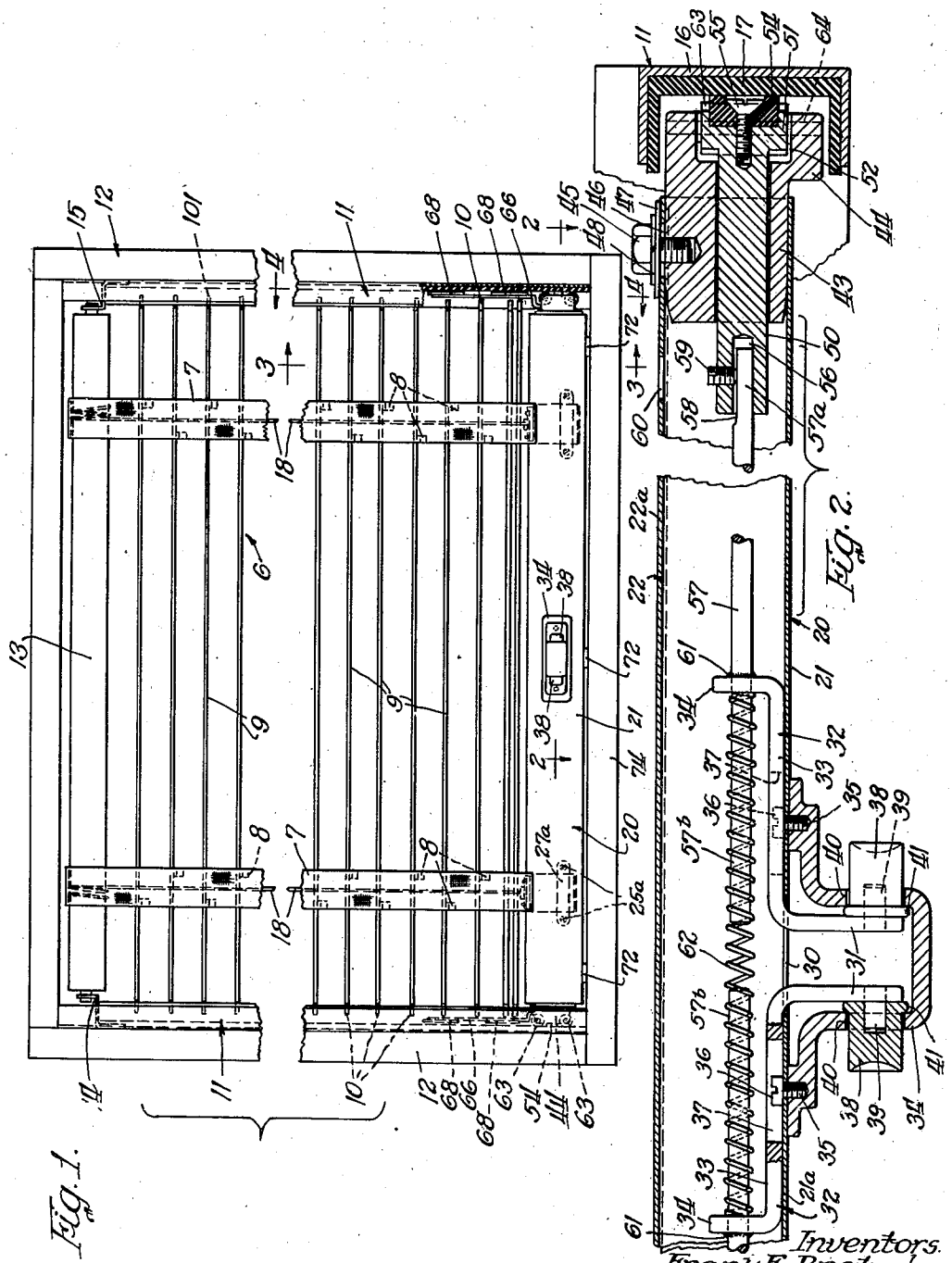

Fig. 1.



Fig. 2.

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Fig. 3.

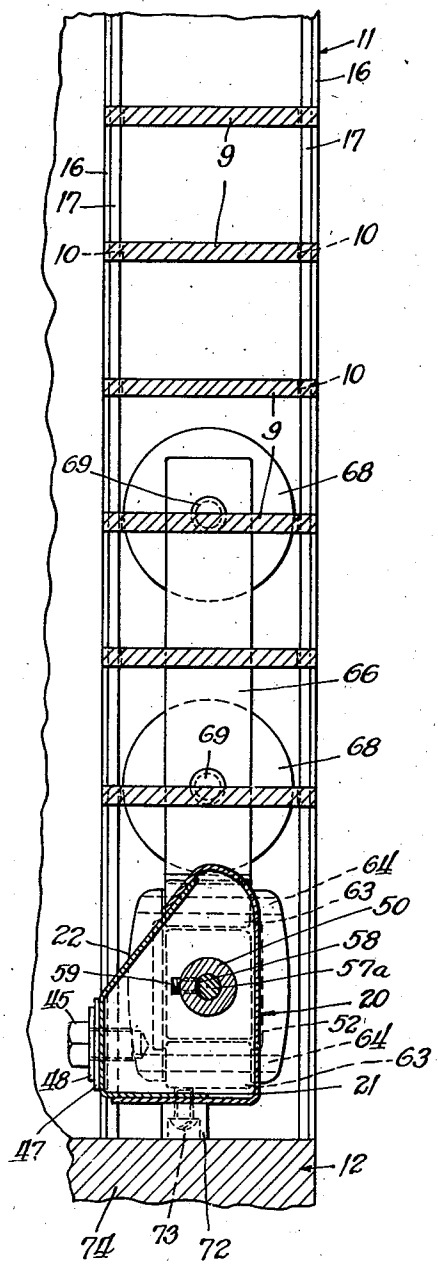



Fig. 5.

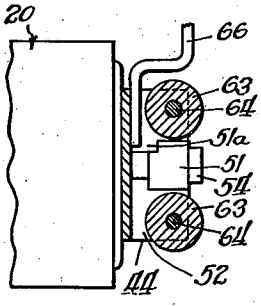
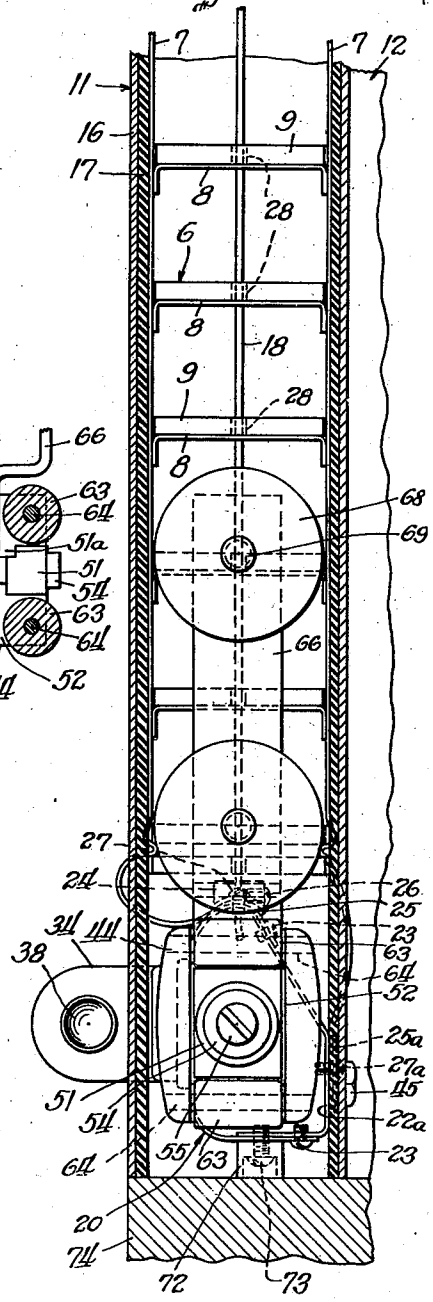



Fig. 4.

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# UNITED STATES PATENT OFFICE

2,428,197

## VENETIAN BLIND FIXTURE

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5 Claims. (Cl. 160—172)

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This invention relates to fixtures intended for use with Venetian blinds and analogous structures mounted in frames having side channel guide structures, or ways, with which the fixture cooperates for holding the blind in desired position.

In known Venetian blinds it is the usual practice to adjust the inclination of the blind slats by means of a tilt rail operated manually by a cord attached thereto, and to raise and lower the blind by means of lift cords attached to the nose rail at the bottom of the blind, means being provided for releasably holding the lift cords against movement and thereby holding the blind in adjustment with respect to lowering and raising thereof. The use of this cord is objectionable for various reasons. The means for holding the cords frequently fails to operate satisfactorily, and the cords often become worn or abraided to such extent as to necessitate replacement thereof. Further, the use of lift cords necessitates the provision of guide rollers and openings therefor, and the lift cords not infrequently become jammed between the rollers and the associated structure.

Our invention is directed to a fixture, particularly suitable for use with Venetian blinds, whereby a Venetian blind may readily be secured in desired adjustment without the use of means for gripping and holding the lift cords as at present. To that end, we provide a fixture readily attachable to the lower ends of the ladder tapes of a Venetian blind, such fixture comprising holding members and means for normally maintaining such members in gripping engagement with ways or channel guide structures at the sides of the blind, effective for holding it in desired adjustment. This fixture is further provided with means facilitating raising and lowering thereof in the guide structures, and with means restraining it against tilting and consequent binding in the guide structures, the fixture as a whole being of comparatively simple, inexpensive and highly efficient construction. Further objects and advantages of our invention will appear from the detail description.

In the drawings:

Figure 1 is a front view, with certain parts broken away, of a Venetian blind provided with a fixture embodying our invention, mounted in a window frame with side guide structures;

Figure 2 is a sectional view, on an enlarged scale, taken substantially on line 2—2 of Figure 1, certain parts being shown in plan;

Figure 3 is a sectional view, on an enlarged scale, taken substantially on line 3—3 of Figure 1;

Figure 4 is a sectional view, on an enlarged scale, taken substantially on line 4—4 of Figure 1; and

Figure 5 is a fragmentary front view of one of the guide blocks and associated parts, partly shown in section.

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We have shown the fixture of our invention, by way of example, as applied to a Venetian blind 6, which is, in general, of known construction. The blind 6 comprises ladder tapes 7 connected by cross tapes 8 upon which rest slats 9, the end portions of the slats being reduced in width to provide extensions 10 which project into channel guide structures 11, mounted at the sides of a suitably constructed frame 12 in which the blind and its associated supporting means are suitably mounted. Conveniently, the ladder tapes 7 are looped over a spring roller 13, of conventional type, supported in a known manner by brackets 14 and 15 riveted or otherwise suitably secured to the bight elements of the channel members 16 of guide structures 11. Each of the channel members 16 preferably is provided with a lining 17 of rubber, either natural or synthetic, or other suitable material of a character to eliminate objectionable noise due to vibration of, or operation of, the blind. Lift cords 18 are suitably secured to the roller 13 so as to be wound thereon for raising the blind and unwound therefrom for lowering the blind, the roller 13 being turned in blind raising direction by the usual spring therein. The ladder tapes 7 rest upon roller 13 in friction contact therewith, so that by turning the roller a slight distance in either direction the slats 9 may be tilted as desired. The ladder tapes 7 are suitably secured at their lower ends to a nose rail or bar 20, to which the lift cords 18 are also secured at their lower ends, as will be explained more fully presently.

It will be seen that the blind 6 may be raised and lowered by means of the roller 13, and that this roller also provides means for tilting the slats 9 as desired. It is not essential to our instant invention that the Venetian blind be supported by the roller 13, and, if desired, it may be supported by means of the usual tilt rail, or in other suitable manner, it sufficing to state that the blind is suitably supported for raising and lowering thereof and for tilting the slats 9. If the blind be supported from a tilt rail, the lift cords 18 may be omitted, in which case adjustment of the blind, with respect to raising and lowering thereof, may be effected by the fixture comprising the nose rail or bar 20 and associated parts.

The bar 20 is of hollow construction and is conveniently formed of sheet metal in two lengthwise sections, the front section 21 and a rear section 22 telescoping the front section and suitably secured thereto, conveniently by means of screws 23. Collars 24, carried by clamp plates 25, secured on the top of front section 21 of bar 20, receive the lower end portions of the lift cords 18, which are secured in the collars by means of

clamping screws 26, the lower end portion of cord 18 passing downward through a suitable opening in bar 20. The lower end portion of one run of the respective ladder tapes 7 is clamped between plate 25 and the top of bar 20, plate 25 being secured to the bar by screws 27. The lower end portion of the other or rearward run of the respective ladder tapes 7 is secured to back wall 22a of housing section 22 in a suitable manner, conveniently by a clamp plate 25a secured to wall 22a by screws 27a and seating on the folded over end of the tape. As thus constructed, the bar 20 is of light weight but rigid construction and provides a housing for the parts mounted therein. The slats 9 are provided with slots 28 therein through which the lift cords 18 pass, as usual.

The front section 21 of bar 20 is provided with a lengthwise slot 30 through its front wall, conveniently at about its midlength. This slot 30 receives the forwardly projecting pinch arm 31 provided at the inner ends of two opposed operating members 32 of substantially Z-shape. Each of the members 32 comprises a flat body element 33 seating against the inner face of front wall 21a of section 21 of bar 20, a pinch arm 31 extending forward from the inner end of body element 33 and an arm 34 disposed within bar 20 and directed rearward thereof. The pinch arms 31 are enclosed by a suitable housing 34, formed of a plastic or other suitable material, secured by screws 35 to wall 21a, the screws 35 respectively having a flat cylindrical head 36 which extends into a lengthwise slot 37 in body element 33 of the adjacent operating member 32, providing supporting and guiding means therefor, the diameter of head 36 of screw 35 being approximately the same as the width of slot 37. Buttons 38, mounted on studs 39 secured in the forward ends of pinch arms 31, are slidable through openings 40 in the sides of housing 34, each of these buttons having a flange 41 at its inner end serving to retain it within the housing 34. It will be clear that by moving the buttons 38 toward each other, the operating members 32 are movable toward each other, and upon release of the buttons 38 the members 32 may be moved apart.

A guide block 43 is mounted in each end of bar 20 and projects outward therebeyond into the adjacent guide structure 11, this block having a forward projection 44, as shown in Figure 2, and having its front and back surfaces, at the projecting portion thereof, rounded vertically, as shown more clearly in Figures 3 and 4. Block 43 is secured in bar 20 by a cap screw 45 passing through a slot 46 in back wall 22a of housing section 22, there being a washer 47 disposed over opening or slot 46 and confined between wall 22a and a spring lock washer 48 against which the head of screw 45 seats. That provides convenient means for securing block 43 tightly in bar 20, and for adjusting block 43 lengthwise to vary its effective length or extent beyond the end of bar 20.

Each of the blocks 43 is suitably bored for reception of a holding member 50 slidable therethrough, this member 50 being provided at its outer end with an enlarged head 51, in the form of a cubiform block which is slidable in a vertical groove 52 in the outer end of block 43, head 51 being restrained by the side walls of the groove from turning movement. The head 51 of the respective holding members 50 is provided with a cylindrical recess in its outer end, which recess receives a gripping member or disc 54, secured therein by a screw 55 or in other suitable manner, the member 54 and the bight portion of liner 17 of channel member 16 cooperating effectively to lock the bar 20 to the guide structures 11 and to thereby hold it in vertical adjustment, as will appear more fully presently.

Each of the holding members 50 is bored out lengthwise from its inner end to provide a bore 56 which receives the outer end portion 57a of an operating rod 57. Outer end portion 57a of rod 57 is slabbed off at one side, to provide a flat surface 58 against which bears the inner end of a set screw 59 threaded in member 50. Back wall 22a of housing section 22 is provided with an opening 60 therein aligned with screw 59, for insertion of a screw driver, whereby the holding member 50 may be adjusted lengthwise relative to rod 57, so as to vary the effective length of the two as conditions may require.

Each of the rods 57 passes through an arm 34 of one of the operating members 32 and projects a substantial distance inward beyond such arm, being secured thereto in a suitable manner, conveniently by welding as at 61. The inner portions 57b of the rods 57 are spaced apart a suitable distance at their inner ends and receive a compression coil spring 62 piloted thereon and confined under compression between the arms 34. As will be understood, spring 62 urges the holding members 50 outward through blocks 43 and is effective for holding the gripping discs 54 in gripping contact with the liner 17 of channel 16. By forcing the buttons 38 toward each other, the holding members 50 are retracted, so as to release the bar 20 from the guide structures to permit desired adjustment thereof, and upon release of the buttons 38 the bar 20 is again secured in adjustment. While we have shown friction gripping means for holding bar 20 in adjustment, any other suitable means may be provided for that purpose within the broader aspects of our invention.

In order to facilitate adjustment of bar 20 within the side guide structures, we provide each of the blocks 43 with rollers 63 mounted in groove 52, on bearing pins 64, as is shown more clearly in Figures 3 to 5, inclusive. The rollers 63 are disposed above and below head 51 of holding member 50, and project outward beyond block 43 to a slightly less extent than the gripping disc 54. When the holding members 50 are retracted, the rollers 63 may contact the bight portions of the guide structures in the adjustment of bar 20, thereby facilitating such adjustment. A substantially Z-shaped bracket 66 has its lower portion extending into groove 52 of the respective blocks 43, and is secured to the block in a suitable manner, conveniently by spot welding. The bracket 66 is offset outward a short distance above block 43 and extends upward therefrom within the adjacent guide structure 11, head 51 of holding member 50 being notched out at 51a (Figure 5) to accommodate the lower end portion of bracket 66. Guide members 68, conveniently in the form of discs, are pivoted on bracket 6, by pivot pins 69, one adjacent the upper end of bracket 66 and the other a short distance above the head 44 of block 43. The discs 68 are disposed within the guide structure 11 and are of a diameter but slightly less than the interior width of such structure, so as to restrain bar 20 against objectionable tilting in either direction about the common axis of the holding members 50 and the rods 57 connected thereto. Within the broader aspects of our invention, the bracket 66 may be provided with other suitable members for restraining bar 20 against tilting movement, though the discs 68,

pivotally mounted, are preferred, since these discs have rolling contact with the arms of liner 17, when moved into engagement therewith, and thereby prevent objectionable rubbing contact and possibly objectionable wear of the lining 17 incident to adjustment of the line.

It will be seen that the bar 20 may be adjusted with facility for effecting adjustment of the blind 6, and that the rollers 63 and the bracket 66 and parts carried thereby contribute to ease of adjustment of the bar 20, by guarding against binding thereof in the ways or guide structures and providing rolling contact between such structures and the fixture, including bar 20, during adjustment thereof. Preferably, a plurality of suitably disposed rubber bumpers 72 are secured, conveniently by screws 73, to the bottom of bar 20 for contact with the bottom bar or sill 74 of frame 12.

As has been indicated above, and will be understood by those skilled in this art, changes in construction and arrangement of parts of our invention may be resorted to without departing from the field and scope thereof, and we intend to include all such variations, as fall within the scope of the appended claims, in this application in which the preferred form only of our invention has been disclosed.

We claim:

1. In a fixture of the character described, a hollow bar, channel guide structures adjacent the ends of said bar, blocks secured in the ends of said bar and projecting outward therebeyond for engagement with said guide structures therein, said blocks having vertical grooves in their outer ends, holding members projectable lengthwise through said blocks and having at their outer ends heads slidable in said grooves provided with gripping elements cooperable with said guide structures in the projected position of said members, means yieldingly urging said members outwardly and for retracting them, and brackets secured in said grooves of said blocks extending upwardly therefrom and provided with elements disposed within said channel guide structures for restraining said bar against tilting movement.

2. In a fixture of the character described, a hollow bar, channel guide structures adjacent the ends of said bar, blocks secured in the ends of said bar, and projecting outward therebeyond for engagement with said guide structures therein, said blocks having vertical grooves in their outer ends, holding members projectable lengthwise through said blocks and having at their outer ends heads slidable in said grooves provided with gripping elements cooperable with said guide structures in the projected position of said members, guide rollers mounted in said grooves transversely thereof above and below said heads and extending outwardly beyond said blocks, means yieldingly urging said members outwardly and for retracting them, and brackets secured in said grooves of said blocks extending upwardly therefrom and provided with elements disposed within said channel guide structures for restraining said bar against tilting movement.



3. In a fixture of the character described, a hollow bar, holding members slidably mounted in the ends of said bar and movable outward therebeyond, opposed operating members having at their adjacent ends pinch arms extending forwardly of said bar and at their other ends arms within said bar directed rearwardly thereof, operating rods secured through said rearwardly directed arms and attached at their outer ends to said holding members, yielding means piloted on the inner portions of said rods confined between said rearwardly directed arms and yieldingly urging them apart, and means limiting movement of said operating members by said yielding means.

4. In a fixture of the character described, a hollow bar, holding members slidably mounted in the ends of said bar and movable outward therebeyond, opposed substantially Z-shaped operating members mounted in said bar and having at their adjacent ends pinch arms extending through and slidable in the front wall of said bar and at their other ends arms within said bar directed rearwardly thereof, operating rods secured through said rearwardly directed arms and attached at their outer ends to said holding members, and a compression spring piloted on the inner portions of said rods and confined between said rearwardly directed arms yieldingly urging them apart.

5. In a fixture of the character described, a hollow bar having a lengthwise slot in its front wall, holding members slidably mounted in the ends of said bar and movable outward therebeyond, opposed substantially Z-shaped members each comprising a body element adjacent the inner face of the front wall of said bar having a lengthwise slot therein, a pinch arm at the inner end of said body element extending forward of said bar through said first slot and an arm at the outer end of said body element directed rearwardly of said bar, operating rods secured through said rearwardly directed arms and attached at their outer ends to said holding members, a compression spring piloted on the inner portions of said rods and confined between said rearwardly directed arms and yieldingly urging them apart, a housing at the front of said bar enclosing said pinch arms, the latter having operating elements thereon slidable through the side walls of said housing, and means securing said housing to the front wall of said bar comprising guide elements extending into said slots of the body elements of said operating members.

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## REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

| Number | Name | Date |
|---|---|---|
| 804,800 | Emery | Nov. 14, 1905 |
| 1,050,459 | Hotaling | Jan. 14, 1913 |
| 2,187,242 | Kesner | Jan. 16, 1940 |