Nov. 8, 1938. F. J. BURNS 2,135,795

VENETIAN BLIND CONSTRUCTION

Original Filed Oct. 10, 1936 2 Sheets-Sheet 1

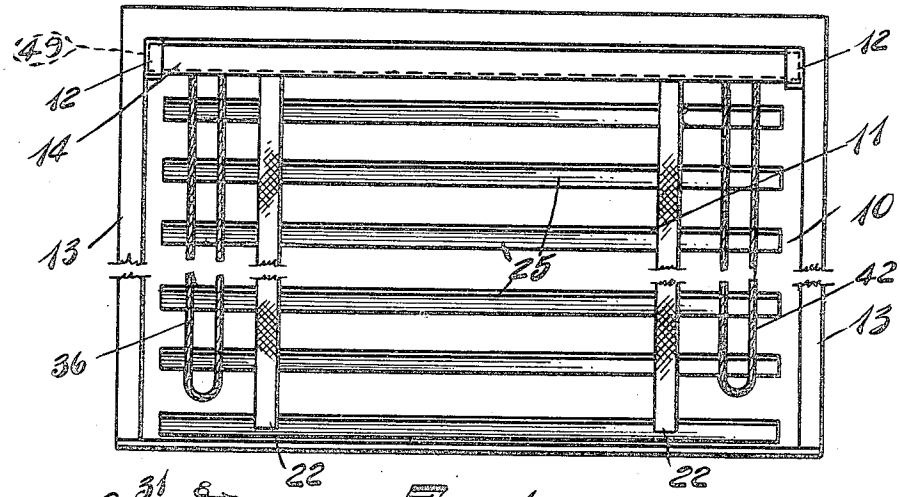


Fig. 1.

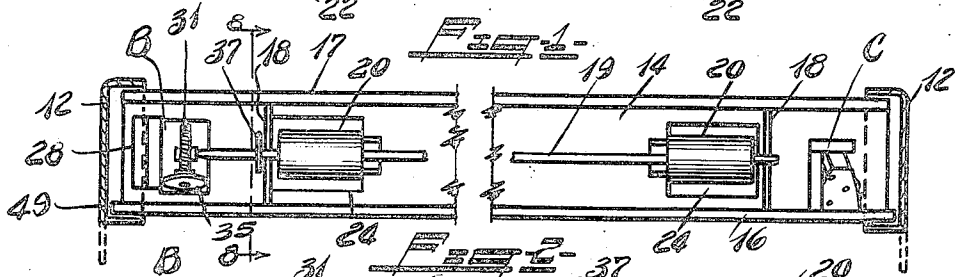


Fig. 2.

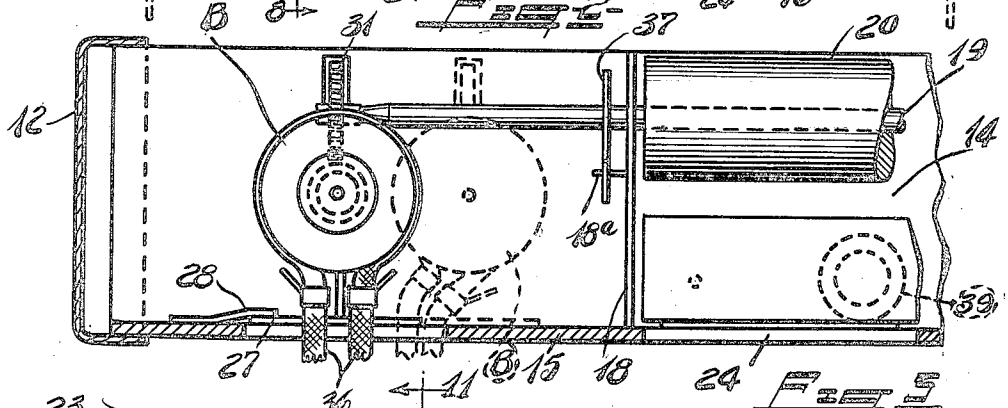


Fig. 5

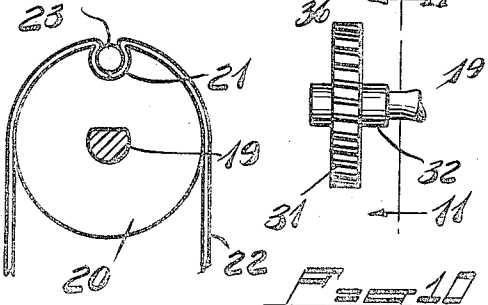


Fig. 9.

Fig. 10

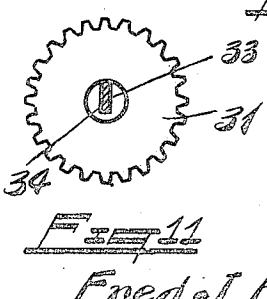


Fig. 11

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VENETIAN BLIND CONSTRUCTION

Original Filed Oct. 10, 1936 2 Sheets-Sheet 2

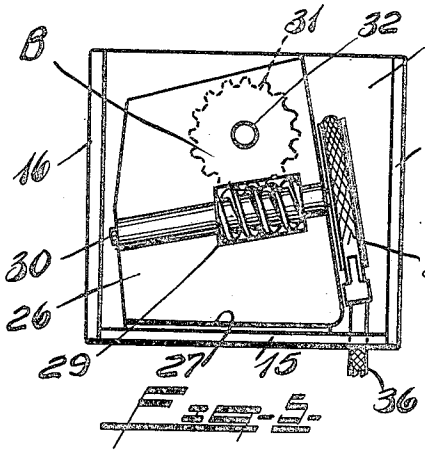


Fig. 5.

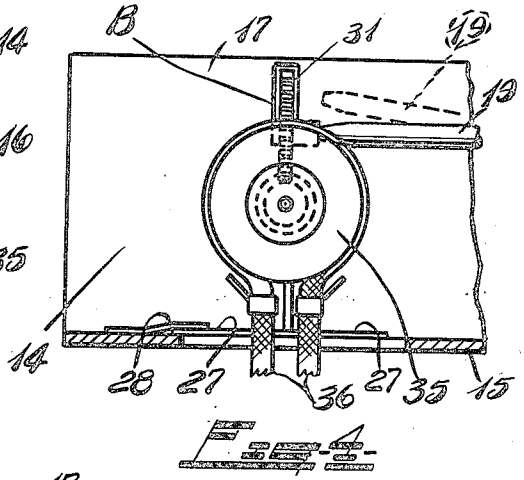


Fig. 4.

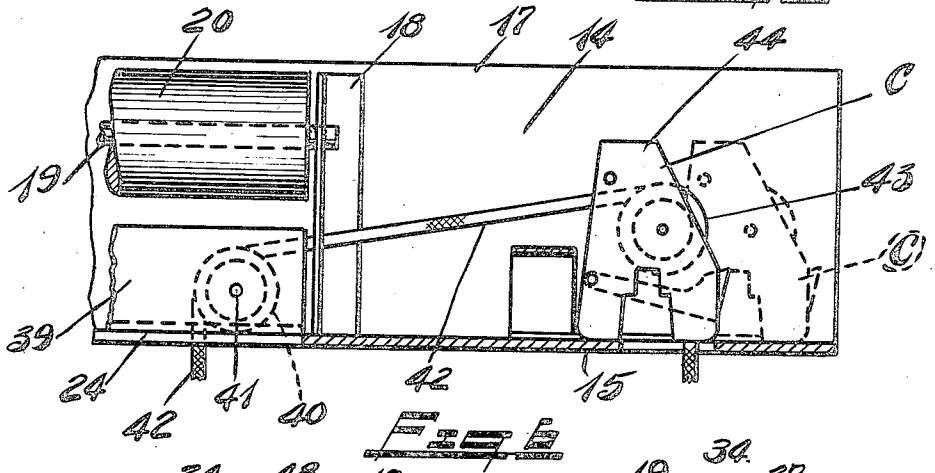


Fig. 6.

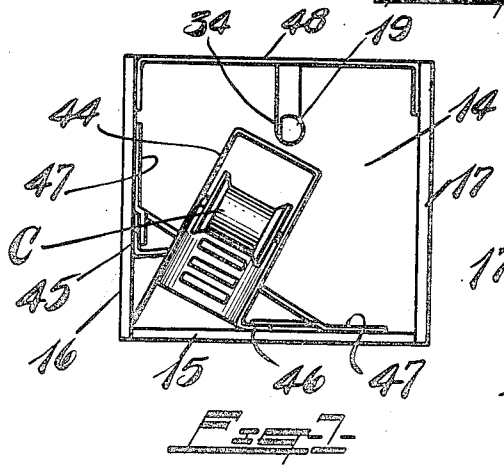


Fig. 7.

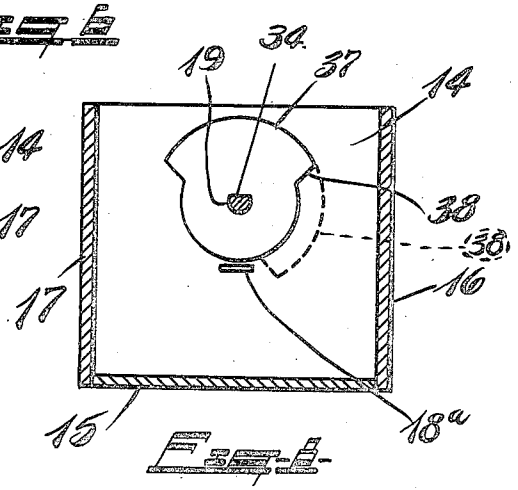


Fig. 8.

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VENETIAN BLIND CONSTRUCTION

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Continuation of application Serial No. 104,999, October 10, 1936. This application May 15, 1937, Serial No. 142,904

6 Claims. (Cl. 156—17)

This case is a continuation of Ser. No. 104,999, filed October 10, 1936.

One of the objects of the present invention is to provide a blind construction which is simple, practical and comparatively inexpensive to manufacture.

A further object still is to provide a centrally disposed rotatable blind tilting element which can be removed from the housing as a unit, as well as means for limiting the rotative movement of said rotatable element.

A still further object is to provide simple, quickly detachable means for securing the ladder tape in position, thus simplifying the blind assembly and mounting.

With the above and other objects in view, the present invention consists in the combination and arrangement of parts, hereinafter more fully described, illustrated in the accompanying drawings, and more specifically pointed out in the claims, it being understood that changes may be made in the form, size, proportion and minor details of construction, without departing from the spirit, or sacrificing any of the advantages of the invention.

In the drawings—

Fig. 1 is an inside elevational view of a Venetian blind embodying my construction.

Fig. 2 is a top plan view of the housing and associated parts, the broken lines showing the front wall of the bracket swung out to permit removal of the head rail.

Fig. 3 is an enlarged fragmentary part sectional front view of the housing, the broken lines showing the worm assembly shifted longitudinally for removal.

Fig. 4 is an enlarged fragmentary part sectional front view showing the worm and worm wheel assembly, the broken lines showing the blind suspending rotatable element removed.

Fig. 5 is an end view thereof.

Fig. 6 is an enlarged fragmentary part sectional view similar to Fig. 3 and showing the opposite end of the casing and the automatic cord stop.

Fig. 7 is an end view thereof.

Fig. 8 is a sectional end view taken on the line 8—8 of Fig. 2, and illustrating the stop for limiting rotation of the shaft, the broken lines showing the limit of travel.

Fig. 9 is an enlarged detail end view showing the manner of attaching the ladder tape.

Fig. 10 is a detail edge view of the worm wheel showing the rotatable member connected thereto.

Fig. 11 is a side view taken on the line 11—11 of Fig. 10.

Referring now more particularly to the accompanying drawings in which I have shown the preferred embodiment of my invention, the numeral 10 indicates a conventional window frame in which the Venetian blind 11 is hung. Brackets 12 are secured to the side jambs 13 of the window casing, and support a housing 14 in which the blind operating mechanism and hardware is mounted.

The housing 14 can be formed of any desired material, but in the present instance, I have shown it formed of wood, which when properly finished presents a neat and pleasing appearance and conceals the operating mechanism from view.

This casing 14 comprises a bottom panel 15, and front and back panels or walls 16 and 17 respectively, transversely disposed plates 18 being secured to the front and back panels and form a support for a centrally disposed shaft 19, which is removably journaled therein, said shaft being provided with a flat section as shown.

Relatively short spaced apart cylindrical sections 20 are provided on the shaft 19 and are formed with a longitudinally disposed groove 21 into which the ends of the ladder tape 22 are inserted, (see Fig. 9) said tape being anchored in said groove by means of the short wire section 23, these tapes leading through suitable openings 24 provided in the bottom wall of the casing and the blind slats 25 are carried by said tape.

A tilting assembly B is removably mounted as a unit in the one end of the housing, and comprises a pair of spaced apart plates 26, the ends of which are bent to form flanges 27, one of said flanges engaging a raised plate 28 which is secured to the bottom panel of the housing and this assembly can be detached by merely shifting it longitudinally, and as indicated in broken lines in Fig. 3 of the drawings.

The tilting mechanism comprises a worm and worm shaft 29 and 30 respectively, a worm wheel 31 being mounted on said plates and is provided with hubs 32, one of said hubs projecting beyond the face of the plate and is slotted as at 33 (see Fig. 11) to receive and accommodate the flattened end 34 of the shaft 19. A sheave 35 is mounted on the outer end of the worm shaft 30 and a tilt cord 36 is trained thereover, the end hanging within easy reach of the operator so that the slats can be readily tilted as desired.

A stop is provided to limit the rotation of the shaft 19, and comprises a disc shaped member

37 which is mounted on the shaft 19 at a point directly adjacent one of the cylindrical sections 20, said disc having a cam shaped section 38, the edge of which engages a leg 18a which is formed integral with one of the plates 18.

Brackets 39 are provided in the housing 14 and sheaves 40 are mounted on pins 41 provided in said brackets, cords 42 being trained thereover for raising and lowering the blind. The lifting cords pass over the sheave 43 which forms a part of an automatic stop unit C, and which is mounted in a bracket 44, the flanged portions 45 and 46 respectively engaging the members 47 which are secured in the housing, and by shifting the unit toward the end of the housing, as shown in broken lines in Fig. 6 of the drawings, it can be readily removed as a unit, both the tilt and stop devices can be assembled separately on the bench, and then mounted as separate units in the housing, thus simplifying the assembly and mounting of the operating mechanism.

The shaft assembly is also easily removable as a unit, it is merely necessary to remove the pins 23 to release the ladder tape, rotate the shaft so that the reduced section 34 of the shaft 19 is vertically disposed, and the shaft assembly is then free for removal.

Braces 48 serve to reinforce the ends of the housing, and the bottom and side panels can also be reinforced in any satisfactory manner if desired.

I wish to direct particular attention to the fact that the front panel projects beyond the ends of the back and bottom walls as shown at 49 in Figs. 2, 3, 4 and 6, and this is of prime importance as window openings which are supposedly the same, will vary anywhere from ¼" to 1" and more, and these projecting portions can be cut to suit the width of the opening, it can be readily done by unskilled labor and requires nothing more than a common hand saw, and the ends of the housing are concealed by the supporting brackets 12, so that a neat and pleasing appearance is preserved.

It will be noted that the entire blind structure is suspended from the shaft 19 which is adapted to be actuated for tilting the slats, the specific arrangement permitting the slats to be tightly closed to exclude all light. The tilt assembly B provides for the slat tilting action, and the automatic stop device C operates to hold the blind in its raised or set position. All of these units are quickly detachable and removable, and the housing can be manufactured of a length to suit window openings of extreme width as they can be cut to exact length on the job, the ends being supported and concealed within the cap shaped brackets 12.

From the foregoing description it will be clearly obvious that I have perfected a very simple, novel and improved Venetian blind construction.

What I claim is:

1. A Venetian blind construction comprising a supporting housing, a rotatable element removably journaled therein and provided with enlarged cylindrical sections, a ladder tape having its ends detachably secured to said cylindrical sections, clips provided in said housing, a quickly detachable tilting mechanism engageable with said clips, said tilting mechanism being adapted to actuate said rotatable element, and means for limiting the rotative movement of the rotatable element.

2. A Venetian blind comprising a support in the form of a casing, a rotatable element removably journaled and concealed in said casing, cylindrical sections mounted on said rotatable element, and provided with longitudinally disposed slots, ladder tapes detachably secured in said slots, a wire for securing the tapes in position, clips in the housing, and a unitary tilting mechanism detachably engaging said clips, said tilting mechanism being detachably connected to the rotatable element for actuating said element.

3. A Venetian blind comprising a support in the form of a casing, a rotatable element removably journaled and concealed in said casing, ladder tapes detachably secured to said rotatable element, clips provided in said casing, means for driving said element, said means comprising a worm and worm wheel assembly detachably engaging said clips as a unit and having detachable connection with the rotatable element, and means for limiting the rotative movement of the rotatable element in either direction.

4. A Venetian blind construction in the form of a housing, means concealed in said housing for suspending a Venetian blind therefrom, said means including a rotatable element, clips provided in said housings, and a unitary tilting mechanism detachably engageable with said clip for actuating said rotatable element.

5. A Venetian blind comprising a headrail in the form of a casing, a rotatable shaft removably journaled therein and formed with longitudinally disposed flat surface, cylindrical sections mounted on said rotatable shaft, ladder tapes secured to said cylindrical sections, a unitary tilting mechanism mounted in said casing, and a slotted hub on said tilting mechanism and detachably engageable with said shaft to permit removal of the shaft and cylindrical sections as a unit.

6. A Venetian blind comprising a headrail in the form of a casing, bearings in said casing and formed with reduced passages opening thereinto, a rotatable shaft journaled in said bearings and formed with a flat section, adapted when the shaft is in predetermined position, to permit the shaft to pass therethrough and be journaled in said bearings, cylindrical sections mounted on said shaft, ladder tape secured thereto, a unitary tilting mechanism mounted in the casing and including a worm and worm wheel, a slotted passage in the hub of the worm wheel, and a flattened section on the end of the shaft and engageable in said slotted passage to permit the shaft to be removed as a unit when the shaft is rotated to predetermined position.

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