

(No Model.)

2 Sheets—Sheet 1.

C. E. GOODRICH.
CURTAIN FIXTURE.

No. 509,078.

Patented Nov. 21, 1893.

Fig. 1.

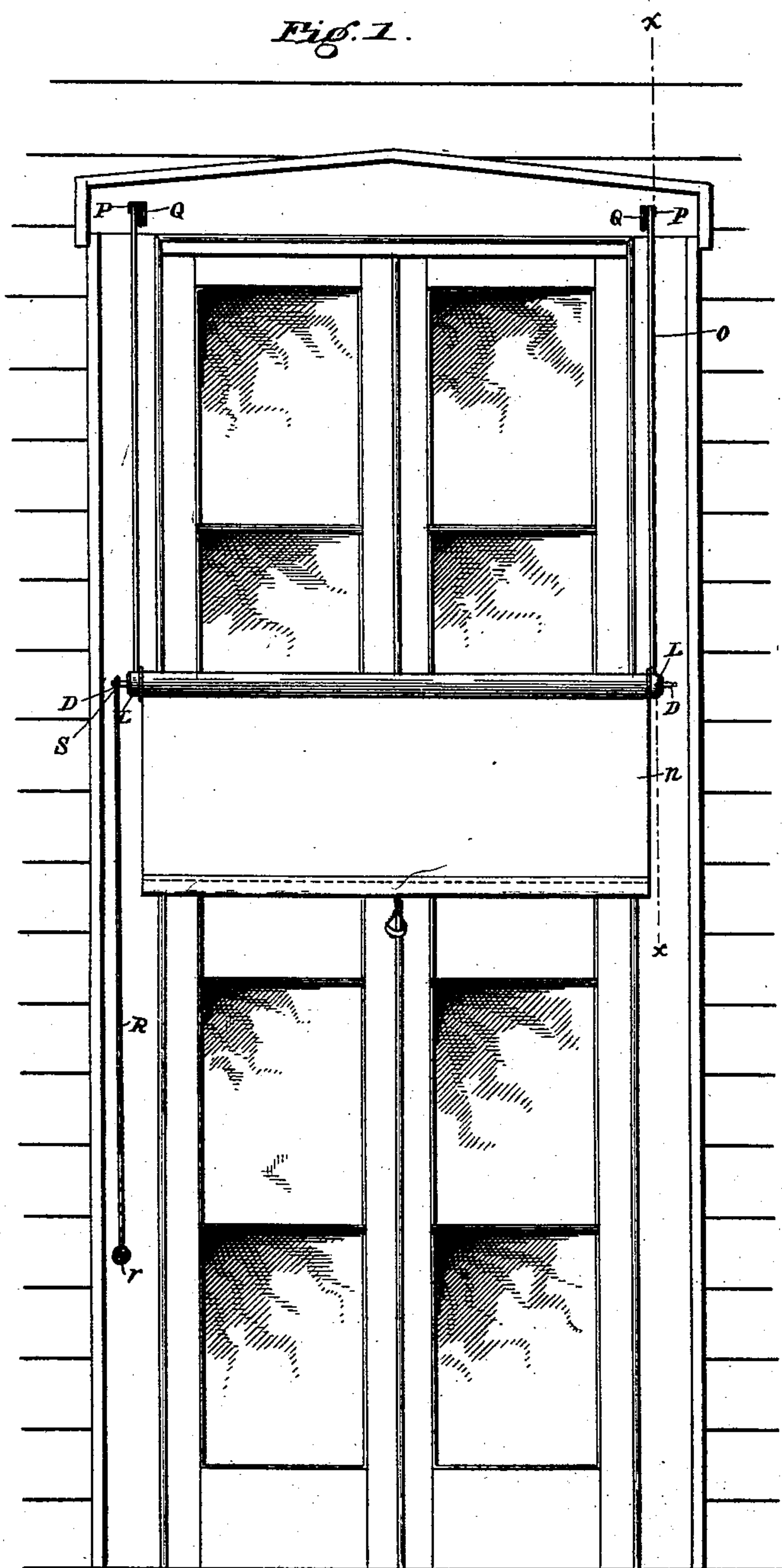
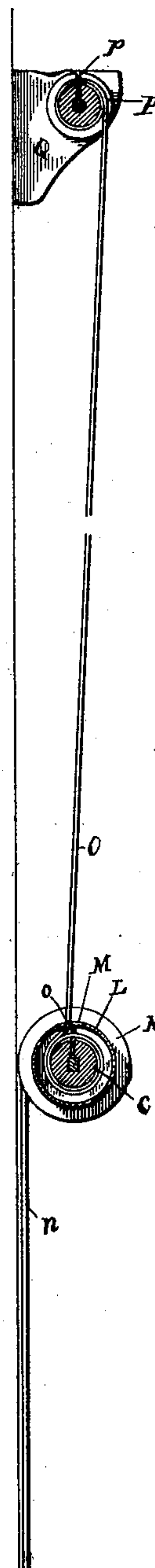


Fig. 2.



Witnesses

J. M. Johnson.
S. B. Wolhaupter.

Inventor

Charles E. Goodrich,

By his Attorneys,

Chas. Snow & Co.

(No Model.)

2 Sheets—Sheet 2.

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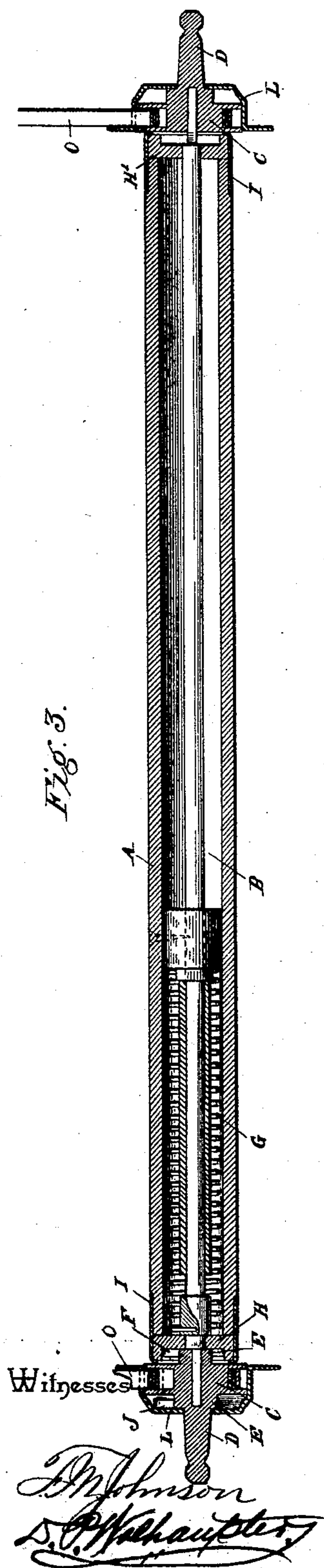


Fig. 3.

Fig. 5

Fig. 4.

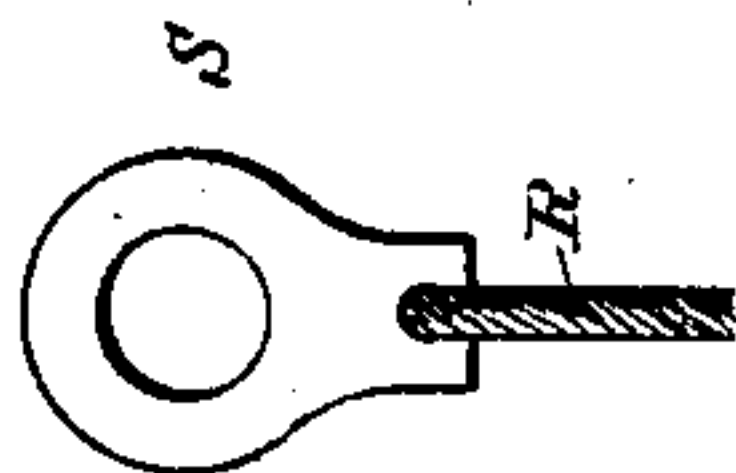
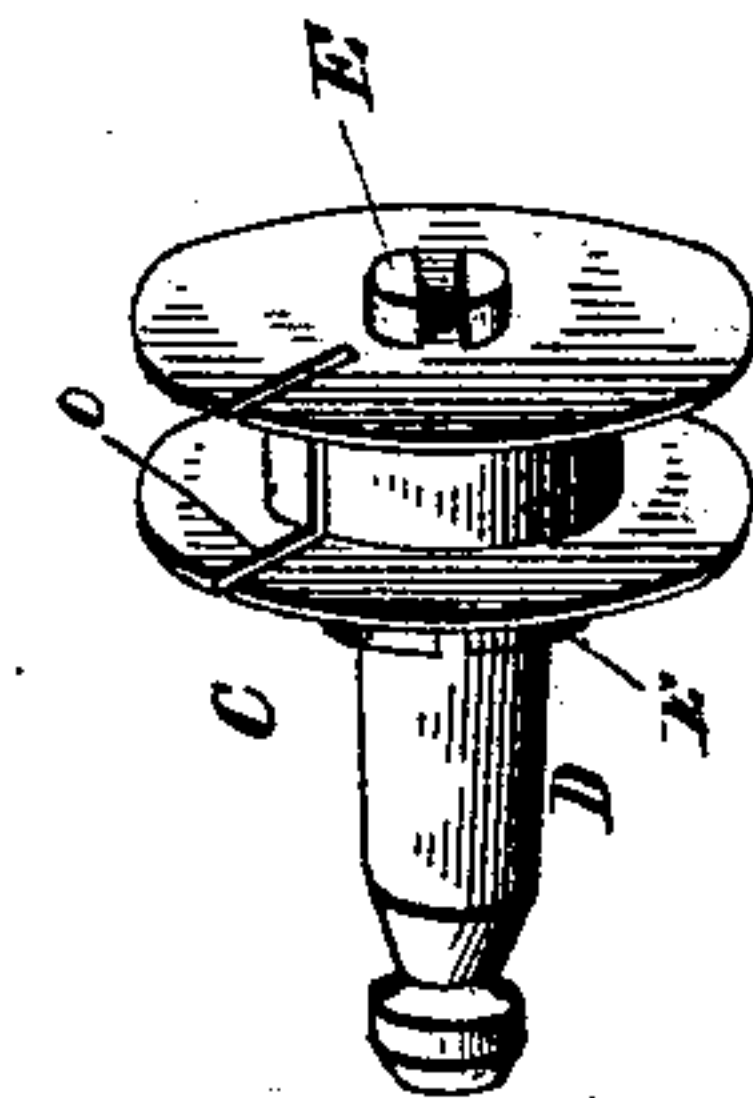


Fig. 5.

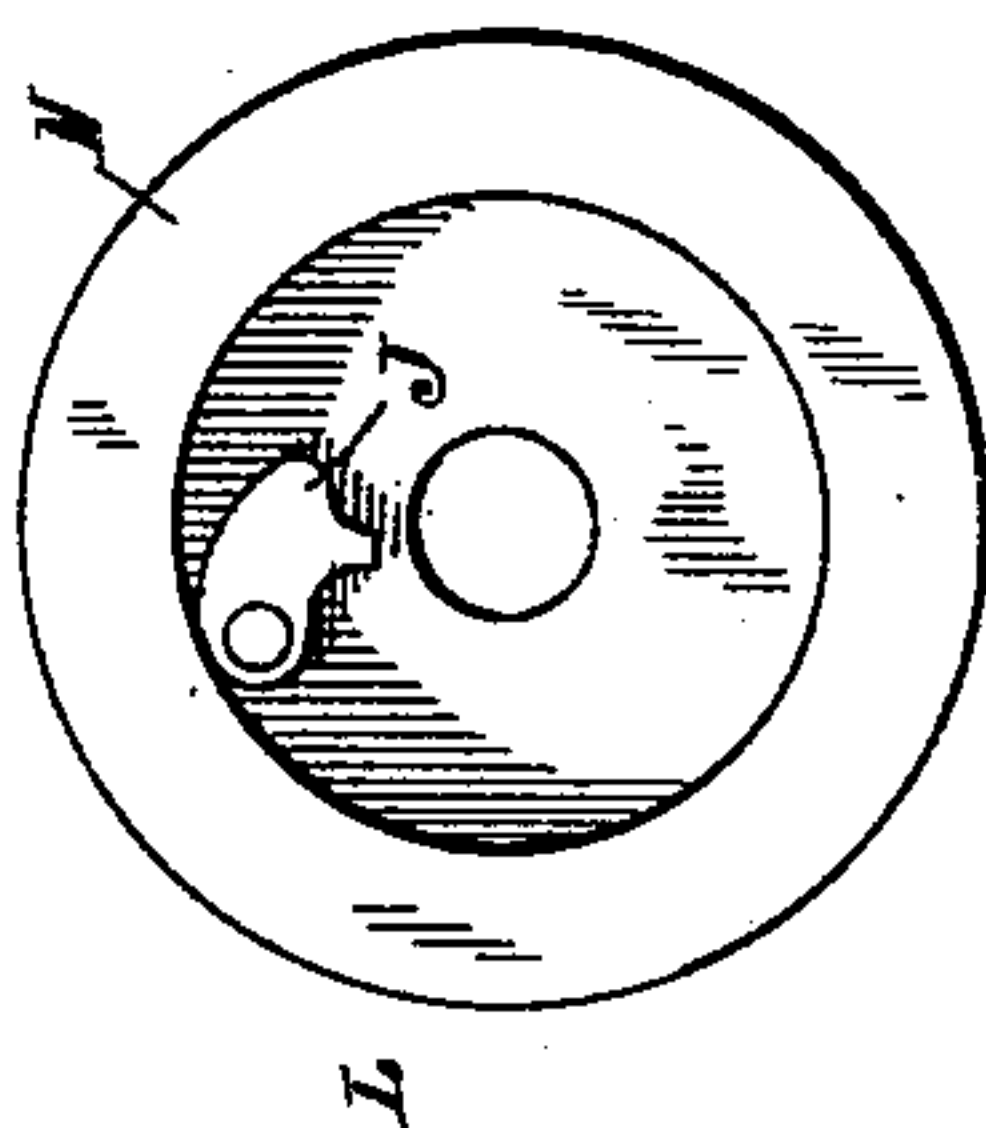


Fig. 8.

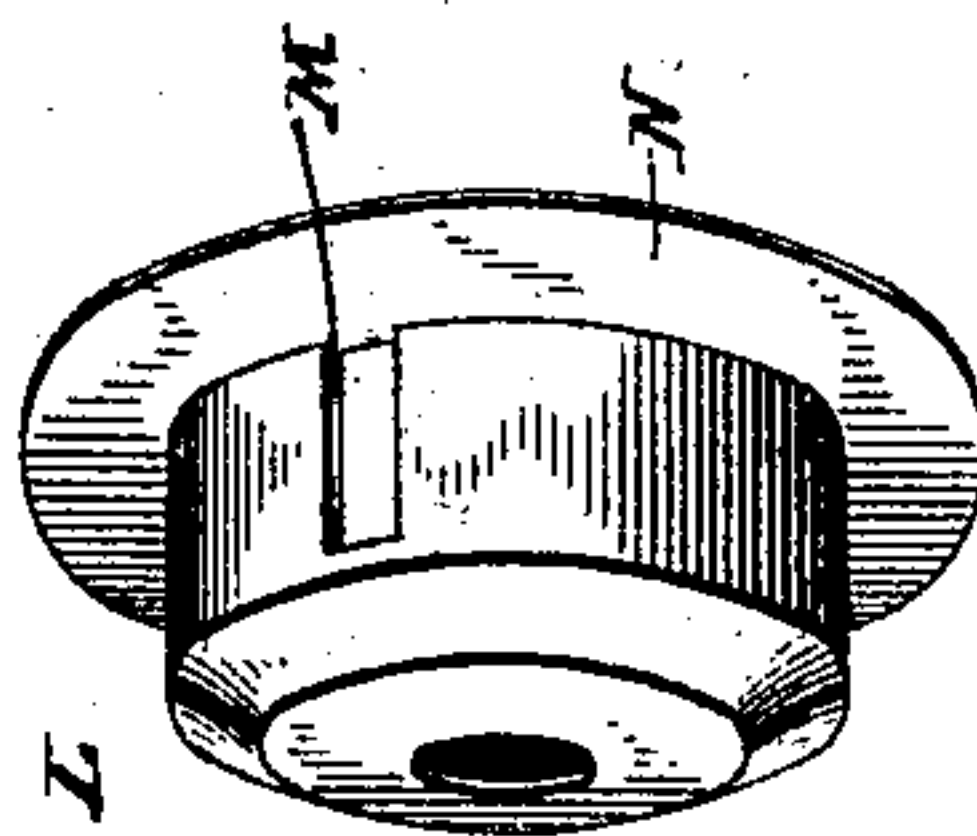
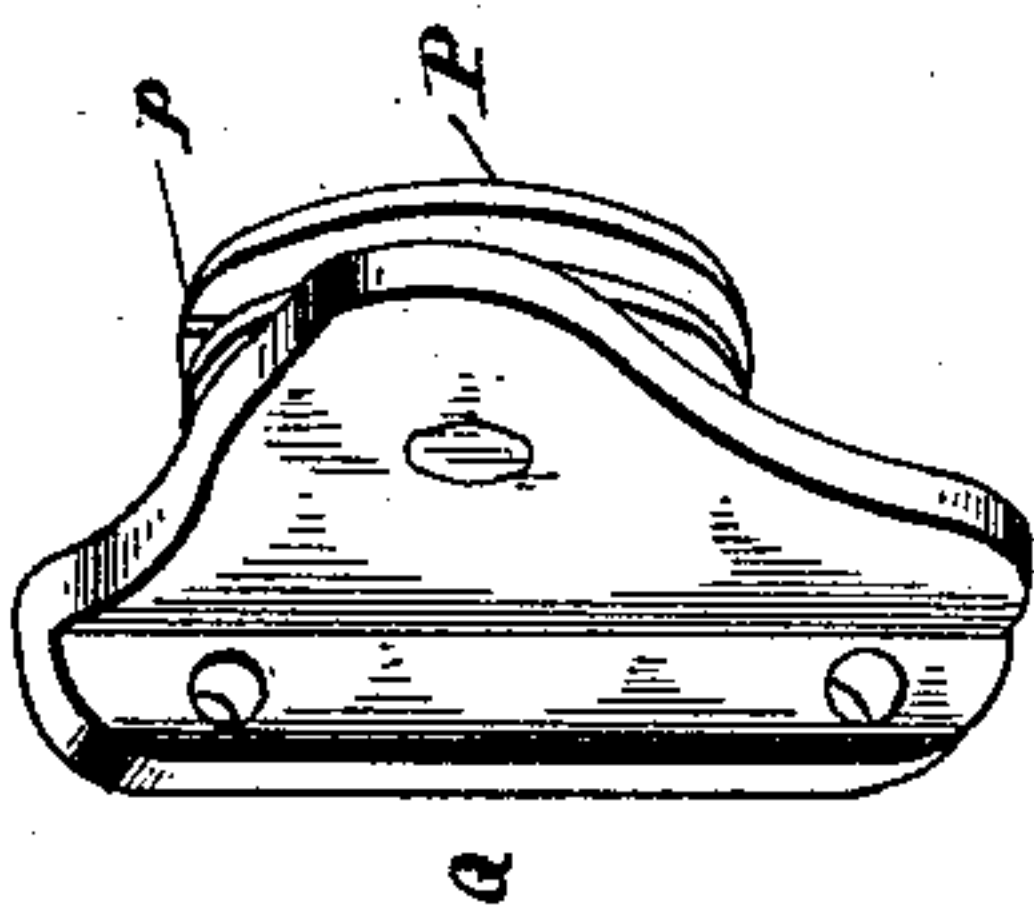


Fig. 6.

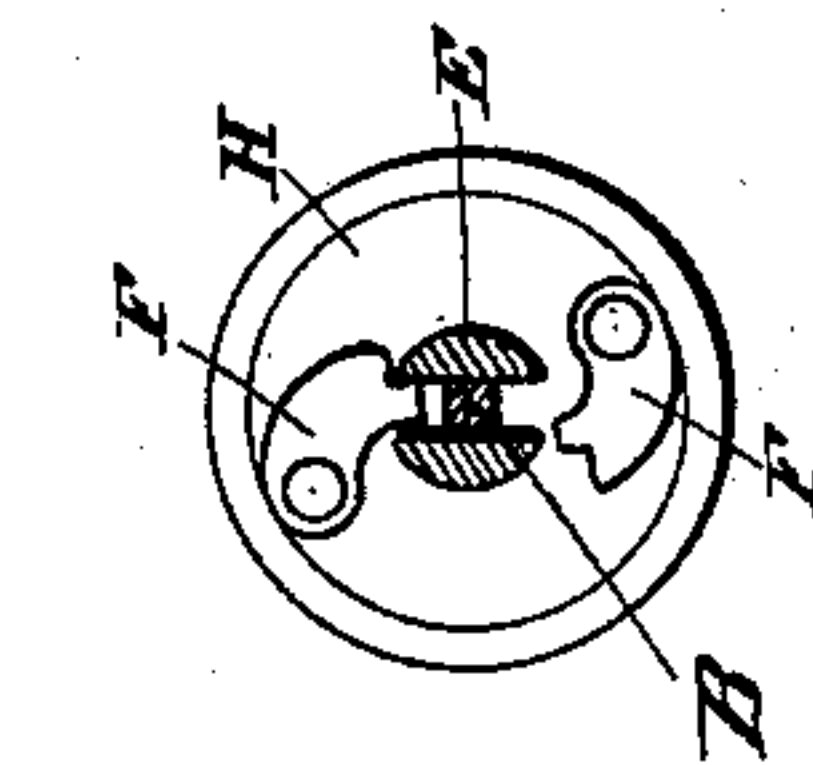


Fig. 7.

Inventor

Charles E. Goodrich

By his 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. 509,078, dated November 21, 1893.

Application filed December 17, 1892. Serial No. 455,427. (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.

The objects of the improvements herein described are to provide improved shade roller devices, by means of which the upper and lower portions of a window can be automatically covered or uncovered simultaneously, or one at a time, so that ventilation from the tops of windows or other openings can be facilitated without inconveniencing or subjecting the occupants of rooms to drafts, &c. Also means are provided whereby light may be admitted from either the top or the bottom of a window, as convenience may require, so that the curtains can be adjusted with respect to the sun, and the proper light can be admitted to the room, while at the same time not exposing the room to the direct rays of the sun.

With these and many 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 showing the herein-described curtain fixture in one of its adjusted positions on a window. Fig. 2 is a vertical longitudinal sectional view on the line $x-x$ of Fig. 1. Fig. 3 is an enlarged longitudinal sectional view of the shade roller and its appurtenances. Fig. 4 is a detail in perspective of one of the grooved winding rollers at one end of the shade roller. Fig. 5 is a similar view of one of the stationary supporting brackets. Fig. 6 is a detail in perspective of one of the roller caps. Fig. 7 is a detail end view of one of the end pawl plates or disks. Fig. 8 is a detail plan view of one of the roller caps. Fig. 9 is a similar view of the loop end of the pull cord.

Referring to the accompanying drawings:—
50 A represents a hollow shade roller of wood or other light material which accommodates the

longitudinally disposed shaft B. The shaft B, extends through the entire length of the roller A, and projects slightly beyond each end thereof, and carries at such end the grooved winding wheels C. Each of the grooved winding wheels C, is arranged on a hub portion D, which projects beyond the outer sides of the wheels and into the ends of the roller, where the same are mounted on the projecting ends of the shaft B, and said winding wheels C, are so constructed that the base of their grooves form a circle, the diameter of which is about one half that of the roller A, while the outer edges or rims of the wheels form a slightly larger circle than the roller. One of the winding wheels C, is provided on both sides thereof with the notched collars E, the inner collar of which is designed to be engaged by means of the roller pawls F, which are designed to arrest the motion of the roller and the recoil of the actuating spiral spring G. The spiral spring G, is of the ordinary construction, and one end thereof is fastened to the shaft B, while the other end is secured to the roller A, so that the shaft with its attached wheels can revolve independently of the roller A. The arresting pawls F, are pivotally mounted or secured to the pawl disk or plate H, which is held to one end of the roller A, by means of the ferrule I, while the other end of the roller receives a similar ferrule I, which holds in position an opposite bearing disk H', which forms a journal for one end of the shaft B, and the opposite pawl disk forms a journal for the other end of the shaft.

Although I have described the arresting pawl devices at one end of the roller, still it will be readily understood by those skilled in the art that the construction can be duplicated at the other end in order to secure a positive accuracy in the catch and release of such pawl devices. The outer notched collar E, of one of the wheels C, is designed to be engaged by the stop pawl J, pivotally mounted within one of the non-rotative cylindrical or disk wheel caps L. The wheel caps L, are arranged to fit loosely over the outer extended ends of the hubs D, so as to entirely inclose the grooved winding wheels C, and are provided in the rims thereof with the slots or openings M, and the inner annular flanges N,

which inclose therebetween on the roller the curtain or shade *n*, attached to the shade roller and adapted to be wound or unwound thereon. The slots *M*, in the wheel caps *L*, receive the roller supporting ribbons *O*. The said roller supporting ribbons *O*, are preferably of thin spring metal, and the lower ends thereof are secured in the transverse notches *o*, in the winding wheel *C*, and are designed to be wound up in the grooves of said wheels as the same revolve in one direction, or unwind therefrom as they revolve in the other direction, and said supporting ribbons *O*, which pass through the slots or openings in the wheel caps, have their upper ends secured in a stationary grooved supporting disk *P*. The supporting disks *P*, are also provided with transverse notches *p*, which receive the upper ends of the metal ribbons *O* and are removably held in such notches by a wrap of the ribbon upon itself in the grooves of said disks and said disks are secured stationary on the supporting brackets *Q*, secured to the top of the window frame above the upper end of the upper sash or window opening. It will be observed at this point, that by reason of the ribbons *O*, passing through the caps *L*, the latter are necessarily prevented from revolving, and therefore always have a fixed position as the ends of the roller and the pawls in said caps which engage the outer notched collars of the winding wheel serve to hold the roller at any point desired by preventing the same from turning in the direction induced by its spring, thus leaving it free to revolve in the opposite direction.

It is of course understood that the fixture is designed to be controlled in such a manner that the roller may be lowered from the top of the window as far as may be desired leaving the remainder of the window covered, or by means of the spiral spring *G*, the roller *A*, may be revolved independently of the shaft *B*, so as to raise and lower the shade *n*, while at the same time the roller *A*, is held in a stationary position with respect to the up and down movement of the same, at the option of the operator. This latter operation provides for uncovering the window at the bottom.

In order to hold the roller in a stationary position while operating the shade thereof, I employ a pull cord *R*, the lower end of which is provided with a knob *r*, and the upper end of which has connected thereto the metal loop or ring *S*, which loosely engages one of the knobs at the outer extremities of the projecting hubs *D*, so that the cord will not wind thereon. By grasping this cord with one hand while the roller is in a stationary position, the operator prevents the ascent of the roller, which would follow from the rolling motion imparted to the roller by pulling down on the curtain, and which would therefore, when a sufficient tension of the spring was reached, cause the end wheels to turn in a

direction so as to wind up the metal ribbon thereon and elevate the entire roller. It will be observed that while the roller is in this manner held stationary in an adjusted position, the curtain or shade may be wound or unwound at will by pulling down on the curtain or allowing it to ascend under the motion imparted to the roller by the spring, it being of course understood by those skilled in the art that by allowing the curtain to ascend slowly the pawls *F*, will engage the notched collar *E*, so as to stop the winding up of the shade or curtain at any position by preventing the roller from turning, and on the other hand by allowing the curtain to rapidly rise, the pawls will travel over the notches in the collars and not engage the same, as is usual. It will be observed that when the roller is stopped by the pawls *F*, a further revolution in the direction induced by the spring will be checked by means of the stop pawl *J*, arranged in one of the wheel caps *L*. By releasing the cord *R*, and pulling down on the curtain, a revolving motion is necessarily imparted to roller, *A*, and this is continued until the tension of the spring is sufficient to overcome the weight of the roller, or in other words the roller will revolve around the shaft until the tension of the spring is sufficient to cause the shaft *B*, to also revolve, thereby turning the wheels *C*, and winding up the supporting ribbons, which causes 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 at the top of the window before the curtain is entirely unwound therefrom. The shade of course can be operated independently of the vertical movement of the roller at any point. The roller is lowered from the top by unwinding or pulling down on the shade or curtain until the tension of the spring is sufficient to cause the roller to begin to ascend. By then quickly releasing the pressure on the curtain by raising the hand, the roller in response to its own gravity will quickly descend, unwinding itself from the supporting ribbons and winding around itself in its descent, the curtain or shade. When the desired point in the descent of the curtain is reached, the curtain is checked by the hand which will cause the stop pawl *J*, to drop into the outer notched collar *E*, thereby holding the roller stationary in its adjusted position. While this motion of the curtain is taking place, and also as the roller is ascending, the spring is necessarily inactive.

From the foregoing description it will be apparent that the construction specified provides a curtain fixture, the roller of which can be automatically raised and lowered by simply grasping the curtain or shade, and also automatically checked or arrested at any adjusted position without touching the checking devices, and without releasing the hand from the curtain or shade. This result is

secured principally by reason of the independent pawl device for one of the winding wheels.

Although I have described and illustrated the pawl device as a stationary disk cap alongside of one winding wheel and carrying a stop pawl, nevertheless it will be apparent that the essential points are, that this pawl device be loose on the hub of the winding wheel which it engages, and be always retained in a fixed non-rotative position, so that the winding wheel engaged thereby can freely turn therein. The tapes passing through the slots in the flange of said caps serve to hold the same stationary, but to secure the result described, it is simply necessary that the disk portion of the cap which carries the stop pawl be suitably mounted stationary alongside of the winding wheel having the outer pawl notches, whereby the automatic raising and lowering of the roller, by reason of the tension of the spring therein and its own gravity, can be effected by simply manipulating the curtain or shade as fully described.

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 my invention, what I claim, and desire to secure by Letters Patent, is--

1. In a curtain fixture, the spring-actuated shade roller, winding wheels attached to the extremities of the shaft of said roller and one or both of which is provided with pawl notches, non-rotative wheel caps inclosing said winding wheels and one or both of which carry check pawls adapted to engage the pawl notches of the winding wheels, and the flexible supporting ribbons or bands, substantially as set forth.

2. In a curtain fixture, the spring-actuated shade roller, deeply grooved winding wheels arranged on the opposite extremities of the roller shaft and one of which is provided with pawl notches at both sides thereof, non-rotative loosely mounted wheel caps entirely inclosing both of said winding wheels and one of which carries a pawl adapted to engage the pawl notches at one side of one of the winding wheels, and flexible supporting ribbons or tapes connected at one end to said winding wheels, substantially as set forth.

3. In a curtain fixture, the combination of a hollow shade roller, a single shaft arranged inside of the roller and extending beyond the ends thereof, deeply grooved winding wheels fixedly attached to the projected extremities of said shaft and one of which is provided with opposite notched pawl collars at both sides thereof, arresting pawls pivoted to one end of the roller and adapted to engage the inner notched pawl collar of one winding wheel, non-rotative wheel caps loosely embracing the hubs of said winding wheels and entirely covering the same, one of said wheel

caps having a stop pawl adapted to engage the outer notched collar of one winding wheel, and flexible supporting ribbons winding and unwinding in the grooved wheel, substantially as set forth.

4. In a curtain fixture, the spring-actuated shade roller carrying the arresting pawls at one end, winding wheels attached to the extremities of the shaft of said roller and having projecting hubs, one of said wheels having pawl notches at both sides thereof, the inner of which are engaged by said arresting pawls, cylindrical wheel caps loosely fitted on the projected hubs of the wheels and entirely inclosing the latter, said wheel caps having slots or openings communicating with the grooves of the wheel, and inner annular flanges, a stop pawl pivoted inside of one of said wheel caps and adapted to engage the pawl notches of one of the wheels opposite the arresting pawls, and the supporting ribbons, wound around the wheels and passing through the slots of the caps, substantially as set forth.

5. In a curtain fixture, the spring actuated shade roller, the winding wheel attached to the extremities of the shaft of said roller and having projecting hubs terminating at their outer extremities in knobs, non-rotative wheel caps having slots the supporting ribbons or tapes winding on said wheels, and passing through the slots of said caps separate pawl devices for one of said wheels, and a pull cord having at one end a loop or ring adapted to removably engage the knob extremity of one of the wheel hubs, substantially as set forth.

6. In a curtain fixture, the combination with an ordinary spring actuated shade roller; of winding wheels attached to the outside extremities of the shaft of said roller, one of said winding wheels having pawl notches independent of the roller pawls, a disk supported loosely in a non-rotative position alongside of the notched winding wheel and having a pawl adapted to engage said pawl notches, and the flexible supporting ribbons, substantially as set forth.

7. In a curtain fixture, the combination with the adjustable shade roller carrying winding wheels at one end; of the non-rotative supporting disks having annular grooves and transverse notches intersecting said grooves, and the flexible supporting ribbons winding and unwinding on said roller winding wheels and adapted to have their upper ends wrapped in the grooves of said disks and their extremities engage the notches thereof, 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 SHIER,
WM. DE FRIEZ.