No. 648,680. Patented May 1, 1900.

C. A. BENKE.

WINDOW SHADE HOLDER.

(Application filed Aug. 30, 1899.)

(No Model.)

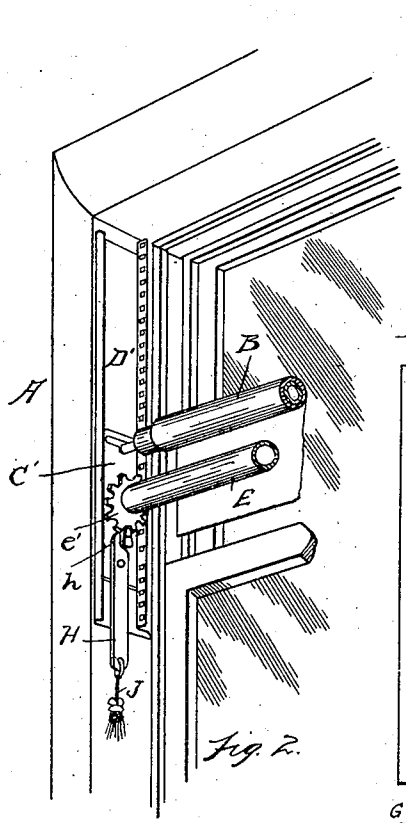


Fig. 2.

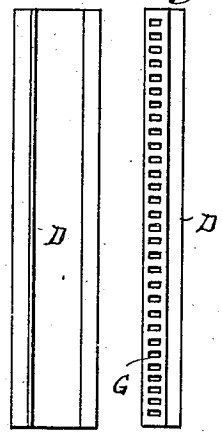


Fig. 6. Fig. 5

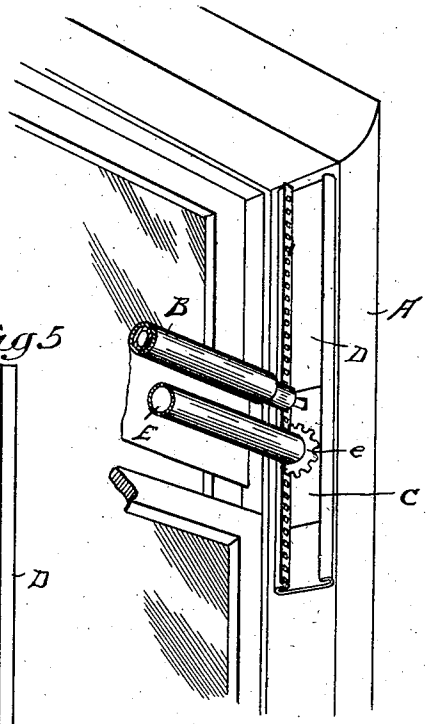


Fig. 1.

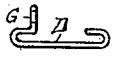


Fig. 4.

Fig. 3.

Fig. 8.

WITNESSES

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WINDOW-SHADE HOLDER.

SPECIFICATION forming part of Letters Patent No. 648,680, dated May 1, 1900.

Application filed August 30, 1899. Serial No. 728,936. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. BENKE, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Window-Shade Holders; and I 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to window-shades, and especially to that class which permit the shade to be lowered bodily from the top of the window; and it consists in certain novel combinations and features of construction hereinafter described and claimed.

Figures 1 and 2 are perspectives of the right and left hand sides, respectively, of a window-frame, showing the roller-ratchet plates and gearing. Fig. 3 is a detail view, partly in section, showing one end of a hollow roller and the mode of attaching a spiral spring therein and also showing the trigger apparatus. Fig. 4 is an end view of one of the guides or ways. Fig. 5 is a side, and Fig. 6 a front, elevation of one of the guides or ways. Fig. 7 is a front elevation of one of the brackets. Fig. 8 is a section of the bracket on the line x x, Fig. 7.

In the drawings, A A indicate the window-frame, and B the shade-roller, which may be of the usual spring construction and which carries the shade in the usual manner.

D D′ are guides or ways fastened to the inside of the window-casing on the right and left hand side, respectively. Said guides are formed of sheet-metal strips turned over along both of its edges to form a U-shaped cross-section, as shown in Fig. 4. One edge of each of said strips is again turned, so as to form the flange G, extending in cross-section perpendicular to the main strip, as distinctly shown in Fig. 4.

g represents perforations through the flange G, located at equal distances apart and forming a row extending longitudinally of the flange G.

C C′ are brackets which run in the guides or ways D D′, their edges engaging under the overturned edges of said guides. The pintles of the roller B bear on the brackets C C′ in the usual way.

E is a hollow roller to which are rigidly attached at each end small pinions e e', whose teeth are adapted to enter the perforations g and engage with the flanges G, so that said flanges form racks for said pinions. f is a rod extending axially through the roller E and pinions e e'. The ends of the rod f bear in the brackets C C′, so that it cannot turn relative to said brackets. The pinions e e' are adapted to revolve upon the rod f.

Inside of the roller E is carried a spiral spring F, one end of which is rigidly attached to a pinion e' and the other to the rod f, so that the turning of the roller tends to coil or uncoil the spring.

In the lower portion of the bracket C is a slit in which is a spring-dog c, adapted to pass through the slit and engage the teeth of the adjoining pinion. To the bracket is pivoted a lever H, having a peculiarly-formed nose h, adapted to slide over the beveled outer end of the spring-dog as the lever swings, and thus disengage it from the teeth of the pinion by pressing said dog out of the plane of said pinion, Figs. 3 and 8. Thus the dog acts as a stop when the lever H is in a vertical position; but by swinging said lever the dog is disengaged and the pinion is then free to rotate. A cord J is used to control the lever H for the purpose of enabling the user to adjust the height of the top of the shade by its action in conjunction with the spiral spring inclosed within the tube E.

The mode of operation of the device is as follows: A spring F in the tube E is put under tension when the window-shade is at the top of the window, and it is so arranged that on drawing down the hollow tube E by means of the cord J the pinions are compelled to rotate in the rack-bars, and thus the hollow tube is compelled to turn, thus winding up or twisting the spring. Hence the drawing down of the shade tends to wind up the spring inclosed in the tube. Preparatory to drawing it down the lever H is swung slightly to one side, so as to cover and hold back the dog adapted to engage in the teeth of the pinion. When the shade is adjusted to the desired height, the lever H is swung in a perpendicular position by the cord, thus permitting the

dog to catch the teeth of the pinion, and as it cannot rotate the shade is held in the proper position. The shade is afterward raised, if desired, by simply putting the latch so as to engage the dog and force it out of contact with the teeth of the pinion, and then by allowing the spiral spring in the tube to rotate it the shade is returned to its original position.

It is obvious that the lower edge of the shade can be raised and lowered in the usual manner, and I lay no claim to this part of the mechanism. This can be done regardless of the position which the top of the shade keeps with reference to the top of the window.

What I claim is—

1. The combination of a window-frame, two guides one on each side of said frame, brackets adapted to travel on said guides, a curtain-roller B, on said brackets, means located upon said brackets for automatically raising said brackets, and means for controlling said means for raising said brackets, substantially as described.

2. In a device for lowering and raising window-shades, the combination of guides, brackets adapted to move upon said guides, a spring-controlled tube bearing in said brackets, a rack-bar, a pinion upon said tube, adapted to engage with said rack-bar, means for locking the pinion in any desired position, means for releasing the locking device, and a curtain-roller bearing in said brackets, substantially as described.

3. The combination of a tube adapted to rotate, bearings therefor adapted to be reciprocated, a central spindle non-rotatably fixed in one of the bearings, a coil-spring, one end of which is fixed to the non-rotatable spindle and the other to the tube, stop mechanism to hold said tube in any desired position, means for releasing said stop mechanism, and a curtain-roller upon said bearings, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

CHARLES A. BENKE.

Witnesses:

RALZEMOND A. PARKER,
ELLIOTT J. STODDARD.