

(No Model.)

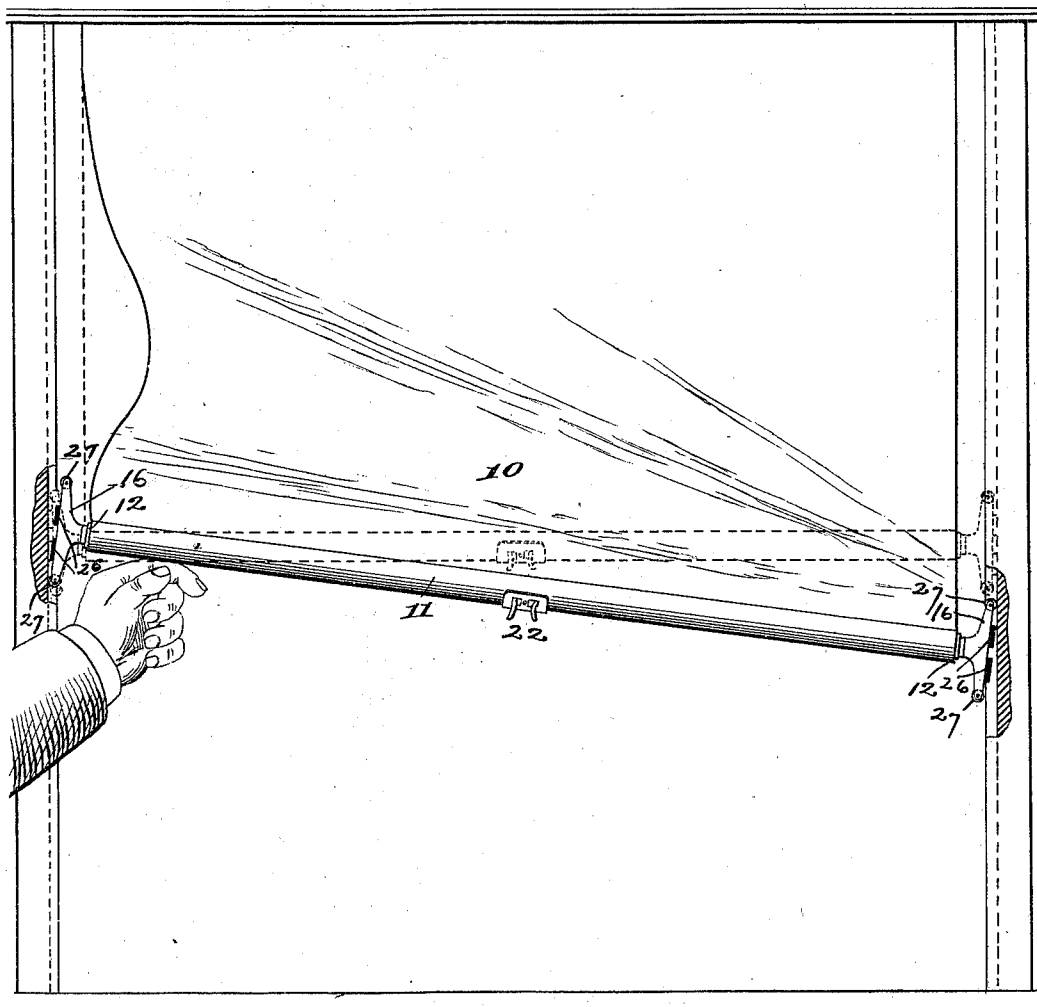
2 Sheets—Sheet 1.

H. H. FORSYTH & H. H. FORSYTH, Jr.  
SHADE HOLDING DEVICE.

No. 559,446.

Patented May 5, 1896.

*Fig. 1.*



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Fig. 2.

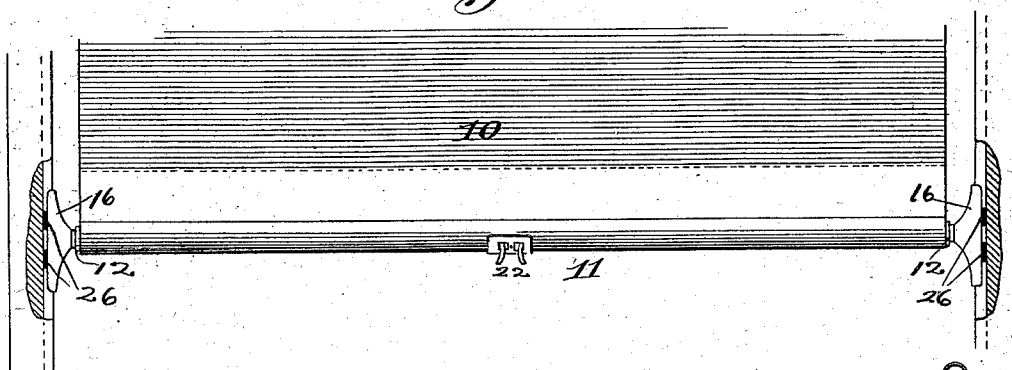


Fig. 3.

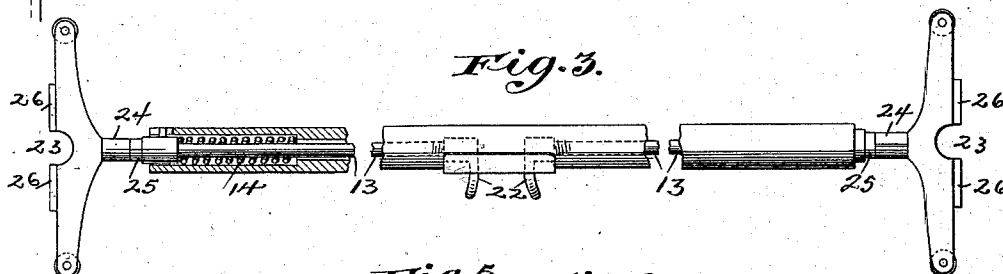


Fig. 4.

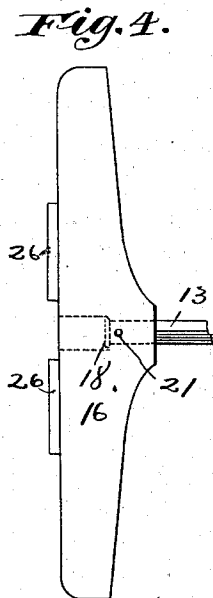


Fig. 5.

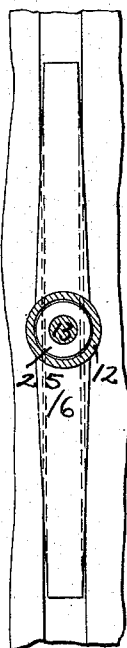


Fig. 6.

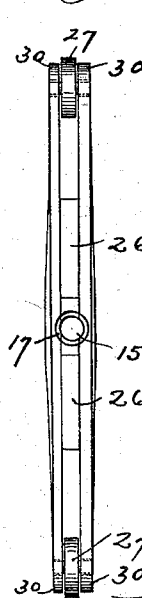


Fig. 7.

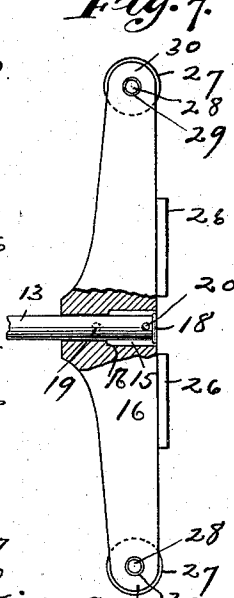


Fig. 9a.

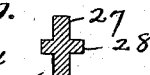


Fig. 9.

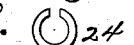
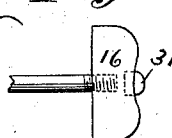


Fig. 8.



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# UNITED STATES PATENT OFFICE,

HENRY H. FORSYTH AND HENRY H. FORSYTH, JR., OF CHICAGO, ILLINOIS.

## SHADE-HOLDING DEVICE.

SPECIFICATION forming part of Letters Patent No. 559,446, dated May 5, 1896.

Application filed November 19, 1895. Serial No. 569,383. (No model.)

*To all whom it may concern:*

Be it known that we, HENRY H. FORSYTH and HENRY H. FORSYTH, Jr., of Chicago, Illinois, have invented certain new and useful  
5 Improvements in Shade-Holding Devices, of which the following is a specification.

This invention relates to that class of devices which are used for holding spring-actuated shades and which are attached to the  
10 lower margin of the shade to guide it in its adjustment as well as to lock it in any desired position.

Shade holding and locking mechanisms have been provided in which spring-actuated  
15 rods are slidably mounted in a pocket or tube in the lower margin of the shade and carrying friction-tips at their outer ends adapted to traverse grooves in the stops, the rods being normally thrust outwardly by the springs  
20 so as to cause the tips to impinge the bottoms or sides of the grooves, locking the shade in any position in which it is released. The tip-holders and tips have heretofore been constructed in various ways, but usually with a  
25 metal body constituting the holder and having a block of leather or rubber constituting the tip-shoe or friction-surface. As heretofore constructed, the friction-tips have been usually short, and when made of rubber wear  
30 rapidly and by exposure to the air become solidified and brittle. Furthermore, when it is attempted to adjust the curtain by grasping the shade-stick near one end the opposite end will remain stationary owing to the constant  
35 and excessive frictional impingement of its friction-shoe, while the end which is being moved will come out of the groove. Leather is a better and more durable material than rubber; but the ordinary leather shoe has the disadvantage of being so hard and dense that it requires an excessive spring-pressure to make it frictionally hold. Moreover, the bottoms of the grooves rarely stand in vertical parallel planes, and hence a continuous bearing-shoe is limited in its contact to a small  
45 portion of its bearing surface. The principal difficulty to be overcome in the use of these devices is their tendency to frequent displacement and the liability of the friction ends to  
50 come out of the grooves owing to the manipulation of the shade by grasping its lower edge by the hand and forcing it up or drawing it

down without withdrawing the locking-rods against the action of their outwardly-forcing springs. Should the bottom of the curtain be  
55 merely displaced and the ends of the fixtures remain in the grooves, the shade will retain its angular position with the older types of tips.

It is one of the chief objects of this invention to construct a shade-holding mechanism which will not only firmly hold the shade against the action of the spring shade-roller, but which will also be self-righting or capable of returning to its proper position when  
60 moved therefrom by grasping the end of the shade either in raising or lowering.

Another object of this invention is to render possible the use of a leather frictional-holding shoe without employing an excessive  
65 spring-pressure.

Furthermore, our invention provides means whereby the shade-holding device may be conveniently assembled in the factory and afterward be readily adjusted in application  
70 to windows of slightly-varying widths. Heretofore it has been customary to effect this adjustment by the selection of parts of different lengths. This is expensive, because it necessitates the carrying of a number of parts of  
75 various dimensions and requires much time in adjusting the fixtures.

In our improved construction we make a tip-holder of considerable length, and instead of employing a single short and continuous bearing-point we preferably provide a plurality of bearing-points arranged adjacent to the rods on which the tip-holders are mounted and extend the ends of the tip-holder beyond said bearing-surfaces, so that when the lower margin  
80 of the shade is forced into an angular position the metal surfaces at the ends of these extended tip-holders come into contact with the bottoms of the grooves, and having small frictional-holding power it results that the  
85 shade will right itself automatically when released, and, moreover, the shade may be moved up and down by grasping it at any point and without any liability of the holding devices being withdrawn from the grooves. We also  
90 provide antifriction-rollers, which are journaled in the extended ends of the tip-holders and which facilitate the self-righting of the fixture by reducing the friction of the ends of

the tip-holders upon the wall of the grooves when the shade is tilted, but remain inactive when the shade is in the normal position. Again, special provision is made so that the ends of the spring-actuated rods neither interfere with the efficiency nor mar the appearance of the fixture.

By means of our improvements a perfectly-operating shade-holding device of simple and economical construction is provided.

In the preferred embodiment of our invention we employ two locking-rods slidably mounted in a pocket in the lower margin of the shade, a spring or springs normally thrusting said rods outwardly and metal heads or tip-holders carried upon the projecting ends of the said locking-rods, said heads having longitudinal grooves in their outer edges and said grooves containing two separate friction tips of leather or a single long tip cut away at the point where the rod projects through the head. The ends of these heads extend beyond the leather tips, so that when the lower margin of the shade is tilted into an angular position these metal ends will make contact with the bottoms of the groove and the fixture will quickly right itself. In order to reduce the friction of these contacting ends to a minimum, we may provide them with antifriction-rollers. These heads may be loosely mounted on the rods, and the latter are sufficiently long to permit the longitudinal movement of the heads to adjust them to windows of slightly-varying widths between the bottoms of the grooves, and for the purposes of this adjustment we provide split collars or washers, which are adapted to be passed over the body of the rod between the metallic head and a collar or shoulder on the rod.

In the accompanying drawings, Figure 1 is a face or plan view of a window-frame with the stops partly broken away, showing a shade applied thereto, and two positions of the lower margin thereof being indicated by full and dotted lines respectively. Fig. 2 is a similar view showing the shade in an adjusted position and the dotted lines indicating the bottoms of the grooves and the stops being broken away to show the bottom walls of the grooves and the tips impinging thereon. Fig. 3 is a broken elevation, partly in section, showing the preferred manner of constructing the fixture and having the adjusting-collars applied thereto. Fig. 4 is a detail view of one of the heads shown in Fig. 2, the antifriction-rollers being omitted. Fig. 5 is a rear edge view of one of the heads, showing the rod and rod-carrying tube in section and a sleeve on the rod in end elevation. Fig. 6 is a similar view of the front edge of a head having the antifriction-rollers. Fig. 7 is a side elevation, partly broken away, of the head having the antifriction-rollers, the locking-rod being projected into the plane of the front edge of the holder. Fig. 8 shows a modified construction of a self-righting fixture, wherein a single

elastic tip is employed at each end and the sliding rods and their actuating-springs are omitted. Fig. 9 is a detail view of one of the split collars, and Fig. 9<sup>a</sup> is a detail view of one of the rollers.

In the drawings, 10 represents the shade, which is provided at its lower end with a pocket 11 to contain the tube 12. Within this tube are mounted the sliding rods 13, which are normally thrust outwardly by means of the springs 14. These rods project beyond the end of the tube 12 and into the apertures 15 of the heads 16. The aperture 15 is provided with a shoulder 17, the bore of the aperture being enlarged at its outer end. The rods 13 are upset, as shown at 18, and this enlargement or upset portion engaging with the shoulder 17 prevents the heads 16 from separating from the rods. The body of the head has a transverse aperture, as indicated at 19, and the rod 13 has a similar aperture 20, through which a pin 21 may be thrust in order to furnish means for turning the rods and engaging their inner ends, which are threaded, with the threaded sockets of the pendants 22.

The construction above described is particularly shown in Figs. 4 and 7; but an equivalent, simpler, and therefore preferred construction, is shown in Fig. 3, where the outer face of the head 16 is notched or cut away, as shown at 23, thus providing space equivalent to the enlarged bore of the aperture 15, within which the outer end of the rod may work or play when the tip is to be adjusted. The widths of the windows vary somewhat, owing to irregularities in construction of cars, the depth of the grooves, &c., and in order to properly adjust the fixtures having parts of uniform lengths or dimensions to these slightly-varying conditions the head is provided with this enlarged bore or cut-away portion to receive the projecting end of the rod, as shown in Fig. 4, or when the window is wider a split collar 24, Fig. 9, may be slipped over the rod between the head 16 and the sleeve 25, which is fixed on the rod. By means of these split collars the fixture may be readily applied and quickly adjusted.

It will be observed that the head is made quite long and its outer face is preferably grooved or channeled to receive the friction-tips 26. Preferably two of these friction-tips are mounted in the groove of each head with a suitable interval between them, so as to provide separated bearings, which are much more efficient than a single bearing of equal length, and hence permit of the use of a much weaker spring-pressure. It is desirable to use a weak spring, because if the spring be strong the fixture will not right itself. The heads extend beyond the friction-tips and the front corners of said heads are preferably rounded, as shown in the drawings.

In some cases, and particularly in street-car work, which is not so highly finished as railway-coaches, sleeping and parlor cars, it

may be found expedient to journal antifric-  
tion-rollers in the extended ends of the tip-  
holders. Such rollers (marked 27) may be  
provided with lateral studs 28, adapted to en-  
ter apertures 29 in the bifurcations 30 of the  
extended ends, and said bifurcations, when  
the tip-holder is constructed of a malleable  
material, may be spread sufficiently to admit  
the journals and then closed, so as to confine  
them in their bearings. When these rollers  
are employed, the friction of the extended  
ends upon the walls of the groove when the  
shade is tilted into an abnormal position is  
reduced to a minimum and the shade will  
right itself, even though the spring-pressure  
be excessive, owing to carelessness or unskil-  
fulness in construction. The tips may be  
made of some other material than leather—  
*e. g.*, a harder substance which would have  
of itself less frictional power and a heavier  
spring-pressure used, in which case depend-  
ence would be had upon the strength of the  
spring to frictionally lock the shade in the  
adjusted position. Thus the provision of the  
antifric-tion-rollers permits a wider range of  
selection of material and compensates for  
carelessness or lack of skill in construction.

When the fixture is applied to the window  
and properly adjusted, the friction exerted  
by the tips will be slightly greater than the  
power of the shade-roller spring, so as to re-  
quire the exertion of some force to move the  
shade up or down. This force may be ap-  
plied either upon the pendants, so as to with-  
draw or decrease the friction, or the shade  
may be raised or lowered by grasping a por-  
tion of its lower margin. In practice it is  
found that the shade is more often adjusted  
in this latter manner than in any other, and  
hence arises the necessity for the feature of  
self-righting which forms the important part  
of our invention. This feature is provided  
for by employing heads or tip-holders having  
their ends extended beyond the friction-tips.  
If it be attempted to adjust the shade by push-  
ing up or pulling down one end thereof, the  
lower margin of the shade will be deflected  
into the angular position shown in Fig. 1.  
Now with the old construction if pressure  
was released while the shade was in that po-  
sition it would so remain; but in our improved  
construction it will be seen by reference to  
Fig. 1 that when the lower margin of the  
shade is placed in such angular position the  
friction-tips are released from contact with  
the bottom wall of the groove and the metal  
ends of the heads are alone in contact. The  
metal has very slight frictional power as com-  
pared with the leather, and hence will not  
resist to the same extent the pull of the  
spring of the shade-roller which, drawing on  
the taut edge of the shade, will return the  
fixture into the horizontal position. There  
are several advantages derived from the em-  
ployment of these long heads. In the first  
place by the employment of these long heads  
when the shade is adjusted by taking hold of

its lower margin near one end, so as to raise  
the shade at that end, the heads rock upon  
their extremities, carrying the friction-tips  
out of contact with the bottom walls of the  
grooves, the tube in the pocket of the shade-  
stick serving as the lever and the end of the  
head as the fulcrum, by means of which the  
withdrawal of the friction-tips from contact  
with the bottom of the groove is effected.  
They furthermore provide for carrying sepa-  
rated frictional bearing-surfaces and journal-  
bearings for the antifric-tion-rollers.

It will be observed that the friction-tips pro-  
ject beyond the plane of the outer edge of the  
head, so that when the bottom of the shade is  
in the normal position or horizontal the fric-  
tion-tips only contact with the bottoms of the  
groove. When, however, the bottom of the  
shade is tilted to an abnormal position, the  
metal ends contact with the bottom of the  
grooves and rock the tips away from frictional  
contact. As these metal ends offer but a  
slight frictional resistance to upward pull of  
the springs of the shade-roller they easily  
slide along the grooves. The instant the cur-  
tain is released the shade at once rights itself  
and the tips again come into frictional con-  
tact with the bottom of the grooves, thus hold-  
ing the shade in the adjusted position.

Of course the provisions above described  
would be unnecessary if the shade were al-  
ways operated by means of the pendants  
drawing the rods equally or the shade were  
grasped at its middle portion; but the shade  
is so seldom operated in this manner, or at  
least is so likely to be operated by grasping it  
near its ends, that it is important to provide  
against the accidental removal of the tips  
from the grooves and for making the shade  
self-righting when left in an abnormal posi-  
tion.

While the construction above described is  
preferred, modifications thereof embodying  
the principle of our invention may be made.  
Thus in Fig. 8 is shown a head having a sin-  
gle central friction-tip 31 of rubber fastened  
to the head and the latter being carried by a  
non-sliding rod or support mounted in the  
lower margin of the curtain, the rod-actuat-  
ing springs being omitted. In this construc-  
tion the rubber has sufficient frictional power  
to hold the shade and is sufficiently elastic to  
yield to force in adjusting the shade while the  
extended heads operate in the adjustment  
and in self-righting, as before described.

The form of tip-holder shown in Fig. 8 may  
also be employed with a leather tip of the  
same form as the rubber tip therein shown,  
and the rods may be actuated by springs of  
suitable strength in the same manner as the  
actuating-springs above described.

While we have described metal tip-holders  
and leather tips, we do not confine ourselves  
to these particular materials, as other mate-  
rials may be found efficient.

We claim—

1. A self-righting holding mechanism for

spring-actuating shades comprising, in combination with the shade, heads carried thereby, said heads having separated bearing or contact points of diverse frictional holding power and arranged in such relation to each other that when the margin of the shade is moved from a horizontal position the bearing-point of least resistance will be engaged and the bearing-point of greater frictional power wholly or partially withdrawn from contact whereby the shade may resume its normal horizontal position, substantially as described.

2. A self-righting holding mechanism for spring-actuated shades comprising in combination with a shade, heads carried thereby, said heads having projecting friction-tips in the vertical faces thereof, and antifriction-rollers journaled in the extremities of said heads on opposite sides of the friction-tips, said heads and rollers adapted to bear upon the same opposing surface whereby when the shade is moved from a horizontal position, the roller will be brought into contact with such surface and the tip wholly or partially withdrawn from contact and the shade resume its normal horizontal position when released from the moving force, substantially as described.

3. A holding mechanism for spring-actuated shades, comprising in combination spring-actuated rods slidably mounted in the lower margin of the shade and having heads whose outer faces extend at right angles to the lower margin of the shade, friction-tips carried by the heads and normally projecting beyond the plane of the edges thereof and said heads having bearing-points above and below the tips and on which the fixture may rock when force is applied to the shade near one side thereof, substantially as described.

4. A holding device for spring-actuated shades, comprising in combination sliding rods mounted in the lower margin of the

shade, heads carried by said rods, a plurality of friction-tips mounted in said heads and providing separated bearings and said heads being extended above and below the tips and adapted to contact with the window-frame when the lower margin of the shade is moved into an abnormal position, substantially as described.

5. In a spring-actuated shade-holding mechanism, a rod carried by the shade and projecting beyond the edge thereof, a tip-holder mounted upon the projected end of said rod and adapted to be adjusted lengthwise thereof and a split collar adapted to be applied over the rod without the removal of the tips, substantially as described.

6. A holding device for spring-actuated shades, comprising in combination rods adapted to be mounted in the lower margin of the shade, tip-holders carried upon the projected ends of said rods and adapted to be adjusted lengthwise thereof, said tip-holders having apertures to receive the extended ends of the rods and said apertures being enlarged at their outer ends to receive and protect the ends of the rods in adjustment, substantially as described.

7. In a shade-holding mechanism, the combination with a sliding spring-actuated rod having its end projected beyond the side margin of the curtain, a pendant having threads to engage threads on the inner end of said rod, a metallic head or tip-holder applied to the projected end of the rod and said projected end and said tip-holder having registering apertures to receive a pin whereby to lock the tip-holder and rod together, substantially as and for the purpose described.

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