No. 758,918. PATENTED MAY 3, 1904.

F. B. HOPEWELL.

DEVICE FOR HOLDING SPRING ACTUATED CURTAINS.

APPLICATION FILED OCT. 23, 1902.

NO MODEL.

Fig. 1.

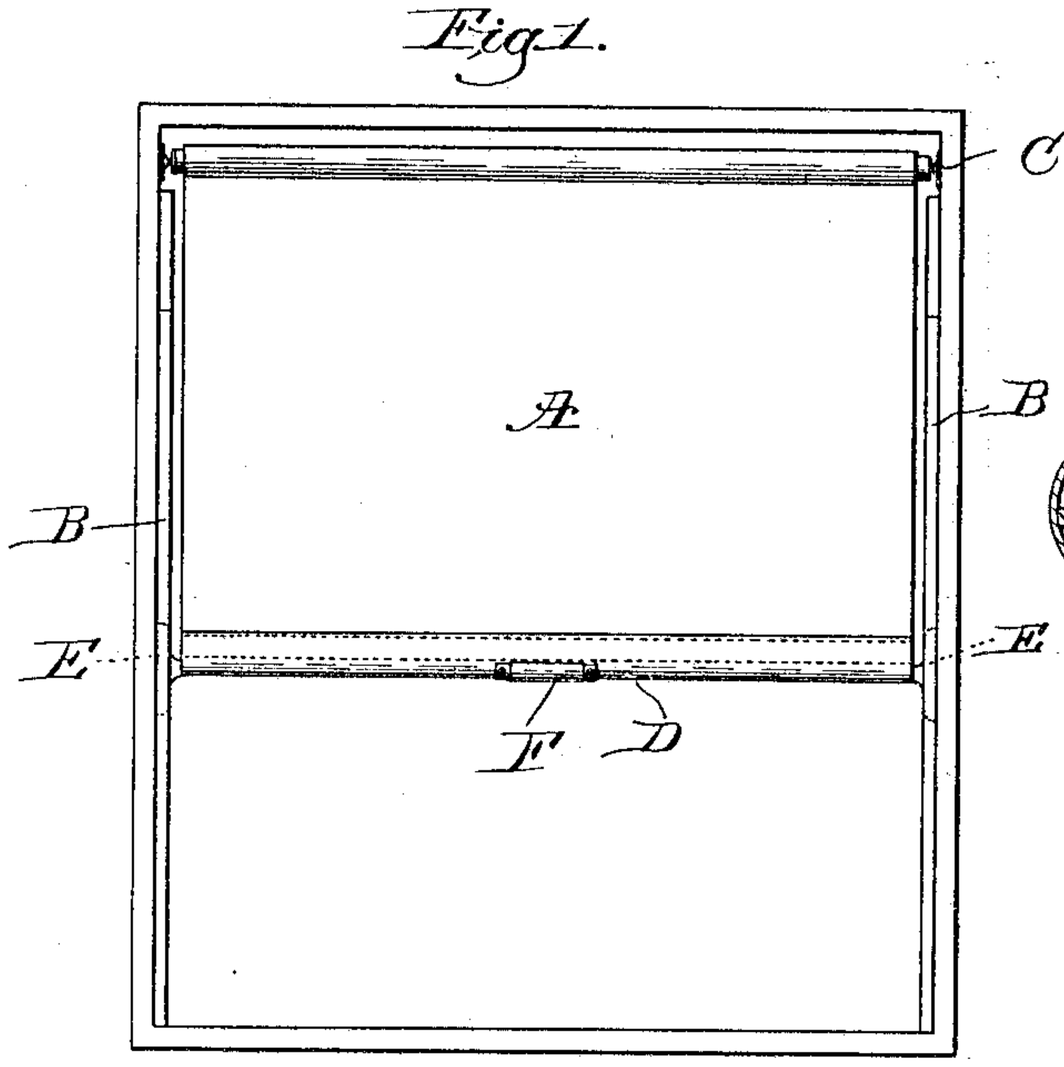
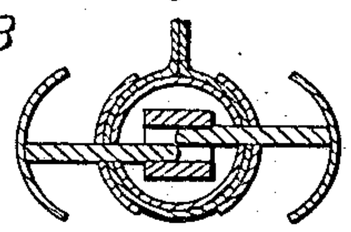



Fig. 6.



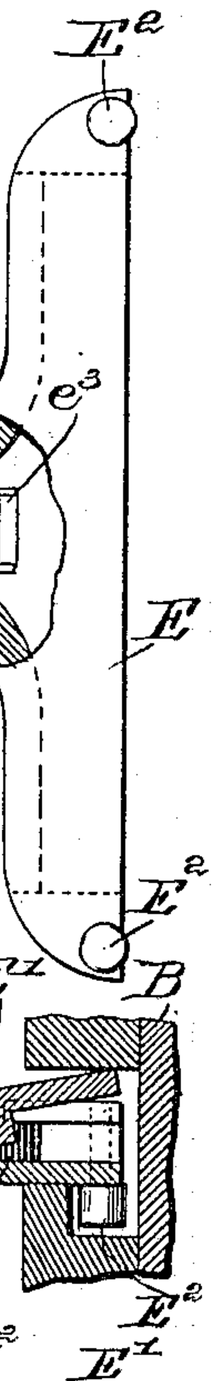



Fig. 2.

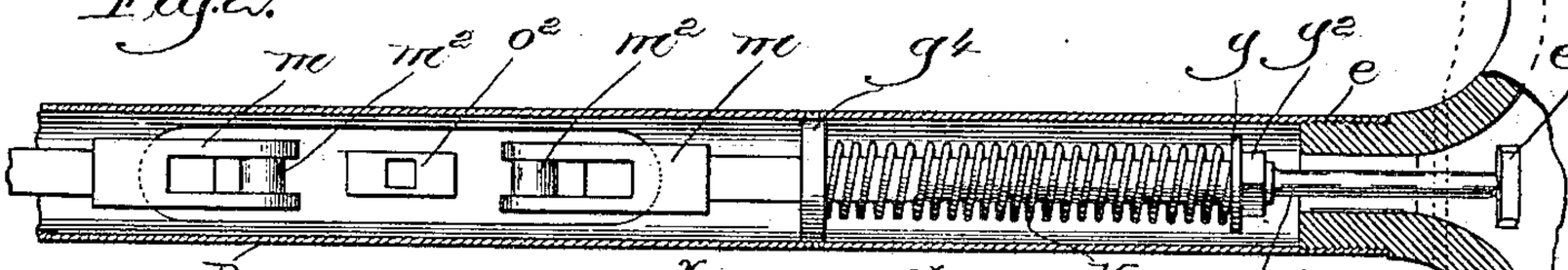



Fig. 3.

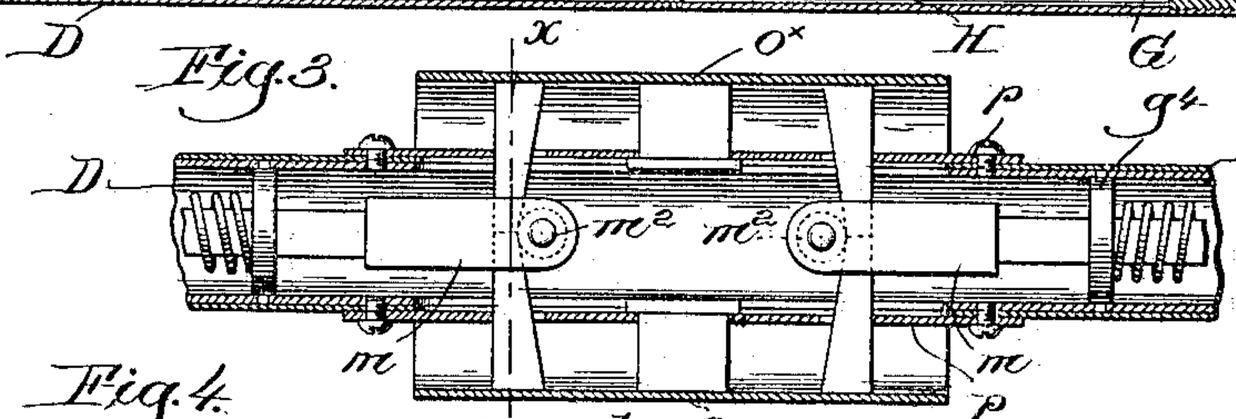



Fig. 4.

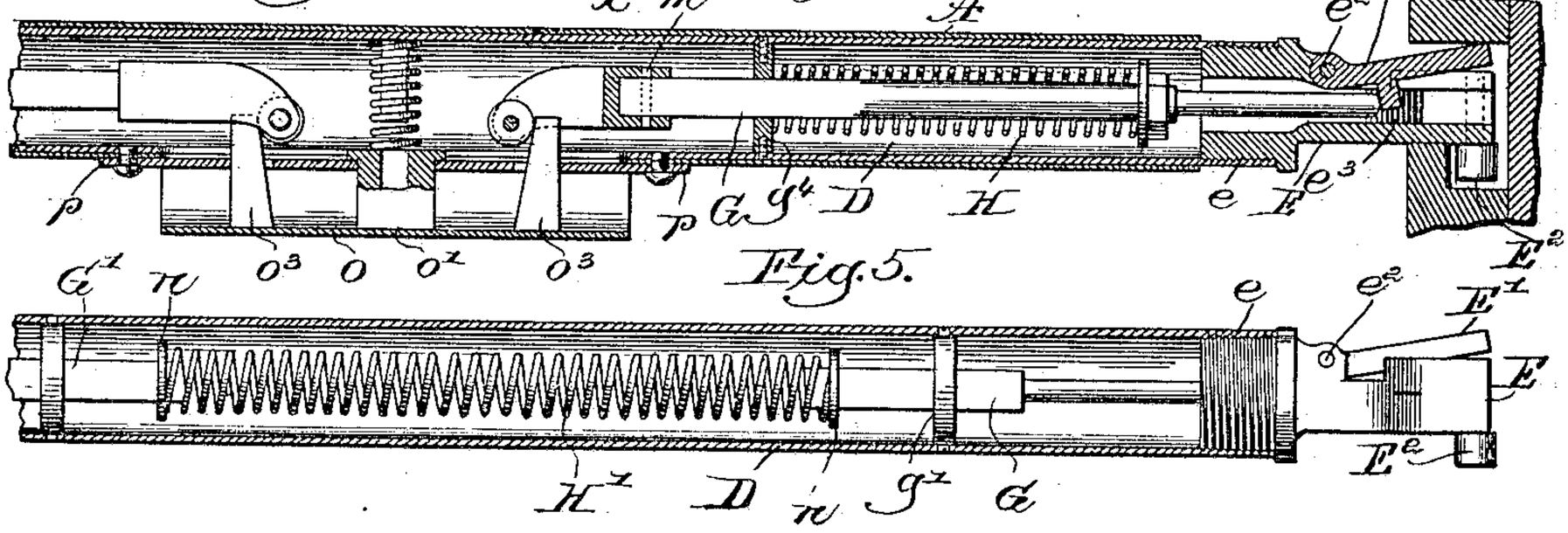



Fig. 5.



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No. 758,918. Patented May 3, 1904.

# UNITED STATES PATENT OFFICE.

FRANK B. HOPEWELL, OF CAMBRIDGE, MASSACHUSETTS.

## DEVICE FOR HOLDING SPRING-ACTUATED CURTAINS.

SPECIFICATION forming part of Letters Patent No. 758,918, dated May 3, 1904.

Application filed October 23, 1902. Serial No. 128,408. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK B. HOPEWELL, a citizen of the United States, residing at Cambridge, county of Suffolk, State of Massachusetts, have invented an Improvement in Devices for Holding Spring-Actuated Curtains, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to an improvement in devices for holding spring-actuated curtains at different points of adjustment; and it consists in the construction and arrangement of parts hereinafter described, and defined by the several claims.

This invention involves as one feature a fixture with heads, preferably elongated, which are held by means of springs in frictional contact with the side walls of the grooves in the window-casing, thus obviating the difficulties which are attendant upon the use of fixtures where the heads are held in frictional contact with the bottoms of the grooves in the window-casing.

Another feature of the invention consists in the employment of means, such as friction-rolls, upon the heads, whereby the accidental removal of the fixture from the grooves of the window-casing is prevented.

Another feature of the invention consists in the novel construction of means for releasing the friction of the heads against the window-casing, whereby the curtain may be moved upward or downward and which is readily and naturally grasped by the operator.

Further features of the invention consist in the general arrangement and combination of parts hereinafter specified.

The drawings illustrate different embodiments of the features of the invention; but it is obvious that some of the features of the invention may be used in connection with other forms of apparatus and that changes may be made in the forms illustrated without avoiding the spirit of the invention.

Figure 1 is a front view of a window-casing with the curtain and fixtures in place. Fig. 2 illustrates, partly in vertical section, one head and a portion of the curtain-rod with its inclosed parts. Fig. 3 illustrates, partly in horizontal cross-section, one form of the means for releasing the friction between the heads and the side walls of the grooves of the window-casing. Fig. 4 illustrates, partly in horizontal cross-section, another form of said means and also in horizontal cross-section the parts illustrated in Fig. 2. Fig. 5 illustrates, partly in horizontal cross-section, a form of the curtain-rod with the head where no positive means is employed for releasing the friction between the head and the side wall. Fig. 6 is a sectional view on the line $x\ x$ of Fig. 3.

In Fig. 1 the outlines of the window-casing are shown with the walls B, wherein are formed the grooves in which the heads of the curtain-fixture slide. The grooves are shown in cross-section in Fig. 4. A represents a curtain, and C a spring-actuated curtain-roll of ordinary type. D represents the curtain-rod, E the elongated heads, and F the handhold. The heads E are preferably elongated, as shown, and provided with a screw-threaded portion $e$, fitting the interior of the end of the curtain-rod. The screw-threaded portion is of such length as to provide for a considerable adjustment of the length of the curtain-rod to adapt the shade to windows of varying width, it not being necessary that the heads be screwed into the curtain-rod its entire length, and the rod G, hereinafter referred to, being readily cut off to make the adjustment. The head E is provided with a portion E′, pivoted at $e^2$, the upper and lower ends of this pivoted side wall being indicated at $e^9$, Fig. 2, in dotted lines and constituting practically one entire side wall of the head, and it is also provided with antifriction rolls or studs $E^2$ at each end, as shown, the said rolls having their peripheral surfaces projecting slightly beyond the surface of the head nearest the bottom of the groove in the window-casing. A lug or projection $e^3$ is formed on the pivoted portion E′ and coöperates with the rod G, as hereinafter described. The rod G, located interiorly of the hollow curtain-rod D, is preferably formed in two parts and is acted upon by springs H, whereby it is projected against and held in contact with the lug $e^3$, and thus operates to press and maintain the pivoted wall E′ of the

head and the fixed wall of the head in frictional contact with the side walls of the grooves in the window-casing. The rod G is acted upon in the opposite direction by the means shown in Figs. 2, 3, and 4, whereby it may be retracted, thus releasing the pressure upon the lug $e^3$, and consequently the friction between the walls of the head and the walls of the grooves in the window-casing.

In Figs. 2, 3, and 4 the rod G is shown as polyonal throughout a portion of its length and having cylindrical portions of two different diameters throughout the remaining portion of its length. The polygonal portion of the rod passes through a corresponding polygonal opening in a washer $g^4$, rigidly attached, as by screws, to the curtain-rod D, whereby rotation of the rod G is prevented. A washer $g$ is slipped over the end of the rod and onto the larger cylindrical portion, being held thereon in place by check-nut $g^2$. A spring H is placed between the fixed washer $g^4$ and the washer $g$ on the rod G and acts to throw the rod G outwardly against the lug $e^3$. By moving the washer $g$ along the rod and adjusting the check-nut $g^2$ accordingly the tension of the spring H may be varied as desired.

The means for retracting the rods G is shown in two forms in Figs. 3 and 4, the one in Fig. 4 being the preferable form, of which Fig. 3 is simply a duplication as to certain parts.

The rods G are provided with the end pieces $m$, fitting over the polygonal ends of the rods G and attached thereto by pins or screws $m'$, whereby rotation of the end pieces $m$ is prevented. The end pieces are constructed as shown and preferably provided with the antifriction-rolls $m^2$.

The handhold O is preferably of semicylindrical form and placed on that side of the curtain and rod toward the interior of the car or room. It is mounted by means of a projection O′ passing through a hole $O^2$ in the curtain-rod, so as to slide back and forth therein, and is provided with two interior projections $O^3$, having inclined faces coöperating with the rolls $m^2$ on the end pieces of the rods G. The operation is obvious. When the handhold O is pressed inwardly, the inclines on the projections $O^3$ operate to retract the rods G, and when the hand is withdrawn from the handhold O the springs H serve to throw it out again into position. If desired, an additional spring, as $O^5$, surrounding a post over which the projection O′ may slide, may be added to insure the movement of the handhold.

In Fig. 3 the handhold O is duplicated at $O^\times$; otherwise the construction is substantially the same. In this form the hand of the operator grasps both handholds and upon compressing them the rods G are retracted. This form is more symmetrical than the form illustrated in Fig. 4, but it is a duplication of the parts, and for ordinary purposes the form shown in Fig. 4 will be found sufficient.

Reinforcing-plates P are illustrated screwed or fastened in position by screws $p$, and the curtain A is also shown in Figs. 3 and 4 as placed around the rod D and beneath its reinforcing-plates. The walls of the curtain-rod may be still further reinforced if necessary to guide the movement of the handhold.

In Fig. 5 is illustrated a simpler form of the invention which may be used under many conditions with entire satisfaction. In this form the handholds and means for positively retracting the rods G are dispensed with. The rods (designated by G′ in this figure) are mounted to slide in washers $g'$ and have attached at or near their ends washers $r$, against which a single long spring H′ presses. In this form of the invention the spring H′ serves to press the rods E against the projections $e^3$. When it is desired to adjust the curtain, it is only necessary to press the curtain-rod bodily away from the operator, thus pressing the walls E′ of the heads inwardly and allowing the curtain to be raised and lowered. The fixtures shown in Figs. 2, 3, and 4 are also capable of this manner of operation, as is evident.

From the constructions thus described in detail it will be seen that a curtain-fixture has been provided simple in construction, certain in operation, and capable of adjustment with ease and accuracy at any position.

The friction whereby the curtain is held in position takes place between the side walls of the grooves for the window-casing, and thus the binding of the head of the fixture against the end walls of the grooves of the window-casing which has been found to cause so much difficulty in fixtures of this class is obviated. The heads of this invention are mounted loosely in the grooves of the window-casing, and the antifriction-rolls $E^2$ are mounted so as not to be in engagement with the end walls of the grooves in the window-casing unless the curtain-fixture is tipped at an angle to the horizontal, when they act against the end walls of the grooves, reducing friction and preventing binding and preventing the withdrawal of the heads entirely from the grooves. Herein with respect to the grooves in the window-casing the term "side walls" is applied to the walls parallel with the curtain or window, and the term "end walls" is applied to the walls at right angles to the curtain or window.

The rods G are made of sufficient length, and the screw-threaded portions $e$ are made of sufficient length, so that a material adjustment may be made by simply cutting off the end of the rods G and screwing the heads farther into the curtain-rods D.

The means for retracting the rods G are of such character as to be actuated by the most careless and indifferent operator. Fixtures of this character, as is well known, are most

commonly used in railway-cars, and are seized hurriedly and carelessly by the occupants of the car. It is of the greatest importance, therefore, to have a device which will operate no matter how seized. It is impossible to grasp this device without retracting the rods, and thus relieving the friction between the head and the window-casing and allowing easy movement of the curtain. The entire structure itself aids in this purpose, for it is almost impossible to seize the curtain-rod at any point without pressing it laterally, and thus forcing inwardly the pivoted portions E′, relieving the friction. A person about to operate the curtain would naturally grasp at the device in the center, and no matter how he grasps the device of this invention it is sure to effect its purpose, which is not true of most of the devices now in general use. It is obvious that the handhold device which forms a portion of this invention is adapted for use with any form of a curtain-fixture where a longitudinal movement of a rod is necessary.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A curtain-holding device comprising a rod, heads comprising side portions attached at each end to said rod, one of the side portions of each head being pivoted and thus movable with respect to the other side portion, a spring acting to separate said side portions, whereby the side walls of the grooves in the window-casing may be gripped by said heads.

2. A curtain-holding device comprising a rod, heads comprising side portions attached at each end of said rod and longitudinally adjustable with respect to said rod, one of the side portions of each head being pivoted and thus movable with respect to the other side portion, a spring acting to separate said side portions, whereby the side walls of the grooves in the window-casing may be gripped by said heads.

3. A curtain-holding device comprising a rod, heads comprising side portions attached at each end to said rod, one of the side portions of each head being pivoted and thus movable with respect to the other side portion, a spring acting to separate said side portions, whereby the side walls of the grooves in the window-casing may be gripped by said heads, antifriction devices projecting laterally from said heads, and adapted to come into engagement with the end walls of the grooves in the window-casing when the curtain-rod is tipped.

4. A curtain-holding device comprising a hollow rod, heads attached to each end of said rod, each head having a pivoted side portion, longitudinally-movable spring-actuated rods located in said curtain-rod, and pressing against said pivoted portions.

5. A curtain-holding device comprising a hollow rod, heads attached to each end of said rod, each head having a pivoted side portion, longitudinally-movable spring-actuated rods located in said curtain-rod, and pressing against said pivoted portions, and means for retracting said rods.

6. A curtain-holding device comprising a hollow rod, heads attached to each end of said rod, each head having a pivoted side portion, longitudinally-movable spring-actuated rods located in said curtain-rod, and pressing against said pivoted portions, a handhold mounted to slide transversely to the curtain-rod, and provided with means for retracting said rods.

7. A curtain-holding device comprising a hollow rod, heads attached to each end of said rod, each head having a pivoted side portion, longitudinally-movable spring-actuated rods located in said curtain-rod and pressing against said pivoted portions, a handhold mounted to slide transversely in the curtain-rod and provided with oppositely-inclined projections acting against said rods whereby they may be retracted.

8. A curtain-holding device comprising a hollow curtain-rod, heads mounted at each end thereof, means for pressing said heads against the window-casing, comprising spring-actuated rods mounted in said curtain-rod, a handhold arranged to slide horizontally and transversely to the curtain-rod and provided with means for retracting said rods whereby a grasp of or pressure upon the handhold in the natural horizontal direction causes the ready actuation of the curtain-holding device.

9. A curtain-holding device comprising a hollow curtain-rod, heads mounted at each end thereof, means for pressing said heads against the window-casing, comprising spring-actuated rods mounted in said curtain-rod, a handhold arranged to slide transversely to the curtain-rod and provided with oppositely-inclined projections acting against said rods whereby they may be retracted.

10. A curtain-holding device comprising a hollow curtain-rod, heads mounted at each end thereof, means for pressing said heads against the window-casing, comprising spring-actuated rods mounted in said curtain-rod, end pieces secured to said rods, a handhold mounted to slide transversely in said curtain-rod and provided with oppositely-inclined projections acting upon said end pieces whereby said rods may be retracted.

11. A curtain-holding device comprising a hollow curtain-rod, heads mounted at each end thereof, means for pressing said heads against the window-casing, comprising spring-actuated rods mounted in said curtain-rod, end pieces secured to said rods and provided with antifriction-rollers, a handhold provided with oppositely-inclined projections acting upon said antifriction-rolls in said end pieces, whereby said rolls may be retracted.

12. A curtain-holding device comprising a hollow curtain-rod, heads mounted at each end thereof, means for pressing said heads against the window-casing, comprising spring-actuated rods mounted in said curtain-rod, a handhold mounted to slide transversely in said curtain-rod, and provided with oppositely-inclined projections coöperating with said spring-actuated rods, whereby said rods may be retracted upon transverse movement of the handhold.

13. A curtain-holding device comprising a hollow curtain-rod, heads mounted at each end thereof, means for pressing said heads against the window-casing, comprising spring-actuated rods mounted in said curtain-rod, end pieces secured to said rods, a handhold comprising two parts mounted to slide oppositely and transversely in said curtain-rod and provided with oppositely-inclined projections acting upon said end pieces whereby said rods may be retracted.

14. A head for a shade-holding fixture adapted for coöperation with the side walls of the grooves in a window-casing, having one of its side walls pivoted with respect to the other side wall.

15. A head for a shade-holding fixture adapted for coöperation with the side walls of the grooves in a window-casing, having elongated side walls, one of said walls being pivoted with respect to the other side wall.

16. A head for a shade-holding fixture adapted for coöperation with the side walls of the grooves in a window-casing, having elongated side walls one of which is immovable with respect to the head and the other of which is pivoted.

17. A head for a shade-holding fixture adapted for coöperation with the side walls of the grooves in a window-casing, having elongated side walls, one of which is immovable with respect to the head, and the other of which is pivoted upon an axis parallel to the length of the head.

18. A head for a shade-holding fixture adapted for coöperation with the side walls of the grooves in a window-casing, having elongated side walls, one of said side walls having a pivoted portion, antifriction-rolls mounted transversely and exteriorly to said head at the ends thereof.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK B. HOPEWELL.

Witnesses:
GEO. W. GREGORY,
NATHAN HEARD.