

(No Model.)

J. M. RHODES.
PLATE HOLDER FOR CAMERAS.

No. 418,065.

Patented Dec. 24, 1889.

Fig. 1.

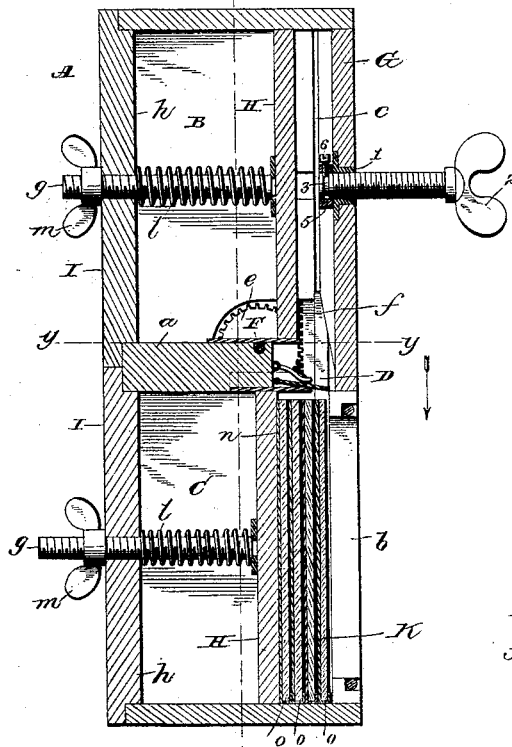


Fig. 2.

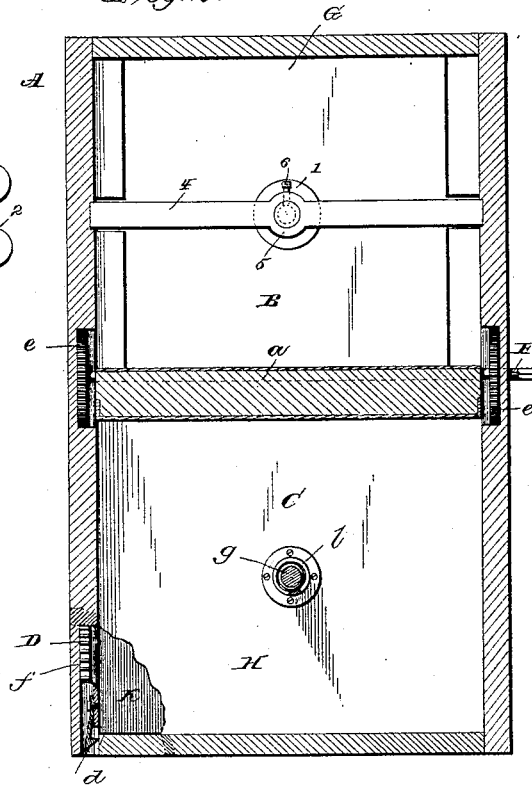
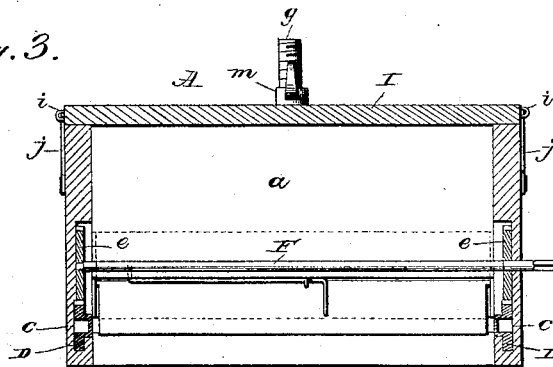


Fig. 3.



Witnesses

L. S. Elliott.
E. M. Johnson

Joseph M. Rhodes.

Inventor

By his Attorneys

UNITED STATES PATENT OFFICE.

JOSEPH M. RHODES, OF COVINGTON, INDIANA, ASSIGNOR TO SUSAN S. RHODES, OF SAME PLACE.

PLATE-HOLDER FOR CAMERAS.

SPECIFICATION forming part of Letters Patent No. 418,065, dated December 24, 1889.

Application filed August 1, 1889. Serial No. 319,423. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH M. RHODES, a citizen of the United States of America, residing at Covington, in the county of Fountain and State of Indiana, have invented certain new and useful Improvements in Plate-Holders for 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 in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon, which form a part of this specification.

15 My invention has reference to devices for operating photographic plates; and it consists in the improved construction hereinafter described and set forth, whereby a simple and efficient arrangement is provided
20 which will enable the plates to be quickly and conveniently brought into and out of position, their movement being such that they will not unnecessarily be exposed to light.

In the accompanying drawings, Figure 1 is
25 a vertical section of my improvement. Fig. 2 is a sectional view taken on the plane slightly in the rear of the device for shifting the plates, the upper pressure-plate being removed. Fig. 3 is a transverse horizontal section.
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The main case A consists of the vertical side, top, and bottom portions, and is interiorly provided with upper and lower compartments B C by means of a transverse horizontal partition *a*, which does not extend entirely to the front of the frame. The lower compartment is provided adjacent to its front and on its inner sides with two vertical strips *b*, which are channeled for the reception of
40 the shutters described and set forth in my application filed June 20, 1889, to which reference may be had for a more perfect understanding of the operation of the parts. Transverse horizontal rods are located at the top
45 and bottom of said lower section, as is also set forth in said application alluded to.

Each side of the main frame is provided near its front edge with a vertical channel *c*, which is of dovetail form in cross-section,
50 as shown in Fig. 3, and within each channel

plays a vertical bar D, which is T-shaped in cross-section, so that its central raised portion will be flush with the adjacent faces of the side of the case, and said bar D carries at its lower end a spring-seated catch *d*, which
55 is adapted to be pressed flush with the inner face of the side.

Within the horizontal partition bears a transverse shaft F, one end of which projects beyond one of the sides of the case, and is
60 square-ended for the reception of a key, and is so recessed as to enable the said transverse shaft to carry at each side a gear-pinion *e* in mesh with rack-teeth *f*, located on the adjacent sides of the sliding bar. The
65 front portion of this transverse partition is provided with a horizontally-extending recess, in which is pivotally secured a transverse metallic strip adapted by its gravity to close the transverse opening formed between the horizontal partition and front
70 plate. The recess in which this strip is pivoted is of such size that said plate may be moved back into the same to open the passage between the upper and lower compartments. The said strip, however, is provided
75 with a torsional spring to restore it to its normal closed position. The upper compartment is permanently closed by a front plate G.

A rectangular plate H is adapted to fit
80 snugly within each compartment, and each plate has secured to the rear of the same a threaded bolt *g*, the threaded end of which is adapted to pass through a central perforation formed in the back section I, having a
85 central raised portion *h*, designed to fit within the rear part of the chamber and furnished with side loops *i*, to enable the back section to be locked in position through the medium of engaging-hooks *j*, located on the vertical
90 sides of the case. A coiled spring *l* embraces the threaded rod extending from the plate, so that said plate may be moved toward the front of the case under the force exerted by the said spring. A nut *m*, engaging the
95 outer threaded portion of the bolt, serves to secure the relative engagement of said bolt with said back, and also limit the movement of said plate relative to said back. A number of the photographic plates K may be em-
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played at once, and each plate is confined in an individual metallic case *n*, which has retaining-flanges *o* on three sides only to enable the ready withdrawal and insertion of the plate. A number of the photographic plates incased, as explained, being placed in the lower compartment with their sensitive faces toward the light, the shutter-operating device may be manipulated to open the shutters to expose said plates to the action of the light. The photographing operation being completed, the shutters are closed, as is well understood. While the plates are in the position described the movable side bars are at the limit of their lower movement, so that their catches are pressed back by contact with the recessed portions of the bottom of the frame. The action of the spring-follower back of said plates is such that the bottom corners of the foremost plate is in line with said catches, and after the shutters have been closed the side key may be rotated to effect the ascent of the bars and cause the catches of the latter to engage said lower corners of the plate and elevate the same in a vertical position into the upper compartment B. As the movement of the plate occurs its upper edges contact with the transverse metallic strip and force the same back to secure a clear passage, and after the photographic plate passes completely within the upper compartment the said metallic strip will be restored to its horizontal position, and thus serve to completely exclude any light that might enter said chamber by way of the passage. The removal of the foremost plate causes the spring-acting follower to press the succeeding plate into the foremost position and the previously-described operation can be repeated. As the plates successively enter the dark chamber the follower therein will yield, so that they will occupy successive positions relative to each other and can be conveniently removed when desired.

Centrally within the front plate of the upper chamber is located a threaded bushing 1, through which passes a thumb-screw 2, the inner end of which is reduced and provided with an annular groove 3. A horizontal bar 4 is located transversely in said upper chamber, its ends being located to slide in horizontal grooves formed in the vertical sides of said upper chamber and maintaining said bar horizontal. The central portion 5 of said bar is enlarged and perforated for the engagement of the end of the thumb-screw, so that a clamp-bolt 6 can enter the annular groove and rigidly connect the parts. The office of this arrangement is to move the plates back out of position as they are passed into the upper chamber. The rotation of the nuts of the rear bolts adjusts the spring so as to enable the plates to be moved back or fed forward in the respective chambers.

After a plate is moved back through the me-

dium of the front thumb-screw and its cross-bar the rotation of said thumb-screw is reversed, so as to retract said bar, to enable a succeeding plate to be passed into the upper chamber.

From the foregoing it will be seen that the device embodying my improvements is of great convenience and value in the photographic art and is of comparatively simple and durable construction.

I claim—

1. The combination, with the main frame having the upper and lower compartments, the latter being provided with the usual blind or shutter devices, of a horizontal passage-way between said compartments, a spring-pressed follower in said lower compartment to press the plates in line with said passage-way, and vertically-movable disconnected side bars, each having a catch on its inner face adjacent to its lower end to engage said plates, substantially as set forth.

2. The combination, with the main frame having the upper and lower compartments, as described, formed by the transverse partition provided with a transverse passage-way, of a movable section pivoted to said partition to close said passage-way a spring-pressed follower in said lower compartment adapted to press plates in line with said passage-way, and movable side bars having catches to engage said plates when in line with said passage-way, substantially as set forth.

3. The combination, with the main frame having a central horizontal partition forming upper and lower compartments, said partition provided with a passage-way, of T-shaped bars moving in corresponding recesses in the sides of the frame and provided with rack-teeth, a transverse shaft bearing in said partition and having gear-pinions to engage said teeth, and a device for revolving said shaft, substantially as set forth.

4. The combination, in the main frame having an upper dark chamber and lower operating-chamber, as described, communicating by a transverse passage-way, of movable side bars each provided at its lower end with a spring-seated catch, and rack and pinion devices for operating said bars, substantially as set forth.

5. The combination, with the main frame having the upper and lower chambers communicating as described and each provided with a movable plate, of a bolt connecting therewith and having its threaded end extending through a back plate, and a spiral spring embracing said bolt, and devices for sliding plates from one chamber to the other, substantially as set forth.

6. The combination, with the main frame having the central partition forming upper and lower compartments communicating by means of a transverse passage-way, of movable side bars having catches and rack and

pinion operating devices, spring-pressed follower in the lower compartment, and a series of metallic cases adapted to contain photographic plates, substantially as set forth.

5 7. The combination, with the frame having the lower and upper chambers, the latter being provided with a front plate, of the transferring devices and the front thumb-screw

and bar connected thereto, substantially as set forth.

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

JOSEPH M. RHODES.

Witnesses:

D. V. SPENCE,
JOHN B. MARTIN.

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