

No. 715,617.

Patented Dec. 9, 1902.

J. A. SMITH.

PLATE HOLDER ATTACHMENT FOR CAMERAS.

(Application filed Sept. 24, 1902.)

(No Model.)

5 Sheets—Sheet 1.

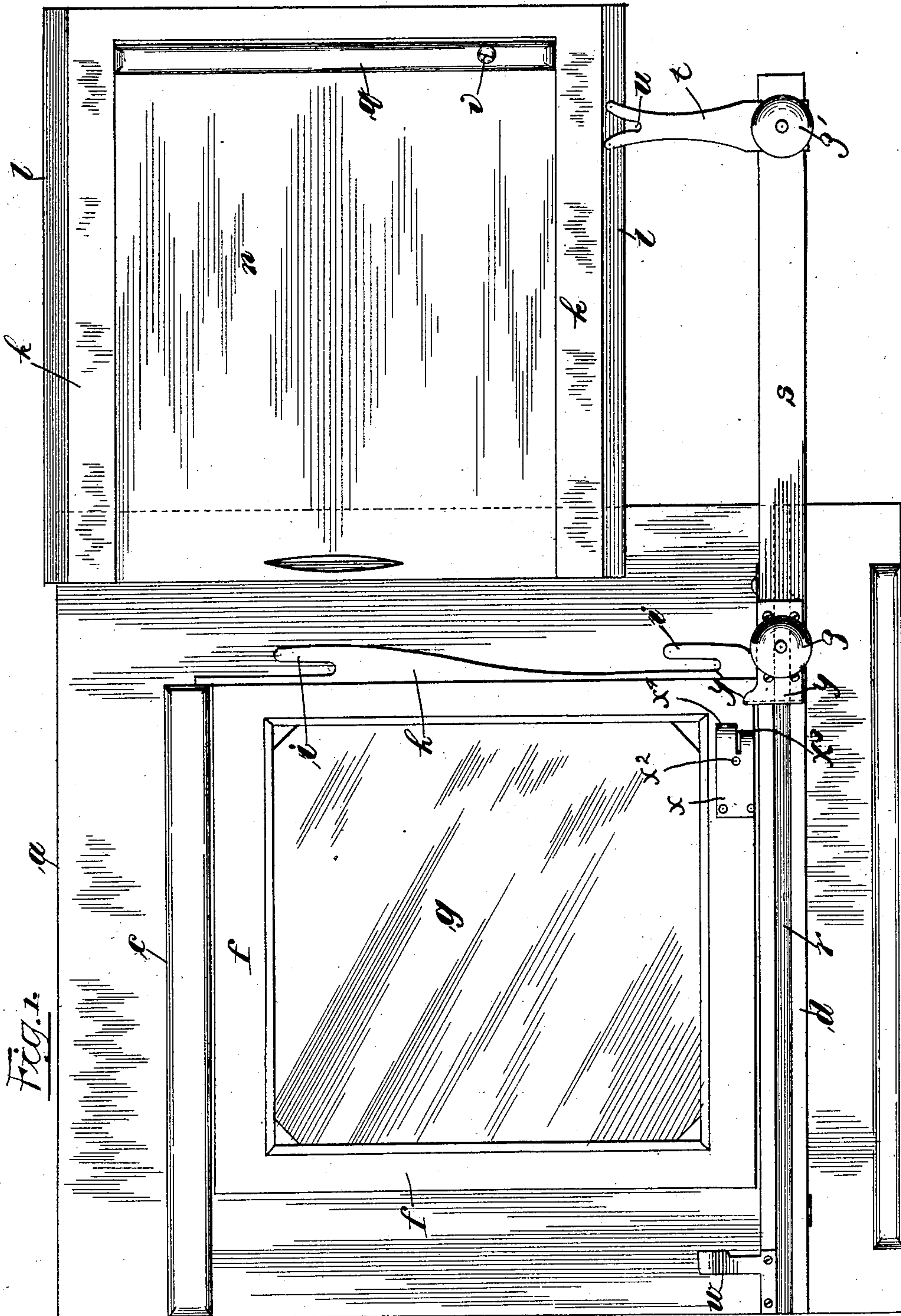


Fig. 1.

Witnesses:-

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Inventor:-

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By David H. Ditcher,
his Atty.

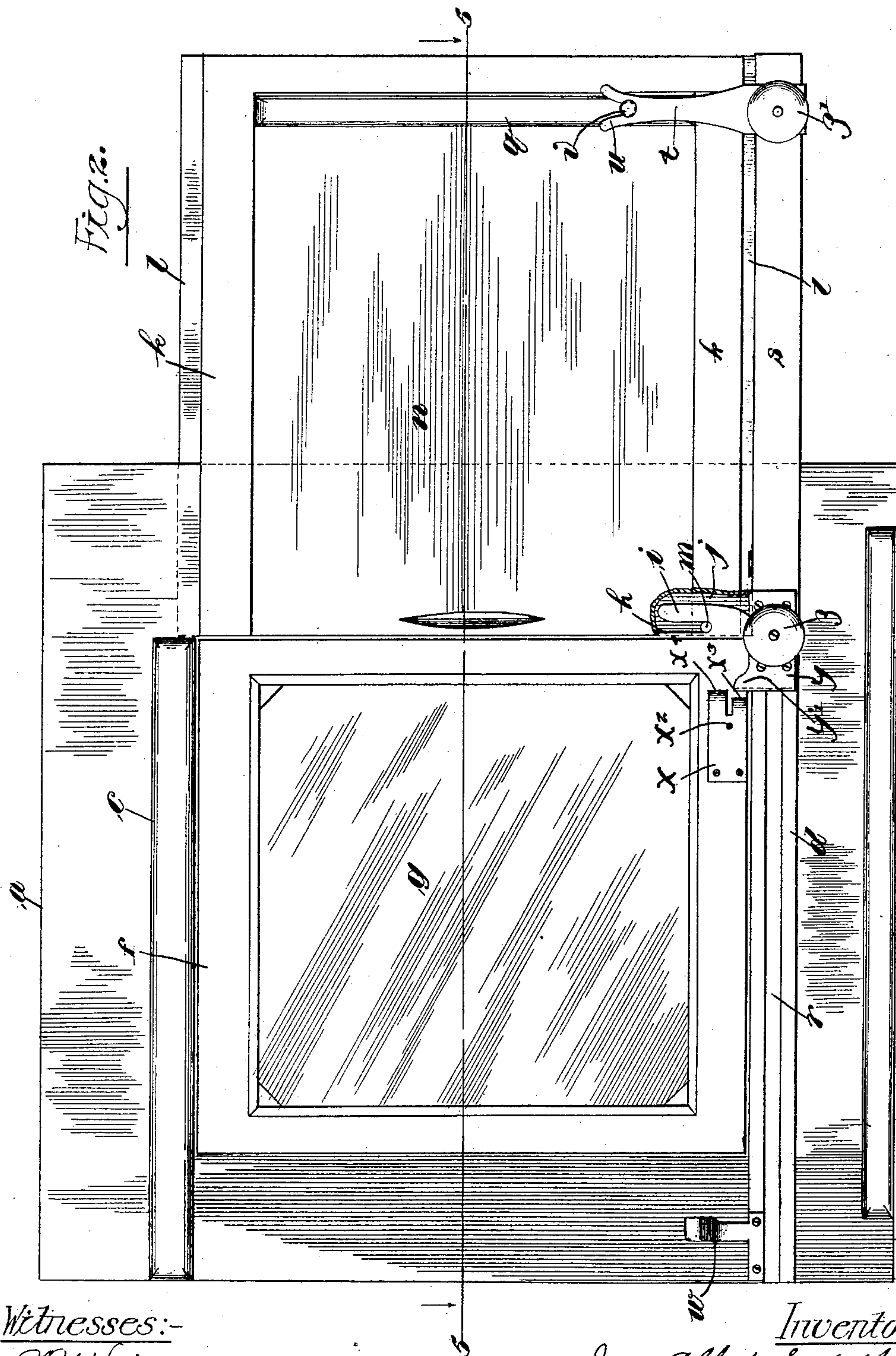
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5 Sheets—Sheet 2.



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5 Sheets—Sheet 3.

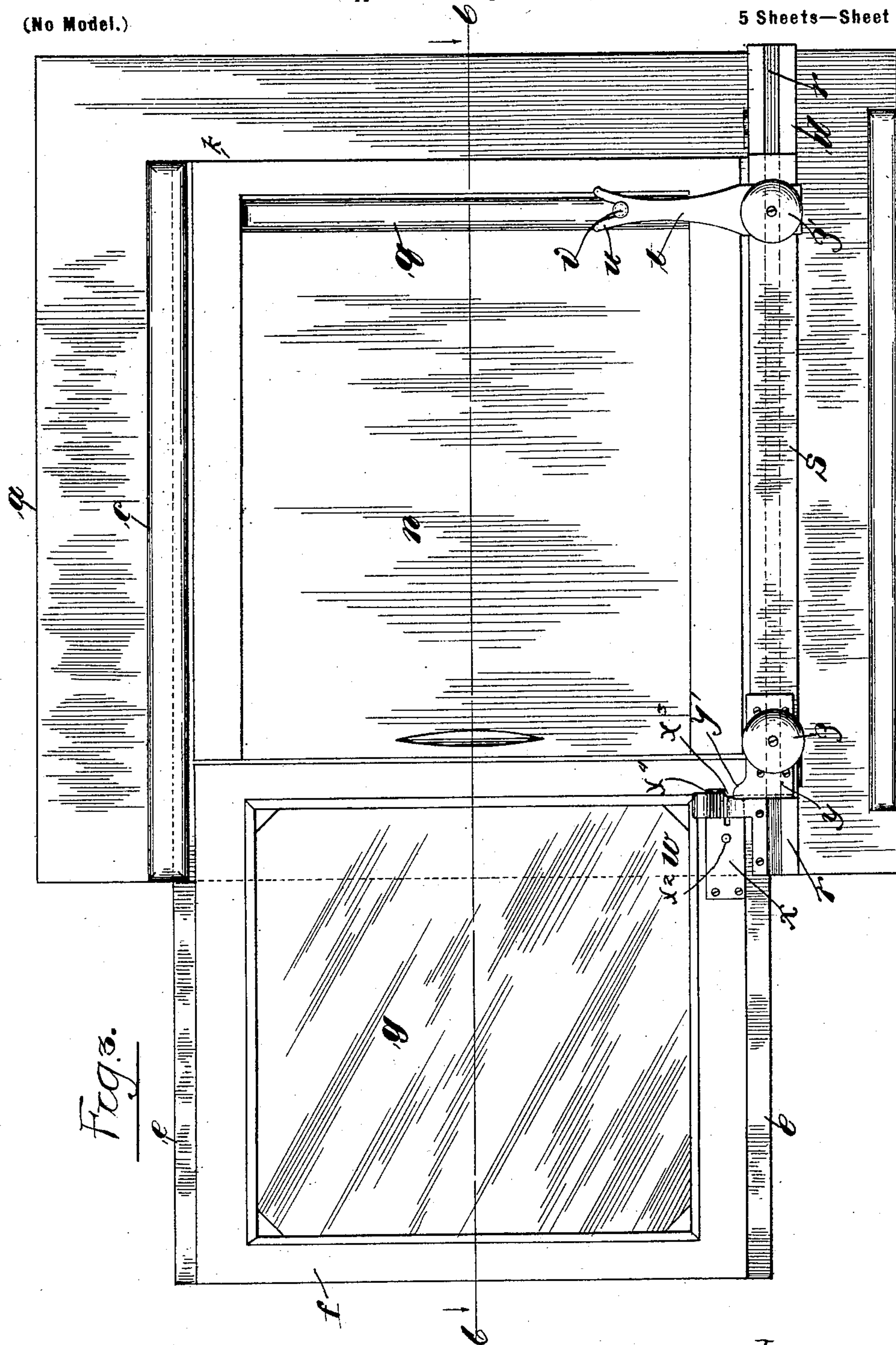


Fig. 3.

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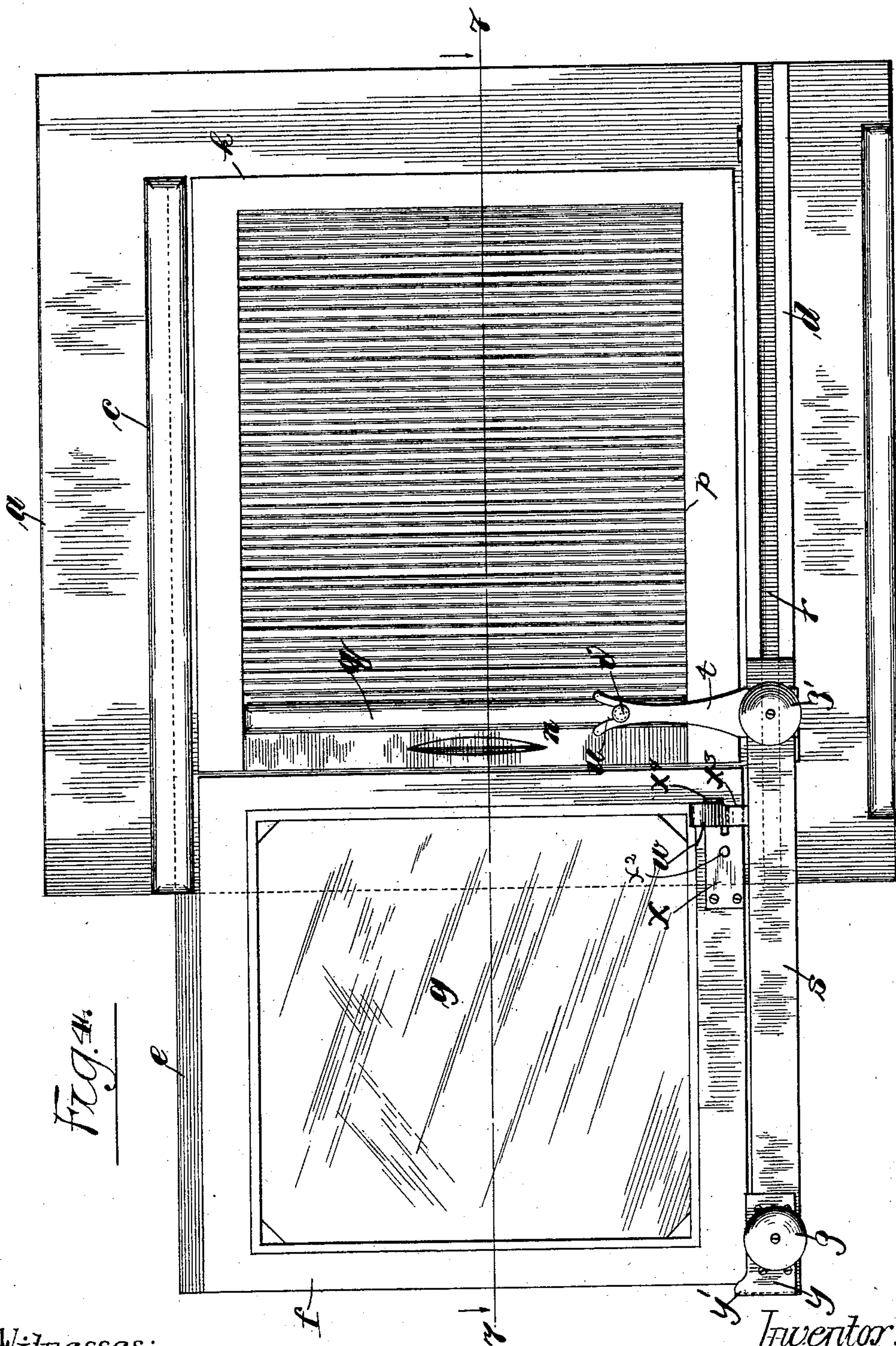
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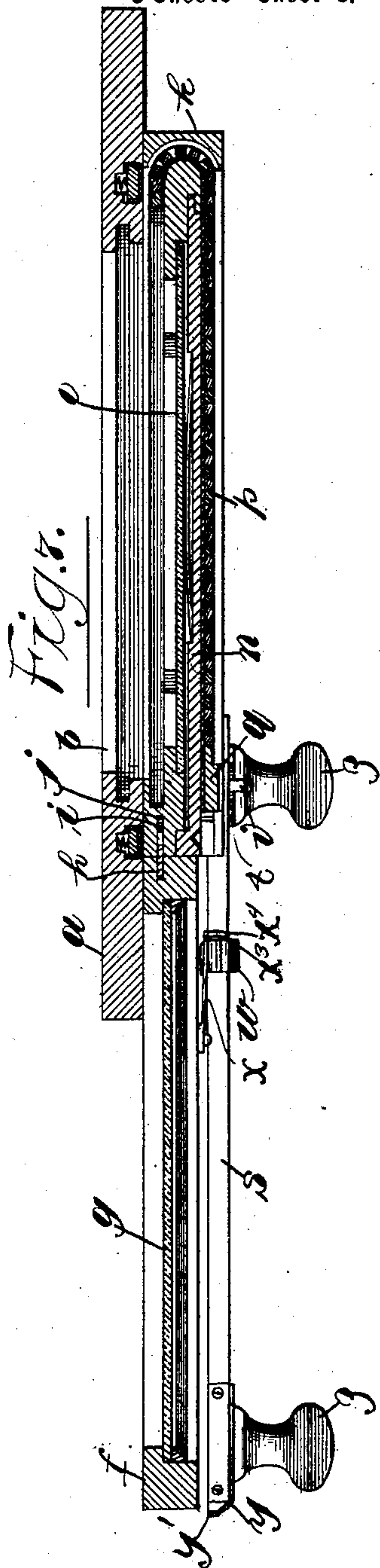
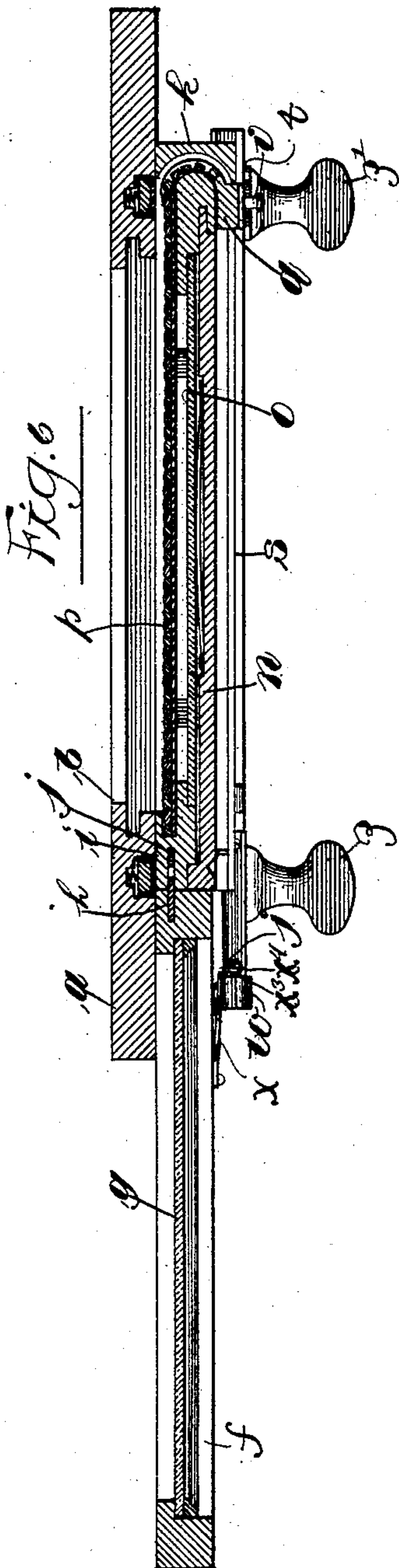
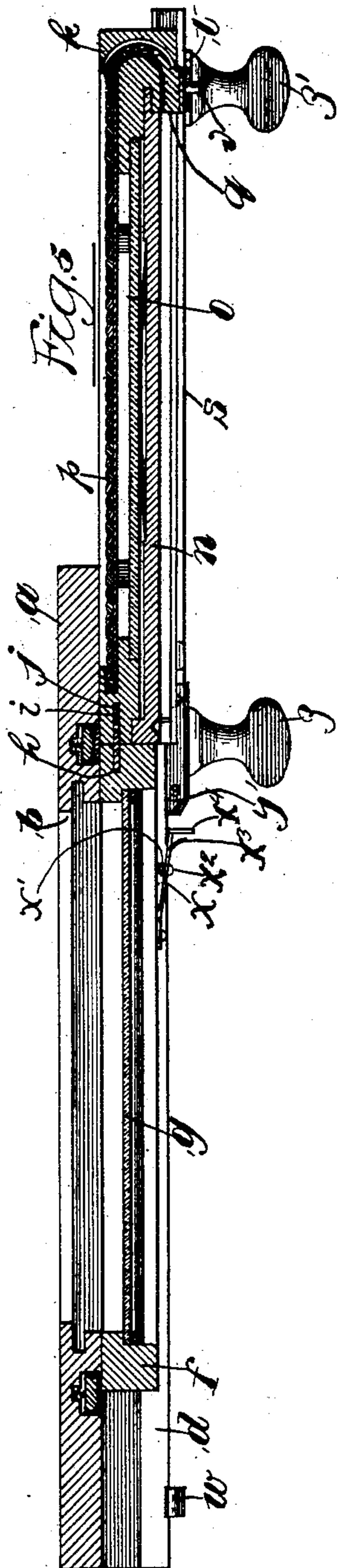
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PLATE HOLDER ATTACHMENT FOR CAMERAS.

(Application filed Sept. 24, 1902.)

(No Model.)

5 Sheets—Sheet 5.



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UNITED STATES PATENT OFFICE.

JAY ALBERT SMITH, OF HUNTINGTON, NEW YORK.

PLATE-HOLDER ATTACHMENT FOR CAMERAS.

SPECIFICATION forming part of Letters Patent No. 715,617, dated December 9, 1902.

Application filed September 24, 1902. Serial No. 124,637. (No model.)

To all whom it may concern:

Be it known that I, JAY ALBERT SMITH, of 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 full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in which corresponding letters of reference in the different figures indicate like parts.

The object of my invention is to so construct a plate-holder attachment for cameras that the plate-holder may by one continuous movement of the hand of the operator be moved into an exposing position simultaneously with the removal of the ground glass, and when at rest in that position the continuation of the movement may serve to withdraw the slide and expose the plate, while a reverse movement serves first to close the slide while the plate-holder is still at rest, and then to remove the plate-holder from its exposing position and to restore the ground glass before the exposing-aperture.

A further object is to so construct said attachment that the plate-holder may be detachably secured to the ground-glass frame, with the sensitive plate in the same plane with the ground glass, and that without providing a separate carriage for said ground glass and plate-holder. Moreover, I desire to so construct said device that the placing of the holder in position will serve to detachably connect the curtain-slide with the actuating mechanism by which the ground glass, plate-holder, and curtain-slide are severally manipulated, all of which is hereinafter more particularly described and the novel features thereof briefly set forth in the claims.

In illustrating the invention, which applies only to the back of the camera-box, I have merely shown the backboard without the usual bellows and the other well-known parts, it being assumed that their relations would be readily comprehended.

In said drawings, Figure 1 is a rear view of the camera-back, showing the ground glass in its normal position, the plate-holder detached, and indicating the manner in which the latter may be attached to the ground-glass frame and its slide connected with the

actuating mechanism. Fig. 2 is a like view showing the plate-holder in its initial connected position. Fig. 3 is a like view showing the plate-holder moved to its secondary position opposite the exposing-aperture. Fig. 4 is a rear view showing the plate-holder in an exposing position with the curtain-slide withdrawn to expose the plate. Fig. 5 is a horizontal sectional view in plan, taken upon the line 5 5, Fig. 2. Fig. 6 is a like view taken upon the line 6 6, Fig. 3; and Fig. 7 is a like view taken upon the line 7 7, Fig. 4.

Referring to the drawings, *a* represents the usual backboard, which is detachably or otherwise secured in any well-known way to the camera box or bellows in the rear of the camera, said back having the usual exposure-aperture *b*, Figs. 5, 6, and 7. Parallel horizontal cleats *c d* are rigidly attached to the back of the board *a*, said cleats being rabbeted or grooved in the usual manner, so as to receive the tongues *e e* of a frame *f*, having therein the usual ground glass *g*. Within a groove at the right-hand edge of the ground glass is rigidly secured a sheet-metal piece *h*, having thereon vertical hooks *i i*, Figs. 1, 2, 5, 6, and 7, which piece is adapted to fit in a corresponding groove *j* formed in the edge of a plate-holder *k*, which plate-holder is provided with rabbets or projections *l l* upon its upper and lower edges, respectively, as clearly shown in Fig. 1, to fit within the grooves of the cleats *c d*, like the projections *e e* upon the ground-glass frame. Pins *m m*, one of which is shown in Fig. 2, are engaged, respectively, by the hooks *i i* and serve to lock the plate-holder to the ground-glass frame. The holder is provided with the usual removable back or slide *n* to enable the sensitive plate *o* to be inserted against the supporting-edges, as well as with the usual slat or curtain-slide *p*, adapted to slide in grooves in front of, around one end, and at the back of the holder, a large slat *q* being attached at one end of the slide and adjusted at the back of said plate-holder. The normal position of said slat when the curtain-slide is closed is that shown in Figs. 1, 2, 3, 5, and 6, while its reverse position is that shown in Figs. 4 and 7.

In the face of the cleat *d* is formed a dove-

tailed groove r , into which a sliding bar s , having a counterpart dovetail upon the back, is fitted. Said bar is provided with an upwardly-projecting arm t near its outer end, 5 having a fork or notch u therein adapted to receive a pin or stud v upon the slat q or end of the curtain-slide. The several parts are so adjusted that when the plate-holder is locked to the ground-glass frame, as described, the notch of the arm t is in engagement with said stud.

A sheet-metal plate w is rigidly attached to the left-hand end of the cleat d and is projected upwardly; so as to overlap the lower rail of the ground-glass frame. Upon said 15 rail, near the right-hand end, is placed a spring x , adapted to stand normally in the position shown in Fig. 5; but when the ground-glass frame is moved to its extreme position toward the left, as shown in Figs. 3, 4, and 7, the spring is compressed beneath the plate w , for the purpose hereinafter stated. A spiral spring x' beneath the spring x may be provided to reinforce it, if necessary, while a 25 headed pin or screw x^2 serves to limit its outward movement. Two projections x^3 x^4 are formed upon the outer end of said spring, the first of which is bent in a curved form to form a catch, as hereinafter stated, and the other at right angles (see Figs. 5, 6, and 7) to 30 engage the part w when the frame f is moved to the left and form a stop to limit said movement. A sheet-metal plate y is attached to the left-hand end of the slide-bar s , said plate being flanged inwardly at its outer end and so formed that a portion y' thereof will overlap the lower rail of the ground-glass frame, so as to engage the projection x^3 , as hereinafter stated. Knobs z z' are formed upon 40 the slide-bar s for manipulating said bar.

The operation of said device is as follows: The sensitive plate o being placed within the plate-holder and the slides n and p closed to protect it, the plate-holder k (shown in Fig. 1) 45 is placed in position, as shown in Fig. 2, so that the hooks i i engage the pins m m , it being assumed that the ground glass is opposite the exposing-aperture and the slide-bar s moved to its extreme position toward the right, as shown in Figs. 2 and 5. In this position the pin v of the curtain-slide is in engagement with the notch of the arm t . The image having been focused, the operator takes hold of one of the knobs z or z' and 55 moves the slide-bar s toward the left. This causes the part y' of the plate y to engage the projection x^3 of the spring x , thereby causing the ground-glass frame and plate-holder to slide in the way in which they are supported until the spring x is moved beneath the part w , 60 which causes said spring to be depressed until the part x^3 becomes disengaged from the part y' . As soon as this occurs the part x^4 is brought into engagement with the stop w , thereby preventing further movement of the plate-holder, which is then in registering position with the exposure-aperture. A con-

tinuation of the movement of the slide-bar s to the position shown in Figs. 4 and 7 serves through the action of the arm t to draw the 70 curtain-slide. The exposure having been made, the operation is reversed by moving the slide-bar s in an opposite direction to its extreme limit. The first half of the movement serves to close the curtain-slide, while 75 the plate-holder remains stationary. The spring x being depressed by the part w the part y' passes over the projection x^3 without touching, and when the slat q is brought into contact with the end of the frame, as shown 80 in Figs. 3 and 6, the further movement of the slide-bar s carries the plate-holder and ground-glass frame with it until the latter are restored to their respective initial positions, as shown in Figs. 2 and 5. 85

It will be noticed that in the last-named figures the camera-back has a different relative location upon the sheet than in the other figures, which would seem to be inconsistent with the presumption that it occupies a stationary position. This apparent inconsistency was rendered necessary and the relative location was changed in order to make the figures of a suitable size to show the parts clearly, and the drawings should be read with 95 this understanding.

Having thus described my invention, I claim—

1. The combination with a camera-back of a sliding ground-glass frame, a plate-holder, 100 means for detachably locking the two together end to end, a curtain-slide in said plate-holder, a sliding element on said camera-back, means for detachably connecting the same with said ground glass, plate-holder 105 and curtain-slide respectively, and means for releasing said connection with said ground glass, frame and plate-holder when the latter shall have reached an exposing position.

2. The combination with a camera-back of 110 a sliding ground-glass frame, a plate-holder having a curtain-slide, a sliding element at the rear of the camera-back, means for connecting the same with the rear end of said curtain-slide, a spring-catch for operatively 115 connecting said sliding element with said ground-glass frame and plate-holder and means for releasing said spring-catch at a predetermined period during the longitudinal movement of said sliding element. 120

3. The combination with a camera-back of a sliding ground-glass frame, a plate-holder, a curtain-slide therein, means for detachably securing one end of said plate-holder to one end of said ground-glass frame, a sliding bar 125 upon the rear of said camera-back, means for detachably connecting the same with the rear end of said curtain-slide, means for engaging the same with a catch for moving said ground-glass frame and plate-holder, means for stopping the movement of said ground-glass 130 frame and plate-holder when the latter is in an exposing position, and means for simultaneously releasing said catch whereby the

movement of said slide-bar may be continued to withdraw said curtain-slide.

4. The combination with a camera-back, of a slideway, a ground-glass frame and plate-holder adapted to slide therein, means for detachably connecting said holder and frame, a curtain-slide within said holder, a sliding bar upon the outside of said camera-back, means for detachably connecting said bar with the end of said curtain-slide at the back of the plate-holder, and means for automatically moving said plate-holder into an exposing position and subsequently withdrawing the curtain-slide by a single movement of said slide-bar.

5. The combination with a camera-back having the usual exposure-aperture, of a ground-glass frame, a plate-holder having a curtain-slide, said frame and plate-holder being fitted to slide in a way in the rear of said camera-back, means for detachably securing said plate-holder to said ground-glass frame, a horizontal sliding bar at the rear of said camera-back, means thereon for engaging the rear end of said curtain-slide, a catch upon said ground-glass frame, means upon said sliding bar for engaging said catch, to remove the ground-glass frame from and to place the holder before the exposing-aperture, and means for releasing said catch when the plate-holder is in an exposing position whereby a continued movement of the slide-bar may serve to draw the curtain-slide while the plate-holder remains stationary.

6. The combination with an apertured camera-back and slideway, of a ground-glass frame, a plate-holder having a curtain-slide, means for detachably connecting said ground-glass frame and plate-holder end to end to each other, a sliding element mounted upon the back of the camera-frame, means for detachably connecting the same to the curtain-slide at the rear of the plate-holder, a spring-catch in operative connection with said sliding element for moving said ground-glass frame and plate-holder to bring the latter to an exposing position, a stop for holding said plate-holder in an exposing position and means for automatically releasing said spring-catch when said stop is engaged, and for holding said catch out of an engaging position until after the curtain-slide is opened and closed.

7. In a camera attachment, a plate-holder, a curtain-slide therefor, one end of which is exposed at the rear, a slideway upon the camera-back adapted to receive said plate-holder, and a sliding device upon said camera-back in operative connection with said plate-holder and the rear end of said curtain-slide for first sliding said plate-holder to an exposing position and then withdrawing said curtain-slide, all by a single movement of said sliding device, and then by a reverse movement thereof, first closing said curtain-slide and then restoring said plate-holder to its normal position.

8. The combination with a camera-back having a sliding way in the rear thereof, of a plate-holder a curtain-slide therein, a sliding attachment upon the rear of said camera-back for manipulating said plate-holder and curtain-slide, a stop for limiting the movement of said plate-holder upon reaching an exposing position, a yielding catch device for engaging said sliding attachment, and means for depressing said catch device when said plate-holder is engaged by said stop, whereby said sliding attachment may be permitted to continue its movement to withdraw said curtain-slide.

9. In a camera attachment, the combination of an apertured back, a slideway thereon, a plate-holder, a curtain-slide inclosed within the plate-holder and a device upon the rear of said apertured back which engages the rear end of said curtain-slide and automatically manipulates it while the plate-holder is stationary and in an exposing position.

10. The combination with an apertured camera-back having a slideway in the rear, of a plate-holder adapted to fit said slideway, a curtain-slide in said plate-holder and automatic means for first sliding said plate-holder to an exposing position and then withdrawing said curtain-slide by one continuous movement.

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

JAY ALBERT SMITH.

Witnesses:

W. C. HAYES,
JESSE G. CORWIN.