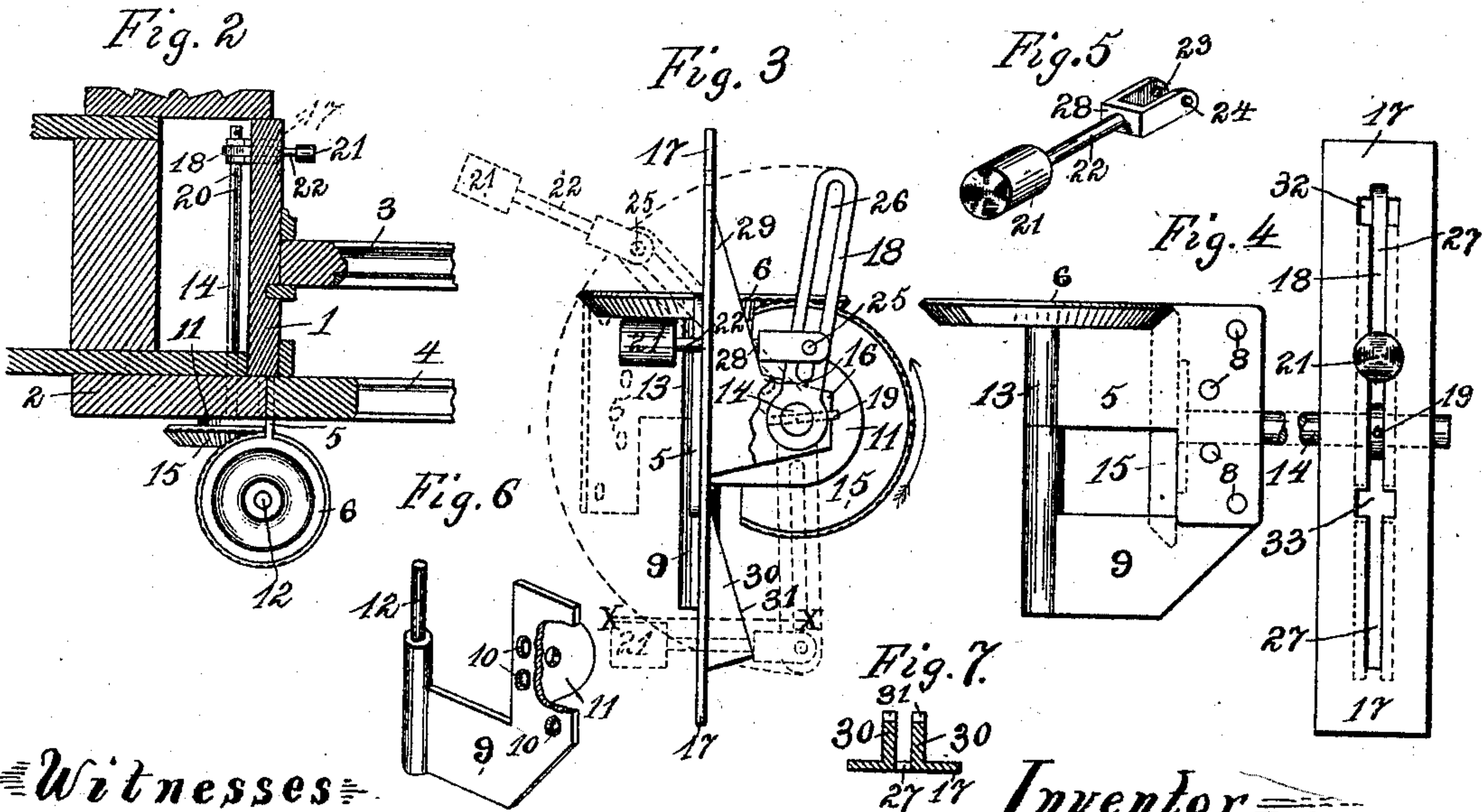
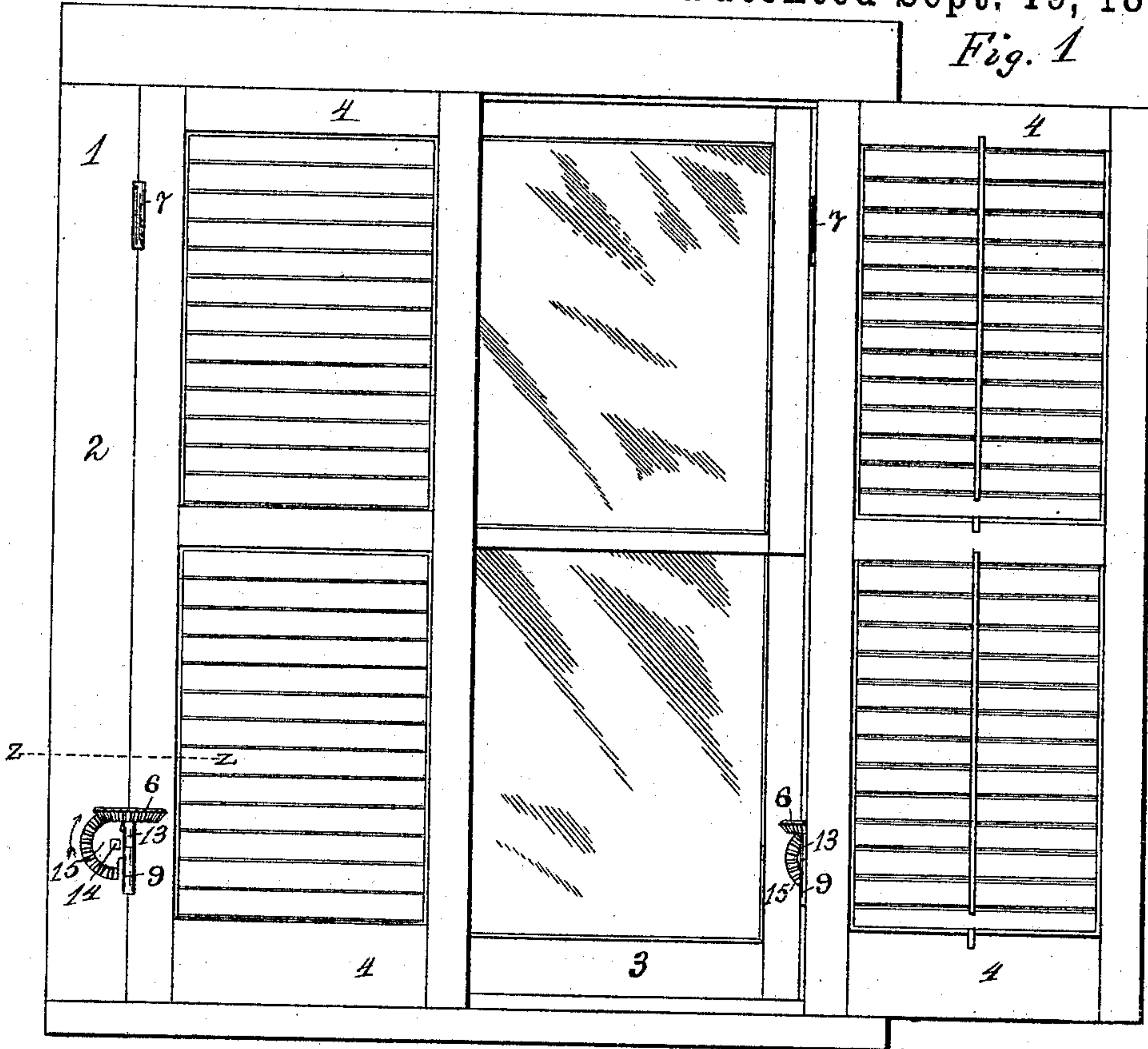


(No Model.)

C. F. ZIEGLER.
SHUTTER WORKER.

No. 505,283.

Patented Sept. 19, 1893.



Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES F. ZIEGLER, OF ST. LOUIS, MISSOURI.

SHUTTER-WORKER.

SPECIFICATION forming part of Letters Patent No. 505,283, dated September 19, 1893.

Application filed May 29, 1893. Serial No. 475,893. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. ZIEGLER, of the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in a Combined Shutter Fastener and Operator, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

10 My invention relates to an improved shutter fastener and operator, and consists in the novel construction, combination and arrangement of parts hereinafter specified and pointed out in the claims.

15 The object of my invention is to provide an improved fastener and operator for outside blinds or shutters, whereby the same may be fastened and operated from the interior of the room, and it shall be efficient in operation and of reasonable cost.

20 In the drawings: Figure 1 is a side elevation of a window showing two blinds and the invention applied to both blinds. Fig. 2 is a sectional plan view enlarged on the line Z—Z of Fig. 1. Fig. 3 is a side elevation of the parts detached from the window, looking from the right hand of Fig. 4. Fig. 4 is a front elevation of the same, with the operating shaft broken. Fig. 5 is a detail view in perspective of the operating handle detached. Fig. 6 is a detail view in perspective of the lower leaf of one of the blind-hinges, with parts broken away. Fig. 7 is a sectional plan view on line X—X of Fig. 3.

35 1 indicates the window-frame, 2 the outside casing thereof, 3 the sash and 4 the blinds or shutters, all of which may have the usual construction.

40 My improved fastener and operator is to be made either right or left hand, so as to be applied to blinds or shutters upon either the right or left hand of a window. I will limit my description to the same as seen at the left hand of Fig. 1.

45 5 indicates the movable leaf of the blind hinge. It is the upper leaf, and has secured to or cast upon its upper edge exterior of the blind or shutter, a bevel-gear wheel 6, so that when said gear wheel is turned or revolved the hinge-leaf will also be moved or revolved a corresponding distance. I will also limit my description to the hinges which are lo-

cated adjacent the lower ends of the blinds or shutters, as the upper hinges 7 may be of any ordinary construction now in common use. This upper leaf 5 is secured to the edge of the blind which is adjacent the window-casing 2, by means of suitable screws or other fastenings passed through holes or apertures 8 formed in said leaf adjacent its inner end, and engaging the adjacent edge of the blind, so that said leaf stands at a right angle to the outer surface of the blind.

It will be observed that the leaves of the operating hinge of my device are of extra length.

9 indicates the lower or fixed leaf, which has its inner end provided with holes or apertures 10 and secured to the edge of the casing 2 at a point opposite the upper leaf. A brace-arm 11 extends from one side of the fixed leaf 9 at a right angle thereto, and is secured to the front surface of the casing by means of a screw or other fastening passed through an aperture 10 formed in said arm. The outer free end of the fixed leaf 9 is provided with a vertical pintle 12 having a free upper end, and this pintle is engaged by an eye 13 on the outer end of the upper leaf 5, so that said upper leaf may swing upon said pintle during operation.

14 indicates a horizontal rock-shaft which extends through a passage in the window frame and the outer casing 2 so that its outer end projects a distance beyond said casing, and a toothed segment 15 is fixed upon this projecting end of this shaft, so as to rock therewith. The toothed-segment 15 engages the gear-wheel 6, to operate the blinds or shutters in the manner hereinafter stated. The inner portion of the shaft 14 is mounted in suitable bearings formed in ears 16 projecting from the inner face of a slotted face-plate 17, which face-plate is fixed upon the side of the window-frame, or mortised into the same so as to lie flush therewith at a point adjacent the sash 3 within the room.

18 indicates an arm having its inner end fixed upon the shaft 14 by means of a pin 19 engaging aligned apertures in said arm and said shaft, so that the free end of said arm may be pulled inward and thrown around as indicated by dotted lines in Fig. 3. The shaft 14 is provided with a series of apertures lo-

cated adjacent its inner end, and any one of which is adapted to be engaged by the pin 19, so as to secure the arm 18 upon said shaft at different distances from the outer end thereof. This construction enables the device to be used with window-frames of different sizes, applied to walls of different thicknesses. For instance, if the wall of the house is thick, the arm 18 is to be applied to the shaft 14 by causing the pin 19 to engage an aperture 20 in said shaft at a point closely adjacent the inner end of said shaft, while if the wall is thinner, said pin should be made to engage an aperture 20 nearer the outer end of said shaft, the window-frame of course corresponding to the thickness of the adjacent wall of the house.

21 indicates an operating knob or handle which is provided with a shank 22 having a fork or bifurcation 23. The knob 21 is located upon the end of the shank 22 opposite the fork 23. The fork 23 is provided with aligned perforations 24 which are engaged by a pin 25, and this pin loosely engages and slides in a longitudinal slot 26 formed in the arm 18, so that the knob or handle 21 is thereby loosely connected to said arm. The face plate 17 is provided with a vertical slot 27, which is engaged by the shank 22 of the operating knob or handle. Movement of the knob 21 in one direction is limited by contact of said knob with the adjacent surface of the face plate, while the knob and shank 22 have their movement in an opposite direction limited by contact of a shoulder 28 on the fork 23 with the adjacent inclined edges 29 of the ears 16, except under the circumstances hereinafter mentioned.

Immediately beneath the ears 16 are a pair of ears 30 which project upon the inner face of the face-plate 17 in alignment with said ears 16, and have inclines 31 upon their upper edges, one of said ears 30 being located on either side of the slot 27 in said face plate. The slot 27 in the face plate 17 is provided with a lateral enlargement 32 at a point adjacent its upper end, and with another lateral enlargement 33 at a point below the plane in which the shaft 14 is located, for a purpose hereinafter mentioned.

The operation is as follows: Premising that the parts are in the relative positions in which they are shown at the left hand of Fig. 1, and in Figs. 2, 3, and 4, with the blind 4 closed, all that is necessary to unlock and open the blind is to lift the knob 21, the shank 22 and the fork 23 upward, said shank sliding in the slot 27 in the face plate 17, and the fork 23 sliding upon the slotted arm 18 carried by the shaft 14, until the pin 25 of said fork is at or adjacent the upper end of the slot 26 in said arm. Previous to this, with the parts in the position first stated the blind was locked in a closed position, by the shoulder 28 of the fork 23 engaging the inclined edges 29 of the ears 16 adjacent the base of said inclined edges, and this held the arm 18 and the shaft

14 in a locked position, so that the blind could not be opened from the outside of the room. It will be observed that the knob 21, shank 22 and fork 23 are held in this locked position by the action of gravity. Now, to open the blind, it is only necessary to pull the knob 21 inward into the room, the fork 23 passing into the room through the upper lateral enlargement 32 of the slot 27, and the arm 18 engaging the slot just mentioned, so that the parts stand out in the room substantially in the position indicated by dotted lines in the upper part of Fig. 3. This partially rotates the shaft 14 in the direction indicated by the arrow in Figs. 1 and 3. The shaft is still farther rotated by throwing the arm 18 and the operating handle downward, and inserting the fork 23 into the lower lateral enlargement 33 of the slot 26 and then pushing the said fork inward and sliding it downward upon the arm 18 to the position indicated by dotted lines at the lower part of Fig. 3, when the blind will be opened fully as shown at the right hand of Fig. 1, and will be locked in this open position by the shoulder 28 of the fork 23 engaging the inclines 31 of the ears 30, and will be automatically held in such position by gravitation of said fork. The farther said fork is moved downward while its shoulder 28 is in contact with the inclines 31, the more secure will the blind be locked in an open position. Likewise, the farther said fork 23 is moved downward while its shoulder 28 is in contact with the inclined edges 29 of the ears 16, the more secure will the blind be locked closed. When it is desired to close the blind the above operation is reversed, that is, the fork 23 is pulled into the room through the lower lateral enlargement 33 in the face-plate 17, and the arm 18 is then swung around upward to the position indicated by dotted lines at the top of Fig. 3, and then said fork is passed through the upper enlargement 32, and the parts are then returned to the position in which they are shown by solid lines. During the above operations, the segment 15 engages the gear-wheel 6 and imparts a corresponding rocking movement to the said gear-wheel and to the hinge-leaf 5 which is attached thereto, and the blind is thereby opened or closed.

I desire to call attention to the fact that although it would appear at a casual glance that the segment 15 would come in contact with the adjacent hinge-leaf 5 when said segment is moved in the direction of the arrow, such is not the case, because such movement of the segment causes a corresponding movement away from it of the said leaf.

I have found all the parts of my invention to operate successfully in the manner above described, there being no interference of one part with another.

What I claim is—

1. The improved shutter fastener and operator for hinged shutters and blinds, constructed with a gear-wheel mounted upon one of the

hinge-leaves of the blind or shutter, a horizontal shaft, a gear 15 mounted upon the outer end of said shaft to engage said gear-wheel carried by the hinge-leaf, an arm 18 having
5 its inner end fixed upon said shaft and provided with a longitudinal slot 26, a slotted face-plate 17 having a longitudinal slot 27 and an enlargement 32 of said slot adjacent the upper end thereof, and an enlargement 33 of
10 said slot located below the plane of said shaft, an operating knob or handle 21 provided with a shank 22 having a fork 23, a pin 25 sliding loosely in the slot 26 of the arm 18 and connecting said arm to said shank, said shank
15 and arm being constructed to be pulled out of and pushed in the slot 27 in the face plate and swung around to rock said shaft, means which lock said shaft against rotation in one direction when the shutter is in a closed position, and means which lock said shaft against
20 rotation in the opposite direction when the shutter is in an open position, substantially as herein specified.

2. In an improved shutter fastener and operator for hinged shutters and blinds, a horizontal shaft 14 provided with a series of apertures 20 located adjacent its inner end, means fixed upon the outer end of this shaft to assist in opening and closing the shutter,

an arm 18 arranged to be fixed upon said shaft 30 nearer to or farther from its ends, a pin 19 which engages an aperture in said arm and any one of the series of apertures in said shaft, and an operating handle or knob connected to said arm to rock said shaft, substantially
35 as herein specified.

3. In an improved shutter fastener and operator for hinged shutters and blinds, the face plate 17 having a slot 27 provided with two lateral enlargements 32 and 33 located a distance apart, ears 16 having inclined upper edges 29 and projecting upon one side of said face-plate, one of said ears upon either side of said slot, ears 30 having inclines 31 and located one upon either side of said slot and
45 beneath said ears 16, in combination with means which engage the inclined edges of the ears 16 to lock a shutter or blind in a closed position, and which engage the inclines 31 of the ears 30 to lock a shutter or blind in an
50 open position, substantially as herein specified.

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

CHARLES F. ZIEGLER.

Witnesses:

EDWARD E. LONGAN,
JNO. C. HIGDON.