(No Model.) 2 Sheets—Sheet 1.

I. WILLIAMS.

CURTAIN FIXTURE.

No. 518,977. Patented May 1, 1894.

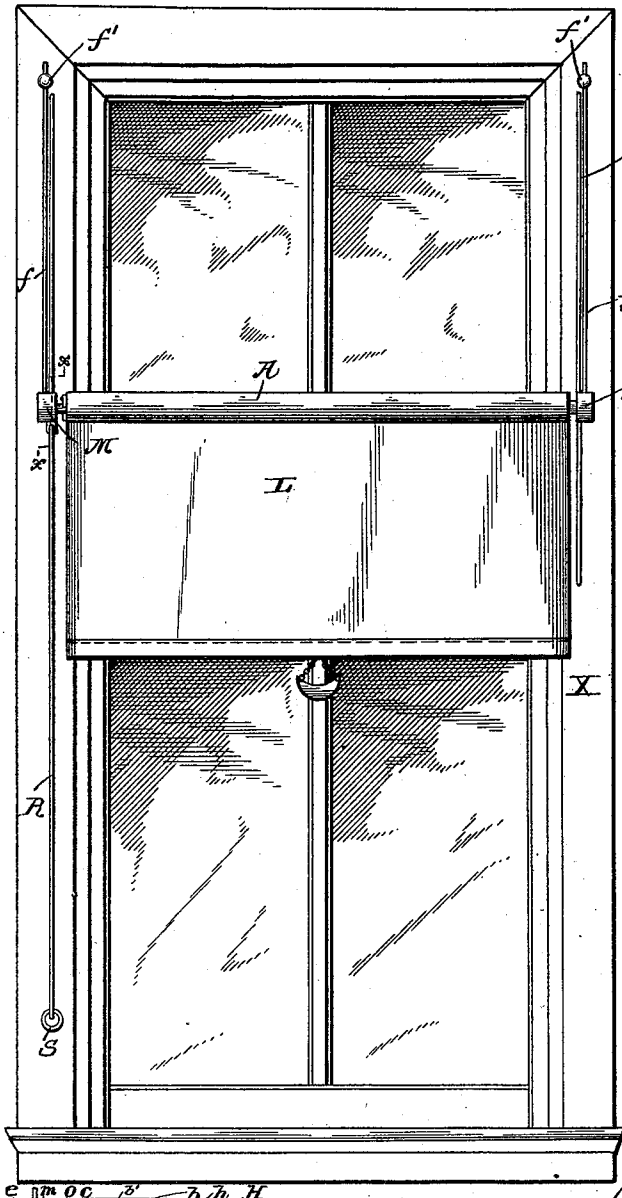

Fig. 1.

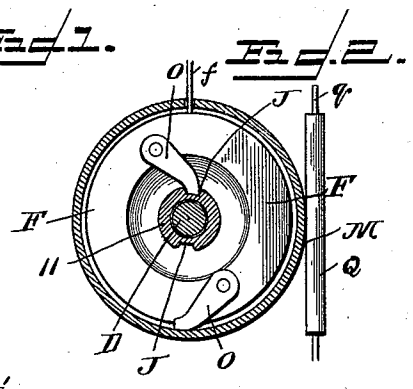

Fig. 2.

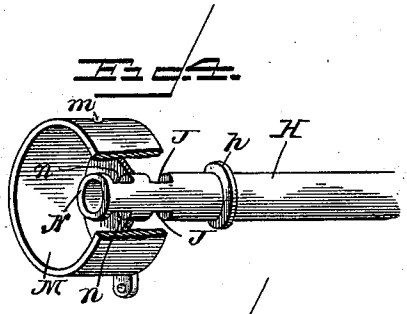

Fig. 4.

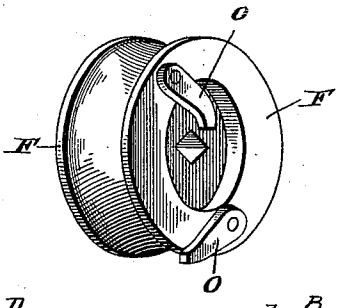

Fig. 5.

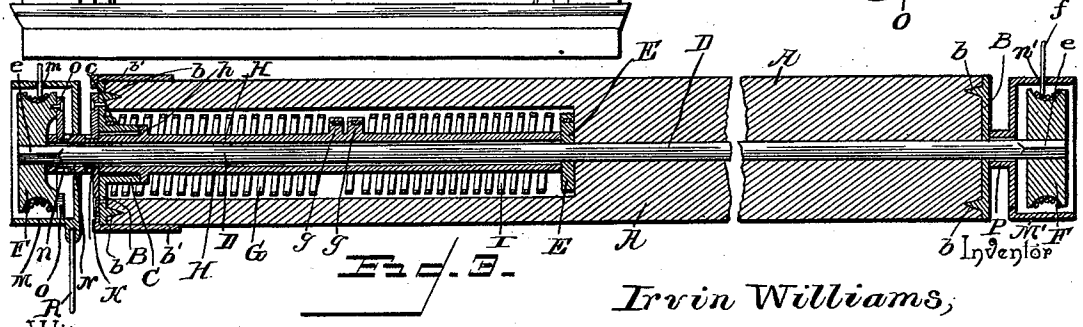

Fig. 3.

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(No Model.) 2 Sheets—Sheet 2.

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CURTAIN FIXTURE.

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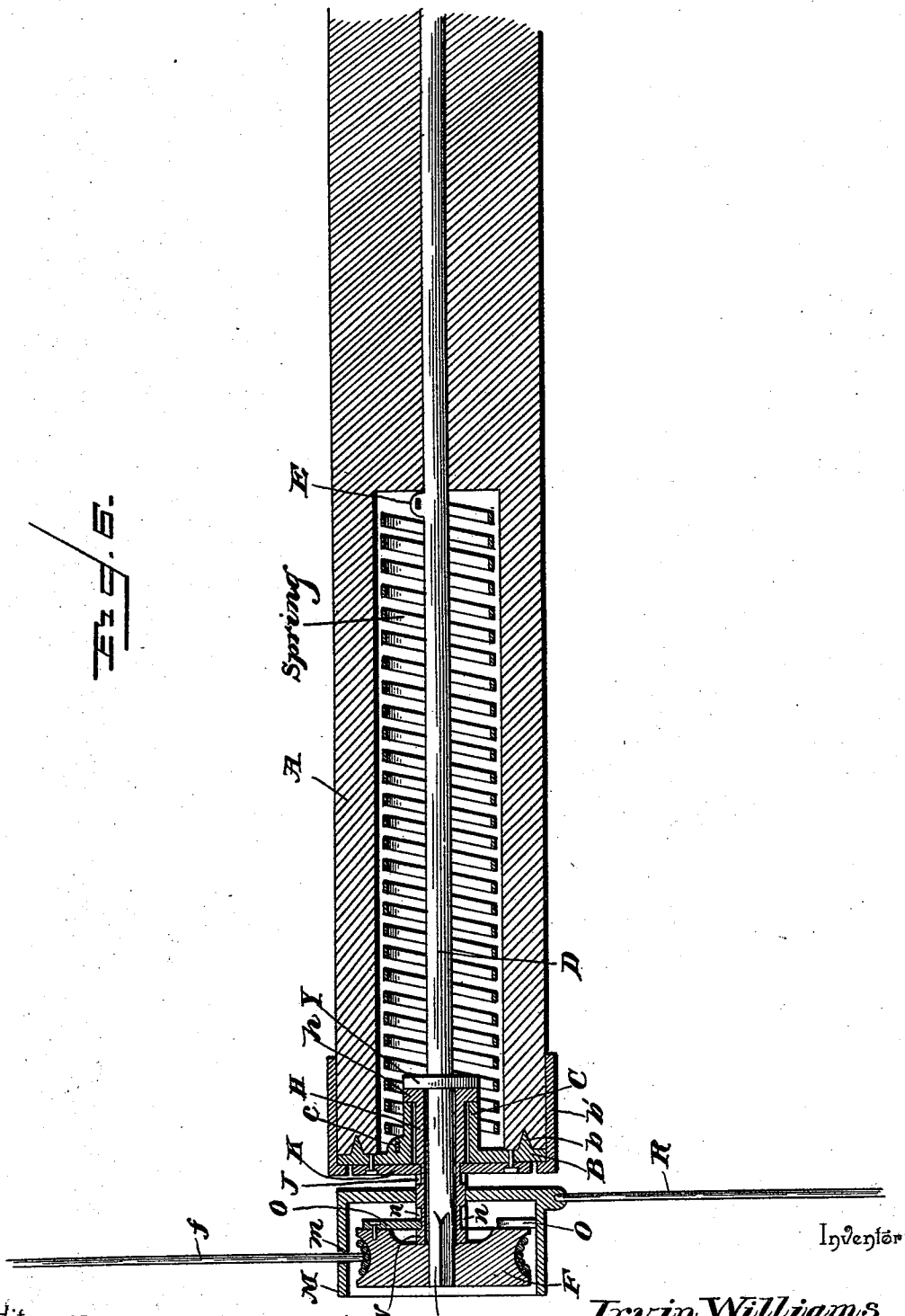
Fig. 5.



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IRVIN WILLIAMS, OF NELSON, MISSOURI.

CURTAIN-FIXTURE.

SPECIFICATION forming part of Letters Patent No. 518,977, dated May 1, 1894.

Application filed August 22, 1893. Serial No. 483,744. (No model.)

To all whom it may concern:

Be it known that I, IRVIN WILLIAMS, a citizen of the United States, residing at Nelson, in the county of Saline and State of Missouri, 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 curtain fixtures whereby the curtain and curtain roller can be raised or lowered separately, or together at the same time, thereby providing novel and efficient means for covering and uncovering the top as well as the bottom portion of a window in order to secure the necessary light and ventilation.

To this end the main and primary object of the invention is to provide a curtain fixture having an automatically raising and lowering curtain shade and roller.

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 curtain fixture applied to a window frame. Fig. 2 is a vertical sectional view on the line *x*—*x* of Fig. 1. Fig. 3 is an enlarged central longitudinal sectional view of the curtain roller and its appurtenances. Fig. 4 is a detail in perspective of the non-rotative shaft sleeve and its cap. Fig. 5 is a detail in perspective of the winding wheel or pulley which carries the check pawls. Fig. 6 is an enlarged detail sectional view of a modified construction of the fixture employing a single spring.

Referring to the accompanying drawings, A represents a curtain roller of the ordinary construction formed of either metal or wood, said curtain roller being partially or entirely hollow to accommodate the shaft devices therein. The said curtain roller accommodates at opposite ends thereof the bearing disks B, both of which are provided with the inwardly extending prongs *b*, engaging the ends of the roller so as to turn therewith, and one of said bearing disks is additionally secured in place by the ordinary metal cap *b'*, which provides means for gaining access to the interior spring devices, in the usual manner. Both of said bearing disks are centrally perforated, but the disk held in place by the cap *b'*, is further provided with the inwardly extending bearing neck C, and the attaching eye *c*, at the inner base of said neck. The opposite bearing disks B, and the roller A, support the longitudinal roller shaft D. The shaft D, extends longitudinally through the entire roller and is provided at a point intermediate of its ends with a central attaching collar E, located inside of the roller, while the opposite extremities of the shaft D, project beyond the ends of the roller and are squared as at *e*. The squared ends *e*, of the longitudinal shaft are adapted to receive the grooved winding wheels or pulleys F, securely fitted onto said shaft ends and having attached thereto the lower ends of the hanging cords or tapes *f*, the upper ends of which are secured to suitable points of attachment *f'*, at the top and one side of the window frame X, thereby providing a support for the roller, while at the same time winding and unwinding on the wheels or pulleys F, to provide means whereby the roller can be raised and lowered to cover and uncover the top portion of the window. The ordinary roller or curtain spring G, is arranged within one end of the roller A, and is attached at one end to the attaching eye *c*, of one of the end disks, and at its other end to one of the central attaching lugs *g*, of the non-rotative shaft sleeve H. The non-rotative shaft sleeve H, is fitted in one end of the roller to form a bearing for that end of the same, as well as for the longitudinal wheel or pulley shaft D, which freely turns within the sleeve, and said sleeve is adapted to have the inner end thereof work at one side of the central attaching collar E, of the shaft, and is provided at a point near the outer end thereof with the bearing shoulder *h*, which works against the inner end of the inwardly extending bearing neck C, of one of said bearing disks B. As is clearly shown in the drawings, the non-rotative shaft sleeve H, is provided with two central attaching lugs *g*, and to one of these lugs is attached one end of the lifting spring I, the other end of which is attached to the central attaching collar E, of the shaft, to provide for raising and lowering the roller together with the cur-

tain by simply the tension thereof, and the tension of this lifting spring I, is sufficiently stronger than the spring G, so as not to be affected by the tension of the latter spring. The non-rotative shaft sleeve H, which extends a distance within the curtain or shade roller is provided at a point just outside of one end of the roller with the pawl notches J, formed on opposite sides thereof and adapted to be engaged by the ordinary arresting pawls K. The arresting pawls K, are pivoted to the necked bearing disk B, at one end of the roller, and are designed to arrest the motion thereof in order to check the curtain shade L, at any height. It will be apparent that the curtain shade L, is operated in the ordinary manner by simply winding and unwinding the same on the roller, by grasping the curtain with one hand and easing up the ascent and descent of the curtain when it is desired to arrest the same at any point, by allowing the pawls K, to come into engagement with the sleeve notches J. The sleeve H, carries upon the outer extremity thereof at one end of the roller A, a cylindrical wheel cap M, which wheel cap fits over and incloses the winding wheel or pulley located at that end of the roller, and said wheel cap is provided with a top perforation *m*, through which passes the cord or tape winding and unwinding on the wheel or pulley inclosed by the cap. The said shaft sleeve is further provided with a notched hub N, which is an extension of the main body of the sleeve and projects to a point slightly inside of the wheel cap mounted thereon, and the notches *n*, therein are disposed in a position corresponding to the notches J, outside of the wheel cap, but are adapted to be engaged by the check pawls O, pivoted to one side of the winding wheel or pulley located at that end of the roller, and providing means for checking the roller in any adjusted position. A duplicate cylindrical wheel cap M′, similar to the wheel cap of the shaft sleeve, is located at the opposite end of the roller to that in which the spring devices are arranged, and is provided with a short off-standing bearing neck P, loosely embracing one of the shaft ends at one side of the pawlless wheel or pulley which it embraces, and said duplicate wheel cap is also provided with a top perforation *n′*, through which passes the cord or tape winding or unwinding on the wheel or pulley inclosed thereby.

Although the construction just described embodies the main principles of my invention and will work with great efficiency, nevertheless if it is desired to insure the steady working of the fixture, both of the cylindrical wheel caps M and M′ may be provided at their rear sides with the short guide tubes Q. These guide tubes Q, are adapted to loosely slide on the vertical guide or slide rods *q*, secured to opposite sides of the window frame X, and extending from the top thereof to a point near the center of the frame, and providing means for holding the fixture steady to the window frame and preventing it from blowing about, but it will be obvious that other suitable guide devices might just as advantageously be employed. A pull cord R, is secured at its upper end to one of the non-rotative wheel caps, and is provided at its lower end with a finger ring S, by means of which it may be readily grasped in order to raise and lower the roller independently of the curtain. By grasping the pull cord R, and pulling down on the same, the roller can be lowered against the tension of its lifting spring I, in a similar manner to the raising and lowering of the curtain shade L, itself, and when the roller has reached the point desired, the pull cord is eased up in order to permit the check pawls O, to engage the pawl notches *n*, in the sleeve hub N, thereby providing means for holding the roller stationary in its adjusted position. To raise the roller, the pull cord is drawn down until the pawls O, disengage the notches *n*, and then the pull on the cord is quickly released in order to permit the roller to be lifted under the tension of the spring I, as will be readily understood. It may be further observed that the roller may also be raised and lowered by the curtain itself, and to do this it is simply necessary to allow the pawls K, to lock or engage in the notches J, and then by pulling on the curtain the roller can be raised or lowered inasmuch as the curtain will then act in the same capacity as the pull cord.

While I have specifically described my improved curtain fixture as operated in connection with two springs, G and I, respectively, it will be understood by those skilled in the art that the fixture might be modified so as to employ only one spring, which may be made to serve the functions of both of the springs G and I. It will be obvious that one end of the ordinary roller or curtain spring G, may be extended to have its inner end attached to the roller shaft D, at E, where the lifting spring I, is connected, because the springs G and I are substantially continuations of each other, and their connection to the non-rotative sleeve H, provides for the use of two springs of different tensions so that the raising and lowering of the roller may always be positively insured without depending upon the roller spring. In the event of the employment of one spring, the shaft sleeve H, is still prevented from rotating by reason of the weight of the fixture, and the guide-part thereof, and the roller may be raised and lowered in substantially the same manner as described, as long as the tension of the single spring is sufficiently strong to turn the roller shaft D, in the same manner as turned by the spring I. In the one spring modification the fixture is operated as already described. The modified construction just described is, clearly illustrated in Fig. 6 of the drawings in which the arrangement of a single spring is plainly shown, and it is to be observed that, since the employment of a single spring would dispense with the connections at the point *g*,

on the non-rotative sleeve H, this sleeve need not be as long as the one illustrated in Fig. 3 of the drawings, but may be shortened up to the bearing shoulder *h*, thereof, at one side of which is the shaft collar or shoulder Y, which is formed on the shaft D to properly hold the parts of the fixture in position in the modified form, and with this exception and the use of a single spring the construction shown in Fig. 6 is identical with that shown in Fig. 3 of the drawings.

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 of a hollow shade roller provided with an ordinary roller spring and arresting pawls, a longitudinal winding shaft extending through the roller, winding wheels or pulleys attached to the extremities of the shaft beyond the roller ends, the hanging cords or tapes, a separate and independent roller lifting spring arranged within the roller and connected with the shaft extending therethrough, and a suitable check attached to one of the winding wheels for checking the rotation of the shaft, substantially as set forth.

2. In a curtain fixture, an ordinary spring-actuated shade roller, a shaft arranged longitudinally in the roller and having winding wheels or pulleys at its extremities, a shaft sleeve located at one end of the roller and loosely embracing the shaft and provided with separate pawl notches in its outer end, the roller lifting spring arranged within one end of the roller and connected to said sleeve and to the shaft, the hanging cords or tapes, and the pawls affixed at one end of the shade roller and to one of the wheels or pulleys, said pawls being adapted to engage the notches in said shaft sleeve to check the roller and also the shade thereof, substantially as set forth.

3. In a curtain fixture, a hollow shade roller carrying a curtain shade, bearing disks attached to opposite ends of the roller and one of which is provided with an inwardly extending bearing neck, a longitudinal shaft having winding wheels at its extremities, a non-rotative shaft sleeve located within one end of the roller and having a shoulder working against the inner end of said neck, a cylindrical wheel cap inclosing one of the winding wheels, and pawl notches at both sides of said cap, a duplicate non-rotative cylindrical wheel cap loosely mounted on the other end of the shaft, the curtain spring connected to one end of the roller and to said shaft sleeve, a stronger lifting spring attached to said shaft sleeve and to the shaft, pawls pivoted to one of the end bearing disks of the roller and to one of said winding wheels and adapted to engage the pawl notches in said shaft sleeve, and suitable guides for the fixture, substantially as set forth.

4. In a curtain fixture, an ordinary spring-actuated shade roller, a shaft arranged longitudinally in the roller and having winding wheels at its extremities, non-rotative wheel caps inclosing said winding wheels and each provided at one side with a guide tube, suitably arranged check devices, the hanging cords or tapes, the pull cord attached at one end to one of said cylindrical wheel caps, and the opposite stationary slide rods loosely receiving said guide tubes, substantially as set forth.

5. In a curtain fixture, the combination with the hollow shade roller; of a shaft arranged longitudinally in the roller, winding wheels or pulleys attached to the extremities of the shaft, a spring arranged within the roller and connected to the shaft, a non-rotative shaft sleeve located in one end of the roller and having a cylindrical wheel cap inclosing one of the winding wheels, and pawl notches at both sides of said cap, a duplicate non-rotative wheel cap loosely mounted on the other end of the shaft, the hanging tapes, pawls pivoted to one end of the roller and to one of said winding wheels and adapted to engage the pawl notches at both sides of the sleeve wheel cap, and suitable guides for the fixture, 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.

IRVIN WILLIAMS.

Witnesses:
W. P. WATTS,
L. M. HAYNIE.