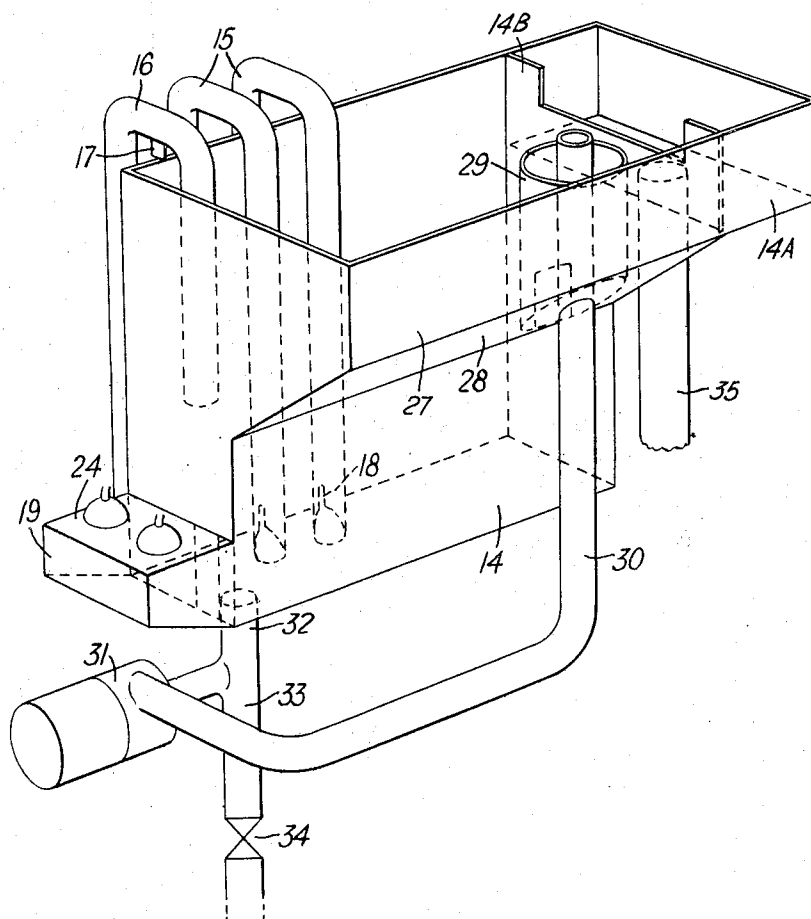


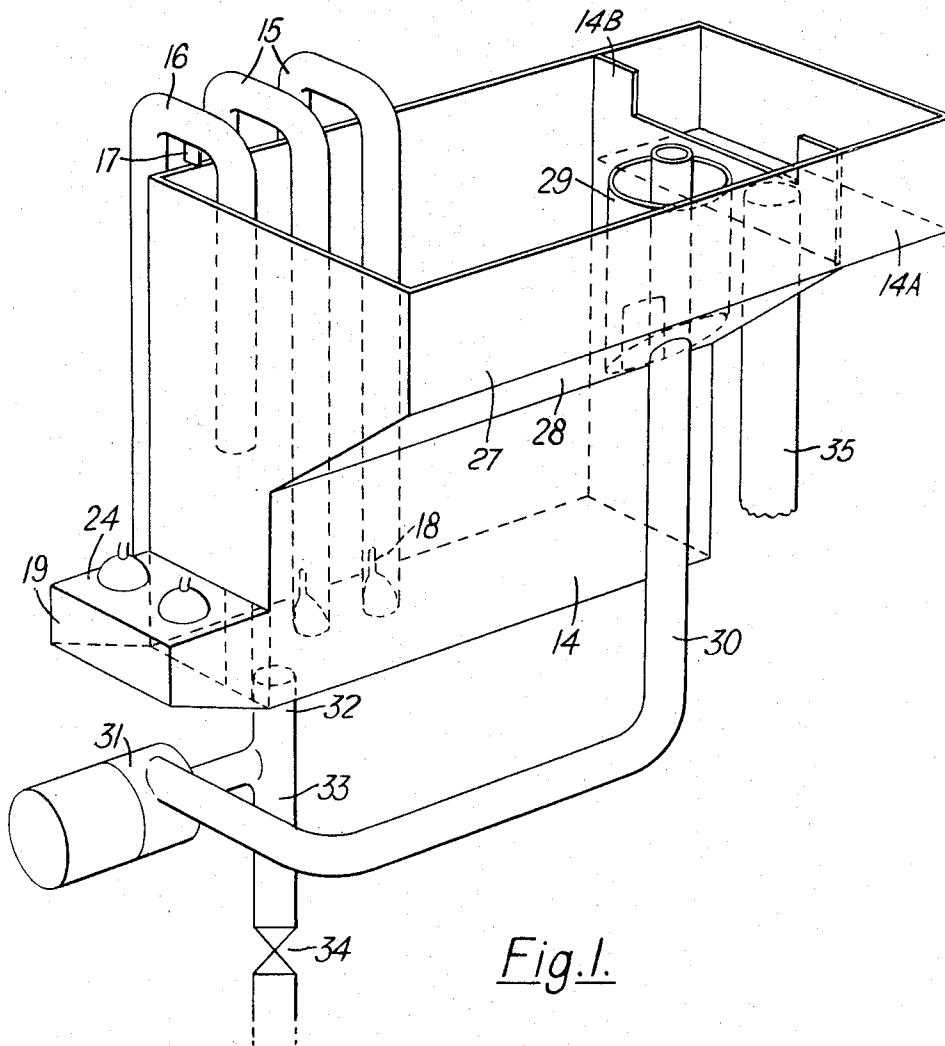
[54] APPARATUS FOR PROCESSING
PHOTOGRAPHIC MATERIAL[75] Inventor: **Derrick Sunnucks Woollacott**,
Sidcup, England[73] Assignee: **Colorapid Limited**, Croydon,
England[22] Filed: **July 25, 1972**[21] Appl. No.: **274,988**[52] U.S. Cl. **95/96, 95/89 R, 211/45**[51] Int. Cl. **G03d 3/06**[58] Field of Search **95/89 R, 93, 94 R,
95/96, 97, 98, 100, 90.5; 211/41, 45, 50**[56] **References Cited****UNITED STATES PATENTS**

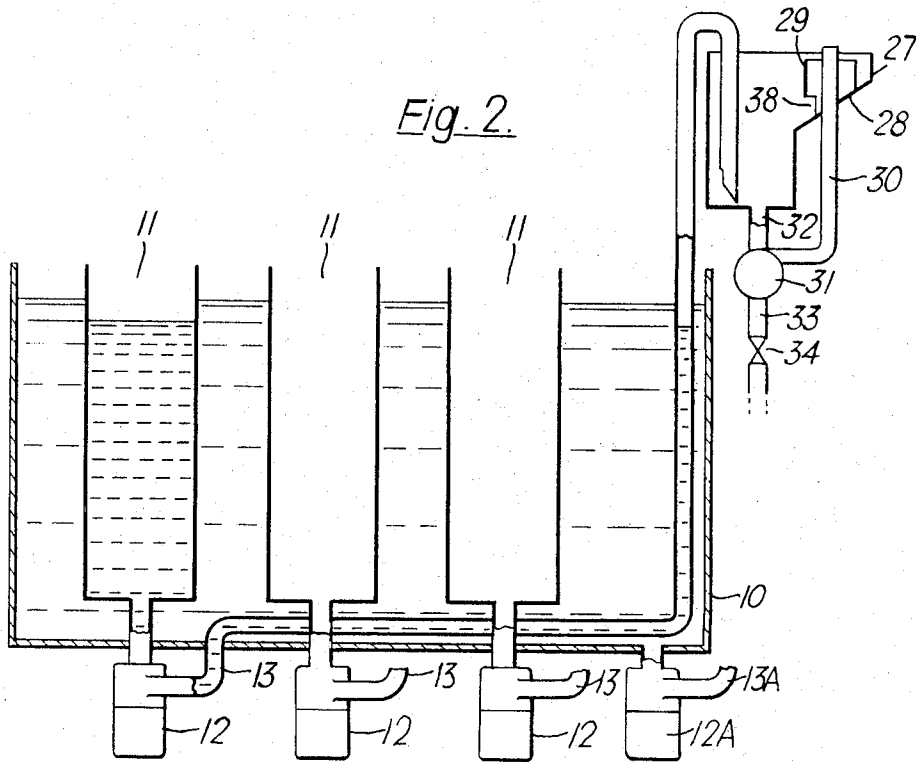
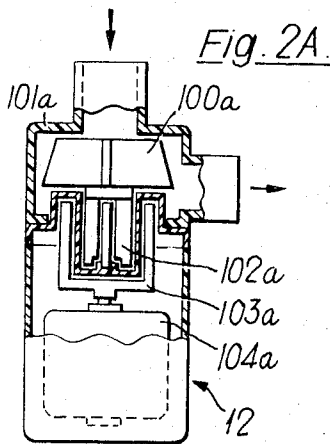
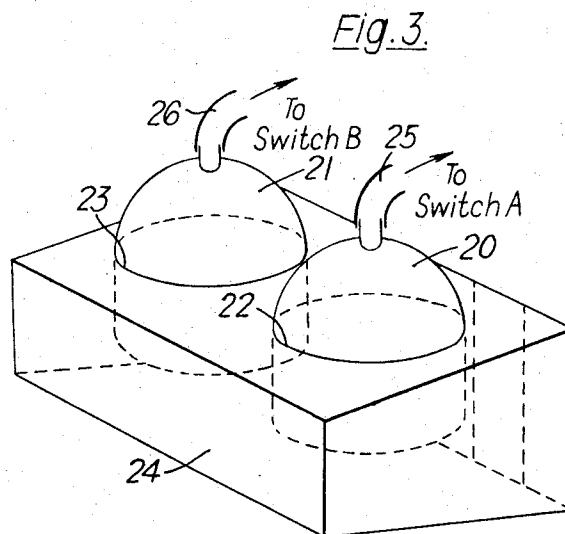
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Primary Examiner—Fred L. Braun
Attorney—Martin Fleit et al.[57] **ABSTRACT**

Apparatus for treating photographic prints or film material in which chemicals and water are selectively fed to a light proof container for the material to be treated, which is releasably mounted on a collecting chamber from which it is pumped by a processing pump to the container and flows back to the chamber via a light trap. The temperature of the chemicals and water is accurately controlled. The chemicals are fed selectively from containers therefore positioned in a thermostatically controlled water tank via a separate secondary pump for each vessel and via a separate syphon tube for each secondary pump. When the pumps are switched off a portion of the chemicals can syphon back for re-use. Various types of light proof containers may be used and in one construction the feed pipe from the outlet of the pump is connected to the lower end of the container with the chemical or water overflowing at the top via a surrounding outer container. A level sensing switch in the container may alternately switch on and off the processing pump to provide vertical agitation. Film spirals may be supported on a motor driven rotary rod.

13 Claims, 9 Drawing Figures





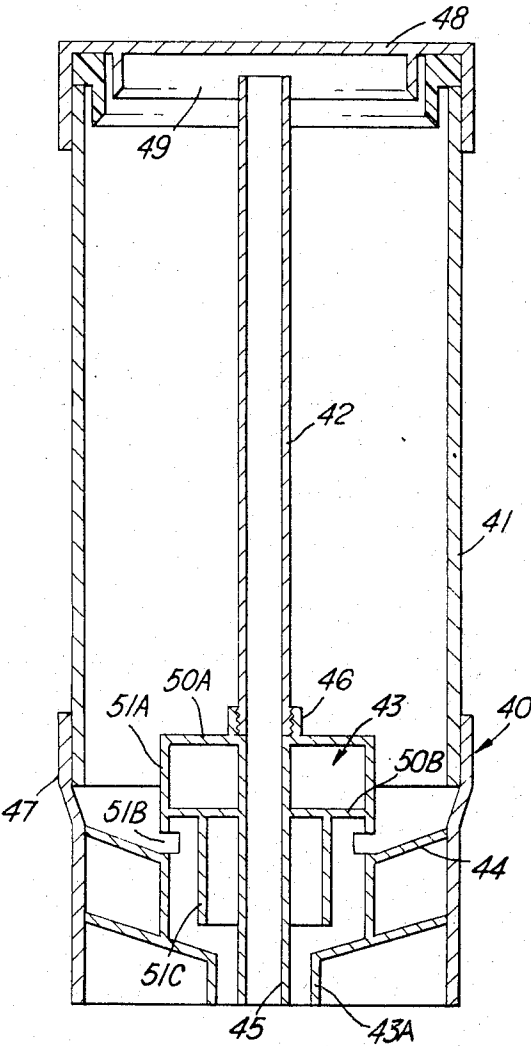


Fig. 4.

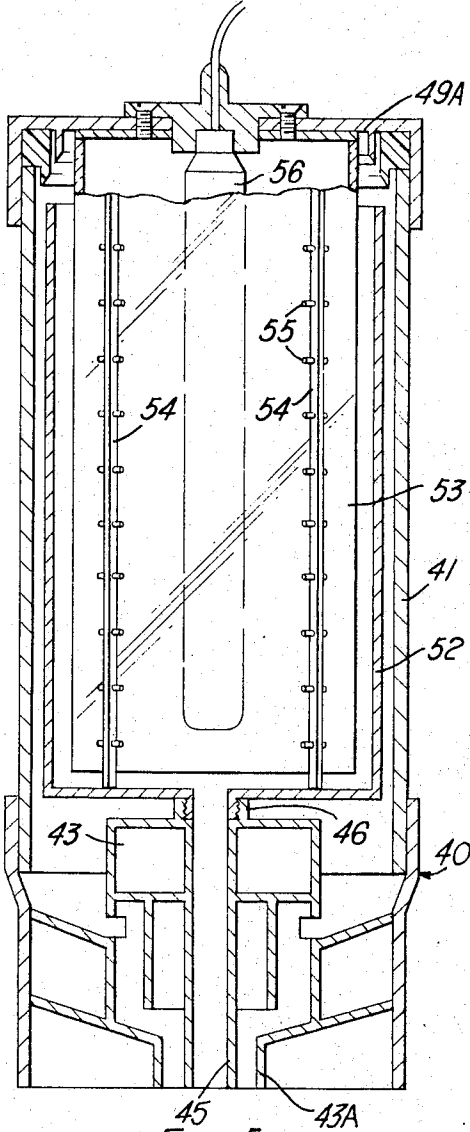


Fig. 5.

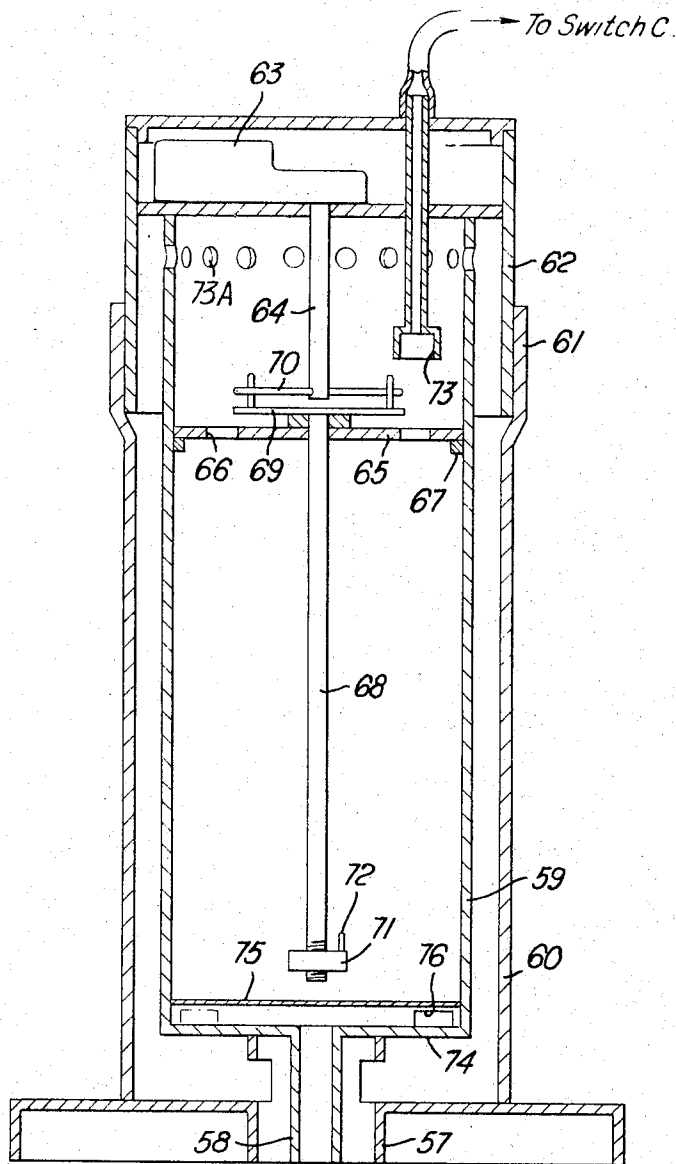


Fig. 6.

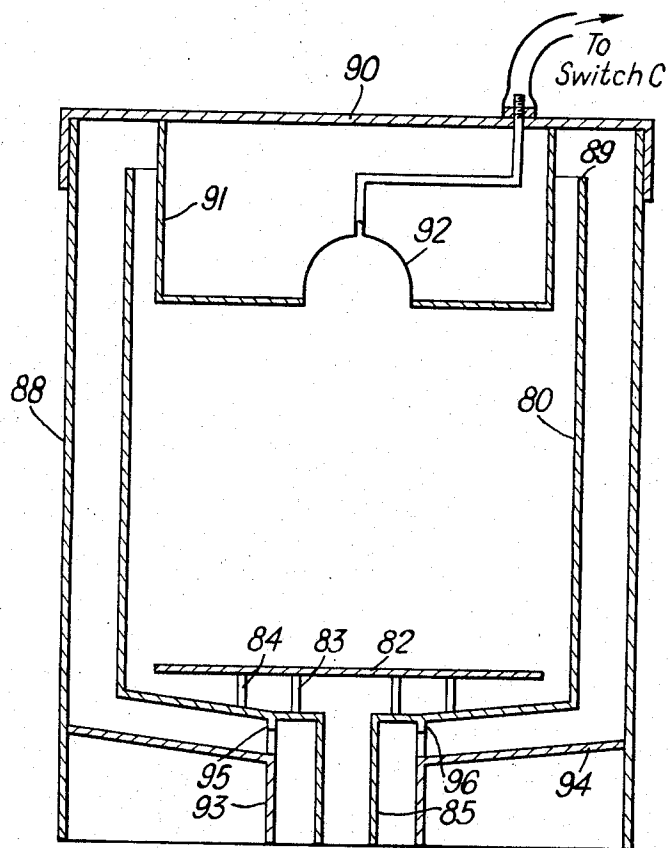


Fig. 7.

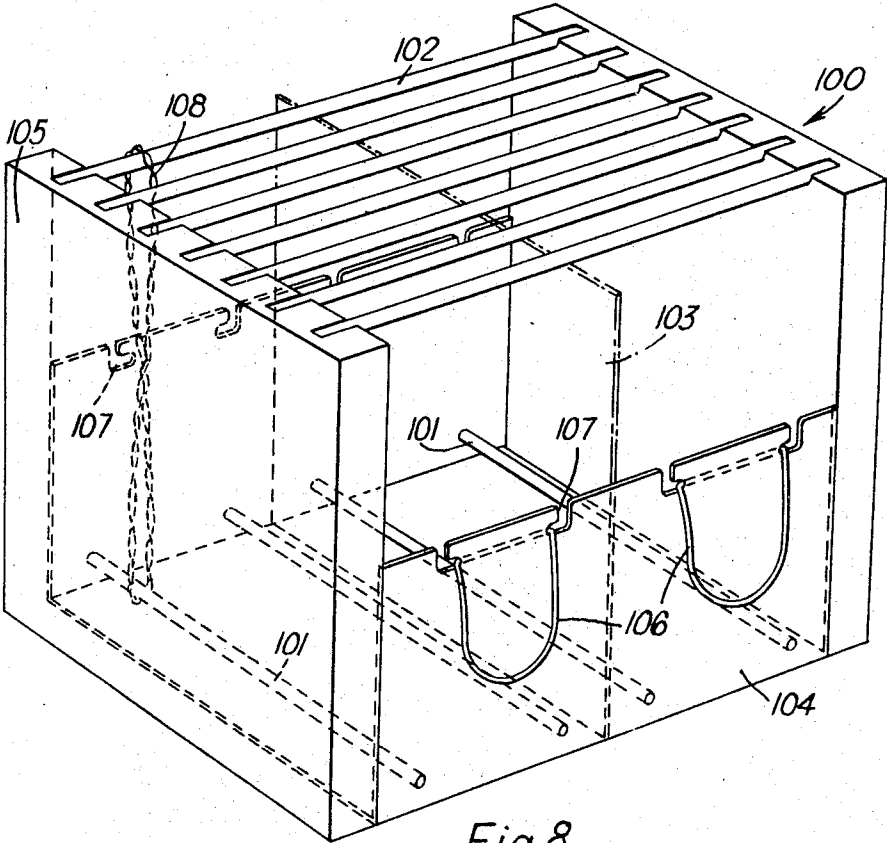


Fig. 8.

APPARATUS FOR PROCESSING PHOTOGRAPHIC MATERIAL

The present invention relates to an apparatus for processing photographic materials such as prints, films or transparencies, and is particularly concerned with an apparatus for processing in a relatively inexpensive manner, a single black and white or colour print or small runs of such prints.

In our British Patent specification No. 1,201,469 there is described and claimed an apparatus for processing sheet or film material, the apparatus comprising a chamber, a light proof container for the material releasably mounted on said chamber, a processing pump communicating with said chamber, a feed pipe connected to the outlet of the pump, and extending substantially vertically upwardly with its open upper end located within the container adjacent the upper interior surface of the container, a drain to the light proof container adapted to return liquid from the container to the chamber for recirculation by the pump, and means for selectively feeding chemicals and rinsing water at a controlled temperature, to said chamber.

In the apparatus described in British Patent specification No. 1,201,469, the processing container was supplied with chemicals and with water from a tank containing a plurality of vessels and means were provided for feeding water to the tank and an outlet valve was associated with the tank for feeding water to the chamber, and further outlet valves were provided for feeding chemicals from each of the vessels to the chamber. Thus, both the water and chemicals were fed to the chamber under the action of gravity.

It is now proposed, according to one aspect of the invention to provide apparatus comprising a collecting chamber, a light proof container for the material releasably mountable on said collecting chamber, a processing pump communicating with said collecting chamber, a feed pipe connected to the outlet of the processing pump, a drain to the light proof container adapted to return liquid from the container to the collecting chamber for recirculation by the pump, means for selectively feeding chemicals and rinsing water, at a controlled temperature, to said collecting chamber, said means including a tank arranged at a location below that of the collecting chamber, and containing a plurality of vessels for chemicals, and a separate secondary pump for each vessel connected via a syphon tube to the collecting chamber.

With such an arrangement, particularly if the secondary pumps are constructed as centrifugal pumps, when a suitable signal is given to pump the appropriate chemical into the collecting chamber, the associated pump operates and the chemical flows into the chamber. Subsequently, the processing pump connected to the feed pipe is caused to operate so that the chemical is fed into the light proof container and is circulated therethrough. As this happens the level of liquid in the collecting chamber will drop, and suitable level sensing means therein will be arranged to cause the appropriate secondary pump to operate to maintain a sufficient level of chemical within the collecting chamber. Upon completion of a particular chemical processing period, the processing pump will stop and the appropriate secondary pump will also stop operating. All the chemical which is above the lower end of the syphon tube in the collecting chamber will flow back under a syphoning

action through the syphon tube to the appropriate chemical vessel. Thus, it is possible to obtain feed back of a portion of the chemical, this portion being suitable for re-use. As it flows back into its appropriate vessel, a violent agitation occurs therein to ensure mixing with the chemical remaining in that vessel.

According to a preferred embodiment, the secondary pumps are constructed to have rotors and stators of a plastic material, the rotor being operated solely by a magnetic connection between the rotor and a driving motor, so that there is no necessity for any glands. This is particularly important with the chemicals used for photographic processing, since these are of an extremely corrosive nature.

As indicated above, the water is also fed by a secondary pump, but for this the syphon tube is provided with a bleed port at its highest point, to prevent syphoning back of the water, which is used for washing of the photographic material, into the tank. Clearly, it would be unsatisfactory if the tank became filled with dilute solutions of the various chemicals.

The invention also proposes a container for use with a photographic processing apparatus having a collecting chamber on which the container is mountable, a processing pump communicating with said collecting chamber, a supply pipe connected to the outlet of the pump and a drain inlet for the collecting chamber, said container comprising, in combination:

a light proof container wall means, having upper and lower ends;

a feed pipe connected to the lower end of said container wall means;

a drain pipe connected to the upper end of said container wall means; and

light trap means for said feed and drain pipes.

The level sensing means may comprise level sensing means in said container wall means operatively connectable to the processing pump of the apparatus effective to cause alternate switching on and off thereof.

In one construction said container wall means comprises a light proof outer body wall portion and an inner tubular wall spaced radially inwardly from said outer body wall portion to form an annular space, wherein said annular space is connected to said drain pipe and to the interior of said inner tubular wall near said upper end, wherein said feed pipe is connected to the interior of the inner tubular wall near said lower end. With this construction it is possible to include a removable lid positionable on said outer body wall portion, a rotatable film spiral support positionable within said inner tubular wall, a drive motor carried by said removable lid and means connecting said rotatable film spiral support to said drive motor. Alternatively there may be provided a displacement vessel positionable within said inner tubular wall, spaced inwardly of said inner tubular wall to provide an annular space therebetween, and means on the exterior of said displacement vessel to hold photographic sheet material spaced therefrom.

In a further construction the container includes a removable photographic material support comprising an open topped and open bottomed box, a first set of spaced apart parallel rods extending across the open bottom, a second set of parallel rods extending across the open top, the rods at the top and bottom being perpendicular to one another, and spirally twisted elastic bands looped over one rod of the first set and one rod

of the second set to extend perpendicularly from the top to the bottom of the box.

In order that the invention may more readily be understood, the following description is given, merely by way of example, reference being made to the accompanying drawings, in which:

FIG. 1 is a perspective view of the collecting chamber and feed pump of the apparatus according to the present invention;

FIG. 2 is a cross-section through the tank, collecting chamber and chemical vessels of the apparatus of FIG. 1;

FIG. 2a is a schematic side elevation, partly in section, of a pump used in the apparatus of FIG. 1;

FIG. 3 is a perspective schematic enlarged view of the level sensing housing of the apparatus of FIGS. 1 and 2;

FIG. 4 is a cross-section through one embodiment of light proof container suitable for processing photographic prints;

FIGS. 5, 6 and 7 are views similar to FIG. 4 of further embodiments of container; and

FIG. 8 is a perspective view of a support for photographic sheet material.

Referring first to the construction of FIGS. 1, 2 and 3 there is illustrated a tank 10 provided with a suitable filling and heating arrangement which may be identical to that described in British Patent specification No. 1,201,469. In the tank 10 are mounted a number of vessels 11 for the various chemicals. Each of the vessels 11 is provided with its own delivery or secondary pump 12. The pumps are of a known centrifugal type (FIG. 2a) in which the rotor 100a and stator 101a are formed of a plastic material, the rotor being driven by a magnetic coupling 102a, 103a between the motor 104a of the pump and the rotor 100a thereof. A connecting pipe 13 extends from each of the pumps 12 and passes over the upper edge of one of the walls of a collecting chamber 14 to form a syphon tube 15, only two of these being shown in FIG. 1. As can be seen from FIGS. 1 and 2, the lower ends of these syphon tubes are cut away to form a chamfer. At the upper edge of the chamber the tubes are formed with a short, narrow upwardly extending slot 18. A similar pump (12a) is provided for feeding water from the interior of the tank 10 to a further syphon tube 16 (FIG. 2) which is formed with a bleed hole 17 at its uppermost point. On the side of the collecting chamber is formed a level sensing housing 19. The housing 19 is illustrated more clearly in FIG. 3 and it can be seen that the bottom wall slopes towards the collecting chamber 14. Two open bottomed tubes 20 and 21 extend downwardly from the upper wall 24 of the housing 19 and are provided with diaphragms 22 and 23 respectively. Above the diaphragms, pipes 25 and 26 are connected to pressure sensitive switches A and B (not shown). The tubes 20 and 21 are arranged to operate their associated switches, so that the switch B associated with tube 21 is operated when the level of liquid in the collecting chamber is about 2 inches above the level which is necessary to operate the switch A associated with tube 20. Access to the housing 19 is via slots in the wall dividing the chamber 14 from the housing, so that turbulence in the housing is minimized.

As can be seen more clearly from FIGS. 1 and 2, the collecting chamber is provided with a side portion 27 having a sloping bottom wall 28 inclined towards the

remainder of the collecting chamber. Extending upwardly from this lower wall is a drain pipe 29 provided with a slot 38 for draining liquid back into the collecting chamber. Centrally of the drain pipe 29 is a feed pipe 30 connected to a processing pump 31 which is of the same type as the pumps 12. The inlet of the processing pump 31 is connected by a pipe 32 to the bottom of the collecting chamber and by a further pipe 33 to a drain valve 34. The collecting chamber 14 is extended at 14A, at the top and one end, this extension being separated from the remainder of the chamber by a partition 14B, forming a weir. From the bottom of the extension extends an overflow pipe 35.

Referring now to FIG. 4 of the drawings, there is illustrated a suitable form of light proof container for processing photographic prints. This container is essentially in three parts, namely a socket 40, a tubular portion 41 and a feed pipe 42, these parts being mutually releasable. The socket 40 includes a light trap 43 secured to the main portion of the socket 40 by a wall 44. Extending within the light trap 43 is a lower feed pipe 45 threaded at its upper end 46. This is suitable for engaging the feed pipe 42. A scan be seen from the Figure, the socket, which is generally cylindrical, is flared or blown at 47 to receive the lower open end of the tubular portion 41, the upper end 48 of which is closed, either permanently or by a removable lid.

As indicated in the Figure a rim 49 extends around the closed end 48 of the portion 41 and leaves a space in which the upper edge of photographic paper may be inserted. The paper may be held in place by a short length of flexible plastic material which extends essentially along a tangent to the rim 49 and clips the paper in place.

The light trap consists of two horizontal transverse walls 50a and 50b secured at their outer edge to a tube 51a which in turn is secured to the wall 44 and a further similar wall therebelow. A series of slits 51b is formed in the tube 51a and depending from the transverse wall 50b is an inner tube 51c. The slits provide communication to a drain pipe 43a of the socket 43, the drain pipe being coaxial with the lower feed pipe 45.

FIG. 5 shows a similar construction in which the socket member 40, the tubular wall 41 and the light trap 43 are of identical construction. In place of the feed tube 42 an inner container 52 is threaded on to the threaded portion 46. The outer surface of the inner container 52 is spaced from the wall of the tubular portion 41 to provide an annular space therebetween. Mounted within the inner container 52 is a displacement vessel 53, to the outer surface of which are attached three or more vertically extending rails 54 which project radially outwardly from the displacement vessel 53. At a location spaced from the outer surface of the displacement vessel and extending circumferentially of the latter are a series of spaced apart pegs 55. As can be seen from FIG. 5 the rails extend down below the bottom of the displacement vessel 53 and produce a gap between this bottom and the bottom of the inner vessel 52. It will be noted that the inner vessel 52 extends to a height below the top of the container 49a, so that an overflow passage is defined between the top of the vessel to provide communication between the interior of the inner container and the annular space.

The displacement vessel may be constructed of an opaque material as desired. If it is desired to produce colour reversal, however, it is constructed of a trans-

parent material and the lid 49a is provided with a light source 56.

A further construction of container is illustrated in FIG. 6. Here, a downwardly extending drain pipe 57 has, coaxial therewith, a feed pipe 58 connected to a central aperture in an inner container 59 surrounding an outer container 60. The top of the container 60 is flared or blown at 61 to accommodate a lid 62 having a drive motor 63 mounted therein, the drive shaft 64 of the drive motor extending centrally downwardly from the lid 62. A disc 65, provided with arcuate slots 66 rests on an annular abutment 67 carried by the wall of the inner container 59, the disc 65 forming a bearing for a downwardly extending shaft 68 provided at its upper end with a drive bar 70 on the shaft 64. The shaft 68 can carry a number of conventional film spirals which are held in place by a nut 71 having a drive spigot 72 engageable with the lowermost spiral to cause rotation thereof as the motor drives the shaft at 64 and thus the shaft 68.

The downwardly extending tube 73, including a pressure switch diaphragm, in the lid 62 is connected to a switch C (not shown) and extends into the inner container 59 to a level above the disc 65. A series of apertures 73a is provided near the top of the wall 59 to define an overflow passage for the escape of chemical or water to the annular space between the wall 59 and 60.

At the lower end the inner container 59 is provided, across its bottom wall 74, with a diametrically extending channel formed by a plastics tube, split symmetrically along its length with the concave face downwards, the interior of the channel communicating with the feed tube 58. Two slots 76 (only one shown) are provided, one near each end of the channel 75. The slot at one end is on the opposite side from that of the other end. Thus as liquid flows up through the tube 58 along the channel 75, it can escape on opposite sides from opposite ends, via the apertures 76 to provide a swirling motion of the liquid in the inner chamber 59 which is in the opposite sense to the direction of rotation of the shaft 68 and thus of the spirals carried thereby.

The container illustrated in FIG. 7 comprises an inner container 80 having a bottom wall 81 above which is mounted a false bottom 82. A number of cut-away discs 83 and 84 serve to form a light trap and in the centre of the bottom wall is a feed pipe 85. An outer casing 88 surrounds the inner container 80 and extends thereabove to form an overflow weir 89. A lid 90 closes both of the containers and is provided with a downwardly extending housing 91 which extends into the upper portion of the inner container 80 leaving an annular clearance therebetween. Within the housing 91 is a downwardly extending tube 92 which is connected to a pressure switch C (not shown). The drain tube 93 extends downwardly from the lower wall 94 of the outer casing. Between this lower wall 94 and the lower wall 81 of the inner casing are further slotted discs 95 and 96 again serving as a light trap.

A suitable form for the support for prints or film material in the container is shown in FIG. 8. This support comprises an open topped box 100 provided with a first set of parallel bars 101 at the open bottom end and a second set of parallel bars 102 at the open topped end, the bars 102 being perpendicular to the bars 101. Each bar 101 has associated therewith a number of desulphured elastic bands 108 equal to the number of bars 102. These elastic bands are given a slight twist so

that they extend vertically in the form of a spiral. Thus a plurality of vertically extending open slots are formed and a film or sheet of paper can be fed between the elastic bands with only the minimum of contact. The effect of the spiral arrangement is to reduce the contact and enable the water or chemical to run off therefrom readily. A vertical partition 103 can be pushed between the front and rear walls 104 and 105 of the open topped box. This serves to divide the box in half so that smaller sheets can readily be supported. Again, using the same box further elastic bands 106 can extend across the space between the front and rear walls 104 and 105, these bands 106 being engaged in slots 107 and the bands 106 will thus form an open partition. Thus, by a very simple means a large box which is suitable for large sheets can be modified to make it suitable for four times the number of sheets of one quarter the size.

In use of the above described apparatus, for example, using the construction of FIG. 4 as the container, the photographic material is placed in the container portion 41 in the darkroom and this is engaged on the socket 40 to which the feed tube 42 has already been secured. The feed tube 42 is chosen to be of such a length that it is closely adjacent to, but spaced from the upper wall 48 of the container 41. The assembly thus formed is then fitted onto the remainder of the apparatus as illustrated in FIGS. 1 to 3, so that the drain pipe 43a of the light trap 43 engages within the drain pipe 29, and the feed pipes 30 and 45 are in communication. When water delivery pump pumps water through pipe 16, the processing pump 31 starts to operate and commences the washing cycle the moment the level reaches a level sufficient to close the pressure sensitive switch A. The water delivery pump is not in circuit with switch A and the delivery pump continues to run, permitting water to overflow continuously through overflow pipe 35. The cut away from drain pipe 29 is biased towards the overflow pipe 35, which encourages contaminated water to overflow to waste, whilst the delivery pipe 16 is close enough to pipe 32 to encourage clean water to be delivered by pump 31, which results in an efficient and quick washing cycle. During a washing cycle therefore, both delivery pump and process pump 31 run continuously, overflow pipe 35 being large enough to cope with the full output of the delivery pump.

When the timer circuit (which may be similar to that described in British Patent No. 1,201,469 or may include a punched card or tape or magnetic tape) has indicated that sufficient washing has been effected, then the delivery pump associated with the tank 10 is stopped and the valve 34 is opened, so that the water therein flows to waste. The timer then instructs the first chemical secondary pump 12 to operate and chemical from one of the vessels 11 is pumped, via the syphon tube 15 into the collecting housing. Again the level will continue to rise and as it reaches the level of tube 20 so that pressure switch A is closed and the pump 31 will be caused to operate, so that chemical is passed through the container 41. As before, the chemical will circulate. In the meantime the secondary pump 12 continues to operate and the level of chemical will continue to rise in the collecting chamber 14 until it reaches the level of the tube 21. When the level has reached this, the pump 12 will be stopped from operating and the level will sink by syphon action until it reaches that of tube 20 whereupon the associated secondary pump 12 will again be operated. This will con-

tinue for the required time whereupon the pump 12 will cease to operate. Chemical will then syphon back through the syphon tube 15 into its respective vessel 11 until the syphon is broken by air entering via slot 18. A small proportion of the chemical as determined by the chamfer on the lower end of the syphon tube 15 will not flow back and will be discarded by subsequent opening of the valve 34, when the level falls below tube 20. This can in fact be effected by the switch A.

The pump being of the type indicated permits the chemical to flow back and will allow the chemical to flow into the vessel 11 and considerable turbulence will be caused therein to ensure mixing of the partly used chemical with the remaining chemical in the vessel 11. This feed back is clearly desirable if the photographic process is such as to permit it since it overcomes unnecessary wastage of chemical. However, in certain circumstances it will not be desirable for this to take place, and provision is made in the control circuit for preventing a feed back when so desired. This may be effected by the timer causing the drain valve 34 to open immediately after the processing cycle has been completed so that all of the chemical is dumped to waste.

The FIG. 5 container is used for treating sheet film material which is clipped in place by bowing the sheet, and allowing it to spring back to engage behind pins 55. The vessel 53 is sufficiently large to displace most of the volume of container 41, so that only a minimum of chemical is required. The liquid flows upwardly between vessel 53 and wall 52 and then flows downwardly between walls 52 and 41. Otherwise the operation is as with FIG. 4. If no colour reversal is required vessel 53 is opaque, but if colour reversal is necessary then this vessel is made transparent and the light source 56 is provided and illuminated at the appropriate time.

If the construction of FIG. 7 is used, similar considerations apply. The water flows in through the pipe 85 and the light trap below the false bottom 82 and flows upwardly in the inner container 80 and flows through the overflow 89 and is returned to the processing chamber via the drain pipe 93. When the wash cycle has been completed, the pump 31 will be stopped so that the liquid will flow back.

When the processing pump 31, pumps a chemical up pipe 85 then film material placed within the inner casing 80 on some suitable support, is subject to the up-flowing chemical until this reaches a sufficient height to operate the pressure switch C. When this is closed, the motor 31 is de-energized and the water will flow back through the pipe 85 and the level will drop. The pressure switch C will then be opened and the pump 31 will be switched on again. This will continue and a gentle upward and downward flow of liquid within the casing 80 results.

After this has progressed for some time, a timer control mechanism will cut-out the pump 31, and the chemical will flow back to collecting chamber 14 via the pump 31, for syphoning back to the vessel 11 or dumping as appropriate.

The operation of the construction of FIG. 6 is similar to that of FIG. 7. Here films mounted on spirals carried by support 68 are treated. First the lid 62 together with associated parts 63, 64, 70 and 73 is removed and disc 65 is lifted together with parts 68, 69, 71 and 72, by passing ones fingers through slots 66. Nut 71 is removed, the film spirals put in place and the nut replaced. The container is then reassembled as shown in

FIG. 6. The operation is the same as that of FIG. 7, except that the chemical solution is caused to swirl in one direction, while the spirals are rotated in the opposite direction by the motor. At the same time the liquid in container 59 oscillates vertically due to the action of the pressure switch assembly 73. This ensures maximum flow of the film material, the rotation and vertical oscillation preventing streaks forming in the emulsion, which might otherwise be caused by the presence of the film spirals supporting the films. In each of the constructions of FIGS. 5, 6 and 7, the feed pipe 45, 58, 85 is connected to the lower end of the container 52, 59, 80 respectively. The drain pipe 43a, 57, 93 is connected to the upper end of the respective container, the liquid in each instance overflowing, so that the photographic material to be processed is submerged in a moving body of liquid.

I claim:

1. Apparatus for processing photographic sheet or film material, the apparatus comprising a collecting chamber, a lightproof container for the material releasably mountable on said collecting chamber, a processing pump communicating with said collecting chamber, an outlet for said processing pump, a feed pipe extending into the interior of the light proof container and connected to the outlet of the processing pump, whereby liquid may be pumped from the collecting chamber into said container, a drain in the lightproof container providing communication between the interior of said container and said collecting chamber effective to return liquid from the container to the collecting chamber for recirculation by the processing pump, means for selectively feeding chemicals and rinsing water, at a controlled temperature, to said collecting chamber, said means including a tank arranged at a location below that of the collecting chamber, a plurality of vessels for chemicals, positioned in said tank, a separate secondary pump for each one of said vessels and a separate syphon tube for each secondary pump connecting the secondary pumps to the collecting chamber, each of said tubes extending to a point above said collecting chamber and down into the chamber to a point adjacent the bottom thereof so that the tube acts as a syphon to return the excess liquid in the chamber to its respective vessel when the operation of its secondary pump is terminated.

2. Apparatus according to claim 1, wherein the processing and secondary pumps are centrifugal pumps.

3. Apparatus according to claim 2, wherein the secondary pumps have rotors and stators formed of plastic material, and further comprising a driving motor for each pump and a magnetic connection forming the sole connection between each rotor and the associated driving motor.

4. Apparatus according to claim 1, and further comprising a further secondary pump connected to the interior of the tank and a further syphon tube connecting said further secondary pump to the collecting chamber effective to pump water to the latter, and wherein a bleed port is formed at the highest point of said further syphon tube.

5. Apparatus according to claim 1, and further comprising level sensing means associated with the collecting chamber, said level sensing means being operatively connected to the processing pump and to the secondary pumps to control operation thereof.

6. Apparatus according to claim 5, wherein the level sensing means comprise pressure sensitive switches associated with downwardly depending tubes in the collecting chamber, the tubes having therein diaphragms, flexing of the diaphragms causing operation of the pressure sensitive switches.

7. Apparatus according to claim 1, and further comprising a drain valve for the collecting chamber for draining the collecting chamber, the processing pump and the feed pipe.

8. A container for use with a photographic processing apparatus having a collecting chamber on which the container is mountable, a processing pump communicating with said collecting chamber, a supply pipe connected to the outlet of the pump and a drain inlet for the collecting chamber, said container comprising, in combination:

- a. a light proof outer body wall portion, having upper and lower ends;
- b. an inner tubular wall portion enclosed entirely within said body wall portion and having upper and lower ends, said inner tubular wall portion being spaced radially inwardly from said outer body wall portion to define an annular space therebetween;
- c. a photographic material receiving space defined within said inner tubular wall portion;
- d. a feed pipe connected to the lower end of said photographic material receiving space;
- e. means defining an overflow passage at the upper end of said inner tubular wall portion, providing communication between said photograph material receiving space and said annular space;
- f. a drain pipe connected to the lower end of said annular space for draining liquid therefrom; and
- g. combined light trap means for said feed and drain

pipes.

9. A container according to claim 8 and further comprising level sensing means in said inner tubular wall below said overflow passage defining means operatively connectable to the processing pump of the apparatus effective to cause alternate switching on and off thereof.

10. A container according to claim 8 and further comprising a removable lid positionable on said outer body wall portion, a rotatable film spiral support positionable within said inner tubular wall, a drive motor carried by said removable lid and means connecting said rotatable film spiral support to said drive motor.

11. A container according to claim 8, and further comprising a displacement vessel positionable within said inner tubular wall, spaced inwardly of said inner tubular wall to provide an annular space therebetween, and means on the exterior of said displacement vessel to hold photographic sheet material spaced therefrom.

12. A container according to claim 11, wherein said displacement vessel is constructed of a transparent plastic material and further comprising a light source within said vessel.

13. A container according to claim 8, wherein the container includes a removable photographic material support comprising an open topped and open bottomed box, a first set of spaced apart parallel rods extending across the open bottom, a second set of parallel rods extending across the open top, the rods at the top and bottom being perpendicular to one another, and spirally twisted elastic bands looped over one rod of the first set and one rod of the second set to extend perpendicularly from the top to the bottom of the box.

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