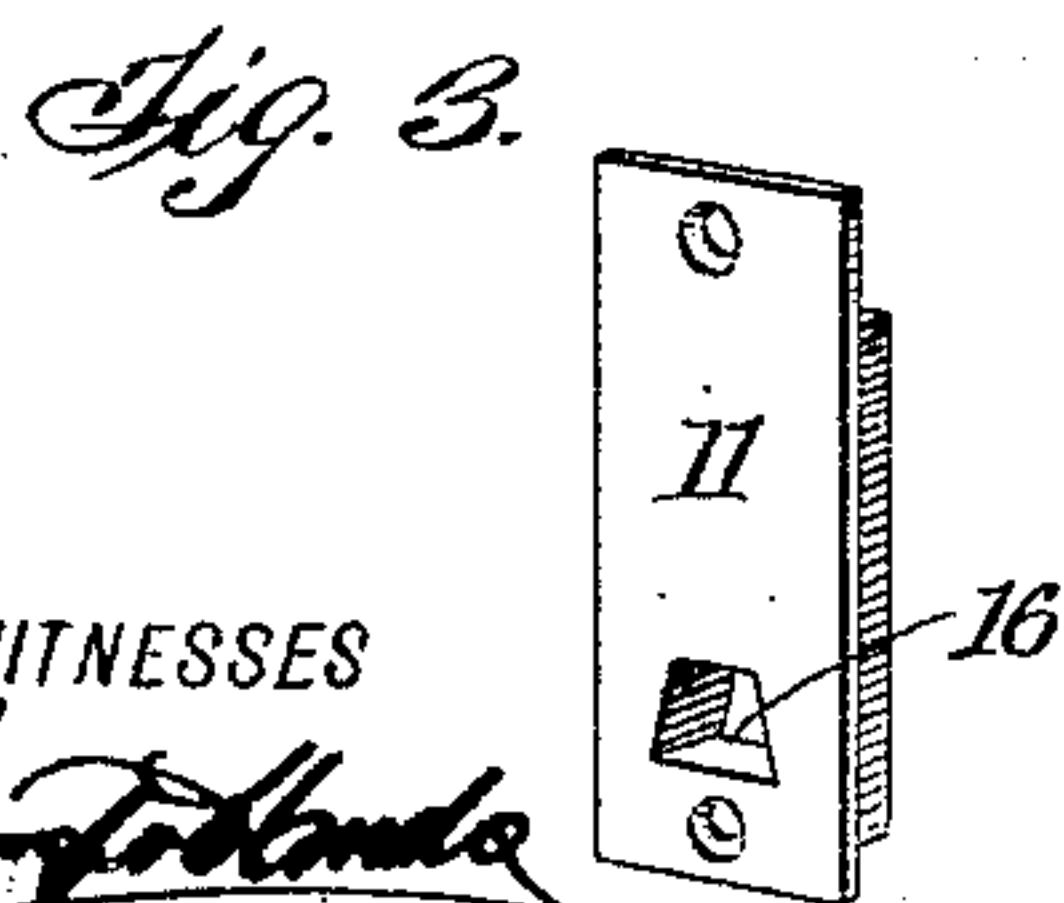
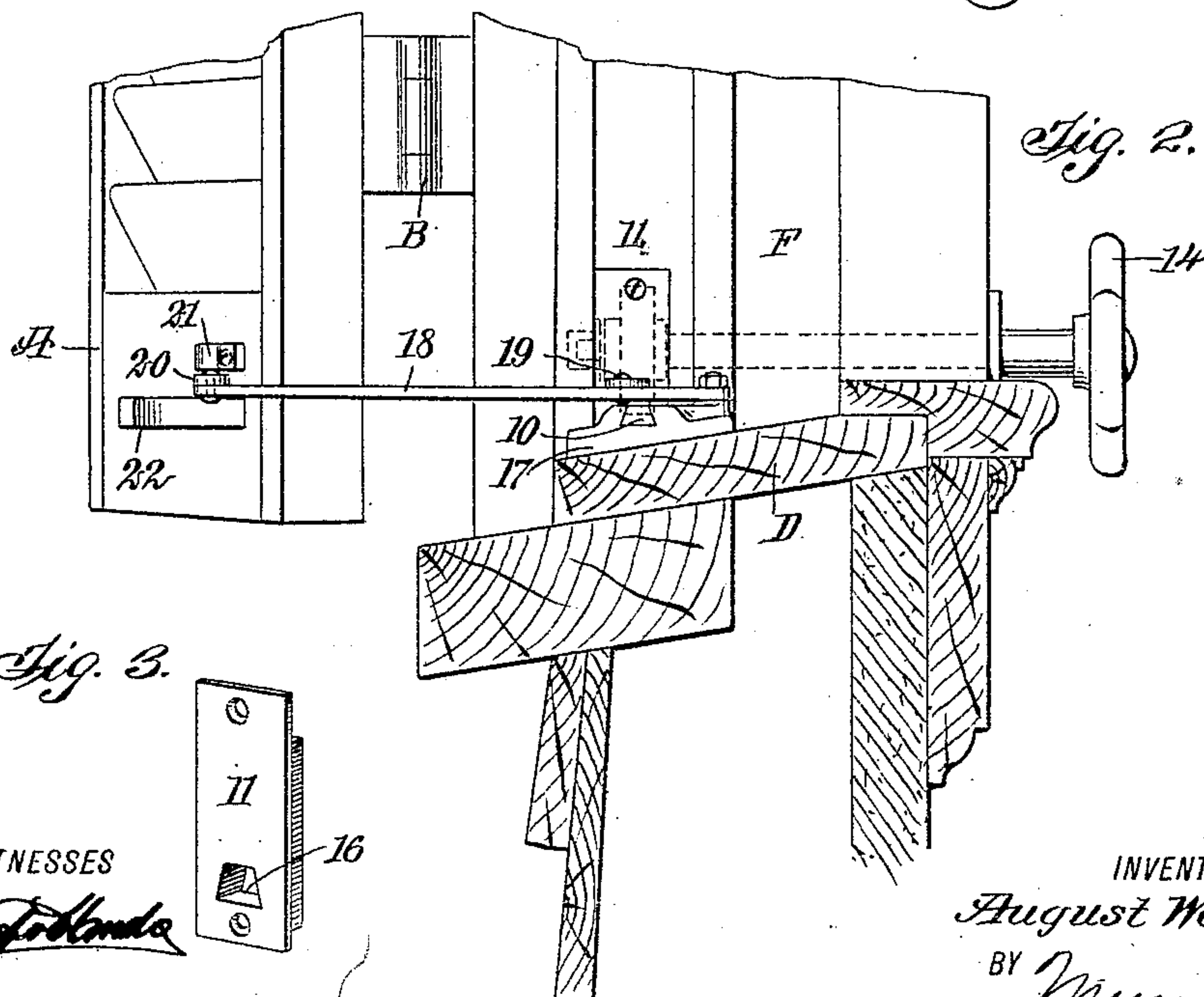
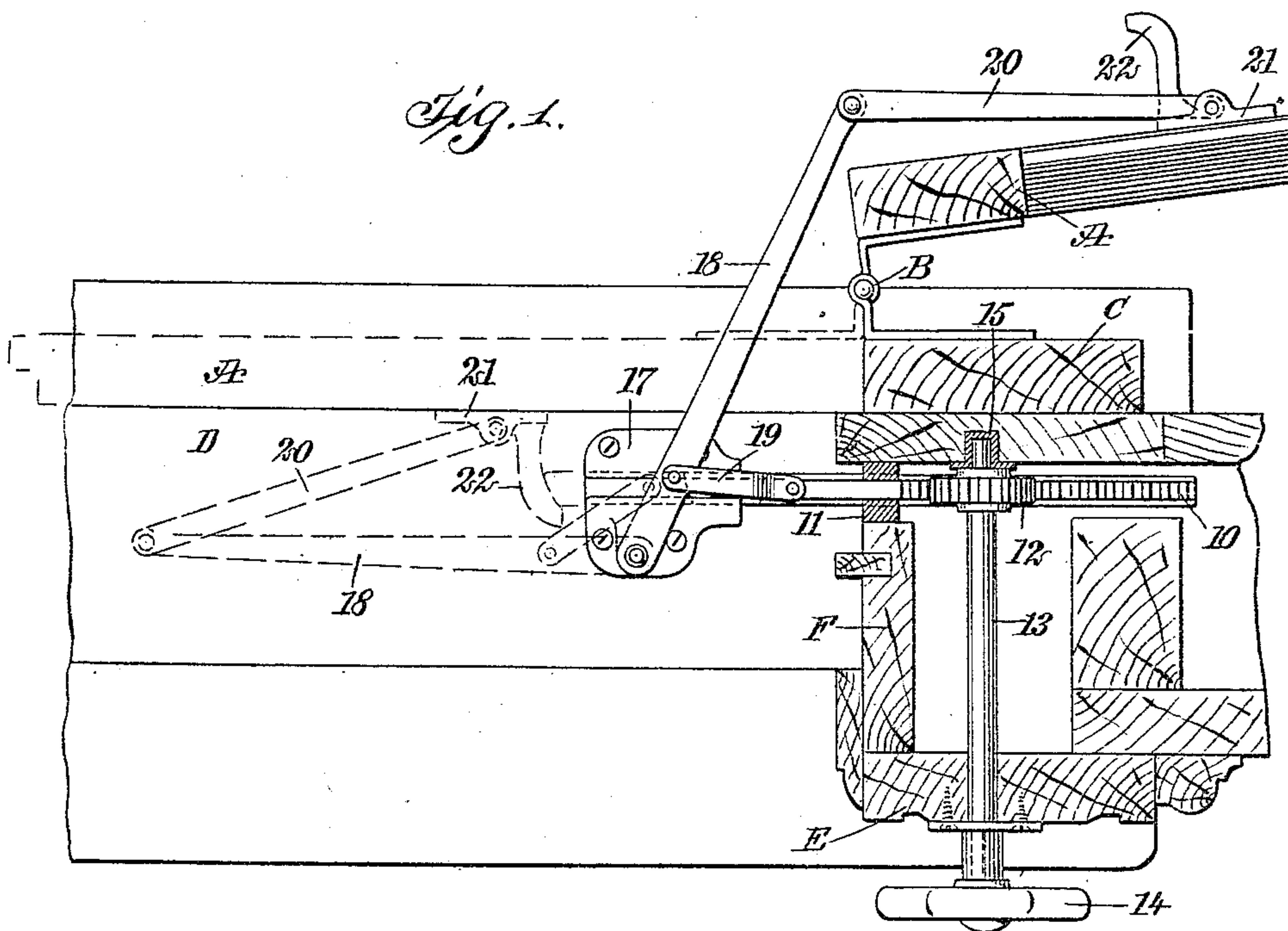


A. WEBER.
SHUTTER OPERATOR.
APPLICATION FILED NOV. 20, 1908.

910,248.

Patented Jan. 19, 1909.



WITNESSES
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AUGUST WEBER, OF LONG BRANCH, NEW JERSEY.

SHUTTER-OPERATOR.

No. 910,248.

Specification of Letters Patent.

Patented Jan. 19, 1909.

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To all whom it may concern:

Be it known that I, AUGUST WEBER, a citizen of the United States, and a resident of Long Branch, in the county of Monmouth and State of New Jersey, have invented a new and Improved Shutter-Operator, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in operating mechanism for window shutters, and more particularly to that type of mechanism which permits the shutter to be opened or closed from the interior, without necessitating the opening of the window.

The object of my invention is to provide an operating mechanism in which a rack bar and a pinion are so connected to the shutter by levers that the minimum energy need be exerted and the shutter very easily operated, without undue strain on any of the parts of the mechanism.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures, and in which—

Figure 1 is a transverse section through a portion of a window casing and a shutter, showing my improved operating mechanism in top plan; Fig. 2 is a vertical section through the window sill, showing portions of my mechanism in side elevation; and Fig. 3 is a perspective view of a guide plate employed for the rack bar.

My improved operating mechanism is adapted for use in connection with any form of hinged window shutter or with any form of window casing. The details of these parts, which are illustrated in the accompanying drawings, form no portion of my invention.

My device is illustrated in connection with a shutter A, secured by a hinge B to the window frame casing C, and a portion of the mechanism is connected to the window sill D. A portion of the operating mechanism is concealed within the window casing and the operating handle of the device extends through the inside frame E of the casing.

The details of my improved device may be varied without departing from the spirit of my invention, but in order to facilitate a clearer understanding of the invention, I have illustrated a preferred form in which there is employed a rack bar 10 movable

longitudinally through a guide plate 11 in the stile F of the window frame, and in a direction parallel to the plane of the window frame and the plane of the shutter when the latter is in closed position. The rack bar is of greater width at its lower face than at its upper face, the side edges of the rack bar being inclined. The teeth of the rack bar are in the upper face, and disposed within the casing and intermeshing with these teeth is a pinion 12 rotating in a substantially vertical plane. The pinion is carried by a rotatable shaft or rod 13 extending through the inner frame E of the casing to the interior of the building and terminating in a handle or hand wheel 14. The opposite end of the shaft is journaled in a pocket or recess 15 within the window casing, so that by rotating the hand wheel 14, the rack bar may be moved longitudinally. The guide plate 11 is secured in an aperture in the stile F, and its outer surface is preferably flush with the outer surface of the stile. The guide plate is provided with an aperture 16 of substantially the same form as a cross section of the rack bar, and due to the inclined sides of the rack bar the latter is prevented from rising and the teeth are prevented from engaging with the upper side of the aperture.

Rigidly secured to the window sill D, is a plate 17, having a groove in its upper surface for receiving and guiding the rack bar 10. The sides of the groove are inclined, so that the outer end of the rack bar is also prevented from moving upwardly. A lever 18 is pivoted to the plate 17 adjacent the edge thereof toward the window, so that the lever in extending outwardly crosses the groove in the plate. The lever is connected to the rack bar by a link 19, one end of which is pivoted to the upper surface of the rack bar and the other end of which is pivoted to the upper surface of the lever intermediate the ends of the latter. The lever extends outwardly to a point beyond the outer surface of the shutter and is there pivoted to one end of a link 20, the opposite end of which is pivoted to a plate 21 secured to the outer surface of the shutter at a distance from the hinge B. The plate 21 also carries an outwardly-extending catch or hook 22 rigid therewith, and this hook is so positioned that when the shutter is in closed position, as shown in dotted lines in Fig. 1, said hook lies in the path of the rack bar 10 and en-

gages with the end of said rack bar to additionally retain the shutter in closed position.

It is thought that the operation of my improved device will be evident from the above description, but it may be briefly stated as follows: With the parts as shown in solid lines in Fig. 1, a clockwise rotation of the hand-wheel 14 will force the rack bar 10 outwardly, and through the action of the link 19, the lever will be swung toward the left. This causes the link 20 to swing the shutter upon its hinge B, and the movement of the other parts is continued until the shutter is closed and the parts lie in the position indicated in dotted lines in Fig. 1. At this time the hook 22 engages with the end of the rack bar 10 in such a manner that it resists an opening of the shutter, save by the rotation of the hand wheel and the withdrawal of the rack bar.

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

1. A shutter-operator having a lever pivoted to the window sill, a link connecting the outer end of said lever and a surface of the shutter, a longitudinally-movable rack bar extending through the window casing, means connecting said rack bar and said lever, and a pinion for operating said rack bar.

2. In combination with a window casing having a window sill and a shutter, of a lever pivoted adjacent the window sill, a link having one end connected to the outer end of said lever and having the opposite end connected to said shutter, a rack bar movable longitudinally through said casing in a direction parallel to the plane of the shutter when the latter is in its closed position, a link connecting said rack bar and said lever, a pinion within the window casing and in operative engagement with said rack bar, and a handle for rotating said pinion.

3. In combination with a shutter and a window casing having a window sill, of a plate secured to said window sill, a rack bar having a portion thereof within said window casing and having a portion thereof guided and supported by said plate, a lever pivoted to said plate, a link connecting said lever and the shutter, a link connecting said lever and said rack bar, and means for moving said rack bar longitudinally.

4. In combination with a shutter and a window casing having a window sill, of a plate secured to said window sill, a rack bar having a portion thereof within said window casing and having a portion thereof guided and supported by said plate, a lever pivoted to said plate, a link connecting said lever and the shutter, a link connecting said lever and said rack bar, means for moving said rack bar longitudinally, and a hook or catch carried by said shutter and adapted for engagement with said rack bar for retaining the shutter in its closed position.

5. The combination with a shutter and a window casing having a window sill, of a rack bar having teeth in the upper surface thereof and having its lower surface wider than said upper surface, said rack bar being longitudinally movable through the window casing, a guide plate having an aperture therein corresponding in form to the cross section of said rack bar, a pinion within the casing and in engagement with said rack bar, means for operating said pinion, and means connecting the outer end of said rack bar to the shutter for operating the latter.

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

AUGUST WEBER.

Witnesses:

J. A. BURNS,
PHILIP L. COHEN.