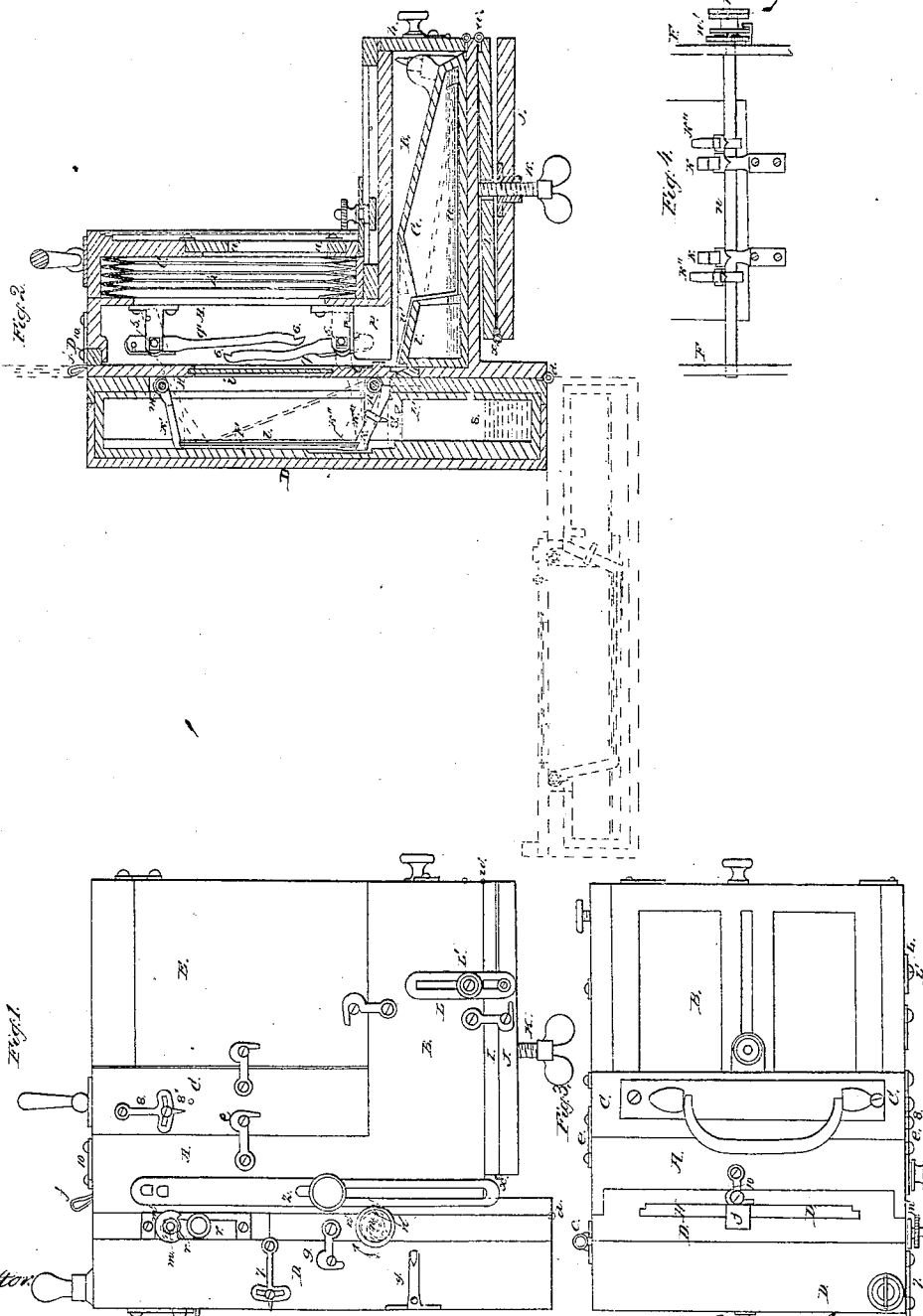


C. G. Anthoni,

Camera Attachment,

N^o 33,230.

Patented Sep. 10, 1861.



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UNITED STATES PATENT OFFICE.

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PHOTOGRAPHIC APPARATUS.

Specification forming part of Letters Patent No. 33,230, dated September 10, 1861.

To all whom it may concern:

Be it known that I, CHARLES GUSTAVE ANTHONI, mechanician, of Paris, in the Empire of France, have invented Improvements in Photographic Apparatus; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed sheet of drawings, making a part of the same.

This invention consists in a certain mode of applying the sensitizing and developing baths, in combination with the camera, and in certain mechanism capable of being controlled outside of the apparatus, whereby I obtain a complete photographic apparatus for operating upon damp collodion in the open air or in any other place, in which I can sensitize the plate, take the picture, and transfer the plate to the developing-bath without removing the picture from the dark room formed by the camera and baths.

Figure 1 in the drawings is a side view of the exterior of the apparatus packed up for traveling. Fig. 2 is a central vertical section of the same, having the box E shown in Fig. 1 removed and ready for use. Fig. 3 is a plan corresponding with Fig. 2. Fig. 4 represents a portion of the mechanism for holding the plate during the processes of sensitizing it and taking the picture.

Similar letters of reference indicate corresponding parts in the several figures.

A B C D is the camera-box, of which the vertical portion A and horizontal portion B are permanently secured together. The portion C, to which the tube containing the object-glass is to be attached at *a*, Fig. 2, is connected by a square bellows-like tube *b*, and the portion D is hinged at *c*, Fig. 3, to swing open with a horizontal movement, as illustrated by red lines in Fig. 3, and at *d* to swing open by a downward movement, as illustrated by red lines in Fig. 2.

e e are hooks to fasten the portion C when closed up, and when the portion C is closed up there is room left above the portion B for the box E, in which is to be carried a number of sheets of glass and a vessel containing water in which to immerse the plates when they are removed from the developing-bath. Before this box E can be packed upon the camera the tube containing the object-glass is to be turned round within the camera-box.

The portion D of the camera-box contains the gutta-percha sensitizing-bath F, (see Fig. 2,) such bath being a fixture within it, and the portion B contains the gutta-percha developing-bath G, which is movable at a door *h* in front.

H is a sliding screen fitted to the part D of the camera-box for intercepting the luminous rays while the sensitizing process is performed, fitted with a yellow glass *i*, through which the process of sensitization may be observed. This is withdrawn previous to taking the picture by taking hold of a strap *j* at the top thereof.

k k, Figs. 2 and 4, are hooks of gutta-percha, horn, whalebone, or other suitable material secured to the front of the portion D of the camera-box for the support of the lower edge of the plate *l*, on which the picture is to be taken, and *k' k'*, Fig. 2, are hooks secured to a shaft *m*, passing through bearings in the upper part of D to hold the upper edge of the plate. The hooks *k' k'* are caused to press upon the upper edge of the plate by a coiled spring *m'*, applied to one end of the shaft *m*, outside of the camera-box.

k'' k'', Figs. 2 and 4, are hooks attached to a shaft *n*, passing through bearings in the lower part of D for the purpose of removing the plate from the hooks *k k* and transferring it to the developing-bath G, as will be presently explained. These hooks *k'' k''* are kept below the hooks *k k* until the time for transferring the plate by means of a coiled spring *n'*, applied to one end of the shaft *n* outside of the camera-box. The shaft *n* is furnished outside of the camera-box with a knob *n''*, by which it can be turned by hand in the direction of the arrow shown near it in Fig. 1, which is the opposite direction to that in which its spring tends to turn it. The shaft *n'* has provided for it movable bearings *r r*, by which it may be adjusted higher or lower to adapt the hooks to plates of different sizes.

p is one of two lateral guides to guide the plate on its way from the hooks *k k k' k'* to the developing-bath G.

q q are hooks—two upper and two lower ones—working on pivots *5 5* within the portion A of the camera-box and capable of having their notches *6 6* brought to such positions relatively to A as the hooks *k k* and *k' k'* occupy when the portion D of the camera-

box is shut up, as shown in bold outline in Fig. 2, the object of such hooks being to hold the ground glass by which the focus of the camera is adjusted.

The sensitizing-bath F is so constructed that when the part D of the camera-box is let down to a horizontal position it (the said bath) constitutes a flat-bottomed trough, but that when it is upright, as shown in bold outline in Fig. 2, a reservoir *s* is formed in its lower part to contain the sensitizing solution. This reservoir may be fitted with a lid at *s'*, Fig. 2, to prevent the solution splashing about while the apparatus is carried from place to place.

The developing-bath G is made with an inclined plane *t*, down which the plate may slide into it from the hooks *k k' k'' k'''*, and the said bath is fitted with a movable strip *u*, by which the plate can be removed. The mouth *u'* of the said bath may be fitted with a lid to prevent the developing solution from splashing about. To enable the developing-bath to be inclined in opposite directions that the solution may run all over the face of the plate, the portion B of the camera-box is connected by hinges *w* and *x* with two boards I and J, which permit the box to have a rocking motion, while the lower board J is attached to a tripod by the screw K, and also permits the adjustment to elevate or depress the focus. The elevation is secured by a slotted plate L and set-screw L'. (Shown in Figs. 1 and 3.)

y is a hook secured to the portion D of the camera-box to receive a metal strap *z*, attached to the part A for the purpose of holding the portion D in a horizontal or nearly horizontal position while the focus of the camera is being adjusted.

6 7 8 are small pendulums attached to the different portions of the camera-box to facilitate the adjustment of the several portions.

9 is a hook to secure the portion D of the camera when it is not desired to open at the hinge *c*.

10 is a hook to secure the portion D when closed up to the portion A.

I will now proceed to describe the manner in which the apparatus is used. After setting the apparatus up on its stand I adjust it by the pendulum 6 to bring the hinge *d* to a horizontal position, and I then unfasten the hook 9 and open the portion D of the box on its vertical hinge *c*, and take the glass plate *l* on which the picture is to be taken, prepare it with collodion in the usual manner, and place it between the hooks *k k'* and *k'' k'''*, and shut up the portion D of the box again and fasten the hook 9. I next unfasten the hook 10 and open the box D on the hinge *d* till the sensitizing-bath F and the plate pass a horizontal position, when the plate is at once covered with the sensitizing solution contained in the bath. A rocking motion on the hinge *d* is then given to D for a sufficient time to subject the plate to the action of the sensitizing solution, and D is then hooked up

by the hook *y* to the strap *z*, while the camera is adjusted to the proper focus, the glass *l* remaining protected from the light by the screen H.

To adjust the camera, the hooks *q q'* are brought to the position shown in red outline in Fig. 2 and the ground glass placed within or between them, such glass now occupying the position that will be occupied by the prepared plate *l* when D is shut up. When the camera has been adjusted, the ground glass is removed and the hooks *q q'* returned to the position shown in black outline, which is near the sides of the box, and D is shut up. The screen H and the cap of the object-glass are then removed to allow the plate *l* to be acted upon by the light for a sufficient time and the cap is put on.

While the camera-box remains closed it is adjusted on the hinged boards I J at a slight inclination, to be indicated by the pendulum 8 arriving opposite to its index 8*, (see Fig. 1,) and the plate *l* is transferred from the hooks *k k' k'' k'''* to the developing-bath by turning the shaft *n*, by means of its knob *n''*, in a direction to raise the hooks *k'' k'''*, which lift the lower edge of the plate out of the notches in the hooks *k k'*, and the said hooks *k'' k'''*, having no notches, in themselves form inclined planes, down which the lower edge of the glass is caused to slide and over which it is carried at first by the pressure of the hooks *k' k''* and afterward by gravitation to the inclined plane *t*, down which the plate slides into the developing-bath G. The plate is shown in Fig. 2, in dotted red lines, at two stages of its progress to the developing-bath. The apparatus then has given to it a rocking motion on the hinges *w x* to make the developing solution run back and forth over the plate, and when this has been done sufficiently the door *h* is opened, the bath G drawn out, and the plate *l* lifted out of the bath by the strip *u*, after which it is washed in the water bath, carried within the box E, and then inserted in a grooved compartment of the said box.

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

1. The arrangement of the sensitizing and developing baths within the camera-box and in relation to the camera in such manner that I can sensitize the plate, take the picture, and transfer the picture to the developing-bath without removing the plate from the dark room formed by the camera and baths, substantially as herein specified.

2. The combination of the hooks *k k', k'' k'''*, and *k'' k'''*, the whole applied and operating substantially as and for the purpose herein specified.

3. The hooks *q q'*, applied and operating substantially as and for the purpose herein set forth.

C. G. ANTHONI.

Witnesses:

GEO. HUTTON,
A. GUION.