June 5, 1956 S. BERLANT 2,748,678

DEVELOPING TANK

Filed Feb. 25, 1953

Fig. 1.

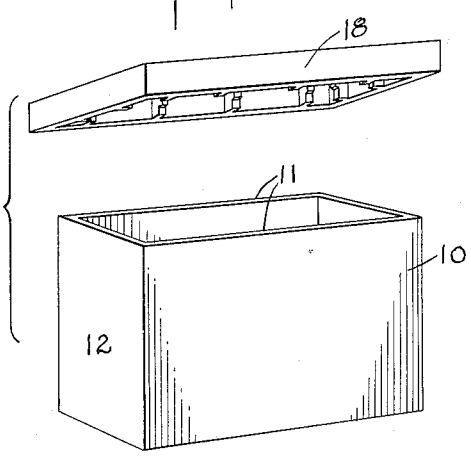


Fig. 4.

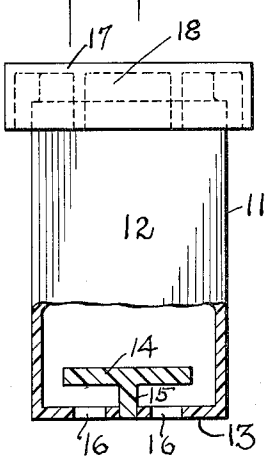


Fig. 2.

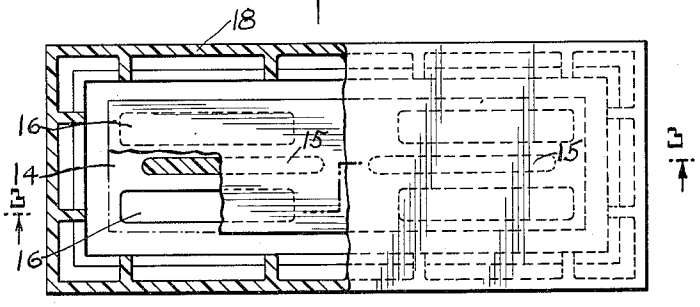
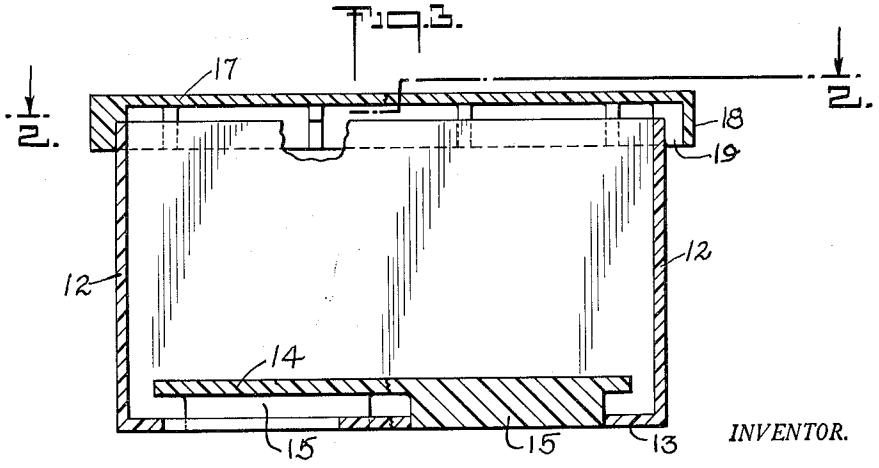


Fig. 3.



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DEVELOPING TANK

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1 Claim. (Cl. 95—90.5)

This invention relates to a developing tank for photographic films, in which a photographic film, supported upon a suitable frame, may be inserted and kept in light proof seclusion, while it is subjected to various washings, developing and fixing solutions.

It is an object of this invention to provide a device of the character described which is loaded at the beginning and unloaded at the end of the developing period, and which will insure that the various liquids which are introduced to perform the various steps in the development will wet the film uniformly, without bubble streaks, or spots.

It is a further object to provide a tank which while completely closed to light, may nevertheless be rapidly filled and drained by merely immersing it in a container of the liquid without unduly splashing the liquid out of the container, and in which the contents of the container may substantially all be used without wasting expensive fluids; and in which, after withdrawal from the container, may be easily substantially completely drained of the liquid, before immersing it in another container for a further step in the process of development.

I have found that the most satisfactory form of frame, or rack, for retaining a film strip during development, is a series of frame mounted end to end, and so hinged, that they may be folded zigzag between each exposure, with proper means to keep the different sections of the strip from touching each other. Such a frame is very easily loaded, and easy to handle in and out of the tank after folding, and at the same time it insures uniformity of development throughout all parts of the film.

This tank is primarily intended for use with a frame of that general nature, although as indicated in the claim the rack, itself, forms no part of the invention, which as to many of its features may be made of a shape to receive frames of a wide variety of shapes.

An embodiment of this invention is shown in the accompanying drawings, in which Fig. 1 is a perspective view, showing the device with the lid slightly separated from the body. Fig. 2 is a top plan view, with the lid partly in section, as indicated by the line 2—2 for Fig. 3. Fig. 3 is a vertical longitudinal section on the line 3—3 of Fig. 2. Fig. 4 is an end elevation with a part of the end of the device broken away.

The invention comprises primarily a tank **10**, which when designed for use with a rack of the kind heretofore described, is rectangular in form, having two vertical imperforate sides **11**, and two ends **12**, and a bottom **13**. A table **14** is supported slightly above the bottom **13**,

and is of a size slightly smaller than the bottom. This table is supported from the bottom by pillars **15**. Openings **16** are cut through the bottom beneath the table, so the table and side walls provide a light trap to permit the ingress of liquid into the space beneath the table, and thence around the ends of the table, or preferably around the ends and side walls, into the body of the tank, while excluding all light.

The cover portion of the device comprises a top **17**, having a flange **18** extending forwardly around its periphery, the size of the top and flange being such that the flange is spaced outwardly from the walls of the tank, and down below the upper edges of the tank. Lugs **19***a* extend inwardly from the top and side flanges of the cover, each being notched to engage the side face and the upper edge of the vertical walls of the tank, to hold the cover centrally spaced in the tank, and to provide an annular channel from the interior of the tank, over the top edge of its walls, and down and out inside the flange of the cover, as at **19**. This annular channel **19**, while providing a free channel for the ingress and egress of air, nevertheless, is light proof.

If desired, any convenient means may be provided for fastening the cover on the tank during use, but ordinarily this will not be required, since the hand can readily extend down over the sides of the cover to grasp the side walls of the tank itself.

In use, the frame containing the strip of film is inserted in the tank, in a dark room, or if the form of rack disclosed in the co-pending application is used, the film may be inserted in the rack, and the folded rack may be inserted in the tank and the cover put on, in complete darkness. Thereafter the closed tank may be inserted successively in containers having the different solutions in, in succession, until finally it is placed in the final wash water, all without lifting the cover. By reason of the large openings in bottom, and at the top, the tank quickly fills, or drains, of any liquid, and drains substantially completely. It is thus possible to use a container for the developing solution which is not much larger than the tank itself, and thus to use almost all of the solution, and at the same time the transfer from one solution to another can be easily and rapidly made.

What I claim:

A developing tank having imperforate side and end walls, and a bottom having an opening there-through spaced from the sidewalls thereof, a table of smaller size than the interior of said tank supported from the bottom thereof over said opening whereby there is provided a light-trapped opening into said tank, a cover for said tank having a downwardly extending flange of greater interior size than the top of said tank, and lugs to support said cover spaced from and surrounding the top of the tank.

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