

G. H. DAVIS.
HOLDING MECHANISM FOR SPRING ACTUATED SHADES.
APPLICATION FILED NOV. 3, 1897.

966,085.

Patented Aug. 2, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

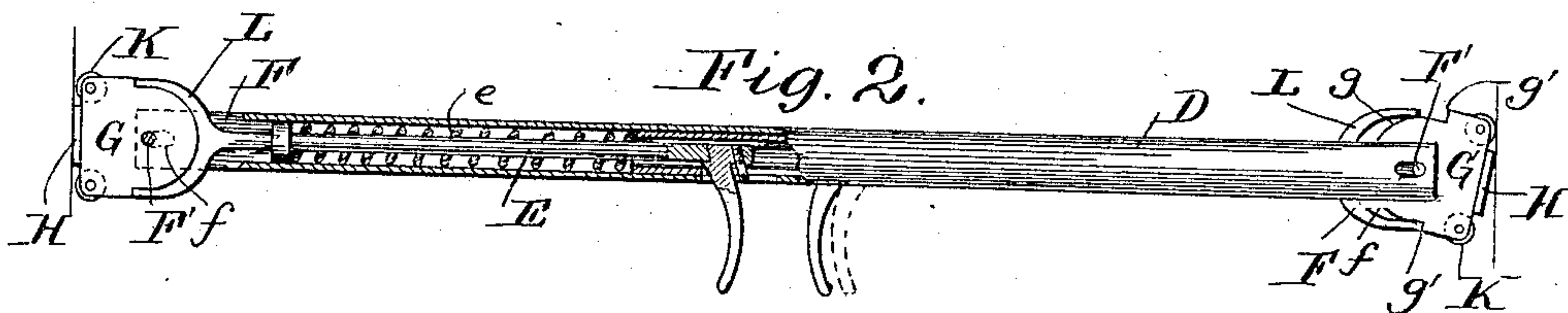
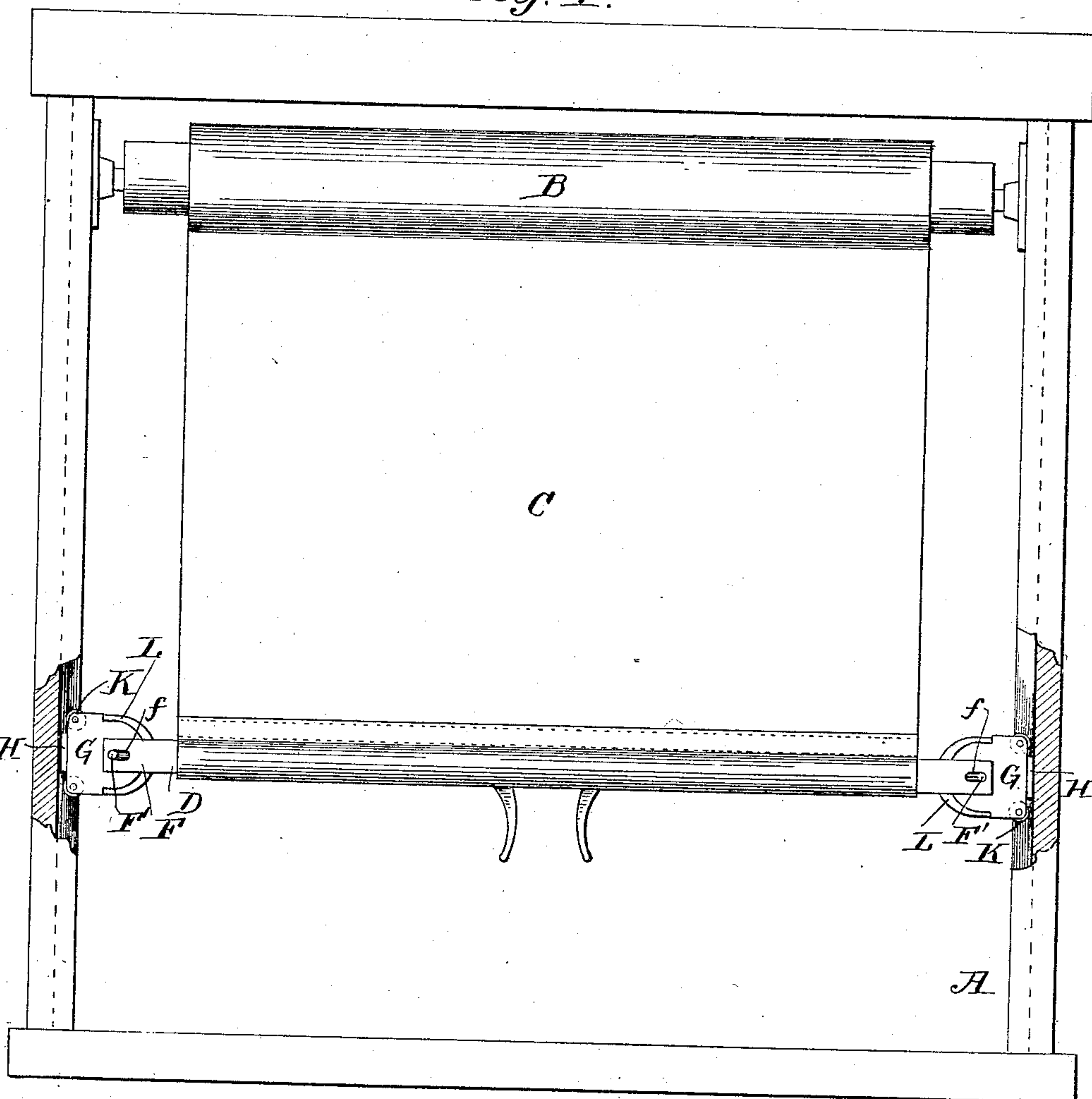


Fig. 2.

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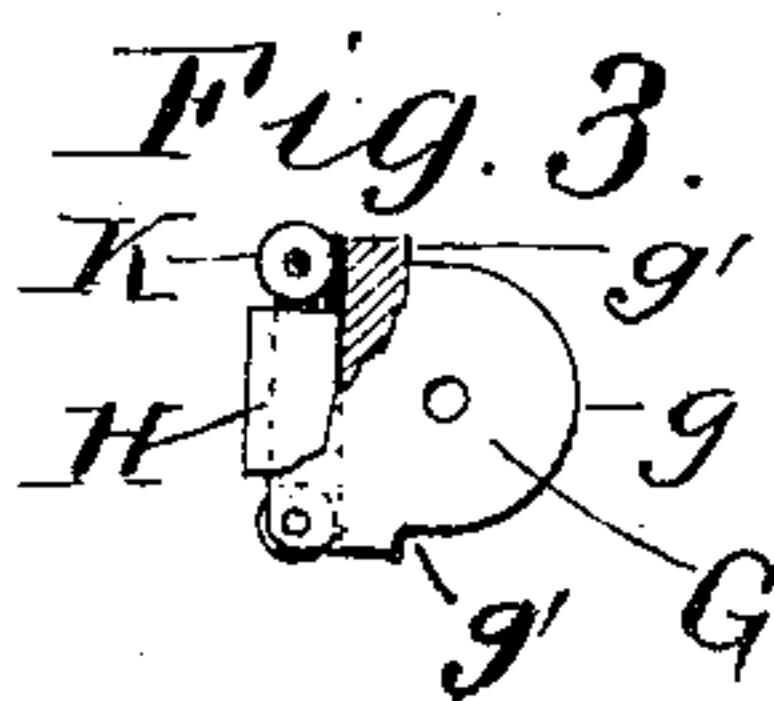


Fig. 3.

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Fig. 4.

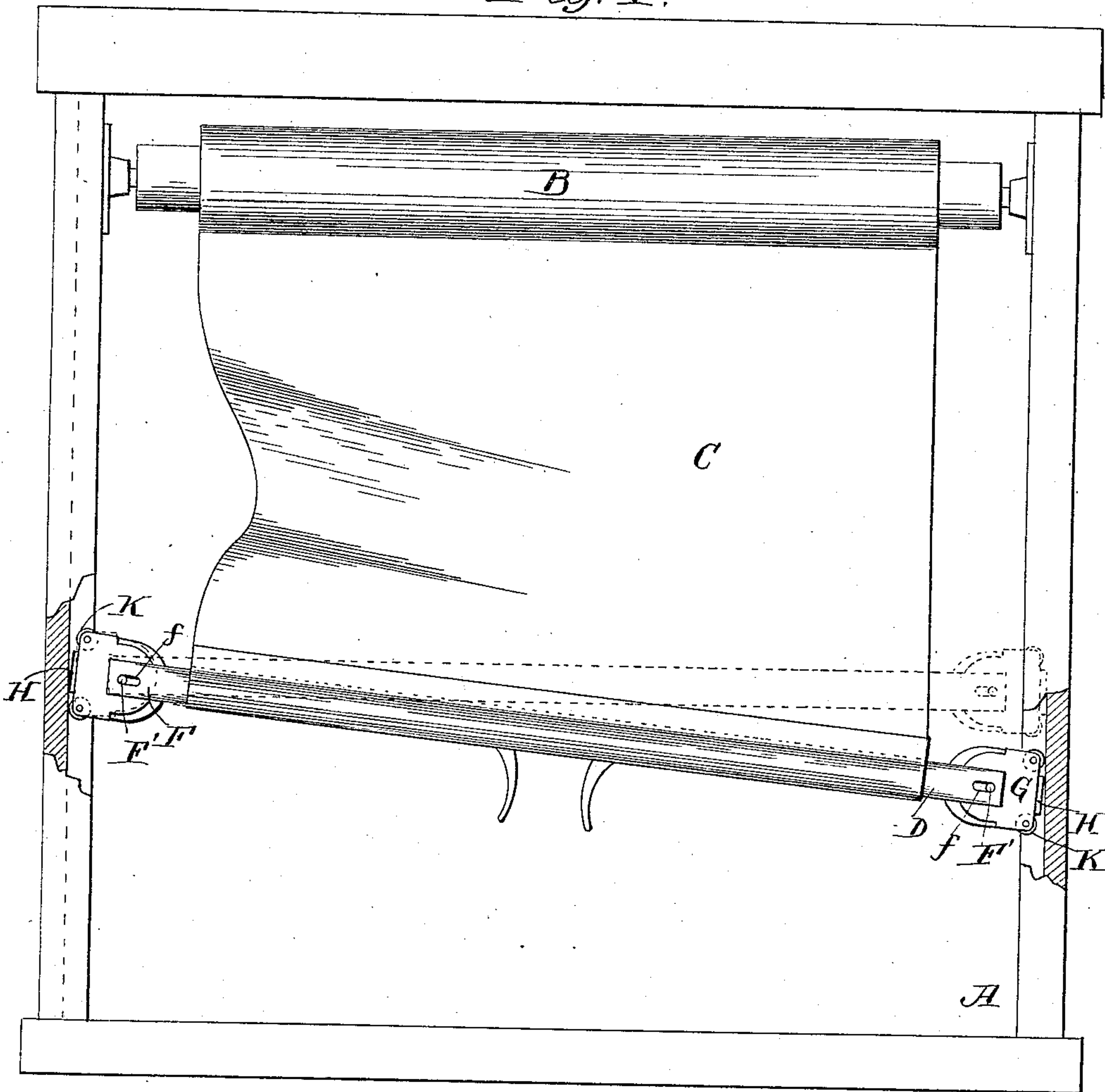
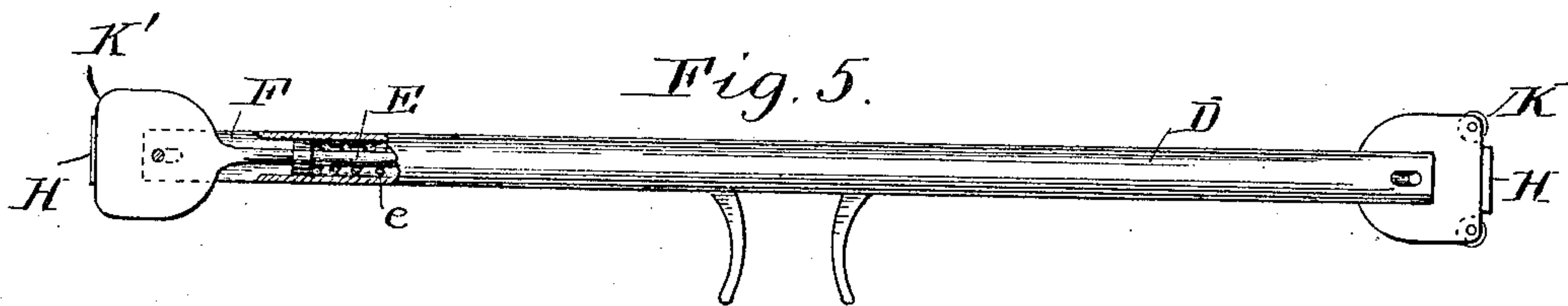


Fig. 5.



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UNITED STATES PATENT OFFICE.

GEORGE H. DAVIS, OF PORTLAND, MAINE, ASSIGNOR, BY MESNE ASSIGNMENTS, TO
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HOLDING MECHANISM FOR SPRING-ACTUATED SHADES.

966,085.

Specification of Letters Patent.

Patented Aug. 2, 1910.

Application filed November 3, 1897. Serial No. 657,269.

To all whom it may concern:

Be it known that I, GEORGE H. DAVIS, a citizen of the United States, residing at Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Holding Mechanism for Spring-Actuated Shades; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improvement in holding mechanism, or devices, for spring actuated shades, and it is embodied in the construction and arrangement of parts hereinafter described and definitely pointed out in the claims.

The invention relates more particularly to that class or type of shade holding mechanism wherein outwardly thrusting springs are employed to set or press friction pads or devices against the wooden jamb or frame, the mechanism being carried by a tube secured to the lower edge of the shade, and comprises devices or instrumentalities for retracting or compressing the springs to release the friction devices from their holding or friction engagement. In devices of this type the shades are under constant tension and as soon as the holding friction is released the shades are rolled up on the spring roller. The advantages of such devices are that they permit of any desired adjustment of the shade up or down, and at the same time prevent their flapping. Heretofore in the class of holding devices the friction tips have been quite small and present but a single contact surface, and it was frequently the case that the stick would be tilted when not properly operated. When the stick was tilted the same would usually remain in its tilted position or, as often happens, escapes wholly from its retaining grooves, in which condition they became a source of considerable annoyance.

My invention is designed primarily to overcome such objections, and it consists generally speaking in an elongated friction tip or device which extends above and below the carrying stick, and in providing the stick with a plurality of friction surfaces of different frictional strength, so that when the stick is tilted the friction contact will be shifted from a surface of strong fric-

tional resistance to one of relative weak resistance, thereby permitting the roller spring to move the curtain stick into its normal horizontal position, resetting the friction holding surfaces.

I have shown in the accompanying drawing a form of device embodying the invention, the same being shown for the purpose of illustration only, and not to limit the invention, which I desire it understood can be changed and altered, modified and varied in its form and arrangement, and associated with various forms of spring-actuated mechanisms, without departing from the nature and principle of the invention.

In the accompanying drawings, Figure 1 is an elevation of a window curtain or shade, showing portions of the frame, and the invention applied to the lower edge of the shade, the frame adjacent the friction shoes being broken away; Fig. 2 is a detail view of the holding mechanism; Fig. 3 is an elevation of a shoe, partly in section; Fig. 4 is an elevation, showing the stick in a tilted position; Fig. 5 is a view of a modified form.

A represents the frame having guide-grooves in the vertical jambs thereof.

B designates the spring-actuated roller, the spring of which is at all times free to act, and tends to roll the shade C up in a manner well known in the art.

At the lower edge of the shade is a hollow metallic shade stick D inclosed in a pocket in the usual manner. Within the stick are two actuating rods or spindles E, extending from at or near the center to the outer ends of the stick. These rods have spiral springs e sleeved thereon, the same being so secured that their tendency will be to force the rods outward. The inner ends of the rods are equipped with any convenient form of withdrawing devices, by preference, the well known "pinch-handle" which extend through slots in the stick. At the opposite ends of the stick D are the parallel separated arms F each having elongated slots f near their outer ends.

G designates the friction shoes which are located between the arms F. They are eccentrically mounted on transverse pins F', the ends of which project through the slots f and are permitted to slide therein. By eccentrically mounting the shoes, their normal tendency is to tilt or rock, and as the pins have a sliding movement in the slots the

shoes can be moved bodily back and forth. The shoes consist conveniently of metallic boxes the outer edge portions of which are channeled vertically, forming open edged boxings which are substantially oblong or elongated in shape, the ends projecting considerably beyond the plane of the stick in opposite directions. Between the side walls of the boxing at or near the center is fixedly secured a friction pad H, which I shall hereinafter term "the retaining tip." This retaining tip is formed of rubber, leather, or any other suitable material, and is so arranged in the boxing that its projecting edge lies considerably beyond the edge of the side walls. Located above and below, and a distance from the retaining tip are the antifriction metallic rollers K, the same being mounted on suitable cross shafts or pins secured in the side walls of the boxing. The peripheries of these rollers project beyond the edge of the boxing to a point between the same and the plane of the outer edge of the retaining tip.

To permit the independent movement of the shoe I form the inner edges thereof rounded or curved as at g , and reduce their vertical diameters to form vertical shoulders g' , which are located a short distance back from the rollers. The extreme outer ends of the rods E are provided with stirrups L fashioned to closely fit the rounded surfaces g of the shoes, and so that their outer ends or the ends of the branches, normally engage or rest against the vertical shoulders g' . This construction serves to normally maintain the shoes in their proper horizontal positions, but as soon as the stirrups are retracted or moved back the shoes are free to be moved inward and also to rock, as above described. In this connection I would state that the invention comprehends a structure wherein the stirrups are made a part of the shoes, or entirely omitted, and the rods E attached directly to the shoes, as shown in Fig. 5. In this construction the movements of the shoes in the longitudinal slot or space between the arms is sufficient to permit the withdrawal of the friction surfaces from their contact with the jambs. In both constructions it will be noticed that the friction tips or shoes are controlled by the spring actuated rods which, by their movement in either direction, directly affect the position of the shoes.

I desire it understood that in lieu of the rollers K smooth rounded surfaces can be used, as shown at K' , Fig. 5. The roller feature is however preferred.

In operation, by pressing on the pinch handles, forcing them together or toward each other, the springs are compressed, thereby releasing the friction and allowing the curtain to be moved up and down at ease. To avoid the contingency of the re-

taining tips dragging on the jamb should the shade be unevenly wound or moved edgewise, I conveniently mount the shoes eccentrically in the manner shown, so that as soon as the shoes are released from the spring pressure they will tilt downward, carrying the upper anti-friction roll into position for engaging the jamb. Should, however, an attempt be made to move the curtain up or down by taking hold of the same at points beyond the center of the stick and without retracting the rods, the stick would be canted or tilted, thus releasing partly or wholly the retaining tips from their frictional engagement with the jambs, and transferring the engagement to the lower roll on one side and the upper roll on the opposite side, and as soon as the operator releases his hold on the stick the spring of the shade roller will immediately right the stick. The distance from the upper roller on one side to the lower roller on the opposite side is greater than the distance from one retaining tip to the other. The tendency therefore of the shoe to escape from the groove is overcome while being tilted owing to the fact that the points of contact increase proportionately, to a certain point, as the stick is being tilted.

As I have above stated, I do not wish it understood that the invention is limited to the construction shown and described, as I am aware that many changes can be made without departing from the invention.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In a curtain holding device the combination with a shade and a constantly acting spring-actuated roller therefor, of a stick on the shade, spring pressed elongated guiding and holding shoes at the ends of the stick having curved anti-friction surfaces at their opposite ends, and a stationary guide on the window frame with which the elongated shoes engage to hold the shade in different positions of adjustment, said guiding and holding shoes being free to be moved bodily to be tilted toward and from the stationary guide.

2. In a shade holding device, the combination with a shade stick of friction shoes pivotally connected therewith and spring pressed means carried by the stick and extending into the same for resisting the tilting movement of the shoes.

3. In a shade holding device, the combination with a shade stick of friction shoes pivotally connected therewith and spring pressed means carried by the stick for resisting the tilting movement of the shoes.

4. In a curtain fixture the combination with a hollow shade stick, of a holding shoe loosely supported for independent bodily swinging movement relative to the axis of

the stick, and a spring pressed member carried by the stick for resisting the said movement of the shoe.

5 In a curtain fixture the combination with a shade stick of a holding member at the end of the stick means connecting the said holding means with the stick and arranged so that the said holding member may have a bodily movement transversely the
10 axis of the stick and a spring pressed braking member having parts extending forward to interrupt the said movement of the holding member.

6. The combination with a shade stick of
15 a guiding device at the end of the stick elongated transversely to the axis of the stick to travel in the grooves of a window frame, a device operating in connection with the stick to prevent the guiding device from
20 tilting out of the grooves, and a spring for permitting a limited movement of the guiding device longitudinally of the stick.

7. In a curtain fixture the combination with a shade stick, of a tilting shoe at the
25 end of the stick, a spring pressed member for resisting the tilting of the shoe, and means for retracting said spring pressed member.

8. In a shade holding device, the combination with a shade stick of an elongated head 30 or shoe carried by the stick, a slot and pin connection between the shoe and the stick, and a spring pressed rod for normally forcing the shoe out.

9. In a shade holding device the combination 35 with a stick of an elongated friction holding shoe pivoted at the end of the stick, means for preventing the pivotal movement of the shoe relative to the stick, and a spring pressed rod for normally forcing the shoe 40 outward.

10. In a shade holding device, the combination with a hollow stick, spring actuating rods within the stick having retracting
45 handles, a tilting friction shoe at the outer end of the stick with which the rod engages for setting the shoe against the window frame, and antifriction devices associated with the friction shoe and arranged respectively above and below the same. 50

In testimony whereof I affix my signature, in presence of two witnesses.

GEORGE H. DAVIS.

Witnesses:

H. W. ROBINSON,
H. H. KING.