

(No Model.)

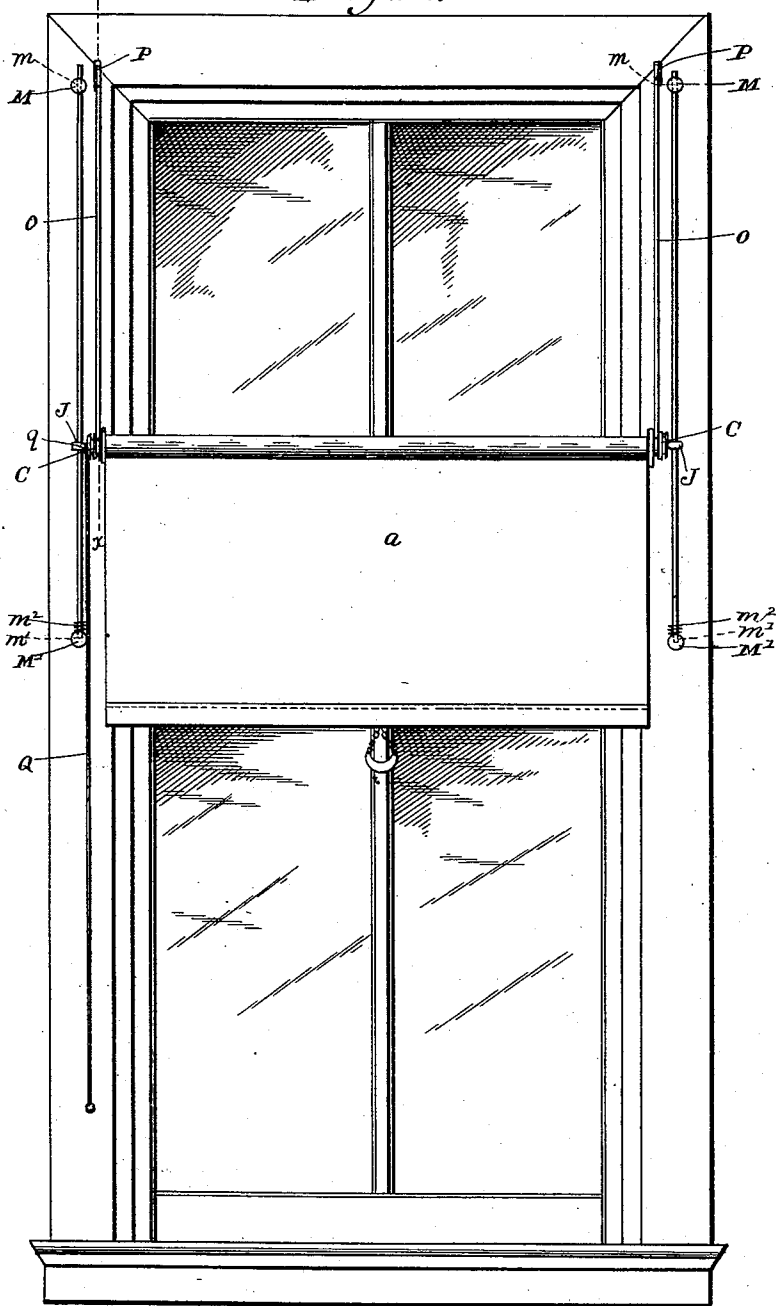
2 Sheets—Sheet 1.

C. E. GOODRICH.  
CURTAIN FIXTURE.

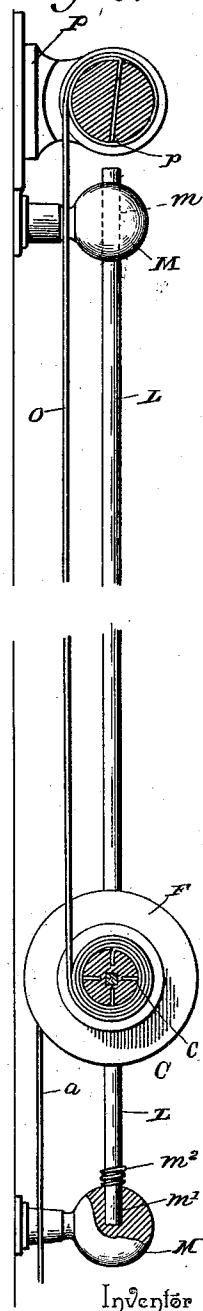
No. 509,161.

Patented Nov. 21, 1893.

*Fig. 1.*



*Fig. 2.*



Inventor

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By *his* Attorneys,

*C. A. Snow & Co.*

Witnesses

*J. M. Johnson*  
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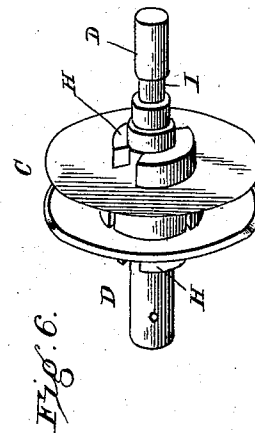
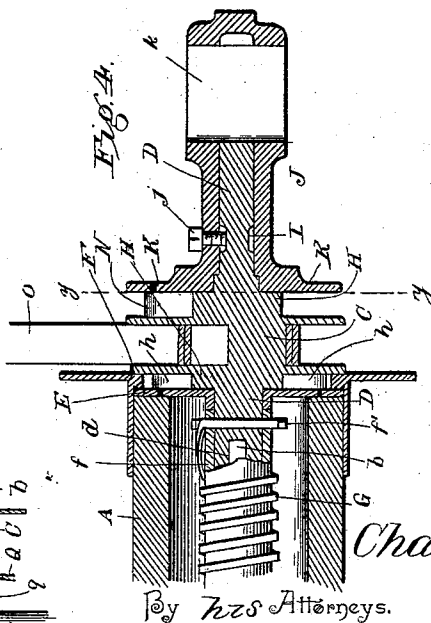
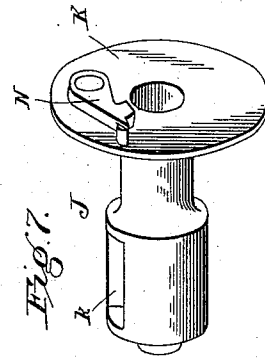
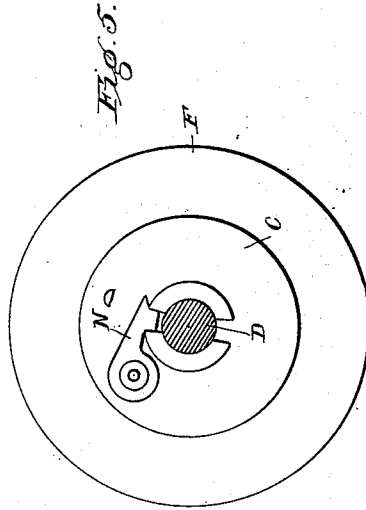
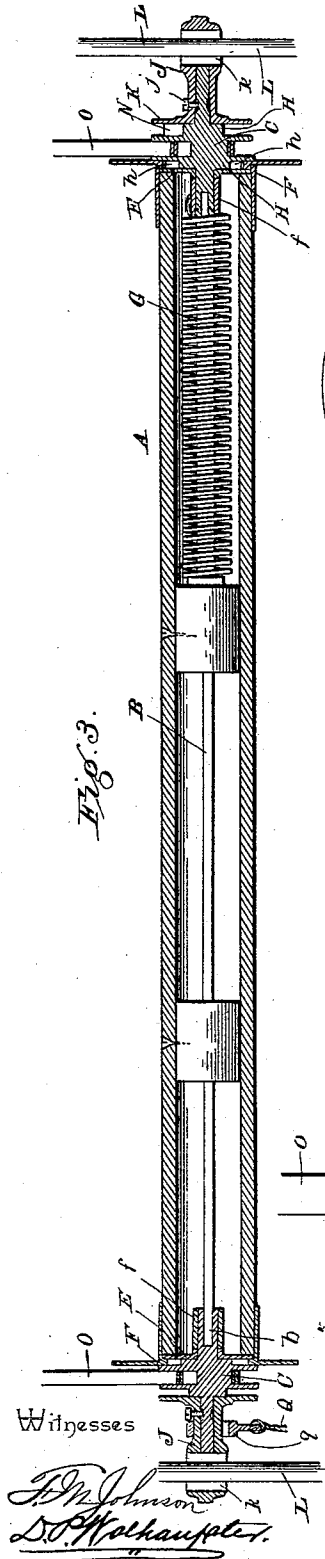
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Inventor

Charles E. Goodrich

By *hws* Attorneys.

*Chas. E. Goodrich*

# UNITED STATES PATENT OFFICE.

CHARLES E. GOODRICH, OF PIOCHE, NEVADA, ASSIGNOR OF ONE-HALF TO  
THOMAS J. OSBORNE, OF SAME PLACE.

## CURTAIN-FIXTURE.

SPECIFICATION forming part of Letters Patent No. 509,161, dated November 21, 1893.

Application filed May 25, 1893. Serial No. 475,480. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES E. GOODRICH, a citizen of the United States, residing at Pioche, in the county of Lincoln and State of Nevada, have invented a new and useful Curtain-Fixture, of which the following is a specification.

This invention relates to curtain fixtures; and it has for its object to provide certain improvements in fixtures of that character in which the roller can be automatically adjusted up and down as well as the shade which winds on the roller.

To this end the main and primary object of the present invention is to provide an improvement in automatically controlled curtain fixtures, whereby the upper and lower portions of a window can be covered or uncovered simultaneously or one at a time, for the purposes of ventilation and light.

With these and other objects in view which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a front elevation of a window and its frame showing the improved curtain fixture applied thereto. Fig. 2 is a vertical longitudinal sectional view on the line  $x-x$  of Fig. 1. Fig. 3 is a central longitudinal sectional view of the shade roller and the several parts connected therewith. Fig. 4 is an enlarged detail sectional view of one end of the shade roller and the automatic check located at that end. Fig. 5 is an enlarged detail sectional view on the line  $y-y$  of Fig. 4. Fig. 6 is a detail in perspective of the winding wheel having the pawl notches in its hub. Fig. 7 is a detail in perspective of the stationary pawl check employed for one of the winding wheels.

Referring to the accompanying drawings, A represents a hollow shade roller of the ordinary construction, in which is arranged the longitudinally disposed shaft B, mounted in suitable bearings inside of the roller so as to be steadied in its movement, and adapted to have attached to the squared extremities  $b$ , thereof, the opposite grooved winding wheels

C, located at each end of the said roller. Each of the grooved winding wheels C, arranged at opposite extremities of the roller is so constructed that the base of its grooves is of a diameter considerably less than the diameter of the shade roller in order to permit of the raising and lowering of the roller by the operation hereinafter described, and said winding wheels are provided in the base of their deep grooves with the transverse notches  $c$ , the function of which will presently appear. The said winding wheels C, are cast integral with the opposite spindle portions D, which project from opposite sides of the wheels, and the inner of said spindle portions D, work inside of the roller and have inner squared sockets  $d$ , which fit onto the squared extremities of the roller shaft B, whereby a firm yet removable connection between the winding wheels and the shaft is secured, and the said inner projecting spindles are journaled in the opposite bearing plates E. The opposite bearing plates E, are held in position on the opposite open ends of the roller A, by means of the flanged ferrules F, the annular flanges of which are designed to inclose therebetween the curtain shade  $a$ , winding and unwinding on the roller A, in the ordinary manner, and inside of said bearing plates E, the inner spindle portions of the winding wheels receive the attaching sleeves  $f'$ , held in position on the spindles by the pins  $f'$ , passing therethrough and through the sleeve, and by this means is provided a connection which prevents wobbling of the winding wheels, as well as the possibility of becoming disconnected from the extremities of the shaft B. The hollow shade roller A, accommodates herein the usual spiral actuating spring G, one end of which is fastened to the shaft B, while the other end is secured to the roller A, so that the shaft, with its attached wheels, is independent in one sense of the roller A, to permit the shade to be separately raised and lowered in the manner hereinafter described. One of the winding wheels is further provided at both sides thereof with the notched pawl hubs H, the inner notched one of which is adapted to work inside of the opening of one of the flanged ferrules F, so as to be engaged by the

ordinary roller pawls *h*, pivoted to one of the bearing plates *E*, and adapted to engage the inner notched hub of said winding wheel, in order to arrest the motion of the roller and the re-coil of the actuating spring in the ordinary manner, when simply the curtain shade is being raised and lowered.

The outer spindle portions *D*, of each of the opposite winding wheels *C*, are provided with the annular grooves *I*, and are adapted to loosely receive the stationary collars *J*. The stationary collars *J*, while loose on the outer spindle portions of the winding wheels to permit of a free revolution therein, at the same time are prevented from displacement by means of the retaining set screws *j*, passing therethrough and adapted to project into the annular grooves in said spindles. The collars *J*, which form the support for the extremities of the shade devices, are provided at their inner ends alongside of the outer flanges of the winding wheels with the disks *K*, while their outer ends are enlarged and provided with the widened openings of slots *k*, which loosely embrace the opposite vertical guide rods *L*.

The opposite guide rods *L*, are supported in position at opposite sides of the window frame by means of the upper and lower off-standing screw brackets *M* and *M'*, respectively. Each upper bracket *M*, is provided with a perforation *m*, therethrough to permit of the ready insertion of the guide rods and their removal, while the lower brackets *M'*, are provided with the sockets *m'*, into which removably fit the lower ends of the guide rods, and on said lower brackets *M'*, are supported the short buffer springs *m'*, against which the outer ends of the collars *J*, are adapted to strike, to relieve, in part, the roller from jar when descending, or when suddenly dropped to the lowest possible position. As illustrated, the opposite parallel guide rods do not extend the full height of the window frame, but of course may be so arranged if found desirable, but it is found preferable to have the same in substantially the lengths illustrated, so that the roller shade has an adjustment from an intermediate point of the window to the top thereof. The guide rods serve several important functions, and while holding the curtain and the roller steady in their adjustments and preventing the roller from swinging when exposed to strong currents of air, at the same time provide means for holding the collars *J*, stationary with respect to the rotation of the roller and the attached wheels, whereby utility is given to the automatic check device presently described. The guide rods are disposed sufficiently close to the window frame, so that in the event of the operator allowing the curtain to slip from his hand, the bottom of the curtain will be arrested when it reaches the roller, as the space between the roller and the window frame is not large enough to admit the slat at the end of the shade to pass through, and thereby providing an arrangement whereby the curtain roller can be ar-

rested in its downward movement, which movement takes place when the shade is winding on the roller.

The automatic check device referred to consists of one of the stationary collar disks *K*, and a stop pawl *N*, pivoted to one side thereof next to one of the winding wheels, so as to engage the outer end of the notched pawl hub of the said winding wheel, and thus provide means for checking the roller at any point desired, by preventing the same from turning in the direction induced by its spring, which tendency causes the roller and the spring to revolve together so that the fixture will lower of its own gravity.

The shade roller and the entire curtain fixture are supported for a vertical adjustment of the window frame by means of the spring metal supporting ribbons *O*. The spring metal supporting ribbons have their lower extremities fitted into the transverse notches *c*, of the winding wheels, and are adapted to wind and unwind in the grooves of said wheels, as the roller is raised and lowered automatically, as hereinafter described, and the upper extremities of the said supporting ribbons *O*, are removably attached to the stationary grooved supporting disks *P*. The stationary supporting disks *P*, are also provided with transverse notches *p*, which receive the upper ends or extremities of the ribbons, which are held in engagement with such notches by a wrap of the ribbon in the grooves of said disks. This construction is fully described and claimed in my pending application, Serial No. 455,427, which embodies the fundamental principles involved in the present invention.

Irrespective of the vertical adjustment of the entire window fixture, it is of course necessary to provide means whereby the curtain shade *a*, can be wound and unwound without affecting the adjusted position of the roller, and to secure this result it is necessary to prevent the stop pawl *N*, from coming out of engagement with the winding wheel adjacent thereto, and therefore providing for holding the shaft stationary while the roller *A*, may revolve independently thereof, and be checked at any moment by reason of the ordinary roller pawls at one end thereof, which operate in the ordinary manner. The pull cord *Q*, is employed for this purpose, and is provided at its upper end with a metal loop or ring *q*, adapted to loosely engage either one of the stationary collars *J*. By simply grasping this pull cord with one hand, when the roller is in a stationary position, and holding the same fairly taut, the operator prevents the ascent of the roller as well as the disengagement of the pawl *N*, which would necessarily follow from the rolling motion imparted to the roller by pulling down on the curtain, and which would therefore, by reason of the tension of the spring therein, cause the end wheels to turn in a direction in which they would wind themselves up

on the metal ribbons and therefore elevate the entire roller. Consequently, it will be apparent, that while the roller is in this manner held stationary, the curtain or shade may be wound or unwound at will, and as previously adverted to, when the roller is stopped by its roller pawls in the ordinary manner, a further revolution in the direction induced by its spring will be checked by means of the stop pawl N.

When the curtain roller is in a position below the top of the window, and it is desired to elevate the same automatically, it is simply necessary to grasp the curtain shade and pull down on the same. This imparts a revolving motion to the roller A, which motion, if the tension of the spring is sufficient to overcome the weight of the roller, before the curtain shade has been unwound very much, will immediately cause the shaft B to also revolve, thereby turning the wheels C, which wind up on the metal ribbons and thereby cause the roller to ascend toward the top of the window, the tension of the spring being so regulated, that the roller will reach its highest point before the curtain is unwound entirely therefrom.

To lower the roller, it is simply necessary to pull down on the shade so that the pawl N, will be disengaged, and then quickly releasing the pressure on the curtain by raising the hand, so that the roller in response to its own gravity will quickly descend, unwinding itself from the supporting ribbons and winding up the curtain shade simultaneously. The roller is checked and held in its adjusted position by checking the shade with the hand so as to cause the stop pawl N, to again engage the winding wheel hub. It will be of course understood that while this motion is taking place, and also as the roller is ascending, the spring is necessarily inactive.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. In a curtain fixture, the combination with opposite parallel guide rods, the spring-actuated shade roller, winding wheels attached to the extremities of the shaft of said roller and having projecting spindle portions, supporting collars loosely receiving said projecting spindle portions and having slots working over said guide rods, one of said collars having an automatic check device for one of the winding wheels, and flexible supporting ribbons winding and unwinding at one end on said winding wheels, substantially as set forth.

2. In a curtain fixture, the combination with the spring-actuated and pawl-arrested shade

roller; of winding wheels attached to the extremities of the shaft of said roller and of less diameter than the same, said winding wheels having projecting spindle portions and one of which is further provided with an outer projecting notched hub, collars loosely receiving the spindle portions of the winding wheels and having outer slotted ends, one of said collars being further provided with a stop pawl adapted to engage said notched hub of one of the winding wheels, the flexible supporting ribbons secured stationary at their upper ends and having their lower ends winding and unwinding on the winding wheels, and the opposite stationary guide rods, receiving the slotted ends of said collars, substantially as set forth.

3. In a curtain fixture, the combination with a spring actuated shade roller having the ordinary arresting pawls at one end; of winding wheels attached to the extremities of the shaft of said roller and having outer projecting spindles, one of said winding wheels being further provided at both sides thereof with notched pawl hubs the inner one of which is adapted to be engaged by the roller arresting pawls, supporting collars loosely receiving the outer spindle portions of the winding wheels and having disks at their inner ends and outer slotted ends, a stop pawl pivoted to one side of one of the collar disks and adapted to engage the outer notched pawl hub of one of said winding wheels, the flexible supporting ribbons winding and unwinding on said winding wheels, and the opposite stationary guide rods loosely receiving the slotted ends of said collars, substantially as set forth.

4. In a curtain fixture, the combination with the spring-actuated shade roller and its shaft therein; of the opposite bearing plates clamped in position to opposite ends of the roller, the opposite winding wheels having opposite spindle portions projecting from opposite sides thereof, the inner of said spindle portions being journaled in said opposite bearing plates, and having at their inner extremities, inside of the roller, sockets which fit onto the extremities of the roller shafts, attaching sleeves embracing the inner spindle portions at one side of the opposite bearing plates, the supporting collars loosely receiving the outer spindle portions of the winding wheels and one of which carries a check device for one of the winding wheels, the flexible supporting ribbons, and the opposite stationary guide rods loosely receiving the outer ends of said supporting collars, substantially as set forth.

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

CHARLES E. GOODRICH.

Witnesses:

JOHN H. SIGGERS,  
HORACE G. PIERSON.