

No. 733,147.

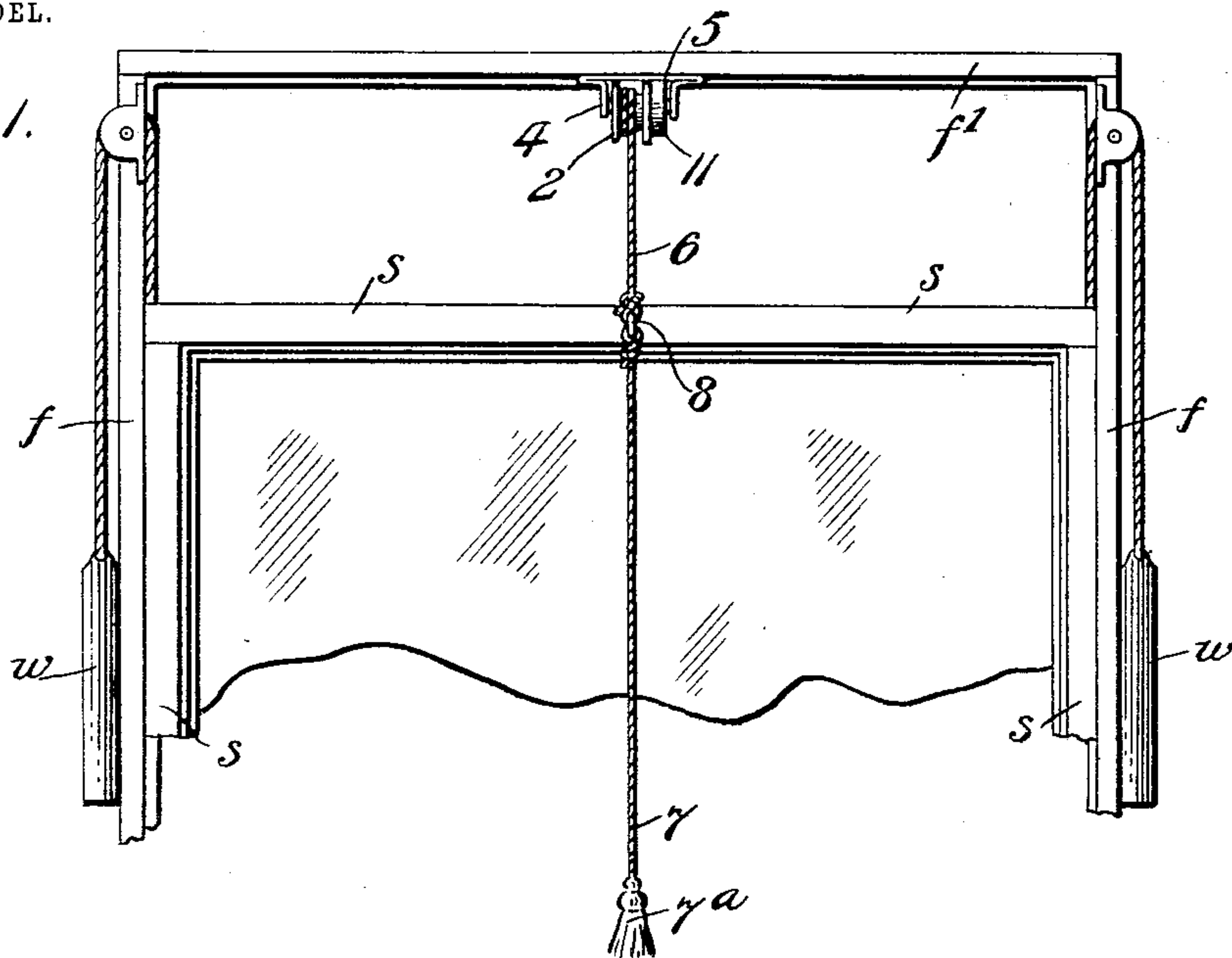
PATENTED JULY 7, 1903.

G. CASSADY.  
SASH LIFTER.

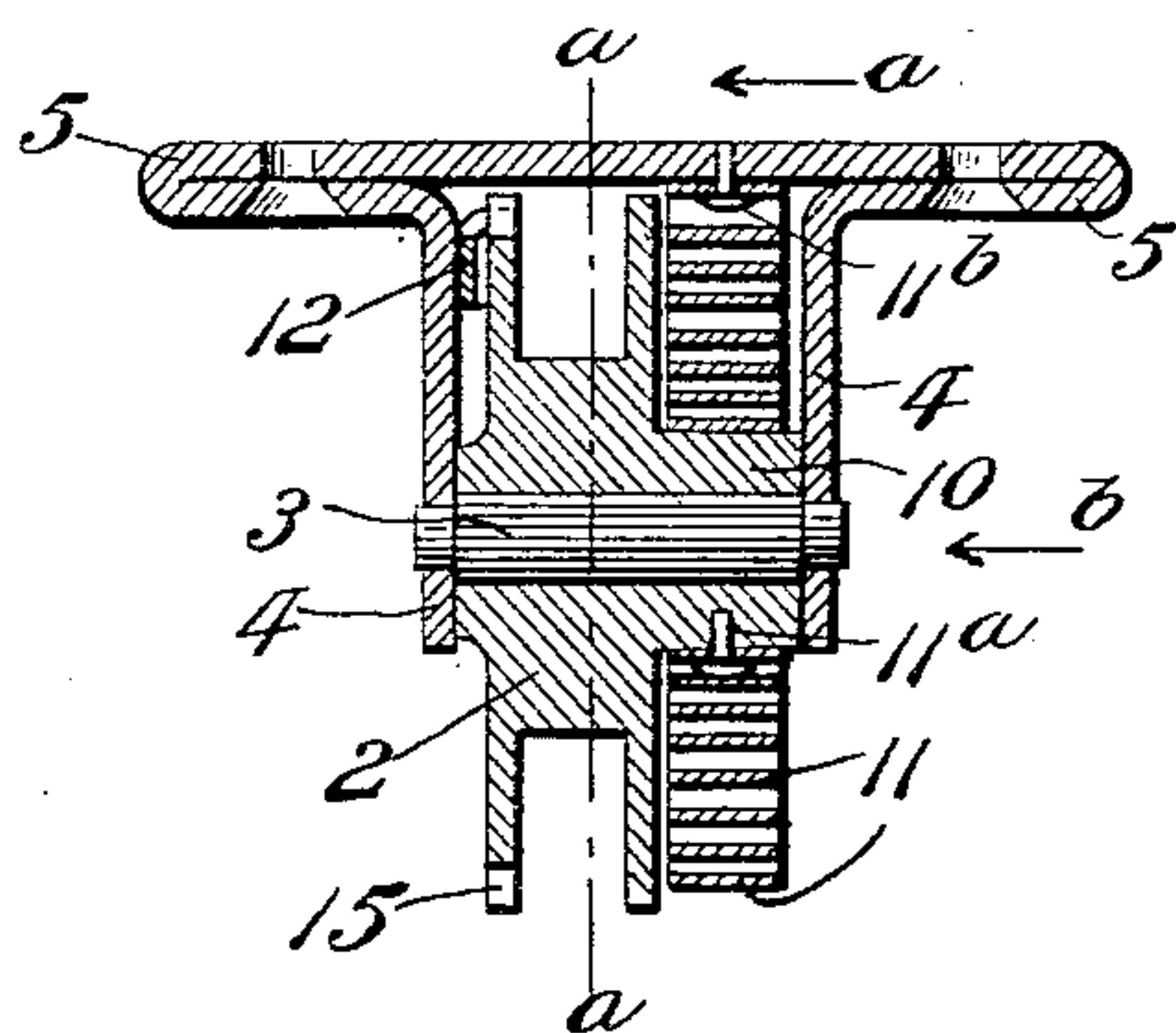
APPLICATION FILED DEC. 11, 1902.

NO MODEL.

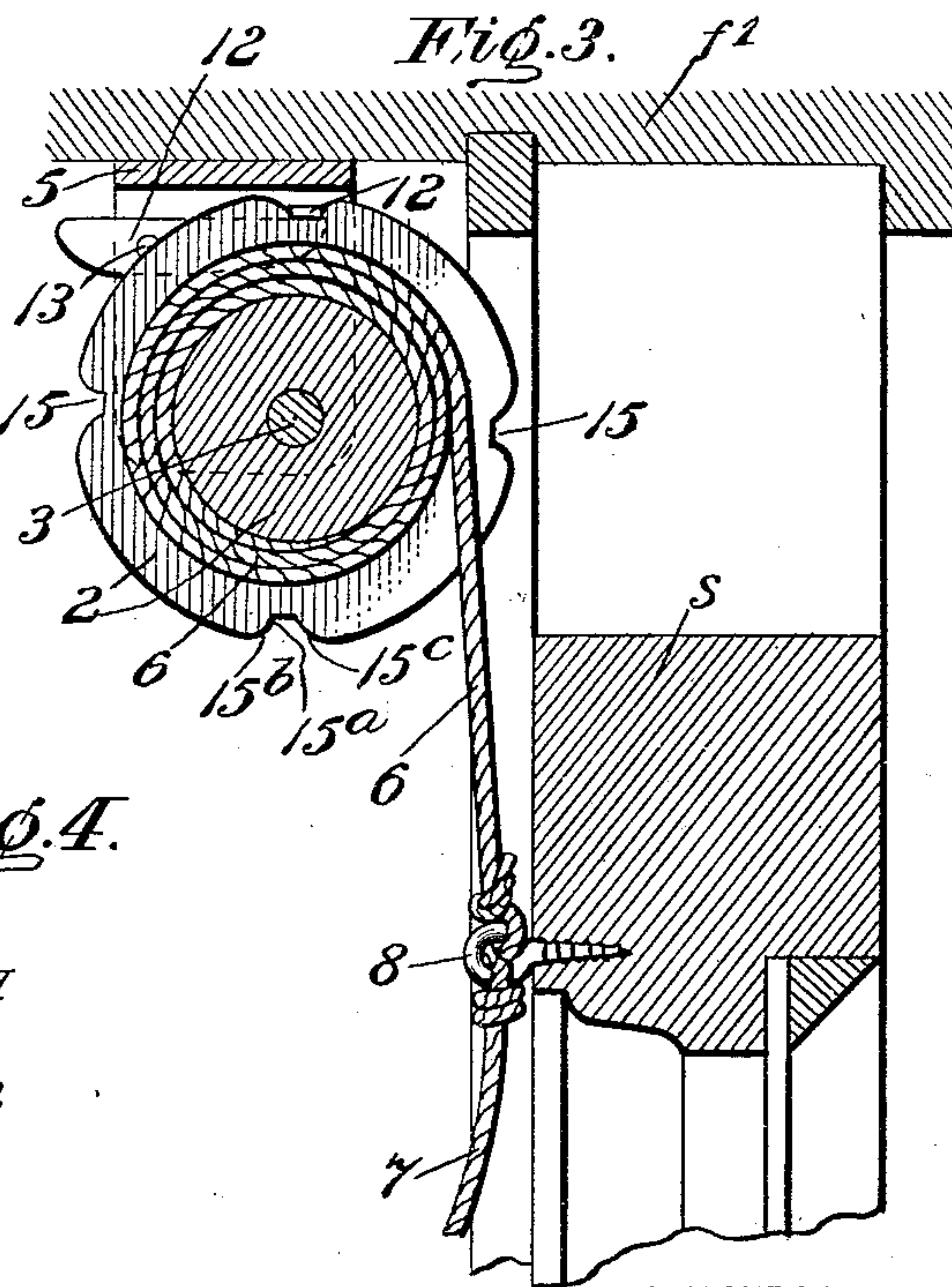
*Fig. 1.*



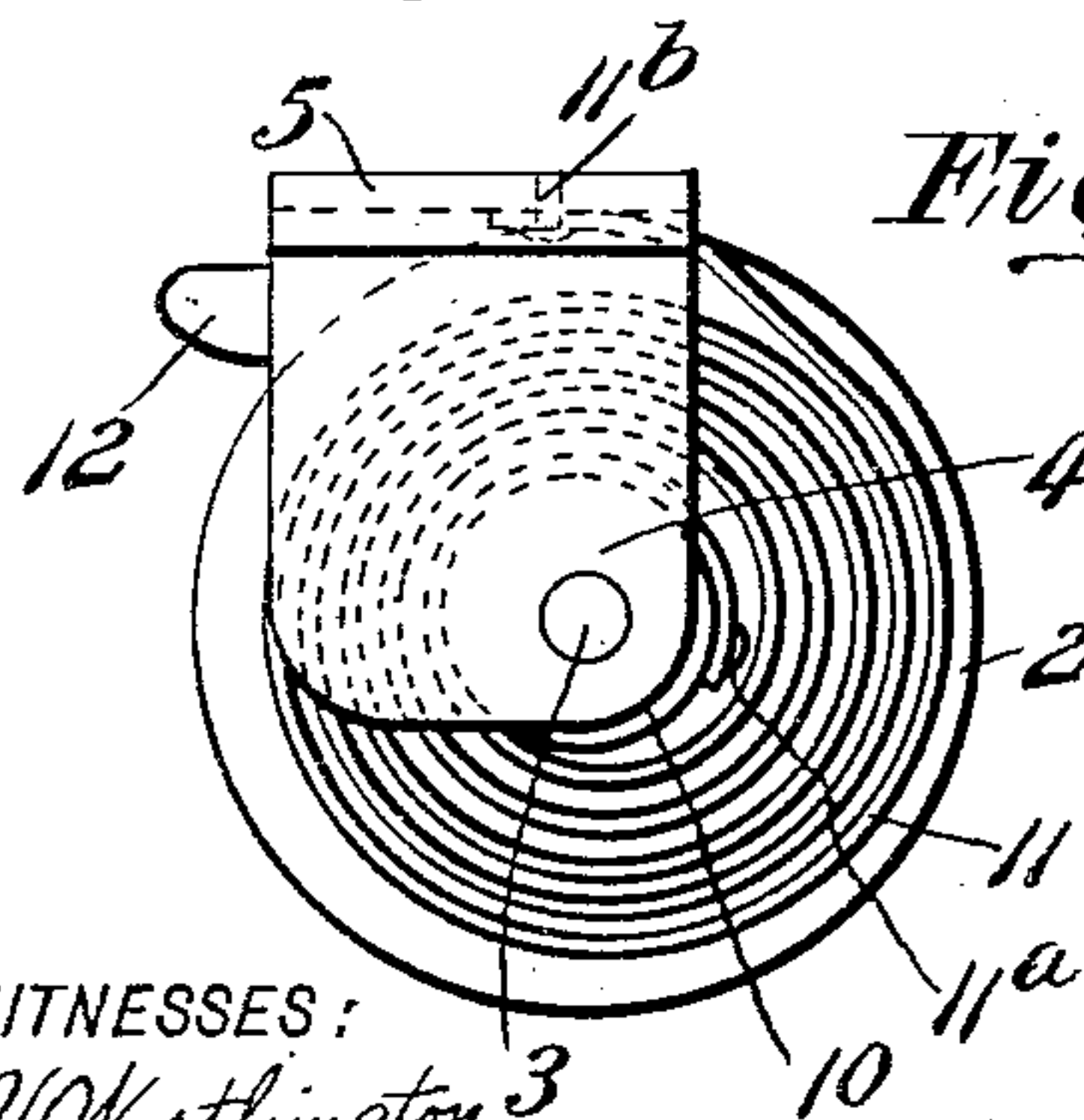
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



WITNESSES:

Guy V. Worthington  
John T. Schrott

INVENTOR

George Cassady

BY

Fred G. Dietrich  
ATTORNEY



# UNITED STATES PATENT OFFICE.

GEORGE CASSADY, OF VANCOUVER, CANADA.

## SASH-LIFTER.

SPECIFICATION forming part of Letters Patent No. 733,147, dated July 7, 1903.

Application filed December 11, 1902. Serial No. 134,791. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE CASSADY, a citizen of the Dominion of Canada, residing at Vancouver, in the Province of British Columbia, Canada, have invented a new and useful Sash-Lifter, of which the following is a specification.

My invention relates to an automatic sash-lifting device designed to be a supplementary attachment to an ordinary sliding window, and is intended to overcome the difficulty commonly experienced in lowering or raising the upper sash of a window, as it provides a convenient means for pulling the sash to the desired open position, will retain it in that position, and when required will close the window again.

It must be distinctly understood that my sash-lifter is not intended to dispense with the customary sash-weights or any spring device which may be in use to effect the balancing of the window-sash; but it is entirely supplementary thereto for the purpose above referred to of opening or closing the top sash for purposes of ventilation, a requirement which is frequently neglected because of the want of any adequate provision for opening and closing this portion of the window.

The construction and application of my device is fully described in the following specification and illustrated in the drawings which accompany it.

Figure 1 is a front view of a window partially open in its frame, showing the application of my device; Fig. 2, an enlarged front elevation of the device itself; Fig. 3, a cross-section on the line *a a* in Fig. 2 looking in the direction of the arrow *a* and showing also the relation to window-frame and top sash, and Fig. 4 a side elevation looking in the direction of the arrow *b*.

In the drawings, *s* represents the top sash of a window, balanced within the frame *f* by the weights *w* or by other suitable means which will allow the sash to be vertically slidable within its frame with a minimum of resistance.

My lifting device is secured to the upper member *f'* of the window-frame and consists of a small flanged reel 2, rotatably mounted on an axle 3, which is riveted or otherwise

fastened in the downwardly-projecting members 4 of the base-plate 5, by which the device is secured to the top member *f'* of the window-frame with ordinary wood-screws. A light cord 6 is secured to and coiled on the reel 2, and toward the other end is fastened to the upper rail of the sash by means of an eyelet 8 or in any other suitable manner, the free end 7 being allowed to hang down low enough to be within easy reach of an operator and may be provided with a light hand-grip 7<sup>a</sup>. Secured to or forming a projecting boss on one side of the reel, so as to be rotatable with it, is an arbor 10, on which a flat spring 11 is coiled in such a manner that it will raise the sash by means of the cord 6 being wound on the reel, one end of the spring 11 being secured to the arbor at 11<sup>a</sup> and the other to the base 5 at 11<sup>b</sup>. This tendency of the spring to wind the reel and raise the sash is checked and controlled by a small gravity-pawl 12, which is pivoted on a pin 13 on the inner side of one of the downwardly-projecting members 4, so as to be adjacent to one of the flanges of the reel 2, the edge of which is provided with a series of notches 15, which form detents to engage the laterally-projecting end of the pawl 12. As this pawl is designed to fall into engagement with the notches of the reel-flange only when the reel is rotating slowly or at rest and is further intended to offer no resistance to the movement of the reel, but to fall out of engagement therewith when the sash is being pulled down, the notches 15 are particularly shaped to effect these objects. The engaging face 15<sup>a</sup> of the notch—that is, the face against which the spring pulls in its effort to rotate the reel against the hold of the pawl—is rounded slightly at its outer corner, as 15<sup>b</sup>. This prevents the pawl catching on the detents as the reel rotates unless the rotation is very slow or the reel is brought to rest with a detent opposite to the laterally-projecting end of the pawl, when the end will drop into engagement and will hold the reel secure. The opposite face 15<sup>c</sup> of the notch is angled or curved from the bottom of the detent to the periphery of the flange, so that the pawl, the engaging end of which is shaped to conform to the angle of the notch, will be thrown out of



engagement and offer no resistance to the rotation of the reel when the sash is being pulled down by the cord 7.

The operation of my device is extremely  
 5 simple and will require very little explanation. The sash of the window being balanced either by weights or by spring devices, the resistance to be overcome is merely the friction of the sash in the window-frame, and  
 10 this the coiled spring 11 is designed to do, acting through the reel 2 and the cord 6, the spring being strong enough to close the window from any position within its range. The cord 7 affords the means by which the sash  
 15 may be pulled open against the upward strain of the spring 11, and when the sash is opened the desired amount on the pull being relaxed and the sash allowed to move slowly up the gravity-pawl will drop into the next detent  
 20 and will retain the reel and consequently the sash at that place against the raising tendency of the spring. When it is desired to close the window, the sash is pulled down by means of the cord 7, and the pawl 12 on account of the shape of the detents at 15° offers  
 25 no resistance to this movement, but is thrown out of engagement with them and bears lightly on the periphery of the reel-flange. The downward pull on the cord 7 may then be relieved and the sash allowed to move smartly  
 30 up, the pawl being unable to drop into the detents 15, as it has not time to do so while they pass at other than a very moderate speed.

The device is simple and inexpensive to  
 35 manufacture and is applicable to any ordinary window without alteration or derangement of the existing fittings, with which it does not interfere in any way, being entirely supplementary to the present weights or other  
 40 balancing devices. It will undoubtedly fill a long-felt want, as too frequently the efficient ventilation which a slight lowering of the top sash so amply provides for is neglected for no other reason than because of the extreme dif-

ficulty of moving the top sash under the  
 45 usual condition of affairs. With my device the sash may be very readily pulled to and will be automatically secured in the open position required, while the self-releasing pawl enables the closing of the window again to be  
 50 no less easily effected.

I am aware that prior to my invention attempts have been made to effect the raising of a window by devices which are primarily  
 55 intended to balance the sashes and also to effect the raising of the sash by a spring-actuated reel, but without any attempt to control the mechanism by which it is done except by means external to the device. Over such my  
 60 sash-raiser has material advantages, and

I therefore declare that what I claim as new, and desire to be protected in by Letters Patent, is—

A sash-lifter of the class described, including a base-plate having a portion bent back  
 65 upon itself, bearing-arms bent at right angles to the base-plate, a spindle mounted in the extremities of said bearing-arms, a reel mounted upon said spindle, said reel including a hub portion, side flanges integral there-  
 70 with to form a groove, a rope wound in said groove, one of said side flanges having periphery-notches, a catch member mounted upon one of the bearing-arms, said catch member  
 75 having a portion bent at right angles thereto to engage with the periphery-notches of the side flange of the hub, a second hub of lesser diameter than the first-mentioned hub and formed integral therewith, a spring fastened  
 80 at one end to said second hub and at the other end to said base-plate.

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

GEORGE CASSADY.

Witnesses:

ROWLAND BRITTAIN,  
 R. B. JOYCE.