Sept. 9, 1969 A. A. BOCHMAN 3,465,664

DEVELOPING TRAY FOR COLOUR POSITIVE PHOTOGRAPHIC PAPERS

Filed Nov. 8, 1966 2 Sheets-Sheet 1

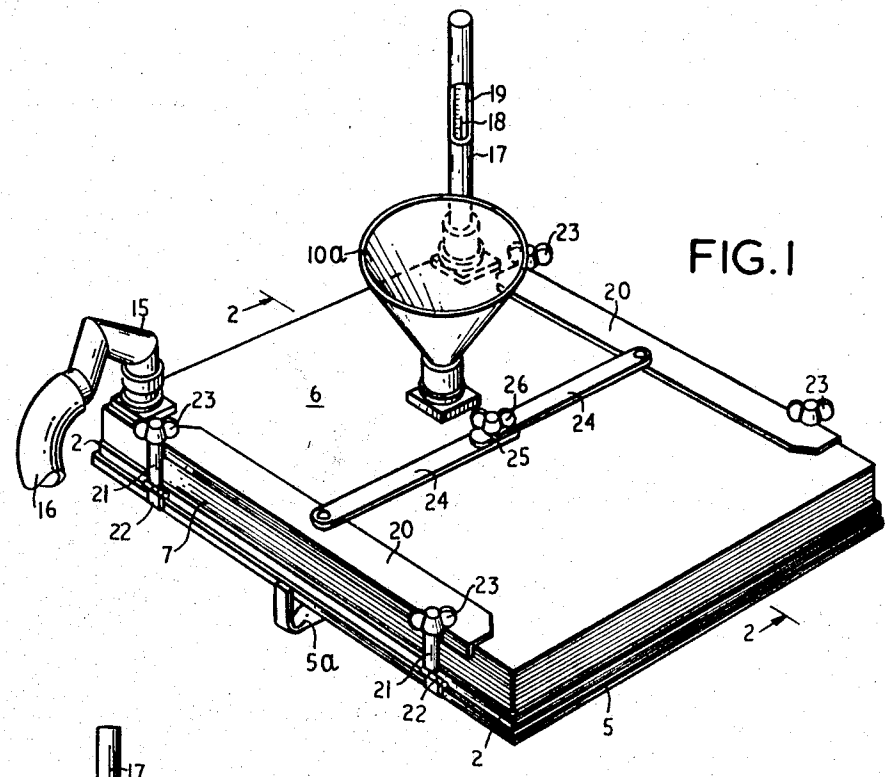


FIG. 1

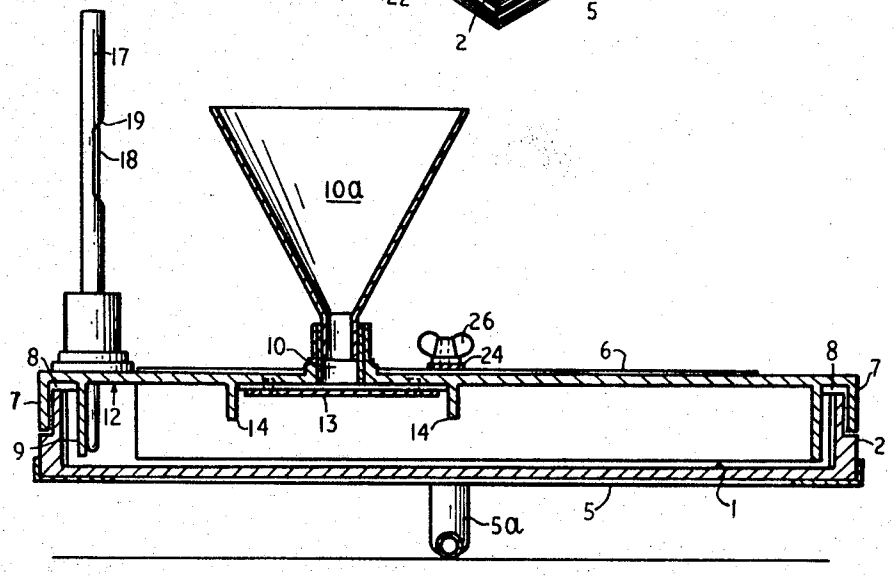


FIG. 2

INVENTOR
AUSTIN A. BOCHMAN
BY Emery L. Wolff Jr. ATTY

Sept. 9, 1969 A. A. BOCHMAN 3,465,664

DEVELOPING TRAY FOR COLOUR POSITIVE PHOTOGRAPHIC PAPERS

Filed Nov. 8, 1966 2 Sheets-Sheet 2

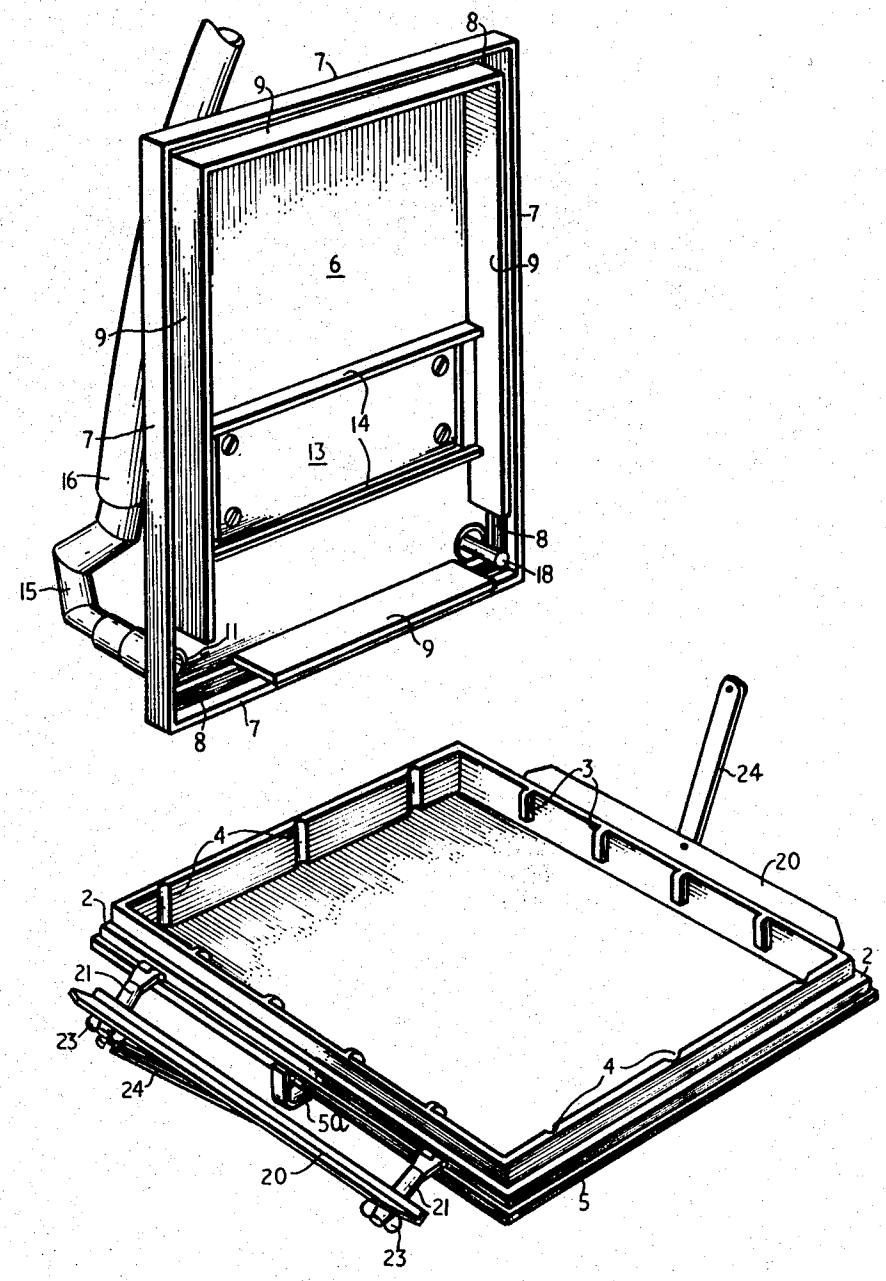


FIG.3

INVENTOR

AUSTIN A. BOCHMAN

By Emory L. Groff Jr. Atty

United States Patent Office

3,465,664

Patented Sept. 9, 1969

3,465,664

DEVELOPING TRAY FOR COLOUR POSITIVE PHOTOGRAPHIC PAPERS

Austin Anthony Bochman, Burns Road, Kellyville, New South Wales, Australia

Filed Nov. 8, 1966, Ser. No. 592,817
Claims priority, application Australia, Nov. 29, 1965, 67,160/65
Int. Cl. G03d *13/04*
U.S. Cl. 95—95 6 Claims

ABSTRACT OF THE DISCLOSURE

A developing tray for color positive photographic papers has a detachable lid which is provided with inlet and outlet openings, each having light traps, and another opening in which a thermometer is positioned. After the paper is placed in the tray in a darkroom, the tray and lid are clamped together to provide a light tight and fluid tight seal. The tray can then be filled with fluid and the processing steps performed in a lighted area. The tray has positioning lugs thereon which cooperate with plates on the lid to thereby cause the sheet of paper to lie on the bottom of the tray.

The present invention has been devised to provide a tray for developing colour positive papers in which the paper to be developed can be placed in a darkroom and the tray sealed. Filling the tray with fluid, and the developing operations, can be carried out in a lighted area. Advantages resulting from the invention are:

(a) The operator's hands are not brought into contact with the fluid,

(b) Only sufficient fluid is required to cover the paper. Consequently this can be economically discarded after one operation,

(c) The same tray can be used for the several, hitherto darkroom operations, in a lighted area without fogging the paper,

(d) A thermometer can be incorporated,

(e) Agitation of the fluid can be maintained by rocking the tray.

The developing tray of this invention comprises a rectangular tray and a lid, interengaging, locating and clamping means to position and hold the lid on the tray and make a light seal and a fluid seal joint, means to cause a sheet of paper to lie on the floor of the tray, and a fluid inlet and a fluid outlet each incorporating a light trap.

One embodiment of the invention will be described with reference to the annexed drawings, wherein:

FIG. 1 is a perspective view of the tray with the lid clamped thereon, seated in a cradle, and illustrating the disposition of the fluid inlet, fluid outlet and thermometer mounting.

FIG. 2 is a longitudinal central section taken on the plane 2—2 of FIG. 1, and

FIG. 3 is a perspective view showing the tray and lid separated.

The tray **1** is rectangular and has a continuous step **2** formed in the walls thereof. The tray is internally dimensioned to receive, with a small working clearance, a sheet of paper to be developed and for this purpose, vertical positioning lugs **3** are formed on two opposite sides. The lugs terminate short of the bottom of the tray so that the paper can slide under them and so be prevented from warping. The other two sides have vertical grooves **4** formed therein to assist fluid drainage and to enable an extracting tool to be inserted under the ends of a sheet of paper after a developing operation has been completed,

so that the paper can be raised clear of the bottom of the tray, without contacting it with hands. The tray is mounted in a cradle **5** which incorporates a rocker member **5***a* of U shape fixed medially transversely across the bottom thereof by the ends of the limbs of the U.

The lid **6** is dimensioned and has downwardly flanged sides **7** adapted to seat on the step **2** of the tray **1**. Inside the flanged sides **7**, a sealing gasket **8** is positioned to engage the top of the tray walls. When the lid is clamped on the tray the gasket forms an effective light seal and fluid seal. Inwardly and adjacent the sides **7**, the lid **6** has four (as illustrated) downset plates **9** fixed therein, to project into the tray to near the bottom thereof. These plates assist in positioning a sheet of paper to lie on the bottom of the tray when wetted.

The lid **6** has three openings **10**, **11**, **12** formed therethrough, constituting a fluid inlet, a fluid outlet and an inlet for a thermometer respectively. A pouring funnel **10***a* is fixed on the lid over the fluid inlet **10** and under the inlet **10** a light trap is fixed to the lid. It consists of a plate **13** fixed in spaced relationship to the lid between baffles **14** and under the fluid inlet **10**. A fluid outlet pipe **15** is fixed to the lid over the outlet **11**. The outlet pipe **15** is offset in two places to provide a light trap and a flexible pipe **16** is connected to its end. A tubular case **17** for a thermometer **18** is fixed to the lid over the inlet **12**. The case **17** has an opening **19** through which the thermometer **18** can be viewed.

Clamping means for securing the lid on the tray, consist of a pair of L members **20** having sleeves **21** fixed thereto whereby they are mounted on clamping screws **22** hinged to opposite sides of the cradle **5**. They are clamped on the lid by thumb screws **23**. The L members **20** are also secured together by a pair of links **24** each pivoted to one of the L members and having a pin and slot connection **25** in the middle of the lid **6**. The links **24** are secured together by a thumb screw **26**.

I claim:

1. A developing tray for color positive photographic papers comprising a rectangular tray and a lid therefor, interengaging, locating and clamping means on said tray to position and hold said lid on the tray and make a light tight seal of a fluid tight seal joint, means on said tray and lid to cause a sheet of paper to lie on the bottom of the tray, said means comprising vertical positioning lugs on opposite sides of the tray terminating short of the bottom thereof and plates fixed in the lid to project into the tray to near the bottom thereof, said lid having a fluid inlet and a fluid outlet for said tray each incorporating a light trap.

2. A developing tray for color positive photographic papers comprising a rectangular tray and a lid therefor, interengaging, locating and clamping means on said tray to position and said lid on the tray and make a light tight seal and a fluid tight seal joint, means on said tray and lid to cause a sheet of paper to lie on the bottom of the tray, said lid having a fluid inlet and a fluid outlet each incorporating a light trap, a cradle in which said tray is mounted, said cradle including a rocker member, said clamping means comprising a pair of L-shaped members, clamping screws on which said L-shaped members are mounted, said screws hinged to opposite sides of the cradle, a pair of links pivotally connected one to each L-shaped member, and means for releasably connecting said links together across the lid when the lid is clamped on the tray.

3. A developing tray and lid as claimed in claim **2**, wherein the lid has a thermometer case mounted over an opening formed therein, said case having an opening through which a thermometer mounted in the case can be viewed.

4. A developing tray and lid as claimed in claim 2, wherein the light trap for the fluid inlet is a plate fixed in spaced relationship to the lid under the fluid inlet.

5. A developing tray and lid as claimed in claim 2, wherein a fluid outlet pipe is fixed to the lid over the fluid outlet in said lid, said pipe having offset parts formed therein to constitute the light trap for said fluid outlet.

6. A developing tray for colour positive photographic papers comprising a rectangular tray having vertical positioning lugs on opposite sides thereof terminating short of the bottom, vertical grooves on the other two sides and a continuous step formed in the walls thereof; a cradle to hold the tray, said cradle having a rocker fixed thereto; a lid for said tray having downwardly flanged sides adapted to seat on said step, downset plates on said lid adjacent the sides thereof adapted to project into the tray to near the bottom thereof, three openings in said lid constituting an inlet for fluid, an outlet for fluid and an inlet for a thermometer, a light trap fixed to said lid under the fluid inlet, an outlet pipe fixed to the lid over said fluid outlet, said pipe being offset in at least two places, said offsets constituting a light trap; clamping means to secure the lid on the tray, said clamping means comprising a pair of L shaped members having sleeves fixed thereto, said sleeves being mounted on clamping screws hinged to opposite sides of the cradle, each said L shaped member having a link pivoted thereto and means to secure the links across the lid.

References Cited

UNITED STATES PATENTS

2,307,017	1/1943	Brown	95—95
2,419,859	4/1947	Tarr et al.	95—90.5
2,804,003	8/1957	Hoffman	95—90.5
2,877,700	3/1959	Keller	95—99 XR
2,947,236	8/1960	Siegel	95—96 XR
3,166,999	1/1965	Dement	95—95

FOREIGN PATENTS

820,765	9/1959	Great Britain.

NORTON ANSHER, Primary Examiner

FRED L. BRAUN, Assistant Examiner