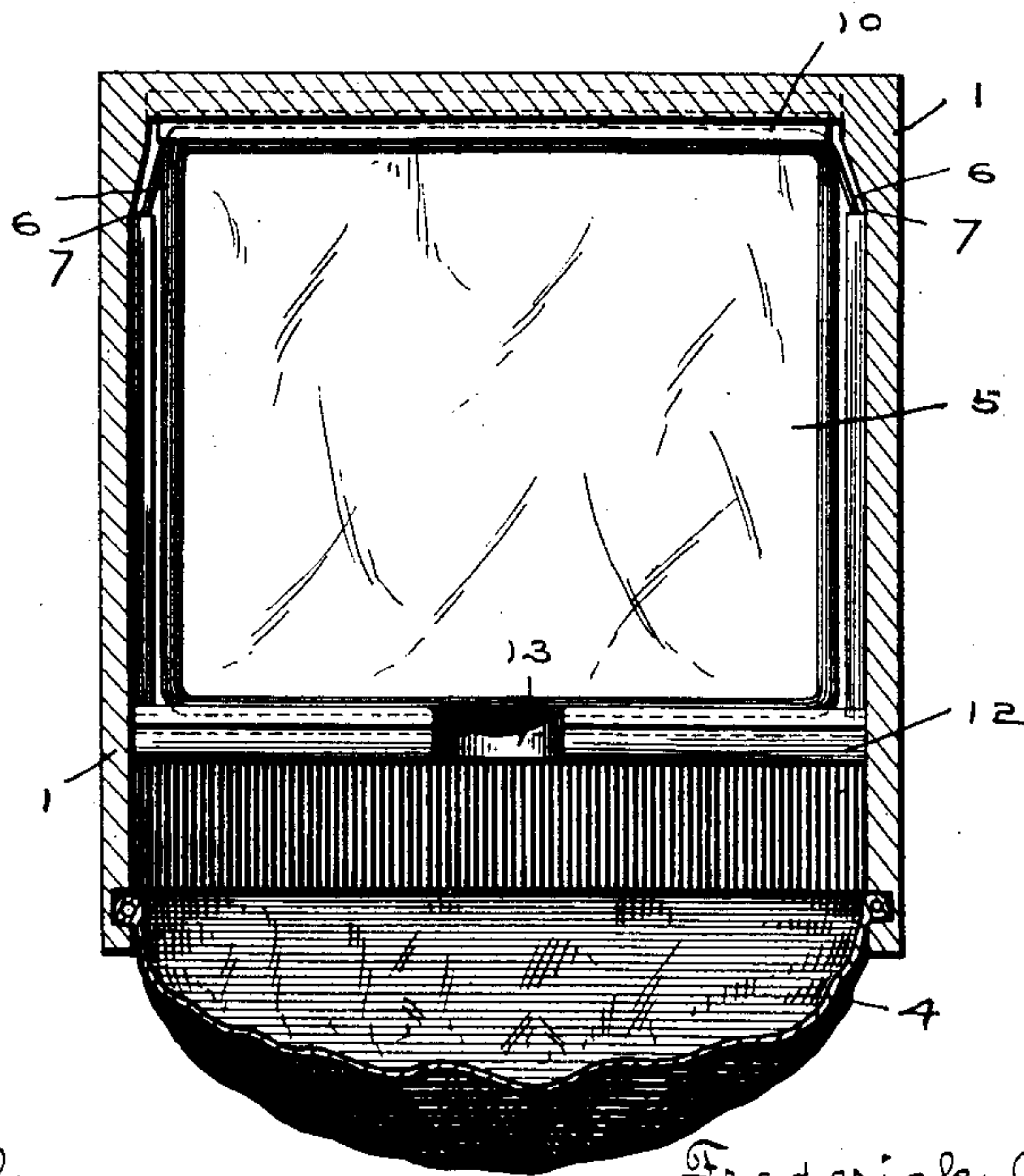
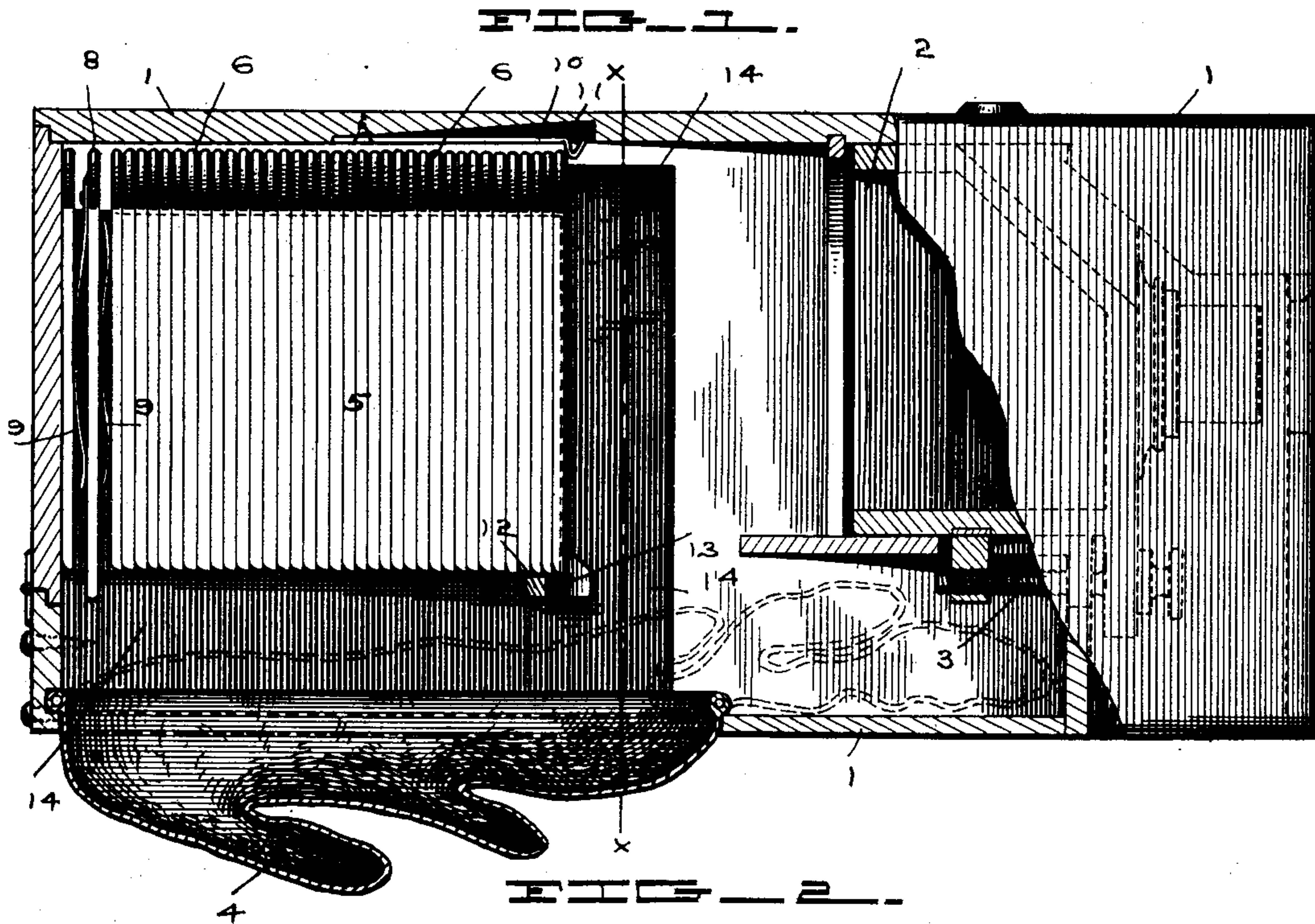


(No Model.)

F. A. HETHERINGTON.
PHOTOGRAPHIC CAMERA.

No. 483,688.

Patented Oct. 4, 1892.



Witnesses

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FREDERICK A. HETHERINGTON, OF INDIANAPOLIS, INDIANA.

PHOTOGRAPHIC CAMERA.

SPECIFICATION forming part of Letters Patent No. 483,688, dated October 4, 1892.

Application filed December 11, 1891. Serial No. 414,753. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK A. HETHERINGTON, of Indianapolis, county of Marion, and State of Indiana, have invented certain new and useful Improvements in Photographic Cameras; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like numerals refer to like parts.

My invention relates to improvements in the construction of photographic cameras, and belongs to that class known as "magazine-cameras," wherein a series of plates are carried in a casing and are successively exposed and removed out of the way, as desired, and it will be understood from the following description.

In the drawings, Figure 1 is a longitudinal section through the camera. Fig. 2 is a cross-sectional view through the same, looking to the left on the line $x x$, Fig. 1.

In detail 1 is the casing of the camera.

2 is an inner movable casing, which carries the lens-tube and its connections.

3 is an adjusting-screw for moving the lens-tube and its frame in and out.

4 is a flexible bag, to the top of which is secured a rectangular wire frame, which is held in grooves in the sides and ends of the casing, which are rabbeted out for its reception. The manipulation of the plates is all done from beneath and through the bag when it is necessary to remove a plate or film that has been exposed and carry it to the rear without allowing it to come in contact with the light.

5 are plate or film carriers, which are suspended by spring-supports 6 from the top of the camera-casing, these springs entering notches or recesses or grooves 7, formed in the sides, and rest against a shoulder, as shown in Fig. 2.

8 is a movable diaphragm or partition, the object of which is to separate the plates that have been exposed from those that have not, and it extends a short distance below the bottom of these, so that the dividing-point can be readily distinguished. To either side of this diaphragm is secured a pressure-spring 9, one of these bearing against the

plates in front for carrying them successively forward and the other against the plates behind for holding them in position, thus providing a spring-backing on both sides of this diaphragm.

10 is a retaining spring hook or catch extending across the width of the casing and works in a notched recess 11, formed in the upper piece of the same, as shown in Fig. 1. This hook normally engages with the upper edge of the front side of the forward plate and holds it in position, the lower edge of this plate abutting against the flange of a cross-piece 12, connected to the sides of the casing, so that the outer plate is held firmly at both its upper and lower edges. This cross-piece is provided with a finger-recess 13 for enabling the operator to seize the lower edge of the plate.

The casing of the camera is partially cut out or recessed in front of one end of the grooves 7, as shown at 14 in Fig. 1, both in front of and below the plates and up to the dotted line shown along the first plate, the object of this recess being to make room for the handling of the outer plate when it is to be removed. The operator takes hold of the lower edge of the plate through the folds of the bag, forcing it upward, carrying the spring into its recess, and then draws the lower edge of the plate forward and downward over the cross-piece 12 and removes it backward beneath the other plates without affecting the spring-supports 6 that have held it in place, and the plate itself may be carried backward and inserted behind the diaphragm in proper position. As it is pushed up into position behind the partition it enters between the unrecessed portions of the casing, and to pass through this portion the spring-supports are compressed flatly against the carrier to which they are affixed, and as soon as it is fully pushed into place the spring-supports will snap outward into the grooves 7, and the carrier thus be held again suspended freely. Care should be taken, however, to reverse the plate, so that its film shall face the rear end of the camera to avoid any injury by stray light. The upper part of the rear end of the camera is hinged to the lower portion, so as to allow it to swing out, thus facilitating the insertion

and removal of the plates. The lower end of the rear end is screwed to the case and may be detached for inserting the bag. It will thus be seen that by removing the screws at the bottom the lower part of the back of the casing will operate on the same hinge that the upper one does, this construction being shown at the left hand in Fig. 1. The latter when not in use may be pushed up and forward into the space beneath the lens-frame.

What I claim as my invention, and desire to secure by Letters Patent, is the following:

1. In a photographic camera, the combination of a casing having grooves in its sides, such casing recessed in front of one end of such grooves, such grooves adapted to engage with the projecting spring-supports of a series of plate or film carriers, whereby the carriers are supported, substantially as shown and described.

2. In a photographic camera, the combination of a casing having grooves in its sides in which the projecting spring-supports on each plate or film carrier of a series are adapted to move laterally and by which such carriers are suspended, a retaining-spring secured to the top of the casing for engaging the upper edge of the forward carrier, and a cross-piece extending across the casing near its bottom for engaging the lower edge of such carrier, the cross-piece having a recessed finger-opening, giving access to the forward carrier, substantially as shown and described.

3. In a photographic camera, the combination of a casing, a retaining-spring secured to the top of such casing and adapted to engage with the forward plate or film carrier of a series as it is presented to the lens, such carrier adapted to be supported within such casing, and a fixed cross-piece adapted to engage with the lower edge of the forward carrier, in combination with a laterally-moving diaphragm or partition arranged to separate the exposed from the unexposed plates, substantially as shown and described.

4. In a photographic camera, the combination of a casing having grooves in its sides in which the projecting spring-supports on each plate or film carrier of a series are

adapted to move laterally and by which such carriers are suspended, a fixed cross-piece forming a retaining-ledge for the lower edge of the carriers and having a recessed finger-opening, giving access to the forward one, and a retaining-spring engaging with the upper edge of the forward carrier, in combination with a spring-diaphragm arranged to separate the exposed from the unexposed plates, substantially as shown and described.

5. In a photographic camera, the combination of a casing having grooves in its sides, such casing recessed in front of one end of such grooves, such grooves adapted to receive and support a series of plate or film carriers, a retaining-spring connected with the upper edge of the forward carrier, and a fixed cross-piece forming a retaining-ledge for the lower edge of the carriers, in combination with a spring-diaphragm arranged to separate the exposed from the unexposed plates, substantially as shown and described.

6. In a photographic camera having a portion of its lower side cut out, rabbeted grooves formed in the body or casing, and a rectangular wire frame with the top of a flexible bag secured thereto and adapted to fit in such grooves, the rear of such camera-casing hinged to allow the removal of such bag and its frame, substantially as shown and described.

7. In a photographic camera, the combination of a casing having grooves in its sides adapted to engage with the projecting spring-supports of a series of laterally-moving plate or film carriers, whereby such carriers are supported, a spring-diaphragm arranged to separate the exposed from the unexposed plates, and a bag formed of flexible material secured to an open side of the casing, whereby the forward plate may be removed and inserted behind the spring-diaphragm, substantially as shown and described.

In witness whereof I have hereunto set my hand this 7th day of December, 1891.

FREDERICK A. HETHERINGTON,

Witnesses:

H. D. NEALY,

E. B. GRIFFITH.