

[54] **PHOTOGRAPHIC DEVELOPER
APPARATUS**

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Related U.S. Application Data

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abandoned.

[52] U.S. Cl. **354/331, 354/329**
[51] Int. Cl. **G03d 1/04**
[58] Field of Search..... **95/93, 95**

[56]

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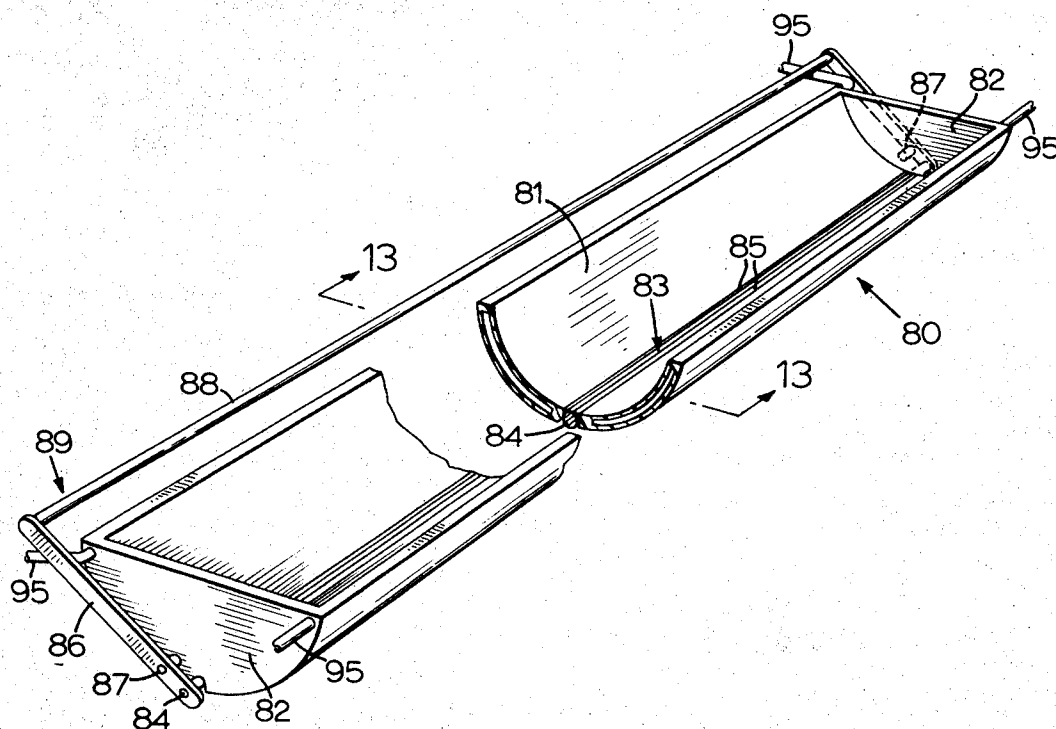
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[57]

ABSTRACT

A trough for holding photographic processing chemicals. The trough comprises a rod which externally seals a longitudinal slot in the bottom of the trough, and a lever for moving the rod in an arcuate path away from the slot to allow rapid emptying of the chemicals from the trough.

6 Claims, 2 Drawing Figures



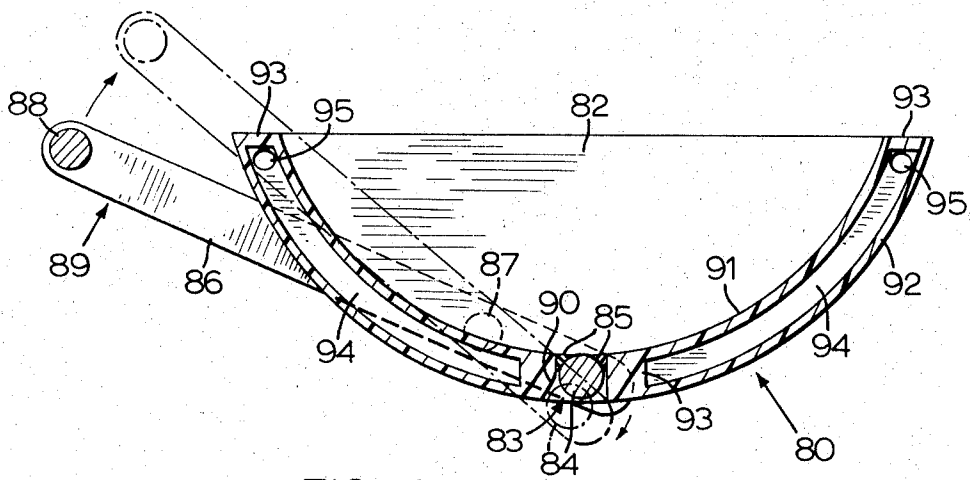
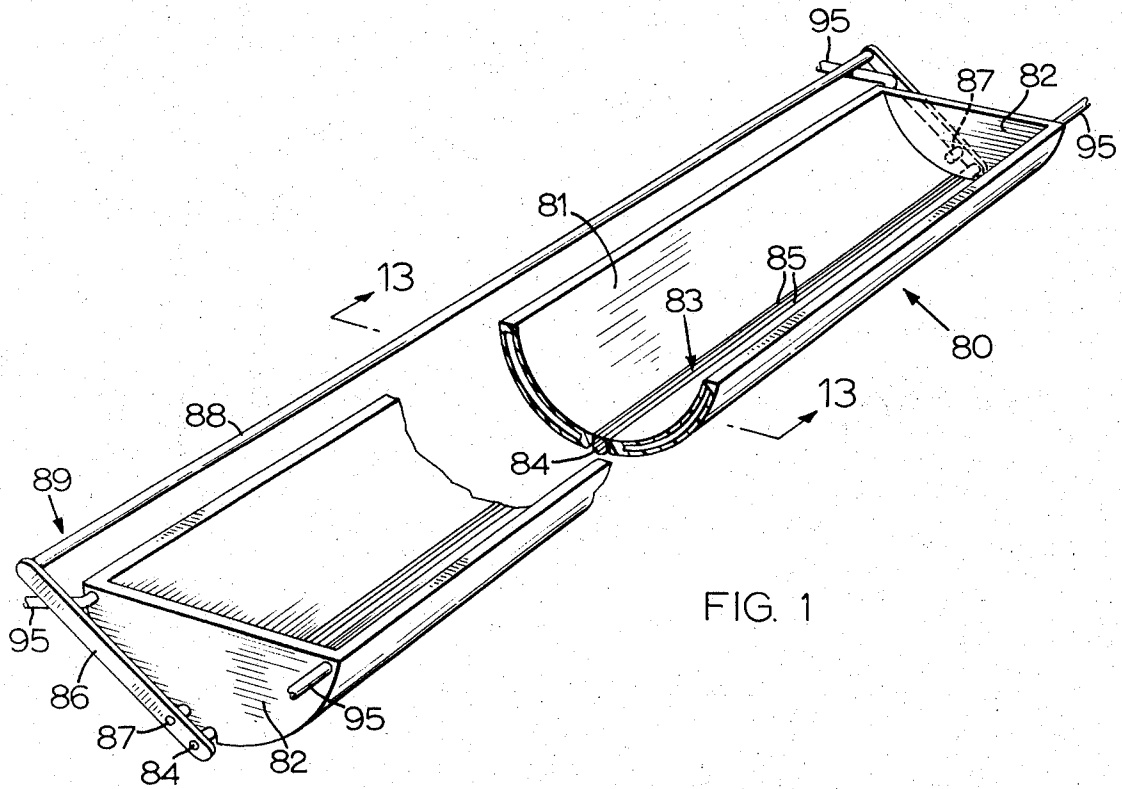


FIG. 2

PHOTOGRAPHIC DEVELOPER APPARATUS

This application is a division of application Ser. No. 80,836 filed Oct. 15, 1970, in the name of Raymond Joseph Masygan, assignor to Alex Clark Limited, now abandoned.

The present invention relates to the processing of photographic sheet material and roll film.

When processing photographic sheet material or film it is desirable to remove the liquid processing chemical as quickly and uniformly as possible and the invention provides a trough adapted to accommodate a horizontally disposed reel and having a longitudinal slot in its lowermost portion with a releasable seal.

An example embodiment of the invention is shown in the accompanying drawings, in which:

FIG. 1 is a perspective view, partly broken away, showing an alternate embodiment of a trough of the invention,

FIG. 2 is a view in cross-section of the trough taken along the line 13—13 of FIG. 1.

The embodiment shown in FIGS. 1 and 2 of the drawings consists of a fixed trough 80 having an arcuate longitudinal wall 81 terminating in a pair of spaced end walls 82. Located longitudinally within wall 81 in its lowermost portion is an aperture or slot 83 which extends the length of trough 80 between end walls 82. A stopper rod 84 is adapted to fit freely into slot 83 against a pair of wedge gasket strips 85 fixed one on either side of the slot and coextensive with its length. Rod 84 may be chamfered along its upwardly facing portion to provide a smooth inner surface of wall 81 where the rod seals slot 83.

Rod 84 extends beyond each end wall 82 of trough 80 and is fixed at each end transversely to one end of a bar 86 which is pivoted intermediate its ends about a fulcrum pin 87 mounted on end wall 82. The end of bar 86 remote from rod 84 carries a second fixed rod 88 to form a rigid pivotable frame 89 carrying stopper rod 84. The edge of slot 83 closer to fulcrum pin 87 may have a chamfered lower portion 90 to provide clearance for stopper rod 84.

In the operation of this embodiment suitable means are provided (for example a foot pedal linked with frame 89) for pivoting frame 89 about pins 87 to move stopper rod 84 into slot 83 and against gaskets 85 to seal the slot and hold liquid processing chemical within trough 80, and to move the stopper rod out of the slot to open the slot and drain away the liquid chemical quickly by downward flow.

Wall 81 of trough 80 may be constructed of an inner shell 91 and an outer shell 92, with edge seals 93, to provide a pair of intermediate chambers 94. Pairs of conduits 95 leading into chambers 94 allow suitable liq-

uid to be circulated within the chambers for temperature control of the liquid processing chemical forming a pool within trough 80.

I claim:

1. A trough for holding a liquid processing chemicals comprising: an arcuate longitudinal wall and a pair of spaced end walls, the longitudinal wall having a slot therein extending substantially along the entire length of the lowermost portion thereof; a yieldable elongated sealing element positioned within the slot about its periphery and forming an elongated drain opening through which processing chemicals pass; an elongated movable sealing stopper rod of circular cross section disposed below the longitudinal wall and parallel with the slot; the stopper rod having a length at least that of the opening and having a cross-sectional width greater than that of the opening; the sealing element having a surface which conforms to the contour of the rod when the adjacent surfaces of the sealing element and the rod come into contact to provide a tight sealing fit; lever means pivotally mounted to the end walls of the trough and having a lower end extending downwardly below the arcuate longitudinal wall, the stopper rod being directly engaged and supported by the lever means at the lower end thereof, whereby upon pivotal movement of the lever means the stopper rod is moved arcuately into and out of sealing engagement with the slot sealing element to open and close the elongated drain opening.

2. A trough as claimed in claim 1 in which the lever means comprises a pair of lever bars pivotally mounted one adjacent each end of the trough on an axis lateral to and adjacent the slot.

3. A trough as claimed in claim 2 in which the lever bars are pivotally mounted on a pair of pins fixed on the end walls of the trough.

4. A trough as claimed in claim 2 including a handle bar extending parallel to the trough fixed to the lever bars remote from the stopper rod and forming with the lever bars and the rod a rigid pivotable frame.

5. A trough as claimed in claim 1, wherein the sealing element comprises a pair of strip gaskets fixed in the slot in opposed relationship and engageable with the sealing stopper rod when the rod is moved into the slot; and one of the sides of the slot being chamfered to permit unobstructed arcuate movement of the elongated stopper rod.

6. A trough as claimed in claim 1 in which the longitudinal wall of the trough comprises a pair of co-axial annular shells forming a pair of closed chambers separated by the slot, and inlet and outlet means opening into each chamber for circulation of temperature controlling liquid.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,825,943 Dated July 23, 1974

Inventor(s) Raymond Joseph Masygan

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 2, line 5, delete "a".

Signed and sealed this 6th day of May 1975.

(SEAL)
Attest:

RUTH C. MASON
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents
and Trademarks

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