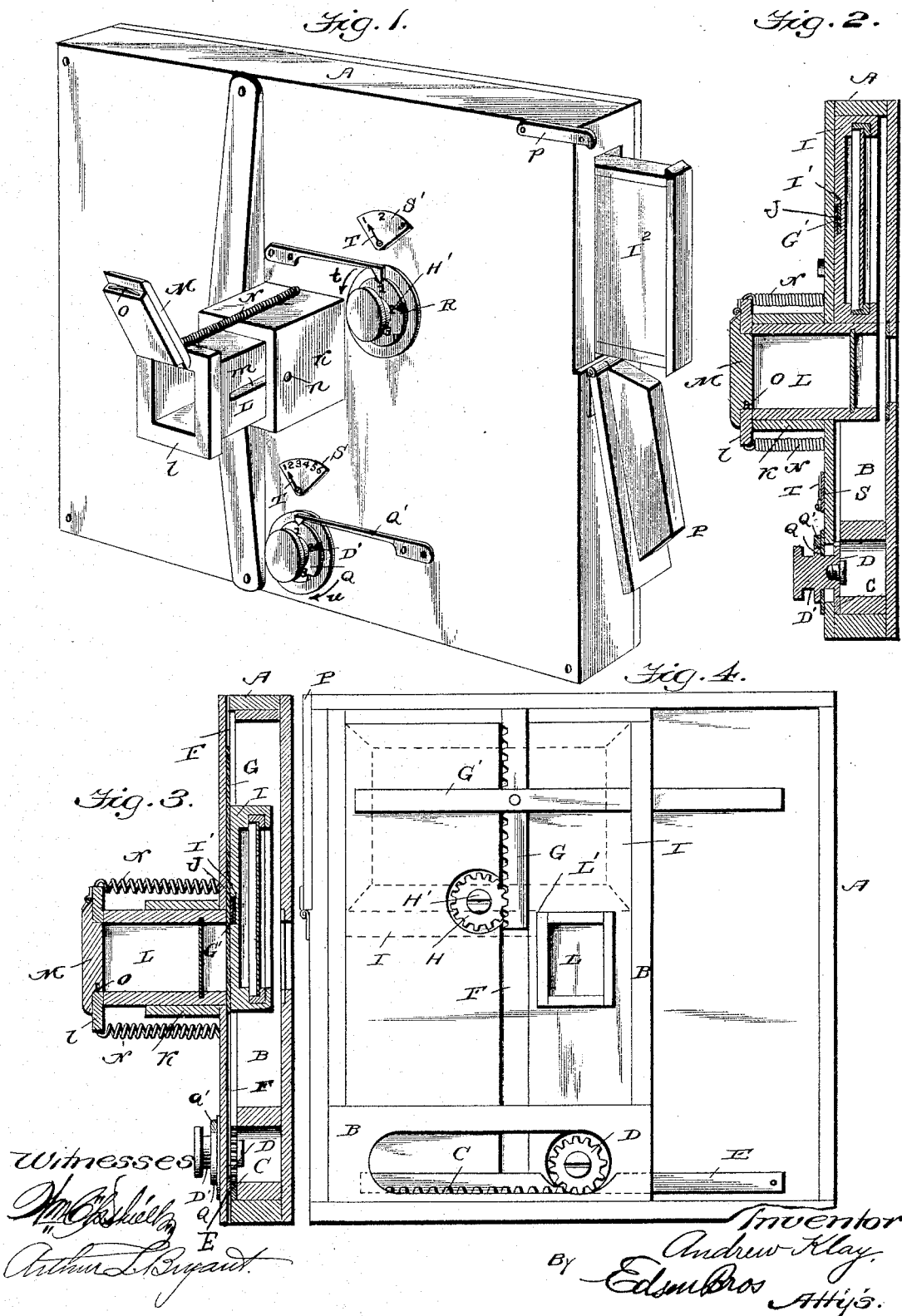


(No Model.)

A. KLAY.
PHOTOGRAPHIC CAMERA.

No. 492,025.

Patented Feb. 21, 1893.



UNITED STATES PATENT OFFICE.

ANDREW KLAY, OF BLUFFTON, OHIO.

PHOTOGRAPHIC CAMERA.

SPECIFICATION forming part of Letters Patent No. 492,025, dated February 21, 1893.

Application filed June 29, 1892. Serial No. 438,461. (No model.)

To all whom it may concern:

Be it known that I, ANDREW KLAY, a citizen of the United States, residing at Bluffton, in the county of Allen and State of Ohio, have
5 invented certain new and useful Improvements in Plate-Holders for Photographic Cameras; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled
10 in the art to which it appertains to make and use the same.

My invention relates to improvements in plate holders for photographic cameras; and the object of the invention is to provide a
15 plate holder which can be used in connection with any ordinary or common form of camera and which is provided with simple and readily operated mechanism for adjusting the plate to bring different portions thereof in
20 line with the lens of the camera whereby a series of impressions can be taken on one plate without removing the same from the holder.

With these and other ends in view, the invention consists in the combination with a
25 laterally traveling carrier, of a vertically-movable plate carrying slide arranged within the laterally-movable carrier and a longitudinally-movable focusing tube arranged to align
30 with the lens of the camera and normally adjusted to hold the plate above and out of line with the lens.

My invention further consists in the peculiar construction and arrangement of parts
35 as will be hereinafter fully described and claimed.

In the accompanying drawings:—Figure 1 is a perspective view of my improved plate holder; Fig. 2 is a vertical sectional view showing the plate supported by the focusing tube
40 out of line with the lens; Fig. 3 is a similar view showing the plate holder in position to receive an impression on the plate to be supported therein, and Fig. 4 is an elevation
45 showing the operating mechanism, the front of the holder being removed.

Like letters of reference denote corresponding parts in the several figures of the drawings, referring to which—

50 A designates the shell or case of the plate holder, and the front of this casing is removably secured in place in any suitable way. In

this holder is arranged a horizontally movable carrier B made in the form of an open rectangular frame, and to the lower edge of said carrier frame is secured a rack or toothed bar C,
55 the teeth of which mesh with the teeth of a pinion D. This pinion is carried by the inner end of a short shaft D', journaled in the rear wall of the holder A, and by means of
60 this shaft the carrier frame B can be moved laterally within the case A for a purpose to be hereinafter described. Guide pieces E are attached to the inner side of the rear wall or
6 back of the case A and extend above the rack C on opposite sides of the pinion D, to guide the frame and prevent vertical displacement thereof.

In the inner face of the back of the case A is formed a vertical groove or way F, and in
70 this groove or way is fitted a toothed or rack bar G which is rigidly attached to a horizontal plate-supporting slide G'. The slide G' extends or projects beyond one side of the laterally traveling frame B and the teeth of the
75 bar or rack G mesh with the teeth on a pinion H secured on the inner end of a shaft H'. Both the pinions D and H are seated in suitable sockets or depressions so that the inner faces thereof lie flush with the inner face of
80 the rear or back wall of the case A.

Within the frame B in the case A is arranged a frame I which is provided, in the rear face of its solid back, with a groove or
85 way I' adapted to receive the plate carrying slide G', and said frame I is held on said slide by the frictional contact between a flat leaf spring, J secured in the groove I' and the said
slide G'. In this frame is supported the usual
"kit" carrying the sensitized plate on which
90 the impressions are to be taken.

To the rear wall of the case A is rigidly secured a hollow guide K, and in this hollow guide is arranged a longitudinally-movable
95 focusing tube L provided at its inner end with a pane of ground glass and at its outer end with an outwardly extending flange l, which outer end is adapted to be closed by a shutter
M hinged at one edge to said flange and adapted to be held in its closed position over
100 the outer end of the tube L by means of a suitable catch.

The focusing tube L is arranged directly in line with the lens tube of the camera, and said

focusing tube normally projects or extends into the case A below the frame I, the lower edge of which is suitably recessed or cut away to receive said tube and provide the shoulder 5 L' that abuts against the side of the focusing tube and said focusing tube is normally projected into the shell A by means of coiled springs N attached to the guide K and the flange l on the outer end of said focusing tube. 10 The focusing tube thus serves to normally support the plate holding frame above and out of line with the lens and prevents said frame from being moved down and thus expose the plate by turning the wheel R until 15 the tube is withdrawn from the holder. The focusing tube is provided inside with a longitudinal groove m in which is fitted a guide stud or pin n attached to the fixed guide K, and by this construction the tube is guided 20 as it is moved longitudinally within said hollow guide.

The means for fastening the shutter M in its closed position over the focusing tube is, preferably, a spring O attached at its ends to 25 the lower end of said shutter and projecting slightly beyond the same so as to bear closely against the inner face of the tube L when the shutter is closed.

In one side of the casing A is formed a door 30 P which is in line with the holder, when the latter is in the position shown in Fig. 2, and through which the plate and kit can be introduced into the frame I. This door is locked in its closed position by means of a spring 35 latch p.

On the outer end of the shaft D' is secured an index wheel Q provided with a series of notches and in one of the notches in the edge of said index wheel a spring latch Q' is adapted to fit or take as said wheel is revolved to 40 move the carrier frame B laterally within the case A. A similar index wheel R is attached to the outer end of the shaft H' and serves to indicate the extent of movement and position 45 of the slide G' which carries the plate-frame vertically in the case A. On the rear face of the case A are also arranged two graduated dials S, S', the number of graduations corresponding respectively, to the number of 50 notches on the wheels Q, R, and on each of said dials S, S', is arranged a pointer or indicating finger T.

The operation of my improvements is as follows: The shutter at the outer end of the 55 focusing tube is opened and the proper focus obtained in the usual manner. The shutter is then closed and the tube L drawn out, so that the inner end thereof will lie flush with the inner surface of the back of the shell A, and out of the path of the slide which supports the plate holder. At the same time, the 60 wheel R is turned in the direction indicated by the arrow t and the plate carrying slide G' is moved downwardly and a portion of the sensitized plate in the plate holder brought 65 in line with the lens and exposed in the ordinary manner to take an impression on the

sensitive plate. After an impression has been taken the operator can, without removing the plate, bring another portion thereof in line 7c with the lens by turning the wheel Q in the direction indicated by the arrow u, which moves the frame B laterally, the frame I sliding on the slide bar G'. By turning the wheel Q, a series of impressions can be taken in the 75 same horizontal line with the first impression on the sensitive plate until the frame B has moved completely across the holder, when the wheel Q is operated in the reverse direction to bring the plate back into the position 80 it occupied while the first impression was being taken. The wheel R is then operated to lower the slide and plate another notch or step to expose a fresh portion of the plate. By operating the wheel Q another horizontal 85 line of impressions can be taken on the upper part of the sensitive plate, and by repeating the operations above described the plate is covered with impressions. The number of 90 impressions that have been taken can be ascertained by glancing at the indicating-wheels the faces of which bear a series of numbers corresponding to the number of notches formed in the peripheries of said wheels; and as a further guide the dials S, S', are provided. 95 The operator moves the pointer or hand on one of said dials every time an impression is taken and can at a glance ascertain the number of rows of impressions, or the number of impressions in a row, that have been taken. 100

While the plate is being used, its frame forces the focusing tube L out in the position shown in Fig. 1 but when said plate is not in use and the mechanism has been returned to its normal position above the line of the lens, 105 the springs N draw the tube inward below the frame I, as shown in Fig. 2. The plate and kit holding the same can be easily removed from the frame I through the door in the side of the casing A. 110

By the construction herein described I am enabled to easily and rapidly take a number of impressions on one plate without removing it from the holder, thus saving the time 115 ordinarily consumed in removing and replacing plates after each impression.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a plate holder for photographic cameras, the combination of a laterally movable carrier frame, a vertically movable bar arranged within said frame, a cross bar or slide 120 firmly attached to said vertically movable bar, a plate holding frame provided with a groove which receives said cross bar or slide 125 and a flat leaf spring arranged in said groove and bearing against said slide, substantially as and for the purpose described.

2. In a plate holder for photographic cameras, the combination of a plate holding frame 130 adapted to be adjusted both vertically and laterally and a longitudinally movable focusing tube adapted to support the plate hold-

ing frame when it is adjusted out of line therewith, substantially as described.

3. In a plate holder for photographic cameras, the combination of a movable frame
5 adapted to support a sensitized plate, a longitudinally movable focusing tube arranged in a suitable guide and adapted to support the plate holding frame when it is adjusted out of line therewith, and retracting springs
10 attached at one end to said focusing tube and at the other end to the guide of the focusing tube, substantially as described.

4. In a plate holder for photographic cameras, the combination of a movable frame
15 adapted to support a sensitized plate, a lon-

gitudinally movable focusing tube arranged in a suitable fixed guide and adapted to support the plate holding frame when said frame is adjusted out of line with said tube, a pin attached to the guide frame and extending 20 into a groove in the tube and coiled springs attached at one end to the outer end of the tube and at their other ends to the fixed guide, substantially as described.

In testimony whereof I affix my signature in 25 presence of two witnesses.

ANDREW KLAY.

Witnesses:

TIM MCGRIFF,
CYRUS B. MANN.