(No Model.)

G. D. THOMPSON.

PHOTOGRAPHIC CAMERA.

No. 433,553. Patented Aug. 5, 1890.

FIG. 1.

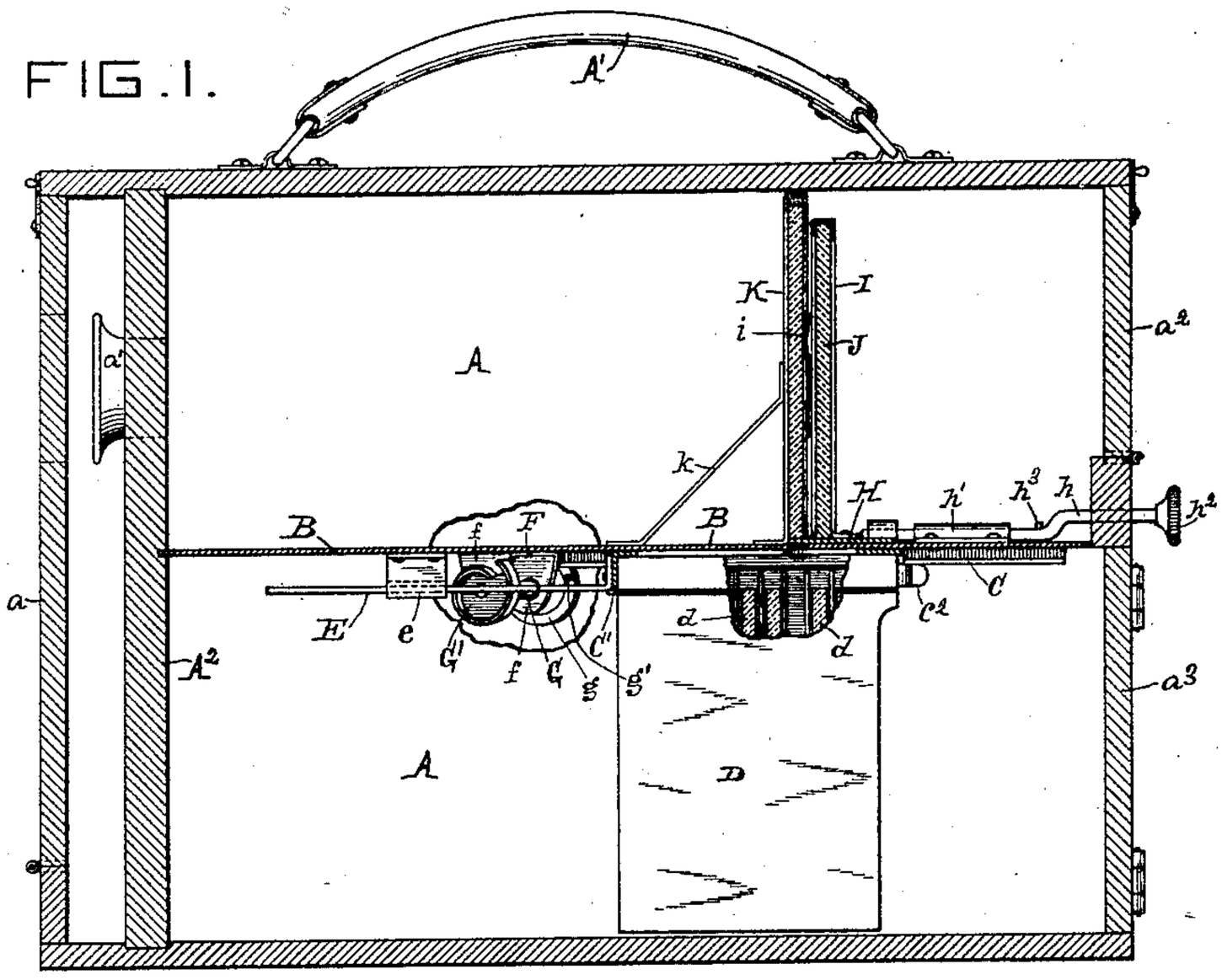

FIG. 2.

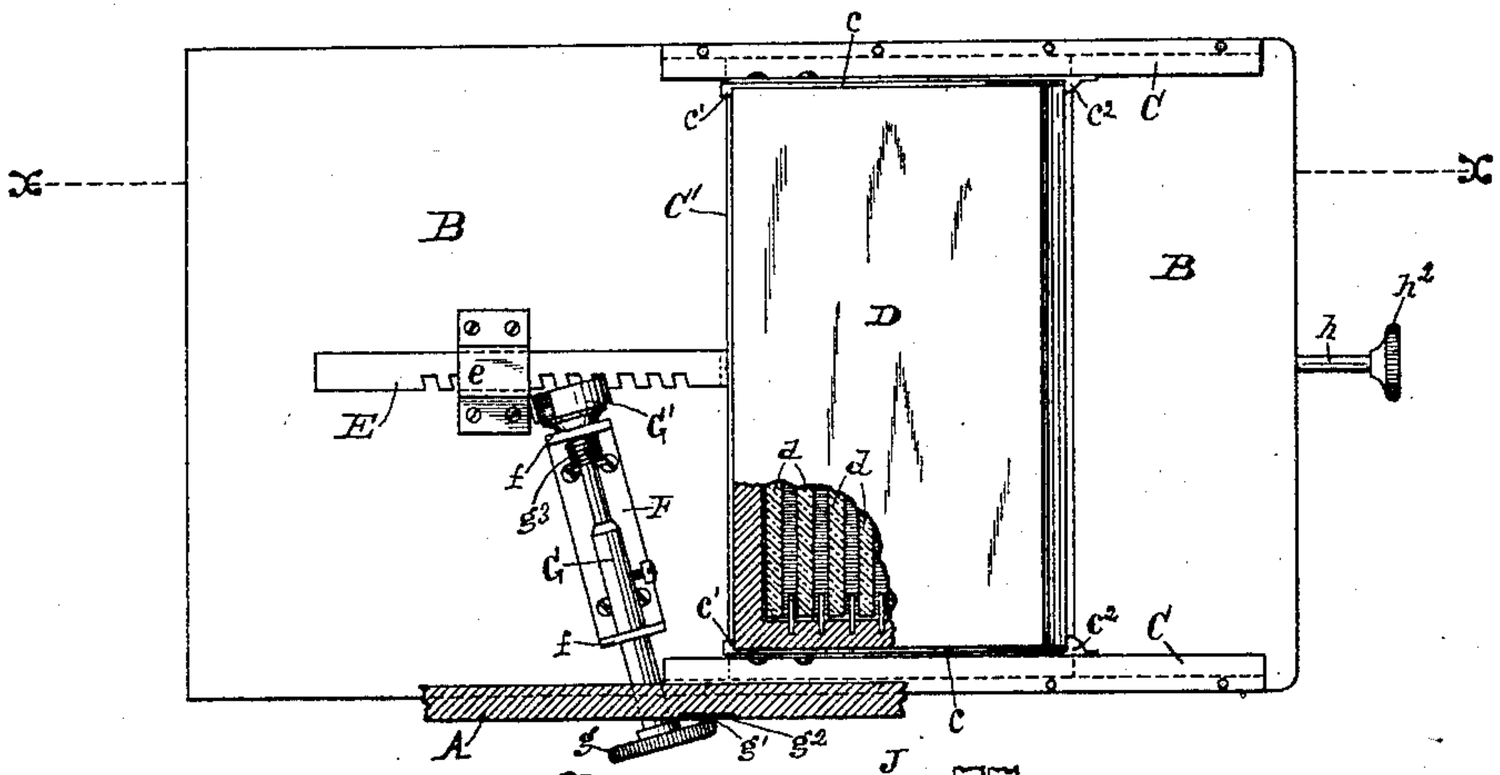

FIG. 3.

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UNITED STATES PATENT OFFICE.

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PHOTOGRAPHIC CAMERA.

SPECIFICATION forming part of Letters Patent No. 433,553, dated August 5, 1890.

Application filed June 27, 1889. Serial No. 315,826. (No model.)

To all whom it may concern:

Be it known that I, GEORGE D. THOMPSON, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Photographic Cameras, of which the following is a specification.

My invention relates to photographic cameras, and particularly to that class which are provided with a receptacle to receive a number of sensitized plates arranged to be exposed successively and after exposure to be conveyed into a dark-box until such time as it is convenient to develop them. Its object is to combine in the same device a detective, view, and general camera, so arranged that the plates may be successively exposed and after exposure returned to the dark-receptacle without change of the device, whether used as a detective or ordinary camera. These objects are accomplished by the means illustrated in the accompanying drawings, in connection with which the invention will be first fully described, and will then be particularly referred to and pointed out in the claims.

Figure 1 is a vertical longitudinal section of my improved camera and its attachment, taken through line *x x* of Fig. 2, except the plate-receptacle, which is shown in side elevation, and except that portion of it which is broken away to expose the position of the plates within it. Fig. 2 is an inverted plan view of the attachment with the plate-receptacle connected. This is shown in bottom elevation with a portion broken out. A portion of one side of the box or case is also shown in section. Fig. 3 is an end elevation of the attachment shown in Fig. 2.

Referring to the parts, which are indicated by similar reference-letters wherever they occur throughout the various views, A is a rectangular box provided at top with the customary handle A′. The box has, near one end back of the hinged door *a*, a partition A^2, into which is fitted the lens *a*′. The opposite end of the box has two hinged doors a^2 a^3, the upper one of which a^2 opens downwardly and the lower one of which is hinged to one side of the box. The sides of the box A and the inside of the partition A^2 are grooved to receive the metal plate B, which is the foundation upon which my improvements are mounted. To the under side of this plate are secured guide-bars C to receive the side edges of the frame C′. This frame has downwardly-projecting side flanges *c*, which have inturned angle edges *c*′ to enter grooves in the sides of the plate holder or receptacle D. To the outsides of these flanges *c* are secured spring-latches c^2, the catches of which, when the box or receptacle D is pushed into place, spring over the front corners and lock the receptacle to the frame C′. To the rear bar of the frame C′ is secured a toothed bar E, the longitudinal movement of which is guided by a keeper *e*, through which the bar E passes. The keeper is secured to the under side of plate B by screws passing through its lugs. To the under side of the plate B is secured a lug-plate F, which furnishes bearings *f f* for the shaft G.

Upon the inner end of the shaft G is a disk-wheel G′, which has a spiral thread to engage the teeth of a rack E and move the rack the distance of one tooth at each revolution of the shaft G. The teeth of the rack are so spaced as to successively bring one of the plates *d* within box D under the opening in plate B at each revolution of the shaft. To the outer end of shaft G is secured a knurl *g*, which has a pin *g*′ projecting from its inner face to enter a hole in a plate g^2, secured to the outside of the box A, in order to stop the shaft when it has made one revolution. A spiral spring g^3 is coiled around the shaft G to hold the spirally-threaded disk up to its work and lock the shaft by holding the pin *g*′ in the hole in the plate g^2.

Upon the upper side of plate B is arranged a slide H, to cover and uncover the plate-opening in the plate B. This slide is actuated by a rod *h*, which is secured to its forward end, and is guided in a keeper *h*′, secured upon plate B. To the outer end of the rod *h* is secured a button or knurl h^2, by which the slide is pulled out or pushed inwardly, its movement being limited in one

direction by the edge of the plate or the boss within which the inner end of rod *h* is secured, and in the opposite direction by a pin or screw h^3, secured in the rod *h*. Upon the upper side of this slide H is secured, in an upright frame I, a ground-glass plate J, which, when the slide H is pushed in to its limit, occupies a position within the frame K, which is secured upon the plate B, to receive the sensitized plates, the frame K being large enough to admit the ground-glass plate and its frame. The object of this arrangement is to admit of the instrument being used as an ordinary camera, as well as what is known as a "detective-camera." The frame K has grooves to receive the sensitized plates from the receptacle. These plates are brought into the frame K successively by simply pulling out the slide H, and then reversing or turning over the camera, when the plate immediately below the transverse slot in frame B drops into the frame K. The slide is then pushed in to cover the slot, and the camera turned to its normal position.

To the inside of frame I at each side is secured a flat spring *i*, the object of which is to press slightly against the back of the sensitized plates or their frames, prevent jar in their passage from the box D to the frame K, and force the sensitized plate against the front frame, so as to insure a uniform focus whether thick or thin plates be used. The frame K is supported by braces *k*.

The operation of my camera is as follows: When the device is to be used as detective-camera or to take instantaneous views, let it be assumed that the receptacle E is filled with sensitized plates, and the first plate to the left of the device is directly under the slot in plate B. The slide H is pulled from over the slot in plate B and the camera turned over or upside down. This movement will bring the first plate into frame K. The slide H is now pushed inwardly, closing the slot in plate B and firmly holding the sensitized plate to the front of the frame K. After the necessary exposure the slide H is again drawn out, when the now-impressed plate drops back into the box D, and the shaft G rotated once around. This brings the next plate directly under the slot in plate B, when the operation may be repeated when another picture is to be taken.

When it is desired to use the instrument as an ordinary camera, the parts are in the position just described—that is, with the ground-glass plate occupying the position in frame K which is occupied by the sensitized plate when ready for exposure. The operator can now get his subject in focus by opening door a^2, whether the camera be in its normal or inverted position, (the latter being preferable.) If the camera is inverted, it is only necessary after the subject is in focus to draw out the rod *h*, when a sensitized plate will drop down to the position just previously occupied by the ground-glass plate, when the picture will be taken without moving the camera after the subject has been properly focused. If the picture is to be taken with the camera in its normal condition, it is obvious that it must be returned to the same position after it has been inverted to bring the sensitized plate to the same position previously occupied by the ground-glass plate.

It will be understood, of course, that I do not confine myself to the precise construction shown and described, as it is obvious that many mere mechanical changes may be made without departing from the spirit and scope of my invention.

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

1. The combination, substantially as hereinbefore set forth, of the outer case, the plate dividing it into an upper and lower compartment, said plate being slotted for the passage of a plate from the lower to the upper compartment for exposure, and its return after exposure, a plate-supporting frame secured to the top of said dividing-plate over its slot, a plate-receptacle arranged to slide in the lower compartment, means such as shown to slide said receptacle so as to bring the plates contained in it successively under the slot in the dividing-plate, and a slide to cover and uncover said slot, a rod secured to said slide and extending outside of the case, whereby the plates in the receptacle may be successively brought from their places in the receptacle into the frame in the upper compartment, sustained for exposure, and returned to their places in said receptacle by simply turning over the case and moving the slide to cover or uncover the said slot.

2. In a camera, the combination, substantially as set forth, of the case A, the slotted plate B, dividing the case into an upper and lower compartment, the plate-holder mounted to slide in guides secured under the plate B in the lower compartment, the frame K, secured to the top of said plate B over the slot in the same, and the slide H to alternately cover and uncover said slot for the purpose of allowing the plates to be carried from the receptacle into the frame K, supported in said frame, and returned to the receptacle after exposure.

3. The combination of the case A, the slotted partition B, dividing said case into two compartments, the frame K, secured upon plate B above the slot in the same, the sliding plate-holder below said plate, means such as shown to move the plate-holder so as to bring the plates within it alternately under the slot in plate B, the slide H and its actuating-rod *h* to cover and uncover said slot, and the frame I and ground-glass plate J, secured to the upper side of said slide, for the purpose set forth.

4. The combination, substantially as specified, of the camera-box A, the slotted plate

B, dividing the same into an upper and lower compartment, the frame C′, fitted to slide under the plate or partition B, the rack-bar secured to said frame, the shaft and spirally-threaded disk to move said frame, the plate-carrier secured in the frame C′, the plate H, arranged to cover and uncover the slot in plate B, the rod *h* to actuate said slide, and the frame K, secured to the top of said plate B over its slot, for the purpose specified.

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