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Patented Sept. 6, 1898.

B. MARX & H. GASSNER.

MAGAZINE CAMERA.

(Application filed Jan. 6, 1898.)

(No Model.)

2. Sheets—Sheet 2.

Fig. 4.

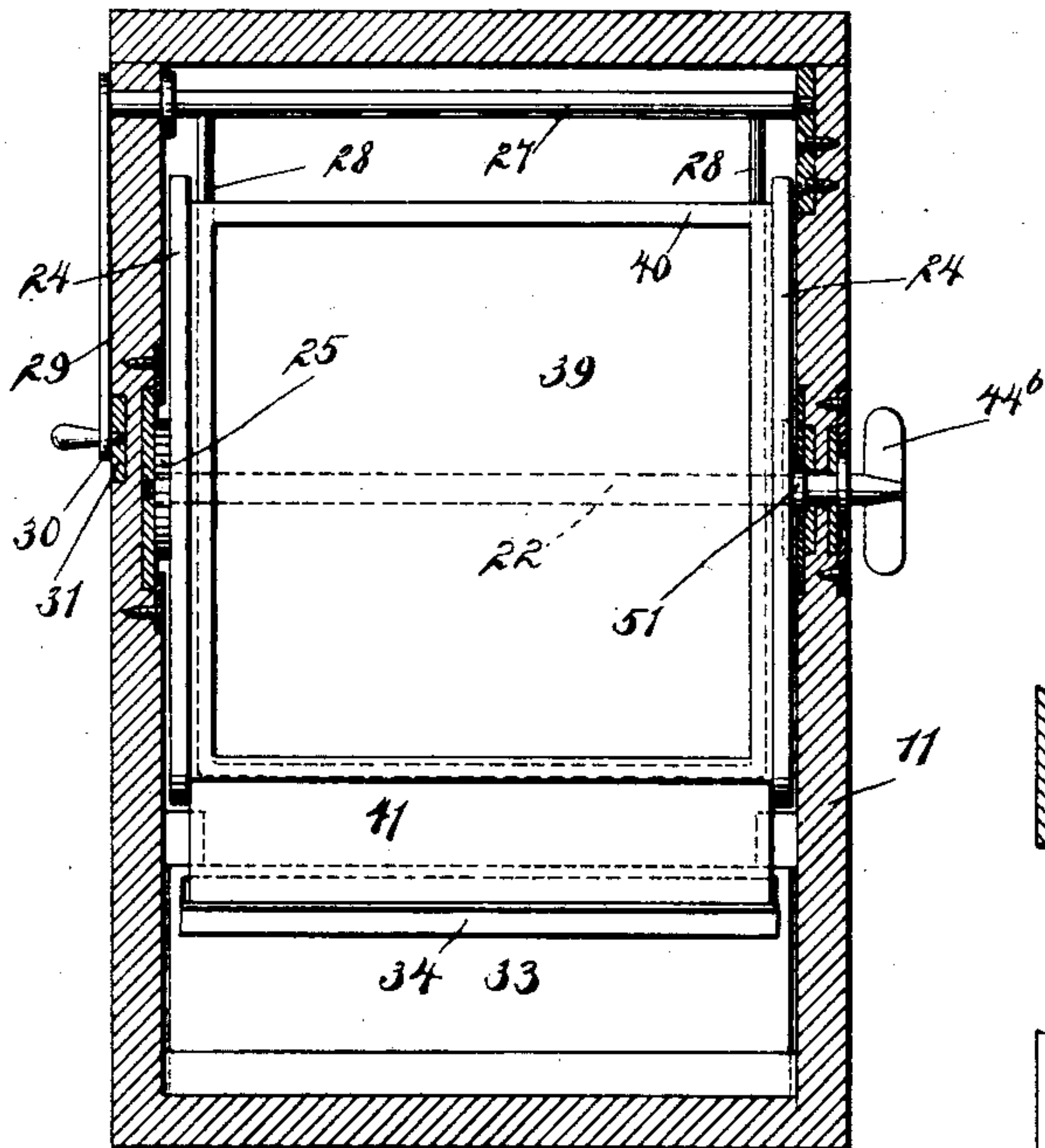


Fig. 5.

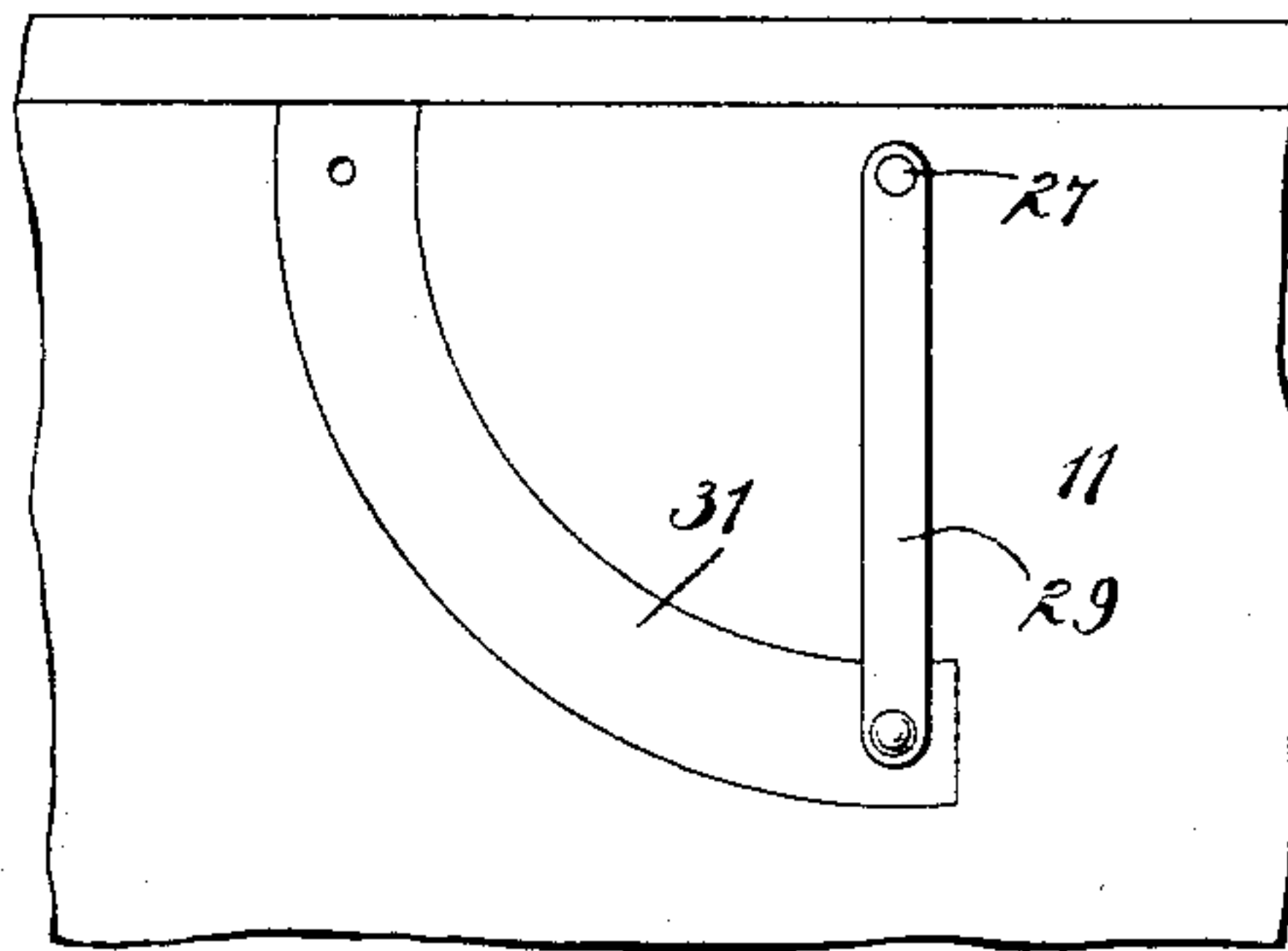


Fig. 6.

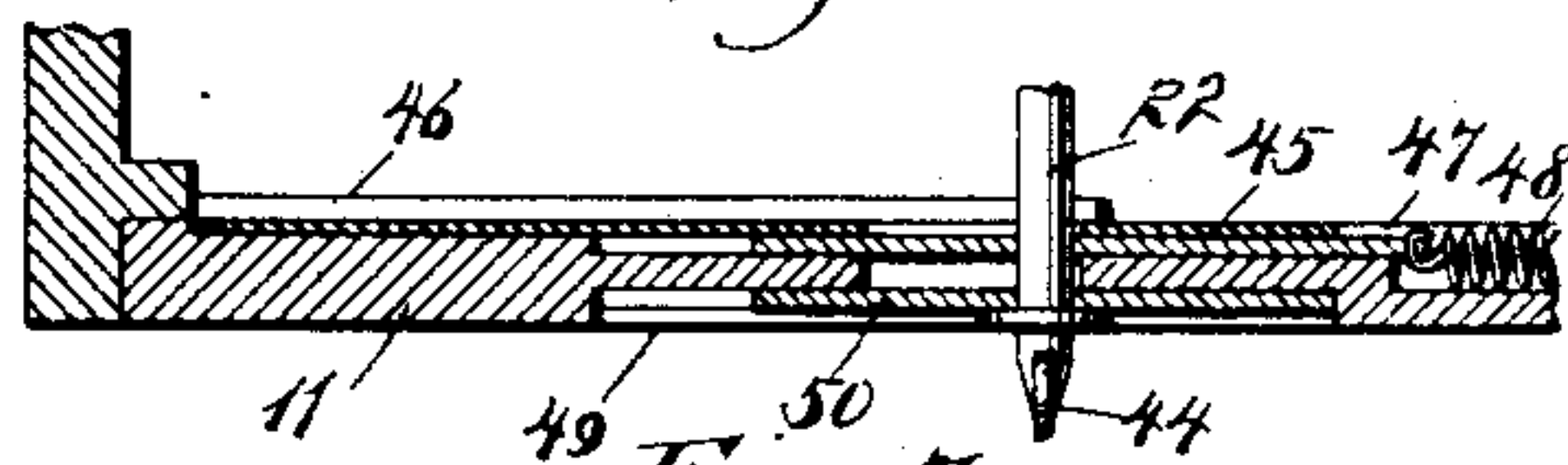


Fig. 7.

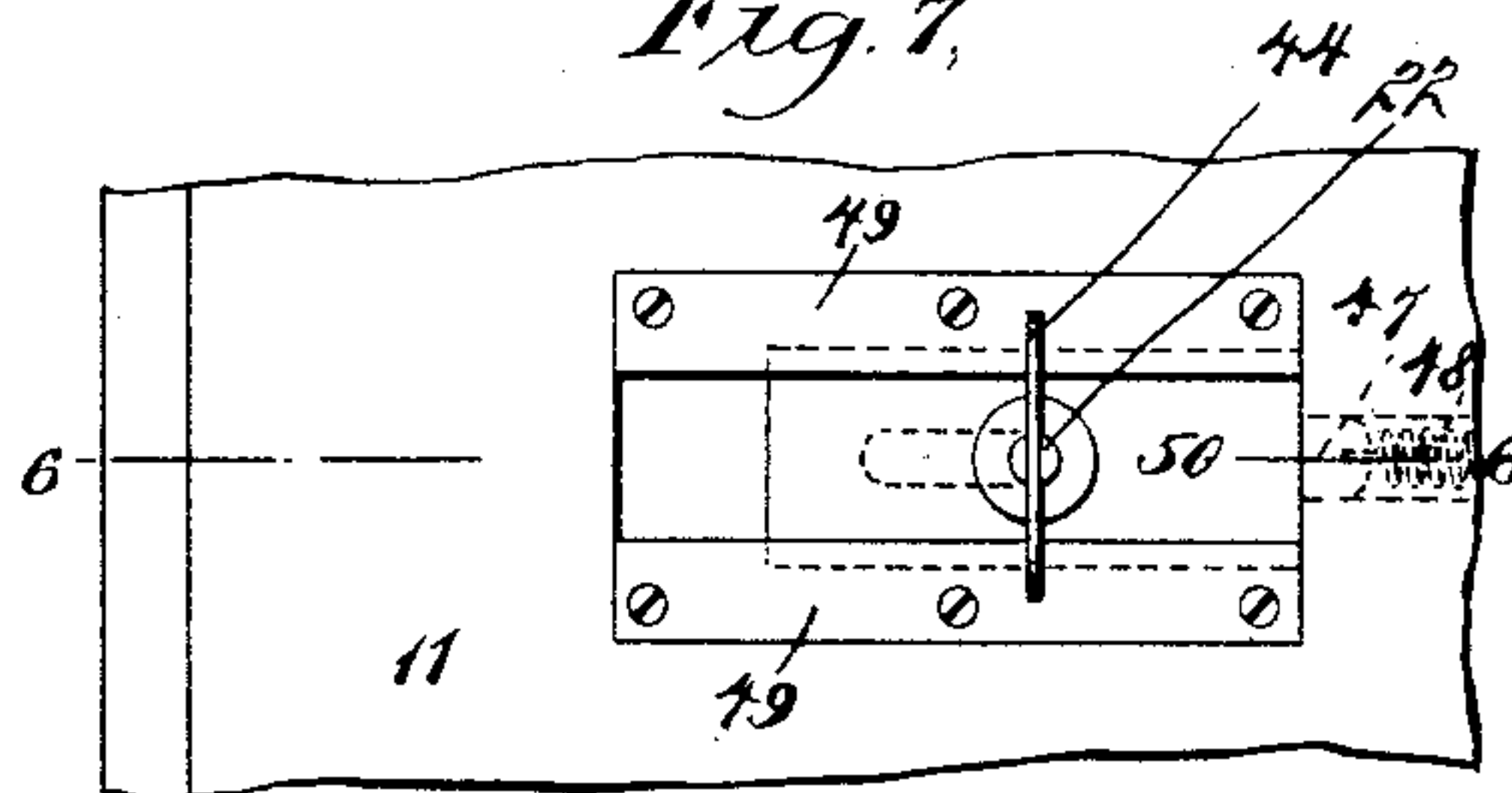


Fig. 8.

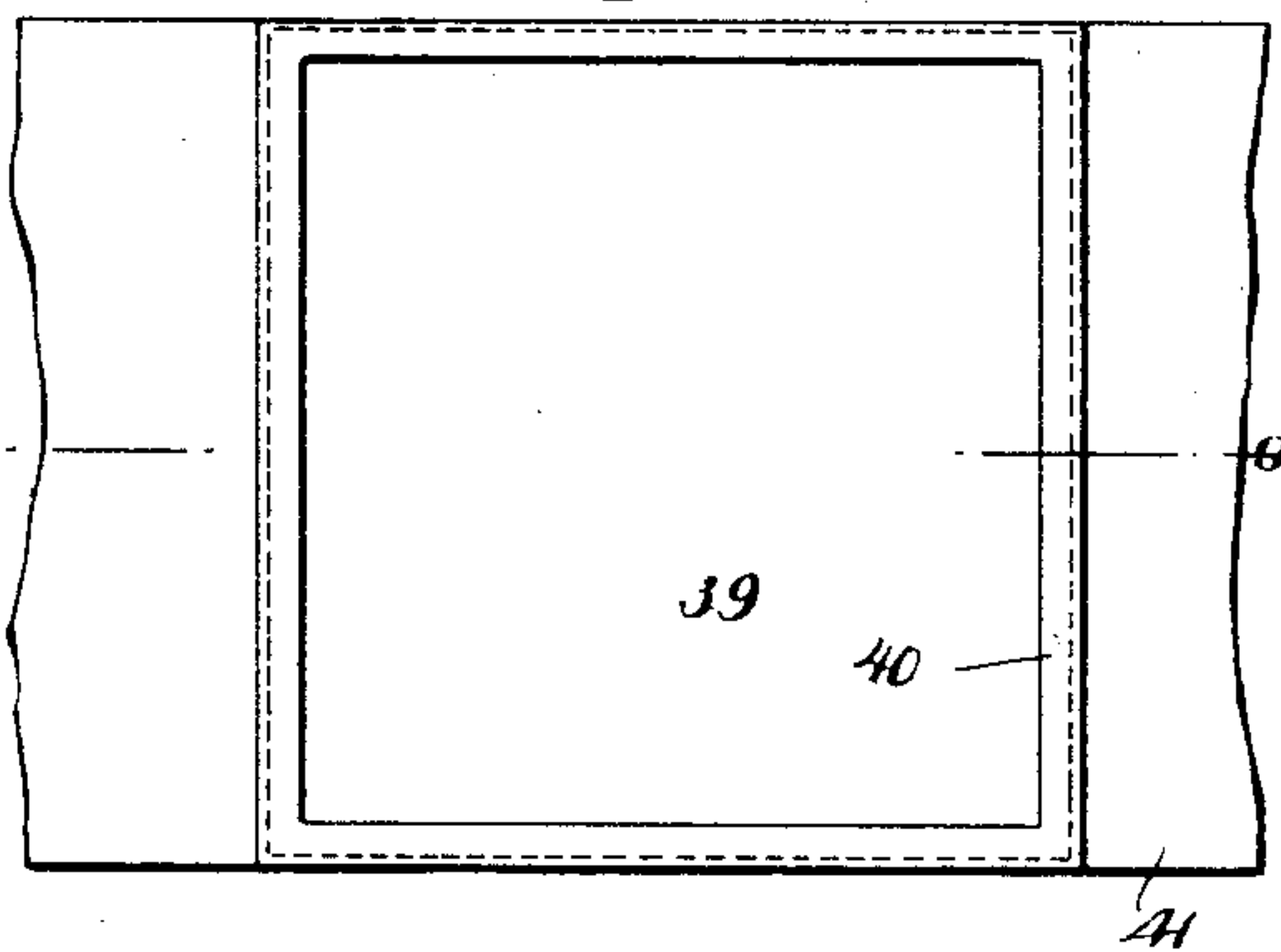


Fig. 9.



Fig. 10.

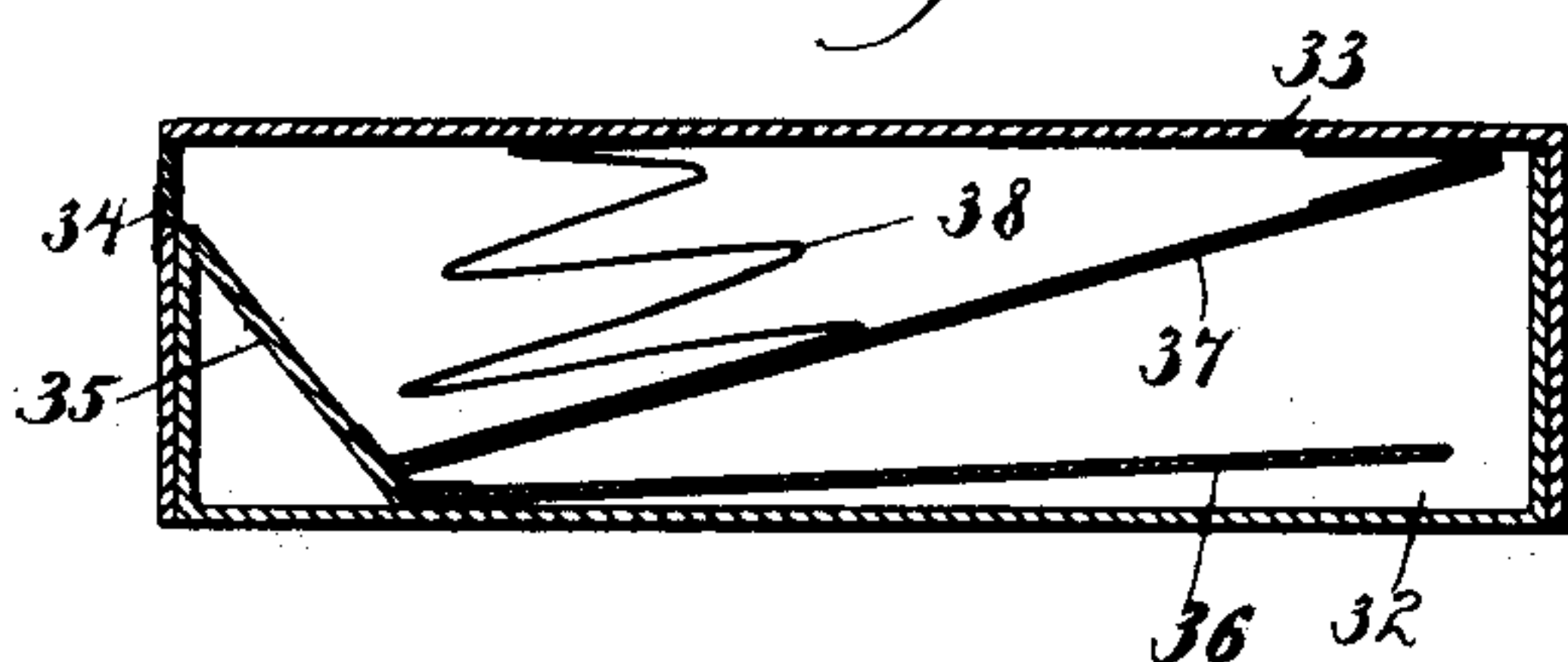
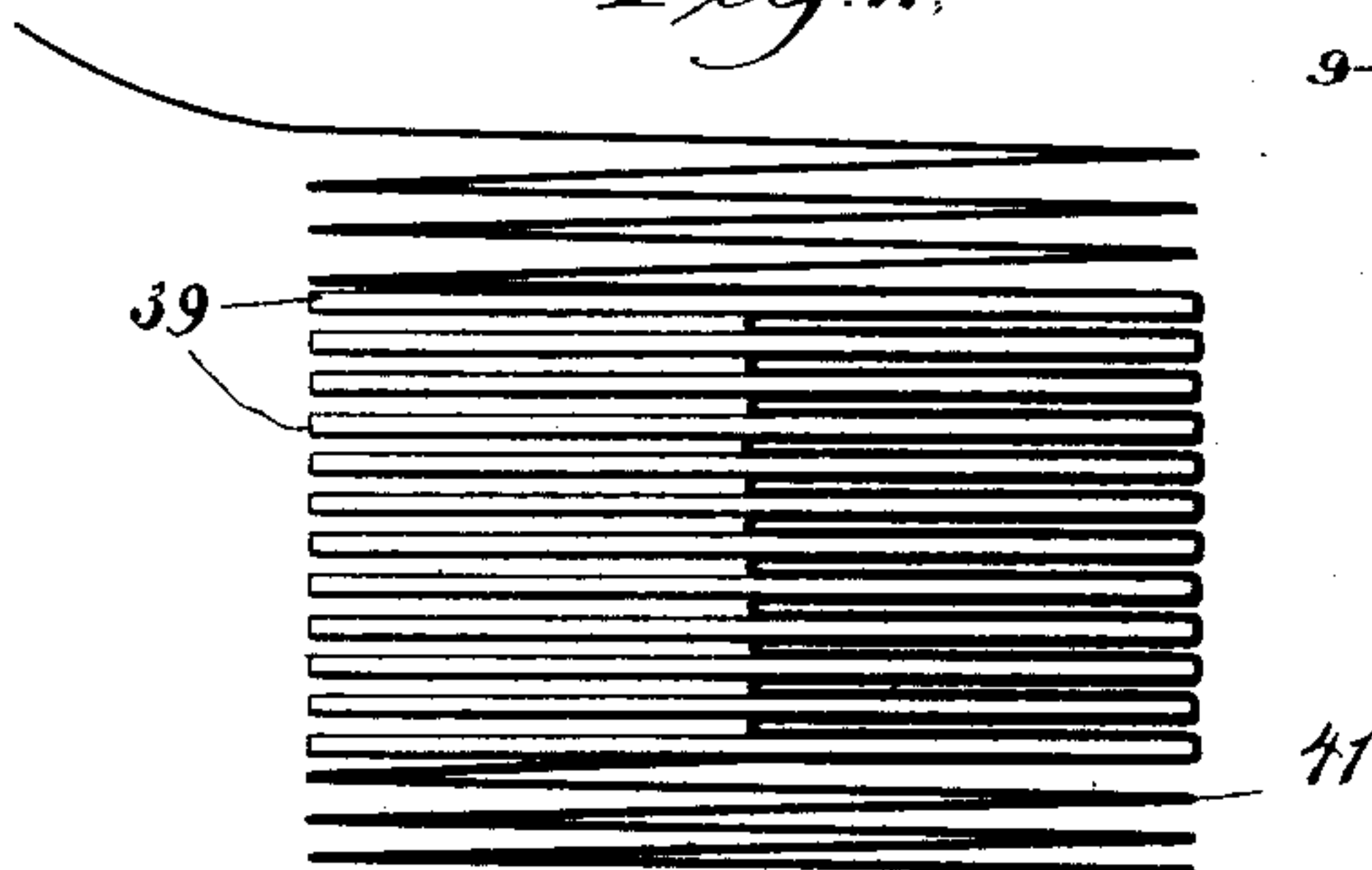


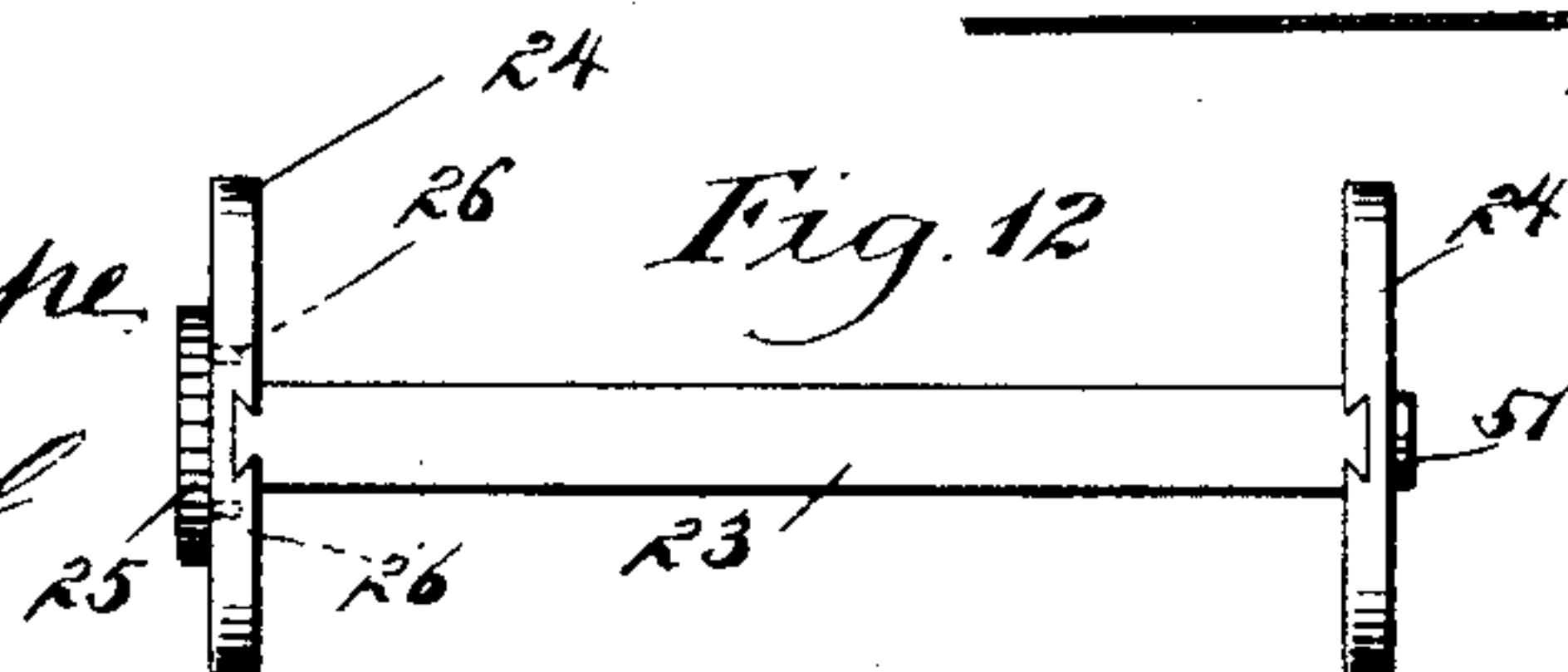
Fig. 11.



WITNESSES

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Fig. 12



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UNITED STATES PATENT OFFICE.

BENJAMIN MARX AND HENRY GASSNER, OF NEW YORK, N. Y.

MAGAZINE-CAMERA.

SPECIFICATION forming part of Letters Patent No. 610,453, dated September 6, 1898.

Application filed January 6, 1898. Serial No. 665,821. (No model.)

To all whom it may concern:

Be it known that we, BENJAMIN MARX and HENRY GASSNER, of New York city, in the county and State of New York, have invented a new and Improved Camera, of which the following is a full, clear, and exact description.

This invention is a magazine-camera capable of being charged and discharged with and of any number of sensitized plates in the daylight and without the necessity of the dark room and having a series of sensitized glass plates joined to each other by an opaque web, such plates being first superposed in an opaque box which is placed in the camera and from which the plates are drawn by a removable reel that carries the plates during and after exposure.

This specification is the disclosure of one form of our invention, while the claims define the actual scope of the invention.

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.

Figure 1 is a longitudinal section of the invention, looking toward the left-hand side thereof and omitting the reel and the plate-box. Fig. 2 is a longitudinal section looking toward the left and showing the reel and plate-box. Fig. 3 is a fragmentary elevation showing parts at the interior right-hand wall of the casing. Fig. 4 is a cross-section of the invention, looking forward to the reel and plate-box, the section being taken on the line 4 4 in Fig. 2. Fig. 5 is a fragmentary elevation showing the focusing-arm. Fig. 6 is a detail section on the line 6 6 of Fig. 7. Fig. 7 is a fragmentary elevation of the exterior right-hand wall of the camera, showing the rod for turning the reel and the contiguous parts thereof. Fig. 8 is a face view of one of the photographic plates. Fig. 9 is a section on the line 9 9 of Fig. 8. Fig. 10 is a detail section taken through the plate-box. Fig. 11 is a view showing the folding of the plates in the box, the plates being separated from each other to show them more clearly. Fig. 12 is an edge elevation of the reel.

The camera is formed of a box or casing 11, the rear wall 12 of which is hinged to the

box and the front wall of which is provided with the usual lens 13 and shutter 14.

The left-hand side of the camera has secured to its inner face a flanged track-plate 15, leading to a plate 16, that slides between guides 17, which are secured to the inner face of the said left-hand side of the box. The plate 16 has a forwardly-running extension 18, slidable in a groove in the left-hand side of the casing and attached to a retractile spring 19, also situated in a groove, by which arrangement the plate 16 is drawn forward. The plate 16 is provided with a stop 20 and a pawl 21. The plate 16 forms the support for the left-hand end of the spindle 22, whereon the reel is carried.

The reel has a web or body portion 23, having dovetailed connection at each end with flanges 24. These dovetailed connections between the parts 23 and 24 enable the reel to be taken apart and packed in a small space. The left-hand flange-plate 24 of the reel is provided with a ratchet 25, which, as shown by dotted lines in Fig. 12, is provided with two pins 26, adapted to be removably seated in openings in said left-hand flange-plate 24. The stop 20 and pawl 21 are adapted to engage this ratchet 25, the stop 20 serving to limit the forward movement of the reel during the act of placing the reel in position and the pawl 21 serving to prevent backward movement of the reel. In placing the reel in position the reel is moved from the rear of the camera forward, with the ratchet 25 in the guide-plate 15, until the axis of the ratchet coincides with the opening for the spindle 22 in the plate 16. The spindle 22, having been first removed, should now be passed through the web 23 of the reel to support the same.

The right-hand end of the spindle 22 and of the reel are held by devices which yield forward and backward like the devices of the plate 16. These devices consist in a guide-plate 45, fastened to the right-hand interior wall of the casing and having a channel-shaped extension 46, corresponding with the guideway 15. The plate 45 and the casing are slotted to permit the spindle 22 to pass through them, and the spindle is held by a carriage-plate 47, that slides between the plate 45 and the casing and that is drawn for-

ward (like the plate 15) by a retractile spring 48. These are the means that mount the right-hand end of the spindle 22 to slide like the left-hand end thereof. Two guides 49 are made fast to the outer wall of the casing over the plate 45 and slidably hold a closure-plate 50, that surrounds the spindle 22 and slides therewith, to keep the light from entering the casing. The right-hand flange of the reel is provided with a bossed plate 51, that receives the spindle and that also serves to slide through the guide-channel 46 during the placing of the reel in position. When the reel has been moved into position, the spindle 22 is passed through the plates 50 and 47, and then through the web 23 of the reel, and finally into engagement with the plate 16. The spindle 22 is screwed into the ratchet 25 and turns loosely in plate 16, so that the reel may be turned by the spindle. The reel is thus mounted to move forward and backward toward and from the lens 13, so as to permit a proper focusing of the plate. This focusing is effected by means of a shaft 27, which is mounted in the upper portion of the casing 11 and which carries a rectangular focusing-frame 28. (Shown best in Fig. 4.) The shaft 27 extends through the casing and is provided with an arm 29, by which the shaft 27 may be rocked. This arm 29 has a pin 30 at its free end, which pin is capable of fitting in either one of two openings formed in an arc-shaped plate 31, let into the outer face of the casing 11, so as to hold the shaft 27, with its frame 28, either in the position shown in Fig. 1 or in the position shown in Fig. 2. In the latter position the focusing-frame is active, since the shaft 27 is adjusted at the proper focus with reference to the lens 13, and when the frame 28 is in the perpendicular position (shown in Fig. 2) the frame pushes the reel backward against the tension of the springs 19 and 48, so as to place the plate to be exposed in proper relation to the lens 13. As the number of plates on the reel increases the reel is moved further backward, as will be understood.

The plate-box, as shown best in Fig. 10, has a body portion 32, whereon is placed a cover 33, that incloses the top and sides of the body. The cover 33 is provided with a hinged flap 34, forming a door through which the plates and their opaque web may pass from the box. The rear end of the body 32 is provided with an inclined false wall 35, adapted to guide the plates up to the door 34. Hinged to the lower edge of the wall 35 is a tension-plate 36, which extends forwardly into proximity to the front end of the box. Hinged to the under side of the cover 33 is a rearwardly-projecting follower 37, pressed downward by a spring 38. The several sensitized plates 39, as shown in Figs. 8, 9, and 11, are bound, as usual, by a sheet 40. These plates have one-half of the area of the backs of the sheets 40 cemented to the opaque web 41. When the web is extended, the plates lie in the same

plane and directly contiguous to each other, and when the plates are superposed, as shown in Fig. 11, the trend of the web is first under the bottom or lowermost plate, thence inward over one-half the top thereof, and thence outward in cemented connection with the bottom of the next plate, the web lying loosely on the top of the first-mentioned plate. This accordion-like fold is continued throughout all of the plates, and in order to cover the plates and prevent their exposure the web is extended beyond the plates and folded, as shown in Fig. 11. When placing the plates in the plate-box, the extended portion of the web, which is at the bottom of the stack of plates, is first led on the bottom of the box 32. The tension-plate 36 should now be moved down on such part of the web 41. Then the photographic plates should be led on the tension-plate with the upper extended portion of the web pressed down upon by the follower 37. The extremity of the web is projected slightly beyond the door 34 and may be provided with a suitable stiffening to permit of readily grasping the web and drawing the same through the top.

In using the camera the photographer is provided with a number of plate-boxes each charged, as above described, with the photographic plates. Each box will also be equipped with a plate-reel taken apart, as previously described. Assuming that it be desired to charge the camera, the reel is assembled and placed in position in the casing. The plate-box is now introduced into the forward lower portion of the camera through a door 42, the box being held by a cleat 43 on the bottom and by cleats 44 44^a, respectively, on the sides of the casing. Through the door 12 the operator may reach to grasp the end of the web 41, which is left projecting out of the plate-box, and draw said web forward to connect it with the reel, preferably through the medium of a slot 43^a, formed in the reel. The focusing-arm 29 is now moved to throw the frame 28 up to the position shown in Fig. 1, and through the medium of the button 44^b, formed on the right-hand end of the spindle 22, the reel is turned to wind thereon the upper extended portion of the web 41. When the upper extended portion of the web has been drawn out and wound on the reel, the uppermost plate is then drawn through the door 34 and laid flat against one side of the web 23 of the reel, placing the face of the plate outward in position for exposure. The arm 29 is now thrown down to properly focus the plate, whereupon the shutter may be operated and the exposure effected. When all of the plates have been wound on the reel and exposed, the frame 28 is lifted, and the lower extended portion of the web is then drawn out of the plate-box and wound over the plates to protect them from light. The purpose of the tension-plate 36 is to retard the withdrawal of the lower extended portion of the web 41, so as to cause this extended por-

tion to be wound tightly around the plates. When the plates have been covered on the reel, the spindle 22 should be withdrawn and the reel removed from the camera. The empty plate-box should also be removed, and a second reel and a second plate-box should be put in position.

It is our purpose to provide but one ratchet 25 for each camera, the ratchet being removable from each reel, so that when a reel is taken from the camera the ratchet may be disconnected therefrom and applied to a second reel.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. A camera having a casing, a plate-reel mounted to turn therein and capable of movement transverse to its axis, and a focusing-frame mounted to swing within the casing and capable of engaging the reel to push the same to proper position.

2. A camera having a casing, an adjustable plate-reel capable of holding the plates during the exposure, and means for adjusting said reel to individually focus the successive plates.

3. A camera having a casing, a reel adjustable therein and having a flat web against each side of which the photographic plates are carried and exposed, and means for adjusting the reel to focus the plates as they are successively wound on each side of the reel.

4. In a camera, the combination of a casing, a reel, bearings for adjustably mounting the reel, and a focusing-frame mounted to swing above or below the reel and capable of engaging the reel to focus the plates thereon.

5. In a camera, the combination of a casing, a reel, bearings for the reel, the bearings being adjustable toward and from the lens of the casing, springs tending to draw the bearings toward the lens, and a focusing-frame mounted to swing above or below the reel and capable of pushing the reel away from the lens to focus the negatives as they are wound on the reel.

6. A photographic camera having a casing, a plate-box therein, a series of plates stacked in the box and attached to an opaque web, a reel to which the web is connected and on which the plates are wound, the reel being adjustable toward and from the lens, and means for adjusting the reel to focus the plates as they are successively wound on the reel.

7. The combination of a plurality of rigid photographic plates, and a flexible web on which the plates are arranged, each plate having a portion of its back attached to the web, and the remaining portion of the back being free of connection with the web.

8. A box for photographic plates having a

body portion, a false wall arranged diagonally therein and leading to one end thereof, a tension-plate hinged to the false wall and lying in parallelism with the bottom of the box, a cover for the box, a spring-pressed follower hinged to the cover and moving into the box, and a door closing an orifice in the cover and adjacent to the false wall of the box.

9. A box for photographic plates, the box having a body portion, and a cover, the body portion being provided with a false wall leading diagonally to one end of the box and the cover being provided with a door arranged at the upper end of the said false wall.

10. A box for photographic plates, the box having a body portion, and a cover, the body portion being provided with a wall leading diagonally to one end of the body portion and the cover being provided with a door arranged at the upper end of said wall, and a tension-plate hinged to the bottom of the body portion.

11. A camera having an adjustable reel, means for focusing the reel, and a plate-box capable of containing the plates and of permitting the plates to be withdrawn under the action of the reel.

12. A camera having a removable plate-box separable from the camera and capable of being placed therein and displaced therefrom to charge and recharge the camera, plates carried in the box and connected to each other by a flexible web, and means mounted in the camera and capable of drawing the plates and web from the box to expose the plates.

13. A camera having a reel mounted therein and capable of carrying and holding for exposure photographic plates connected with each other by a flexible web, the reel being adjustable to admit of focusing the successive plates.

14. A camera having means capable of carrying a plurality of rigid photographic plates connected by a flexible web, and a reel mounted in the camera and capable of winding the plates and web on the reel and of holding the plates during exposure, the reel being adjustable to successively focus the plates.

15. A box for holding rigid photographic plates connected by a flexible web, the box having therein an inclined false wall leading upward from the bottom of the box at one end thereof, and the box having an opening at the upper edge of said false wall, and a hinged flap mounted to cover said opening and to permit the withdrawal of the plates and web.

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Witnesses:

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JNO. M. RITTER.