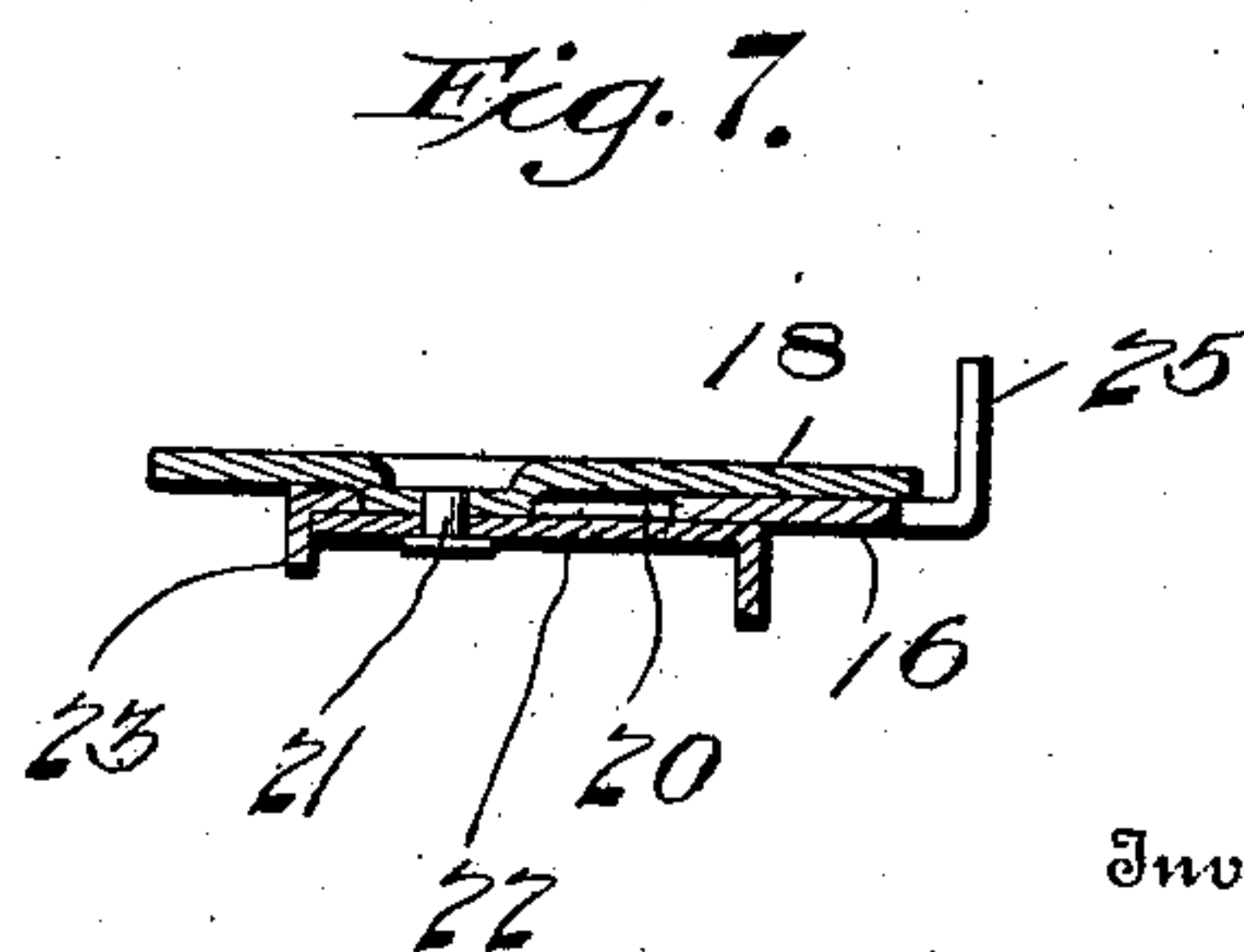
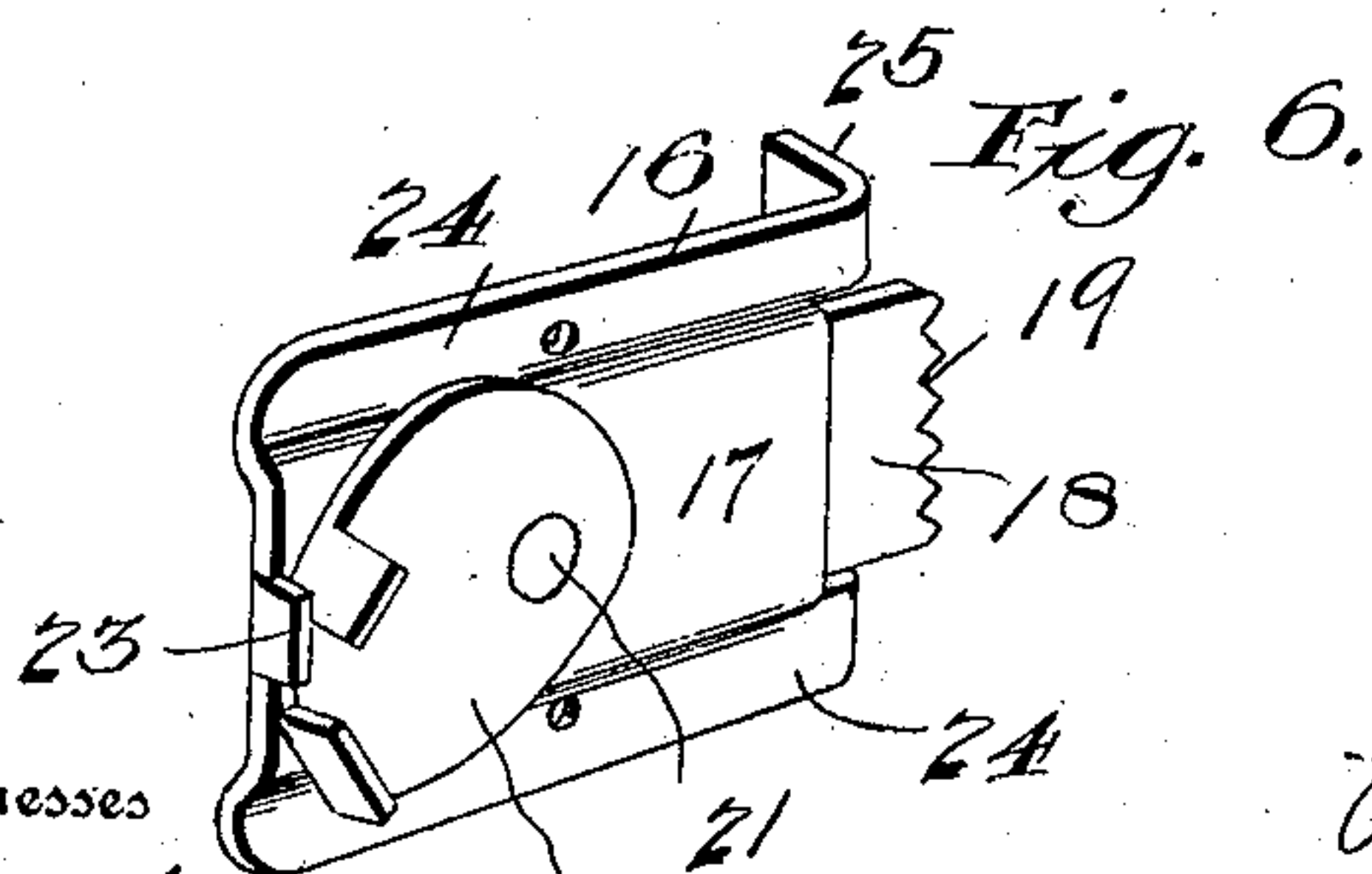
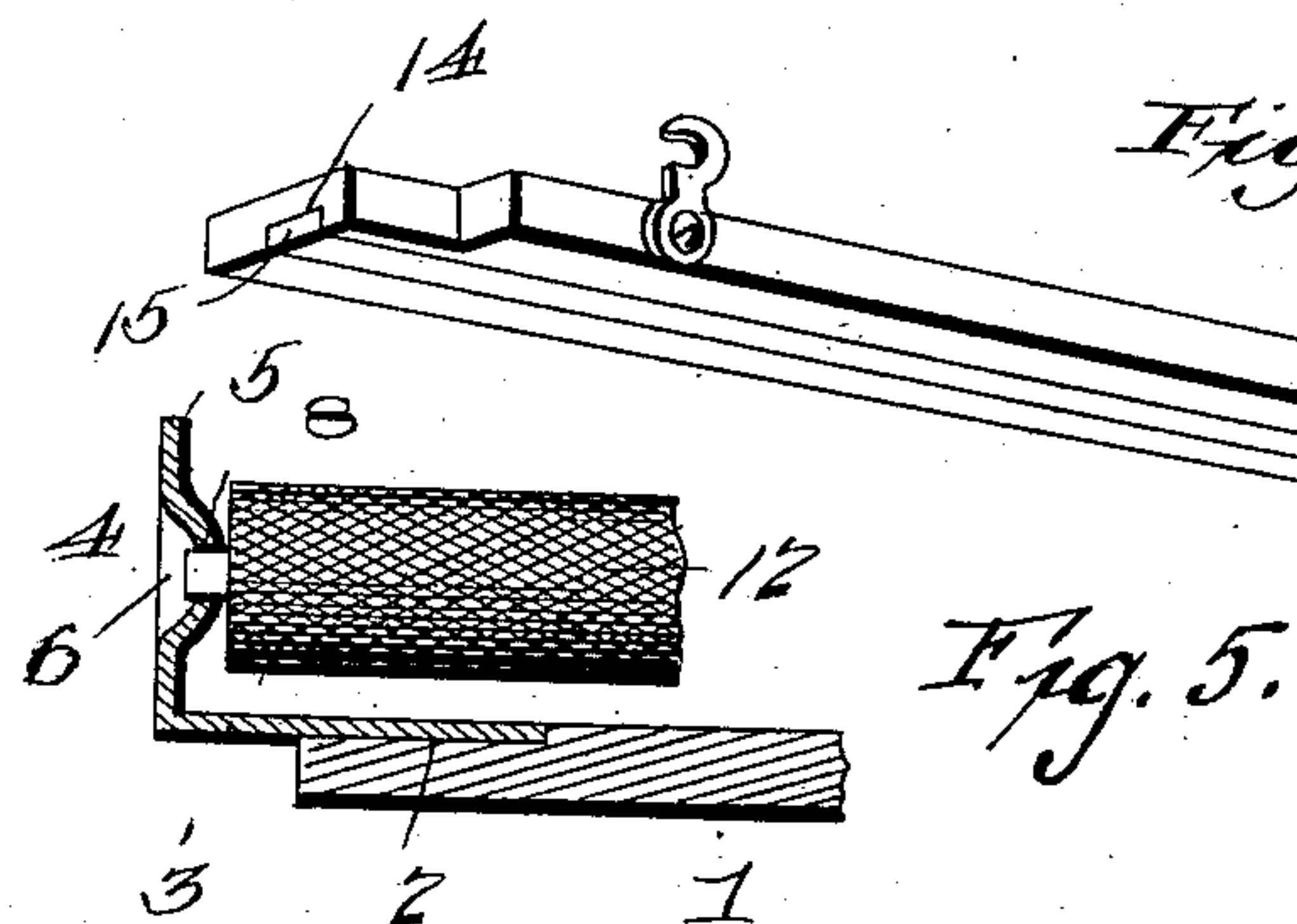
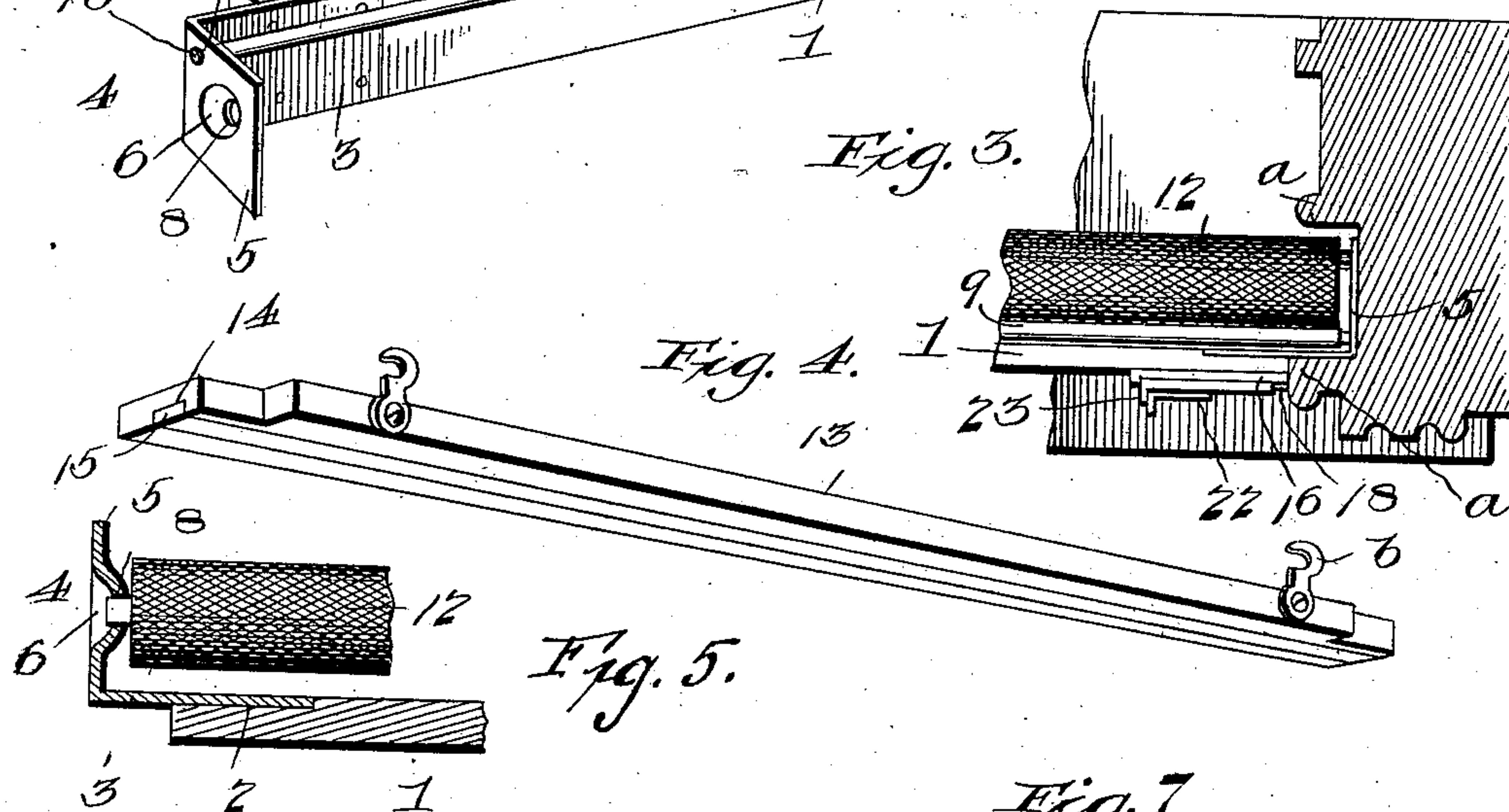
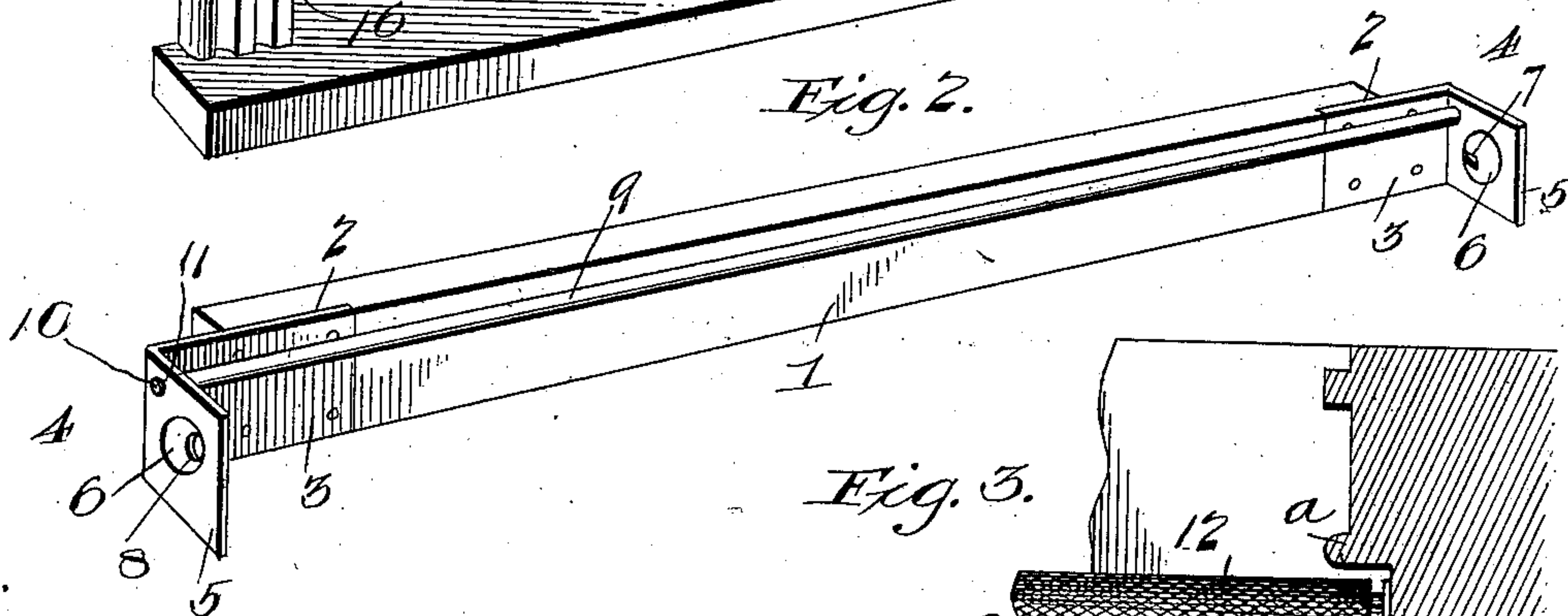
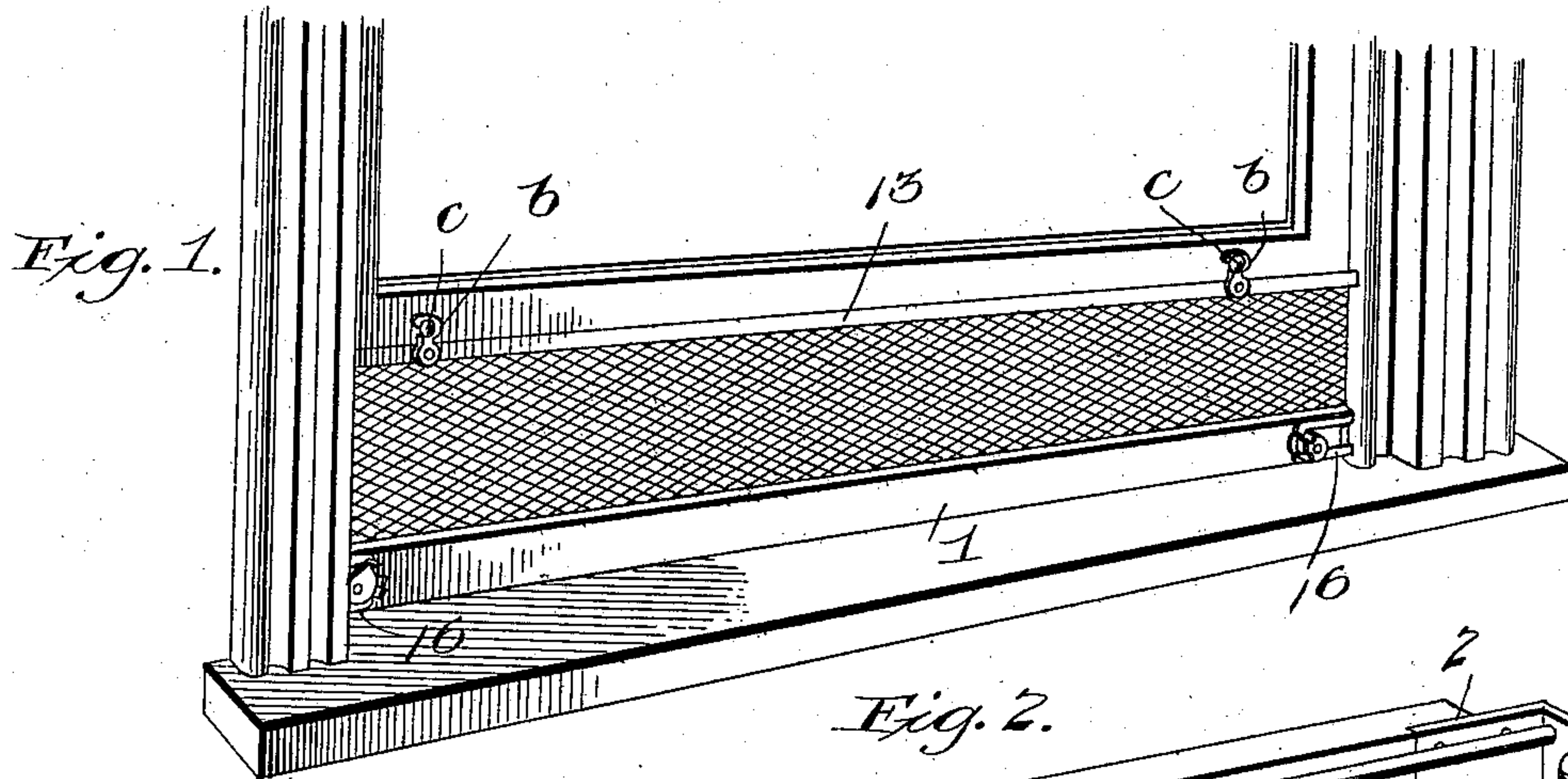


No. 860,005.

PATENTED JULY 16, 1907.

B. WORTHINGTON.
WINDOW SCREEN.

APPLICATION FILED AUG. 18, 1906.



Witnesses

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UNITED STATES PATENT OFFICE.

BRUCE WORTHINGTON, OF WINCHESTER, VIRGINIA.

WINDOW-SCREEN.

No. 860,005.

Specification of Letters Patent.

Patented July 16, 1907.

Application filed August 18, 1906. Serial No. 331,142.

To all whom it may concern:

Be it known that I, BRUCE WORTHINGTON, a citizen of the United States, residing at Winchester, in the county of Frederick and State of Virginia, have invented certain new and useful Improvements in Window-Screens, of which the following is a specification.

This invention relates to new and useful improvements in window screens, and more particularly a screen adapted to be placed within the window frame above or below the sash, and to be so connected with the sash as to automatically span the space between the bottom of top of the sash as the case may be, and the window frame, as the sash is raised or lowered.

The invention contemplates the provision of an extremely simple holder in the way of a strip having connected thereto at opposite ends two resilient end pieces provided with sockets for the reception of the shaft of the spring-roller around which a screen is rolled very much in the same manner as in the ordinary curtain or shade, a strip adapted to be attached to the sash, and means for firmly holding the strip and roller in place in the sash below the frame.

The object of the invention is to provide a device of this character that can be readily put into place in the window frame and readily attached in operative position to the sash, and to provide a construction whereby the roller may be readily inserted in the holder and removed therefrom, and to provide such construction of the end pieces as to permit them to fit snugly against the flattened surfaces of the window sash, and at the same time not interfere in any way with the easy rotation of the screen roller when mounted in the holder.

A further object is to provide a convenient means, in the way of a rotatable rod for guiding the screen and keeping the same smooth throughout its movements.

In the drawings illustrating the invention: Figure 1 is a perspective view of the window frame showing my improved device attached thereto. Fig. 2 is a perspective view of the holder with the spring roller removed. Fig. 3, is a section of a portion of the window frame, taken a little above a holder in place, showing the manner in which the end pieces engage the sides of the frame, and the manner in which the cam-devices hold the holder in place in the window frame. In this view the strip which is connected with the window sash is removed for clearness of illustration. Fig. 4, is a perspective view of the strip adapted to be attached to the window sash. Fig. 5, is a vertical section of one of the resilient end plates, showing the formation thereof which adapts it to receive the ends of the roller-shaft, in such manner as to permit the easy rotation of the shaft when the holder is in place in the window frame. Fig. 6, is a perspective view of a cam-device which I employ to secure the holder

in place in the window sash. Fig. 7, is a longitudinal section through this device.

Referring to the drawings: The numeral 1 designates a strip preferably of wood. In carrying out my invention I rabbet this strip at opposite ends as indicated at 2, for the reception of one side 3, of the resilient end pieces 4, which end pieces in addition to the part 3 comprise resilient portions 5, at right angles to the pieces 3. Each piece 5 is provided with a central concavo-convex depression 6, one of which is provided with a squared opening 7, for the reception of the flattened end of the roller shaft, and the other is provided with a round opening 8, for the reception of the round end of the shaft. These ends are resilient, that is to say they are formed of metal possessing the property of returning to their normal position after having been sprung in one way or the other. By the use of the resilient ends, I am enabled to readily remove and insert the roller, thus avoiding the necessity of supplying a new holder should the roller get out of order, and for the purpose of removing the roller to tension the spring therein when this becomes necessary.

Close to the peripheral edge of the strip 1, I arrange a rod 9 which is formed with ends 10 of smaller diameter than the rest of the rod, and these reduced portions pass into and turn in apertures 11, made in the pieces 5, and have such play therein as not to provide a lock that would interfere with the resiliency of the end pieces.

The numeral 12 designates a spring-roller of ordinary construction, having a shaft provided with a flattened end and a round end. This roller has a screen thereon preferably formed of linen mesh or some other strong flexible material, which when the screen is in place in the holder, passes between the edge of the strip 1, and the rod 9.

The numeral 13 designates the strip adapted to be attached to the bottom of the window sash. This is provided with a longitudinal groove 14 for the reception of a tongue 15, which fits into the groove upon the edge of the screen. The tongue is held in place by brads or other means adapted to firmly hold it in place upon the screen. The cam-devices for securing the holder firmly in place in the window frame are of special construction and will be described in detail.

The numeral 16 designates a plate formed with a central depression or guide-way 17, in which slides a plate 18 provided at its outer end with spurs or teeth 19. The plate 16 is slotted as indicated at 20 and a stud 21 is mounted upon the plate 18, and extends through this slot where it is connected with a cam 22, so shaped that when the plate 18 is withdrawn, its edge will abut against an ear 23 integral with the plate 16. The plate 16 is further formed with flanges 24 by which it may be conveniently attached to the face of the

strip 1, and is also provided with downturned ears 25 which embrace the ends of the strip 1. The cam 22 has formed thereon a laterally extending thumb piece by which it may be conveniently gripped and manipulated to cause the spurs to be inserted in the window frame. To withdraw the teeth of the plate 18 it is only necessary to rock the cam forward and push the same together with the plate 18 toward the opposite end of the strip 1, as it will be noted that the cam and the plate upon which it is mounted, move together.

In operation the strip is placed in the window frame below the sash, with the resilient ends of the holder flush against the sides of the sash between the guiding strips *a* of the frame. This, as shown in Fig. 3, will bring the cam-devices in position to have the teeth on the plate 18 engage the guiding strip of the sash. The holder is locked firmly in place by the manipulation of the cams, when the strip 13 is secured to the lower edge of the sash. As a means for securing this strip I preferably provide hooks *b* which engage pins or buttons *c* upon the sash. When this connection is made the window sash is raised or lowered to any desired height, when it is obvious the screen will span the space between the holder and the sash.

While I have shown a cam-device mounted on each end of the strip, I do not desire to be understood as limiting myself to this arrangement, as obviously one end of the strip may be provided with spurs which are pressed into the sash, and the other end provided with the cam, nor do I desire to be understood as limiting myself to the use of two resilient ends of the holder, as it is obvious that the purposes of my invention would be accomplished if one end were stationary and the other sufficiently resilient to permit of the required movement of the end to remove and insert the roller-shaft.

Claims.

1. A device of the character described comprising a strip having resilient metallic end pieces at right angles thereto, said end pieces being provided with inwardly extending depressions having sockets therein for the reception of the ends of a spring roller shaft, whereby when

said resilient ends are flush against the window frame the easy rotation of the roller will not be interfered with, a rod loosely mounted in the end pieces and extending the entire length of the holder, whereby a screen may be guided in its movements, substantially as and for the purposes set forth.

2. A device of the character described comprising a strip having resilient metallic end pieces at right angles thereto, said end pieces being provided with inwardly extending depressions having sockets therein for the reception of the ends of the roller-shaft whereby when said resilient ends are flush against the window frame the easy rotation of the roller will not be interfered with, a rod loosely mounted in the end pieces and extending the entire length of the holder, a spring-roller having bearings in the sockets in the end pieces, a screen upon said roller and passing between the upper edge of the strip and the loosely mounted rod, whereby the screen is guided in its movements, and means for attaching the screen, to the window sash, substantially as and for the purpose set forth.

3. A device of the character described comprising a strip adapted to fit in the window frame, and having resilient metallic end pieces at right angles thereto each provided with a concavo-convex depression having a socket therein for the reception of the ends of the shaft of the spring-roller, a plate attached to the end of the strip, a sliding plate carried by the first mentioned plate and having teeth thereon to engage the window frame, a cam mounted on the sliding plate adapted when operated to force the teeth into locked engagement with the window frame, substantially as described.

4. A device of the character described comprising a strip adapted to fit in the window frame, said strip having a resilient metallic end at right angles thereto and provided with an inwardly extending depression having a socket therein for one end of the shaft of a spring roller, and another end attached to said strip at right angles thereof, and provided with an inwardly extending depression having a socket therein for the reception of the other end of the shaft of a spring roller, a rod loosely mounted in the end pieces and extending the entire length of the strip and adapted to guide a screen in its movements, substantially as described.

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

BRUCE WORTHINGTON.

Witnesses:

TITIAN W. JOHNSON,
FRANCIS S. MAGUIRE.