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2,993,427

TANK HAVING A PHOTOGRAPHIC DEVELOPMENT MACHINE

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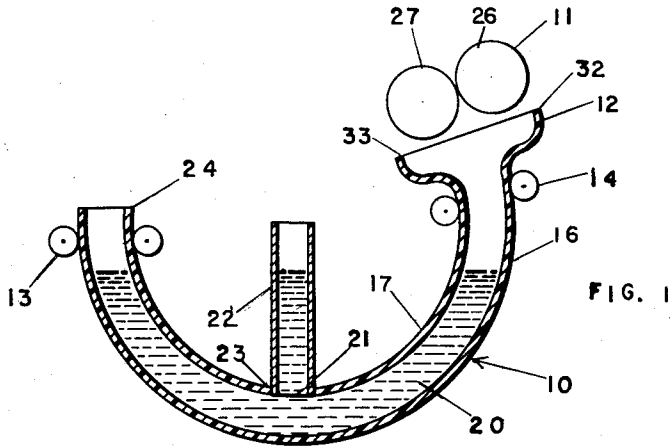


FIG. 1

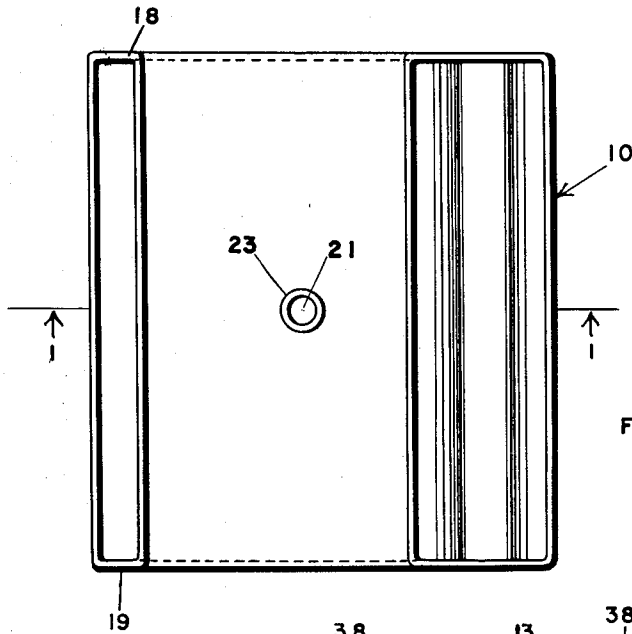


FIG. 2

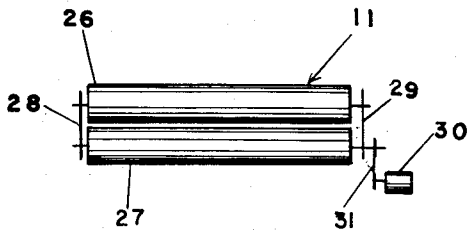


FIG. 3

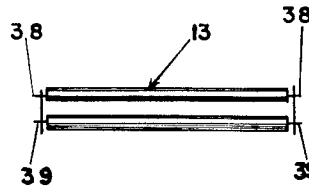


FIG. 4

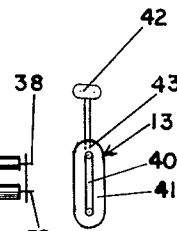


FIG. 5

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TANK HAVING A PHOTOGRAPHIC DEVELOPMENT MACHINE

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1 Claim. (Cl. 95—96)

This invention relates to tanks and, more particularly, to tanks suitable for use with photographic developing material.

Photographic developing material tanks have usually been open or the fluid therein at least partially exposed and they have, therefore, been subjected to deterioration due to oxidation and exposure to the atmosphere. In many photographic machines, it is necessary to remove the fluid from the tank after use in order to prevent its deterioration and the materials are often stored in bottles. This necessitates a time consuming operation of removing the materials and, also, introduces the likelihood of spilling the materials.

It is, accordingly, an object of this invention to overcome the above and other disadvantages in previous liquid tanks, especially those used for photographic fluids and, more particularly, it is an object of this invention to provide a tank which is simple in construction, economical to manufacture, and simple and efficient to use.

Another object of the invention is to provide a photographic liquid tank comprising an outer and an inner concentrically disposed, semi-cylindrical member connected together to provide a tank therebetween.

Still another object of this invention is to provide a flexible tank which can be sealed during periods of non-use at its open ends by compressing the ends together.

A further object of this invention is to provide an improved tank and sealing means therefor.

With the above and other objects in view, the present invention consists of the combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawing and more particularly pointed out in the appended claim, it being understood that changes may be made in the form, size, proportions, and minor details of construction without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawing:

FIG. 1 is a transverse cross sectional view taken on line 1—1 of FIG. 2 of a tank according to the invention;

FIG. 2 is a top view of the tank according to the invention;

FIG. 3 is a top view of the wringer shown in FIG. 1;

FIG. 4 is a top view of the closing device according to the invention; and

FIG. 5 is an end view of the closing device.

Now with more specific reference to the drawing, a tank 10 is shown having a wringer 11 supported above a discharge end 12 of the tank 10 and a clamping device 13 in position at the inlet end thereof and a clamping device 14 at the outlet end thereof.

The tank 10 is made up of an outer generally hemi-cylindrical tank portion 16 and an inner generally hemi-cylindrical tank portion 17 which is disposed concentric to the outer tank portion 16. The ends of the outer tank portion 16 and the inner tank portion 17 are connected by end members 18 and 19. The tank 10, therefore, is generally in the form of a crescent and fluid 20 may be contained between the outer and inner tank portions 16 and 17.

An opening 21 is formed generally in the center of the inner tank portion 17 and a tube 22 is fixed and sealed thereto at 23. The tube 22 extends upwardly approximately to a level with an upper edge 24 of the inlet end

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of the tank 10. A tube of a suction device for removing a liquid can be inserted through the tube 22 and the liquid pumped from the tank 10 in that manner.

The wringer 11 has two rolls 26 and 27 which may be connected by means of bearings 28 and 29. The rolls 26 and 27 may be driven by means of a motor 30 through a belt 31 properly belted thereto so that when photographic paper is inserted through the upper edge 24 of the inlet end and comes through the fluid 20 to the discharge end 12, the liquid removed from the paper by the wringer rolls 26 and 27 will fall back into flared ends 32 and 33 of the discharge end 12 and the liquid will, therefore, be returned to the tank 10.

The tank 10 is preferably made of a vinyl plastic of the flexible variety as is presently used for making bottles, drinking cups, and the like. The clamping devices 13 and 14 are disposed as shown at the upper edge 24 of the inlet end and the discharge end 12. The clamping devices or rolls 13 and 14 may be generally cylindrical and their ends may have journals 38 and 39 received in a slot 40 in a support 41. The support 41 is fixed to a fixed supporting surface holding the rolls 13 and 14 in fixed relation to the ends of the tank 10. A threaded screw 42 threadably engages a threaded hole 43 in the support 41 and forces the journals 38 and 39 toward each other, thereby squeezing the ends of the tank 10 together and clamping the ends in closed position. Therefore, liquid in the tank 10 will not be exposed to the outside atmosphere when the tank is not in use.

The foregoing specification sets forth the invention in its preferred practical forms but the structure shown is capable of modification within a range of equivalents without departing from the invention which is to be understood is broadly novel as is commensurate with the appended claim.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

A tank comprising an outer generally hemi-cylindrical tank portion, an inner generally hemi-cylindrical tank portion, said inner tank portion being disposed generally concentric to said outer tank portion, end members connecting said inner tank portion to said outer tank portion forming a repository for fluid therebetween, the side edges of said inner and said outer tank portions being open, one said side edge of said inner tank portion flaring inwardly and one said edge of said outer tank portion flaring outwardly to catch drops of fluid from sheets of material moved through fluid in said repository, said tank portions being made of flexible material, means to squeeze the side edges of said inner tank portion into sealing engagement with the side edges of said outer tank portion whereby said repository is closed to prevent the contents thereof from being exposed to the atmosphere, and a tube connected to said inner tank member and communicating with said repository whereby fluid may be drawn through said tube from said repository.

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