Aug. 16, 1938. G. FINDELL 2,127,330

DEVICE FOR OPERATING VENETIAN BLINDS

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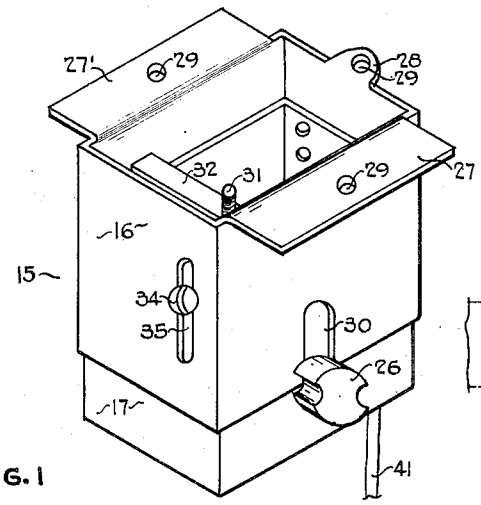


FIG. 1

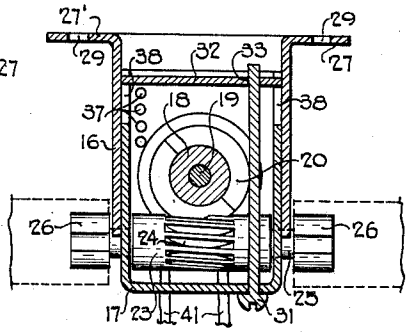
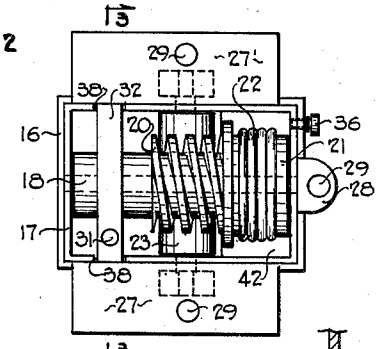


FIG. 3

FIG. 2



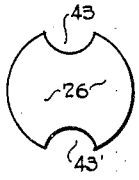


FIG. 4

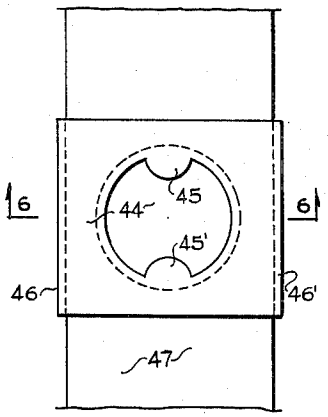


FIG. 5

FIG. 8

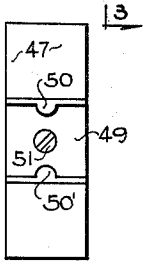


FIG. 9

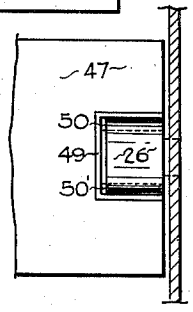


FIG. 7

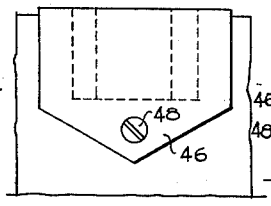
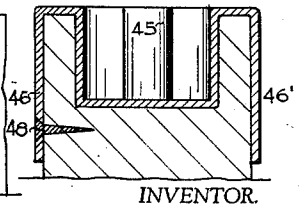


FIG. 6



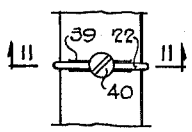


FIG. 10

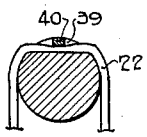


FIG. 11

INVENTOR.
GEORGE FINDELL
BY
Peter W. Boesen
ATTORNEY.

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DEVICE FOR OPERATING VENETIAN BLINDS

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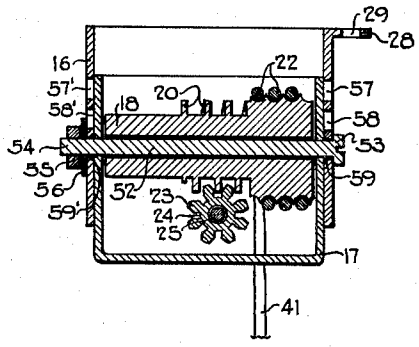


FIG. 12

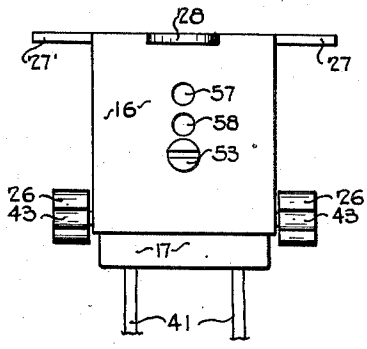


FIG. 13

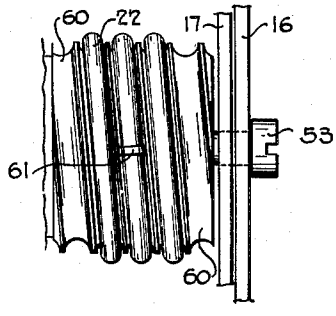


FIG. 14

INVENTOR.
GEORGE FINDELL

BY Peter W. Boesen

ATTORNEY.

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UNITED STATES PATENT OFFICE

2,127,330

DEVICE FOR OPERATING VENETIAN BLINDS

George Findell, Flushing, N. Y.

Application October 22, 1936, Serial No. 106,941

5 Claims. (Cl. 156—17)

This invention relates to new and useful improvements in devices for operating Venetian blinds, and the like, and it has for its special purpose the construction of an adjustable device, which may easily be regulated so as to provide a snug fitting, relative to the window frame, for any kind of tilt used with the different sizes of said Venetian blinds.

A further object of my device is to the effect that the said device simultaneously can operate two blinds as well as one blind; in the latter case the device will be suitable for a right as well as left operation.

Still another advantage of my device lies in the fact that through said construction of my device the length of cord required for a 180 degree turn of the tilt, is reduced to a minimum, or fraction of the length now usually required for such turn.

With the above and other objects in view, this invention consists of the novel features of construction, combination and arrangement of parts, hereinafter fully described, claimed and illustrated in the accompanying drawings forming part of this specification, and in which similar characters of reference indicate corresponding parts in all views, and in which:

Figure 1 is a perspective view of my invention; while

Figure 2 is a top plan view of the same.

Figure 3 is a transverse sectional view on the line 3—3 in Figure 2, showing also in dotted lines the position of the tilts.

Figure 4 is a top plan view of a knob forming part of the arrangement for the attachment of the tilts.

Figure 5 is an end elevational view of the tilt proper, with an iron casing inserted therein to fit the knob shown in Figure 4.

Figure 6 is a transverse sectional view of the device, as disclosed in Figure 5, taken on the line 6—6 in said Figure 5; while

Figure 7 is a side elevational view thereof.

Figures 8 and 9 show a slight modification in regard to said casing, as Figure 8 represents a top plan view, and Figure 9 a side elevational view thereof.

Figure 10 is a top plan view, showing the manner of fastening the string to the drum; while

Figure 11 is a transverse sectional view of the latter, taken on the line 11—11 in Figure 10.

Figure 12 is a transverse sectional view through a modification of my device; while

Figure 13 is an elevational view of same; and

Figure 14 illustrates in an enlarged elevational detail view the modified rope drum of the same.

Referring more particularly to the drawings, 15 indicates a casing comprising an upper part 16 and a lower part 17, said lower part being made to telescope within the upper part 16.

In the lower part 17 is mounted a drum 18 upon an axis 19, said axis is made to be flush with the surface of the outer side wall of the inner, or lower part 17, and is held in place by the walls of the outside part 16.

The central part of the drum 18 is provided with a worm gear 20, while an enlarged portion 21 thereof, is provided with means for preventing a rope 22, wound upon said enlarged portion, from slipping, as said rope is used for the manipulation of the drum.

Underneath said drum and perpendicular to the same, is mounted a gear 23, having teeth 24 in mesh with the worm gear 20 upon the drum. The axis 25 of said gear protrudes through the sides of the casing terminating in two knobs 26 adapted to be secured to two tilts, when one box device is to operate two tilts; otherwise one knob adapted for right and left operation, as desired, may be sufficient.

Side flanges 27 and 27' and a small semi-circular extension 28 are formed with screwholes 29 in order to fasten the box to the rail of the blind. Cut-out portions 30 in the sides of the upper part 16 permit the lower part 17 with its protruding axis 25 to be freely adjusted, according to the different sizes of tilts in use. Said adjustment is achieved by means of a set screw 31 and a cross bar 32, which latter is welded or soldered to the inside walls of the upper part 16 about one half of an inch below the top thereof; said cross bar 32 is made with a threaded opening 33 therein adapted to receive the set screw 31. As especially seen in Figure 3, it will easily be understood how the set screw 31 by manipulating the latter will raise or lower the knobs 26. After completing the adjustment another set screw 34, screwed into the front wall of the inner or lower part 17 and normally free to move in an oblong cut-out portion 35 in the outer part 16, is tightened in place. For further secured adjustment the outer back wall is provided with a spring actuated pin 36 adapted to cooperate with a row of correspondingly shaped holes 37 arranged in the wall of the inside, or lower part 17.

Said inside, or lower part 17 has, in addition to the holes provided for the two axes and the aforesaid holes 37, two cut-out portions 38 for accommodating the cross bar 32.

Figures 10 and 11 show how the rope is secured to the rope-drum, a cut-out 39 in the latter per-

mitting the rope 22 to be inserted therein, with a small screw 48 holding said rope in place. After being wound a few times around the drum the ends 41 will hang down freely through an opening 42 in the bottom of the lower part.

The knob 26 has two semi-circular cut-out grooves 43 and 43', as may especially be seen in Figure 4.

A metal casing 44 with two extended portions 45 and 45' corresponding to the grooves in the knob, and two side wings 46 and 46', is inserted in each end of the tilt 47.

One of the side wings 46 is in Figure 7 shown with a screw 48 adapted to secure the same in place.

Figures 8 and 9 show a modification in regard to the casing. Thus 49 indicates herein a somewhat U-shaped form provided with two extended portions 50 and 50' similar to 45 and 45' shown in Figure 5. A screw 51 in the bottom of the casing secured the latter to the tilt.

In Figures 12 and 13 is shown another modification of my device. The adjustment of the box, in regard to the height for the three sizes of tilts usually manufactured, is here obtained by moving the axle 52, which supports and has mounted thereon the rope and worm-gear drum 18. Said axle is herein provided with a head 53 and a threaded portion 54 at the opposite end. A nut 55 and a washer 56 are applied to said end 54, and will, as may be especially seen in Figure 12, when tightened, securely hold the two parts 16 and 17 together.

Three holes in both end walls of the part 16, 57, 57'; 58, 58' and 59, 59' are arranged one set for each of the three different tilts, and are adapted to have the axle mounted therein.

Figure 14 shows a different rope arrangement, as a semi-circular continuous track 60 will here secure a smooth and easy operation, and the rope will have no chance to get tangled up. The small screw 48 shown in the Figures 10 and 11, holding the rope in position, is here replaced with a small clamp or hook 61, preferably soldered on to the drum fins.

It is obvious that changes may be made in the construction and arrangement of the several parts, as shown and described, within the scope of the appended claims, without departing from the spirit of the invention, and I do not therefore wish to limit myself to the exact construction and arrangement shown and described herein.

What I claim as new, and desire to secure by Letters Patent of the United States, is:—

1. A device of the class described, comprising two casings telescopically arranged, flanges formed upon the outer casing and being made with screwholes therein, whereby to secure the outer casing to a top-rail, a cross-bar mounted upon the inside of said outer casing and being formed with a threaded opening therein, the inner casing being made with a screw-hole in the bottom thereof, a screw-member mounted in said screw-hole and being adapted to engage the threaded opening in said cross-bar, means for securing said casings in relative position, when adjusted, and comprising a set-screw, and a spring actuated stud adapted to cooperate with any one of a number of apertures, respectively, an axle mounted in the inner casing and flush with the outside walls thereof, a drum turnably arranged on said axle, worm gears centrally arranged upon said drum, one end of the latter being formed with an enlarged portion, a screw mounted in a cut-out slit in said enlarged portion, a rope inserted in said slit and underneath the screw and being secured by the latter, a second drum arranged upon an axle mounted in said inner casing, the axis of the second drum being perpendicular to the axis of the first said drum, teeth upon the second drum in mesh with said worm gears, knobs formed upon the axle of the second drum and outside both casings, and adapted to have tilts attached thereto, a rope wound upon the enlarged portion of the first said drum, the inner casing being formed with an opening at the bottom thereof adapted to accommodate said rope in operating the device, substantially as shown and described.

2. A device as claimed in claim 1, and wherein the knobs each are formed with semi-circular cut-out portions, metal casings to be inserted into the ends of the tilts, said latter casings being formed with extended portions upon the inner walls thereof adapted to engage the cut-out portions in said knobs, flanges upon said latter casing and adapted to overlap the sides of the tilt, and a screw for securing said flange to the latter.

3. A device, as claimed in claim 3, and wherein the knobs are formed with two semi-circular cut-out portions, a U-shaped metal casing arranged in the end of the tilt, two extended portions upon the inside of said latter casing and adapted to register with the cut-out portions in said knob, and a screw securing said latter casing to the tilt.

4. A device of the class described, comprising two casings vertically telescopically arranged, flanges formed upon the outer casing and being made with screw-holes therein, whereby to secure the outer casing to a top-rail, an axle turnably arranged in the inner casing and a drum mounted upon said axle, a second axle, turnable, and disposed in said inner casing and below the first axle, and a gear arranged upon said second axle, the axle of the gear being perpendicular to the axle of the drum, a worm axially fixed to the drum and adapted to mesh with said gear, knobs formed upon the axle of the gear and outside both casings, and adapted to have tilts attached thereto, a rope wound upon said drum, the inner casing being formed with an opening at the bottom thereof adapted to accommodate said rope in operating the device, and means for adjustably securing said casings in relative position to one another.

5. A device of the class described, comprising two vertically telescopically arranged casings, flanges formed upon the outer casing and being made with screw-holes therein, whereby to secure the outer casing to a top-rail, an axle mounted in the inner casing and a drum turnably arranged upon said axle, a worm-shaped portion axially fixed to said drum, a second axle arranged in the inner casing, a gear mounted upon said second axle and adapted to mesh with the worm-shaped portion of the drum, knobs formed upon the axle of the gear and outside both casings, and adapted to have tilts attached thereto, a rope wound upon the drum, the inner casing being formed with an opening at the bottom thereof adapted to accommodate said rope in operating the device, and means for adjustably securing said casings in relative position to one another.

GEORGE FINDELL.