

No. 618,909.

Patented Feb. 7, 1899.

H. SCHILLING.
SHUTTER OPERATOR AND FASTENER.

(Application filed Dec. 10, 1898.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1

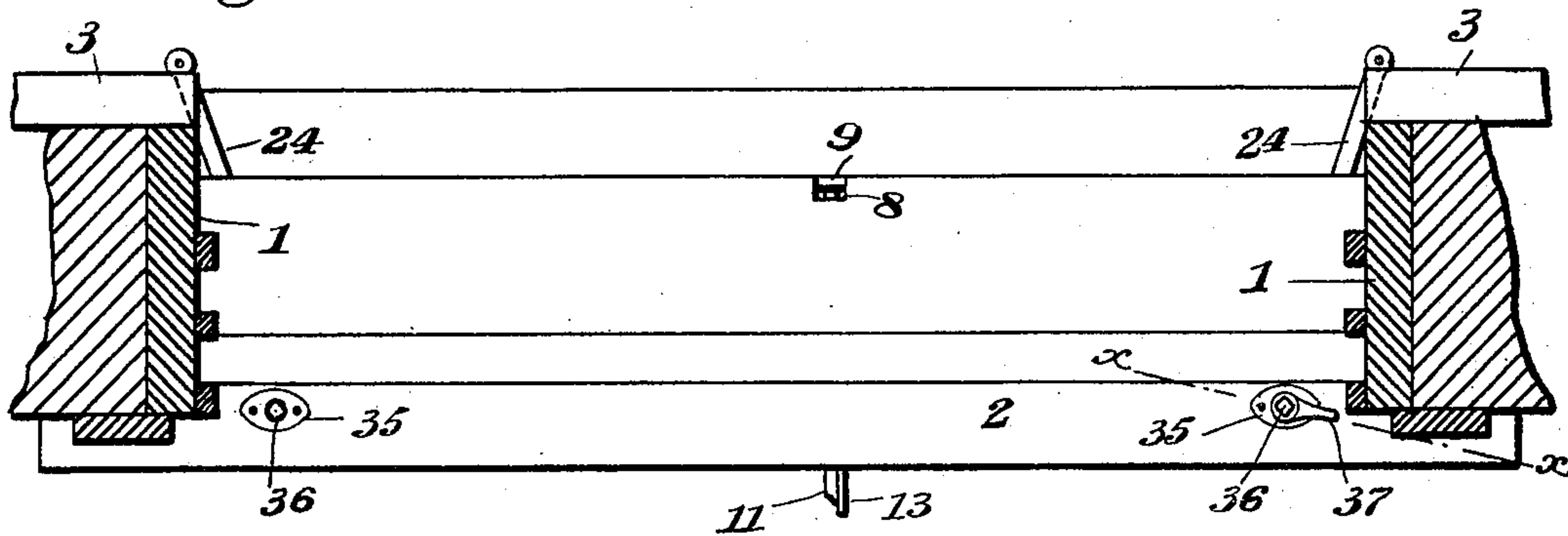


Fig. 2

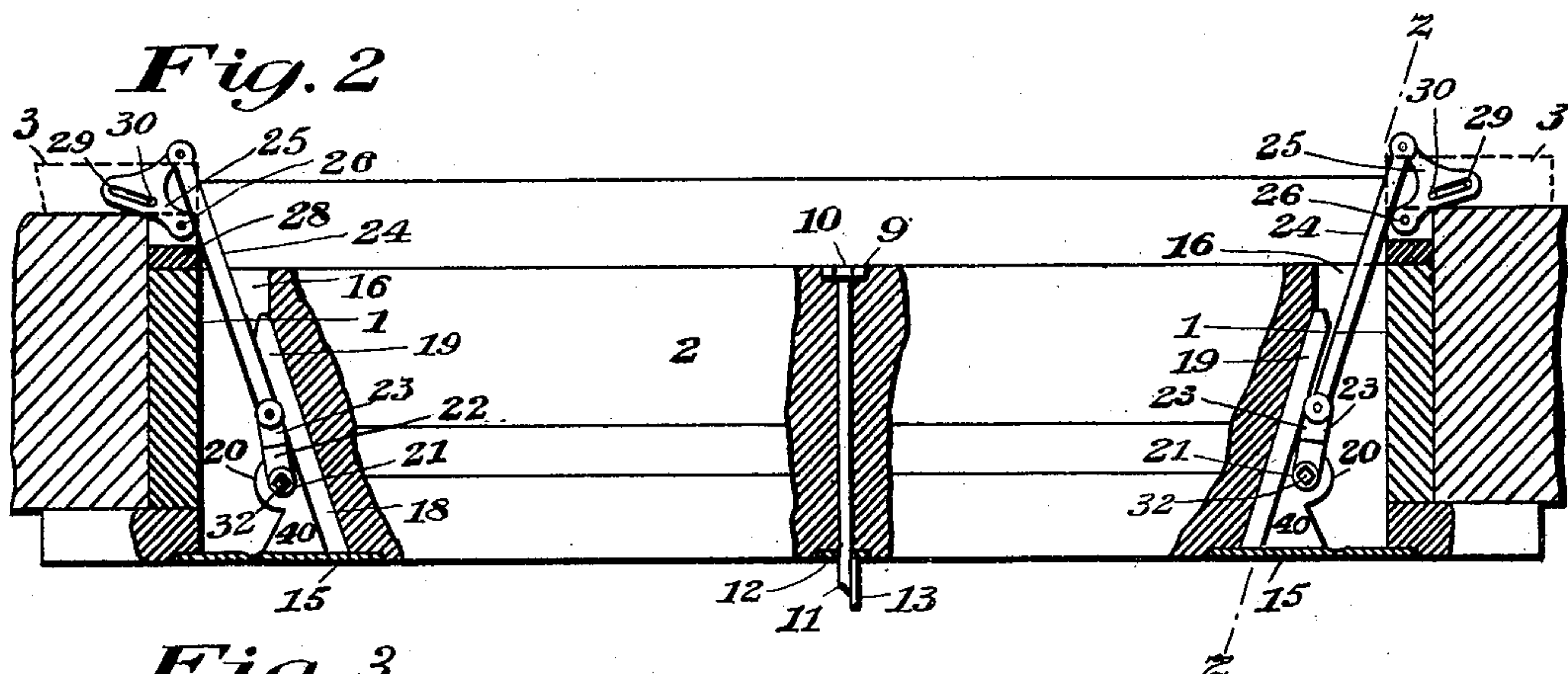


Fig. 3

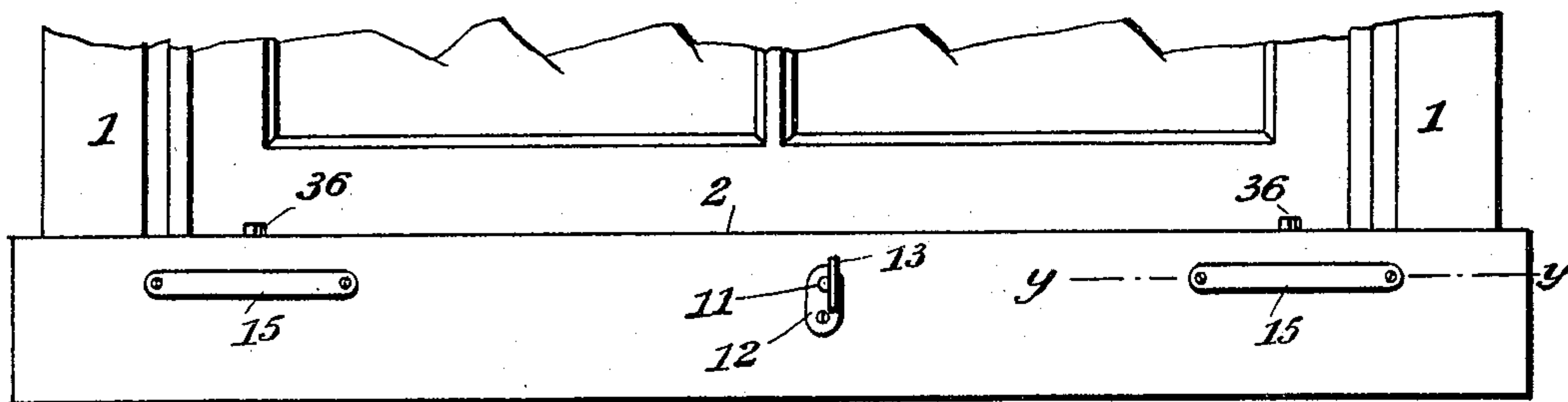
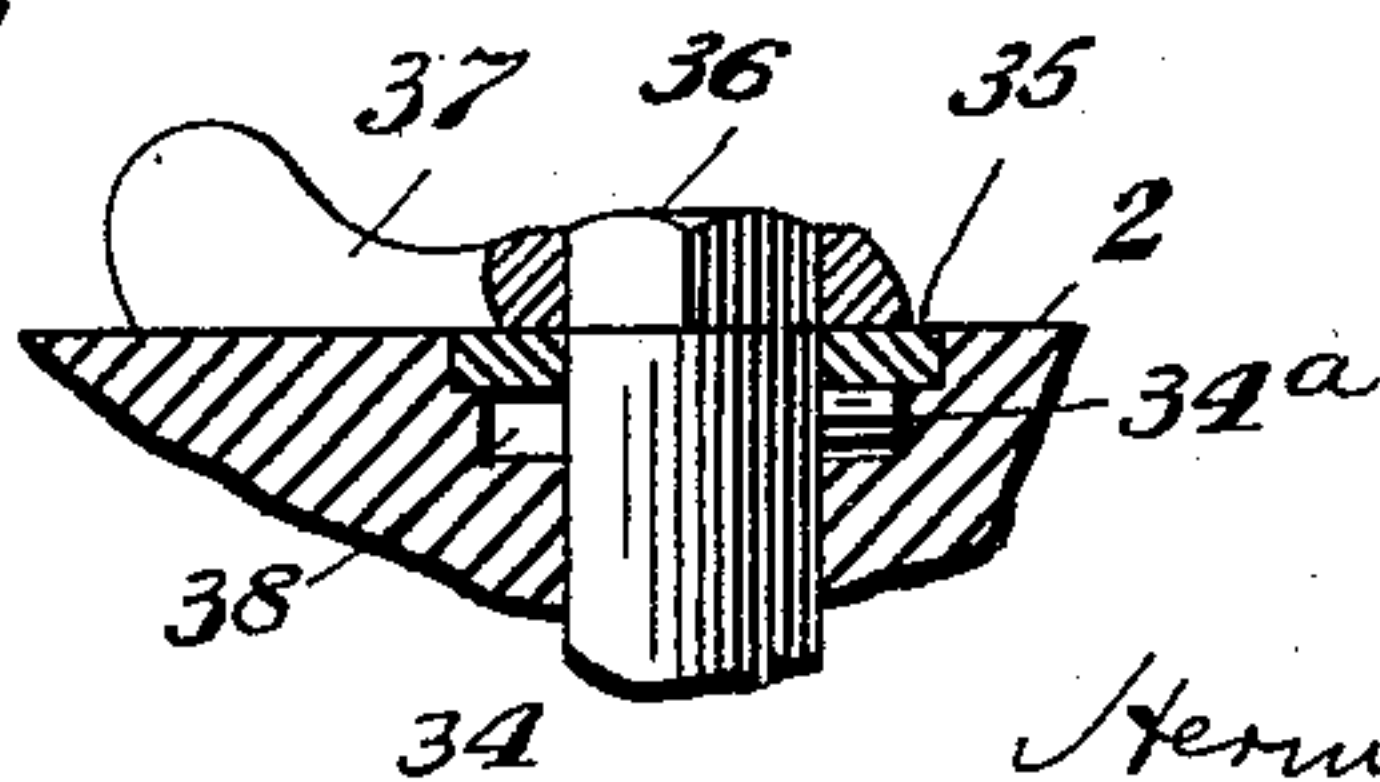


Fig. 4



Witnesses
J. S. Thorne
Thos. Woernle

Inventor
Hermann Schilling,
by *John Elias Jones,*
his attorney.

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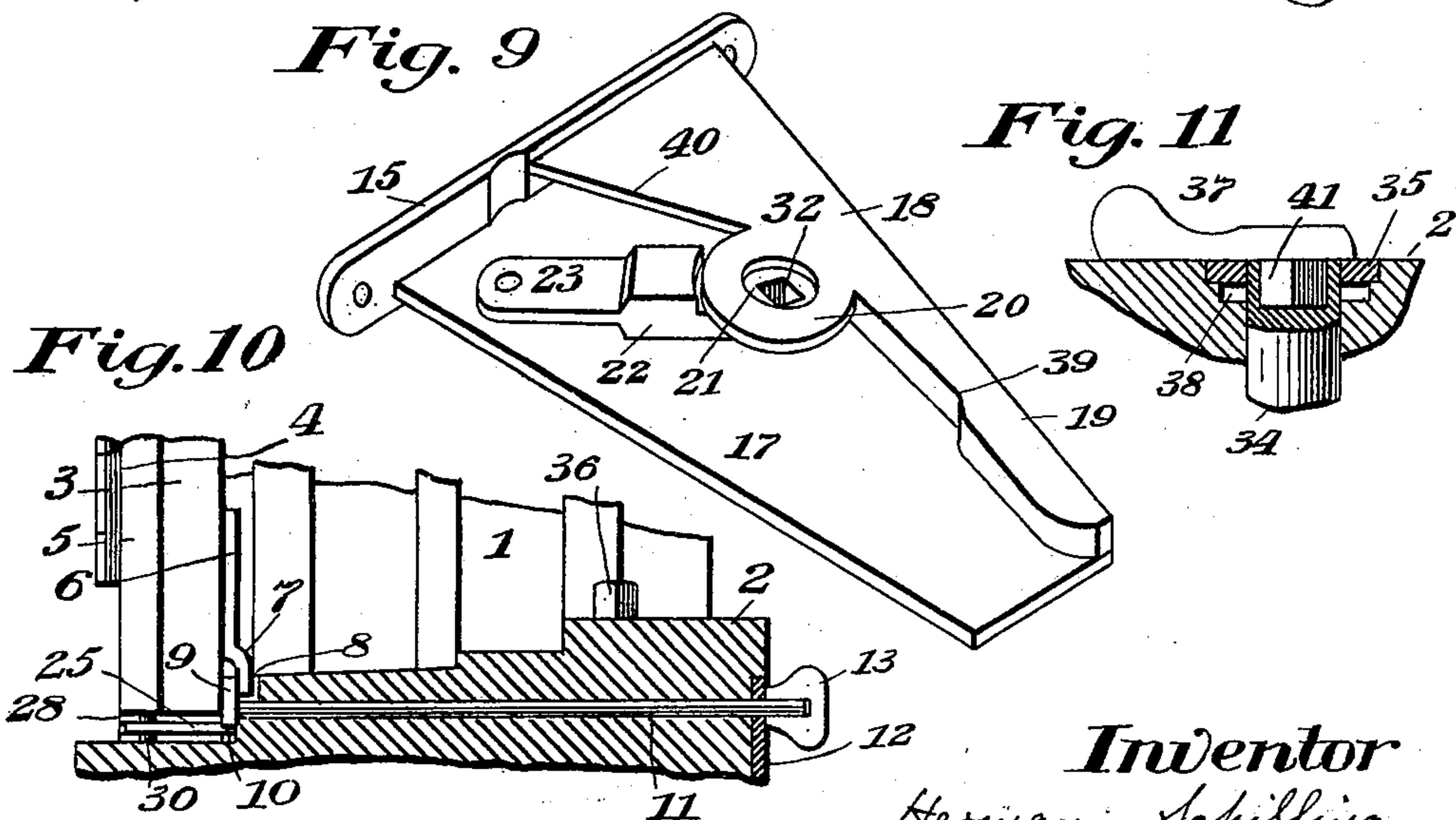
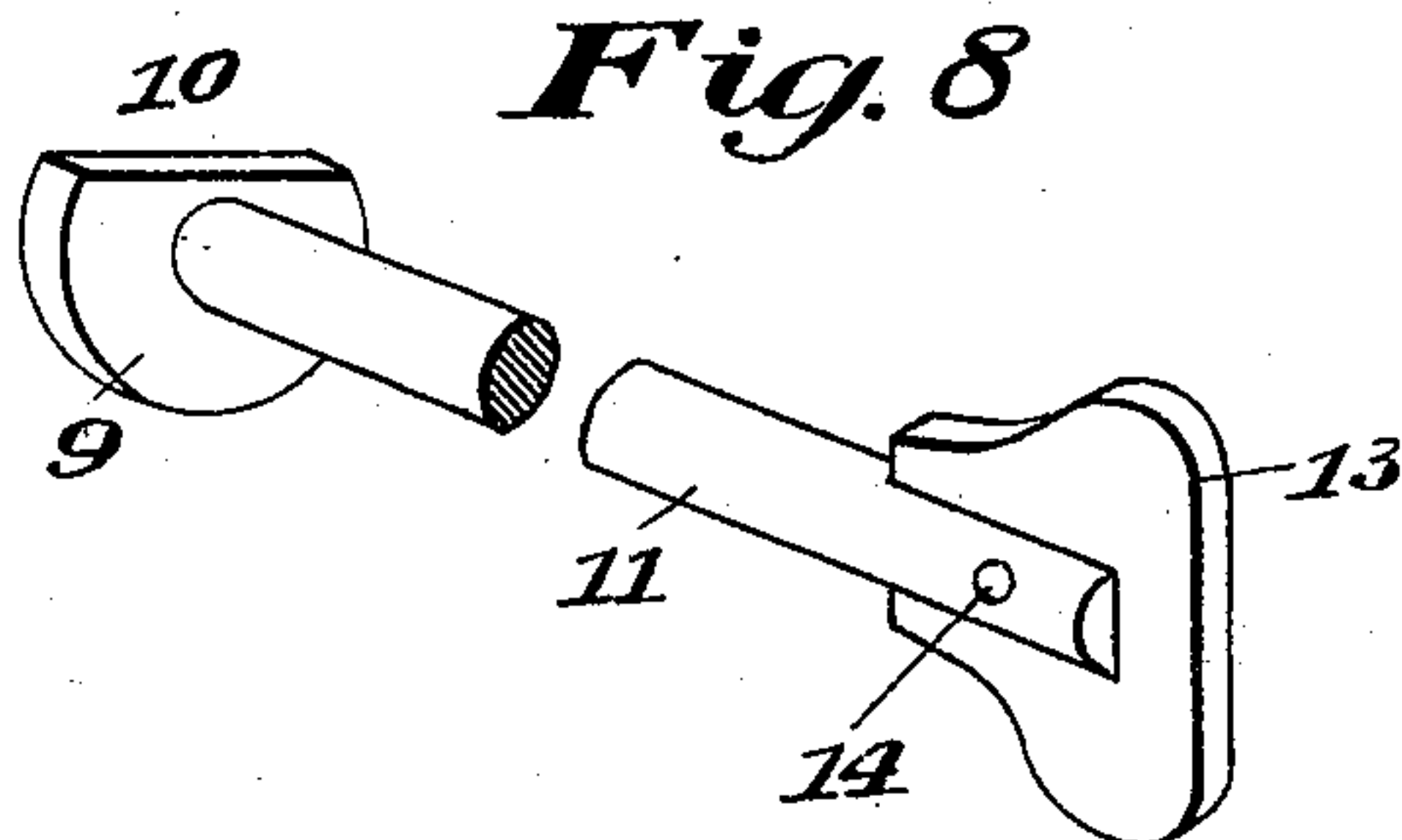
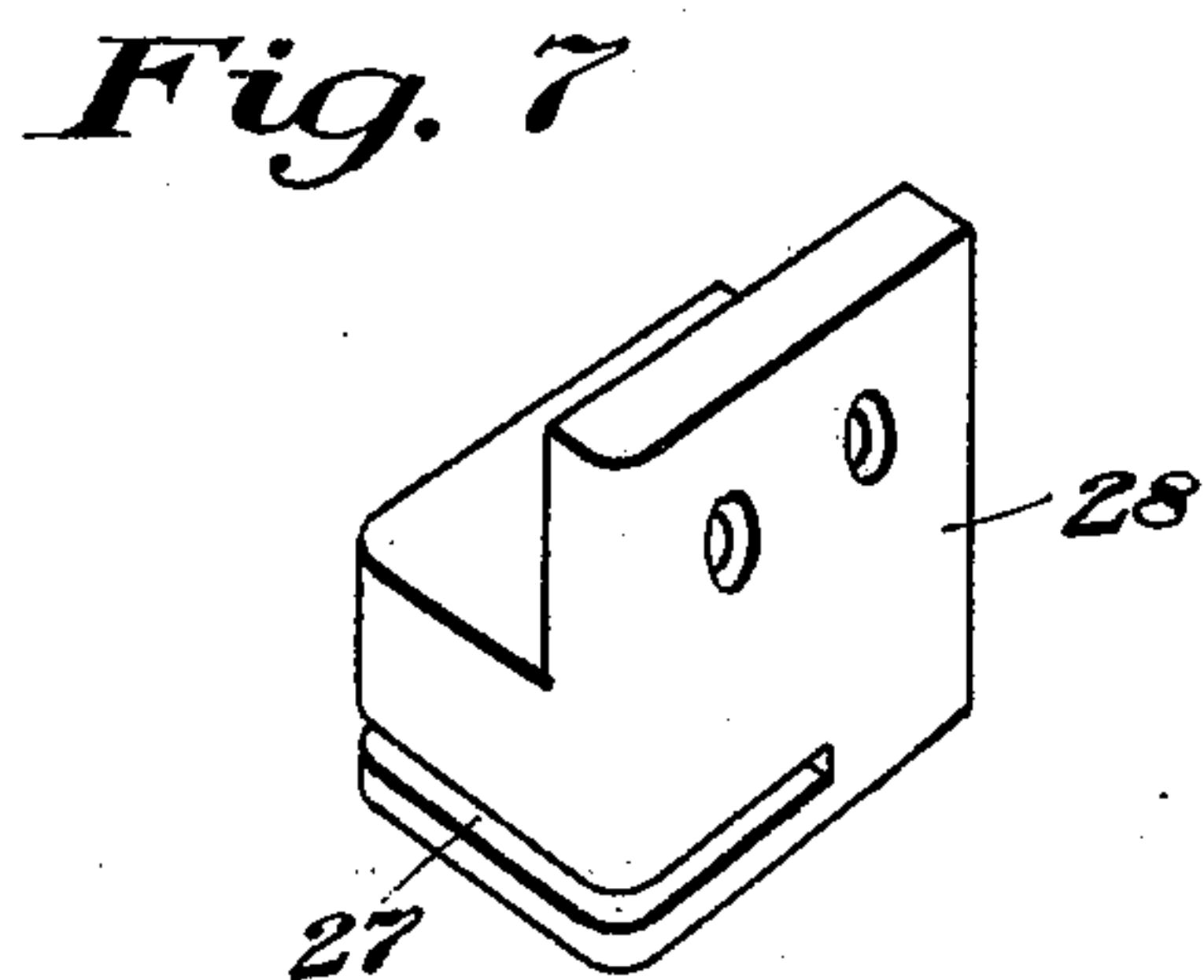
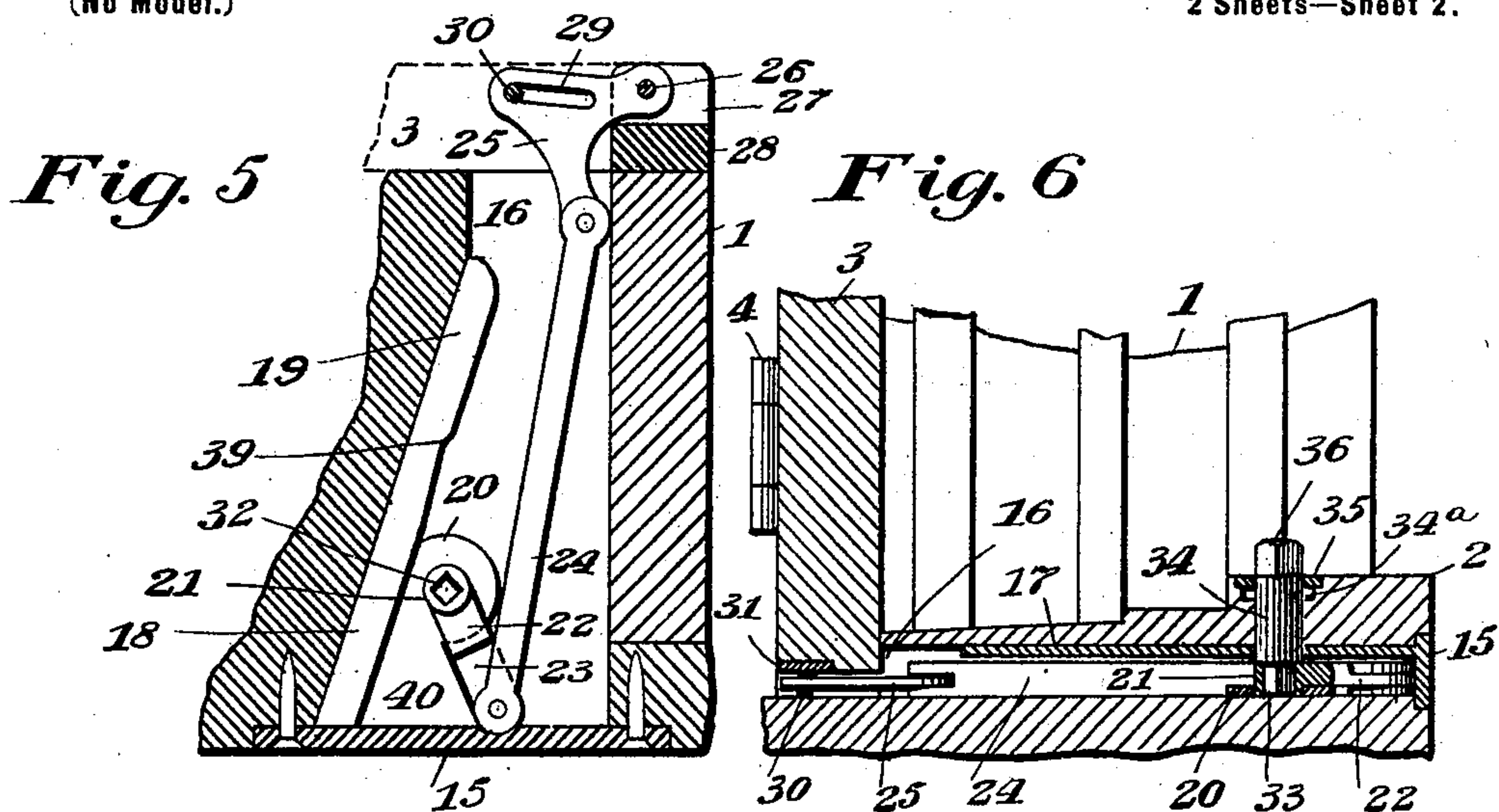
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2 Sheets—Sheet 2.



Witnesses

J. D. Thorne
Thos. Wernle

Inventor

Herrmann Schilling,
by John Elias Jones,
his Attorney.

UNITED STATES PATENT OFFICE.

HERMANN SCHILLING, OF AMSTERDAM, KENTUCKY.

SHUTTER OPERATOR AND FASTENER.

SPECIFICATION forming part of Letters Patent No. 618,909, dated February 7, 1899.

Application filed December 10, 1898. Serial No. 698,825. (No model.)

To all whom it may concern:

Be it known that I, HERMANN SCHILLING, a citizen of the United States, residing at Amsterdam, in the county of Kenton and State of Kentucky, have invented certain new and useful Improvements in Means for Operating and Fastening Shutters; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to certain improvements in shutter-workers such as are adapted for use in opening and closing window-shutters without necessitating the opening of the window; and the object of the invention is to provide a device of this character which shall be simple and inexpensive in construction and shall be adapted to hold the shutter when either in opened or closed position securely against movement, whereby slamming of the shutters by the wind or opening thereof from outside the house is prevented.

The invention consists in certain novel features of the construction, combination, and arrangement of the several parts of the improved shutter-worker, whereby certain important advantages are attained and the device is made simpler, cheaper, and otherwise better adapted and more convenient for use than various other devices heretofore employed, all as will be hereinafter fully set forth.

The novel features of the invention will be carefully defined in the claims.

In the accompanying drawings, which serve to illustrate my invention, Figure 1 is a sectional view taken horizontally through a window-casing and showing the improved shutter-working mechanism in place. Fig. 2 is a view somewhat similar to Fig. 1, but showing the sill of the window-casing broken away to illustrate the working parts beneath the same. Fig. 3 is a view showing the lower portion of the window-casing from the inside and illustrating the arrangement of the improved shutter-working mechanism. Fig. 4 is an enlarged sectional view taken in the plane indicated by line $x x$ in Fig. 1 and showing the handle provided for operating the improved

shutter-worker. Fig. 5 is an enlarged sectional view taken in the plane indicated by the line $y y$ in Fig. 3 and showing in closed position one of the shutter-working devices shown in Fig. 2. Fig. 6 is an enlarged sectional view taken in the plane indicated by the line $z z$ in Fig. 2, but showing the parts in closed position. Fig. 7 is an enlarged perspective view showing one of the slotted pivot-brackets secured to the window-casing. Fig. 8 is a perspective view showing the device for locking the shutters in closed position. Fig. 9 is an enlarged perspective view showing one of the frames embedded in the window-casing. Fig. 10 is a sectional view taken vertically through the window-casing and showing the device for locking the shutters in closed position. Fig. 11 is a sectional view similar to Fig. 4, but illustrating a modified form of the handle for operating the shutter-worker.

In the views, 1 indicates the sides of the window-casing, and 2 indicates the sill thereof, while 3 indicates the shutters hinged to the outer edges of the sides 1 of the casing by means of butt-hinges 4, as will be readily understood. One of the shutters is provided in the ordinary way with a projecting tongue or bead 5, extending along its edge in position to overlap the edge of the other blind or shutter when the shutters are closed, and on the inner side of the shutter having said tongue is secured, as seen in Fig. 10, a plate 6, having a depending lug 7, adapted, when the shutter is closed, to enter a recess 8 in the outer edge of the sill 2, as seen in Figs. 1 and 10, in position to be engaged by a locking piece or cam 9, arranged in said recess and held on the end of a rotative stem 11, extending transversely through the casing-sill 2 to the inside of the house. The locking-piece 9 is circular in form, as shown in Fig. 8, and is provided with a flattened side 10, adapted, when said piece 9 is properly turned, to permit the lug 7 to pass over it into the recess 8 in position to be properly engaged with said piece 9. The locking-piece is also preferably formed integrally with the stem 11, on which it is held, and said stem passes through an escutcheon-plate 12 at the inner surface of the sill 2 and is provided with a flattened handle or thumb-piece 13, secured thereto by means of a screw

14 or the like and serving to prevent the stem from moving lengthwise through the sill, as well as to permit said stem to be readily turned to lock the shutters in closed position.

5 To operate the shutters 3, two similar devices are provided, one at each side of the sill, these devices being, as shown in Fig. 2, reversed, so as to permit of the proper movement of the shutters in opening and closing them, as will be readily understood. As the
10 devices are similar to each other in other respects I will only describe one of them in detail. Each of said devices consists of a metal frame or plate 15, embedded or let into
15 the sill 2 of the casing, which is provided with openings or recesses 16 for this purpose. 17 indicates the top or body portion of the frame or plate 15, extending along the top of said recess 16 and is provided with a beveled
20 or angular side, along which is a raised wall 18, extending below the said body portion and provided with a projecting circular and centrally-perforated bearing-plate 20, spaced
25 apart from said body portion and adapted to receive in its central opening a boss 21, formed on a crank-arm 22, which is held to turn in the space between said bearing-plate 20 and the body portion 17 of the frame. The boss
30 serves to hold said crank-arm in proper position, and said arm is formed with a reduced end portion 23, to which is pivotally connected the end of a link 24, extending out through the opening 16 in the sill and coupled at its
35 outer end to one arm of a bell-crank lever 25, pivotally mounted in a slotted opening 27 on a pin 26, which is secured in the bracket 28, in which the slot is formed. The construction of said bracket 28 is clearly shown in Fig. 7, which is an enlarged perspective view of
40 this part. The bracket 28 is secured by means of screws or the like to the outer side of the casing side 1, as shown in Figs. 2 and 5, near the bottom of the shutter 3.

The lever 25 is slotted, as shown at 29, to
45 receive a pin 30, formed on a plate 31, secured to the lower edge of the shutter, so as to form a connection between the outer end of the link 24 and said shutter to permit of operating the shutter, the slot 29 serving to com-
50 pensate for the differences in the extent of movement of the shutter and the working parts of the device.

The boss 21 of the crank-arm 22 is formed with a squared socket 32, as clearly shown in
55 Figs. 2, 6, and 9, with which socket is engaged the squared lower end of a shaft 34, extending up vertically in the sill 2 of the casing and having its upper end also formed with a square
60 36, projecting above the level of the sill in position to be engaged by an operating-handle 37, having a squared opening to receive said end 36 of the shaft and by means of which the shaft may be readily turned through a
65 partial rotation back and forth to permit the shutter to be opened or closed. The sill 2 is provided with an escutcheon-plate 35, through which the shaft 34 passes, as clearly shown in

Fig. 4, and in order to hold said shaft in position it is provided with a projecting pin 34^a, beneath the plate 35 and playing in a recess 70 38 in the sill.

The raised-edge wall 18 of the frame or plate 17 forms a stop to limit the movement of the crank-arm 22 in one direction, being recessed, as shown at 39, to receive the end of said arm, 75 and in order to limit the movement of said arm in the opposite direction I provide the frame with an overhanging web 40, extending from the bearing-plate 20 to the front end of the frame, as clearly shown in Figs. 2, 5, and 9. 80

In operation when it is desired to open or close the shutters the handle 37 is applied to the squared ends 36 of the shafts 34, as shown at the right in Fig. 1, and moved so as to impart a partial turn to the shaft and to the 85 crank-arm with which the lower end of the shaft is engaged. The movement of the crank-arm is communicated through the link 24 to the elbow or bell-crank lever 25 and through the connection between said lever and the 90 shutter to said shutter, so as to swing the same on its hinges into opened or closed position, as the case may be. When the shutters are in closed position, they may be securely fastened by means of the locking-piece 95 9, so as to prevent them from being opened from outside the house. The parts of the device are so proportioned, moreover, that the crank-arm 22 has imparted to it, when moved to its fullest extent in opening the shutters, 100 a slight extent of movement greater than is imparted to the shutter operated from it, so that when the crank-arm stands in engagement with its stop 39, as shown in Fig. 2, its point of connection with the link 24 will be 105 out of line with the axis of shaft 34 and the point of connection between the link and the bell-crank lever 25, so that closing of the shutter from outside the house is prevented. By this construction slamming of the shutters 110 by the wind is prevented, and at the same time the ready operation of the shutter by means of the handle 37 is not interfered with in any way.

From the above description of my improved 115 shutter-worker it will be seen that the device constructed according to my invention is of an extremely simple and inexpensive nature and is especially well adapted for the purposes for which it is designed, and it will also 120 be apparent that the device is capable of some modification without material departure from the principles and spirit of the invention, and for this reason I do not wish to be understood as limiting myself to the precise form and 125 arrangement of the several parts herein set forth. For example, in some cases the handle shown in Fig. 4 may be dispensed with and the construction shown in Fig. 11 employed. As shown in this view, the upper 130 end of the shaft 34 is made flush with the upper surface of the sill 2 and is formed with a squared socket to receive a squared projection 41 on the under side of the handle 37.

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

1. In a shutter-worker, the combination of
5 a window-casing, a shutter hinged thereto, a crank-arm mounted to turn on the casing, a lever pivoted to the casing and having a slotted connection with the shutter, and a link connecting the lever and crank-arm, substantially as set forth.

2. In a shutter-worker, the combination of
15 a window-casing, a shutter hinged thereto, a crank-arm mounted to turn on the casing, an elbow-lever pivoted on the casing and having a slotted connection with the shutter, a link connecting the elbow-lever and crank-arm, and a stop to limit the movement of the crank-arm in one direction, substantially as set forth.

3. In a shutter-worker, the combination of
20 a window-casing, a shutter hinged thereto, a slotted bracket carried on the casing, a crank-arm mounted to turn on the casing, a lever pivoted and arranged to turn in the slot of the bracket and having slotted connection
25 with the shutter, and a link connecting said lever with the crank-arm, substantially as set forth.

4. In a shutter-worker, the combination of
30 a window-casing, a shutter hinged thereto, a frame mounted on the casing, a crank-arm mounted to turn on the frame, stops on the frame to limit the movement of the crank-arm, a lever pivoted to the casing and having a slotted connection with the shutter, and a
35 link connecting said lever with the crank-arm, substantially as set forth.

5. In a shutter-worker, the combination of
40 a window-casing, a shutter hinged thereto, a crank-arm mounted to turn on the casing and provided with a squared socket, a shaft having a squared end engaged with the socket of the crank-arm, a lever pivoted to the casing

and having slotted connection with the shutter and a link connecting the lever with said crank-arm, substantially as set forth.

6. In a shutter-worker, the combination of
45 a window-casing, a shutter hinged thereto, a frame mounted on the casing and provided with a bearing-plate having an opening, a crank-arm having a boss to fit said opening
50 in the bearing-plate of the frame, means to turn said crank-arm, a lever pivoted to the casing and having slotted connection with the shutter, and a link connecting said lever with the crank-arm, substantially as set forth.

7. In a shutter-worker, the combination of
55 a window-casing, a shutter hinged thereto, a frame mounted on the casing and provided with a bearing-plate having an opening, a crank-arm having a boss formed with a
60 squared opening and adapted to fit in the central opening of the bearing-plate, a shaft having a squared end engaged with the squared opening of the crank-arm boss, a lever pivoted to the casing and having a slotted connection
65 with the shutter, and a link connecting said lever and crank-arm, substantially as set forth.

8. In a shutter-worker, the combination of
70 a window-casing, a shutter hinged thereto, a crank-arm mounted to turn on the casing and provided with a squared socket, a shaft having a squared end engaged with the socket of the crank-arm, an elbow-lever pivoted on the casing and having slotted connection with the shutter, a link connecting the elbow-lever
75 and crank-arm and a stop to limit the movement of the crank-arm in one direction, substantially as set forth.

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

HERMANN SCHILLING.

Witnesses:

JOHN ELIAS JONES,
THEO. WOEMLE.