(No Model.)

G. F. E. PEARSALL.

FOLDING PHOTOGRAPHIC CAMERA.

No. 275,073. Patented Apr. 3, 1883.

Fig. 2

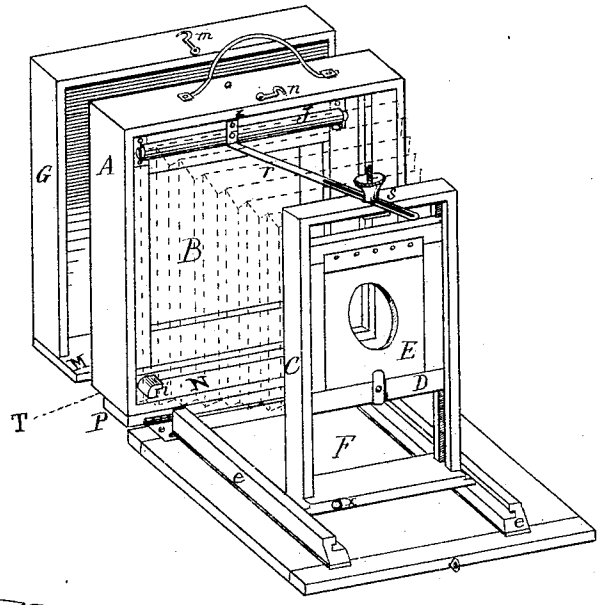
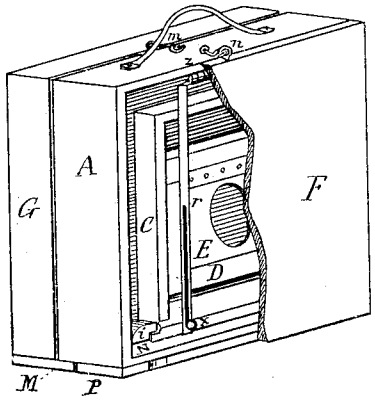


Fig. 1



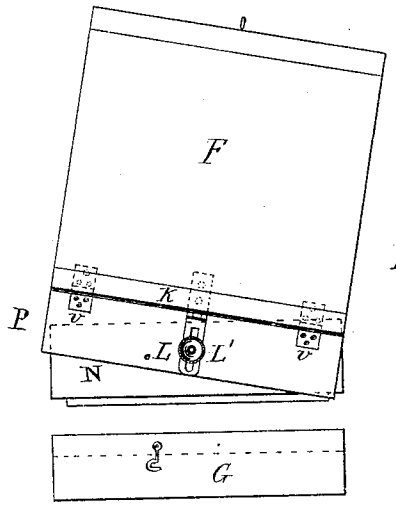


Fig. 3

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FOLDING PHOTOGRAPHIC CAMERA.

SPECIFICATION forming part of Letters Patent No. 275,073, dated April 3, 1883.

Application filed September 29, 1882. (No model.)

To all whom it may concern:

Be it known that I, G. FRANK E. PEARSALL, of the city of Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Folding Photographic Cameras; and I do hereby declare that the following specification, taken in connection with the drawings annexed to and forming part of the same, furnishes a full and clear description of the invention, sufficient to enable those skilled in the art to which it pertains to make and operate the same.

In the drawings, Figure 1 is a view in perspective of my improved camera closed, with a portion cut away to exhibit the interior. Fig. 2 is a view in perspective of the same distended in position for operating. Fig. 3 is a view of Fig. 2 from beneath.

My invention has relation to folding or portable cameras, distinguished from those intended for use in permanent position, and is designed to simplify the movements and increase the capacity of said instruments, while at the same time economizing their bulk and expense of construction. It furnishes a compact portable camera suitable for either professional or amateur work, and possessing several subordinate features of value.

One portion of my invention consists in the arrangement of the plate-holder in such combination with the body of the camera that the sensitive plate may be removed by sliding it downward without the exposure to the light which is attendant upon its removal in the usual mode from above.

Another part of my invention consists in the combination of the bellows with the lens-holder in such a manner as to prevent obstruction of the lens by the folds of the former during vertical adjustments of the lens.

In the drawings, A represents the body of the camera, to the inside of which is attached in the usual manner the distensible bellows B. The outer end of the bellows is attached to a sliding lens-holder, D, which latter moves vertically in a frame, C, being secured by a set-screw at any desired height. Prior to my invention it was the custom to attach this outer end of the bellows in all folding cameras to the frame C, and the lens-holder was moved independent of the bellows; but this construction often resulted in the obscuration of the sensitive plate, caused by a fold of the bellows coming within the field, and this objection I overcame by making the bellows end move up or down with the lens-holder.

The frame C is made adjustable to move horizontally upon the ways *e e*. These ways are strips of wood fastened upon the inside of the board F. When the bellows are closed the frame C is held within the body A by the cleats *i*, and the board F, which is hinged at *v v*, turns up, and, fastened by a catch, *n*, forms an end or cover to the body A.

In the portable apparatus now most commonly used it is customary to distend the folding cameras by drawing the open end of the bellows back from the body on independent ways instead of moving the lens end of the bellows forward.

The frame C, when pushed forward on the ways *e e*, is held firmly in position by a thin metallic brace, *r*, one end of which, bent at an angle, is hinged to the top of the body A at the point *z*, while the free end is slipped under the nut or set-screw *s* at any convenient distance, and a rigid brace for the frame C formed by tightening said screw *s*. This brace *r*, when the frame C is closed back in the body A, falls down in front of the frame, and, held at *x* by a button or equivalent, serves to keep the frame C steady in its position when the camera is closed, as shown in Fig. 1.

The body of the camera A forms the frame for holding the open end of the bellows, and is provided with the usual means of holding a sensitive plate. It has also a roller, J, carrying a flexible screen for receiving the image while adjusting the focus. The end or cover F is not fastened directly to the body A, but is hinged to a strip, P, of the same length as the side of the camera. A hole is made through P at about its center, and a threaded bolt firmly attached to the center of the side N of the body A protrudes through this hole in P and through the slotted leaf of a hinge, K, affixed to the cover F, receiving on its threaded end a nut, L, by which the strip P can be firmly bound to the lower side, N, of the body A. This strip P is made narrower than the sides of the box or camera-body A, leaving a space, as shown at T. This construction allows the

body A to be adjusted by a swing to the right or left around the bolt, and permits the slide of the plate-holder to be drawn downward at any reasonable angle of focal adjustment from the rear of A without any obstruction from beneath, thus avoiding the risk of light on the sensitive plate necessarily attendant upon the drawing of the slide of a vertical plate-holder from the top, as has always heretofore been done. The pivoting of the side end upon the bolt, as heretofore described, enables the operator to adjust the plate by turning it to the right or left, while the hinges *v v* and K enable the plate to be tipped forward or back from the vertical position to any desired angular adjustment. The joint of the hinge K is set farther out from the edge of the cover F than the joint of the hinges *v v*, and this construction causes the slotted leaf of K to travel back and forth along the bolt at L as the cover F is turned on the hinges *v v*. The proper and angular adjustments of the frame A, holding the plate, having been made, the nut K secures the box A from movement from right to left around the threaded bolt, as well as from a forward and backward movement, thus fastening the adjustment of a double movement by a single stop.

G is a box, open in front, which forms the cover for the body A at the side opposite F. Its end M projects so as to fill up the space left by the narrowness of the strip P. This box G is provided with the usual means for holding the stock of glass plates for negatives, and when the camera is closed is fastened to the body A by hooks *m* or equivalent means. When the camera is distended for use the box G is entirely detached from the camera A by loosening the catches *m* at top and bottom. When the cover G is attached to the closed camera the cover F is turned up and fastened by the catch *n*, and a compact box is formed, which may be easily carried by a strap or handle at the top.

A tripod of any suitable construction may be used to hold the camera during an operation, and when the same is concluded the camera is readily closed in the following manner, viz: The nut S being loosened frees the lens-frame C, which is pushed back along the ways *e e*, and under the cleats *i* in the box A, the bellows folding in behind it. The brace *r*, dropping down to the button *x*, holds the frame C in place, and the loosening of the nut L allows the cover F to be folded up and held in place by the catch *n*. The tightening of the nut L then holds the strip P firmly in place against N. The box G is then placed upon the other side and fastened by the catches *m* on opposite edges, completing the closed apparatus, as shown in Fig. 1.

Having thus described my improved camera, I do not broadly claim to be the inventor of folding cameras; but

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a photographic camera, the combination of the frame A for carrying a sensitive plate, and provided with a pivot at L, with the strip P, hinged to the bed on which the lens is supported, and provided with supplemental hinge K and nut L′, controlling the double-swing motions of the plate-holder, substantially as and for the purposes described.

2. In a folding photographic camera, the combination of the lens-holder D and bellows B with a frame, A, for holding sensitive plate, and support P, constructed with an opening, T, at the bottom, to enable the removal of the slide of the plate-holder from below, substantially as and for the purposes described.

3. A folding camera consisting of central portion, A, for inclosing the bellows, lens, and plate-holder, the cover G for carrying the stock of plates, and the cover F to form a bed for the extended lens-holder, constructed substantially as and for the purposes described.

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