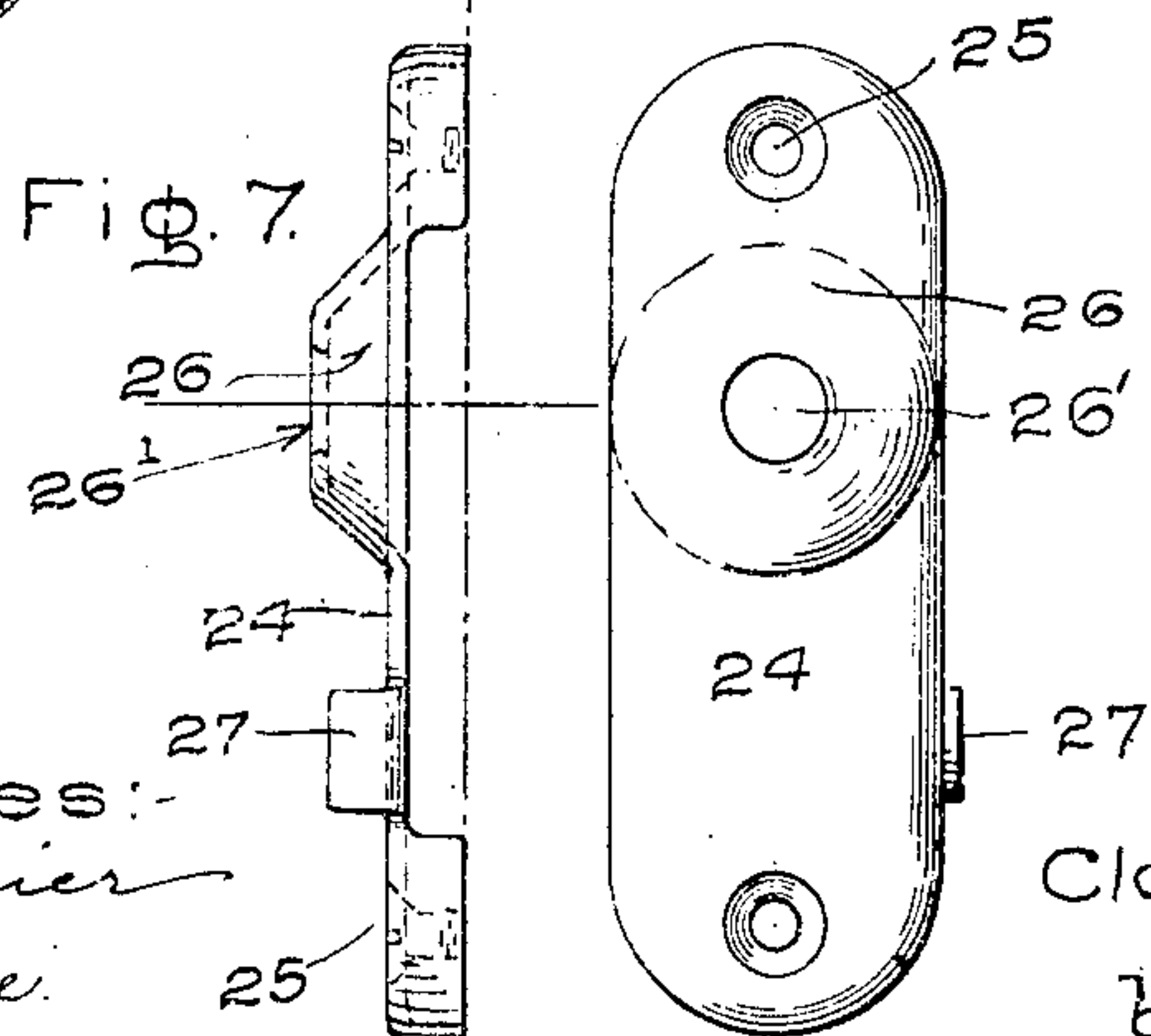
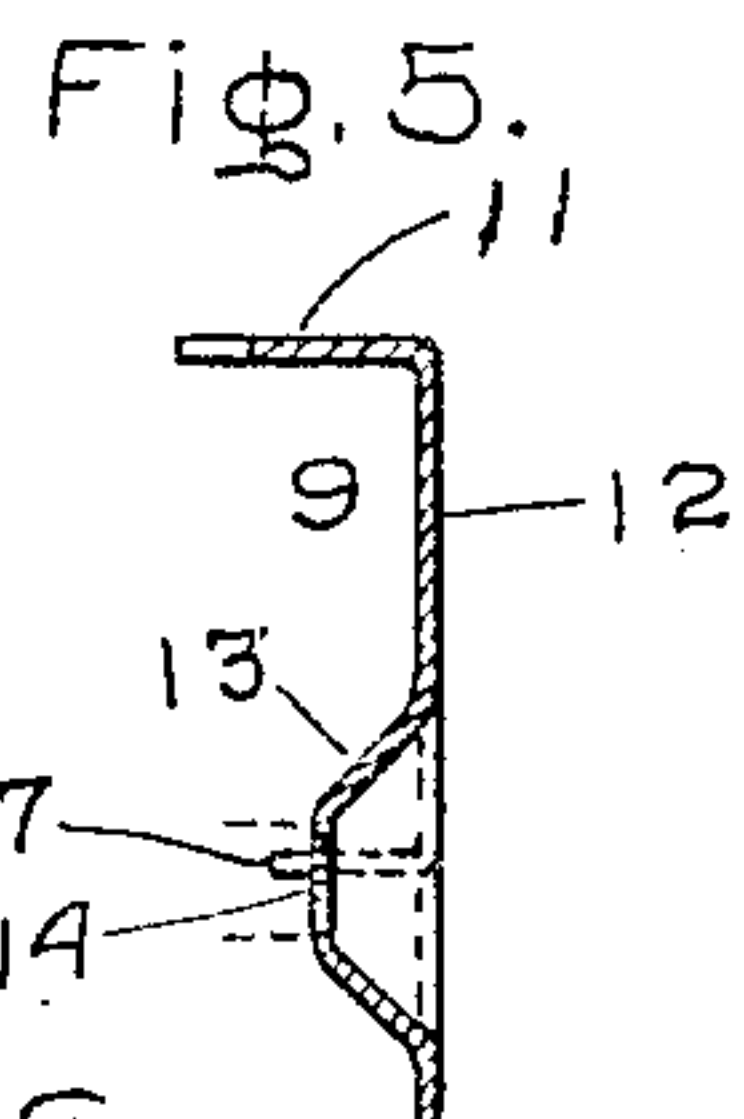
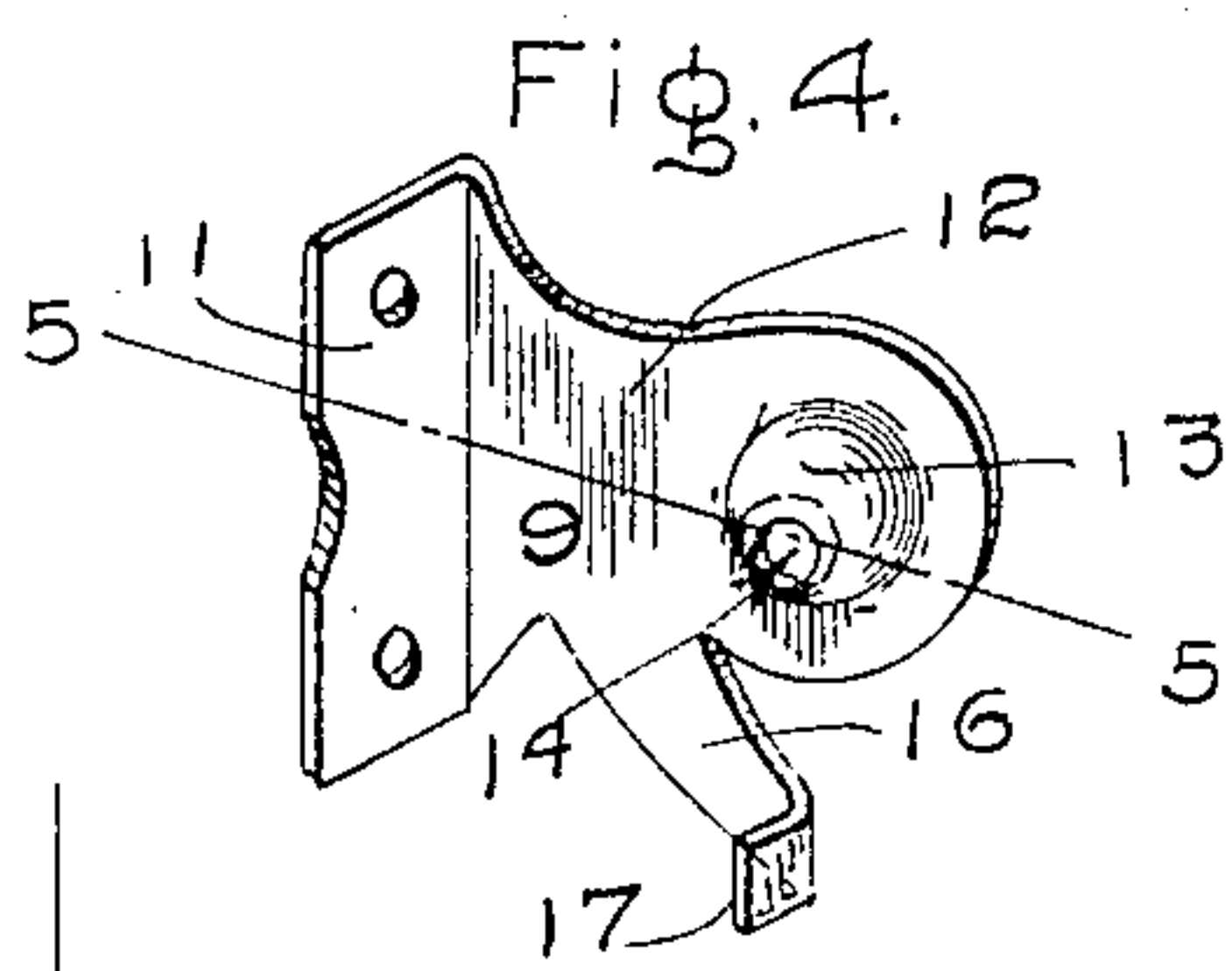
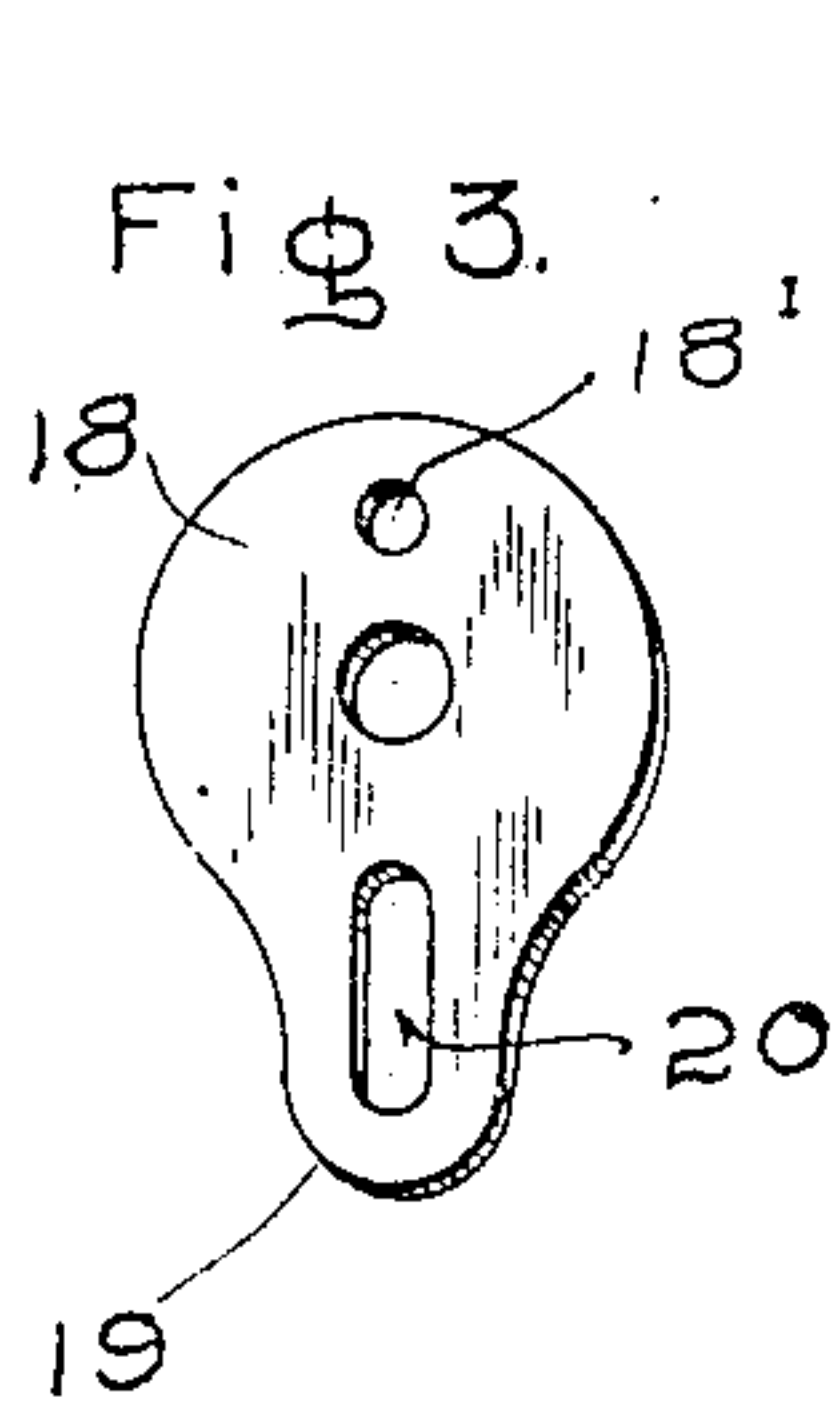
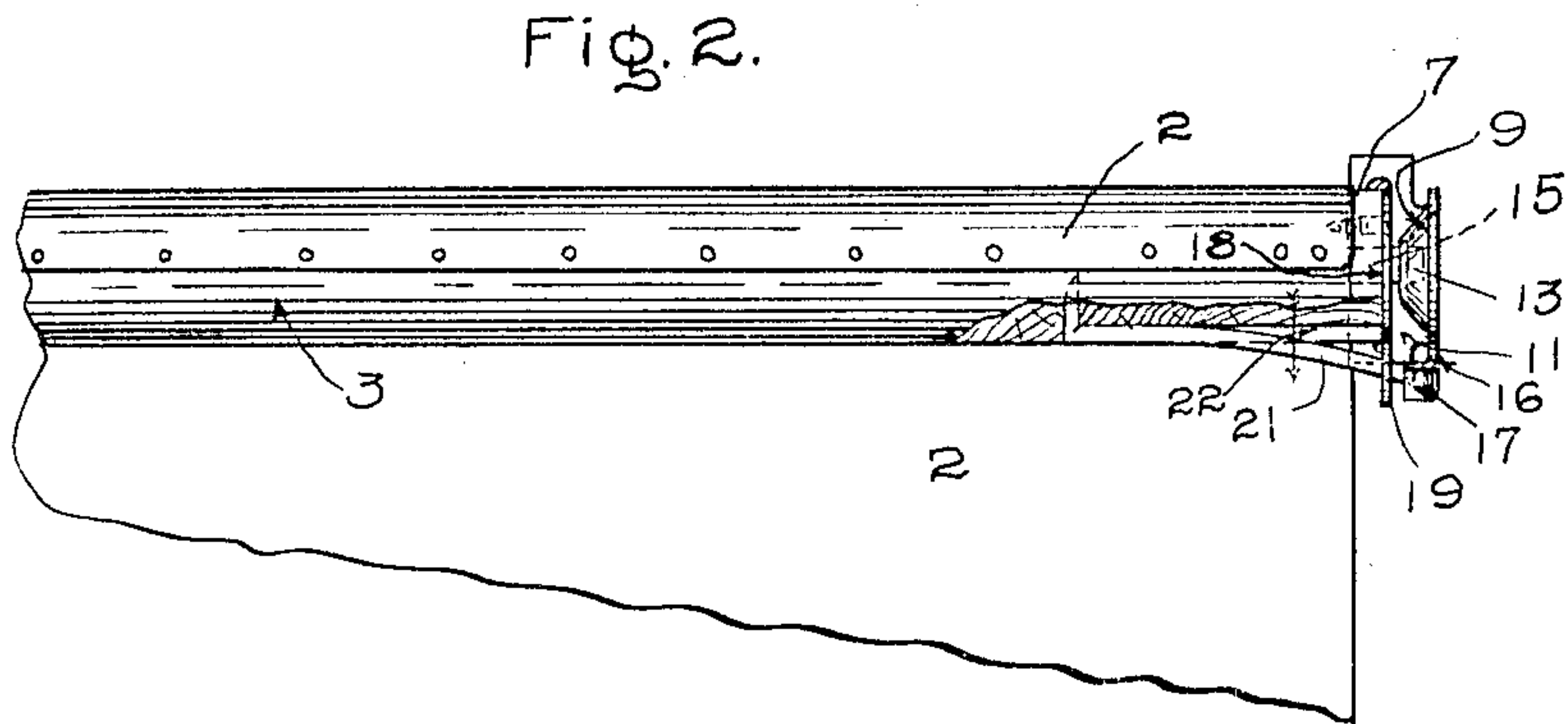
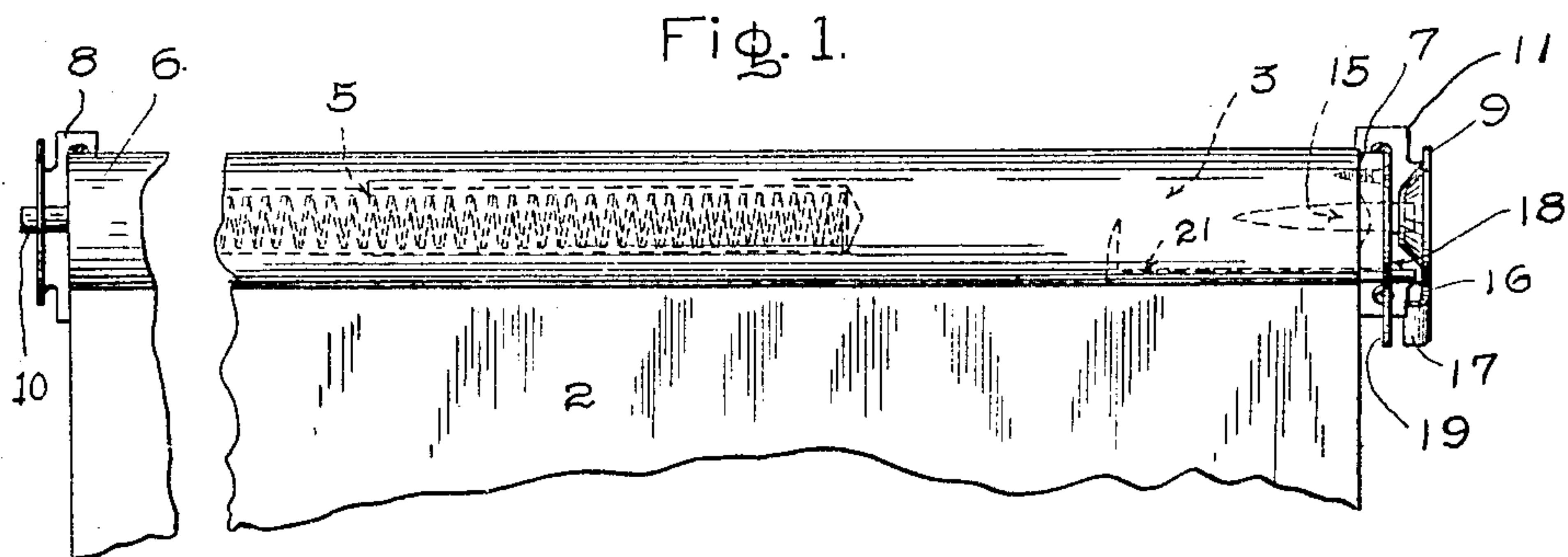


No. 871,858.

PATENTED NOV. 26, 1907.

C. T. BOTTING.
SAFETY STOP FOR SHADE ROLLERS.
APPLICATION FILED MAY 13, 1907.



Witnesses:
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UNITED STATES PATENT OFFICE.

CLARK T. BOTTING, OF WATERTOWN, NEW YORK.

SAFETY-STOP FOR SHADE-ROLLERS.

No. 871,858.

Specification of Letters Patent.

Patented Nov. 26, 1907.

Application filed May 13, 1907, Serial No. 373,353.

To all whom it may concern:

Be it known that I, CLARK T. BOTTING, citizen of Canada, residing at Watertown, in the county of Jefferson and State of New York, have invented certain new and useful Improvements in Safety-Stops for Shade-Rollers, of which the following is a specification.

This invention relates to improvements in safety stops for shade rollers, designed for use in connection with the rollers which support the shades of windows, and the invention relates particularly to a mechanism to be employed for supporting a window shade and its roller in a window or like place, and also to afford a positive stop to prevent the unwinding or unrolling of a shade beyond a safe distance or point.

Heretofore it has been the common practice to secure window shades to the well-known spring-rollers by means of small tacks driven through one end of the shades, and frequently in operating these shades, they have been pulled down or unrolled to their full extent or length, with enough force to tear the ends of the shades loose from the rollers. This has always been a source of great annoyance and often resulted in mutilating or damaging the shades.

It is an object of the present invention to obviate all such damage and annoyance by providing a simple mechanism for hanging or supporting shade rollers in operative position, and in combining with these parts a simple and effective stop which will automatically prevent a window shade from being unwound or unrolled beyond a safe distance, and a further object is to provide a mechanism of the class which is simple, positive, light and durable, which may be produced and installed at a small cost, and which will stand considerable wear and abuse and not get out of order.

The invention consists principally in providing suitable metallic brackets arranged to support and operatively hold any of the well-known makes of spring shade rollers; the invention further consists in providing a stop mechanism comprising an arm or projecting part formed on one of the supporting brackets, and a spring-rod or bar carried by the shade-roller, the said rod or bar being disposed in such manner that it is held from engagement or contact with the stop formed on the bracket by the shade when it is wound

around the roller, but arranged to engage the stop and automatically check or stop the rotation of the roller before the shade has been entirely unwound, and the invention further consists in providing a slotted guide-plate which is secured to the end of the roller to support and also to limit the movement or play of the spring-rod.

Other features and parts of the invention will be fully understood from the detail description which follows, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 is a view of a window shade and roller equipped with my improvement, showing the shade wound around the roller and holding the spring-rod out of engagement with the stop; also showing the mountings for the roller and the winding spring. Fig. 2 is a view similar to Fig. 1, showing all of the parts of my safety mechanism and the manner of applying the same; also showing the shade unrolled sufficiently to expose a portion of the roller and allow the spring-bar to engage the stop. Fig. 3 is a detail face view of the slotted guide-plate. Fig. 4 is a perspective view of the bracket which carries the stop. Fig. 5 is a sectional view of the same bracket substantially on the line 5—5 of Fig. 4. Fig. 6 is a perspective view of the spring-rod. Fig. 7 is a face and edge view of a modified form of bracket, having the stop-lug formed on one side or edge thereof.

Similar characters of reference are assigned to corresponding parts throughout the several figures.

In the drawing, 2 represents a window shade which may be made of any suitable material, and which is mounted upon a roller 3 by means of tacks, or other securing devices. The roller 3 preferably consists of the well-known spring-roller, comprising a cylindrical wooden rod or pole and having an actuating or winding spring 5 disposed in one end 6, the opposite end 7 being solid. 8 and 9 represent brackets, preferably made of sheet or cast metal of suitable weight and form to support and carry the ends of the roller 3. The bracket 8 is preferably made in the ordinary way to receive and hold the pin or rod 10 which is attached to the outer end of spring 5 and which forms a bearing for end 6 of the roller. The bracket 9 is provided with a suitable base or-foot 11, by

means of which it is secured to a window frame, and an outwardly extending lug 12, the latter having an inwardly projecting or countersunk portion 13, through the center of which a circular hole 14 is formed, the latter affording a bearing for the pintle or pivot pin 15, which projects from the center of the roller at its end 7.

16 represents an arm or lug which is preferably formed with the bracket 9 and extends rearwardly and downwardly in line with the central or pivot-lug 12. The outer free end of lug 16 is bent inwardly toward the roller substantially at right-angles to the lug to form a stop 17, the purpose of which will later be fully described.

18 represents a thin metallic guide-plate which is fitted to the end 7 of the roller and is held in place in part by an annular shoulder or flange (not shown) formed on the pintle 15, the shank or tine of the pintle being driven through a central hole in said plate. Plate 18 is provided with a lug 19 which projects outwardly three quarters of an inch or more beyond the outer side of the roller, through which is formed a radial slot 20 extending at right-angles to the axis of the roller. The parts 13 and 17 are intended to be formed so that they project inwardly about the same distance, and plate 18 is disposed so that its projecting part 19 will clear the inner end of the stop 17 when it is rotated with the roller. In order to prevent the guide-plate 18 from turning on the pintle 15, a perforation 18' is provided, and a small screw or nail is driven through this hole into the end of the roller to act as a driver for the plate 18.

21 represents a spring-rod or bar, preferably made of light spring wire, either flat or round, which may be secured to the roller 3 several inches inwardly from the end 7, in any suitable manner to hold it firmly in place. The wire or spring 21 is preferably formed or bent in such manner that when it is applied to the roller, its outer or free end will spring away from the pole 3 and stand at a slight angle to the plane of the roller (as shown in Fig. 2), unless hindered from so doing by some outside force.

22 represents a shallow groove formed in the surface of the roller to receive the spring-rod when it is pressed and held against the roller. At the time of assembling spring-rod 21 and plate 18, before one or the other is secured to the roller, the spring-rod should be inserted through the slot 20, by means of which the movement or play of the free end of the rod in every direction is limited and controlled. The free end of the spring-rod 21 should extend outwardly beyond the plate 18 far enough to overlap or stand in the path of the lug or stop 17, so that when the rod is free to spring away from the roller, it will engage the stop by striking it on its

under side, and thus prevent the roller from further turning in the direction to unwind the shade.

It will be seen, that the rod 21 is mounted on the roller in such position relatively to the point where the end of the shade is tacked to the roller, that it will become free, and spring outwardly by its own power and catch or strike the stop 17, before the shade is entirely unwound. Under this arrangement, a person may unroll a shade to the extent shown in Fig. 2, and then the further downward movement of the shade will be prevented and it will be impossible to tear or damage the shade.

The majority of the window shades in use to-day are secured to the rollers by simply tacking the upper ends to the outside of the rollers. The tacks are necessarily small, and the rollers are usually made from some variety of soft wood. The shades therefore are easily detached from the rollers and very often are torn from the tacks, or the tacks are pulled out by the careless or accidental handling of the shades at the time of unwinding. To avoid these dangers, by the employment of my safety stop mechanism, the spring-rod 21 should be secured to the bare roller at a point rather more than half way around the roller from the point where the tacks are applied. After a shade has been hung in a window, it may be raised or lowered at will. When being raised the shade is wound around the roller by the force of the winding spring 5, and when being lowered, some person must pull it down against the tension of the spring. When winding or rolling of the shade begins, before the first round is completed, the body of the shade comes in contact with the spring-rod, and the weight of the shade will be sufficient to compress the spring-rod inwardly against the roller and force it into the groove 22, the outer end meantime moving inwardly through the slot 20 in plate 18. As long as the body or web of the shade encircles the roller even by one turn, spring-rod 21 will be held seated in groove 22, and the shade may be wound or rolled around the roller as many more times as desired, or it may be shifted and set to any position in the window freely and at will, without interference by the automatic stop or any of its parts, so long as the shade covers the portion of the roller having the spring-rod attached. But as soon as the shade is pulled down or unwound far enough to allow the rod 21 to become free, it will spring outwardly by its own power, and in doing so the outer end of the rod will move away from the roller until stopped by the outer end of slot 20 in plate 18, and the extreme end of the rod which projects beyond the end of the roller will engage the underside of the angular stop 17, and the roller will be positively held from further rotation.

When a shade has been unwound sufficiently to cause the stop mechanism to become effective, as described, it may again be wound upon the roller, by first giving it a slight jerk to release a ratchet (not shown) connected with the actuating spring 5, the roller will then respond to the winding spring, and the shade will be rolled up, and the instant the shade makes contact with the spring-rod, it will press or force the rod into groove 22, and thus release the stop, which will not again become effective until the shade has been subsequently pulled down its full length, as described.

In Fig. 7 I have shown a modified form of bracket for hanging the roller, commonly termed a "flush bracket", which is preferably formed out of sheet metal, although it may be cast and give good results. This bracket is comprised of the base 24, having perforations 25 to receive attaching screws or nails, a boss or projection 26, having a central perforation 26' to receive the pivot pin 15 of the roller, and a lug or lip 27 formed on one side of the base and projecting inwardly in line with the boss 26 to form a stop having the same function and object as the part 17 of the bracket 9. This form of bracket is usually employed where shades are disposed between the jambs of a window, instead of being attached to the casing.

My improved stop mechanism is extremely simple and affords a positive check against tearing or otherwise damaging window shades of the class described. It is composed of but few parts, which may be made from light material and the whole may be produced and applied at a small expense.

Obviously some modifications or changes in the parts may be made without departing from the spirit of my invention, and I therefore do not restrict myself to the precise construction and arrangement as shown and described herein.

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

1. The combination with a window shade and a roller to carry the same, of a spring-rod mounted on said roller, the free end of said rod projecting beyond the end of said roller, a slotted guide-plate secured to one end of said roller adapted to limit the movement of said spring-rod, and a bracket to support the end of said roller and having an integral arm bent at its free end to form a stop to intercept and engage the free end of said spring-rod.

2. A stop mechanism, comprising a spring-rod, a slotted guide-plate to control and guide said spring-rod, and a bracket provided with an arm having an angular stop formed on its free end and disposed in a position to be engaged by one end of said spring-rod, in combination with a window

shade and a self-winding roller, the said shade being attached to said roller and adapted when wound thereon to hold said spring-rod out of engagement or away from said stop, and when unwound from said roller to permit the engagement of said spring-rod and said stop to thereby prevent the further rotation of said roller in the direction to unwind said shade.

3. In a stop mechanism, the combination with a shade-roller and a shade capable of being wound and unwound thereon, of a pair of brackets to support said roller in operative position in a window, one of said brackets having an arm adapted to form a stop disposed adjacent to one end of said roller, a slotted guide-plate secured to the end of said roller facing said stop, a spring-bar secured at its inner end to the outer surface of said roller, its outer end passing through the slot in said guide-plate a sufficient distance to register with the said stop, and means for pressing and holding said spring-bar inwardly against the roller to prevent its engagement with said stop, thereby to permit the roller to wind and unwind freely.

4. In a stop mechanism, the combination with a window-shade and a spring-roller upon which said shade is adapted to be wound and unwound, of a pair of brackets to support said roller in operative position, one of said brackets having an arm fitted with an inwardly projecting stop-lug, a guide-plate rigidly secured to the end of said roller facing said stop arm, the said plate having a radial slot cut through a lug which projects beyond the outer surface of the roller, and a spring-rod secured at its inner end to the side of said roller, the outer free end thereof passing through the slot in said plate and adapted to engage the said stop-lug when said shade is unwound from the roller, and to be held out of reach or engagement with said stop-lug when the shade is coiled around the roller.

5. A safety stop for shade-rollers, comprising a spring-rod mounted on a shade roller, the free end of said spring-rod projecting beyond the end of said roller, a plate having a projecting-lug through which is formed a slot, rigidly secured to the end of said roller, adapted to guide and limit the movement of the free end of said spring-rod, a bracket to pivotally support one end of said roller, and having an integral arm, the outer end of which is formed into a stop-lug adapted to intercept said spring-rod when the latter is positioned in the outer end of the slot, and means for holding said spring-rod away from said stop.

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

CLARK T. BOTTING.

Witnesses:

EDGAR V. BLOODOUGH,
HARRY DE WALLACE.