

C. M. MARTIN.
WINDOW SHADE.
APPLICATION FILED JUNE 3, 1908.

924,255.

Patented June 8, 1909.

Fig. 1.

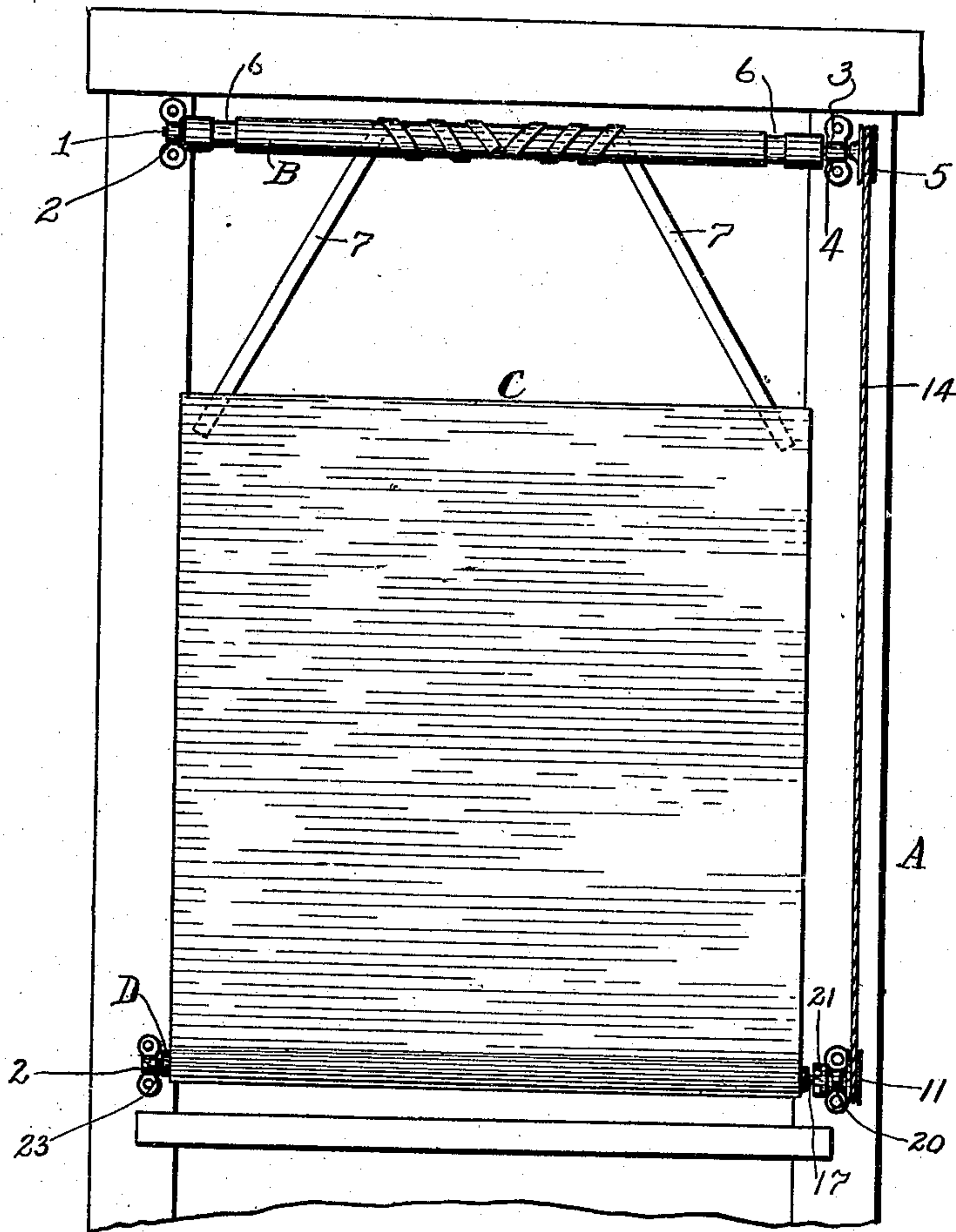


Fig. 2.

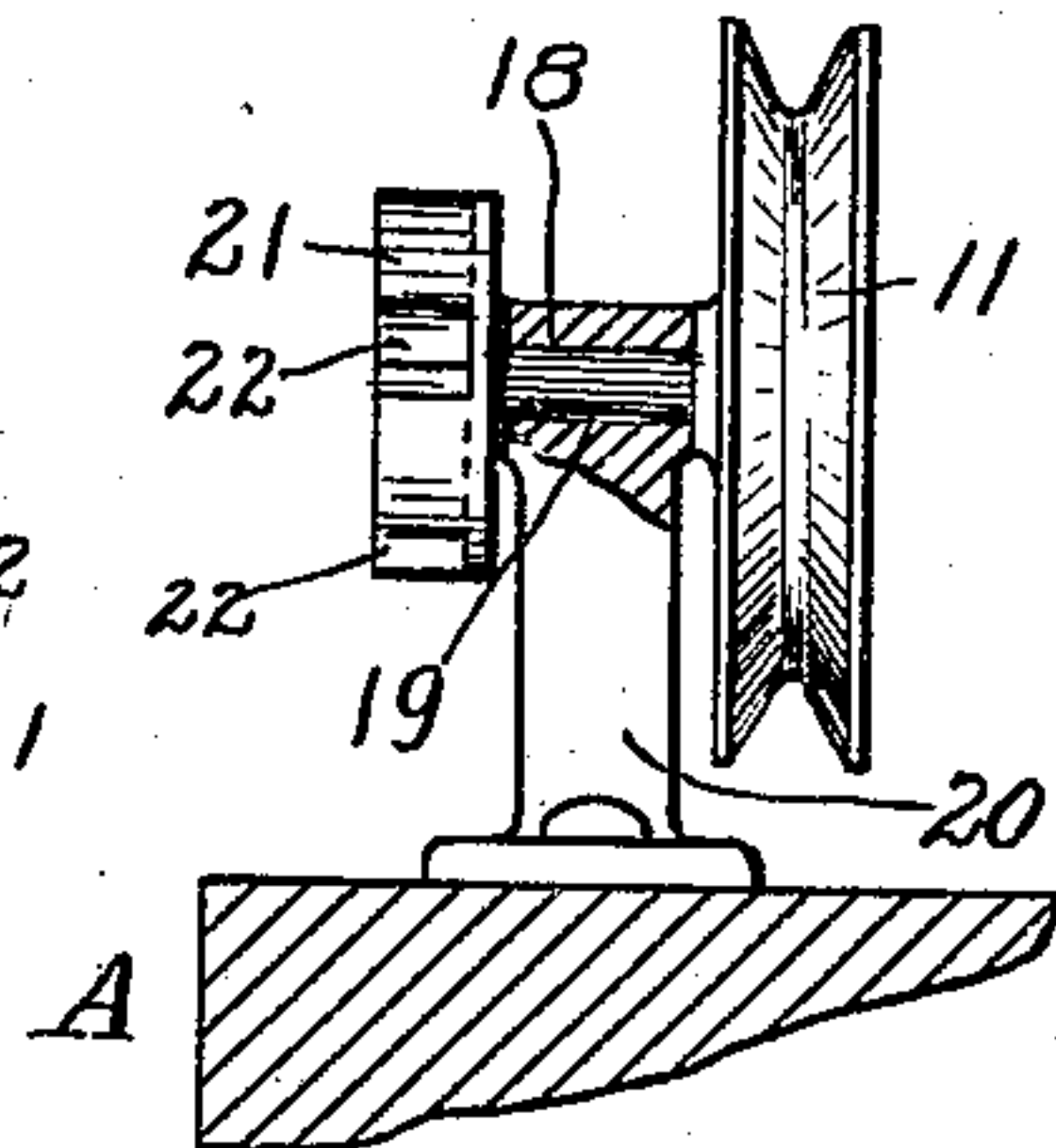


Fig. 3.

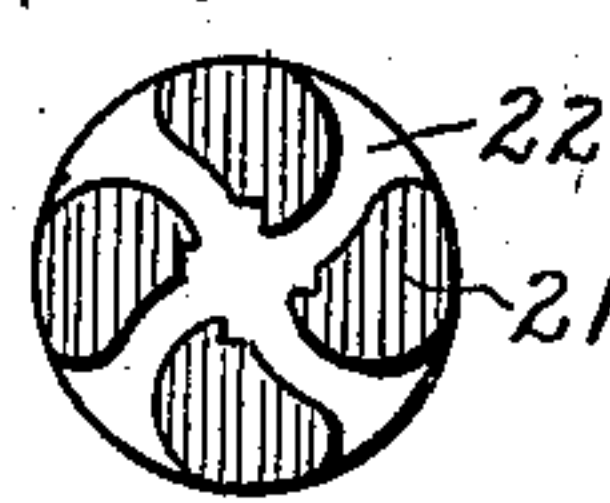
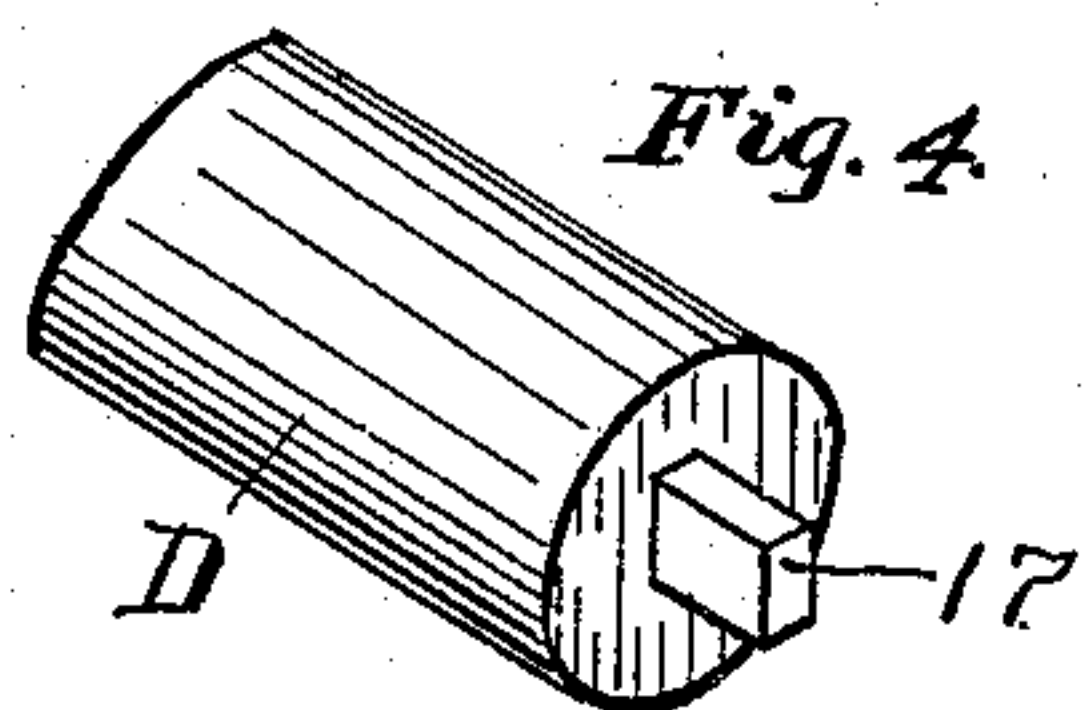


Fig. 4.



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UNITED STATES PATENT OFFICE.

COLUMBUS M. MARTIN, OF FOREST CITY, NORTH CAROLINA.

WINDOW-SHADE.

No. 924,255.

Specification of Letters Patent.

Patented June 8, 1909.

Application filed June 3, 1908. Serial No. 436,332.

To all whom it may concern:

Be it known that I, COLUMBUS M. MARTIN, a citizen of the United States, residing at Forest City, in the county of Rutherford and State of North Carolina, have invented a new and useful Improvement in Window-Shades, of which the following is a specification, reference being had to the accompanying drawing.

My invention relates particularly to window shades adapted to be rolled upon a horizontal roller.

The object of the invention is to provide simple and economical means for placing the shade over the upper or the lower portion or all of the window space or for rolling the entire shade so that all of the window space is exposed.

In the accompanying drawings, Figure 1 is a front elevation of my apparatus; Figs. 2, 3, and 4 are detail views of the mechanism for controlling the lower roller.

Referring to said drawings, A is the window casing.

B is a horizontal upper roller having at its left end a journal, 1, resting in the bracket, 2, on the upper portion of the window casing. At its right hand end said roller has a journal, 3, resting in a bracket, 4. The journal, 3, is extended to the right of said bracket and surrounded by a grooved pulley, 5, fixed immovably upon said journal. Near each end said roller is provided with an annular groove or recess, 6, for receiving a strap, 7. But said straps are preferably secured to said roller at the middle of the latter, so that said straps will wind spirally upon the roller as illustrated. The lower ends of said straps are secured to the upper corners of the shade, C, as shown.

Below the pulley, 5, at or near the lower portion of the window casing is a similar pulley, 11, fixed around the right hand end of a shaft, 18, resting in a bearing, 19, in a bracket, 20, secured to the window casing at the left of said pulley. An endless cord or band, 14, extends around the pulleys, 5 and 11, and is under sufficient tension to cause the turning of both pulleys and the roller, B, when either the forward portion or the rear portion of said cord is pulled up or down. The lower portion of the shade is secured to a roller, D, which serves for the rolling of the shade and also as a weight drawing on the lower edge of the shade to keep the shade and the straps, 7, under suitable tension. One

end of said roller is provided with a rigid tenon, 17.

At the left of the bearing, 19, the shaft, 18, supports a head, 21, having radial cavities, 22, adapted to receive the adjacent tenon, 17. Said cavities are preferably inclined to the true radii of said head, so that the upper ends of said cavities will be forward of the lower ends when the head, 21, is being rotated by pulling the forward portion of the cord, 14, downward. Said head constitutes a mechanism for engaging and rotating the lower roller, D, as will be hereinafter described.

At its left hand end, the roller, D, has a journal or pin, 23. At the left of the window casing and horizontally in line with the bracket, 20, is a bracket, 2, in which said journal, 23, rests when the roller, D, is at its lower limit.

The operation of the apparatus is as follows: Assuming that the straps, 7, and the shade, C, have been rolled upon the upper roller, B, and the shade unrolled from the roller, D, the latter being held against the window opening with the shade, the front portion of the band, 14, is pulled upward by hand, until the shade has been unrolled from the roller, B, far enough to cover the window opening, the lower roller, D, traveling downward with the lower edge of the shade. If the shade is to be lowered sufficiently to uncover the upper portion of the window opening, the forward portion of said band is pulled upward farther, whereby the tenon, 17, on the lower roller, D, falls into one of the radial cavities on the adjacent clutch head and the pin, 23, falls into the adjacent bracket, 2. Since the clutch head, 21, rotates with the lower pulley, 11, the lower roller, D, is now rotated, whereby the shade is wound upon said roller. The rotation of the right hand end of said roller is a little eccentric to its own axis, for when said roller falls into engagement with said clutch, it does not pass into full axial alinement with said clutch. By such rotation of said roller, a considerable portion—approximately one-half—of said shade may be wound upon said roller. Of course the extent of such winding may be varied. Ordinarily one half of the shade is sufficient, it being desirable usually to keep the lower half of the window opening covered by the shade. For again raising the entire shade and winding upon the upper roller, the cord or band, 14, is moved in the

reverse direction. When this is done, the straps are again wound on the upper roller and the lower roller is reversed and the shade unwound therefrom. When such unwinding has been completed, the lower roller is lifted out of the radial notches or cavities on the clutch heads, and the lower roller is then carried upward with the shade. It will be observed that the slant of the straps, 7, becomes less while said straps are wound more and more upon the roller, B, said straps approaching more nearly the perpendicular to the roller as the winding progresses. In this manner the rate at which the straps are wound and the shade, C, lifted gradually diminishes. Such variation is intended to conform to the variation in unwinding from the lower roller, D, due to the variation in thickness of the said roller plus the portion of the shade rolled thereon. And it is to be observed that the rollers are without the usual springs upon which the rotation of the rollers in one direction depends. The absence of such springs makes the fixture more economical for construction and more durable.

I claim as my invention:

1. In a device of the nature described, an upper roller, bearings for said roller, a shade, straps joining said shade and said roller, a lower roller secured to the lower edge of the shade and movable up and down therewith, mechanism for engaging and rotating said lower roller when the latter is at its lower limit, and mechanism for rotating said rotat-

ing mechanism and the upper roller, substantially as described. 35

2. In a device of the nature described, an upper roller, bearings for said roller, a pulley on said roller, a shade, straps joining said shade and said roller, a lower roller secured to the lower edge of the shade and movable up and down therewith, mechanism for engaging and rotating said lower roller when the latter is at its lower limit, a pulley in operative relation with said rotating mechanism, and an endless cord surrounding said pulley and the pulley of the upper roller, substantially as described. 40 45

3. In a device of the nature described, an upper roller, a shade, straps joining said shade and said roller, a pulley on said roller, a lower roller secured to the lower edge of the shade and movable up and down therewith, a pulley below said first pulley, an endless cord surrounding said pulleys, a clutch in operative relation with said second pulley and adapted to engage said roller when the latter descends to the level of said clutch, substantially as described. 50 55

In testimony whereof I have signed my name, in presence of two witnesses, this 18th day of May, in the year one thousand nine hundred and eight. 60

COLUMBUS M. MARTIN.

Witnesses:

CYRUS KEHR,
C. A. MORSE.