July 12, 1932. C. F. STOUT 1,867,190

DEVELOPING TANK

Filed Jan. 23, 1928

FIG. 1

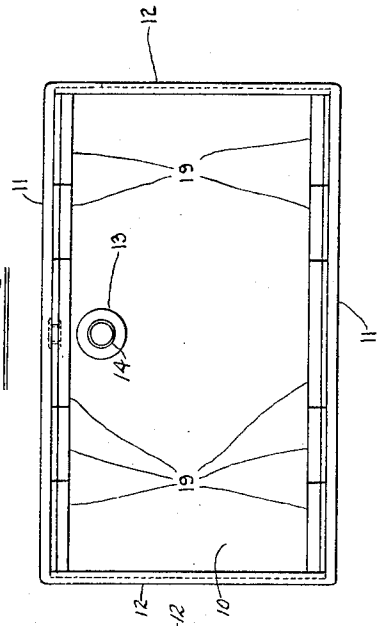


FIG. 3

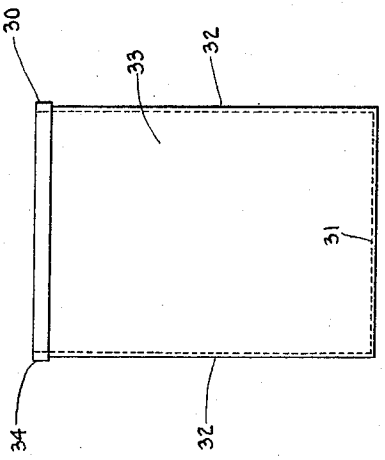


FIG. 2

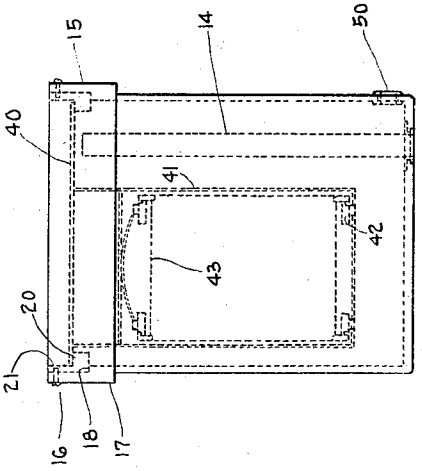
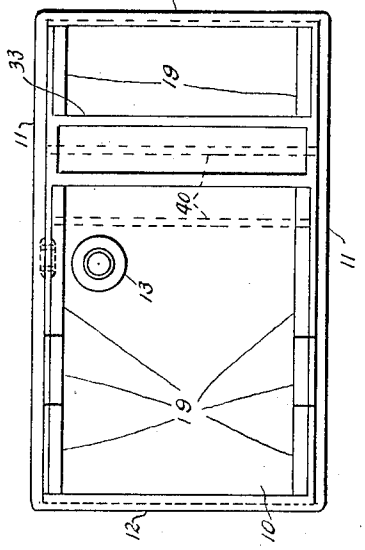


FIG. 4



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DEVELOPING TANK

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This invention relates to tank structures and has particularly to do with the insertion into a tank of a plurality of sections or compartments.

Included among the objects of the invention are the following:

A new and novel means for producing a sectional tank;

Unique means adapted to be applied to a tank in which films in the process of developing and fixing are intended to be suspended by holders whereby a single tank may be divided into compartments into each of which the film holders fit equally well; and

Novel means for separating a larger tank into a plurality of smaller tanks, each of the resulting sections having substantially the same transverse top dimensions.

These, and such other objects as may hereinafter appear, are obtained by the novel construction, combination, and arrangement of the several elements which constitute the invention.

One embodiment of the invention is illustrated in the accompanying single sheet of drawings, in which

Figure 1 is a top view of a tank embodying the invention;

Figure 2 is an end view, the internal walls of the tank and the removable railings being shown in dotted lines;

Figure 3 is an elevation of a tank section adapted to be inserted into the main tank shown in Figures 1 and 2; and

Figure 4 is a plan view of a device showing the main tank, and auxiliary tank therein, and film holders in the main tank and in the auxiliary tank, the film holders being represented by dotted lines.

Like reference characters are employed to designate similar parts in the drawing and in the description of the embodiment of the invention disclosed.

Reference should be had collectively to Figures 1 and 2. A main tank is employed and this comprises a bottom 10, sides 11, and ends 12. These parts are generally integral.

Such tank may be of any suitable material, and for photographic developing work is, ordinarily, of rubber.

Through the bottom of the tank 10 is a drain 13 which is provided with an overflow pipe 14, the upper end of which pipe 14 determines the fluid level of the tank. The drain 13 could be located in either the sides 12 or the ends 11 of the tank, when preferred. An intake 50 is also provided.

The ends 12 and the sides 11 of the tank are reinforced by a thickened rim 15, which rim extends entirely about the tank and is of substantial uniform thickness throughout.

The rim 15 comprises a narrow portion 16, and a wider portion 17, the internal face of 17 corresponding with and being an alignment with the inner surface of sides 11. By the structure suggested, a shoulder 18 is formed between the two sections 16 and 17 of the rim.

Upon the sides 11 of the tank, said rim 15 is supplied with a plurality of sections 19 forming racks. Said sections 19 are well illustrated in the two figures indicated, and comprise a supported portion 20 which is seated on shoulder 18 and extends outwardly into the tank where it provides a support for articles intended to be immersed in the tank, as for example, a film rack such as is shown in Figure 2. The narrower portion 21 of said sections is adapted to provide space for screws or other fastening means, whereby the sections 19 may be firmly secured upon the shoulders 18 and in contact with the rim 16.

In the present embodiment of the invention the sections 19 are paired on opposite sides 11 of the tank.

Paired sections 19 may be removed by removing the fastening means which may be screws. Into the space along the rim 16 of sides 11 thus made, there is adapted to be inserted a tank such as is shown in Figure 3 and designated 30. The smaller tank or tanks 30 which may be inserted into the larger tank, may be of a width as to require the removal of one, two or more of sections 19.

For example, a five-gallon tank might require the removal of one set of paired sections 19, a ten-gallon tank would require the removal of two paired sections 19 on each side of the device, and a fifteen-gallon tank might require the removal of three of such paired

sections 19. It is quite manifest that two or more smaller tanks 30 shown in Figure 3 may be inserted into the larger tank shown in Figures 1 and 2.

The structure of tanks 30 corresponds to that of the larger tank shown in Figures 1 and 2, in that it has a bottom 31, sides 32, and ends 33, and a rim 34, just like the main tank has corresponding parts. The rim 34 is adapted to be seated upon the shoulders 18 when the rack sections 19 are removed from the larger tank and the outside dimensions of rim 34 therefore correspond to the space between the parts 16 of the main tank.

There is no necessity for a shoulder (like 18) in the smaller tank for the internal walls thereof are parallel the entire height of the tank 30 as is shown in Figure 3, and the space from side to side, at rim 34, corresponds exactly with the space between parts 21 of the rail sections 19, hence objects designed to rest upon the latter rest equally well upon the former.

In X-ray photography, the tank here illustrated is particularly efficacious. It is flexible in that it may provide the Roentgenologist with a variety of tanks of various capacities, while working from a unit base. Developing requires but four minutes, while the hypo or fixing bath generally takes fifteen to seventeen minutes.

There is much difference of opinion as to the time which should be employed in washing the films after they have been developed and treated in the hypo or fixing solution. A small outfit would comprise the large tank shown in Figures 1 and 2, a five-gallon insert tank 30 at one end of the major tank, to be used for developing, and a second insert tank 30 of ten-gallons capacity to be used for the hypo solution. Such arrangement would permit developing in the regular way with increased capacity for the hypo solution whereby development could be kept up with and not be retarded by lack of capacity in the hypo tank. The bath portion of the device would be of such capacity that the films could be given a water bath of any desired period.

Additionally, in radiographic work at the present time, a standard or film rack is generally employed. Such a rack is shown in Figure 2, the supporting rod thereof 40 comprising the means for maintaining a film of any size which may be used in connection with radiography.

The frame 41 is adapted to extend about the film and in each corner of the frame 41 is a fastening member 42 of any suitable style, and which are adapted to hold the film 43 rigidly thereacross. The present invention is adapted to be used with the standard length of cross member 40. It is quite manifest that this member 40 rests upon the shoulder of the rack members 19 and will, with equal facility, rest upon the top edges of a tank 30, the space between the top edges of which corresponds exactly with the space intermediate opposed racks 19.

Thus in a series of tanks the transverse dimensions remain the same and any apparatus which is adapted to rest between the transverse side of the larger tank will rest with equal facility upon the top edges of the smaller tank or tanks, and there will be no necessity for providing different widths of transverse rods 40 for the developing tank, for the hypo bath, and for the rinsing reservoir.

Another element of flexibility resides in the fact that the purchaser may secure his sectional tanks one at a time, knowing that there will be a correlation with subsequent units which he may purchase whereby all of the apparatus which he has obtained in connection with his first purchase may be used with equal facility with the subsequent parts he may acquire thus the operator is assured that his first investment will provide for him means for his future uses so long as he desires to remain in the particular professional position which he occupied at the time of purchase.

Further, one may arrange his apparatus for the particular difficulties in hand, and while an arrangement such as is hereinabove suggested may be entirely appropriate at one time and for a specific purpose, a change in photographic technique, or peculiar conditions, may make it desirable to change entirely the arrangement proposed and make other arrangements requiring a readjustment of the tanks or the use of more or fewer tanks.

Without such an arrangement as this, flexibility cannot be obtained. It is clear that the present invention has a decided advantage over a tank arrangement in which sections of a permanent nature are provided, for such an arrangement establishes a definite ratio between the various sections of the main tank and does not permit of a flexible treatment thereof or a rearrangement of the sections to suit any particular emergency.

I claim:

1. In combination, a rectangular sectional tank having a removable longitudinal internal rim, a portion of which is adapted to be removed to admit of an auxiliary tank being disposed therein, the distance from between the internal edges of said main tank with said removable rim detached being the same as the rim to rim external breadth of said auxiliary tank.

2. In combination, a rectangular main tank having removable rims, said tank with said rims removed being of an internal width corresponding to the width of the outside walls of an auxiliary tank to be inserted therein.

3. In combination, a rectangular main tank having a sectional removable rim, a portion of which is adapted to be detached

to admit of an auxiliary tank telescoping into said main tank within the space defined by the removed section of the rim.

4. In combination, a rectangular tank having a removable longitudinal rim, and an auxiliary tank telescopically seated in said tank where said rim is removed.

5. In combination, a rectangular tank having a longitudinal sectional rim upon its internal face, and an auxiliary tank telescopically seated in said tank where a section of said rim is removed.

6. In combination, a rectangular main tank having a longitudinal sectional rim, and an auxiliary tank telescoping into said main tank where a section of said rim is removed, the remaining section of said rim engaging said auxiliary tank to prevent displacement.

7. A rectangular tank, and a detachable internal longitudinal rim therefor, said rim comprising longitudinal sections adapted to be removed in part to admit an auxiliary vessel telescoping into said tank.

8. A rectangular tank having a longitudinal sectional rim, said sectional rim when removed section by section admitting the insertion into said rectangular tank of auxiliary tanks of different capacities.

9. In combination, a rectangular main tank, racks for supporting devices to be immersed in said tanks, and a removable sectional rim in said tank to support said racks, sections of said rim being removable to admit of the insertion of an auxiliary tank into said main tank.

10. In combination, a rectangular main tank, racks for supporting devices in said tank and extending thereacross and removable sectional rims to support said racks, a part of said rims being removable to admit of the insertion into said main tank of an auxiliary tank having an exterior adapted to closely telescope upon the walls of said main tank.

11. The combination described in claim 10, and in which a plurality of sections are removable to admit of placing a plurality of auxiliary tanks in said main tank.

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