

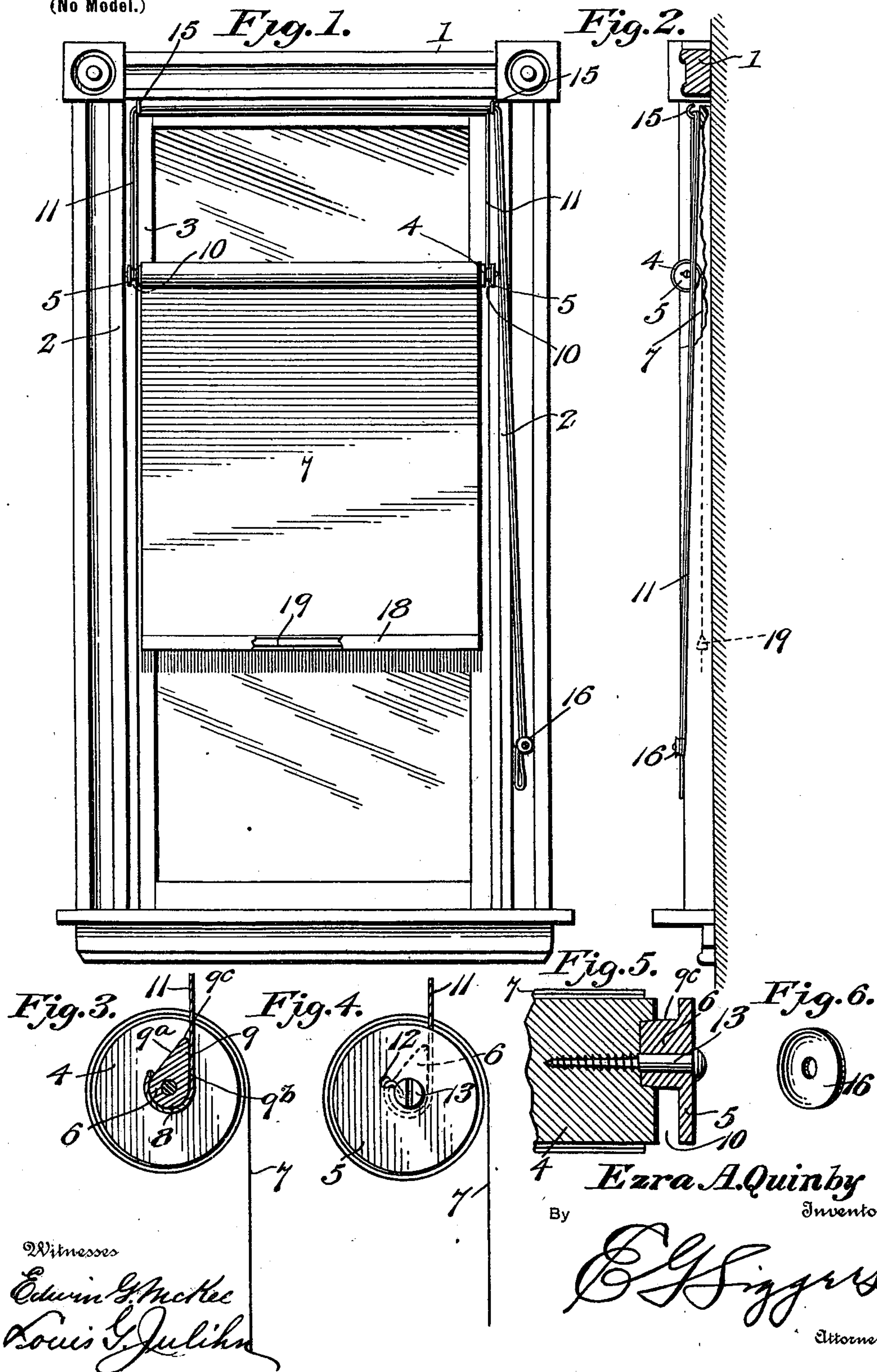
No. 675,110.

Patented May 28, 1901.

EZRA A. QUINBY, Dec'd.  
ELIZABETH A. QUINBY, Administratrix.  
SHADE ROLLER.

(Application filed July 7, 1900.)

(No Model.)



Witnesses  
Edwin G. McKee  
Louis L. Julihn

Ezra A. Quinby  
By  
C. G. Siggers  
Inventor  
Attorney



# UNITED STATES PATENT OFFICE.

EZRA A. QUINBY, OF NEAR NEWMARKET, IOWA; ELIZABETH A. QUINBY  
ADMINISTRATRIX OF SAID EZRA A. QUINBY, DECEASED.

## SHADE-ROLLER.

SPECIFICATION forming part of Letters Patent No. 675,110, dated May 28, 1901.

Application filed July 7, 1900. Serial No. 22,830. (No model.)

*To all whom it may concern:*

Be it known that I, EZRA A. QUINBY, a citizen of the United States, residing near Newmarket, in the county of Taylor and State of Iowa, have invented a new and useful Shade-Roller, of which the following is a specification.

My present invention relates to improvements in shade-rollers, one object being to provide a shade-roller which will be raised and lowered by the lowering and raising of the shade to cause the opposite edges of the curtain to move toward or from the top and bottom of the window simultaneously for the purpose of facilitating the ventilation of the room and to secure the simultaneous regulation of position of both the top and bottom of the curtain.

A further object of the invention is to provide a curtain which may be adjusted to any desired position upon the window for the purpose of admitting the light at the top or bottom of the window or at both points, as desired.

A still further object of the invention is to provide a simple and inexpensive device which will effect the retention of the curtain in any desired position upon the roller as said curtain is wound or unwound by the lifting of its lower edge or by the exertion of a downward pull thereon in the ordinary manner.

To the accomplishment of these several objects the invention consists in the construction and arrangement of parts, to be hereinafter more fully described, illustrated in the accompanying drawings, and defined in the claims.

In said drawings, Figure 1 is an elevation of a window equipped with my device. Fig. 2 is a side elevation thereof with part of the casing broken away. Fig. 3 is a detail view, partly in section, illustrating, on a somewhat larger scale, the construction and arrangement of the stop-cam. Fig. 4 is an end view of the roller, showing the manner of fastening the curtain-cord. Fig. 5 is a sectional view through one end of the roller, showing the manner of mounting the heads; and Fig. 6 is a detail view of the cord-fastener.

Referring to the numerals of reference employed to designate corresponding parts in the several views, 1 indicates the casing, 2 the jamb, and 3 the sash, of a window equipped with my device.

4 indicates a shade-roller of ordinary form, to the opposite ends of which are attached the roller-heads, comprising the disks 5 and the tapering cams 6. The disks 5 are located at proper distances from the ends of the roller to bring them just within the opposed faces of the jamb 2 for the purpose of having the ends of the roller overlap the inner edges of the sash to effectually exclude the light at the edges of the curtain 7, wound upon the roller. The cams 6 are disposed at right angles to the disks 5, with their comparatively broad transversely-curved edges or spindle portions 8 disposed concentric with the disks and extended at the opposite side to form an eccentric stop 9, defined by a pair of angularly-related plain faces 9<sup>a</sup> and 9<sup>b</sup>, extending from the opposite side edges of the face 8 and converging at the comparatively sharp edge 9<sup>c</sup> of the cam.

Inasmuch as the cams 6 are designed to be employed as retaining-prongs for the heads, they may be slightly tapered by imparting a longitudinal inclination to the edge 9<sup>c</sup>, and when a window is to be equipped with my device these cams are driven into the ends of the roller for the purpose of defining cord-retaining spaces or grooves 10 of the proper dimensions between the disks 5 and the ends of the roller. The opposite ends of a curtain-cord 11 are secured to the heads of the roller by being passed into the cord-recesses 10 and through openings 12, piercing the disks 5 adjacent to the cams 6, the extremities of said cord being firmly retained by being clamped against the heads by head-retaining screws 13, which after the cams 6 are driven into the ends of the roller are passed through axial openings 14, piercing the disks and cams. It is obvious that these screws 13 may be omitted, if desired; but I prefer to employ them for the dual purpose of securely retaining the ends of the curtain-cord and to prevent the heads from working loose from the roller. Preparatory to placing the curtain upon the



window it is wound entirely upon the roller, and the ends of the curtain-cord being entirely unwound from the cams are carried to the top of the window-casing and are carried  
 5 over the roller-supporting hooks 15, driven into the casing at points above the roller-heads, the looped end of the cord being then brought down to within convenient reach of the operator and secured upon a cord-fastener 16.  
 10

The fastener 16 may be of any desired construction, but preferably comprises a concavo-convex plate screwed to the window-casing, with its convex side opposed thereto. Before fastening the curtain-cord 11 the roller is adjusted to the desired position, sufficient room being left for the raising of the roller toward the top of the window as the bottom of the shade is drawn down. The curtain-cord having been firmly secured by a turn around the fastener 16, it will be seen that a slight pull upon the lower edge of the curtain will cause the latter to be unwound from the roller, the rotation of which latter will cause  
 15 the ends of the curtain-cord to be wound upon the cams 6, which will necessarily cause the roller to be raised a distance corresponding to the amount of cord wound upon the cams in a reverse direction—that is to say, in a direction reverse to the shade or curtain.  
 20  
 25  
 30

For the purpose of maintaining an effective equilibrium between the roller and the shade—that is to say, for the purpose of preventing an excessive weight of either the roller or shade from causing the curtain to be wound or unwound—I have provided the stop-cam 9, which is essentially an eccentric extension of what would otherwise be a cylindrical shaft for the reception of the curtain-cord as the latter is wound in a reverse direction by the unwinding of the curtain.  
 35  
 40

By reference to Fig. 3 of the drawings it will be seen that the tendency of the curtain to unwind will be overcome by the striking of the stop-cam 9 against the contiguous supporting-strand of the curtain-cord, the lower edge of the curtain being preferably weighted for the purpose of slightly overbalancing the weight of the roller. It will therefore appear  
 45 that the curtain may be unwound from the roller by a slight downward pull upon its lower edge and that said curtain will remain in any desired position by reason of the fact that the stop-cams will strike the supporting ends of the curtain-cord at the end of each rotation of the roller to prevent further unwinding of the curtain unless sufficient strain is imposed upon the curtain to overcome the detaining position of the cam. In like manner it will be observed that by relieving the roller of the weight of the curtain by lifting the lower edge of the latter the roller will gravitate for the purpose of simultaneously winding the shade thereon and unwinding  
 50 the curtain-cord from the cams, the release of the curtain by the operator serving, as before, to permit the stop-cams to retain the roller  
 55  
 60  
 65

against further rotary movement. Any suitable means for weighting the curtain 7 may be employed; but I prefer to confine within  
 70 a hem 18 at the bottom of the curtain an elongated weight-casing 19, designed to contain material of sufficient weight to counter-balance the weight of the roller.

In use the curtain is first unwound to the desired extent from the roller, after which its position upon the window is adjusted by means of the curtain-cord 11; or, if it is desired to lock the curtain against further adjustment relative to the roller, the latter may  
 75 be drawn up to the hooks 15, when, as will be evident, the unwinding of the curtain will be prevented by reason of the fact that the roller is held against a corresponding upward movement.  
 80  
 85

From the foregoing it will be observed that I have produced a simple and ingenious shade-roller-operating mechanism; but while the present embodiment of my invention appears at this time to be preferable I wish to reserve  
 90 the right to effect any and all changes, modifications, or variations embraced within the scope of the protection prayed.

In drawing the claims I shall refer to the cams 6 as being defined by edges at different  
 95 distances from the axis of the roller and also as being distinguished by longitudinal edges one of which is transversely curved concentric with the axis of the roller and the other extending to a greater distance from the axis  
 100 of the roller than said curved edge. By the term "edge" I wish to be understood as meaning either the comparatively sharp edge 9<sup>c</sup> or that transversely-curved portion, spindle portion, or broad edge 8, as it will be observed  
 105 by reference to Fig. 3 of the drawings that this broad edge 8 is concentric with the axis of the roller and is disposed much nearer said axis than the sharp edge 9<sup>c</sup>. At this point attention may be called to the smooth  
 110 easy movement of the shade-roller as it is adjusted in either direction. This ease of movement, which serves to decrease the wear upon the parts and also to reduce the difficulty in effecting the adjustment, is obtained  
 115 by reason of the provision of the wide edge or concentrically-curved spindle portion 8 of the cam 6, because while the roller is making almost a complete revolution it is rotating upon its own axis, and consequently at the  
 120 end of such rotative movement the flat side face 9<sup>b</sup> is brought into contact with the curtain-cord without a shock, such as would be produced if the roller in being raised should move from an eccentric axis. The only time  
 125 the roller is elevated bodily is when the edges 9<sup>c</sup> of the cams constitute the axes of movement, after which the roller rotates upon its own axis for considerably more than a half-revolution in a manner which will be obvious.  
 130

What I claim is—

1. The combination with a shade-roller provided with cams at its opposite ends, each of said cams having opposite edges of different



widths and disposed at different distances from the axis of the roller.

2. The combination with a shade-roller, of cams extending from the opposite ends thereof, one longitudinal edge of each cam being transversely curved concentric with the axis of the roller and the other edge thereof extending to a greater distance from the axis of the roller than said curved edge, to constitute a stop, and a curtain-cord wound upon said cams and suspended at a point above the roller.

3. The combination with a shade-roller and a shade wound thereon, of cams extending from the opposite ends of the roller, one edge of each of said cams being comparatively wide and transversely curved concentric with the axis of the roller, the opposite edge being comparatively narrow and extending farther from the axis of the roller than the wide edge to define spindle and stop portions at opposite edges of the cams, heads carried by the outer ends of the cams and disposed concentric with the roller, and a curtain-cord

wound upon the cams in a reverse direction and suspended from a point above the roller.

4. The combination with a shade-roller, of cams extending from the opposite ends thereof, said cams being of wedge shape in cross-sectional contour and having their comparatively broad edges disposed concentric with the axis of the roller.

5. A shade-roller provided with heads comprising disks, and cams, said cams being extended into the ends of the roller to effect the attachment of the heads.

6. A shade-roller provided with terminal heads each comprising a disk and a cam, said cams being extended into the ends of the roller, and securing-screws passed through the heads and into the roller.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

EZRA A. QUINBY.

Witnesses:

THOMAS JENKINS,  
W. H. H. WAMSLEY.