

E. B. SMITH.
ADJUSTABLE CURTAIN FIXTURE.
APPLICATION FILED DEC. 29, 1910.

Patented Nov. 14, 1911.

2 SHEETS—SHEET 1.

1,008,378.

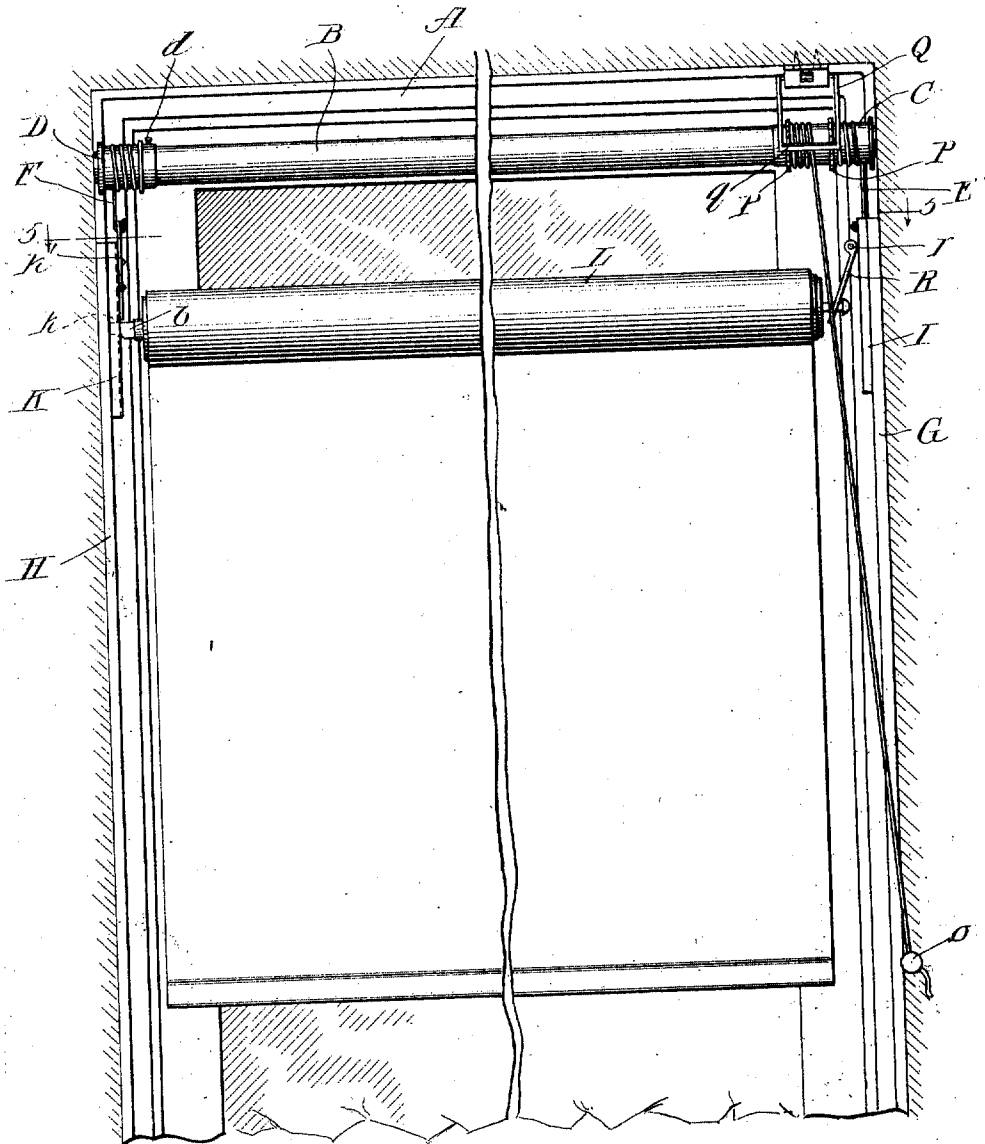


Fig. 1.

WITNESSES

Harry S. Gaither
Ruby V. Brydges

INVENTOR

Ezra B. Smith
Chamberlain & Brundage
attorneys

E. B. SMITH.
ADJUSTABLE CURTAIN FIXTURE.
APPLICATION FILED DEC. 29, 1910.

1,008,378.

Patented Nov. 14, 1911.

2 SHEETS—SHEET 2.

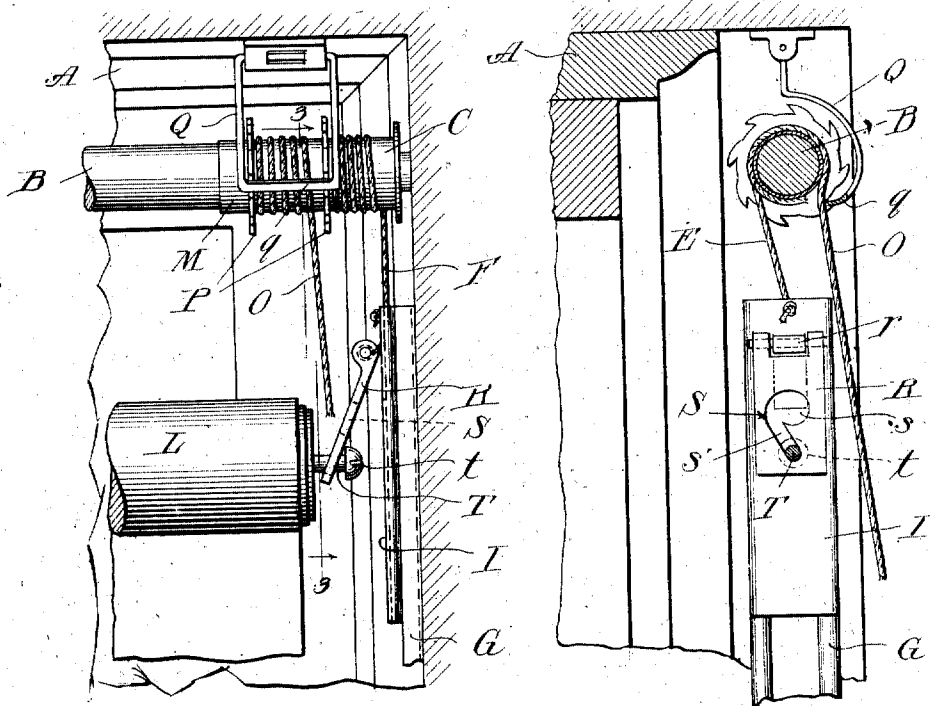


Fig. 2.

Fig. 3.

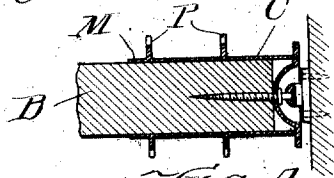


Fig. 4.

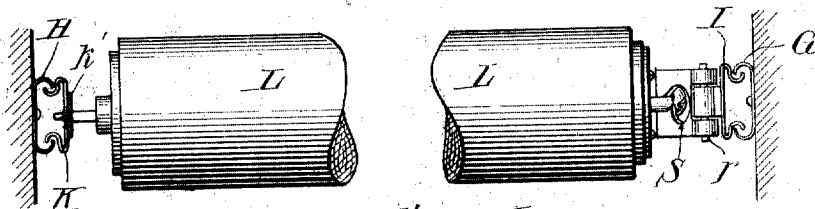


Fig. 5.

WITNESSES

Harry S. Gaither
Ruby V. Brydges

INVENTOR

Ezra B. Smith
Chamberlind & Friend
attys

UNITED STATES PATENT OFFICE.

EZRA B. SMITH, OF CHICAGO, ILLINOIS.

ADJUSTABLE CURTAIN-FIXTURE.

1,008,378.

Specification of Letters Patent. Patented Nov. 14, 1911.

Application filed December 29, 1910. Serial No. 599,793.

To all whom it may concern:

Be it known that I, EZRA B. SMITH, a citizen of the United States, residing at Chicago, county of Cook, State of Illinois, have invented a certain new and useful Improvement in Adjustable Curtain-Fixtures, and declare the following to be a full, clear, and exact description of the same, 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 has for its object to provide a simple and novel fixture for supporting shade rollers so as to permit them to be shifted along a window or the like even though the casing may have warped so that the sides thereof are no longer parallel and prevent them from falling in case one end becomes disengaged.

A further object of my invention is to produce a simple and novel arrangement for supporting shifting curtain rollers in such a manner that they may be operated easily and conveniently.

The various features of novelty whereby my invention is characterized will hereinafter be pointed out with particularity in the claims; but for a full understanding of my invention and of its various objects and advantages, reference may be had to the following detailed description taken in connection with the accompanying drawings, wherein:

Figure 1 is a front elevation of a portion of a window having my improvements applied thereto; Fig. 2 is a view similar to Fig. 1, showing the upper right hand corner of Fig. 1 on an enlarged scale; Fig. 3 is a section on line 3—3 of Fig. 2; Fig. 4 is a central longitudinal section through one end of the supporting roller; and Fig. 5 is a section taken on line 5—5 of Fig. 1 on an enlarged scale.

The usual method of supporting curtain rollers which are adapted to be shifted bodily up and down is to suspend the rollers from cords or cables which are passed through eyes or over pulleys at the top of the window casing. To raise the rollers a pull is exerted upon the cords, drawing them through the eyes or pulleys until the proper elevation is reached. The strain upon the cords or cables is considerable and care must be

taken to manipulate cords properly in order to keep the roller horizontal. Furthermore because of the indirectness of the pull in the usual arrangements, considerable strength must be exerted in order to raise the rollers, particularly on large windows.

One of the features of my invention contemplates a novel supporting arrangement which makes the control of shade rollers simple and easy, eliminates the necessity for careful attention whenever a roller is shifted in order to insure that it will be horizontal, and reduces the wear and tear. To this end I make use of a second roller upon which the suspending cables are wound so that by rotating the supporting roller a direct and even pull is exerted upon the shade roller.

Referring to the drawings, A represents a window casing and B a roller extending across the same at the top and journaled at its ends in the sides of the casing in any suitable manner. At the ends of the roller, which I shall call the supporting roller, are drums C and D upon which are wound the curtain-supporting cables, E and F, respectively. Secured to the sides of the casing are vertical tracks G and H of any suitable construction.

I and K are slides mounted upon the tracks and interlocked therewith so as to have capacity for movements up and down the tracks without being capable of moving laterally.

The lower end of the cable E may be secured directly to the slide I on the corresponding side of the window. The cable F may be connected to the slide K in any suitable manner. The cables are wound upon the drums in the same direction so that both will be wound upon the drums or unwound therefrom simultaneously.

L is a curtain roller of any suitable construction which is mounted upon the slides I and K in a manner to be hereinafter described. It will be seen that the weight of the curtain roller and attached curtain comes directly upon the suspending cables so that unless the roller B is restrained it will rotate under the weight of the curtain roller so as to unwind the cables and let the curtain roller drop.

At any suitable point upon the supporting roller is a third drum M upon which is wound a controlling cable O, the free end

of which hangs down far enough to be within easy reach of any one desiring to raise or lower the curtain roller. The controlling cable is wound upon the supporting roller in the opposite direction from the supporting cables so that when the supporting cables are paid out the controlling cable is wound up, and vice versa. It will thus be seen that, if desired, the curtain roller may be held in any position to which it may have been adjusted by fastening the free end of the controlling cable to a stationary support; as, for example, by wrapping it around a pin or stud *o* secured to the casing. When it is desired to lower the shade roller the controlling cable is unfastened and is permitted to be wound slowly upon the supporting roller as the weight of the curtain roller causes the supporting roller to be rotated. Similarly, when it is desired to raise the curtain roller, a pull is exerted upon the controlling cable and, as it is unwound from the supporting roller, the latter is rotated in a direction to wind up the suspending cables.

It is sometimes preferable to have a more secure locking means than that afforded by fastening the lower end of the controlling cable and therefore I have associated with the supporting roller a pawl and ratchet device which normally prevents the supporting roller from turning in the direction which permits the curtain roller to descend. This may conveniently be accomplished by providing the drum *M* with toothed flanges *P* which constitute ratchet wheels, and mounting upon the casing a pawl *Q* which normally engages with the teeth. In the arrangement shown the pawl is made U-shaped, the yoke *q* extending across the drum *M* from end to end. I so shape the pawl that the yoke overlies the controlling cable just after it leaves the drum so that by pulling the controlling cable outwardly it will engage with the pawl and lift it clear of the ratchet teeth. Normally, therefore, the supporting roller is locked by the pawl. When it is desired to raise or lower the curtain roller, the pawl is released in the manner described and the supporting roller is then rotated by pulling upon the controlling cable or is permitted to be turned backward under the weight of the curtain roller while the controlling cable is gradually paid out.

One of the drums on which the suspending cables are wound may be made adjustable so that parallelism between the two rollers may be obtained when the parts are first placed in position and may thereafter be maintained in case one of the suspending cables stretches more than the other. In the arrangement shown, the drum *D* is held upon the supporting roller by one or more set screws *d*. By loosening the same

the drum may be shifted angularly upon the rollers.

The other feature of my invention relates to the support of the curtain roller in such a manner that it will be guided in its movements up and down the window; will be held firmly in its adjusted positions; and will operate freely both in its bodily vertical movements and in its rotary movements even though the casing may be untrue or warped so as to bring the tracks out of parallelism; without permitting the roller to fall in case one end should become unfastened and without permitting any of the moving parts to come in contact with the woodwork so as to deface the same. To this end I connect one end of the curtain roller to the slide *K* in such a manner that it is locked thereto and is held against axial movements. This may conveniently be accomplished in the manner disclosed in my prior application, Serial No. 544,819, filed February 19, 1910; the slide *K* having a slot *k* into which extends a hook *l* on the adjacent end of the roller, and there being a dog *k'* pivoted to the slide above the hook in a position to prevent the hook from jumping out of place. By connecting the lower end of the cable *F* to the upper end of the dog, the dog is always held in its locking position by the weight of the curtain roller and curtain. The opposite end of the curtain roller is supported in a movable bearing member which is free to shift its position axially of the roller from and toward the slide *I* so as to compensate for any variation in the distance between the tracks. I have illustrated the movable bearing member as being in the form of a leaf *R* which lies between the slide *I* and the adjacent end of the curtain roller and is hinged at its upper end to the slide at *r* so as to be free to swing about a horizontal axis extending at right angles to the axis of the curtain roller. Near its free end the member *R* is provided with a key-hole slot *S* which is adapted to receive a headed journal *T* projecting from the adjacent end of the curtain roller. The member *T* may conveniently take the form of a headed screw whose head *t* will pass through the large portion *s* of the slot but will not pass through the narrow portion *s'*. The curtain roller is mounted at this end by slipping the member *T* through the enlarged portion of the slot in the supporting member and then letting the roller drop until the journal member rests in the lower end of the slot as indicated in Figs. 2 and 3. The neck of the key-hole slot may be arranged diagonally of the member *R* and tangential to the enlargement *s* so that it would be difficult for the journal to become accidentally detached.

When the curtain roller is shifted up or

down it follows the configuration of the track H because it is interlocked therewith. Should either track be out of true so as to bring the two tracks out of parallelism, the end of the roller adjacent to the track G will move toward and recede from this track as the roller is carried up and down; the member R swinging about its hinge so as to vary the angle which it makes with the slide upon which it is supported and affording a proper support for the adjacent end of the roller so that the roller may turn freely in raising or lowering the curtain.

By making the hinge knuckle of the member R long enough, this member will be held firm so as not to yield to any considerable extent to a plane at right angles to the plane of the window and therefore the curtain roller will be held steady. It will be seen that the track G lies between the adjacent end of the curtain roller and the woodwork and all of the movable supporting parts lie between the end of the roller and the track so that as the end of the roller moves toward the track it is prevented from coming in contact with the woodwork and therefore cannot scratch or otherwise mar the woodwork. It will thus be seen that the curtain roller is supported firmly and yet flexibly so that it does not become cramped or locked against movement in case the window casing has become warped so as to make the tracks uneven.

It will also be seen that in case the opposite end of the roller becomes disengaged from its supporting means, the end mounted upon the swinging plate or hanger will prevent the roller from falling down entirely because the journal on the head will engage with the rear side of the hanger and will bring the roller to rest after the free end has dropped a predetermined distance.

While I have illustrated and described with particularity only a single form of my invention I do not desire to be limited to the specific details so illustrated and described; but intend covering all constructions and arrangements which fall within the terms employed in the definitions of my invention constituting the appended claims.

What I claim is:

1. In combination, a horizontal roller, a movable supporting device arranged adjacent to one end of the roller, a member mounted on said device to swing about a horizontal axis transverse to the axis of the roller, and a connection between said member and the roller for revolubly supporting the latter while permitting said member to assume various angular positions, and a cord or cable connected to said device for supporting the same.

2. In combination, a horizontal revoluble roller, a movable supporting device adja-

cent to one end of the roller, a member pivotally mounted on said device to swing about a horizontal axis transverse to the roller, said member having an opening therethrough at one side of said axis and a journal projecting from the end of the roller through said opening, and a cord or cable connected to said device for supporting the same.

3. In combination, a horizontal revoluble roller, a movable supporting device adjacent to one end of the roller, a member mounted on said device to swing about a horizontal axis transverse to the roller, said member having an opening therethrough at one side of said axis and a journal projecting from the end of the roller through said opening, said journal having a head upon the free end to prevent its withdrawal from said opening, and a cord or cable connected to said device for supporting the same.

4. In combination, a horizontal roller, a movable supporting device arranged adjacent to one end of the roller, a member hinged to said device to swing about a horizontal axis transverse to the roller, said member having therein an elongated slot extending transversely to said axis and having an enlargement at the upper end, and said roller having an elongated headed journal extending through said slot, and a cord or cable connected to said device for supporting the same.

5. In combination, a horizontal roller, a movable supporting device arranged adjacent to one end of the roller, a member hinged to said device to swing about a horizontal axis transverse to the roller, said member having therein an elongated slot extending transversely to said axis and having an enlargement at the upper end, said slot being arranged diagonally in said member so as to lie at an angle to the plane of movement of said member, and said roller having an elongated headed journal extending through said slot, and a cord or cable connected to said device for supporting the same.

6. In combination, separated stationary tracks, a curtain roller extending transversely of and between the tracks, means for slidably mounting one end of said roller on one of said tracks so as to permit it to move longitudinally thereof, a slide mounted on the second track adjacent to the opposite end of the roller and interlocked with the track so as to prevent relative lateral and angular movements between the slide and the second track, a member having a bearing for revolubly supporting the roller, and means for yieldingly mounting said member on said slide so as to permit it to carry said bearing from and toward the slide and prevent it from moving in a direction transverse to the axis of the roller.

7. In combination, separated stationary tracks, a curtain roller extending transversely of and between the tracks, means for slidably mounting one end of said roller on one of said tracks so as to permit it to move longitudinally thereof, a slide mounted on the second track adjacent to the opposite end of the roller and interlocked with the track so as to prevent relative lateral and angular movements between the slide and the second track, a member hinged at its upper end to said slide so as to swing about a horizontal axis transverse to the roller, and a connection between said member and said roller for revolubly supporting the latter while permitting said member to assume various angular positions.

8. In combination, separated stationary tracks, a curtain roller extending transversely of and between the tracks, means for slidably mounting one end of said roller on one of said tracks so as to permit it to move longitudinally thereof, a slide mounted on the second track adjacent to the opposite end of the roller and interlocked with the track so as to prevent relative lateral and angular movements between the slide and the second track, a member hinged at its upper end to said slide so as to swing about a horizontal axis transverse to the roller, said member having an opening therethrough, and a journal extending from the adjacent end of the roller through said opening.

9. In combination, separated stationary tracks, a curtain roller extending transversely of and between the tracks, means for slidably mounting one end of said roller on one of said tracks so as to permit it to move longitudinally thereof, a slide mounted on the second track adjacent to the opposite end of the roller and interlocked with the track so as to prevent relative lateral and angular movements between the slide and the second track, a member hinged at its upper end to said slide so as to swing about a horizontal axis transverse to the roller, said member having an opening therethrough, and a journal extending from the adjacent end of the roller through said opening, and means for preventing the withdrawal of the journal from said opening.

10. In combination, separated stationary tracks, a curtain roller extending transversely of and between the tracks, means for slidably mounting one end of said roller on one of the tracks so as to permit it to move longitudinally thereof, a slide mounted on the second track adjacent to the opposite end of the roller and interlocked with the track so as to prevent relative lateral and angular movements between the slide and the second track, a member lying between said slide and the adjacent end of the track and hinged at its upper end to the slide so as

to swing about a horizontal axis, and a connection between the roller and said member for revolubly supporting the roller while permitting said member to assume various angular positions.

11. In combination, a revoluble supporting roller, cables wound upon the ends thereof in the same direction, a curtain roller supported at its ends by the aforesaid cables, a third cable wound upon said supporting roller in the opposite direction from the other cables, and having a depending free end, and a pawl and ratchet associated with the supporting roller for preventing it from turning under the weight of the curtain roller, said pawl having a part overlying the third cable so as to be actuated thereby to release the supporting roller when a pull is imposed on the free end of said third cable.

12. In combination, separated stationary tracks, a curtain roller extending transversely of and between the tracks, means for slidably mounting one end of said roller on one of said tracks so as to permit it to travel lengthwise of the track and hold it against axial movement, a slide mounted on the second track adjacent to the opposite end of the roller, said slide and its track being interlocked so as to prevent relative lateral and angular movements between the slide and its track, and supporting means for the roller arranged between said slide and the adjacent end of the roller for permitting the roller to revolve and also to move axially from and toward the latter track.

13. In combination, separated stationary tracks, a curtain roller extending transversely of and between the tracks, means for slidably mounting one end of said roller on one of said tracks so as to permit it to travel lengthwise of the track and being held against axial movement, a slide mounted on the second track adjacent to the opposite end of the roller and interlocked with that track so as to be held against lateral movements relative to the track, supporting means for the roller arranged between said slide and the adjacent end of the roller for holding the roller in the plane of said tracks and permitting it to revolve and also to move axially in said plane.

14. In combination, separated stationary tracks, a curtain roller extending transversely of and between the tracks, means for slidably mounting one end of said roller on one of said tracks so as to permit it to travel lengthwise of the track and being held against axial movement, a slide mounted on the second track adjacent to the opposite end of the roller and interlocked with that track so as to be held against lateral movements relative to the track, supporting means for the roller for holding the roller in the plane of said tracks and permitting

it to revolve and also to move axially in said plane, and a cord or cable connected to said slide for supporting the same.

5 15. In combination, a revoluble supporting roller, cables wound upon the ends thereof in the same direction, a curtain roller supported at its ends by the aforesaid cables, a locking device for holding said supporting roller against rotation under the
10 influence of the weight of the curtain roller, and a third cable wound upon said support-

ing roller in the opposite direction from the other cables and having a portion extending into proximity to said locking device for the purpose of releasing the same.

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

15

EZRA B. SMITH.

Witnesses:

M. G. GASKELL,
WILBER A. OWEN.