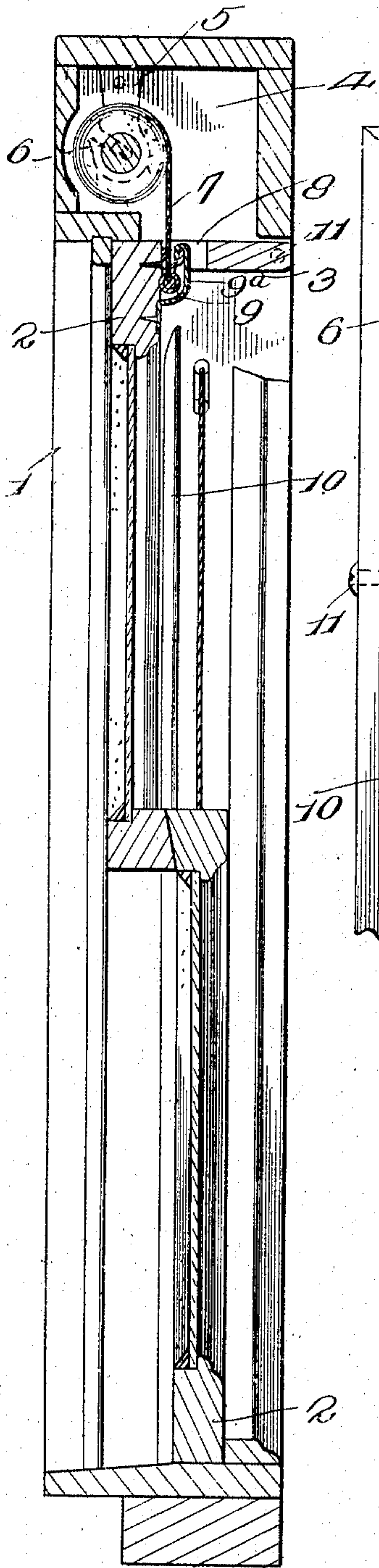


W. A. LOPER.  
WINDOW SCREEN.  
APPLICATION FILED OCT, 26, 1908.

928,526.

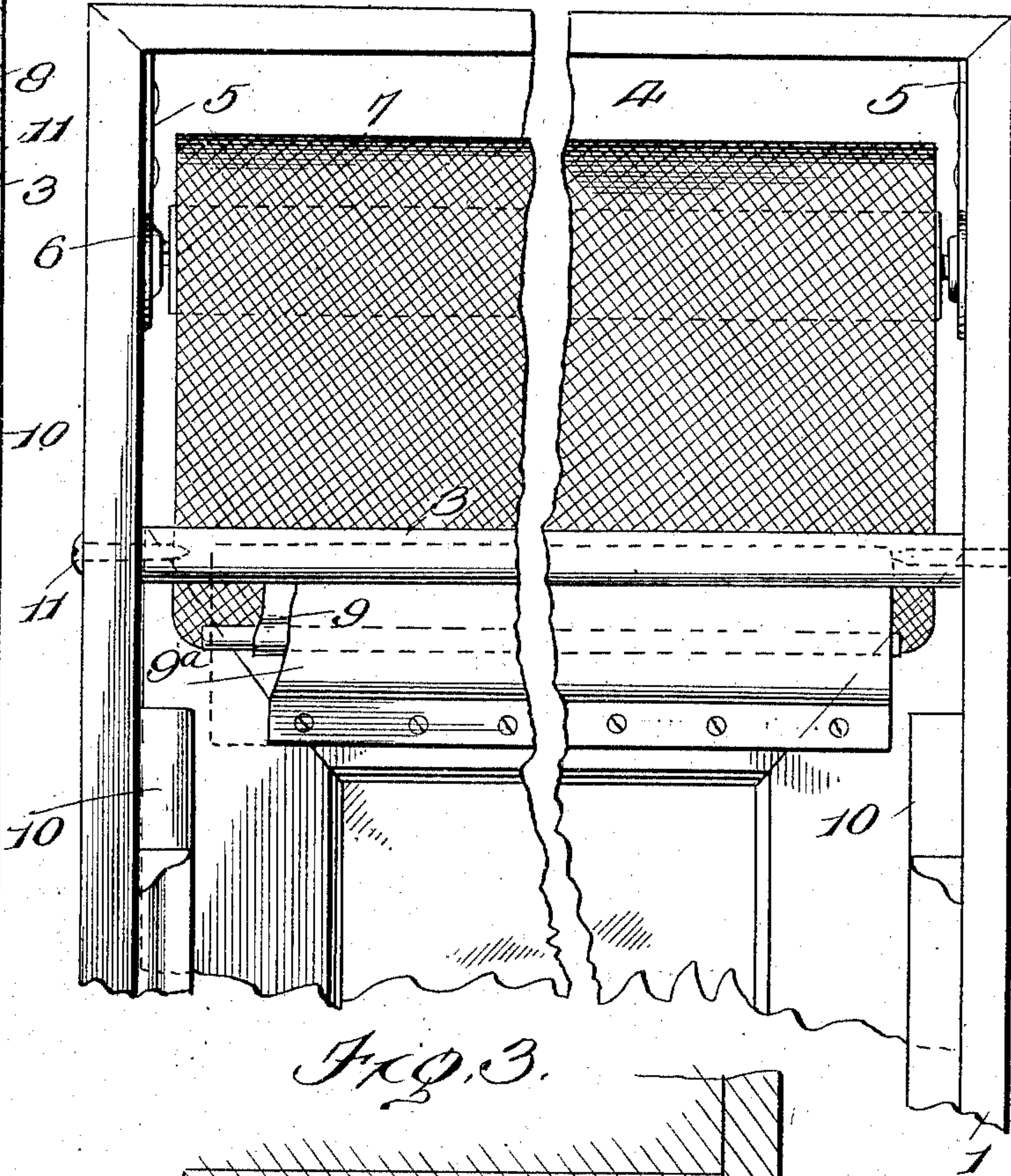
Patented July 20, 1909.



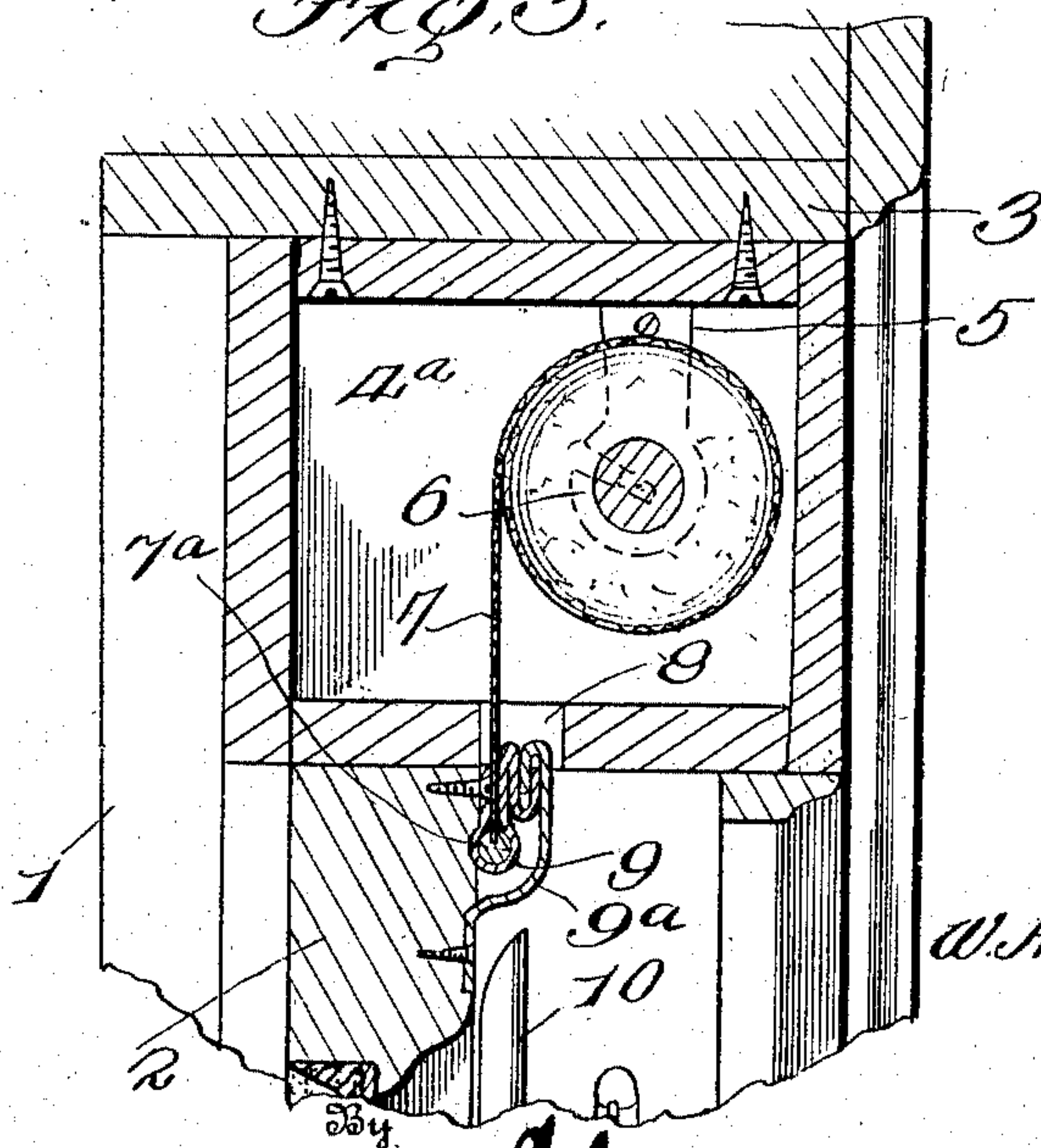
Witnesses *Fig. 1.*

*Lora H. Hardy.*  
*W. A. Loper*

*Fig. 2.*



*Fig. 3.*



Inventor  
*W. A. Loper*

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# UNITED STATES PATENT OFFICE.

WALLACE A. LOPER, OF DANSVILLE, NEW YORK.

## WINDOW-SCREEN.

No. 928,526.

Specification of Letters Patent.

Patented July 20, 1909.

Application filed October 26, 1908. Serial No. 459,537.

*To all whom it may concern:*

Be it known that I, WALLACE A. LOPER, citizen of the United States, residing at Dansville, in the county of Livingston and State of New York, have invented certain new and useful Improvements in Window-Screens, of which the following is a specification.

This invention comprehends certain new and useful improvements in window attachments, relating more particularly to an improved device for use in excluding insects or the like, and the object of the invention is a convenient and attractive window screen which is arranged to be automatically brought into use and to be returned to an inoperative position by and upon the opening and closing of the sash; which in nowise interferes with the desired manipulation of the sash, and when not in use is substantially hidden from view and entirely out of the way; which provides means for admitting air through the top of the window to effect the better ventilation of the room without the liability of admitting flies or other insects; and which possesses certain other advantages which will become at once apparent as the invention is disclosed, over the ordinary screens in general use.

With this and other objects in view that will more fully appear as the description proceeds, the invention consists in certain constructions and arrangements of the parts that I shall hereinafter fully describe, and then point out the novel features thereof in the appended claims.

For a full understanding of the invention and the merits thereof, and to acquire a knowledge of the details of construction, reference is to be had to the following description and accompanying drawing, in which:

Figure 1 is a vertical section of a window equipped with my improved screen; Fig. 2 is an enlarged elevation of the upper portion of the sash frame looking from the inside, and some of the parts being removed; and, Fig. 3 is an enlarged sectional view illustrating a modification hereinafter described.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawing by the same reference characters.

Referring to the drawing, the numeral 1 designates a window sash frame which may be of any desired or approved construction or design, except as hereinafter noted, and which is provided with upper and lower

sashes 2, both of which are preferably arranged for a vertically sliding movement therein. At its upper end, the sash frame 1 is provided above its head 3 with a transversely disposed elongated box or compartment 4 provided at its ends with suitable brackets 5 in which are journaled the gudgeons of a spring roller 6 of the usual or any approved construction. A netting 7 of wire or other meshed fabric is secured at one end to and adapted to be wound about the spring roller 6, and extends downwardly through a transverse slot 8 formed in the head 3. The projecting end of this netting 7 is designed for connection with the upper sash 2 so as to be moved therewith, and in the present instance, the said end of the netting is provided with a bead 7<sup>a</sup> extending transversely thereof, as shown, an attaching strip 9 of tin or other suitable sheet metal, being secured near one edge to the upper rail of the sash 2 and being doubled upon itself upwardly to constitute spaced members embracing the beaded end of the netting to clamp the same thereto. The outer edge portion of the attaching strip is formed with a double bend and arranged for interlocking connection with the upper end of a reinforcing strip 9<sup>a</sup> which extends over the attaching strip and is secured to the upper sash below the same.

Inasmuch as the bead and the attaching strip 9 extends entirely across the end of the netting, it will be observed that they serve to prevent any unraveling of the same, and also obviates the possibility of one strand of the netting being subjected to greater strain than the others, thereby insuring the even winding and unwinding of the netting upon and from the roller 6. The projecting portion of the netting is designed to extend transversely of the upper portion of the sash frame 1 to prevent the entrance of insects therethrough when the upper sash is open, and it will be obvious that in order to permit the netting to effectually accomplish this purpose, tight joints must be effected between the side edges of the netting and the jambs of the sash frame. The netting is therefore made of sufficient width as to be arranged to overlap the parting bead 10 that is interposed between the upper and lower sashes 2, and that in addition to its function of preventing insects from passing around the edges of the netting, also serves to guide the same during its movement. In the present instance, the portion of the head 3 be-



tween the inner edge thereof and the slot 8 is hingedly connected at its opposite ends between the jambs of the sash frame, as indicated at 11, and is thus rendered capable of being swung downwardly to afford access to the box or compartment 4 so as to permit the spring roller 6 to be readily withdrawn therefrom and thus render the parts susceptible of being readily repaired, should the device get out of order.

In the practical use of a screen constructed in accordance with my invention, the upper sash is slid vertically downwardly in the sash frame 1 so as to open the upper portion of the window, such movement of the sash automatically drawing the netting 7 through the slot 8 and unwinding such netting from the roller 6 against the tension of the spring thereof. The unwound portion of the netting is guided by the parting bead 10, and is held drawn downwardly over the open portion of the sash frame by means of the sash which is supported by counterbalancing weights or any other suitable means. Upon the raising of the sash, it will be apparent that the netting 7 will be wound about the spring roller 6 and will be drawn through the slot 8 in the head so as to be entirely out of the way and substantially hidden from view until again desired for use.

It is to be understood that I do not limit myself to the exact arrangement of parts before described, particularly as to the construction and location of the box or compartment, and in one modification illustrated in Fig. 3, the box 4<sup>a</sup> is mounted below the head 3 and secured thereto by any suitable fastening means. In this instance, it will be apparent that the invention may be applied to a window, the sash frame of which is of the ordinary form and not constructed with a box for the accommodation of the spring roller.

In applying the attaching strip 9 to the sash, the former may be secured to the latter before being doubled upon itself to constitute the spaced members, or various other mechanical expedients may be resorted to, as for example, the inner member may be extended beyond the outer member and fas-

tened to the sash, or the said members may be formed with registering apertures, the aperture of the outer member admitting of the fastening element being readily driven through the aperture of the inner member.

From the foregoing description, in connection with the accompanying drawing, it will be manifest that I have provided an improved screen which is adapted to be automatically brought into service and moved into inoperative position by and upon the movement of the sash in one direction or the other; which in nowise interferes with the proper manipulation of the sash; which embodies, to a marked degree, the characteristics of simplicity, durability and efficiency of construction and operation, and which consists of comparatively few parts that may be easily and cheaply manufactured and readily assembled.

Having thus described the invention, what I claim is:

1. The combination of a screen fabric, an attaching strip doubled upon itself to constitute spaced members adapted to embrace an edge of the fabric to clamp the same therebetween, and a reinforcing plate having interlocking connection with one member of the strip.

2. The combination with a window frame having a sliding sash, of a spring roller mounted near one end of the window frame, a screen or netting secured at one end to and wound about the spring roller, the screen being provided at its other end with a transverse bead, an attaching strip secured to the sash and doubled upon itself to constitute spaced members embracing the beaded end of the screen to clamp the same therebetween, and a reinforcing plate also secured to the sash and extending over the attaching plate and having an interlocking connection with the outer member thereof.

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

WALLACE A. LOPER. [L. s.]

Witnesses:

JOHN W. LEE,  
GEO. R. BROWN.