

J. A. SMITH.
PLATE HOLDER ATTACHMENT FOR CAMERAS.

APPLICATION FILED DEC. 28, 1903.

NO MODEL.

3 SHEETS—SHEET 1.

Fig. 1.

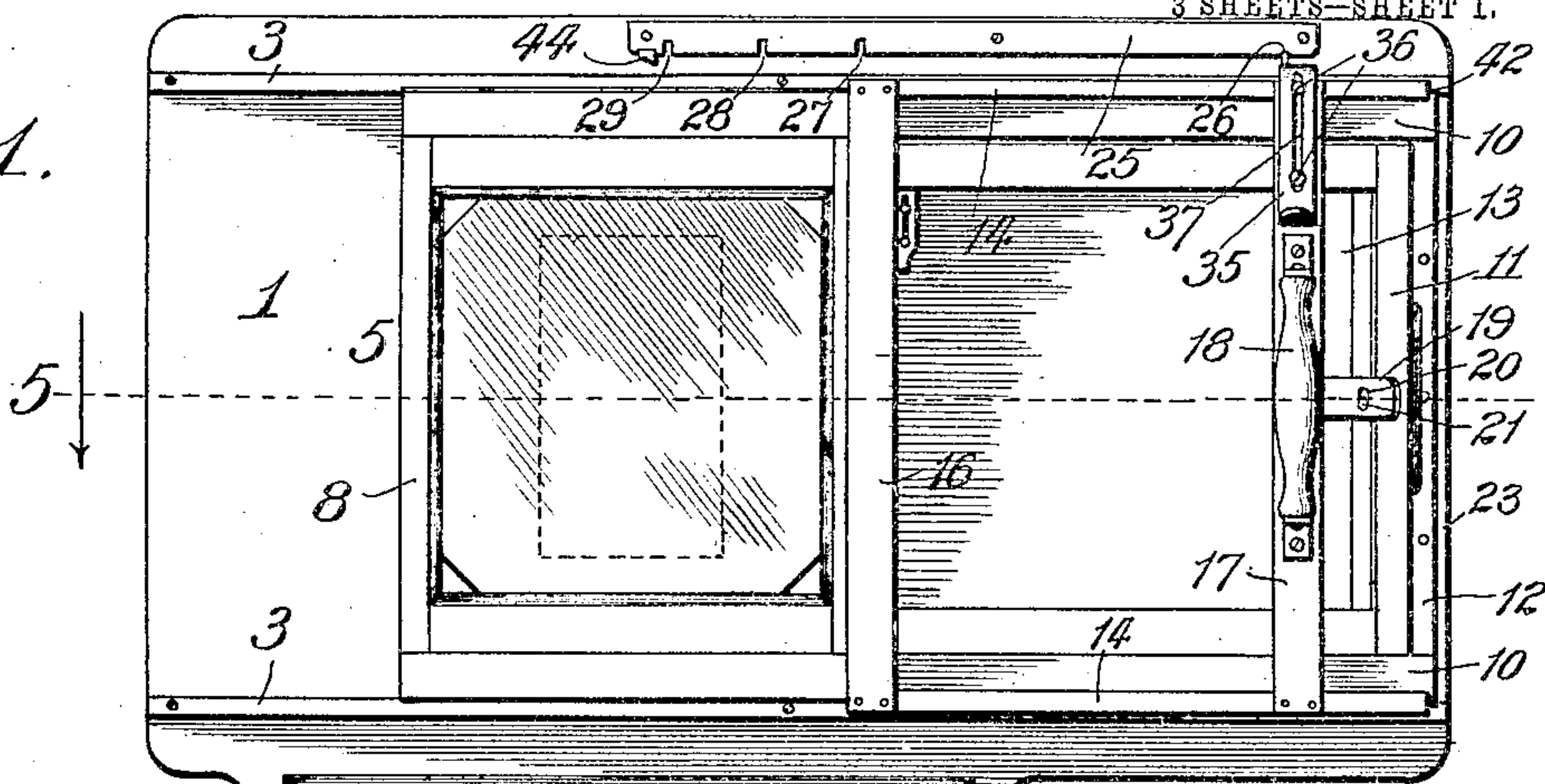


Fig. 2.

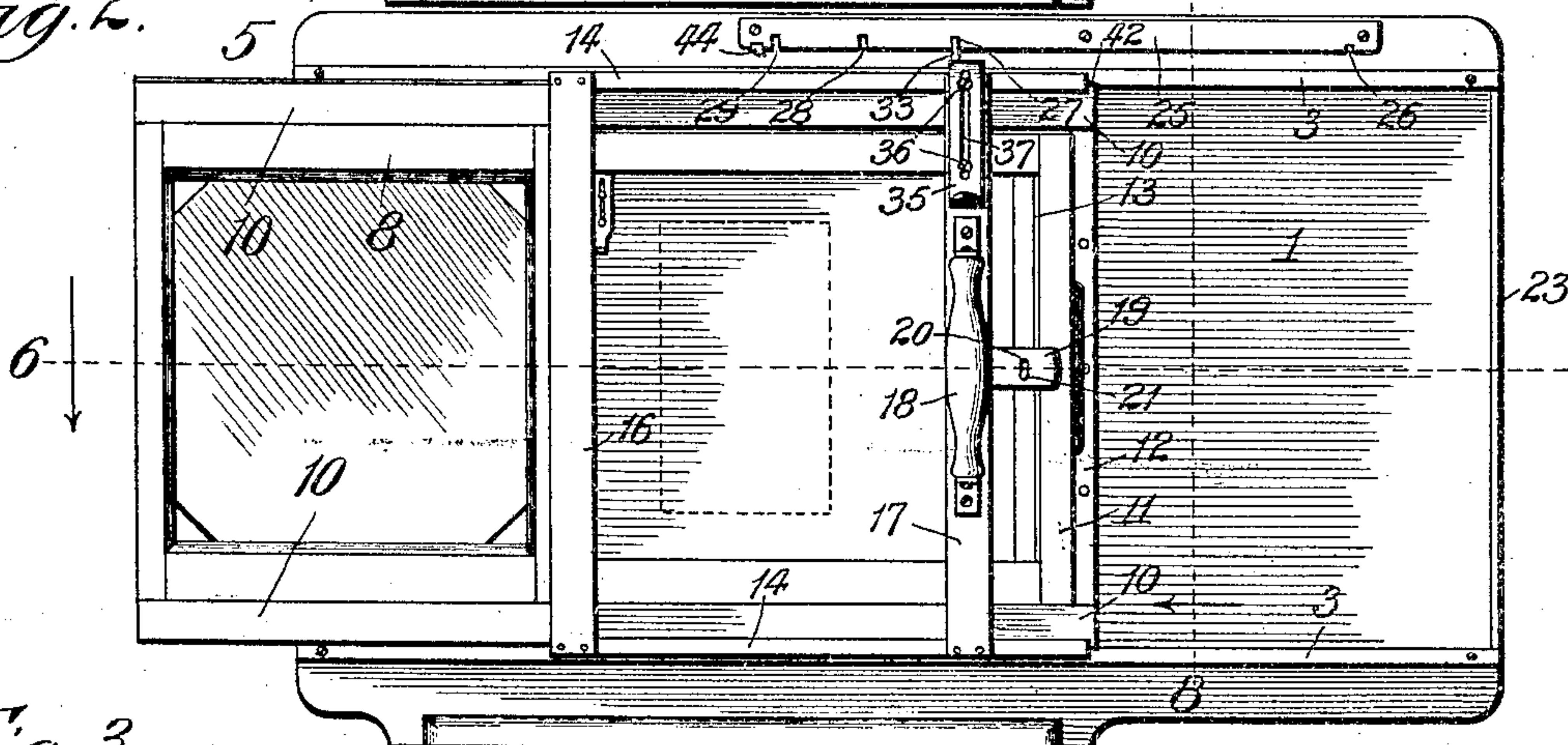
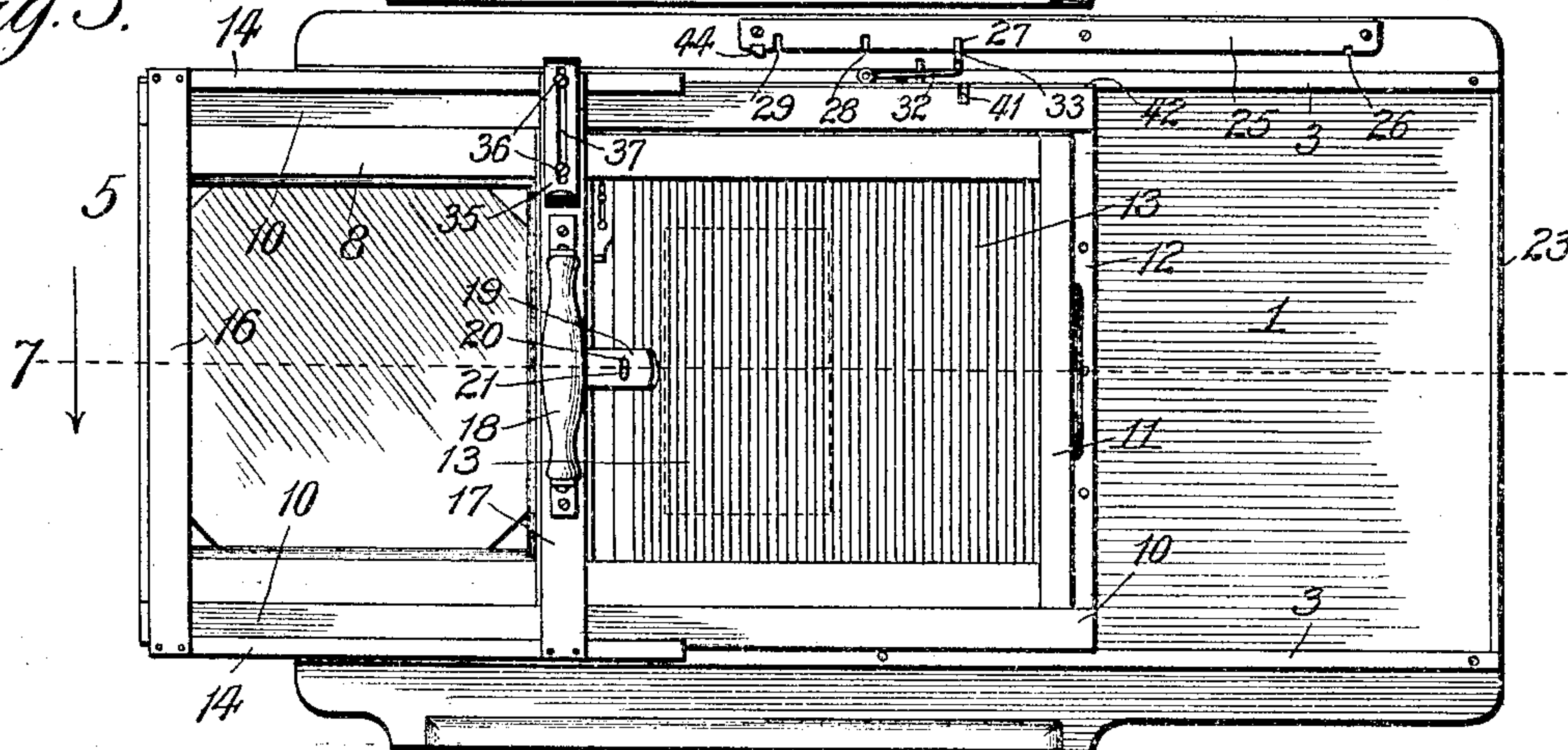


Fig. 3.



Witnesses:

Edw. C. Chylford.
John Enders.

Inventor:

Jay Albert Smith
By *David H. Fletcher,*
Att'y.

No. 771,282.

PATENTED OCT. 4, 1904.

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3 SHEETS—SHEET 2.

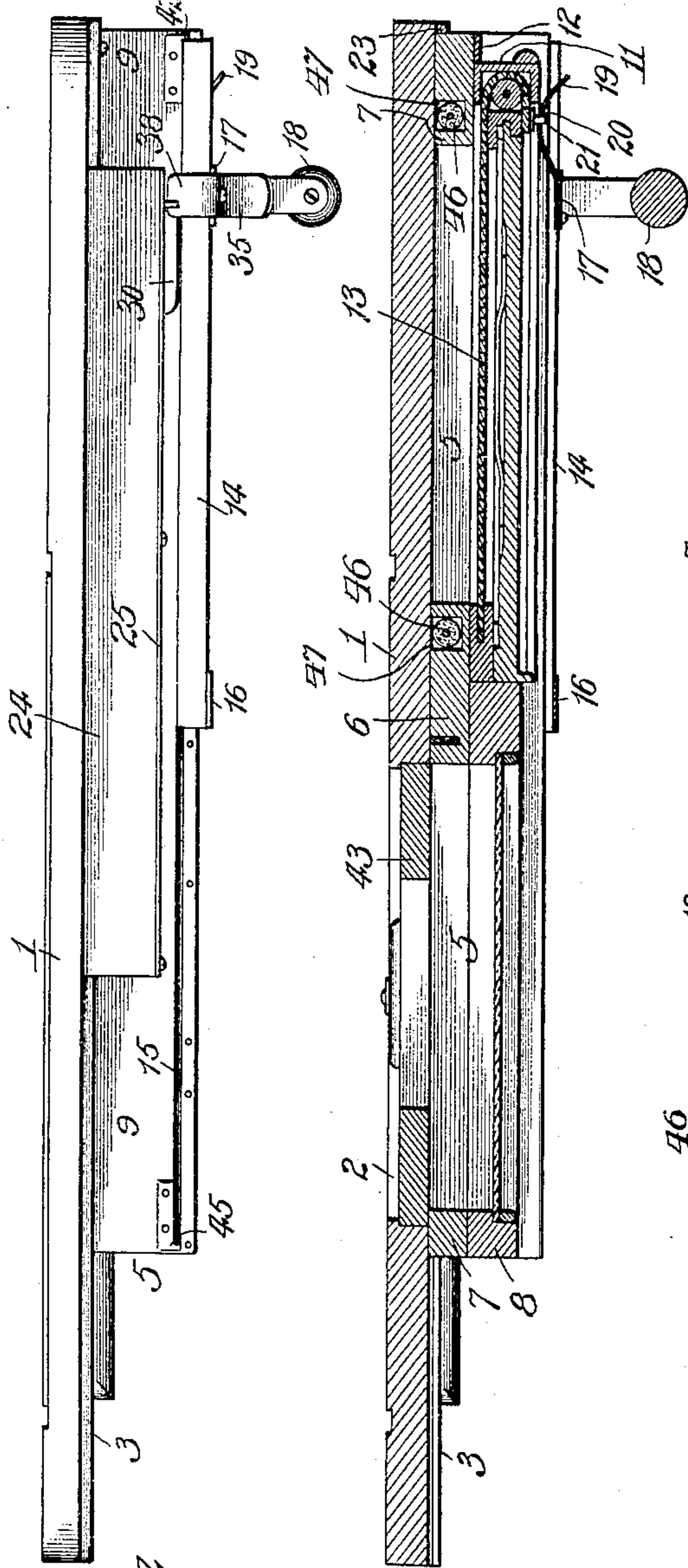


Fig. 4.

Fig. 5.

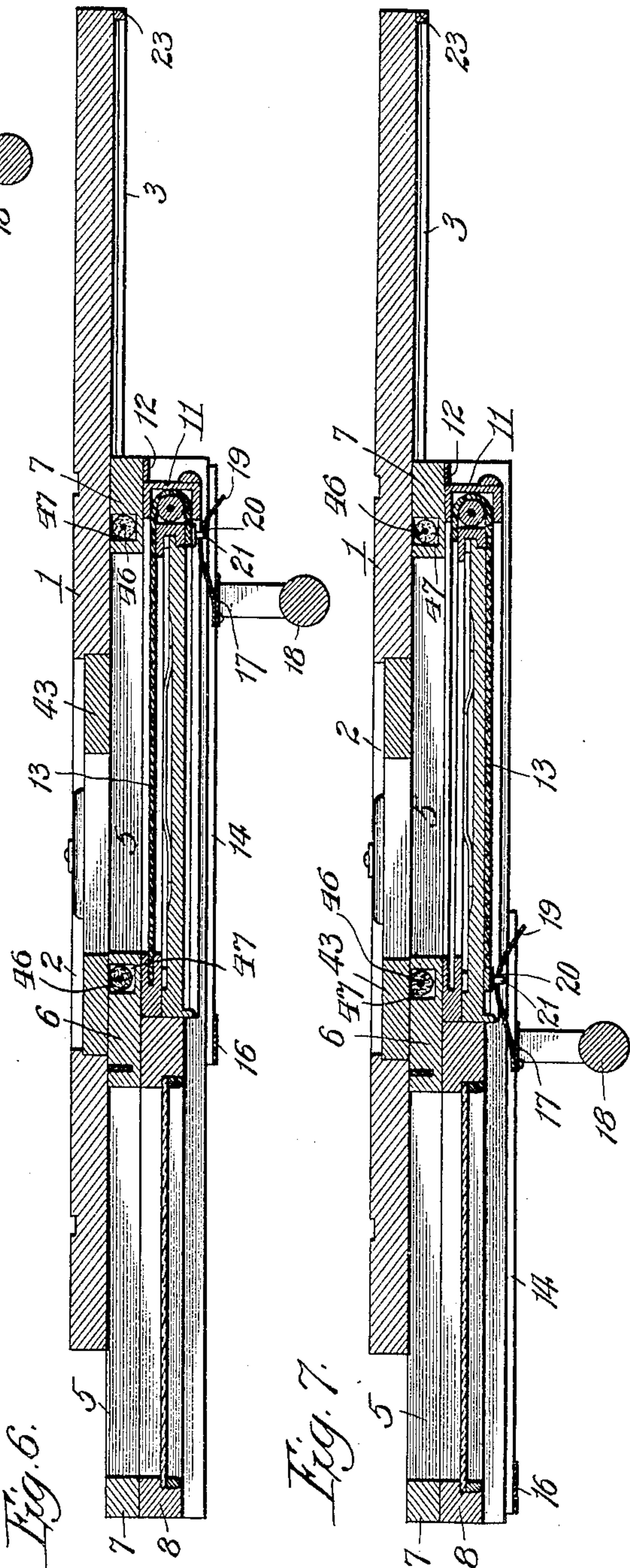


Fig. 6.

Fig. 7.

Witnesses:
E. S. Payford,
John Enders.

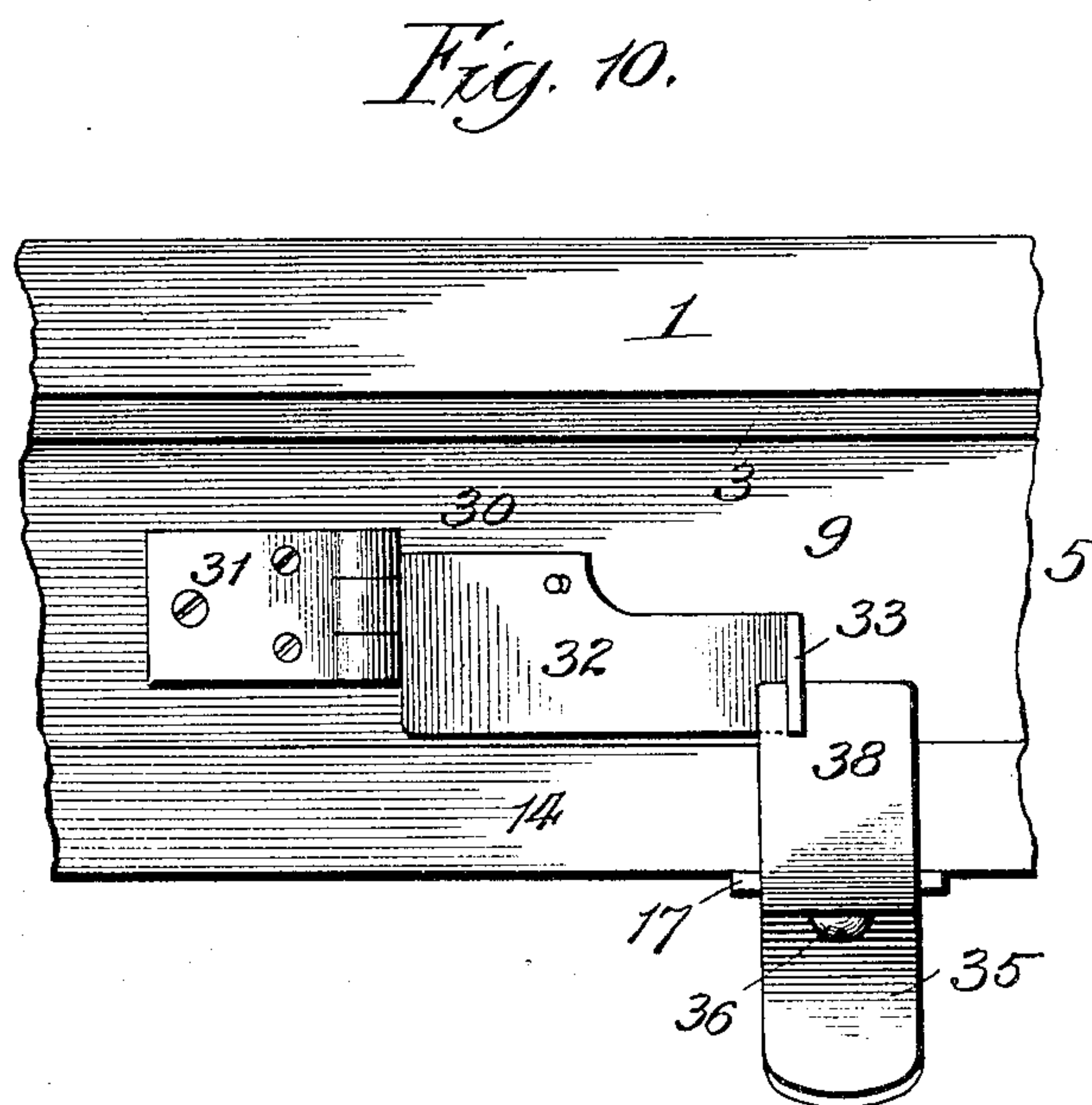
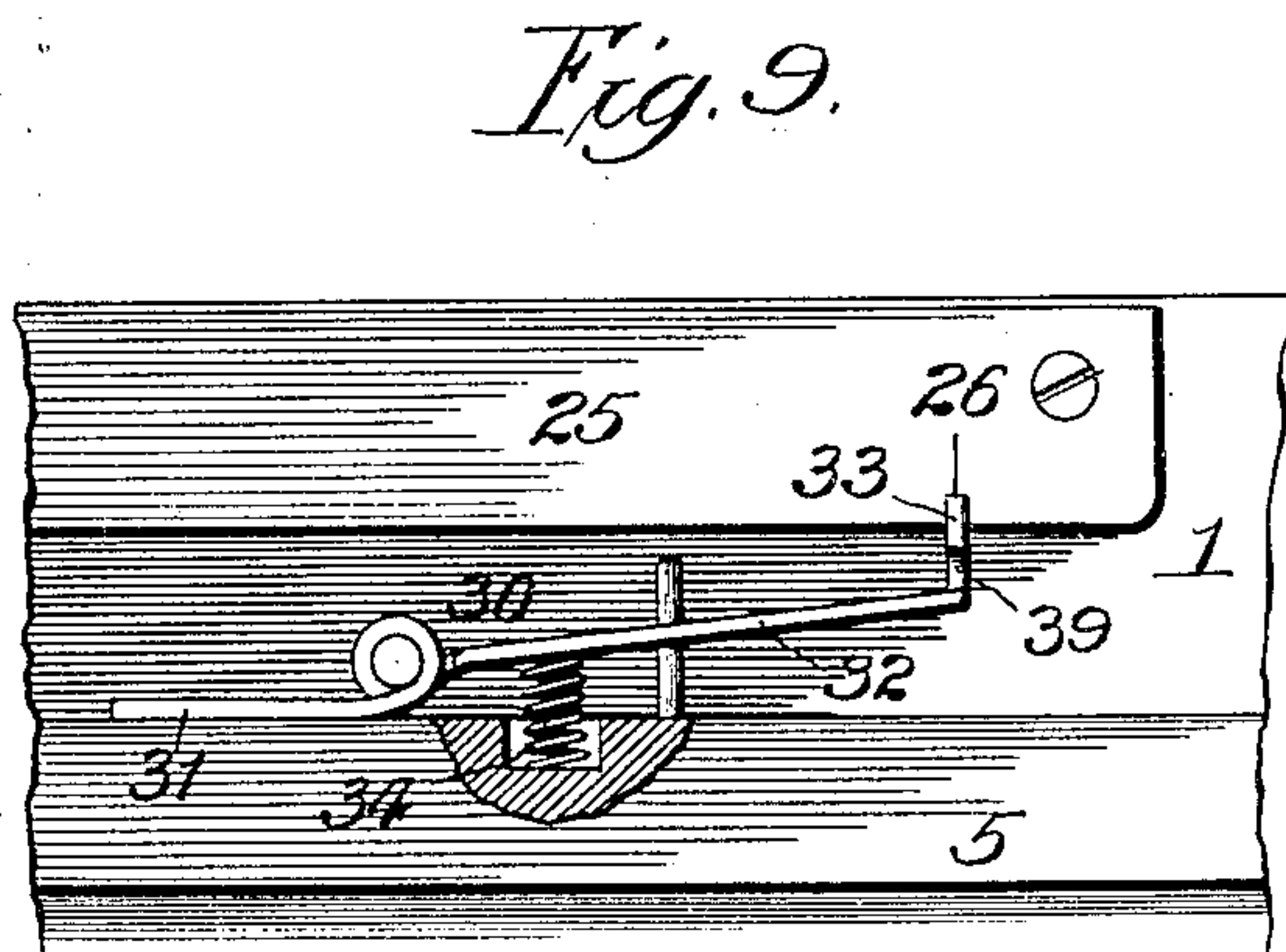
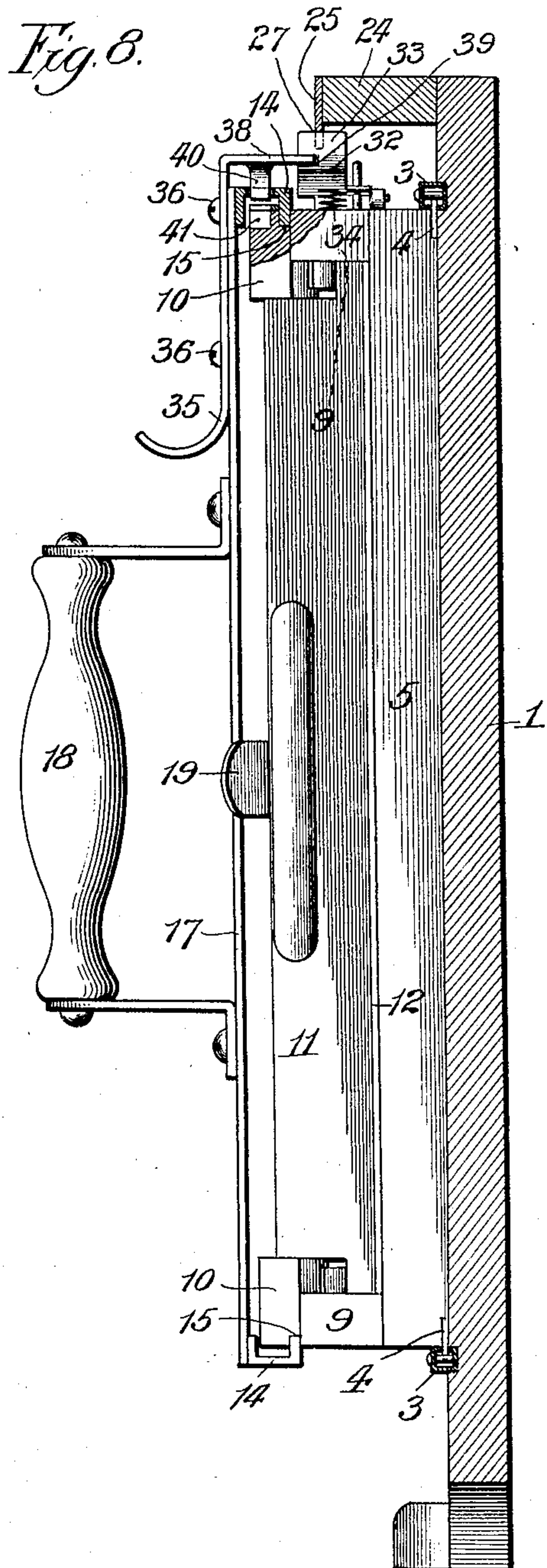
Inventor:
Jay Albert Smith
By David H. Detcher,
Att'y.

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 PLATE HOLDER ATTACHMENT FOR CAMERAS.

APPLICATION FILED DEC. 28, 1903.

NO MODEL.

3 SHEETS—SHEET 3.



Witnesses:
Edw. Gaylord,
John Anders.

Inventor:
Jay Albert Smith
 By *David H. Fletcher,*
Att'y.

UNITED STATES PATENT OFFICE.

JAY ALBERT SMITH, OF HUNTINGTON, NEW YORK.

PLATE-HOLDER ATTACHMENT FOR CAMERAS.

SPECIFICATION forming part of Letters Patent No. 771,282, dated October 4, 1904.

Application filed December 28, 1903. Serial No. 186,872. (No model.)

To all whom it may concern:

Be it known that I, JAY ALBERT SMITH, a citizen of the United States, residing at Huntington, in the county of Suffolk and State of New York, have invented a new, useful, and Improved Plate-Holder Attachment for Cameras, of which the following is a description, reference being had to the accompanying drawings, forming a part of this specification, in which corresponding reference-numerals in the different figures indicate like parts.

The object of my invention is to so construct a plate-holder attachment for cameras that the act of sliding the plate-holder into a locking position within the supporting-frame may serve to detachably connect the curtain-slide thereof with a suitable mechanism whereby as a result of a single continuous movement in one direction the ground glass may be removed, the plate-holder placed in position to expose the whole or any predetermined portion thereof, and the curtain withdrawn, while by a continuous reverse movement the curtain-slide may be closed and the ground glass again moved into position before the exposing-aperture.

I accomplish said object by means of a slidable carrier for the reception of the ground glass and plate-holder and an actuating-frame, together with means for automatically locking the former to the stationary frame or camera-back and for locking the actuating-frame to the carrier-frame at all times except during the act of manipulating the curtain-slide, all of which is hereinafter more particularly described, and specifically pointed out in the claims.

In the drawings, Figure 1 is a rear elevation of a plate-holding attachment as it would appear when the parts are in their respective normal positions with the plate-holder in place ready to be manipulated. Fig. 2 is a like view showing the plate-holder in position for exposure with the slide closed. Fig. 3 is a like view as it would appear with the slide open. Fig. 4 is a plan view of the attachment with the parts in their respective normal positions. Fig. 5 is a sectional view in plan, taken upon the line 5, Fig. 1. Fig. 6 is a like view taken upon the line 6, Fig. 2.

Fig. 7 is a like view taken upon the line 7, Fig. 3. Fig. 8 is a right-hand end elevation, partly in section, taken upon the line 8, Fig. 2, viewed in the direction of the arrow there shown, a small portion of said view being broken and sectioned to show one feature of the locking mechanism. Fig. 9 is an enlarged rear view in detail of the spring-catch, and Fig. 10 is a plan view thereof.

Referring to the drawings, 1 represents the removable backboard of a camera provided with the usual exposure-aperture 2, Figs. 5, 6, and 7, said board being constructed in the ordinary way except that its length is considerably greater than the width of the frame to which it is attached. Rigidly secured to the back of said board are horizontal parallel slide-ways 3 3, Figs. 1 to 8, inclusive, which are preferably formed from metal tubes rectangular in cross-section, as shown in Fig. 8, and having longitudinal slots therein for the reception of metal flanges 4 4, Fig. 8, attached to and extending beyond the upper and lower edges, respectively, of a slidable carrier-frame, (designated generally by 5.) Said flanges are adapted to bear upon balls placed within said tubes in any well-known way to prevent friction. Said carrier-frame is provided with a central vertical cross-bar 6, Figs. 5, 6, and 7, midway between the two vertical end pieces 7, thereby forming rectangular openings in said frame adapted to register, respectively, with the exposure-opening in the back, as hereinafter described. Forming a part of said slidable frame 5 and either attached thereto or formed integral therewith is a ground-glass frame 8. The upper and lower horizontal bars 9 9, Fig. 8, of the frame 5 are extended rearwardly and are provided with in-turned flanges 10 10 in the manner more clearly shown in Fig. 8, thereby forming a slideway for the reception of the plate-holder 11, the left-hand end of which abuts against the end of the ground-glass frame, as more clearly shown in Figs. 5, 6, and 7, while the other end is held by means of a rabbet 12 in the manner hereinafter described. Said plate-holder is of the usual construction used in portrait-cameras and is provided with a curtain-slide 13, arranged in the customary way.

It will be observed that the ground-glass frame registers with one and the plate-holder with the other of the openings in the slidable carrier-frame, while both are adapted to be moved with said carrier.

A supplemental sliding frame, which I prefer to designate as the "actuating-frame," is mounted upon said slidable carrier-frame in the following manner: Angle-bars 14 14, preferably of metal, are fitted upon the upper and lower edges of the parts 10 10, grooves 15, Figs. 4 and 8, being formed in the latter for the reception of one flange of said angle-bars. Vertical cross-bars 16 17 are rigidly connected with the slide-bars 14, and to the latter is attached a handle 18 and also a laterally-projecting spring 19, having a perforation 20 therein adapted to receive and engage a pin 21 upon the bar forming the outer end of the curtain-slide 13 when the plate-holder 11 is placed within the carrier-frame. Said spring serves not only to engage said pin as described, but also to press the plate-holder against said frame, said rabbet or stop 12 upon the edge of the carrier-frame serving to prevent the holder from being displaced. A similar rabbet or stop 23 serves to limit the movement to the right hand of the carrier-frame.

Attached to the backboard 1 above the carrier-frame and parallel therewith is a cleat 24, Figs. 4 and 8, to the outer edge of which is attached a metal plate 25, which projects below said cleat and is provided with notches 26, 27, 28, and 29, Figs. 1, 2, 3, 8, and 9, upon its lower edge for the purpose hereinafter stated.

A spring-catch (generally designated by 30) is mounted upon the top of the upper part or cleat 9 of the carrier-frame and consists, preferably, of a primary metal plate 31 (see Figs. 8, 9, and 10) screwed to the part 9, while a plate 32 is hinged thereto, as shown. An upwardly-extended detent 33 is formed upon the plate 32 and adapted to engage with the notches in the plate 25. A spring 34, Figs. 8 and 9, tends to throw said detent into engagement with one or another of said notches.

A thumb-piece 35 is mounted upon the bar 17 immediately above the handle 18, said thumb-piece consisting of a flat metal plate, which is slidably attached to said bar by means of headed screws 36, which are loosely projected through a vertical slot 37, Figs. 1, 2, and 3, the arrangement being such as to permit the thumb-piece to be moved up and down. The upper end of the part 35 is bent, as shown at 38, so as to overlap and engage the part 32 and enable it to be depressed against the action of the spring 34. A notch 39, Figs. 8 and 9, is adapted to receive the end of the part 38 as the handle is moved laterally, the normal position of the parts being shown in Figs. 4 and 10.

Extending downwardly from beneath the part 38 is a pin 40, which is projected through a bore in the part 14 and is adapted to engage a notch 41 (also shown in Fig. 3) in the part 10 of the slidable carrier. The purpose of said pin and notch is to lock the actuating-frame to the carrier-frame at all times except when the former is being used to manipulate the curtain-slide. A stop 42, Figs. 1, 2, 3, and 4, is formed upon the right-hand end of the carrier-slide for the purpose of limiting the movement of the actuating-slide as an aid in positioning the two with respect to each other to enable the pin 40 to register with the notch 41 when manipulating the device, as hereinafter described.

As before suggested, the device is intended to expose all or a predetermined portion of a plate, and in order to illustrate the manner in which the latter result is accomplished I have shown within the exposure-opening 2 the usual removable "kit" 43, Figs. 5, 6, and 7, the rectangular opening in which is indicated in dotted lines in Figs. 1, 2, and 3.

The operation of said device is as follows: Assuming the slidable and actuating carriers to be in the respective positions shown in Figs. 1, 4, and 5, the plate-holder, with its curtain-slide closed, is pushed into the slide-way in the carrier until its outer end passes the rabbet 12, when it is pressed against the part 7 by the action of the spring 19, the perforation 20 in which is engaged by the pin 21. The notch 26 in the bar 25, Figs. 1, 2, and 3, being of lesser depth than that of notches 27, 28, and 29, the part 32 is thereby sufficiently depressed to cause the pin 40 to remain in engagement with the notch 41, thereby locking the actuating-frame to the carrier-frame and preventing the displacement of the latter when the plate-holder is inserted against the yielding resistance of the spring 19. The plate-holder being thus secured in position, the handle 18 is grasped by the operator, who thereupon depresses the thumb-piece 35. This action causes the part 38 to depress the part 32 against the action of the spring 34, thus disengaging the detent 33 from the notch 26, while the pin 40 remains in engagement with the notch 41. The carrier and actuating frames being thus locked together, the movement of the handle to the left carries with it both of said frames, thereby removing the ground-glass frame from the exposing-aperture and substituting the plate-holder therefor, with the curtain-slide still closed. Assuming that the left-hand half of the plate is to be exposed, the operator releases the pressure upon the thumb-piece, when the spring 34 causes the detent 33 to enter the notch 27, (see Figs. 2 and 6,) the depth of which notch is sufficient to permit the part 32 to rise and carry with it the part 38 to such a height as to enable the pin 40 to pass out of the notch 41, thereby unlocking the actuating-slide from the carrier-slide.

The carrier-slide being locked in a stationary position and the actuating-slide being free, a continuation of the movement of the handle causes the curtain-slide, which is locked to the actuating-frame by the spring 19, to be withdrawn from in front of the exposure-opening, as shown in Fig. 7, thereby exposing one half of the plate. A reverse movement of the handle is then made, which first acts to close the curtain-slide, when by depressing the thumb-piece the detent 33 is withdrawn from the notch 27, while at the same time the detent 40 is caused to again enter the notch 41 and lock the actuating-frame to the carrier-frame. The stop 42, Fig. 2, serves to position the two frames with respect to each other so as to insure proper registration of the locking parts. A continuation of the same movement to the right serves to replace the ground-glass frame in front of the exposure-aperture, when the operation is repeated in the same way to expose the other half of the plate, except that the thumb-piece is depressed until the notch 29 is reached.

Should it be desirable to expose the entire plate, the kit 43 should be removed and the detent 33 caused to enter the notch 28. In all other respects the operations are the same.

A stop 44 upon the plate 25 serves to limit the movement to the left of the carrier-frame, while stops 45, one of which is shown in Fig. 4, are provided to limit the corresponding movement of the actuating-frame.

Rollers 46 46, Figs. 5, 6, and 7, are located in grooves 47, preferably formed in the parts 6 and 7, respectively, of the carrier. Said rollers may be made wholly from or covered with felt, cloth, or other yielding material and are journaled at the ends in suitable bearings and adapted to press against the backboard with a yielding pressure, so as to exclude the passage of light between the two. It is obviously immaterial whether the grooves 47 are formed in the carrier-frame or backboard so long as the rollers are located upon the opposite sides of the exposure-opening when the plate-holder is in an exposing position.

Having thus described my invention, I claim—

1. A plate-holder attachment for cameras, comprising an apertured backboard, an apertured carrier for the reception of a ground-glass frame and plate-holder, said carrier being movably mounted upon said backboard, means for detachably locking said carrier to said backboard, slidable means mounted upon said carrier for independently actuating the carrier and plate-holder curtain-slide, and means for detachably locking said actuating means to the carrier at all times except when the plate-holder is in an exposing position, whereby said carrier may, by a single continuous movement, be placed in an exposing position and the curtain-slide withdrawn,

while, as a result of a continuous reverse movement said slide may be closed and the carrier returned to its normal position.

2. A plate-holder attachment for cameras, comprising a backboard having an exposing-aperture, a laterally-movable carrier-frame for receiving and carrying the ground glass and plate-holder, a laterally-movable actuating-frame, slidably supported in said movable carrier-frame, means for detachably connecting said actuating-frame to the curtain-slide at the back of the plate-holder and means for automatically locking said carrier and actuating-frame together whereby they may move as one at all times except when the plate-holder is in an exposing position.

3. A plate-holder attachment for cameras, comprising a backboard having an exposing-aperture, a laterally-movable carrier-frame for the reception of the ground-glass frame and plate-holder, a laterally-movable actuating-frame movably mounted in a guideway upon said carrier-frame, means for detachably locking said carrier-frame to said backboard, means for detachably locking said actuating-frame to the curtain-slide of the plate-holder, means for detachably locking the same to said carrier-frame, and means for unlocking said actuating-frame from said carrier-frame when said plate-holder is in an exposing position.

4. A plate-holder attachment for cameras for making more than one exposure upon a given plate, comprising a backboard having an exposing-aperture, a laterally-movable carrier for carrying the ground glass and plate-holder, a laterally-movable actuating-frame movably mounted upon said carrier, means for detachably locking said carrier in a plurality of different stationary positions with respect to the backboard, means for detachably locking said actuating-frame to the curtain-slide of the plate-holder and means for detachably locking the same to said carrier at all times except when the plate-holder is in one or another of the different exposing positions.

5. A plate-holder attachment for cameras in which is combined a backboard, a laterally-movable carrier-frame for carrying the ground-glass frame and plate-holder respectively and a laterally-movable actuating-frame, said carrier being slidably mounted upon the backboard, said actuating-frame slidably mounted upon said carrier-frame, means for automatically locking the carrier-frame in non-exposing and exposing positions respectively, means for locking said actuating-frame to the plate-holder curtain-slide and means for also locking the same to said carrier-frame when the latter is in a non-exposing position.

6. A camera attachment of the class described in which is combined with the apertured camera-backboard, a horizontally-movable carrier mounted upon said backboard, for carrying a ground glass and plate-holder

respectively, an actuating - frame movably mounted upon and located back of said carrier in non-exposing and exposing positions respectively with reference to said backboard, 5 means for detachably locking said actuating-frame to said carrier when the latter is in a non-exposing position, said first-named locking means being controlled by the second, and means for detachably connecting said actuating-frame with the curtain-slide of the plate-holder at the rear of the latter. 10

7. In a plate-holder attachment for cameras, a plate-holder and ground-glass carrier movably positioned and detachably locked with the 15 ground glass opposite the exposure-aperture, an actuating-frame movably attached to said carrier, said frame being normally in position to operatively engage the curtain-slide of the plate-holder at the back of the latter, means 20 for locking said carrier in a plurality of predetermined positions, means for locking said actuating-frame to said carrier, and means upon said actuating-frame for manipulating both of said locking means.

8. In a camera attachment of the class described, the combination of a plate-holder carrier-frame movably mounted upon the camera backboard, a spring - catch for locking the same in any one of a plurality of predetermined 25 positions, an actuating-frame movably mounted upon said carrier, means for detachably locking the same to said carrier and a spring-catch upon said actuating-frame for automatically and detachably engaging an element upon 30 the curtain-slide of the plate-holder at the back of the latter.

9. The combination with an apertured camera-back having a slideway in the rear, of a 35 ground-glass and plate-holder carrier fitted within said slideway, means for detachably locking said carrier in different stationary positions, a plate-holder, a curtain-slide therein, an actuating-frame slidably mounted upon the 40 back of said carrier, a catch mechanism thereon for engaging said curtain-slide, a catch mechanism for automatically locking said actuating-frame to said carrier when the latter is in a normal position and means for automatically and simultaneously locking said carrier 45 in a predetermined secondary position and for unlocking said actuating-frame from said carrier to enable said frame to continue its movement and cause the withdrawal of the curtain-slide.

55 10. The combination with an apertured camera-back having a slideway in the rear, of a

ground-glass and plate-holder carrier fitted within said slideway, means for detachably locking said carrier in different stationary positions, a plate-holder, a curtain-slide, an actuating-frame slidably mounted upon the back 60 of said carrier, means thereon for engaging said curtain-slide to move the same, means for locking said actuating-frame to said carrier when the latter is in a non-exposing position, 65 means for automatically releasing said last-named locking mechanism when the carrier is in an exposing position and means for simultaneously unlocking said carrier from its exposing position and again locking the actuating-frame thereto when the curtain-slide is 70 closed.

11. The combination with a camera-back of two movable frames, one being detachably locked to the camera-back, to hold a ground 75 glass and a plate-holder, and the other detachably locked to the former and also to the plate-holder slide.

12. The combination with a camera-back of a laterally-movable carrier-frame for supporting and carrying the ground-glass frame and plate-holder and a laterally-movable actuating-frame, said carrier-frame being detachably locked to said back and said actuating-frame detachably locked to said carrier-frame, 85 whereby the two may be moved in unison or separately at the will of the operator.

13. The combination with a camera-back of a plate-holder carrier-frame slidably mounted upon said back for carrying the ground-glass 90 frame and plate-holder, and a movable actuating-frame slidably mounted upon said carrier-frame, said carrier-frame being detachably locked to said back and said actuating-frame detachably locked to said carrier-frame 95 with means for simultaneously actuating both of said locking mechanisms.

14. In a device of the class described, the combination with an apertured camera-back of a sliding carrier and light-excluding rollers 100 of a yielding material inserted between the two to stand upon opposite sides of the aperture when the carrier is in position to expose the plate.

In testimony whereof I have signed this 105 specification, in the presence of two subscribing witnesses, this 24th day of December, 1903.

JAY ALBERT SMITH.

Witnesses:

D. H. FLETCHER,
CARRIE E. JORDAN.