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VENETIAN BLIND STRUCTURE

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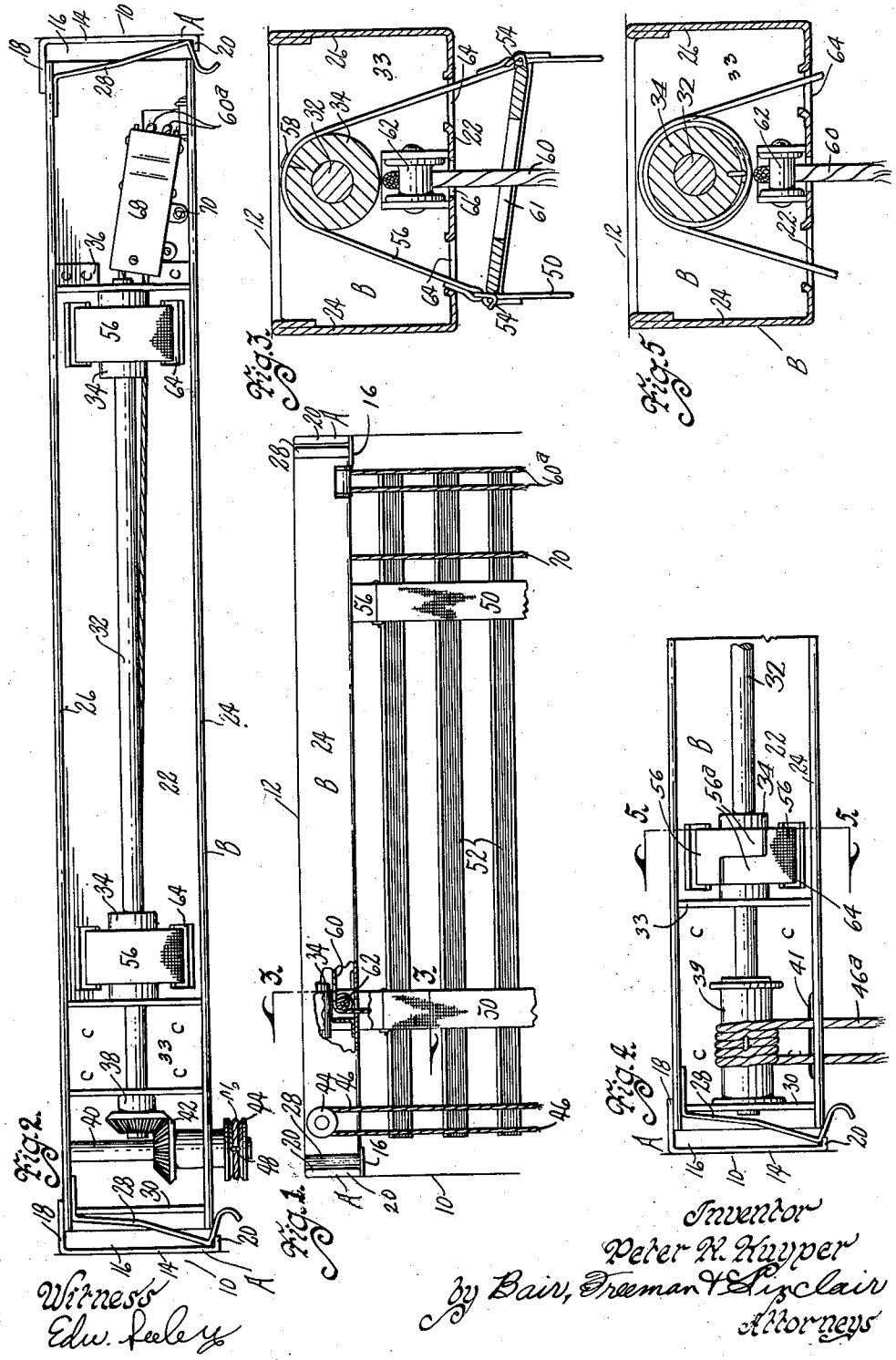


Fig. 2.

Fig. 1.

Fig. 3.

Fig. 5.

Fig. 4.

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VENETIAN BLIND STRUCTURE

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28 Claims. (Cl. 156—17)

The object of my invention is to provide a Venetian blind structure which is simple, durable and comparatively inexpensive to manufacture.

A further object is to provide a Venetian blind structure in which a casing is associated with a window frame in such manner that the casing can be readily removed, the blind being entirely supported by it and thus removable with it whereby the blind and its casing may be removed as a unit and cleaned, painted, repaired, or oiled, etc. without the necessity of having to perform these operations while the blind is installed or without having to remove supporting brackets and the like.

Still a further object is to provide a casing supporting a Venetian blind and associable with brackets supported on the window frame, relative to which the casing can be installed or removed when desired, latches being preferably provided to retain it in position after being inserted with respect to the window frame.

Still a further object is to provide a Venetian blind having a novel tipping mechanism for the blind slats, the tipping mechanism being readily operable by depending cords or the like which rotate an element thereof to which the blind straps are secured.

With these and other objects in view my invention consists in the construction, arrangement and combination of the various parts of my device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawing, in which:—

Figure 1 is an inside elevation of a Venetian blind structure embodying my invention.

Figure 2 is a plan view of the blind structure.

Figure 3 is an enlarged sectional view on the line 3—3 of Figure 1.

Figure 4 is a plan view of a modified form of construction; and

Figure 5 is an enlarged sectional view on the line 5—5 of Figure 4.

On the accompanying drawing, I have used the reference numeral 10 to indicate the side jamb of a window frame and 12 the head jamb thereof. I provide brackets A and a casing B, the casing being removably associated with the brackets and the brackets being supported by screws or other suitable means on the window frames.

The brackets A each comprise side flanges 14, bottom supporting flanges 16, outer limiting flanges 18 and inner locking flanges 20. The casing B comprises a bottom wall 22, an inner wall 24 and an outer wall 26. The casing B is provided with spring latches 28 adapted to snap behind the locking flanges 20 when the casing B is inserted in supported position on the flanges 16 of the brackets A. The latches 28 may be drawn toward each other when it is desired to remove the casing B from its supported position.

The brackets A are supplyable in different sizes to accommodate different widths of window frames and the casings B are supplyable in stepped lengths.

Within the casing B I provide a shaft 32 journalled in suitable brackets 33 and 36. Drums 34 are secured to the shaft 32 and a bevel gear 38 is likewise secured to the shaft 32. A transverse shaft 40 extends to the exterior of the casing B and has a bevel gear 42 secured thereto within the casing. A pulley 44 is mounted on the shaft 40 exterior of the casing and has a length of rope or cord 46 secured thereto as at 48. It is thus obvious that the pulley 44 can be oscillated in either direction and will consequently oscillate the shaft 32.

A Venetian blind having tapes 50, extension tapes 56 and slats 52 is supported by reason of the extension tapes 56 extending over the drums 34 as best shown in Figure 3. Securing means, such as tacks 58 or the like, prevent slippage of the tapes 56 with relation to the drums 34. Connecting elements 54 are provided between the upper ends of the blind tapes 50 and the lower ends of the extension tapes 56.

Slots 64 are provided in the bottom wall 22 of the casing B for the extension tapes 56 to extend through from the drums 34 to the Venetian blind.

The usual raising ropes 60 are provided extending through slots 61 of the blind slats 52 and secured to the lower strap. These extend over pulleys 62 and through a bracket 68 to depend from the casing B as indicated at 60^a. A locking device having a control cord 70 is provided.

In Figure 4, I show a modified construction in which the tapes 56 have portions 56^a cut down to half width. Thus the straps may be offset axially of the shaft 32 and wound side by side for one revolution or so instead of merely passing over the drum 34 as in Figure 3. This permits greater rotation of the shaft 32 than by the construction shown in Figure 3.

Also in Figure 4, I have shown a modified arrangement for rotating the shaft 32. It consists of a drum 39 directly on the shaft and a rope 46^a wound thereon and extending through a slot 41 of the casing B. This eliminates the bevel gears shown in Figure 1.

I have provided a simple arrangement for

tipping the blind slats by merely rotating the element 32. The extension straps 56 are wound up on one side and unwound on the other side of the drums 34 during this operation.

Some changes may be made in the construction and arrangement of the parts of my device without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims, any modified forms of structure or use of mechanical equivalents, which may be reasonably included within their scope.

I claim as my invention:—

1. In a Venetian blind structure, a casing, means for supporting said casing relative to a window frame adjacent the top thereof, a shaft journalled in said casing and a Venetian blind having tapes wound on opposite sides of said shaft.

2. A Venetian blind structure comprising a support in the form of a housing and a shaft element carried by said support and concealed therein for suspending a Venetian blind therefrom, said shaft element being rotatable for varying the degree of tilting of said blind.

3. A Venetian blind structure comprising a support in the form of a housing, a shaft element carried by said support and concealed therein for suspending a Venetian blind therefrom and a drum on said shaft element having the tapes of said blind wound thereon, said shaft element being rotatable for varying the degree of tilting of said blind.

4. A Venetian blind structure comprising a support in the form of a housing, a shaft element carried by said support and concealed therein for suspending a Venetian blind therefrom and a drum on said shaft element having the tapes of said blind wound thereon, said shaft element being rotatable for varying the degree of tilting of said blind, the portions of said tapes wound on said drum being offset axially of said shaft element.

5. A Venetian blind structure comprising a support in the form of a housing, a shaft element carried by said support and concealed therein for suspending a Venetian blind therefrom and a drum on said shaft element having the tapes of said blind wound thereon, said shaft element being rotatable for varying the degree of tilting of said blind, the portions of said tapes wound on the respective sides of said drum being each of substantially half width and offset axially of said shaft element.

6. In a Venetian blind structure, a casing, means for supporting said casing relative to a window frame adjacent the top thereof, a shaft journalled in said casing, a Venetian blind having tapes wound on said shaft and means for rotating said shaft for varying the degree of inclination of the blind slats comprising a second shaft transverse to the first one and extending through the front of said casing, a pulley thereon exterior of said casing, an adjusting cord depending from said pulley and means within said casing for transmitting rotation from said second shaft to said first shaft.

7. A Venetian blind structure comprising a support in the form of a housing, a shaft element carried by said support and concealed therein for suspending a Venetian blind therefrom, a second shaft transversely of the first one and operatively connected therewith and means exterior of said housing for rotating said second shaft.

8. A Venetian blind structure comprising a support in the form of a housing, a shaft element carried by said support and concealed therein for suspending a Venetian blind therefrom and a drum on said shaft element having the tapes of said Venetian blind extended thereover and secured thereto, said shaft element being rotatable for taking up one tape and letting out the other one for thereby varying the degree of inclination of the blind slats.

9. A Venetian blind structure comprising a support in the form of a housing, a shaft element carried by said support and concealed therein for suspending a Venetian blind therefrom, a drum on said shaft element having the tapes of said Venetian blind extended thereover and secured thereto, said shaft element being rotatable for taking up one tape and letting out the other one for thereby varying the degree of inclination of the blind slats and means exterior of said housing and operatively connected within the housing to said shaft element for rotating it to thereby vary the degree of inclination of the blind slats.

10. In a Venetian blind structure, a rotatable element, supporting tapes, one wound on one side thereof and the other wound on the other side thereof, means for rotating said rotatable element and a supporting and enclosing casing for the rotatable element, the portions of the tapes secured thereto and the mechanism for rotating the rotatable element, the blind being entirely supported by said casing.

11. In a Venetian blind structure, a rotatable element, supporting straps, one strap being wound on one side of the rotatable element and the other strap being wound on the other side of said rotatable element and means for rotating said rotatable element.

12. In a ventilating blind, a hollow box-like head bar, a series of spaced apart slats, flexible supporting means engaging opposite edge portions of the several slats, a flexible supporting and tilting member engaging one edge portion of the uppermost slat and extending through the head bar, and a winding and unwinding shaft therefor rotatably mounted in the head bar.

13. In a ventilating blind, a hollow box-like head bar, a series of spaced apart slats, flexible supporting means engaging opposite edge portions of the several slats, flexible supporting and tilting members engaging opposite edge portions of the uppermost slat and extending through the head bar, and winding and unwinding means having operative connection with said members mounted in the head bar.

14. In combination with a series of slats provided with supporting ladder tapes and uppermost roller winding and unwinding mechanism; extensions of the ladder tapes operatively engaging the winding mechanism.

15. In combination with a series of slats provided with supporting ladder tapes and extensions thereof; an uppermost head bar provided with a roller shaft engaging the extensions.

16. In combination with a series of slats provided with supporting ladder tapes and extensions thereof, an uppermost head bar provided with a roller shaft engaging the extensions, and means for rotating the shaft.

17. A Venetian blind structure comprising a sheet metal support in the form of a housing having a bottom and a pair of spaced walls, a shaft element carried by said support and concealed between the walls thereof for suspending a Venetian blind therefrom, enlargements secured

to said shaft element and located within said housing and having the tapes of said Venetian blind secured thereto, said shaft element being rotatable for causing said enlargements to take up one tape and let out the other one for thereby varying the degree of tilting of the blind slats.

18. In a Venetian blind structure, a sheet metal channel-shaped casing arranged to open upwardly, said casing having open ends which are closed and supported by brackets attached to a window frame, means associated with said brackets and casing for normally retaining the casing against removal relative to the brackets, an actuating shaft longitudinally arranged within said casing, tilting members secured to said actuating shaft for rotation thereby, bearings for rotatably supporting said shaft, said bearings being arranged adjacent said members, means for rotating said actuating shaft for tilting said tilting members connected with the tape ladders of a Venetian blind.

19. A Venetian blind structure comprising a sheet metal support bent to the form of a channel-shaped housing having a bottom and a pair of spaced upwardly extending side walls, a shaft element carried by and within said support and concealed between the walls of said support for suspending a Venetian blind therefrom, enlargements movable by said shaft element having the tapes of said blind secured thereto, said shaft element being rotatable for swinging the point of attachment of the tapes to the enlargements through an arc of a circle, and thereby varying the degree of tilting of said blind.

20. A Venetian blind head structure comprising a metal casing bent to form an upwardly open channel-shaped member, a plurality of tilting elements within said casing, bearings within said casing for rotatably supporting said tilting elements and arranged adjacent the elements, a shaft journalled in said casing and having the tilting elements secured thereto for tilting the blind upon rotation of the shaft, and means for rotating said shaft, comprising a second shaft transverse to the first one, a pulley thereon, an adjusting cord depending from said pulley and gearing concealed within said casing for transmitting rotation from said second shaft to said first shaft.

21. A Venetian blind head member comprising a channel-shaped sheet metal support, a shaft element carried by and within said support and concealed by said support for suspending a Venetian blind therefrom, a plurality of members operatively associated with said shaft having the tapes of the blind secured thereto, said shaft element being rotatable for swinging the point of attachment of the tapes to said members through an arc of a circle and thereby varying the degree of tilting of said blind.

22. A Venetian blind structure comprising a support in the form of a housing, bearings on the bottom of said housing, a shaft element journalled in said bearings and concealed within the housing, plural means operated by the shaft for varying the degree of tilting of said blind suspended solely by tape ladders from within said housing, a second shaft transversely of the first one and operatively connected therewith and means depending from said second shaft for rotating it and thereby the first shaft and said plural means.

23. A Venetian blind structure comprising a metal support in the form of a housing having a bottom and a pair of spaced walls, bearings within said housing, a shaft element rotatably mounted and supported by said bearings, enlargements secured to said shaft element and located within said housing closely adjacent to said bearings for suspending a Venetian blind therefrom with the tapes of said Venetian blind moved into and out of said housing thereby, means for rotating said shaft element to thereby vary the degree of tilting of the Venetian blind slats comprising a second shaft element transversely of the first one, gear connections operatively connecting said shaft elements concealed within said housing for transmitting rotation from said second shaft element to said first shaft element and for retaining said first shaft element in any of its adjusted positions and thereby the Venetian blind slats.

24. A Venetian blind structure comprising a metal support in the form of a housing having a bottom and a pair of spaced walls, bearings within said housing, a shaft rotatably mounted and supported by said bearings, enlargements secured to said shaft and located within said housing closely adjacent to said bearings for suspending a Venetian blind therefrom with the tapes of said Venetian blind moved into and out of said housing thereby, means for rotating said shaft to thereby vary the degree of tilting of the Venetian blind slats comprising gear mechanism operatively connected to said shaft mounted within said housing, an operating cord depending therefrom for movement of the gear mechanism and thereby said shaft, said gear mechanism retaining the blind suspended from the shaft in any of its adjusted positions.

25. A Venetian blind structure comprising a metal support in the form of a housing, a shaft element carried by said support and concealed therein for suspending a Venetian blind therefrom and drum-like members operatively associated with said shaft element and movable thereby having the tapes of said Venetian blind extended thereover and moved thereby, said shaft element being rotatable for taking up one tape and letting out the other one for varying the degree of inclination of the blind slats and means depending from said housing for imparting rotary movement to said shaft element.

26. A Venetian blind structure comprising a metal support in the form of a housing, a shaft element carried by said support and concealed therein for suspending a Venetian blind therefrom and tilting members operatively associated with said shaft element and movable thereby having the tapes of said Venetian blind extended thereover and movable thereby, said shaft element being rotatable for taking up one tape and letting out the other one for varying the degree of inclination of the blind slats, means depending from said housing for imparting rotary movement to said shaft element and gear means operated by said last means, said gear means serving to lock said shaft element in any of its adjusted positions.

27. A Venetian blind structure comprising a metal support in the form of a housing, a shaft element carried by said support and concealed therein for suspending a Venetian blind therefrom, bearings for said shaft element and tilting members operatively associated with said shaft element and movable thereby having the tapes of said Venetian blind extended thereover and moved thereby, said members being positioned closely adjacent said bearings for supporting the weight of the Venetian blind slats from points adjacent said bearings, said shaft element

being rotatable for taking up one tape and letting out the other one for varying the degree of inclination of the blind slats and means depending from said housing for imparting rotary movement to said shaft.

28. A Venetian blind structure comprising a metal support in the form of a housing having a bottom and a pair of upwardly extending spaced side walls, a shaft element carried by said support and concealed therein for suspending a Venetian blind therefrom, bearings for said shaft element, a plurality of members operatively associated with said shaft element having the tapes of a Venetian blind secured thereto for moving said tapes into and out of said housing, said members being positioned closely adjacent said bearings for supporting said Venetian blind slats from points adjacent said bearings, means to rotate said shaft element for swinging the point of attachment of the tapes of said members through the arc of a circle and thereby varying the degree of tilting of the Venetian blind slats, said last means comprising a second shaft element transversely of the first one, gear connections operatively connecting said shaft elements and concealed within said housing for thereby transmitting rotation from said second shaft element to said first shaft element, said gear connections serving to retain said first shaft element in any of its adjusted positions and thereby the Venetian blind slats in any of their adjusted positions.

PETER H. KUYPER.

DISCLAIMER

2,058,159.—*Peter H. Kuyper*, Pella, Iowa. VENETIAN BLIND STRUCTURE. Patent dated October 20, 1936. Disclaimer filed October 28, 1938, by the assignee, *Rolscreen Company*.

Hereby enters this disclaimer to claims 2 and 7 of said specification.

[*Official Gazette November 22, 1938.*]