

(No Model.)

R. S. WHITTIER.

APPARATUS FOR OPERATING WINDOW SHADES.

No. 296,494.

Patented Apr. 8, 1884.

Fig. 1.

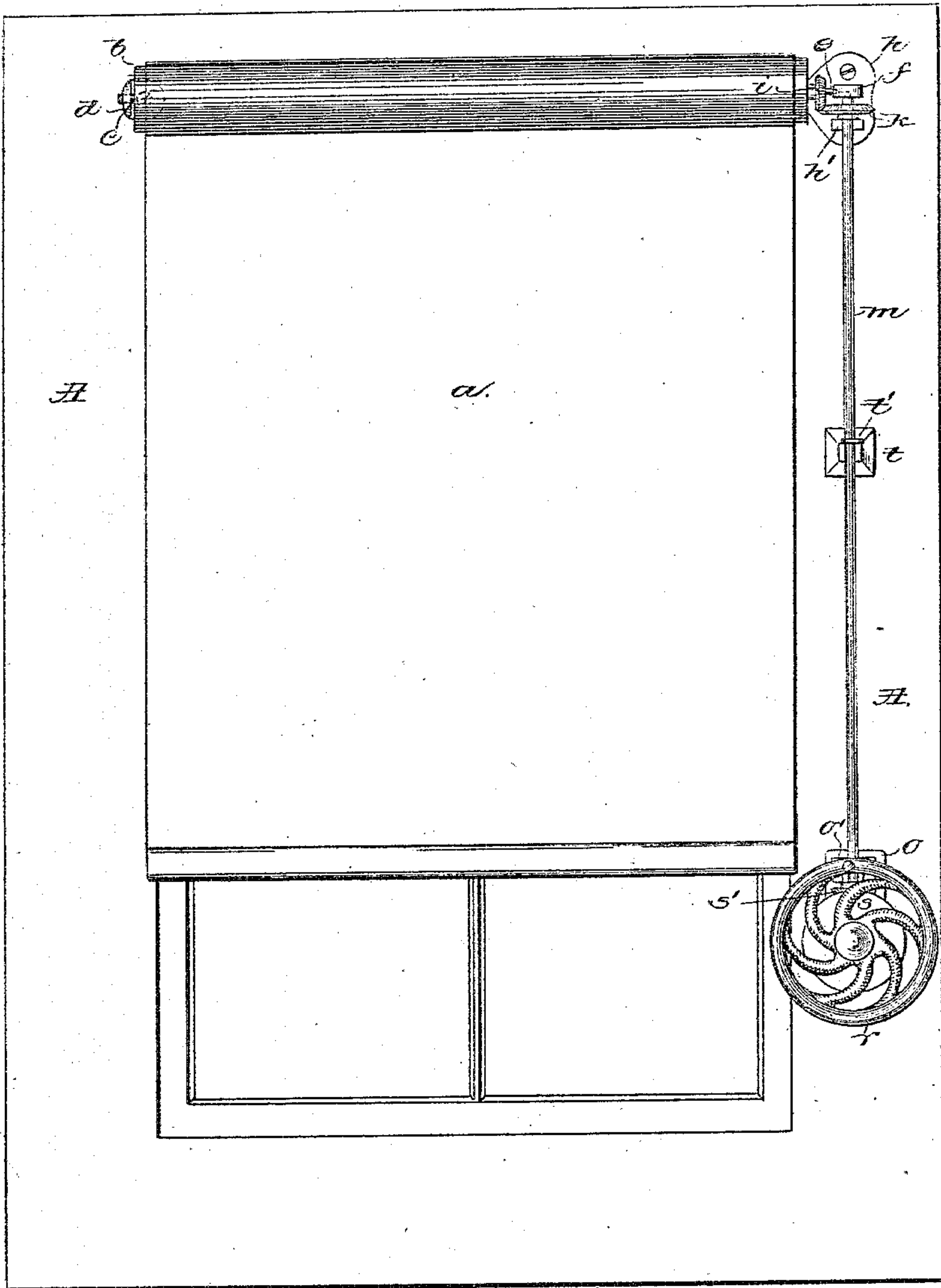


Fig. 2.

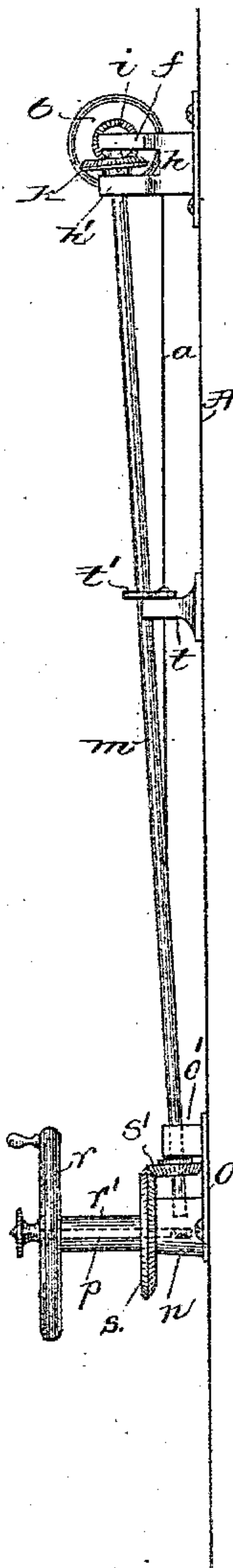
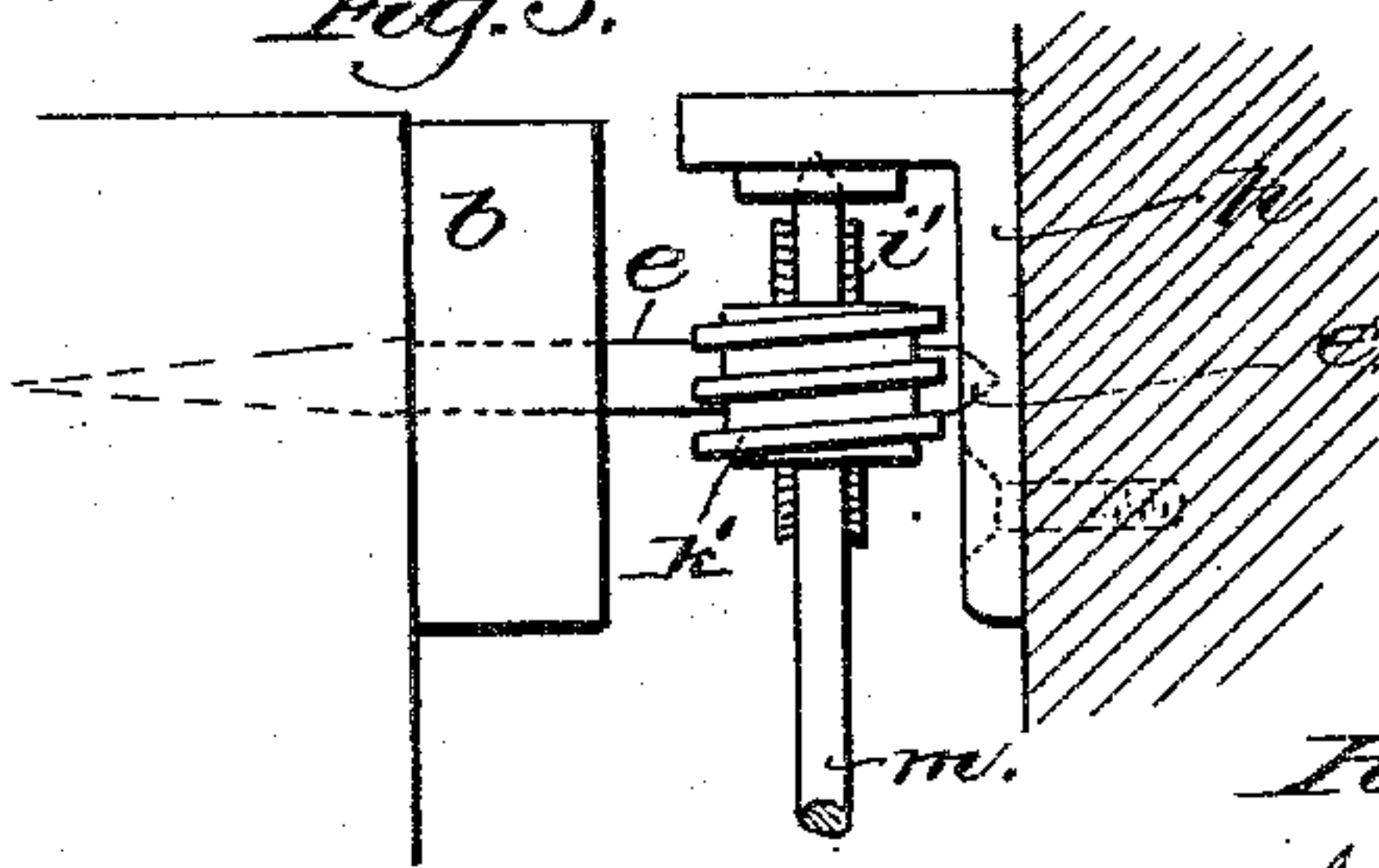


Fig. 3.



Witnesses.
John F. C. Feigelson
Arthur Leppertson

Inventor.
Reuben S. Whittier.
by Crosby & Gregory Attys.

UNITED STATES PATENT OFFICE.

REUBEN S. WHITTIER, OF BOSTON, MASSACHUSETTS.

APPARATUS FOR OPERATING WINDOW-SHADES.

SPECIFICATION forming part of Letters Patent No. 296,494, dated April 8, 1884.

Application filed August 20, 1883. (No model.)

To all whom it may concern:

Be it known that I, REUBEN S. WHITTIER, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Apparatus for Operating Window-Shades, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 The invention consists in the combination, with the usual shade-roller, of gearing and a shaft provided with an actuating-handle at any desired point on the window-frame, and guiding and steadying brackets or projections for said shaft, whereby the said roller may be positively turned in either direction to raise or lower the shade.

I do not broadly claim the combination of gearing with a curtain-roller for operating the same.

20 Figure 1 is a front elevation of a window-frame provided with a shade and operating mechanism therefor embodying this invention; Fig. 2, an end elevation thereof, and Fig. 3 a modification to be described.

25 The shade *a* is attached to the roller *b* in any usual manner, the said roller being provided at one end with a pivot, *c*, supported in a bearing-bracket, *d*, secured to the window-frame *A*, in the usual manner. The other end of the roller *b* is provided with a pivot, *e*, having a bearing in an arm, *f*, of a bracket, *h*, also fastened to the window-frame. The said pivot or spindle *e* is connected by suitable gearing, (shown in Figs. 1 and 2,) as bevel-wheels *i k*, with a slender shaft or rod, *m*, extending down at the side of the window-frame to a convenient point for operating the shade, the said shaft *m* being stepped at its upper end in the arm *f* of the bracket *h*, and at its lower end in a projection, *n*, of a bracket, *o*, fastened to the window-frame. The said projection *n* has fixed in it a spindle or bearing, *p*, for a hand-wheel or other suitable handle, *r*, fixed to a sleeve, *r'*, turning on the said spindle *p*, and connected by gears *s s'* with the shaft *m*, so that by turning the said handle *r* in either direction the shaft *m*, and through it and the gearing *i k* the roller *b*, are caused to rotate in either direction to wind up or unwind the shade *a* thereon.

The brackets *h o* are provided with forked

projections *h' o'* to engage and steady the shaft *m*, and if the said shaft is of considerable length one or more forked guide-brackets, *t*, may be employed to steady the said shaft in its rotary movement, the said bracket *t* being shown as provided with a hook, *t'*, to engage the shaft and retain it in the notch or fork of the bracket.

As shown in Figs. 1 and 2, the gearing is proportioned to give the roller *b* a greater rotary movement than the sleeve *r'* and handle *r*, so that by comparatively small movement of the said handle the curtain may be raised or lowered a considerable distance.

65 The brackets are shown in Figs. 1 and 2 as adapted to be fastened to the front face of the window-frame *A*, or a surface substantially parallel with the axis of the roller *b*.

In the modification shown in Fig. 3 the bracket *h* is shown as attached to the inside of the window-frame, or a surface at right angles to the axis of the roller *b*, and in this modification the spindle *e* and shaft *m* are connected by a worm-gear, *i'*, and worm *k'*, thus giving greater power but less speed to the rotation of the roller *b*, as is desirable in the case of large window-shades, such as employed in the windows of stores or public buildings.

80 It will be seen that the operation of the shade is positive, and that it will remain in any position in which it may be placed, as the weight of a small shade will not be sufficient to move the gearing, and when a large shade is employed it will be impossible to transmit the movement from the gear *i'* to the worm *k'*. The shade is operated with equal facility in all positions, as it is not necessary to touch the shade itself, or to reach up for it when raised to the top of the window-frame.

90 The spindles *c* and *e* of roller *b* may have pointed shanks to be driven into the end of the roller, and the one *e* should be squared so as to insure the turning of the roller with it.

The bearing *d* will be notched in the usual manner, so that the roller may be lifted from it and then withdrawn longitudinally from the bracket *h*, and thus detached from the window-frame, without removing either of the brackets therefrom.

100 The apparatus is neat in appearance, and may be used equally well for small-sized shades,

suitable for railway-car windows or for the largest shades employed in the show-windows of stores.

If desired, the shaft *m* and gearing at the lower end thereof may be inclosed in the casing of the window-frame, the handle *r* only appearing.

I claim—

The combination of the roller *b* and its supporting-brackets with the shaft *m*, handle *r*, gearing connecting the said handle, shaft, and

roller, and guides or brackets *h'*, *t*, and *o'*, for engaging and steadying the shaft, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

REUBEN S. WHITTIER.

Witnesses:

JOS. P. LIVERMORE,

W. H. SIGSTON.