No. 722,052. PATENTED MAR. 3, 1903.

S. J. SLOAN.

PORTABLE DAYLIGHT DEVELOPING BOX FOR PHOTO PLATES.

APPLICATION FILED DEC. 17, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

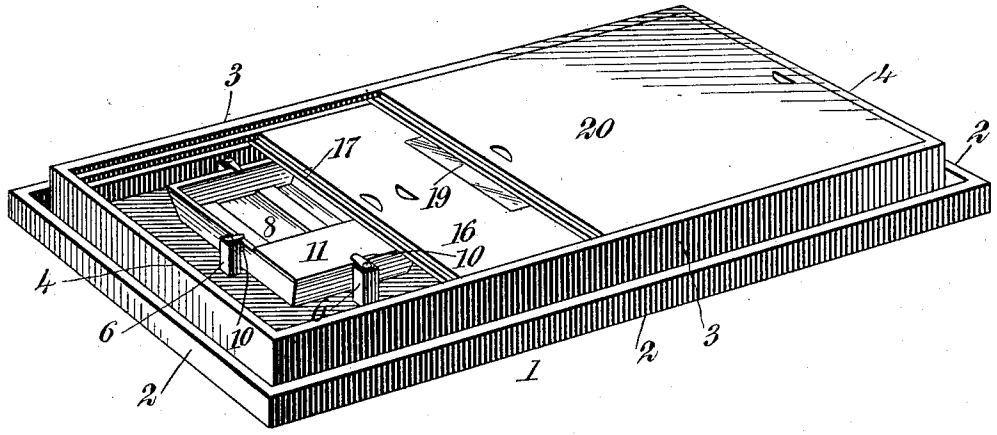
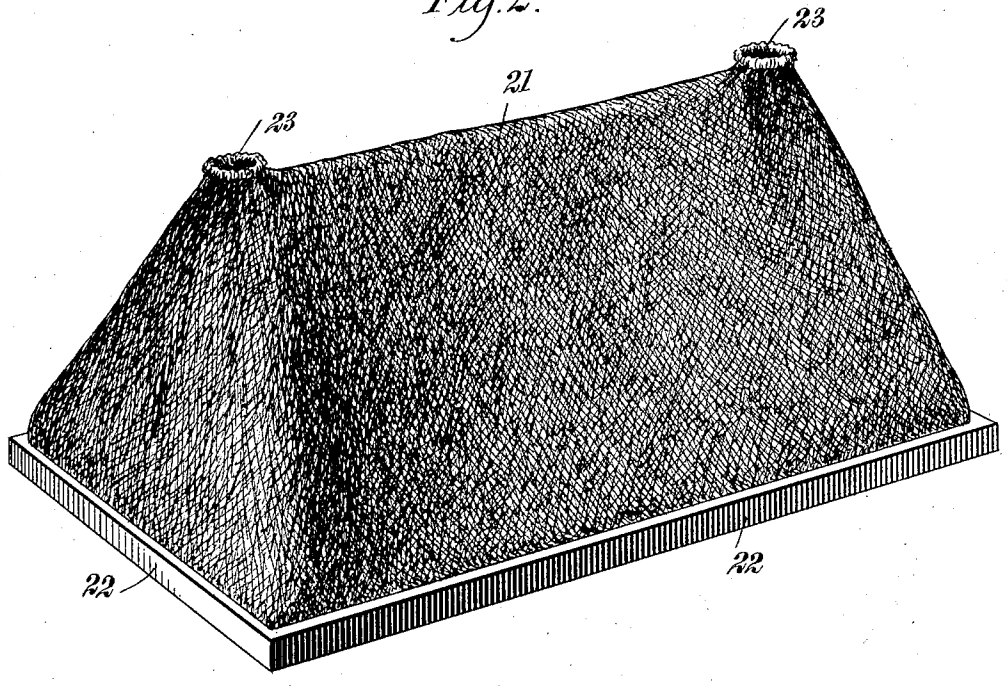


Fig. 2.



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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 3.

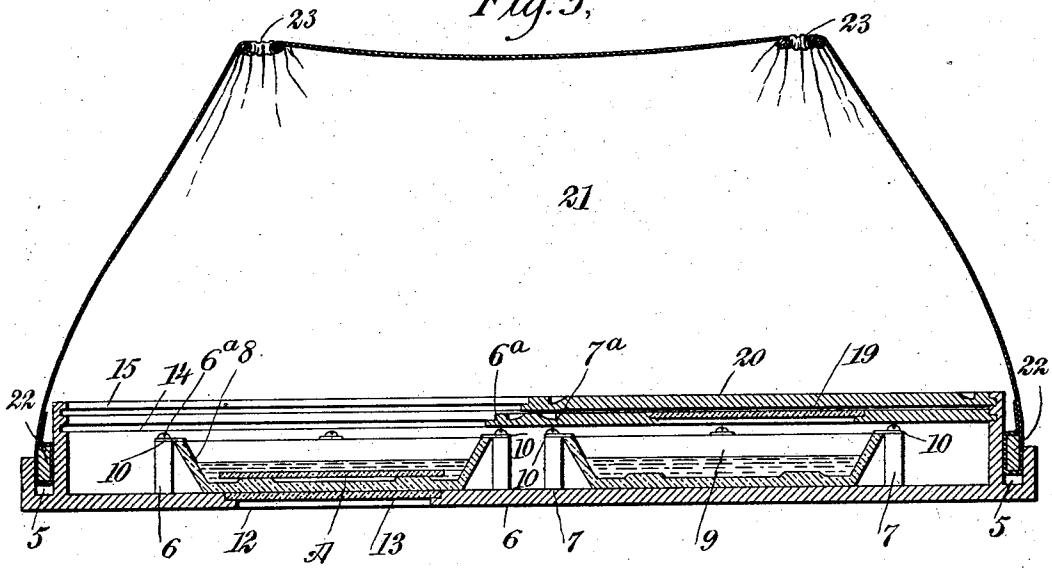


Fig. 4.

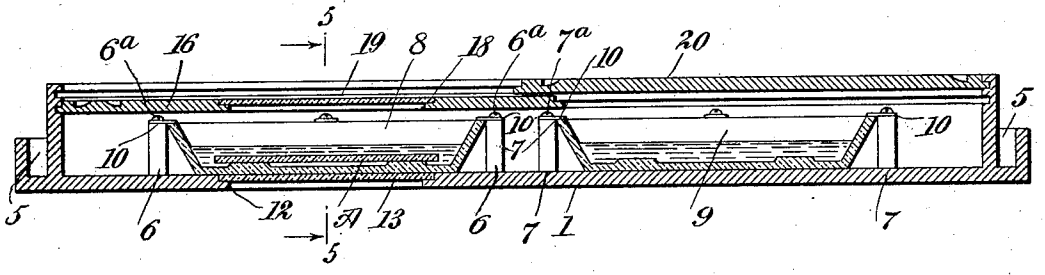
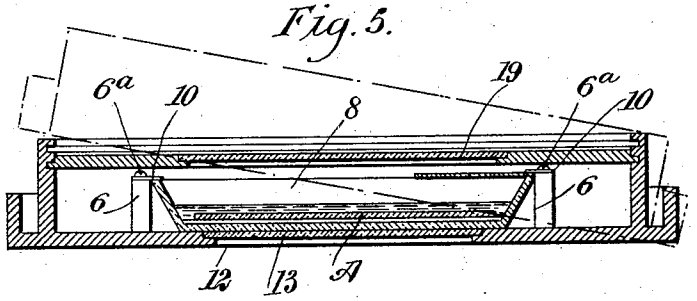


Fig. 5.



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UNITED STATES PATENT OFFICE.

SAMUEL J. SLOAN, OF JERSEY CITY, NEW JERSEY.

PORTABLE DAYLIGHT DEVELOPING-BOX FOR PHOTO-PLATES.

SPECIFICATION forming part of Letters Patent No. 722,052, dated March 3, 1903.

Application filed December 17, 1902. Serial No. 135,601. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL J. SLOAN, a citizen of the United States, and a resident of Jersey City, in the county of Hudson and State of New Jersey, have invented new and useful Improvements in Portable Daylight Developing-Boxes for Photo-Plates, of which the following is a full, clear, and exact description.

This invention relates to certain novel and useful improvements in trays or boxes used in developing photographic plates in daylight without the use of a dark room, and has particular application to a portable article of the class described.

As is well known to those skilled in or conversant with the art of photography, it is the common practice after a picture has been taken to develop the plate in a dark room by immersing the plate first in what is generally termed the "developer" and then transferring and reimmersing the plate in the fixing-bath, the only light being furnished by the ordinary photographer's "red lamp." There are certain disadvantages incident to this procedure, because it is necessary, first, to have a room so furnished and arranged that it shall be absolutely dark, and, secondly, the light furnished is so dim and faint that the operator must move with great caution to avoid upsetting and spilling the developing or fixing solution.

Primarily, therefore, it is the object of my invention to overcome the above objections by providing an article which will retain the trays containing the developing and fixing solutions, my developing-box being of such size that it may be readily packed in a grip or suit-case and conveyed from place to place, and, further, the box is so arranged that with the aid of a covering or hood of dark or colored translucent material the plates may be readily developed without employing the well-known dark room.

It is also an object of my invention to construct a developing-box which shall have the solution-containing trays so arranged relative to the position of a transparent material set in the body of the box that the progress or action of the developing solutions upon the plates may be readily observed, thus enabling the photographer to determine to a nicety when the plates have been immersed in the bath a sufficient length of time.

In addition to accomplishing the last-mentioned function my improvement is especially applicable for loading plates in daylight.

A further object of the invention is to provide an article such as described which shall be simple and durable in construction and capable of being manufactured and sold at but comparatively little expense.

With the above-recited objects and others of a similar nature in view the present invention consists in the construction, combination, and arrangement of parts, as will be hereinafter described in this specification, delineated in the accompanying drawings, and set forth in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of my improvement. Fig. 2 is a similar view, but showing the box provided with the covering-hood employed in connection with my improvement. Fig. 3 is a central longitudinal vertical sectional view of an embodiment of my improvement, showing the top slides of the box in such position that one of the developing-trays therein is uncovered to receive the negative or plate. Fig. 4 is a similar view, but showing the sliding covers in their closed position; and Fig. 5 is a transverse sectional view taken through the line 5 5 of Fig. 4.

Referring now to the accompanying drawings in detail, 1 designates the bottom of the base portion of my improved developing-box, such box being formed preferably square or rectangular in shape and having vertically-disposed flanged walls 2 extending entirely around the edge of said bottom. Extending upwardly from said base portion is a frame formed of the longitudinal walls 3 3 and the transverse walls 4 4, the construction being such that a space or groove 5 is formed entirely around the box between the walls of the frame and the vertically-extending flange of the base portion.

Upon the upper surface of the bottom por-

tion, inclosed by the frame just referred to, are arranged two sets of vertically-disposed studs or pins, one set being designated by the numeral 6 and the other by the numeral 7. Between these studs or pins 6 6 is adapted to be retained a suitable tray 8 for containing the developing solution, while between the studs 7 is adapted to be held a similar tray 9 for the reception of the fixing solution. Each of the studs or pins 6 and 7 has secured to the top thereof, by means of screws or equivalent devices 6^a 7^a, a small retaining-clip 10, such clips projecting inwardly to those of the opposite stud, as clearly shown in Fig. 1, these clips being preferably formed of any springy material, such as metal or the like, and are adapted to bear upon and engage the upper edges of the developing-trays. These trays may be of any suitable material, but preferably constructed of glass, and each tray is provided with a plate across the top thereof, so as to partially cover the same, such plate being shown at 11, it being understood that the trays are substantially similar in construction. The portion of the base covered by the developing-tray is slotted or formed with an opening 12, a groove being formed in the walls surrounding said opening for the reception of a plate or glass 13 of a suitable color, preferably red. This plate is inserted for the purpose of enabling the photographer to observe the action of the developing solution upon the plate, which may be readily seen by turning or holding the box up to the light.

The inner walls of the frame mounted upon the bottom or base portion of the box are provided with two parallel grooves 14 and 15, extending entirely around such walls, these grooves being adapted for the following purposes: Within the lower groove 14 is adapted to slide a cover 16, provided with a lip or extension 17 to enable it to snugly fit into the transverse section of the groove, such slide having a central portion provided with an opening 18, substantially equal in size to the opening formed in the bottom and adapted when the slide is in its normally closed position to be directly above such bottom opening. This sliding plate or cover portion is also provided with a red glass, (shown at 19,) and as the cover is only equal in length to half the length of the frame of the box portion it may be shifted back and forth in the groove to rest either above the developing-tray or over the fixing-receptacle. The upper groove 15 forms a guideway for the cover 20 to slide in, such cover being a trifle shorter than the slide 16, whereby when one or both covers are closed their ends will overlap, as is shown in Fig. 4.

For the purpose of enveloping the entire structure when in use I have provided a hood 21, which is sewed, tacked, or otherwise secured to an open rectangular frame 22, which frame is of such dimensions that it may be readily inserted in the space 5, formed by the flange of the base and the walls of the frame of the base, as is clearly shown in Fig. 3. This hood may be formed of any dark preferably flexible material—such as rubber, canvas, cloth, or the like—or, if desired, this hood may be made of a colored translucent material—such as ruby glass, celluloid, &c.—and in this case the operator will be able to see the plates while loading and unloading the same, and thus may work with more certainty. The hood is provided at points on its top surface with the armholes 23 23, such armholes being made self-adjusting in the present instance by means of an elastic draw-string, the construction forming the hood being clearly shown in Figs. 2 and 3.

When deemed convenient or necessary, the box may be provided with a supplemental cover, as shown in dotted lines in Fig. 5, which is adapted to fit over the frame and within the space 5, so that when being transported the entire structure will be securely incased.

From the above description when read in connection with the accompanying drawings the operation and use of my improved portable developing-box will be readily apparent to those skilled in the art to which it appertains. The hood or cover being removed from the box the developing-trays are clamped between the standards, as hereinbefore described, and the tray containing the primary developing solution (designated by the numeral 8) is placed over the colored plate 13 in the open portion 12 of the bottom, such tray being, as stated, of transparent material. The tray or receptacle 9 is then secured in position in the other set of studs, and such trays are then filled with the developing solution and the fixing-bath, respectively. The covers are at this time presumed to be in the position shown in Fig. 3, and the holder containing the plate may then be placed upon the top 20. The hood is then placed over the entire structure and held by placing the frame in the space 5, as shown in Fig. 3, and the operator then passes his arm through the holes 23 in the hood, and removing the slide from the plate-holder takes the plate out and places it in the developing solution, such plate being shown at A in Figs. 3, 4, and 5. He then moves the slide 16, containing the red glass 19, so as to cover the developing-tray and the plate, as is shown in Fig. 4. The hood may then be removed temporarily and the tray gently oscillated or tilted back and forth, thoroughly washing the plate. When the operator observes through the red glasses by holding the box to the light that the plate has been in the solution long enough, he again places the hood over the box and sliding the cover back removes the plate. Both the covers 16 and 20 are then moved so as to be over the developing-tray, and the plate is placed in the fixing-bath, and the cover 16, having the red glass therein, is moved so as to be directly

above such bath, whereby the photographer may determine when the plate has been sufficiently fixed and all halation removed therefrom. It is of course to be understood that the cover 20 is resting over the developing-solution tray, so as to exclude all possible light from the box, the hood being again removed after the slides have been properly arranged. After the plate has been sufficiently fixed by the solution it may be taken from the tray and washed in the ordinary manner.

It will be evident that numerous advantages incident to my improved structure will render it extremely convenient and useful for amateur photographers, especially those who are unable to make use of a permanently-dark room, such as persons engaged in taking photographs of landscape scenery in out-of-the-way places. The plate may be developed readily and quickly, and there is absolutely no danger of the same becoming light-struck and spoiled.

While I have herein shown and described one particular embodiment of my invention, I wish it to be understood that I do not limit myself to the precise details of the construction shown herein, as there may be modifications and variations in certain respects without departing from the spirit or sacrificing any of the essential features of the invention. For instance, any suitable plate-retaining means may be employed, and the shape and arrangement of the grooves in the base-frame, together with the slides, may be varied. It will further be evident that instead of forming the covers to slide in grooves they could be mounted to swing on hinges.

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

1. A device of the class described, comprising a box portion, trays positioned therein, means for retaining the trays against movement, a plurality of slides covering the box portion, one of said slides having an opening, and a sheet of colored material covering said opening, substantially as set forth.

2. A device of the class described, comprising a box portion, solution-containing trays positioned therein, a cover for said box, having a sheet of colored translucent material fitting over an opening therein, and a hood for the entire structure, substantially as set forth.

3. A device of the class described, comprising a box portion, trays positioned therein, clamping devices for securing said trays in position, a cover for said box portion, provided with an opening having a sheet or plate of transparent or translucent material fitting over the same, and a removable hood for the entire structure, substantially as set forth.

4. A device of the class described, comprising a box portion, solution-trays positioned therein, a movable cover for said box, such cover having an opening provided with colored transparent material fitting over the same, said cover being so adjustable that the transparent portion thereof may assume a position directly above any one of the trays in the box, and a hood for the entire structure, substantially as set forth.

5. A device of the class described, comprising a box portion, solution-trays positioned therein, a movable cover for said box, having an opening fitted with a colored transparent material, said cover being adjustable to rest directly over any one of the trays in the box, and a non-transparent covering portion for the remaining trays in the box, substantially as set forth.

6. A device of the class described, comprising a base, a frame mounted thereon, trays positioned in the frame on said base, said base having an opening covered with transparent material directly beneath some or all of the trays, and a movable cover for the same, substantially as set forth.

7. A device of the class described, comprising a base, a frame mounted thereon, trays positioned on said base within the frame, studs provided with clamping devices for retaining said trays in position, a cover portion having an opening formed therein and fitted with a colored transparent material adapted to be movable to rest immediately over any one of the trays, and a second non-transparent cover portion movable relative to the first portion to cover any trays in the frame not under the translucent cover, substantially as set forth.

8. The combination of a box portion, trays mounted in said box portion, translucent and non-translucent cover portions for said box, said portions being adjustable relative to each other, and a removable hood for the entire structure, substantially as set forth.

9. The combination of a box portion, having the vertical walls thereof grooved, solution-containing trays held within said box portion, each of said trays being formed with a solution and negative retaining receptacle, and cover portions slidable in the grooves of the box portion, substantially as set forth.

10. The combination of a box portion, comprising a flanged base, and a frame mounted on said base, a space being left between the walls of the frame and the base-flange, trays secured in said box portion, a translucent cover and a non-translucent cover movable in the frame above the trays, a frame adapted to lie within the groove between the flange and the walls of the first-mentioned frame, and a flexible hood carried by said frame, substantially as set forth.

11. The combination of a box portion comprising a flanged base, a frame mounted thereon, a space being left between the walls of the frame and the base-flange, solution-containing trays removably secured in said box portion, a translucent cover portion, and

a non-transparent cover portion slidably mounted in the frame above the trays, a frame adapted to lie within the groove between the flange and the walls of the first-mentioned frame, and a flexible hood carried by said frame, said hood having armholes formed therein, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SAMUEL J. SLOAN.

Witnesses:
R. B. CAVANAGH,
JNO. M. RITTER.