(No Model.)

W. K. MENNS.

PHOTOGRAPHIC DRY PLATE HOLDER.

No. 308,781. Patented Dec. 2, 1884.

Fig. 1.

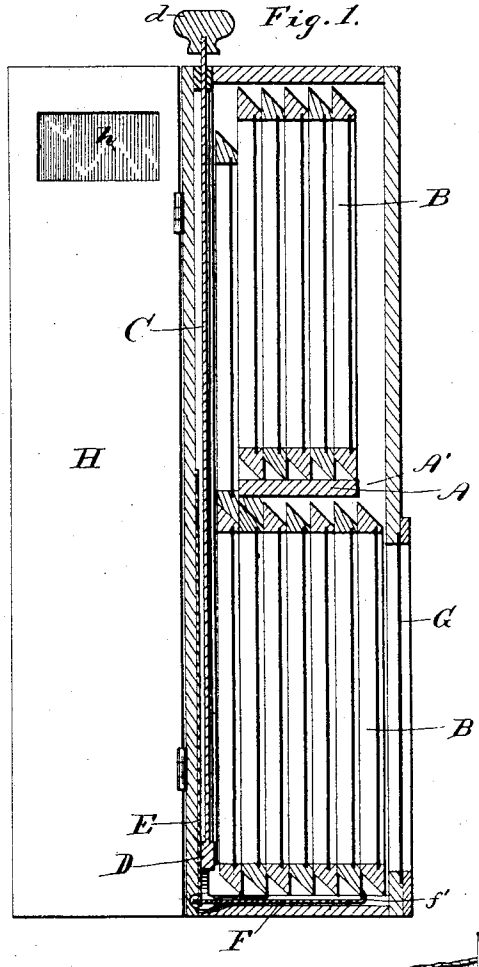


Fig. 2.

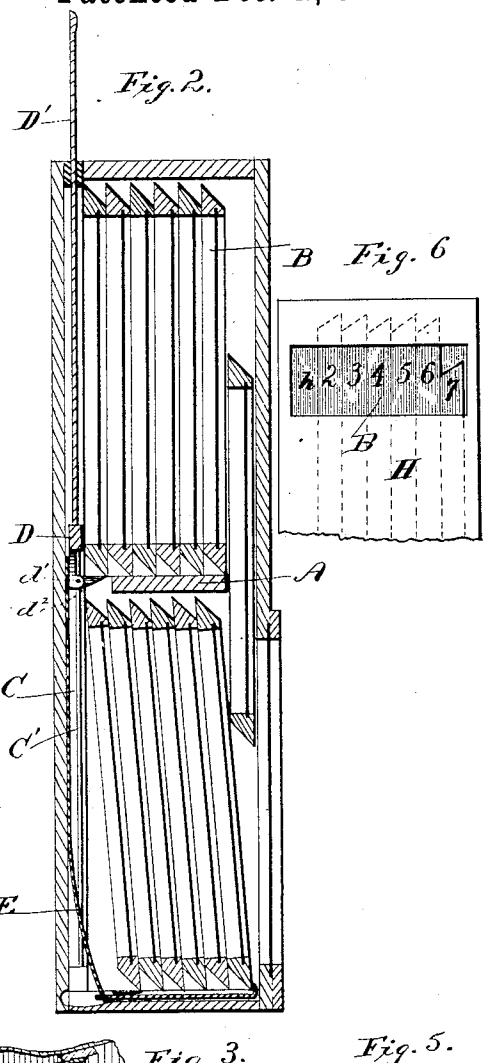


Fig. 6

Fig. 4.

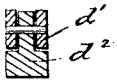


Fig. 3.

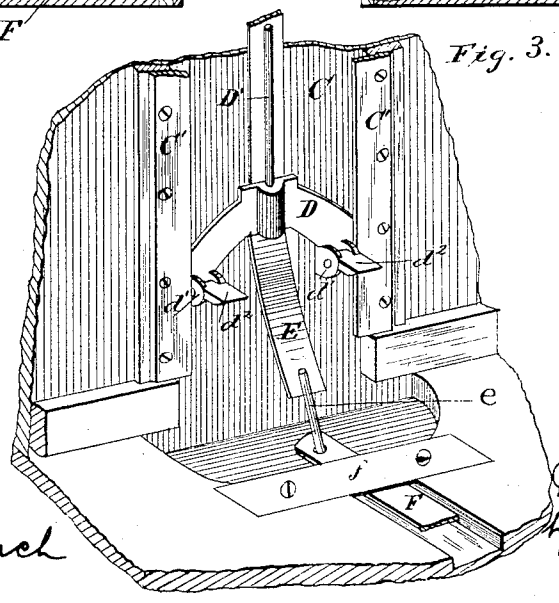
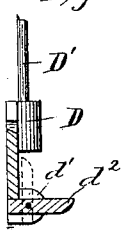


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

WALTER K. MENNS, OF BURLINGTON, VERMONT, ASSIGNOR OF ONE-HALF TO A. HORTON SABIN, OF SAME PLACE.

PHOTOGRAPHIC DRY-PLATE HOLDER.

SPECIFICATION forming part of Letters Patent No. 308,781, dated December 2, 1884.

Application filed March 20, 1884. (No model.)

To all whom it may concern:

Be it known that I, WALTER K. MENNS of Burlington, in the county of Chittenden and State of Vermont, have invented certain new and useful Improvements in Photographic Dry-Plate Holders; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures and letters of reference marked thereon.

My invention has for its object to provide a plate-holder for dry sensitized photographic plates, whereby a large number of exposures can be made without removing the holder from the camera, and that without the exercise of any particular skill on the part of the operator; and it consists in certain novel details of construction and combination of parts, which I will now proceed to describe.

In the drawings, Figure 1 represents a longitudinal vertical section of my invention; Fig. 2, a similar view with the parts in a different position; Fig. 3, a detail perspective view of the frame-lifter, and Figs. 4 and 5 detail views of the frame-lifter; and Fig. 6 is a view of the end of the holder, showing the numbers in the frames through the glass plate.

My invention relates more particularly to that class of plate-holders in which a number of plates contained in the holder are exposed successively. As shown in the drawings, it is composed of a receptacle divided into an upper and lower compartment by a diaphragm or partition, A, having at front and rear a narrow opening extending the entire width of the holder. The dry sensitized plates to be exposed are secured in any suitable manner in frames B, made with their upper and lower ends beveled, as shown, being of a height equal to the height of one of the compartments, and of a length equal to the width of the holder. At the rear of the holder is a groove, C, extending from top to bottom of the same, and at the edges of this groove are secured plates C′ C′, thus forming ways in which works the sliding piece D for lifting the frames containing the plates from the lower to the upper compartment, as will be further on explained. The plate-lifting device D is attached to a rod, D′, having a knob, *d*, at its upper end, and extending from the bottom to the top of the holder. The lower end of the part D is bifurcated, and on each of the two projections thus formed are lugs or ears d' d', between which the ends of the fingers d^2 d^2 are hinged, and these fingers are prevented from turning down by their rearward extensions striking against the under side of the piece D, as shown; but they are permitted to turn up freely.

Secured to the rear of the groove C, and extending from about the height of the partition to the bottom of the lower compartment, is a piece of spring metal, E, normally pressing outward, and having secured to its lower end a pin, *e*, which is inserted in a perforation in the end of a piece of thin metal, F, sliding in a groove in the bottom of the holder, and held in place by means of a small piece of metal, *f*, as shown. The outer end of this piece F is provided with a hook-like portion, *f′*, having its front edge beveled, as shown. When the part D is pressed down by the rod, it rides over the spring E and presses it back against the back of the groove, thus moving the piece F backward.

At one side of the casing, and extending its entire height, is a door, H, affording ready access to the interior of the holder, and enabling the plates to be inserted and removed, and it is provided with a small piece of yellow glass, *h*, through which the numbers on the ends of the frames can be seen, and the operator can thus tell how many and which plates remain unexposed. The opening in the front for exposing the plates is closed by a thin flexible slide, G, as shown. The frames B, for containing the dry-plates, are placed in the holder, six above and seven below the diaphragm, and the holder applied to a camera, and then the plate nearest the aperture exposed in the usual manner. When this is done, the slide G is pushed in and the rod D, to the lower end of which the frame-lifter is secured, raised, the hinged fingers engage with the bottom of the last frame in the lower compartment, which is also raised, the beveled upper end pushing the frames in the upper compartment forward to make room for it. The upper ends of the frames in the lower compartment now drop back by reason of the bevel on their lower ends, and prevent the frame just raised from returning. The rod

carrying the lifter is now pushed down, the hinged fingers d^2 d^2 folding back against it and permitting this. As the lifter moves down it rides over the spring E in the groove and presses the same back, and this spring, acting on the piece of thin metal F in the bottom of the holder, pulls the bottom of the frame containing the plate just exposed rearward, and in so doing permits the front frame in the upper compartment to drop down through the slot A′ in front of the aperture ready to be exposed in the camera, in the usual manner. When this plate is exposed and the slide G closed, the frame-lifter then carries the rear frame in the lower compartment to the upper one, as before described, and when the lifter is pushed down again draws the lower frame back, allowing the front frame in the upper compartment to descend ready to be exposed, as before. This operation is continued until all the plates are exposed in succession, which can be readily ascertained by looking through the small aperture in the door covered by the piece of yellow glass, as described, and seeing the numbers on the ends of the frames.

While I have described the operation of my improved plate-holder with thirteen plates, I do not wish to be understood as confining myself to that number, as it is evident that a greater or less number may be employed when necessary or desirable.

I claim as my invention—

1. In a plate-holder, the combination, with the upper and lower compartments for containing the plates, of means for moving the plates from the lower to the upper compartment without changing the position of the holder, and the diaphragm having a space at both the front and rear of the holder, whereby when a plate is moved from the lower to the upper compartment the front plate in the upper compartment will drop down into the lower compartment, ready to be exposed, substantially as described.

2. In a plate-holder, the combination of the upper and lower compartments, communicating at front and rear, with the frames for containing the plates, having beveled upper and lower ends, and means, substantially as described, for moving the plates from the lower to the upper compartment.

3. In a plate-holder, the combination, with the upper and lower compartments, of the frames having the beveled ends, and means for removing the frames from the lower to the upper compartment, consisting of a piece moving in guides and provided with fingers that will remain extended when lifting the plate, but fold against said piece when moved in the opposite direction.

4. The combination of the upper and lower compartments, means for moving the plates from one to the other, and the spring and plate for moving the foremost plate in the lower compartment backward, so as to allow the foremost plate in the upper compartment to drop into the lower compartment in position to be exposed.

5. The combination of the upper and lower compartments with the means for moving the frames containing the plates from the lower to the upper compartment, consisting of rod D, sliding piece D′, having fingers d' d', and the piece of spring metal E and sliding piece F, substantially as described.

In witness whereof I have hereunto set my hand this 12th day of March, 1884.

WALTER K. MENNS.

Witnesses:
A. H. BLAIR,
W. A. LYMAN.