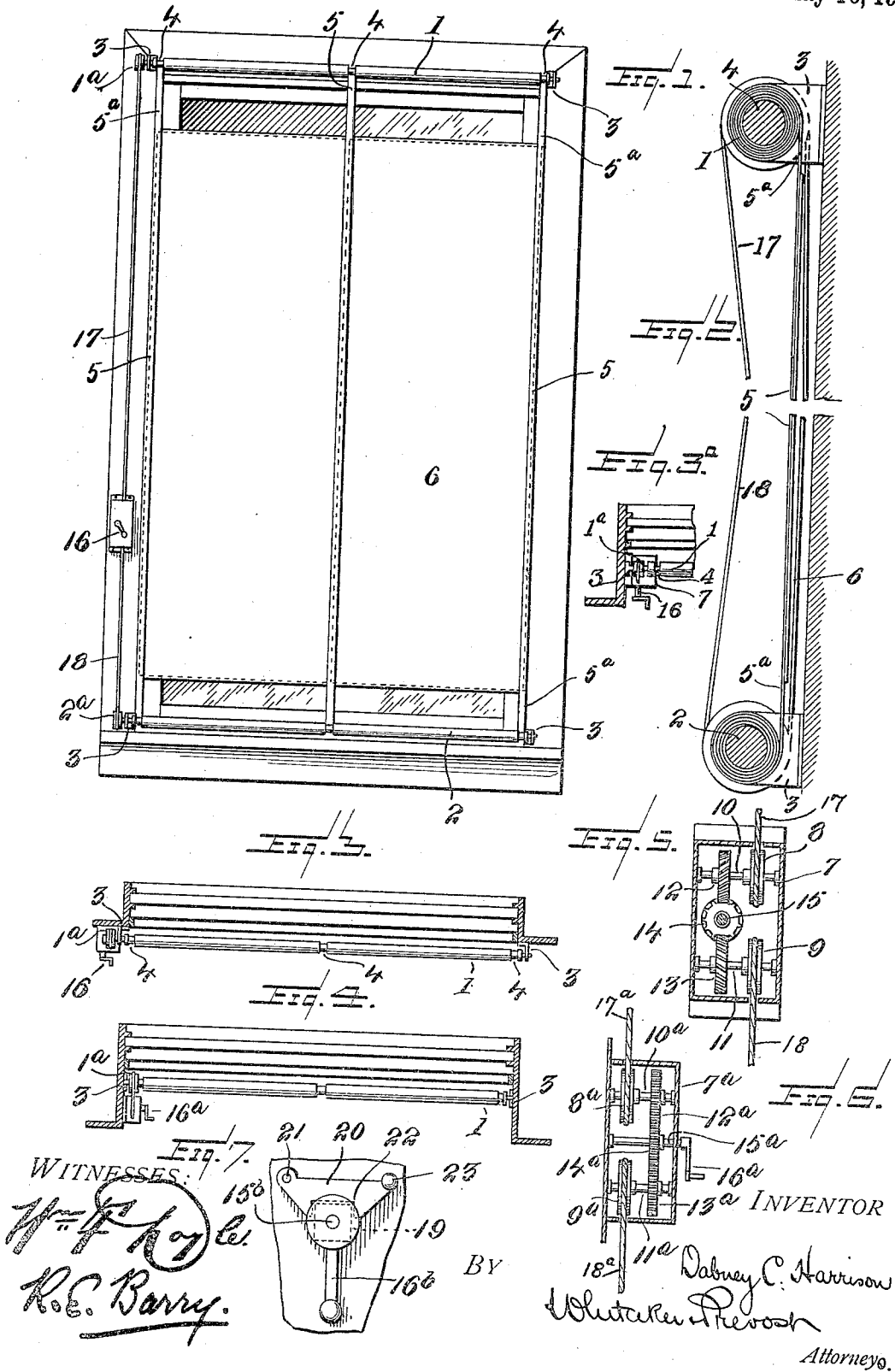


D. C. HARRISON.
WINDOW SHADE.

APPLICATION FILED MAY 21, 1909.

957,207.

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UNITED STATES PATENT OFFICE.

DABNEY C. HARRISON, OF WASHINGTON, DISTRICT OF COLUMBIA.

WINDOW-SHADE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, DABNEY C. HARRISON, citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Window-Shades; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention consists in the novel features hereinafter described reference being had to the accompanying drawings which illustrate the best form in which I have contemplated embodying the invention and the said invention is fully disclosed in the following description and claims.

Referring to the accompanying drawing, Figure 1 represents in elevation a window shade embodying my invention. Fig. 2 is an enlarged vertical sectional view of the same partly broken away. Fig. 3 is a top plan view of the construction shown in Fig. 1, the window casing being shown in section. Fig. 3^a is a detail of one end of the shade shown in Fig. 3, showing it applied to a recessed window. Fig. 4 is a view similar to Fig. 3, but showing the shade adapted for use with a recessed window casing. Fig. 5 is a sectional view of the roller operating mechanism. Fig. 6 is a similar view of a modified form of roller operating mechanism. Fig. 7 is a detail view of a locking device for the roller actuating mechanism.

The object of my invention is to provide a shade for a window opening constructed and arranged so that the shade can be rolled either upwardly or downwardly and made to cover either the upper or lower portion of the window opening leaving the other portion thereof exposed, and enabling the operator to regulate the lighting therefrom.

The device is designed to be operated from an intermediate point between the top and bottom of the window casing, and also embraces means for supporting the shade proper so that it is relieved from strain, and made to roll smoothly upon either roller.

The device is especially desirable for facilitating the proper lighting of a desk, drawing table, easel or the like in offices, studios, etc., from a window opening but is also adapted for general household use.

In carrying out my invention I provide two shade rollers, one of which is located

at the top of the window casing as shown at 1, and the other of which, indicated at 2, is arranged at or near the bottom of the window casing, the said rollers being mounted in suitable bracket bearings 3, 3. Each of the rollers 1 and 2 is preferably provided with reduced tape engaging portions 4, 4, 4 to which are secured a plurality of tapes 5, 5, 5 one end of each tape being secured to one of the said reduced portions of each roller, and the other end being secured to the corresponding reduced portion of the other roller. One tape is arranged near each end of the rollers, and one or more intermediate tapes can be used. In the drawing I have shown one intermediate tape arranged centrally of each roller.

6 represents the shade material, which is stitched or otherwise secured throughout its length or at suitable intervals to the tapes 5, 5, 5, leaving a portion of the tapes indicated at 5^a, 5^a at both the upper and lower ends of the shade material. The reduced tape engaging portions 4 of the rollers form grooves of such depth that the end portions 5^a of the tapes which engage the same, will completely fill the said grooves and lie flush with the surface of the roller when the upper (or lower) edge of the shade 6 engages the roller, thus causing the shade 6 to wind smoothly upon the roller, at either the upper or lower portion of the window.

To facilitate the adjustments of the shade I provide each of the rollers 1 and 2 with a grooved pulley (1^a and 2^a) to receive operating cords, or belts.

7 represents a metallic frame or box adapted to be secured to the window casing, said frame or box being provided with a pair of grooved driving pulleys 8, 9, mounted on shafts 10 and 11 respectively. I also provide operating mechanism for said driving pulleys, actuated by a crank which is located either at the front of the frame or box as in Figs. 1, 3 and 5, or at the side as shown in Figs. 4 and 6. In the form shown in Figs. 1, 3 and 5, the shafts 10 and 11 are provided with spiral gear wheels 12 and 13 respectively meshing with a spiral gear on a shaft 15 extending through the front of the frame or box and provided with a handle or crank 16. This form of actuating mechanism is adapted to be secured to the face of the window casing, as shown in Figs. 1 and 3, and it may also be used on the inner lateral face of a recessed window

casing by providing it with suitable attaching means at one side of the same, (as shown in Fig. 3^a.)

In Figs. 4 and 6 I have shown a modified form of actuating device which can be conveniently used on the inner lateral face of a recessed window casing. In this form the box or casing 7^a is provided with driving pulleys 8^a, 9^a mounted on shafts 10^a and 11^a, said shafts carrying gear wheels 12^a, 13^a engaging a driving pinion 14^a on shaft 15^a which is provided with a handle or crank 16^a. It is obvious that this form of actuating device can also be used on the front face of a window casing by twisting the connecting cords or belts from the driving pulleys to the pulleys on the rollers.

As shown in Figs. 1 and 2 the actuating device is secured to the window casing at the desired height, and driving cords or belts 17, 18 are provided, to connect each of the driving pulleys with the adjacent pulley 1^a or 2^a on the rollers 1 and 2. By turning the crank 16 (or 16^a) the rollers can be actuated so as to wind up the tapes 5, 5, 5, on one roller and unwind them from the other roller, thus raising or lowering the shade 6. The shade 6 can therefore be adjusted to cover the upper portion of the window and expose the lower, or to cover the entire window, and the desired lighting effect therefrom can be readily and accurately obtained. In raising or lowering the shade, the frictional engagement of the cords with the pulleys will permit a slight slippage of either cord with respect to its pulleys to compensate for any difference in the relative speeds of the upper and lower rollers as more or less of the shade and tapes is wound upon them. And further the natural tendency of the upper roller to unwind owing to the weight of the shade and tapes depending therefrom is resisted by the inertia of the lower roller and the winding mechanism, and hence the shade will remain in any position to which it is adjusted by the crank 16 (or 16^a) and the pulleys operated thereby.

In some cases I prefer to provide a locking device for the driving shaft of the roller actuating mechanism and in Fig. 7 I have shown such a device. In this figure 15^b represents the driving shaft and 16^b the

crank or handle. The shaft 15^b is provided in this instance with a squared portion 19 and 20 represents a pivoted locking device secured to the frame or box by pivot 21, and having a notch 22 to engage the squared portion of the shaft, and a finger piece 23, which preferably acts as a weight to hold the locking device in operative position. The locking device can be thrown or held out of operative position when the shade is adjusted and may be dropped into position on the squared portion of the shaft to lock the parts in position when desired.

What I claim and desire to secure by Letters Patent is:—

1. In a window shade, the combination with two rollers supported horizontally one above the other, of a plurality of supporting tapes each having one end secured to one roller and the other end secured to the other roller, said tapes being of greater length than the distance between said rollers, a piece of shade material of less length than said tapes, secured thereto at portions separated transversely of the shade, a pair of driving pulleys supported intermediate said rollers, a driving belt connecting each of said driving pulleys with one of said rollers and actuating mechanism for simultaneously operating said driving pulleys.

2. In a window shade, the combination with two rollers supported horizontally one above the other, of a plurality of supporting tapes each having one end secured to one roller and the other end secured to the other roller, said tapes being of greater length than the distance between said rollers, a piece of shade material of less length than said tapes, secured thereto at portions separated transversely of the shade, a pair of driving pulleys supported intermediate said rollers, a driving belt connecting each of said pulleys with one of said rollers, a driving shaft provided with an actuating device, gearing connecting said driving shaft with said driving pulleys and a locking device for said driving shaft.

In testimony whereof I affix my signature, in the presence of two witnesses.

DABNEY C. HARRISON.

Witnesses:

D. G. STUART,
L. P. WHITAKER.