

No. 657,268.

Patented Sept. 4, 1900.

G. H. FORSYTH.  
SHADE HOLDING MECHANISM.

(Application filed Dec. 5, 1898.)

(No Model.)

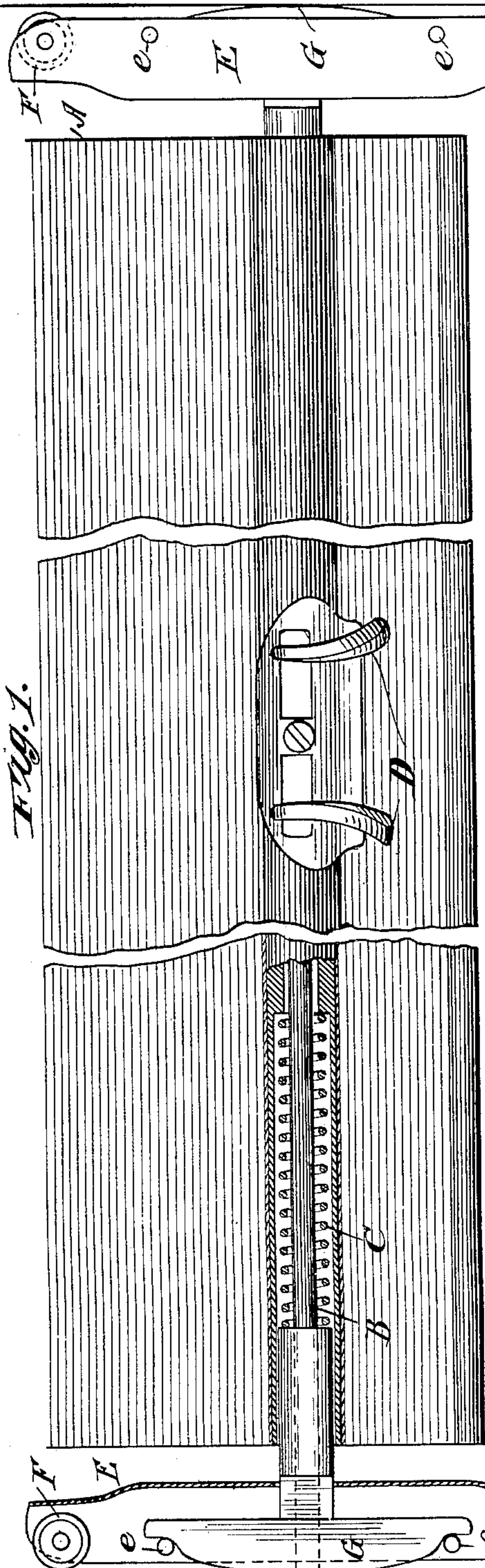


Fig. 1.

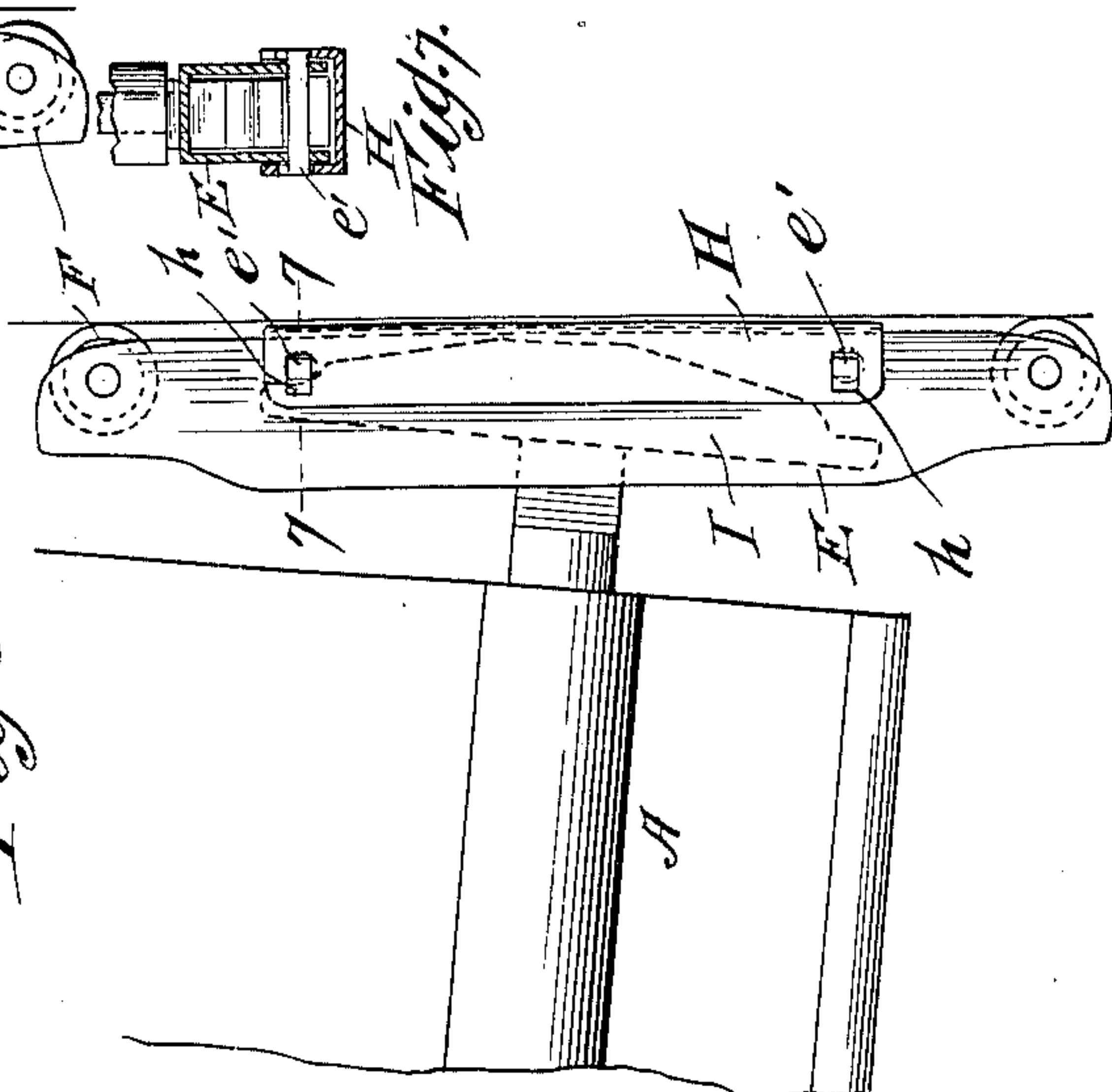


Fig. 5.

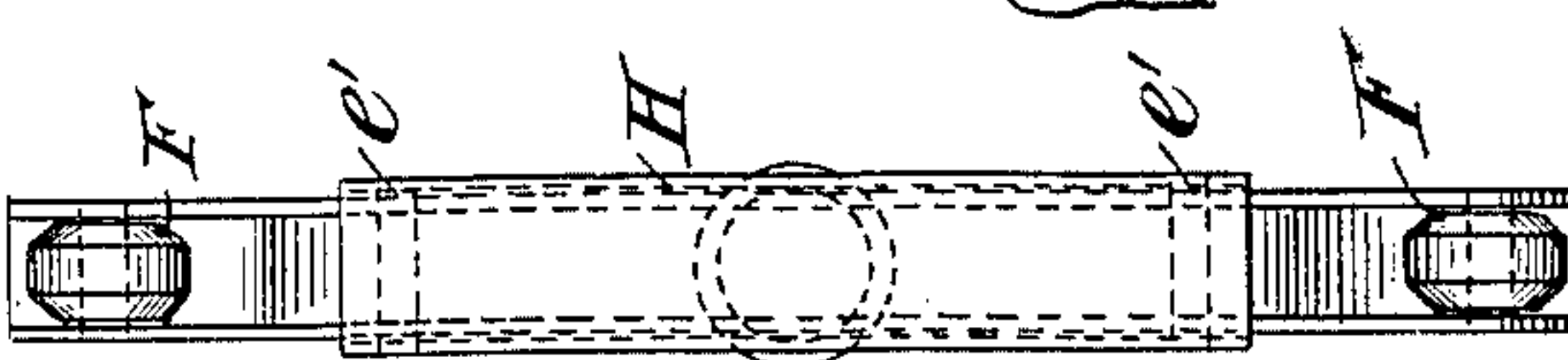


Fig. 6.

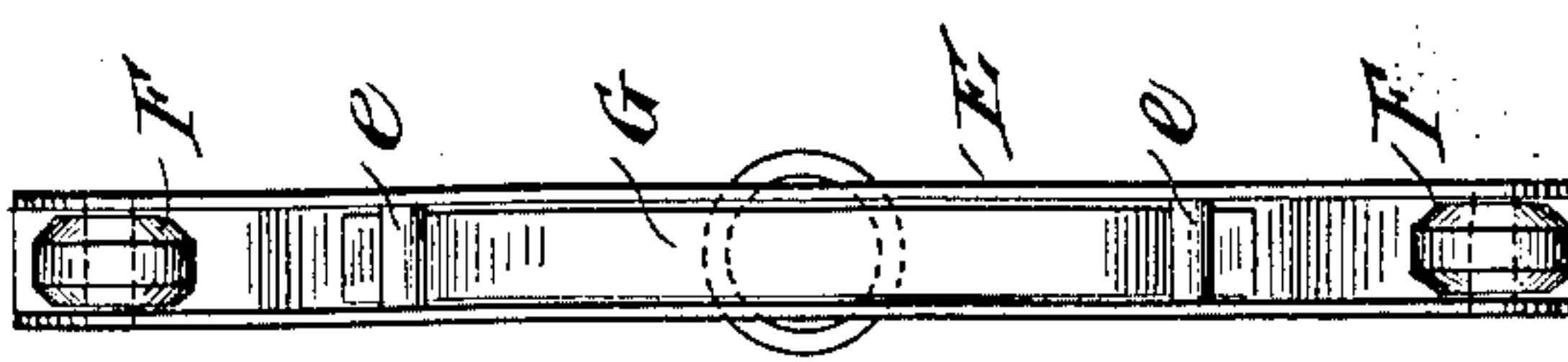


Fig. 3.

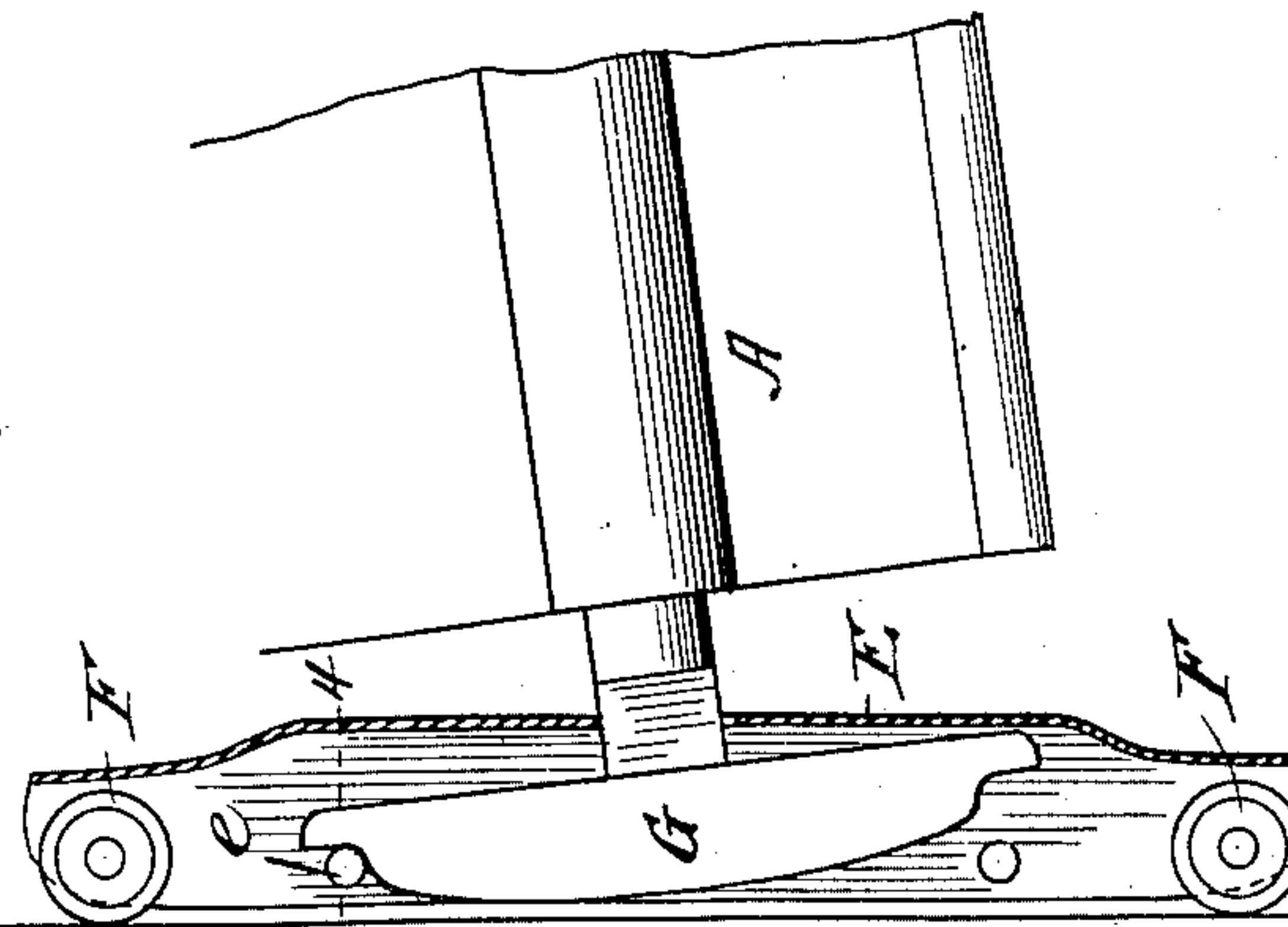


Fig. 2.



Fig. 4.

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# UNITED STATES PATENT OFFICE.

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## SHADE-HOLDING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 657,268, dated September 4, 1900.

Application filed December 5, 1898. Serial No. 698,336. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE H. FORSYTH, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Shade-Holding Mechanism, of which the following is a specification.

This invention relates to a device for frictionally holding a shade or curtain in desired positions against the tendency of its actuating means to raise or roll up the curtain or shade.

More particularly the invention relates to that class of shade-holding devices in which the shade is mounted upon a spring-actuated roller at one end and is provided at its other end with friction devices normally held in contact with the bottoms of the grooves of the window-frame by outwardly-forcing springs.

My invention has for its object to provide a shade-holding device of this class which shall be efficient in holding the shade or curtain in adjusted positions, easily operated, and automatically self-righting when thrown out of normal position by accident or by careless handling in adjusting.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a broken elevation of the lower margin of a shade or curtain with the holding device applied thereto, a part of the holding mechanism being in section. Fig. 2 is a detail view, in broken elevation, showing the position of the mechanism when the curtain is distorted or thrown out of parallelism by accident or careless handling. Fig. 3 is a front or face view of the head carrying the friction-shoe and also antifriction wheels or rollers at its extremities. Fig. 4 is a cross-sectional view on the line 4 4 of Fig. 2. Fig. 5 is a view similar to Fig. 2, showing a modified construction of the shoe. Fig. 6 is a face view of the said construction, and Fig. 7 is a cross-section on the line 7 7 of Fig. 5.

An automatically-self-righting curtain-fixture is shown in Letters Patent No. 559,446, granted to Forsyth and Forsyth May 5, 1896, and which comprises, in combination with a shade or curtain, heads carried thereby, the

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. In the preferred form of construction described in said patent the head is provided near its ends with antifriction-rollers and a friction-tip, arranged between the antifriction-rollers and normally projecting beyond the plane of said rollers, the friction-tip being stationary with relation to the head. In that construction when the lower margin of the shade or curtain is moved into a position oblique to its shade-roller, the curtain will automatically right itself as by such movement of the lower margin of the shade or curtain the stationary friction-tips are partially or wholly withdrawn from contact with the bottom of the groove, the spring-pressure thereon being released, so that the shade-roller will instantly commence to roll the curtain up, thus righting the fixture. In that construction, however, the head being incapable of tilting upon its rod or with relation to the side margin of the shade is carried away at one end or the other from the bottom of the groove, thus withdrawing one of the antifriction wheels or rollers from contact with the frame and leaving only one of the antifriction wheels or rollers in contact at each end of the shade or curtain.

In a later patent the construction just described is modified by the provision of a pivoted shoe instead of the stationary friction-tip of the former patent. In the construction wherein the pivoted shoe is employed the self-righting of the fixture is accomplished in substantially the same manner as in the Forsyth and Forsyth patented structure above described.

My invention is intended to accomplish the same objects as the two patented constructions above mentioned, but in a different and more efficient manner. To these ends I employ a head or box carried by spring-actuated



rods mounted in the lower margin of the shade or curtain, which rods have friction shoes, tips, or pads affording contact points or surfaces adapted to ride upon the bottoms of the grooves in the window-frame, these heads or boxes being loosely mounted upon their supporting-rods, so that they are not tilted when the lower margin of the shade is placed in an abnormal or oblique position. These heads preferably carry antifriction rollers or wheels at their extremities, which under certain conditions bear upon the bottoms of the grooves, but are normally out of contact therewith. Mounted within or upon the head is a friction-shoe which is normally held in contact with the bottom of the groove by an outwardly-forcing spring. These friction-shoes in one form of construction are rigidly connected with sliding rods, the rods are provided with projecting pendants, and springs are arranged to bear on the rods, so as to normally thrust them out and maintain the shoes in contact with the bottoms of the grooves, the pendants affording a convenient means for withdrawing the friction-shoes from contact when it is desired to adjust the shade to a new position. The pendants may be omitted and the curtain or shade manipulated by grasping its lower margin. The parts are so arranged that when the curtain is placed in an oblique position the heads are forced outwardly, thus bringing the rollers or antifriction-surfaces into contact with the bottoms of the grooves, the spring-pressure thus being made to act upon the heads, and the antifriction-surfaces of the latter not having sufficient friction-holding power to withstand the pull of the shade-roller will permit the curtain to automatically right itself. In a modified form of my construction I introduce a U-shaped plate embracing the front of the head and having relative movement to the head and to a rocking shoe or operating cam or wedge carried by the curtain-rod. In my construction the head may be maintained parallel to the bottom of the groove, and both of the antifriction-surfaces provided thereon are effective in the righting of the curtain.

In the drawings, let A represent the shade; B, the sliding rods carried thereby; C, the actuating-springs, and D the pendants.

E represents heads or boxes loosely mounted upon the projecting ends of the rods B and preferably provided with the antifriction-rollers F at their extremities.

G represents friction-shoes preferably rigidly connected to the extremities of the rods B and embraced within the hollow of the box or head E. *e* represents pins extending transversely across the open interior of the heads and providing points or pivots upon which the shoes G may rock when the lower margin of the shade is thrown into an oblique position, as shown in Fig. 2. In the normal position these friction-shoes G are thrust out into contact with the bottoms of the grooves and their acting faces may be flat at their mid-

dles and curved or receding toward their ends. Obviously when the shade-stick is parallel with the shade-roller the shoes G (the springs being duly proportioned) will maintain the curtain in the adjusted position until they are released by the withdrawal of the rods or by the tilting of the curtain to an abnormal position, as indicated in Fig. 2.

In manipulating the curtain when the fixture is provided with the pendants the shoes will be partially or wholly withdrawn from the bottoms of the grooves and the curtain will rise under the action of the spring of the shade-roller or can be drawn down by the force applied by the hand. If the pendants be omitted, the shade will be adjusted by simply pushing it up or pulling it down, overcoming the frictional power of the shoes. If, however, it be attempted to operate the curtain by grasping it near one end, the curtain will quite likely be thrown into an oblique position, in which case the shoe will rock upon the pin *e*, as shown in Fig. 2, thus withdrawing the shoe from contact with the bottom of the groove and forcing the head outwardly until its antifriction-surfaces come in contact with the bottom of the groove, whereupon if the curtain be released from the hand of the operator the spring shade-roller will instantly right the curtain, both of the antifriction-surfaces of the head rolling in contact with the bottoms of the grooves and facilitating this self-righting. The same principle of operation is disclosed in the construction shown in Figs. 5, 6, and 7, wherein a U-shaped friction-shoe H is employed, such shoe, as shown, embracing the side walls of the head E and being loosely connected thereto by the pins *e'* and the slots *h*. These pins *e'* are preferably angular in form and the slots of corresponding form, so that the friction-shoe H is guided out and in and maintained in parallelism at all times with the head E. These shoes H are normally held in frictional contact with the bottoms of the grooves by the springs, being moved into that position by the rocker-shaped cams or wedges I, carried by the rods B, these cams I being widest in line with the rods, so that when the latter are released they strike the rear sides of the plates and drive them out into contact with the bottoms of the grooves. These cams I also have a rocking bearing on the pins *e'* when the bottom of the shade or curtain is placed in an oblique position, and thus serve the same purpose in bringing the antifriction-surfaces into contact with the bottoms of the grooves as the shoes G of the first-described construction.

In both forms of constructions which I have shown to illustrate the principle of my invention it will be seen that the friction-shoes are operative in holding the shade at any desired point and the antifriction devices inoperative when the curtain is in a normal position, whereas when the curtain is in an abnormal or oblique position the reverse is true, the friction-shoes becoming inoperative and the anti-



friction devices operative, thus allowing the curtain to regain its normal position, when immediately the friction-shoes again become operative. In other words, the general principle of my invention involves the employment of friction and antifriction devices movable relatively to each other and means whereby when the curtain is in a normal position the friction devices are operative and the antifriction devices are inoperative, while when the curtain is out of parallelism the friction devices are rendered inoperative and the antifriction devices operative in righting the curtain and causing it to assume its normal position. It is obvious that the principle of my invention is different from that embodied in the two patents referred to in the first part of this specification. In these constructions only one of the two antifriction-wheels at the end of each rod is operative at the same time, and in order that these antifriction-wheels should be operative at all the heads carrying them must of necessity be tilted to a greater or lesser degree out of parallelism with the bottoms of the grooves, in which case it is evident that the entire force of the spring actuating the rod is confined to the two small and diagonally-opposite contact-points, causing them to dig into the bottom of the grooves, and this, combined with the withdrawal of the body of the heads and two of the antifriction-surfaces from the grooves, not only renders the fixture largely independent of the guiding-grooves, but materially reduces its chances of self-righting from an abnormal to a normal position.

It is evident that my invention may be embodied in various constructions not herein specified without departing from its general principle. For example, I have shown rollers as the antifriction means and prefer to use them; but these rollers may be omitted and the rounded ends of the heads provide antifriction-surfaces. The friction-shoes may be made of metal alone or of metal faced with rubber or leather or any other desired material. The rollers may also be of any desired material.

I claim—

1. In a curtain-fixture, the combination with a shade-stick, of friction-shoes and antifriction devices at the ends of the stick, said friction-shoes being normally in holding contact with the casing and adapted to be released from holding contact when the stick is tilted and said antifriction devices being angularly adjustable to the stick and means

whereby when the stick is tilted, the antifriction devices are thrust into contact with the casing, substantially as described. 60

2. In a curtain-fixture for spring-actuated shades, a curtain-stick having at its ends friction-shoes and antifriction-heads, a spring or springs adapted to hold the friction-shoes normally in contact with the window-frame, means for transferring the spring-pressure from the shoes to the heads and the latter being angularly adjustable with reference to the shade-stick, whereby when the latter is tilted, the heads may remain parallel to the casing, substantially as described. 70

3. A curtain-holding fixture comprising, in combination, heads carried by the shade and normally extending substantially parallel to the side margins thereof and provided with antifriction-surfaces near their ends, spring-pressed friction-shoes arranged to bear upon the window-frame and adapted when the margin of the shade is moved into an oblique position, to be withdrawn from contact and means adapted to simultaneously move the antifriction-surfaces at each end of each head into contact with the window-frame, substantially as described. 80

4. In a curtain-fixture, the combination, with a shade-stick having retractable spring-actuated rods, of heads loosely mounted thereon, antifriction-rollers journaled in the ends of said heads, and friction-blocks mounted on and retractable with said rods and normally contacting with the casing of the window, said blocks being adapted, when the stick is abnormally tilted, to bear upon said heads and thrust the same outwardly, so that the antifriction-rollers thereof bear simultaneously upon the casing, substantially as described. 95

5. In a curtain-fixture device, a shade-stick, elongated heads loosely mounted thereon and adapted to traverse the grooves of the window-frame and having antifriction-rollers mounted therein normally inactive, and friction-shoes having a rocking bearing upon said heads and normally held in contact with the bottom of the groove and adapted to be rendered inactive by the tilting of the lower margin of the curtain to an oblique position and by bearing upon said heads to render the rollers thereof active to induce self-righting of the curtain, substantially as described. 100 105 110

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