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P. BISSET.

PHOTOGRAPHIC DEVELOPING APPARATUS.

APPLICATION FILED APR. 30, 1906.

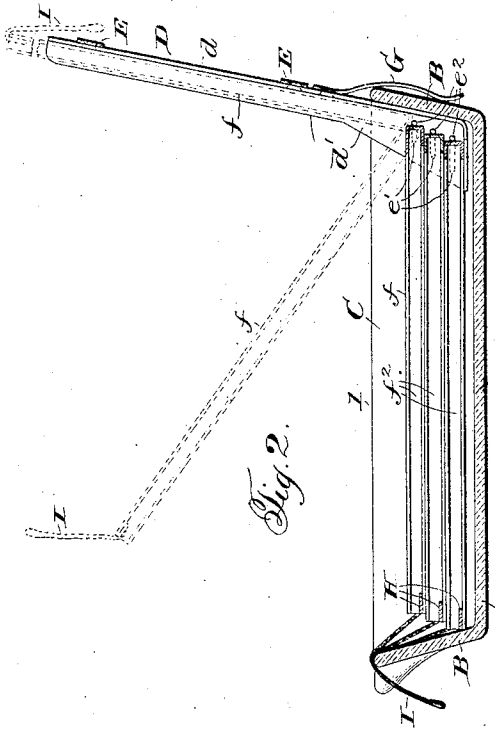


Fig. 2.

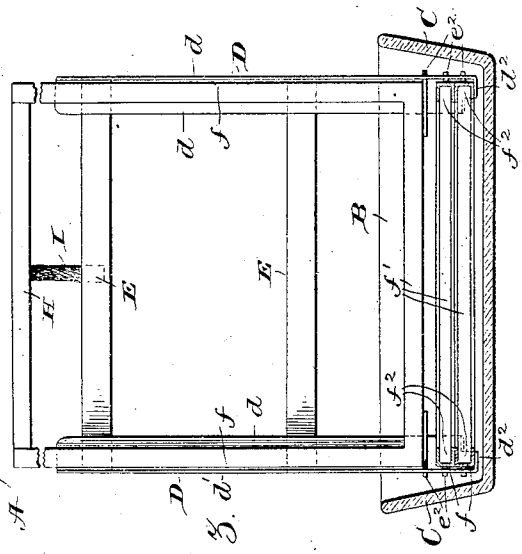


Fig. 3.

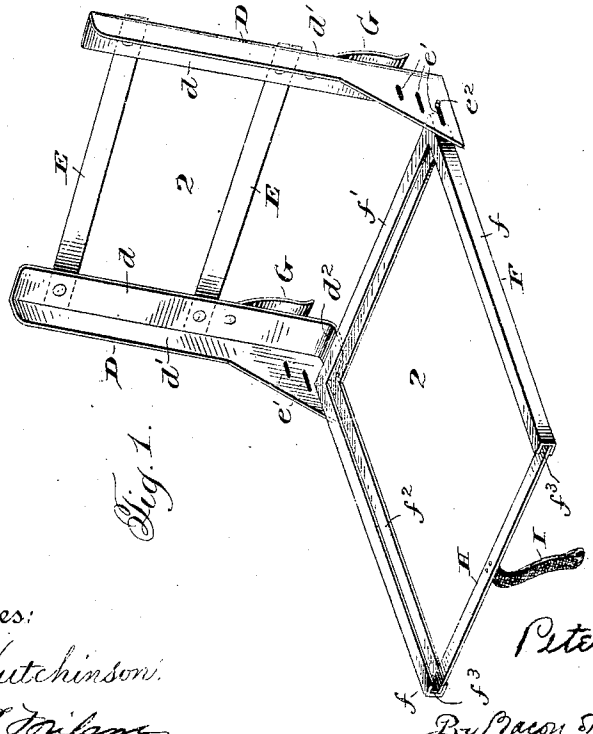


Fig. 1.

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PHOTOGRAPHIC DEVELOPING APPARATUS.

No. 845,049. Specification of Letters Patent. Patented Feb. 26, 1907.

Application filed April 30, 1906. Serial No. 314,601.

To all whom it may concern:

Be it known that I, PETER BISSET, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Photographic Developing Apparatus, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to the art of photography, and more particularly to developing apparatus susceptible of use whenever plate or film negatives are employed.

The purpose of the invention is the provision of novel and efficient carrying means for holding and moving a negative plate adjacent to and away from a containing receptacle or tray, whereby the plate is submerged in the contained liquid for developing purposes.

More particularly, the invention comprises improved means for submerging a plurality of plates in the containing-receptacle in order that a series of them may be simultaneously developed, provision being made for separating the plates whereby they will be prevented from contact with one another and are thereby protected, and at the same time the developing of one will not hinder or impede the developing of the others.

It is a further object of the invention to provide an attachment of the character just stated simple and portable in construction and adapted for detachable connection with any of the ordinary containing receptacles or trays without the use of screws, bolts, or the like, thereby preventing any possible leakage of the tray at the point of attachment.

With these ends in view the invention consists in certain features of novelty in the construction, combination, and arrangement of parts by which the said objects and other objects hereinafter appearing are attained, all fully described with reference to the accompanying drawings, wherein a preferable embodiment of the invention is disclosed for the purpose of illustration.

In the drawings, Figure 1 is a perspective view of the apparatus detached. Fig. 2 is a longitudinal section of the apparatus applied to a developing-tray, and Fig. 3 is a similar cross-sectional view.

Referring now more particularly to the drawings, wherein like reference characters refer to corresponding parts throughout the several views, 1 designates a receptacle or tray of any desired construction, preferably rectangular in shape and comprising a bottom A and inclined sides and ends B and C, respectively.

2 designates my improved attachment as a whole, the same including a skeleton frame or support comprising oppositely-disposed angle-bar uprights D D, connected by transversely-extending bars E, fitted to the rear surface of the flanges d d and united thereto by any convenient means, which preferably does not extend beyond the inner surface of the flanges d d in order that the said inner surface may be continuous and flat throughout for the reception of the plate-racks about to be described. The side flanges d' d' are relatively wide adjacent their lower ends, and both of said flanges d and d' are inwardly turned at their lower ends and united to form seats d^2. The relatively wider portions of the lower ends of the flanges d' have transversely-extending slots e', arranged one above the other and increasing in length from the upper to the lower one.

F designates a series of racks constructed to receive and hold the negative plates and comprising sides f and a connected end f', each of which have intermediate longitudinally-extending guideways f^2, into which may be slid the plates from the open end f^3 of the sides f. The sides and ends of the racks are conveniently formed of elongated metal strips bent longitudinally back upon themselves to form between said bent portions the guideways f^2. Each rack is provided on opposite sides at its inner end with projecting pintles e^2, arranged to loosely engage the oppositely-disposed slots e' in the upright bars D, whereby the racks have pivotal as well as bodily movement relative to the support.

A convenient form of detachably applying the apparatus to a tray of usual construction, and this without the use of screws, bolts, or the like, which are liable to render the tray subject to leakage at the points of attachment, is to provide on the respective upright bars at a point spaced from the lower ends thereof downwardly-projecting arms G, secured at their upper ends in any desired manner to said-bars, the securing means preferably not extending beyond the inner surface of the bars for the reason before mentioned. The lower ends of said arms G are free and preferably of a resilient character

and are adapted to engage the outer surface of one of the flanges B of the tray when the frame of the apparatus is inserted to rest upon the inner surface of said flanges B, it being understood, of course, that the upright bars D of the frame are so spaced apart with relation to the length of the flanges C of the tray as to snugly fit therebetween. The racks are of a size adapted to rest within the tray. By reason of the fact that the slots e' in the upright bars are increased in length from the upper to the lower one the racks are permitted a sliding movement longitudinally of the tray to adapt racks of uniform length and of substantially the same length as the tray to be used, and at the same time affording means whereby the same will lie flat upon one another and upon the continuous flat inner surface of the flanges d of the upright bars D when in their uppermost position, as shown in dotted lines, Fig. 2.

H are supporting-bars connecting the free ends of the sidebars f of the racks, and I are a series of pulls connected to the free ends of the racks, preferably to the connecting-bar H, whereby the racks and the plates carried thereby may be raised and lowered.

The operation may be briefly described as follows: The attachment being applied to the tray in the manner described, the respective racks are swung upwardly into their normal position resting upon the back flanges d and within the side flanges d' of the upright bars D. Plates, one for each rack, are then inserted in the guideways through the open free ends of the racks and lowered by means of the pulls I into the tray. The free ends of the racks will contact with the flanges B of the tray and move longitudinally by reason of their connection and snugly rest within the tray, the seat d^2 of the upright bars constituting means for limiting the pivotal movement of the free end of the racks. After having been developed the plates are raised to their uppermost position to be removed and replaced by others, when the operation will be repeated.

It will be seen that it is not necessary for the operator to bring his hands into contact with the developing material, as is usually the case, and at the same time a plurality of plates may be simultaneously developed within the same tray, that portion of the arms of the racks surrounding the guideway f^2 constituting the spacing means for the plates.

By the employment of means whereby the plate carriers or racks are detachable relative to the tray it will be noted that the entire apparatus may be removed as desired and when thus removed constitute racks for the finished plates, while another apparatus of similar construction is applied to the tray.

While but three racks are shown for the purpose of illustration, it is obvious that any number may be employed. It is also to be understood that while the term "plate" is herein used it is within the contemplation of the invention to develop films or the like as well, the attachment being equally applicable to one or the other.

An important advantage in connection with the invention is that each plate during the process of development can easily be inspected, the plates and their carriers being swung up and the light being placed to show through the plates as they are moved from the bath to upright position.

I claim—

1. The combination with a developing-tray, of a series of independently-movable swinging plate-carrying racks having a detachable connection therewith.

2. The combination with a developing-tray, of a series of swinging plate-racks having a detachable clasping connection therewith.

3. The combination with a developing-tray, of a plate-rack support comprising oppositely-disposed connected upright bars adapted to rest within the tray and having a detachable connection with one flange of the tray, and a plate-rack pivotally mounted upon said support and adapted to move into and out of the tray.

4. The combination with a developing-tray, of an upright support having a detachable clasping engagement therewith, and a plurality of plate-racks connected to said support and adapted to swing into and out of the tray.

5. The combination with a developing-tray, of a support applied to the tray, and a plate-rack having a pin-and-slot engagement with the support, whereby it is pivotally and bodily movable relative thereto.

6. The combination with a developing-tray, of a support applied thereto, a plate-rack pivoted to the support and adapted to swing vertically, and means on the support for limiting the downward movement of the rack.

7. The combination with a developing-tray, of a support applied to the tray, a plate-rack pivoted to the support and adapted to swing vertically, and offset portions on said support constituting seats for limiting the downward movement of the rack.

8. The combination with a developing-tray, of a support connected therewith, the support comprising oppositely-disposed arms, a series of plate-racks superimposed one upon the other and each of said plate-racks having connection with said arms, whereby they are independently, pivotally and bodily movable relative to said arms.

9. In combination with a tray, a plate-rack support applied thereto comprising oppositely-disposed arms having a series of transverse slots arranged one above the other and increasing in length from the upper

one to the lower one, and a series of plate-racks having pintles thereon arranged to engage oppositely-disposed slots in the respective arms.

10. In combination with a developing-tray, a swinging plate-rack applied thereto, the said rack comprising connected side and end walls, each of which has registering longitudinally-extended intermediate guideways.

11. In combination with a developing-tray, of a movable plate-rack applied thereto comprising side arms and an end arm connected with one another and each of which comprises elongated strips of metal bent longitudinally back upon themselves to form between said bent portions longitudinally-extending guideways.

12. In an attachment of the character described, a support comprising oppositely-disposed bars or arms, spring-clips upon said arms, and a series of plate-racks having pivotal and bodily movement relative to said arms.

13. In an attachment of the character described, a series of swinging plate-racks independently movable relative to one another, and a pull carried by the free end of each rack.

14. In an attachment of the character described, a plurality of pivoted plate-racks adapted to swing vertically, and having means for separating the plates carried by said racks when the racks are in contact.

15. A plate-rack for developing-trays comprising a supporting-frame, a plurality of plate-carrying holders pivotally secured adjacent the base of the frame, and means for securing the frame in position.

16. A plate-rack for developing-trays comprising a supporting member, means for securing the same in position, and a plurality of plate-holders pivotally and slidably secured to the supporting member.

17. A plate-rack for developing-trays comprising a supporting member, means for securing the same in place, a plurality of plate-holders, and pivotal connections between the respective holders and the support arranged relative to each other on different vertical and horizontal planes.

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

PETER BISSET.

Witnesses:
ALEXANDER S. STEUART,
L. S. BACON.