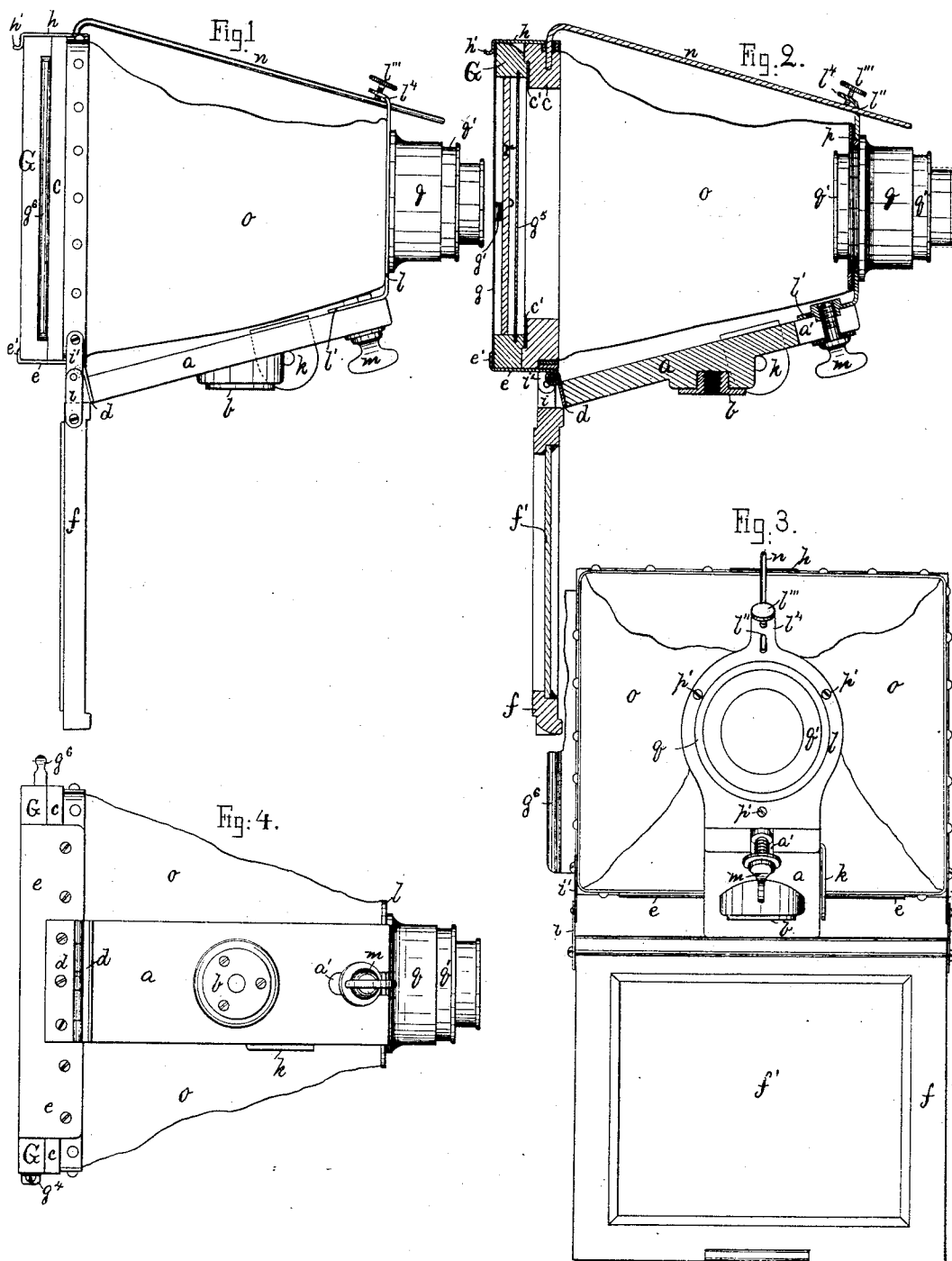


A. ANDRÉN.
FOLDING CAMERA.

No. 260,076.

Patented June 27, 1882.



Witnesses.

Henry Chadbourn.
C. A. Blackwell.

Inventor.

Aban. Andren.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 5.

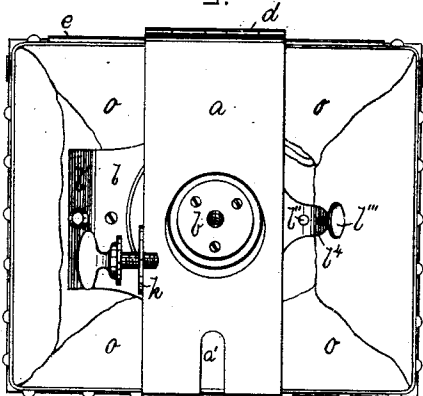


Fig. 6.

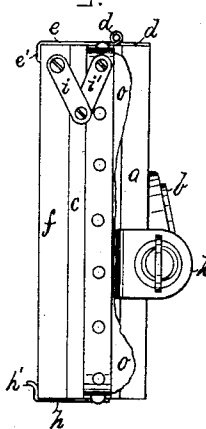


Fig. 7.

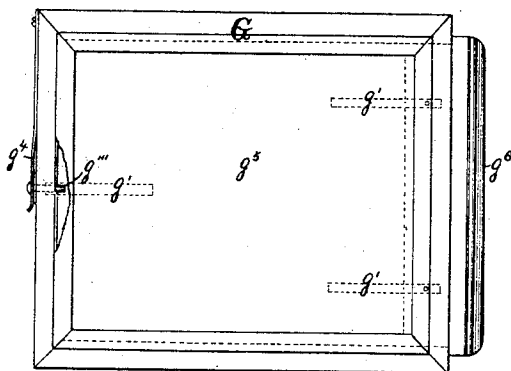
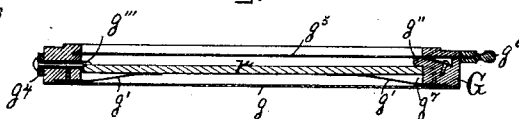


Fig. 8.



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UNITED STATES PATENT OFFICE.

ALBAN ANDRÉN, OF BEVERLY, MASSACHUSETTS.

FOLDING CAMERA.

SPECIFICATION forming part of Letters Patent No. 260,076, dated June 27, 1882.

Application filed May 13, 1882. (No model.)

To all whom it may concern:

Be it known that I, ALBAN ANDRÉN, a citizen of the United States, residing at Beverly, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Folding Cameras; and I do hereby declare that the same are fully described in the following specification and illustrated in the accompanying drawings.

This invention relates to improvements in folding cameras, and it is particularly well adapted for the use of amateurs and tourists, as when not in use it can be folded together with its focusing-glass and plate-holders in a very small compass, so as to be put away and carried in a bag or case suspended from a shoulder-strap, or carried by hand, in a saddle-bag or otherwise, as may suit the convenience of the operator. With my improved camera I use what are termed "gelatine dry plates," a supply of which may be carried by the operator, and, after being exposed in the plate-holder, temporarily attached to the rear of the camera. Such exposed plate may be removed at night or in a dark room or closet, if convenient, and a new plate or plates inserted in the plate-holder, to be exposed at the proper time and place. Such exposed dry plates are to be wrapped or sealed up in light-tight envelopes or packages, as usual, until the tourist reaches a place where it is convenient to develop and fix the negative. If a sufficient number of the improved plate-holders are carried by the operator, the exposed plates may remain therein until convenient to develop and fix them.

The invention is carried out as follows, reference being had to the accompanying drawings, where Figure 1 represents a side elevation of my improved camera when in use. Fig. 2 represents a central longitudinal section of it when in use. Fig. 3 represents an end view seen from the end where the lens is located. Fig. 4 represents a bottom view of the camera when in use. Fig. 5 represents a plan view of the camera as folded together when not required for use; and Fig. 6 represents an end view of the same, also shown as folded together. Fig. 7 represents a plan view of the improved plate-holder, and Fig. 8 represents a longitudinal section of the same.

Similar letters refer to similar parts wherever

they occur on the different parts of the drawings.

The camera is composed of the inclined bottom strip or frame, *a*, made of wood or metal, and provided on its under side with a screw-threaded bushing, *b*, by means of which it may be secured when in use to the screw-threaded upper end of an ordinary portable or other tripod, the latter being, however, not shown in the drawings. To the rear end of the inclined frame or strip *a* is hinged by means of suitable hinges, *d d*, as shown, the square or rectangular hollow frame *c*, to the under side of which is secured the metal or other strip, *e*, which serves as a support both for the focusing-frame *f*, with its focusing-glass *f'*, when focusing an object, as well as for the plate-holder *G* when taking the picture, such focusing-frame and plate-holder being held in place against the rear open end of the frame *c* in its lower end by means of the lip *e'* on the support *e*, and in its upper end by means of the metal spring-clasp *h*, that is secured to top of frame *c*, and provided preferably with a lip, *h'*, adapted to lock the focusing-frame or plate-holder in light-tight connection with the frame *c*, as shown in Figs. 1 and 2.

To prevent the focusing-frame *f* from being accidentally dropped on the ground when it is removed from the rear of the camera, I hinge it to the lower part of the frame *c*, preferably by means of the toggle-joint hinges *i i'*, as shown in Figs. 1, 2, and 6, which enables the lower edge of the focusing-frame *f* to be swung downward clear of the lip *e'* on the support *e* when not desired for use.

k is a screw-threaded bracket secured to the bottom strip, *a*, or made in one piece with it, to enable the camera to be used at a right angle and to be secured to the tripod in such a position, if so desired.

e' is a cloth, felt, or rubber packing-strip fastened to the rear of the hollow frame *c*, so as to provide an absolutely light-tight joint between it and the focusing-frame or plate-holder when either of them is in use on the camera.

l is the lens-carrying bracket or support at the forward end of the camera, which bracket is provided preferably with a foot, *l'*, into which is screwed the set-screw *m*, which passes

through a slotted perforation, a' , in the forward end of the inclined frame a , as shown in Figs. 2, 3, and 5, and by means of which the lens-carrying bracket l may be secured in position to the strip or bottom piece, a , and adjusted to and from the frame c to allow for focal adjustment. The upper end of the lens-carrying bracket l is provided with a perforation, l'' , for the reception of the stay-wire n , one end of which passes through said perforation and is secured in place by means of the set-screw l''' , which is screwed through a projection, l^4 , attached to or made in one piece with the bracket l , as shown in Figs. 1 and 2. The rear end of the stay-wire n is bent and adapted to be inserted in a perforation or equivalent device at the top of frame c , as shown, and in this manner, after the bracket l is secured to the bottom piece a and the set-screw l''' loosened, the frame c and focusing-frame f may be inclined forward or tipped back slightly partly to compensate for focal adjustment or to correct perspective errors in taking high objects from a low elevation, and after being so adjusted the frame c and bracket l may be rigidly secured together by tightening the set-screw l''' on the stay-wire n .

Between the lens-carrying bracket l and the inner end of frame c extends the tapering tube or bellows o , made of cloth, rubber, or other suitable material, such tapering envelope being secured light-tight in its rear end to the frame c and in its forward end to the lens-carrying bracket l , it being preferably secured to the latter by means of the annular ring p and screws $p' p' p'$ in case the bracket l is made of metal; but, if made of wood, it may be tacked or otherwise attached thereto. The inner periphery of the ring p is screw-threaded, as shown in Fig. 2, to which is screwed the lens-ring q , in which the telescopic lens-tube q' is longitudinally adjustable, either direct or by means of a suitable rack and pinion, to allow for focal adjustment of the lens.

When the camera is not required for use it is folded together temporarily simply by loosening the set-screw l''' and removing the stay-wire n from the bracket l and frame c , when the latter may be swung on its hinges toward the lens, so as to rest on top of strip a ; or, if desired to pack the camera away after removing the wire n , as above described, I prefer to remove the telescopic lens-tubes from bracket l and detach the latter from the strip or frame a by unscrewing the set-screw m , after which the bracket l and tube or bellows o are folded up close against the inner end of frame c and the latter swung flat down toward and upon the strip a to the very compact position as shown in Figs. 5 and 6.

The improved plate-holder which I use with my improved camera is carried out as follows: It is composed of the frame G , covered light-tight at the back by the plate or cover g , as shown in Fig. 8, and provided at its bottom with elliptic or flat springs $g' g' g'$, which serve

as an elastic bed for the dry plate r , and by means of which the latter is positively pressed forward in correct focal position, in one end against the projection g'' and in the opposite end against the locking-pin g''' , that passes through a perforation in the frame G and is attached in its outer end to the spring-bar g^4 , the opposite end of which is secured to the outside of the frame G , as shown in Fig. 7.

g^5 is the dark-slide, as usual on plate-holders, adapted to slide through a slit in one end of the frame G and be guided in grooves in the sides and opposite end of the latter.

g^6 is the handle or bar of the slide g^5 , made as usual.

g^7 is a rabbet back of the projection g'' , for the reception of one end of the plate when placed into the holder.

This plate-holder is very convenient for inserting into it fresh plates and removing the same after exposure, which is done as follows: To insert a plate it is only necessary to withdraw the slide g^5 and to place one end of the plate r in the groove g^7 , back of the projection g'' , and after pushing out the locking-pin g''' the opposite end of plate r is pressed down upon the springs $g' g' g'$ sufficiently to allow the locking-pin g''' to pass in in front of the plate r , when it is locked in proper focal position by the action of the spring g^4 and springs $g' g' g'$, as shown in Figs. 7 and 8, after which the dark-slide g^5 is closed, as shown. To remove the plate r after exposure in the camera it is only necessary to remove the dark-slide g^5 and to release the locking-pin g''' by taking hold of the bent end of spring-bar g^4 , when the plate r is automatically forced out at the end nearest to the locking-pin g''' sufficiently to be grasped by the operator and obliquely withdrawn from the interior of the plate-holder.

This plate-holder may be made double or single, to contain two or one dry plate, as may be desired.

Having thus fully described the nature, construction, and operation of my invention, I wish to secure by Letters Patent, and claim—

1. In a camera, the bottom strip or piece, a , and frame c , hinged together at $d d$, in combination with the lens-carrying bracket l , tube or bellows o , and the brace n , as and for the purpose set forth.

2. In a camera, the combination of bottom strip or piece, a , and frame c , hinged together, the adjustable and detachable lens-carrying bracket l , tube or envelope o , the adjustable brace or stay n , and set-screw l''' , the support $e e'$, and locking device $h' h$, as and for the purpose set forth.

3. In a camera, the bottom strip or piece, a , and frame c , hinged together, in combination with the lens-carrying bracket l , tube or envelope o , hinged focusing-frame $f f'$, support $e e$, and locking device $h h'$, and adjustable stay or brace n , as and for the purpose set forth.

4. In a camera, the bottom piece, a , and

frame *c*, hinged together, in combination with the lens-carrying bracket *l l'*, tube or envelope *o*, adjustable brace or stay *n*, set-screw *m*, and slotted opening *a'* in the piece *a*, as set forth.

5 5. The herein - described dry - plate holder, consisting of frame *G*, with its back *g* and springs *g' g' g'*, in combination with the rabbit *g'*, projection *g''*, locking device *g''' g'*, and slide *g⁵*, as and for the purpose set forth.

In testimony whereof I have affixed my signature in presence of two witnesses.

ALBAN ANDRÉN.

Witnesses:

HENRY CHADBURN,
FRANCIS ALLEN.