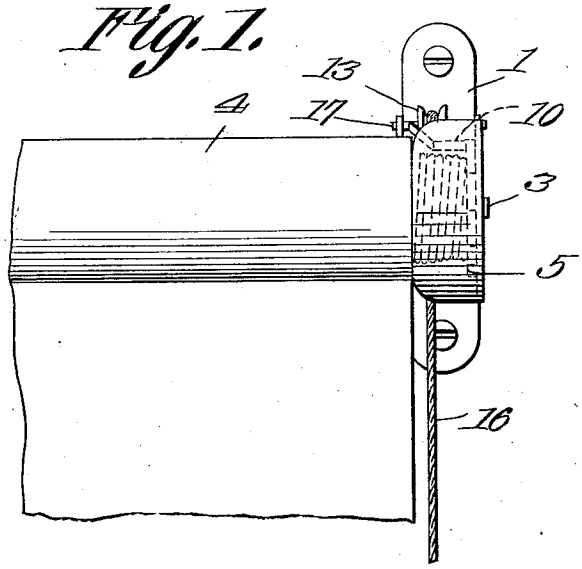
E. E. HARRIS.

WINDOW SHADE CONTROLLING DEVICE.

APPLICATION FILED APR. 25, 1913.

1,069,131. Patented Aug. 5, 1913.

Fig. 1.



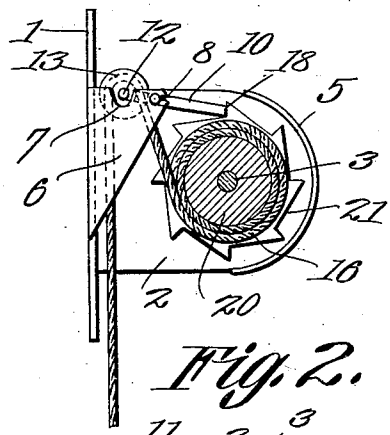


Fig. 2.

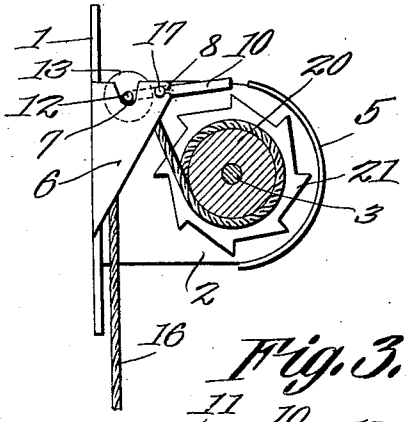


Fig. 3.

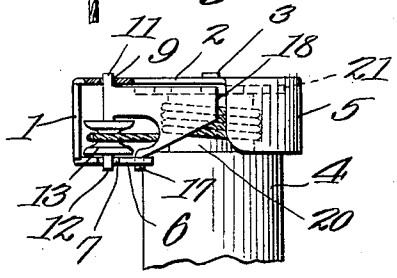


Fig. 4.

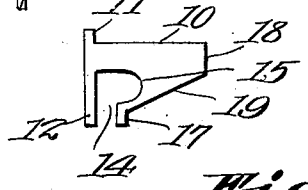


Fig. 5.

Witnesses

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UNITED STATES PATENT OFFICE.

EDWARD E. HARRIS, OF VALLIANT, OKLAHOMA, ASSIGNOR TO THE CORONA MFG. CO., OF VALLIANT, OKLAHOMA.

WINDOW-SHADE-CONTROLLING DEVICE.

1,069,131. Specification of Letters Patent. Patented Aug. 5, 1913.

Application filed April 25, 1913. Serial No. 763,575.

To all whom it may concern:

Be it known that I, EDWARD E. HARRIS, a citizen of the United States, residing at Valliant, in the county of McCurtain and State of Oklahoma, have invented a new and useful Window-Shade-Controlling Device, of which the following is a specification.

This invention relates to window shade controlling devices and is more particularly designed as an improvement upon the structure disclosed in Patent No. 1,044,453 issued to me on November 12, 1912, and upon a structure disclosed in an application filed be me on February 15, 1913, Serial No. 748,765.

One of the objects of the invention is to provide a shade controlling fixture of that type utilizing a controlling cord for the purpose of winding the shade roller and for the purpose of actuating a controlling pawl whereby the shade roller is held against rotation in one direction or is permitted to rotate under the weight of the shade, the said fixture being simple and durable in construction as well as attractive.

A further object is to provide improved means for mounting the pawl within the bracket so that the cost of production is greatly reduced in that the parts can be more quickly assembled, and the number of parts required in the manufacture of the article are reduced to the minimum.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a front elevation of the structure constituting the present invention, a portion of the shade and its roller being illustrated. Fig. 2 is a side elevation of the fixture, the spool on the end of the roller being shown in section. Fig. 3 is a similar view showing the pawl disengaged from the ratchet wheel. Fig. 4 is a plan view of the structure shown in Fig. 1. Fig. 5 is a detail view of the pawl.

Referring to the figures by characters of reference 1 designates the base or attaching plate of the bracket, the same being formed integral with the side plate 2 which is adapted to engage the trunnion 3 extending from one end of the shade roller 4. The front end of the side plate 2 is preferably rounded and provided with a flange 5 constituting a finishing strip whereby that portion of the shade roller nearest the side plate 2 is concealed.

An ear 6 is extended forwardly from the attaching plate 1 and is parallel with the side plate 2, this ear being provided in its upper edge, with a notch 7. An opening 8, preferably in the form of a small slot, is extended into the front portion of the ear 6 close to the upper edge thereof. Side plate 2 has a small aperture 9 directly opposite the notch 7.

Interposed between the side plate 2 and the ear 6 is a pawl 10 preferably of the peculiar shape shown in Fig. 5. This pawl is provided at one end with a short trunnion 11 adapted to fit in the opening 9 and a long trunnion 12 adapted to fit in the notch 7. This long trunnion also constitutes the bearing for a sheave 13. A slot 14 extends into the pawl from one side and is adapted to receive the sheave 13, this slot having its front end rounded, as at 15 so as to accommodate an actuating cord 16 mounted on the sheave. A bearing trunnion 17 extends from that side of the pawl remote from trunnion 11 and is adapted to bear within the opening 8. It will be noted that the sheave 13 is supported within that side portion of the pawl nearest the trunnion 17 and that the active end 18 of the pawl is located outside of the plane of rotation of the sheave, as will be apparent by reference to Fig. 4. The inner side of the pawl is inclined, as at 19, from the trunnion 17 to the active edge 18.

That end of the shade roller 4 back of the flange 5 is reduced in diameter to form a spool 20 to which one end of the actuating cord 16 is secured. A ratchet wheel 21 is attached to the end of spool 20 and is supported close to the side plate 2 where it will be engaged normally by the active edge 18 of the pawl.

It will be noted that, when tilting, the pawl will swing about a line extending through the trunnions 11 and 17 so that the greater portion of the weight of the pawl is thus located between the trunnions and the active edge 18 while only a very small portion of the pawl together with the sheave 13 need be overbalanced. Obviously, therefore, the pawl will normally gravitate into engagement with the ratchet wheel and thus prevent the shade from unwinding from roller 4. As the cord 16 is extended from spool 20 and over sheave 13 it will be seen that, when it is desired to permit the shade to unwind, by its own weight, from the roller 4, it is merely necessary to pull lightly upon the cord so as thus to lift the pawl out of engagement with the ratchet wheel and, while the cord is thus held, to pay it out slowly as the shade unwinds. Should it be desired to raise the shade, the cord 16 is pulled downwardly and will thus first disengage the pawl from the ratchet wheel and then unwind from the spool, thereby winding the shade upon the roller.

Importance is attached to the fact that the bracket, which consists of the attaching plate 1, side plate 2, flange 5 and ear 6 can be stamped out of a single piece of metal after which the pawl can be slipped into place with the sheave in position. Thus the entire structure exclusive of the ratchet wheel is formed in but three pieces, to wit, the bracket, the pawl and the sheave. Furthermore by arranging the trunnions in the peculiar manner shown it becomes necessary to provide only two apertures for the trunnions and a single notch. The trunnion 12 by engaging the wall of notch 7 limits the downward movement of the sheave 13 and, as the bearing trunnions 11 and 17 are disposed along an oblique line, it will be seen that the upward movement of the sheave will be limited by the inclined side 19 of the pawl moving against the inner side of ear 6. The parts are so proportioned that the sheave is always lapped by the ear, no matter what may be the position of the pawl and, consequently, there is no danger of the sheave becoming displaced after the parts have once been assembled. Thus there is no need of upsetting the free end of trunnion 12 for the purpose of retaining the sheave in place.

As hereinbefore stated the sheave is located in that side portion of the pawl remote from the side plate 2. Thus when the cord is being wound upon the spool 20, it will be extended toward the spool along an oblique line and will not tend to pile up upon the spool close to the ratchet wheel 21 and thus interfere with the proper engagement of the ratchet by the pawl.

As hereinbefore pointed out the flange 5 tends to conceal that portion of the roller back of it and, consequently, the coiled portion of cord 16 will likewise be concealed.

What is claimed is:—

1. A window shade controlling device including an attaching plate, a side plate and an ear formed in a single piece of metal, said ear having a notch and an aperture in the upper end thereof and said side plate having an aperture opposite the notch, a pawl having non-alining bearing trunnions mounted in the apertures, another trunnion integral with the pawl and normally seated in the notch, a sheave journaled on the last named trunnion and within one side portion of the pawl, and a ratchet wheel normally engaged by the pawl.

2. A window shade controlling device including a shade carrying roller, a ratchet wheel secured thereto, a bracket including an attaching plate, a side plate and an ear formed in a single piece, said roller being journaled in the side plate and there being an aperture in said side plate and a notch and an aperture in the ear, said notch being directly opposite the aperture in the side plate, a pawl having non-alining bearing trunnions within the apertures, another trunnion integral with the pawl and normally extending into the notch, a guide sheave journaled on the last named trunnion, and an actuating cord connected to and adapted to be wound upon the roller and extending over the guide sheave, the active end portion of the pawl being held normally by gravity in engagement with the ratchet wheel.

3. A window shade controlling device including a shade carrying roller, a pawl mounted to swing about an obliquely disposed axis extending from one of the back corners thereof, a guide sheave carried by the other back corner of the pawl, means revoluble with the roller and normally cooperating with the pawl for holding the roller against rotation under the weight of the shade, a trunnion extending from the pawl and constituting the bearing for the sheave, means for engaging the trunnion to limit the tilting movement of the pawl in one direction, and an actuating cord connected to the roller and extending over the sheave.

4. A window shade controlling device including a shade carrying roller, a pawl tiltable about an oblique axis extending from one back corner thereof, a guide sheave carried by the other back corner of the pawl, means revoluble with the roller and coöperating with the pawl for preventing the roller from rotating under the weight of the shade, an actuating cord connected to the roller and mounted on the sheave, and coöperating means for limiting the tilting movement of the pawl in one direction.

5. A window shade controlling device including a shade carrying roller, a pawl mounted to tilt about an oblique axis extending from one back corner thereof, a guide sheave carried by the other back corner of the pawl and at one side of the active end of the pawl, means for engagement by said active end for holding the roller against rotation in one direction, and a controlling cord secured to the roller and extending over the sheave, said sheave being held normally elevated by the weight of the active end of the pawl.

6. A window shade controlling device including a shade carrying roller, a pawl mounted to tilt about an oblique axis extending from one back corner thereof, a guide sheave carried by the other back corner of the pawl and at one side of the active end of the pawl, means for engagement by said active end for holding the roller against rotation in one direction, a controlling cord secured to the roller and extending over the sheave, said sheave being held normally elevated by the weight of the active end of the pawl, and means for limiting the downward movement of the sheave.

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

EDWARD E. HARRIS.

Witnesses:
E. L. MAYO,
SAM STEPHENSON.