Aug. 16, 1938. H. K. LORENTZEN 2,127,125

VENETIAN BLIND STRUCTURE

Original Filed April 4, 1935

Fig. I.

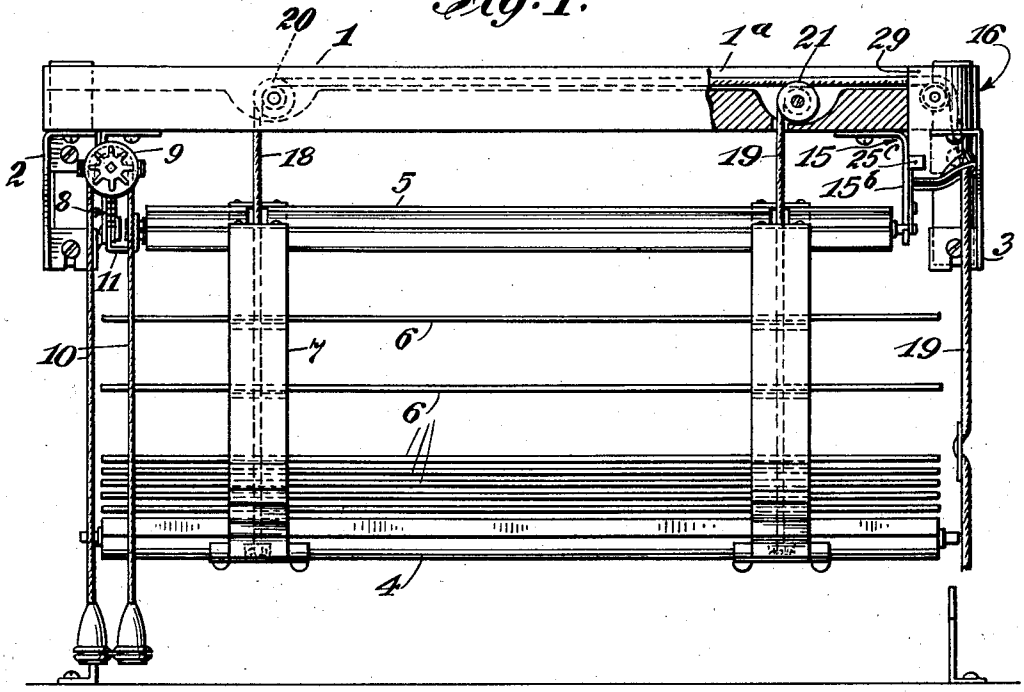


Fig. II.

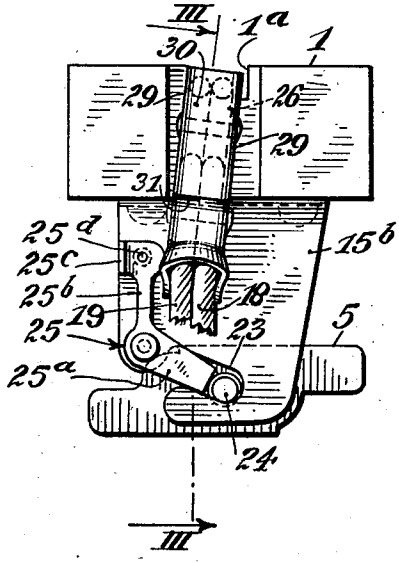
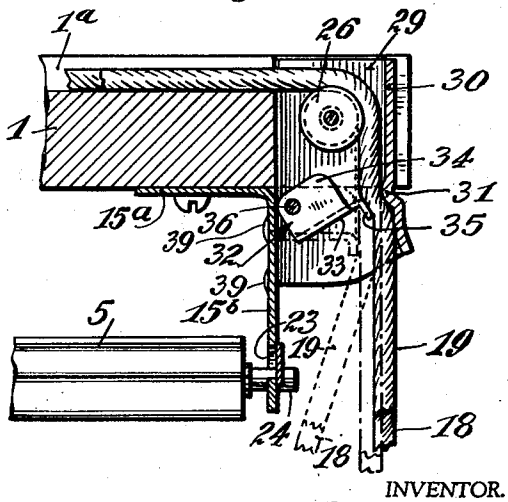


Fig. III.



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2,127,125

VENETIAN BLIND STRUCTURE

Hans K. Lorentzen, Montclair, N. J.

Original application April 4, 1935, Serial No. 14,557. Divided and this application October 15, 1936, Serial No. 105,689

1 Claim. (Cl. 156—17)

The invention relates to Venetian blinds, and particularly to the supporting and manipulating structure of the blind. The subject-matter was originally presented in my prior application Serial No. 14,557, filed April 4, 1935 (Patent No. 2,075,214, March 30, 1937) of which this is a division.

A general object of the invention is to provide an improved supporting and manipulating structure for a Venetian blind, including reliable and satisfactory hardware which can be economically manufactured, largely of stamped sheet metal, on a quantity production basis.

Another object of the invention is to reduce the number of hardware units required for the supporting and actuating structure of a Venetian blind.

Another object of the invention is to provide for Venetian blinds controlling and actuating hardware that is attractive in appearance and reliable in service.

Various other and specific objects and advantages of the invention will be apparent to those skilled in the art from the following disclosure of a preferred illustrative embodiment of the invention.

Fig. I of the drawing is a front elevation, partially in vertical section, showing a complete Venetian blind embodying the present invention.

Fig. II is a detail view in end elevation, looking toward the right hand end of the structure shown in Fig. I.

Fig. III is a detail sectional view, taken in general on the line III—III of Fig. II.

A Venetian blind may be supported from the top of a window frame, but ordinarily it is suspended from a suspension bar 1, which is supported by suitable brackets 2 and 3 that are attached to the window frame. The blind per se illustrated in Fig. I is of conventional construction and includes a bottom slat 4, a top or tilt slat 5, and a number of intermediate slats 6, all of which are connected together and articulated by means of the usual ladder tapes 7, 7. Attached to the left hand end of the suspension bar 1 is a sheet metal angle bracket 8 on which is mounted tilting mechanism that is adapted to be actuated by pulley 9 and cord 10 to tilt the slats of the blind. This tilting mechanism may be of any suitable type, but preferably it includes a U-shaped rocker member 11, which is pivoted to bracket 8 and detachably supports the adjacent end of the top or tilt slat 5 and imparts oscillating movement thereto. Rocking of the U-shaped member 11 is effected by a worm which is driven by pulley 9 and meshes with gear teeth on rocker member 11, all as shown in my copending application Serial No. 105,688, filed October 15, 1936.

At the right hand end of the suspension bar 1 is another sheet metal angle bracket 15, which has a horizontal leg 15a that is attached to the suspension bar 1, and which has a depending leg 15b that supports the right hand end of the top or tilt slat 5, as will be described later. Permanently united with the bracket 15 is a hollow cord lock assembly 16. Cords 18 and 19 for elevating the blind are fastened to the bottom slat 4, pass through apertures in the remaining slats, then over pulleys 20 and 21, respectively, and into horizontal groove 1a that is formed in the top of suspension bar 1. From the groove 1a the two cords pass together to, and through the cord lock assembly 16, and hang down at the right hand end of the blind.

It will be seen that by manipulating the cord 10 at the left hand side of the blind, the inclination of the slats of the blind is varied as described; and by manipulating the cords 19 and 20 at the right hand end of the blind, the blind is raised and lowered and locked in desired elevated position.

The vertical leg of the bracket 15 is provided with an open ended slot 23 into which may be inserted laterally a pintle or the like 24 that is driven into the right hand end of the top or tilt slat 5. Pivoted to the bracket leg 15b is a locking member 25 which can be shifted to permit insertion and removal of the pintle 24 into the slot 23. This member 25 consists of a single piece of springy stamped sheet metal, having an arm 25a which is adapted to cover and uncover the slot 23, and having an arm 25b which has a bent-out thumb piece 25c. When locking member 25 is in the position shown in the drawing, the pintle 24 is held against removal from the slot; and preferably a depression 25d is struck into the arm 25b to form a rear protuberance which snaps into a suitably positioned hole or depression in bracket leg 15b.

The main body of the cord lock assembly comprises a U-shaped casing formed with opposite flat legs 29, 29, joined by a U-shaped portion 30. The U-shaped portion 30 is dented inwardly near the lower end of the casing to form a shoulder or detent 31 which preferably has a curved horizontal sectional outline. A pulley 26 is mounted in the upper end of the casing and is wide enough to accommodate the cords 18 and 19 in side by side relation. Locking of the cords is accomplished by detent 31 in cooperation with

a pivoted dog 32. This dog is made of stamped sheet metal and has a bottom plate 33 from which lateral sides or ears 34 (one shown) are bent upwardly, and from one end of which a lip 35 is bent downwardly. A pivot pin 36 passes through the upper ends of the ears 34; and this pivot pin is mounted in the casing with its center at a point just below the level of the detent 31.

When the cord lock is in unlocked position shown in the dot-dash lines of Fig. III, the bottom plate 33 of the dog is maintained in substantially horizontal position by the engagement of one end of the dog with the angle bracket 15 to which the cord locking casing is attached. When the parts are in this position, the cords 18 and 19 are free to run vertically through the casing, and the blind can be raised or lowered to any position. When the desired elevation of the blind has been reached, the lower ends of the cords 18 and 19 are swung toward the left to the dotted line position of Fig. III. This action brings the cords into contact with the lip 35 of the dog, which is preferably toothed so that the teeth engage in small crevices in the cord to facilitate elevation of the free end of the dog by the cord, as the cord is allowed to move upwardly slightly. This movement of the dog brings it to the locking position shown in the full lines of Fig. III, in which position the two cords are clamped between the dog and the detent 31 without any digging or chewing action by the toothed end of the dog on the cords 18 and 19. Due to the curved inner surface of the portion 30 of the cord lock casing, against which the cords are locked, the cords can slide about the curved surface, thereby automatically adjusting themselves for any inequalities of size or shape. This insures equal clamping pressure on both of the cords.

In manufacture, the cord lock assembly 16 may be united with the bracket 15 in any suitable way. As shown the U-shaped casing of the cord lock assembly is formed with integral projections which are passed through holes in bracket leg 15b and are riveted thereto as at 39.

In compliance with the patent statutes, I have disclosed the best form in which I have contemplated applying my invention, but it will be understood that the disclosure is illustrative of the invention and does not limit the same.

I claim:

For incorporation in a Venetian blind structure in which there is a tilt slat and other slats, all articulated and positioned beneath a suspension bar, the bar having in its upper surface a longitudinal groove for the passage of raising and lowering cords and having at one end a notch connecting said longitudinal groove with the bottom of the bar; a unitary fitting comprising: a vertical member for supporting one end of the tilt slat, a cord lock assembly attached to said vertical member, said assembly having a hollow casing open at the top and bottom and positioned to lie in said notch, the assembly also having a guide pulley to receive operating cords running in said horizontal groove, and a single attachment member for attaching said vertical member and said assembly to the suspension bar, the attachment member being positioned to extend across the bottom face of the suspension bar in non-overlapping relation to said notch.

HANS K. LORENTZEN.