

M. F. HUTCHISON.
ROLLER SCREEN.

(Application filed June 1, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

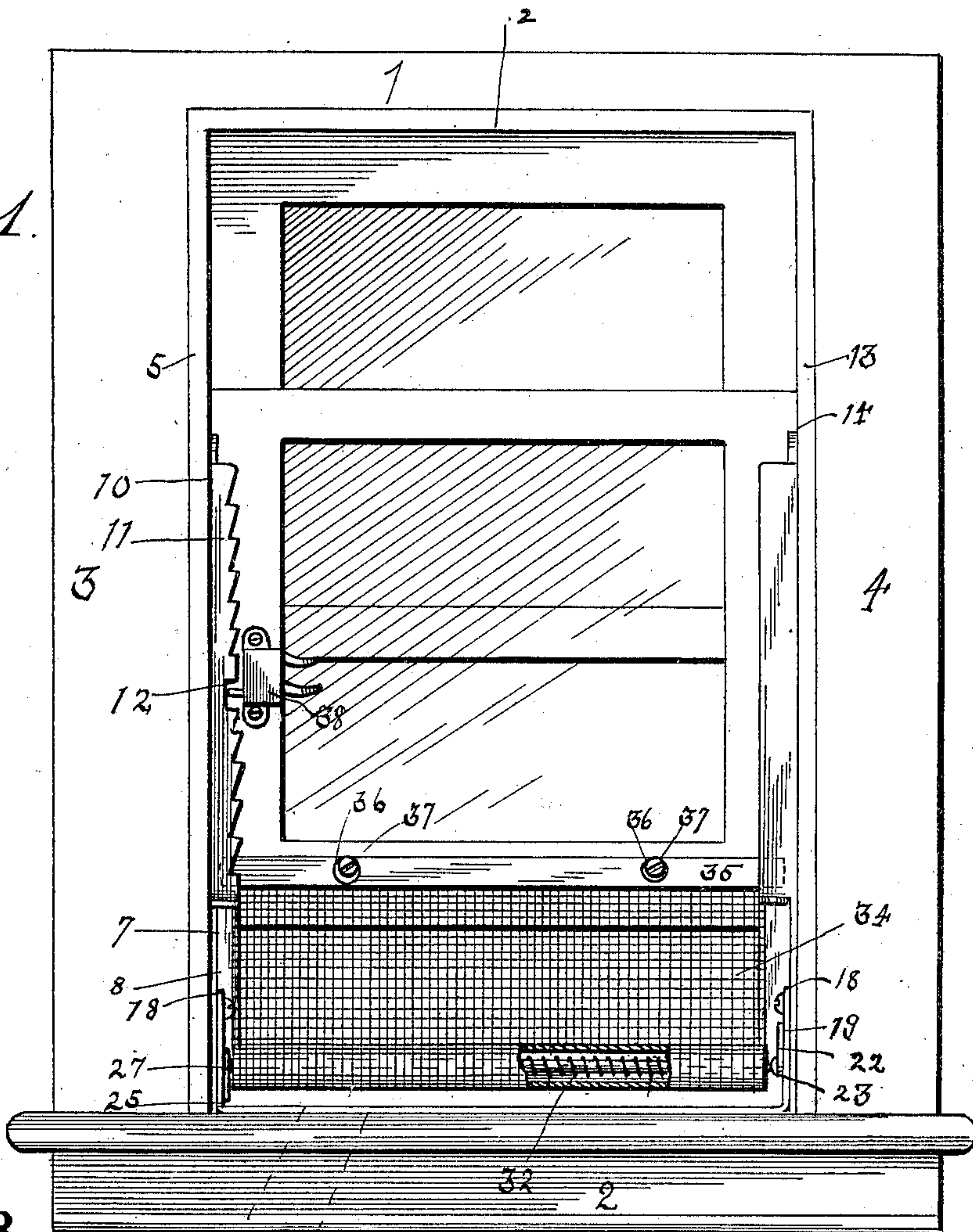


Fig. 8.

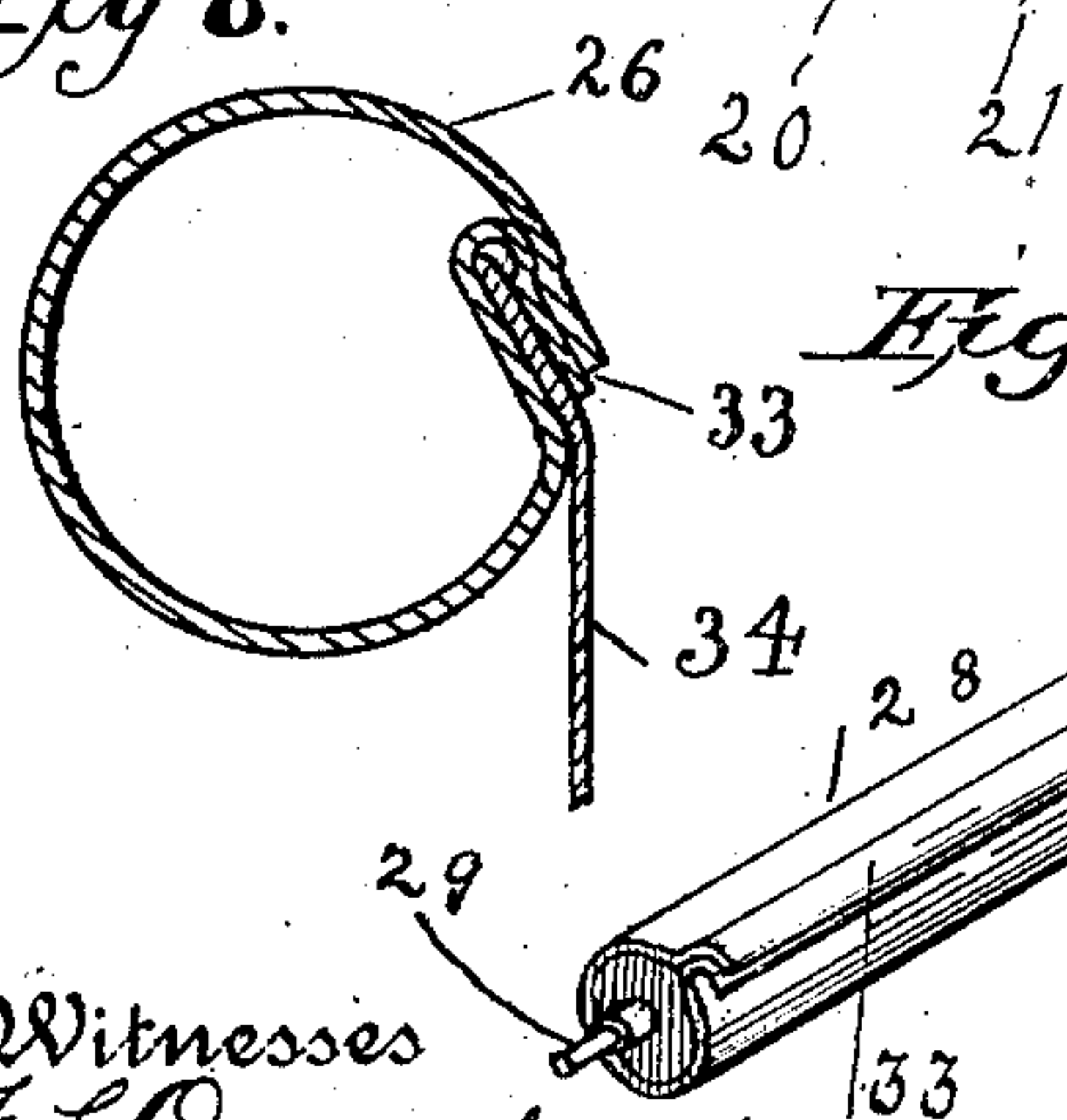


Fig. 6.

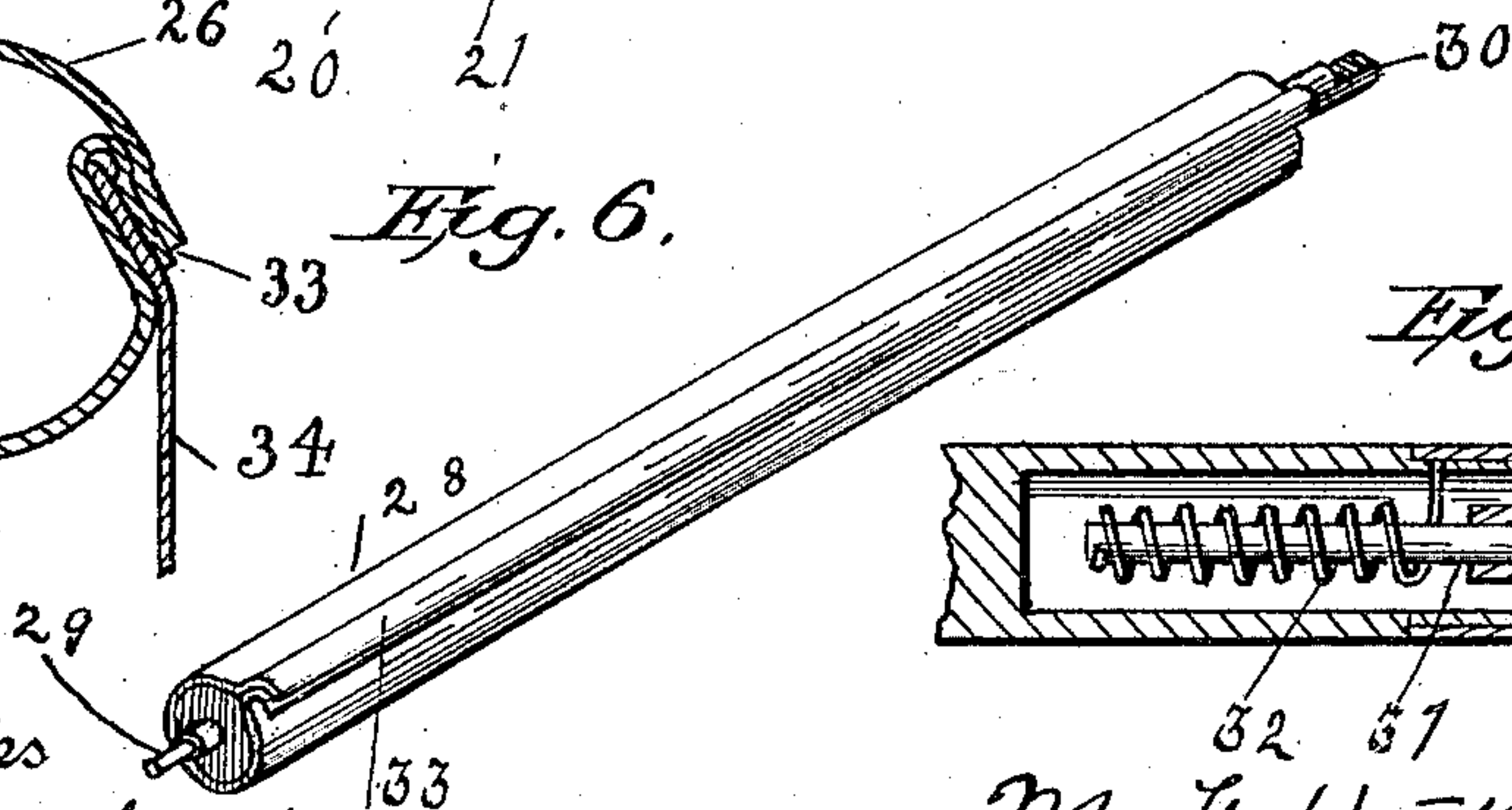
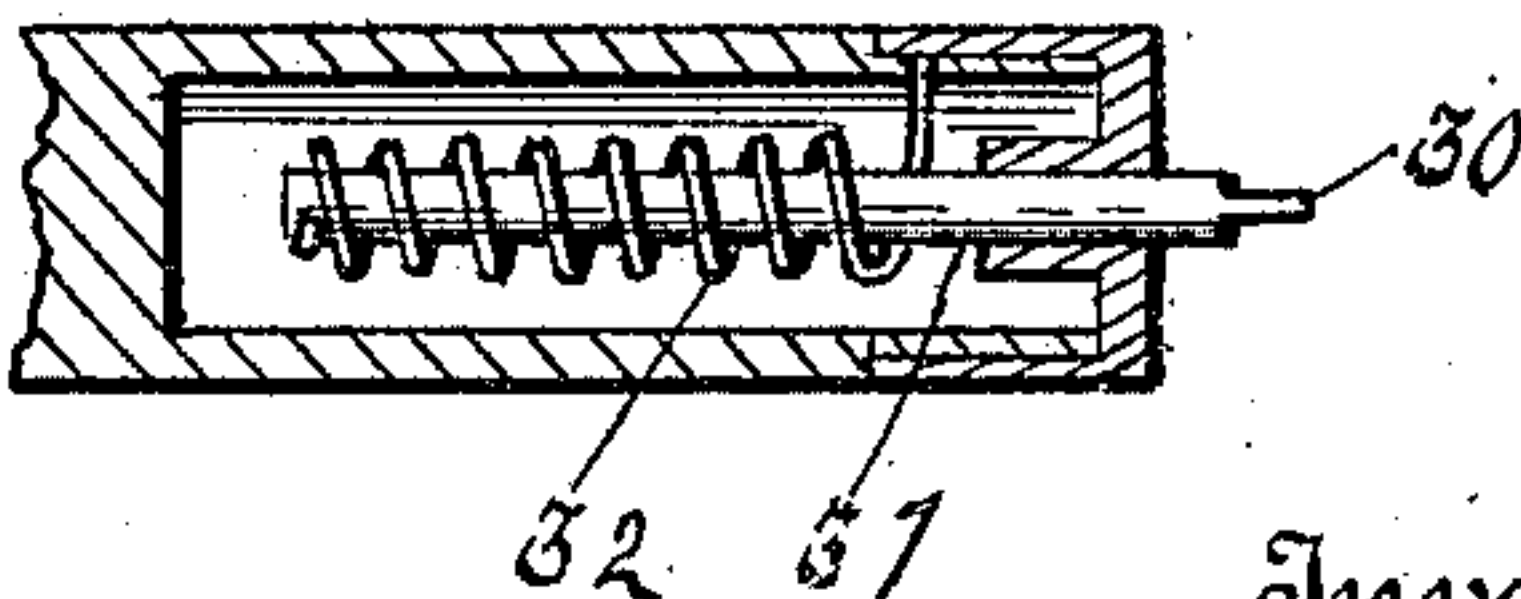


Fig. 7.



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No. 696,373.

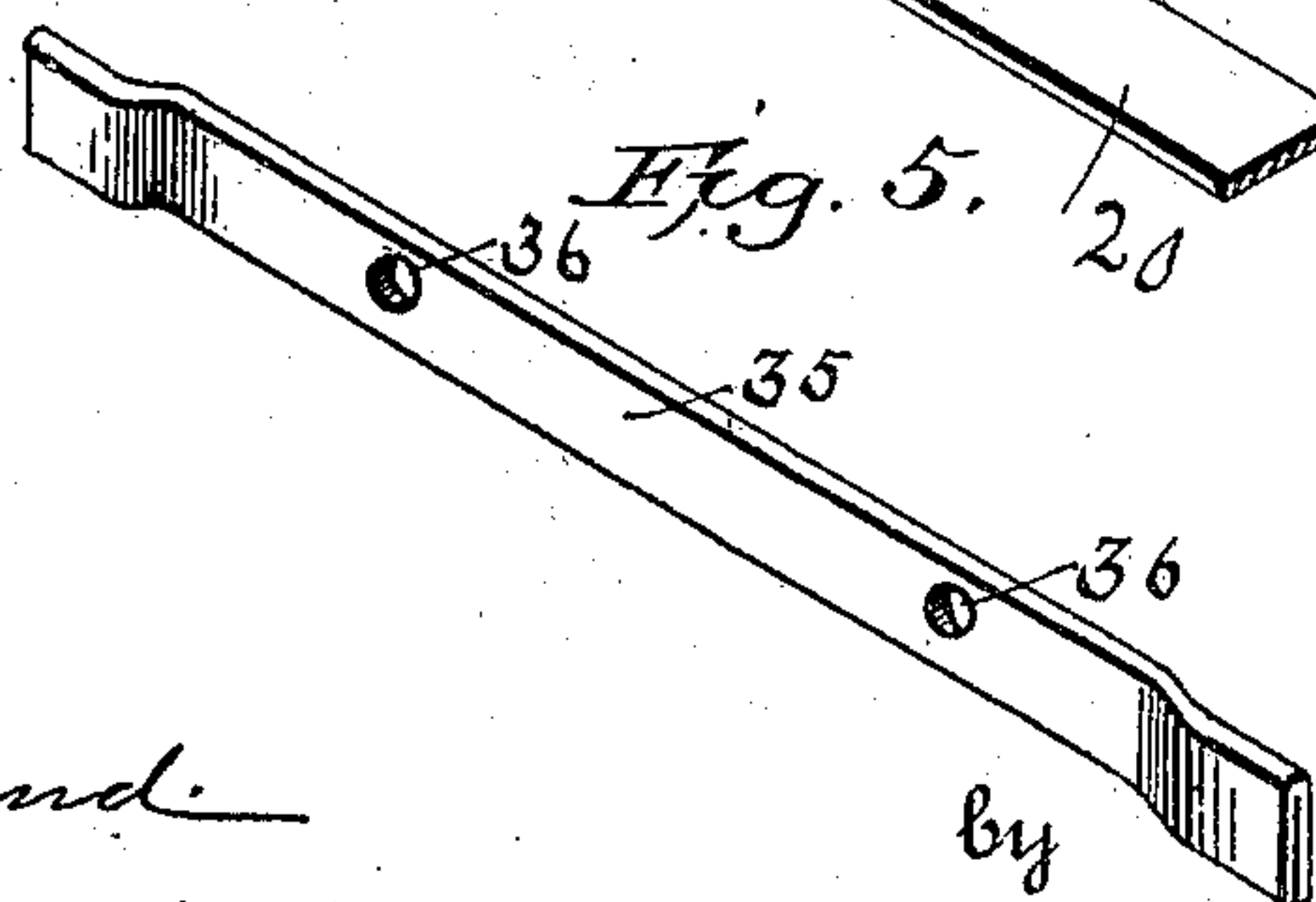
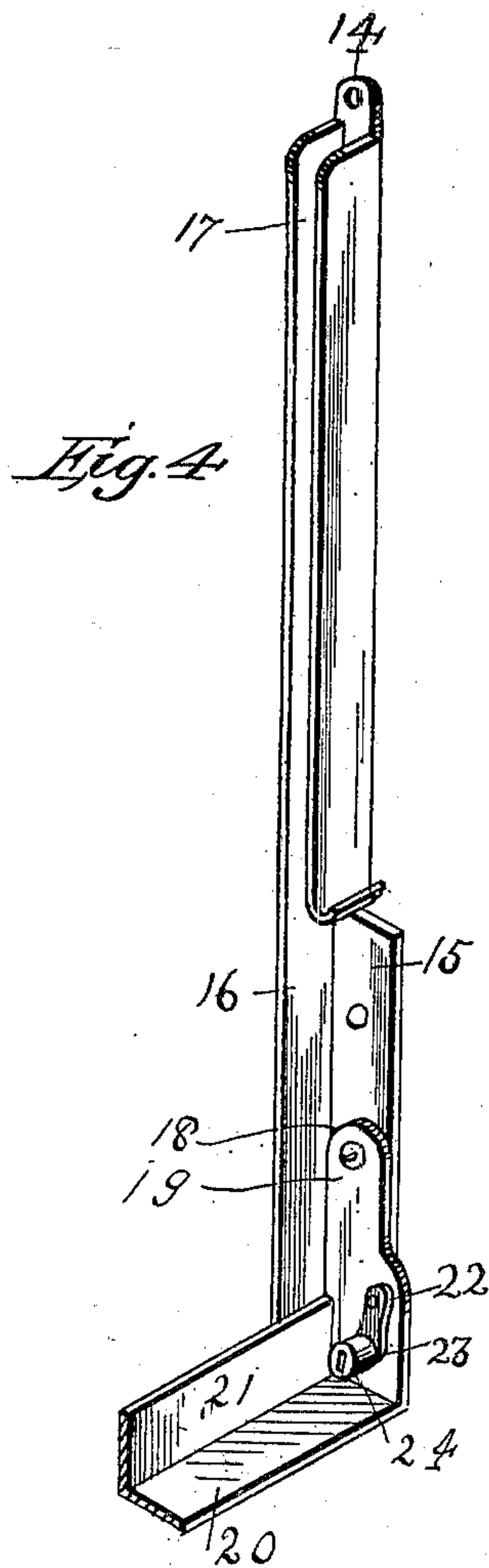
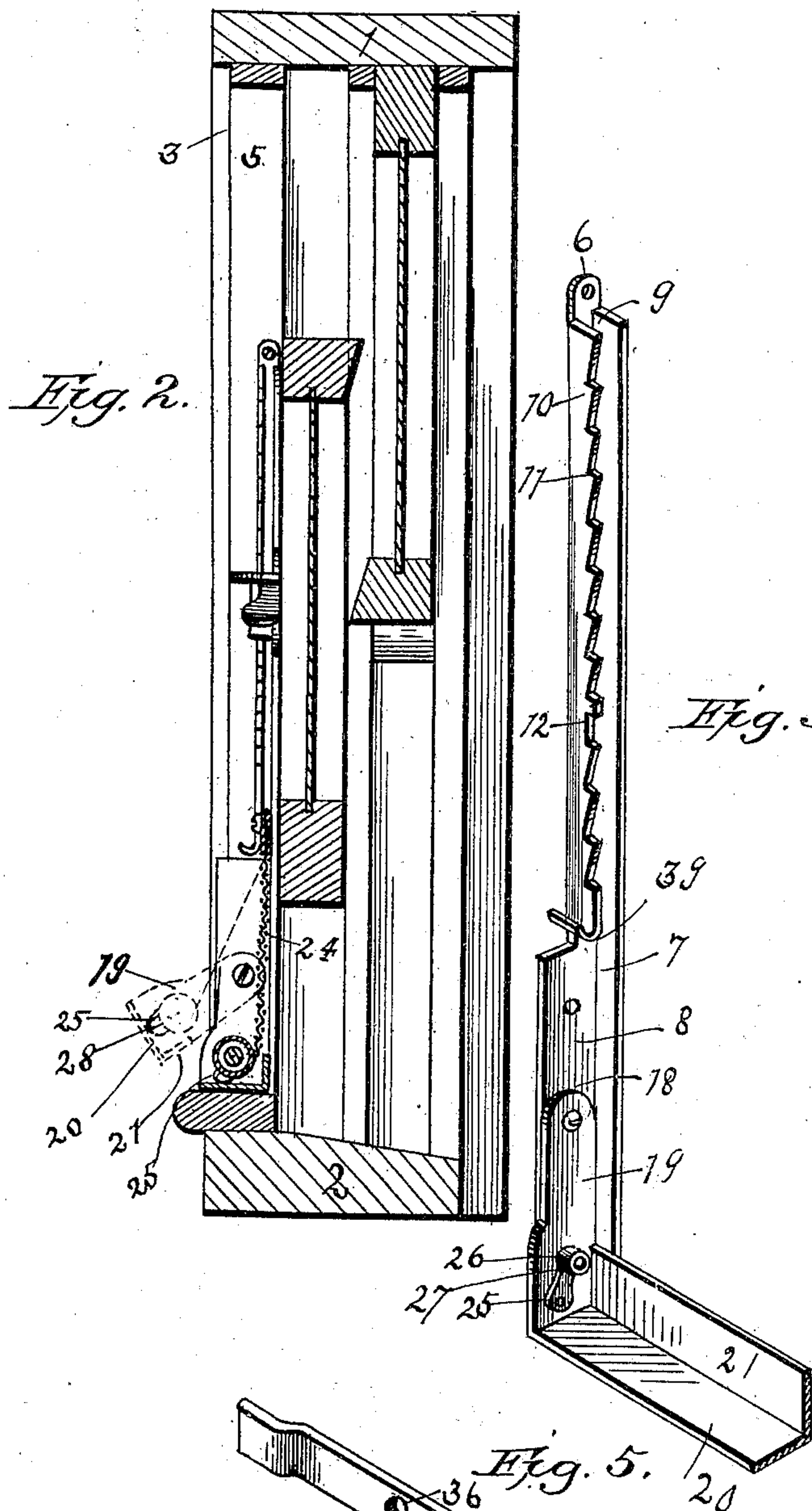
Patented Mar. 25, 1902.

M. F. HUTCHISON.
ROLLER SCREEN.

(Application filed June 1, 1901.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses
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UNITED STATES PATENT OFFICE.

MAURICE F. HUTCHISON, OF FLORIS, VIRGINIA, ASSIGNOR OF ONE-HALF
TO RUDOLPH CHARLES EICHBERG, OF ALEXANDRIA, VIRGINIA.

ROLLER-SCREEN.

SPECIFICATION forming part of Letters Patent No. 696,373, dated March 25, 1902.

Application filed June 1, 1901. Serial No. 62,769. (No model.)

To all whom it may concern:

Be it known that I, MAURICE F. HUTCHISON, a citizen of the United States, residing at Floris, in the county of Fairfax and State of Virginia, have invented certain new and useful Improvements in Roller-Screens, and particularly in Patent No. 668,735, allowed February 26, 1901, of which the following is a specification.

10 My invention is a window-screen attachment for windows. The window is known and described under the head of "automatic roller-screen attachments;" and it consists of an automatically-actuated roller having one
15 end of a screen attached thereto, with the other edge attached to the lower part of the sash by means of a housing and bearings, together with guides, springs, lock, and lock-bars, hereinafter described.

20 In the accompanying drawings, Figure 1 is a face view of a window with my invention attached, the lower sash being partly down and the screen partly wound upon the roller. Fig. 2 is a vertical cross-sectional view of Fig. 1 on the line 2. Fig. 3 is a perspective view
25 of part of the housing for the roller, a perspective view of one of the bearings, screen-guide, and locking-bar attached to the inner face of the left-hand guide-strip. Fig. 4 is a perspective view of part of the housing, a perspective view of one of the bearings and
30 of the screen-guide attached to the inner face of the right-hand guide-strip. Fig. 5 is a perspective view of the perforated bar to which the upper end of the screen is attached. Fig. 6 is a perspective view of the roller to which
35 the lower end of the screen is attached. Fig. 7 is a section view of the right-hand end of the roller, showing its internal mechanism. Fig. 8 is a cross-section of the roller, showing
40 the screen attached thereto.

My invention is described as follows:

1 represents the headpiece of the frame; 2, the sills; 3, the left-hand side piece; 4, the
45 right-hand side piece of the frame.

The frame is made in the ordinary way and I do not claim anything new in the frame itself. To the inner face of the left-hand guide-strip 5 of the frame is secured a combination
50 screen-guide, lock-bar, and housing-holder 6. This combination guide, lock-bar, and hous-

ing-holder consists of a lower angle part 7 and 8, the upper part formed into a trough 9, the front side 10 of which is notched, forming rests 11, on which the locking-pin of the
55 lock may rest to keep the sash from coming down. About midway this front side 10 is a notch 12, with its straight side up, so as to arrest the sash when it is going up at this point, because when we wish to raise the sash for
60 the purpose of only opening or closing the blinds we should not raise it, or at least it is not necessary to raise it, higher than this notch will allow it to go without arresting it. If, however, we wish to raise the sash all the
65 way up, we give a little additional pressure on the lock, which releases the lock-pin, and then we can push the sash all the way up. The part 8 of this combination screen-guide, lock-bar, and housing-holder is perforated
70 and secured to the lower part of the guide-strip 5 and acts as a facing, the purpose of which is hereinafter more fully described. To the inner face of the right-hand guide-strip 13 of the frame is secured a screen-guide
75 and housing-holder 14, the lower part of which, 15 and 16, exactly corresponds to the lower part of the combination screen-guide, lock-bar, and housing-holder 6, its upper part being formed into a trough 17. Near the
80 lower ends of these two combination-pieces 6 and 14 and to the inner faces thereof is hinged a screen-housing 18. This screen-housing consists of swinging side plates 19, one pivoted near the lower end of the combination-
85 piece 6 and the other near the lower end of the combination-piece 14, the two pivots being exactly opposite each other, and to the bottom of these two swinging side plates and at right angles to their straight edges is se-
90 cured a lower wall-plate 20, and to the rear edges of these swinging side plates 19 and to the rear edge of the bottom wall-plate 20 is a rear wall-plate 21. To the inner face of the right-hand swinging plate is pivoted a swing-
95 ing arm 22, which hangs downwardly, and extending to the left and at right angles from this plate 22 is a bearing 23, having in its end a rectangular oblong slot 24. Pivoted to the inner face of the left-hand plate 19 is
100 a swinging arm 25, which swings upwardly, and extending to the right from its inner face

is a bearing 26, having in its end a circular perforation 27.

Extending across the bottom of the window-frame is a hollow roller 28. This hollow roller 28 has extending from its left-hand end a circular pin 29 and from its right-hand end a pin 30, the end of which is a rectangular oblong in shape and is adapted to fit in the rectangular oblong opening 24 of the bearing 23. This rectangular end 30 is the termination of a rod 31, which extends some distance on the inside of the roller 28, and there is a coil-spring 32, which has one end secured to the inner wall of the hollow roller and the other to the inner end of the rod 31. This hollow roller is made of a piece of sheet metal, preferably tin, and it is made cylindrical until its two edges come together, and then they are turned out a little and then turned back a little, making a flange 33. One end of a screen 34 is slipped in between this flange and the roller, and the flange is then beaten down, so as to firmly hold this end of the screen. The other end of the screen is secured to a plate 35, provided with perforations 36, and to the front face of the lower beam of the lower sash is secured fastenings 37, over which this perforated plate fits and is thereby fastened to said beam.

It will be observed by reference to Fig. 7 that the rod 31 may move slightly longitudinally from the right to the left and from the left to the right. Now therefore when we go to put the roller in place we bring the bearing 23 out beyond the front edge of the plate 19 and put the end of the rod 31 into the opening 24. Then we press the roller to the right and then we turn the bearing 27 out a little and put the round pin 29 into the opening 27 and the roller is in place. Then we give it a few turns to tighten it and we put the plate 35, which carries the upper end of screen, over the fastenings 37 and the screen is in place, and when we push the lower sash up the ends of this plate and the two side edges of the screen work in the troughs 9 and 17, and the tension of the screen 34 keeps that part of the screen which is around the roller slightly borne out against the inner face of the plate 21, and thus as the lower wall-plate 20 is against the lower sill of the frame and the screen against the inner face of the rear plate and the edges of the screen in the troughs there is no possible way for insects of any kind to get in the room through this window. The rod 31 is so secured to the spring 32 that its tendency is to protrude from the end of the roller, so that it will constantly keep its neck 30 in the opening 24.

To the left-hand beam of the sash-frame is secured a spring-lock 38 in such position that the locking-pin will run up and down on the notches 11. At the lower end of the lock-bar 10 is an offset, leaving a shoulder 39, under which the lock-pin rests when the sash is completely down, thus forming in connection with said lock a substantial and safe night-lock.

The roller 28 and its attachments herein described may be secured to the upper part of the window-frame in the same manner as they are secured to the lower part in such position that when the upper sash is pulled down the screen will follow the sash and ventilation will be given above the same as ventilation is given below when the lower sash is pulled up.

When I wish to clean the lower part of the window, open the blinds, shut the same, or do anything of the kind, I take hold of the roller and pull it and the housing from the frame, and then I have free access to the lower part of the window-frame and the blinds.

The objects of the peculiar formation and combination of the mechanism of this window attachment are that the lower sash may be raised and held at any position from the base of the frame and that in its ascent upward it will be arrested when it is about one-half way its length up, that the roller and lower end of the screen may be swung out and back at pleasure, and that the whole screen may be taken off and put on quickly and conveniently. For instance, the roller may be swung out and detached from the bearings 23 and 27 and the upper end detached from the fastenings 37 of the lower sash, and when desired the screen and roller may be reattached as readily as it had been detached.

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

1. In a window, the combination of a spring-actuated roller; a screen having one end attached to the roller, and the other end to one of the sashes; screen-guides secured to the inner faces of the guide-strips, each of said guides having a trough and a part acting as facings to said guide-strips; a housing pivoted to the inner faces of the guide-strips, and near the lower ends of said guide-strips; swinging arms pivoted to the inner faces of the end pieces of said housing; bearings secured to said swinging arms; said roller, one end journaled in one of the bearings, and the other end secured in the other bearing; a rack-bar provided at its lower end with a shoulder, and at its middle with a stop-notch; a lock secured to the lower sash, its locking-bolt adapted to catch in the notches and the stop-notch of the rack-bar, and under the shoulder of the same; said housing and swinging arms adapted to swing in and out and carry with them the roller and lower end of the screen, substantially as shown and described and for the purposes set forth.

2. In a window, screen-guides secured to the inner faces of the guide-strips, each of said guides having a trough and a part acting as facings to said guide-strips; a housing pivoted to the inner faces, and near the lower ends of said guide-strips; swinging arms pivoted to the inner faces of the end pieces of said housing; a bearing secured to one of said swinging arms, and provided with a rectan-

gular oblong opening; a bearing secured to the other swinging arm, and provided with a circular opening; a roller, its cylindrical end journaled in the bearing having the circular opening, and the oblong rectangular end secured in the bearing having the rectangular oblong opening; a screen, one end secured to said roller, and the other to the lower rail of the lower sash, substantially as shown and described and for the purposes set forth.

3. In a window, screen-guides secured to the inner faces of the guide-strips, each of said guides having a trough and a part acting as facings to said guide-strips; a housing pivoted to the inner faces and near the lower ends of said guide-strips; an arm pivoted to the inner face of one of the end pieces of said housing, and swinging downwardly; a bearing secured to said arm and provided with an irregular opening; a swinging arm secured to the other end piece of said housing, swinging

up, and provided with a bearing having a circular opening; a hollow roller having its pivotal points, one irregular and the other cylindrical; said points fitting in the bearings respectively; a spiral spring secured in said hollow roller, and adapted to actuate said roller; a screen, one end secured to said roller and the other to the lower rail of the lower sash; a lock-bar integral with one of the guides, and having a central notch and a lower shoulder; a lock secured to the lower sash, its lock-bolt adapted to catch under the shoulder over the notches and in the central notch of the lock-bar, substantially as shown and described and for the purposes set forth.

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

MAURICE F. HUTCHISON.

Witnesses:

R. M. PARKER,
WM. S. HODGES.