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DEVELOPING AND PRINTING TRAY

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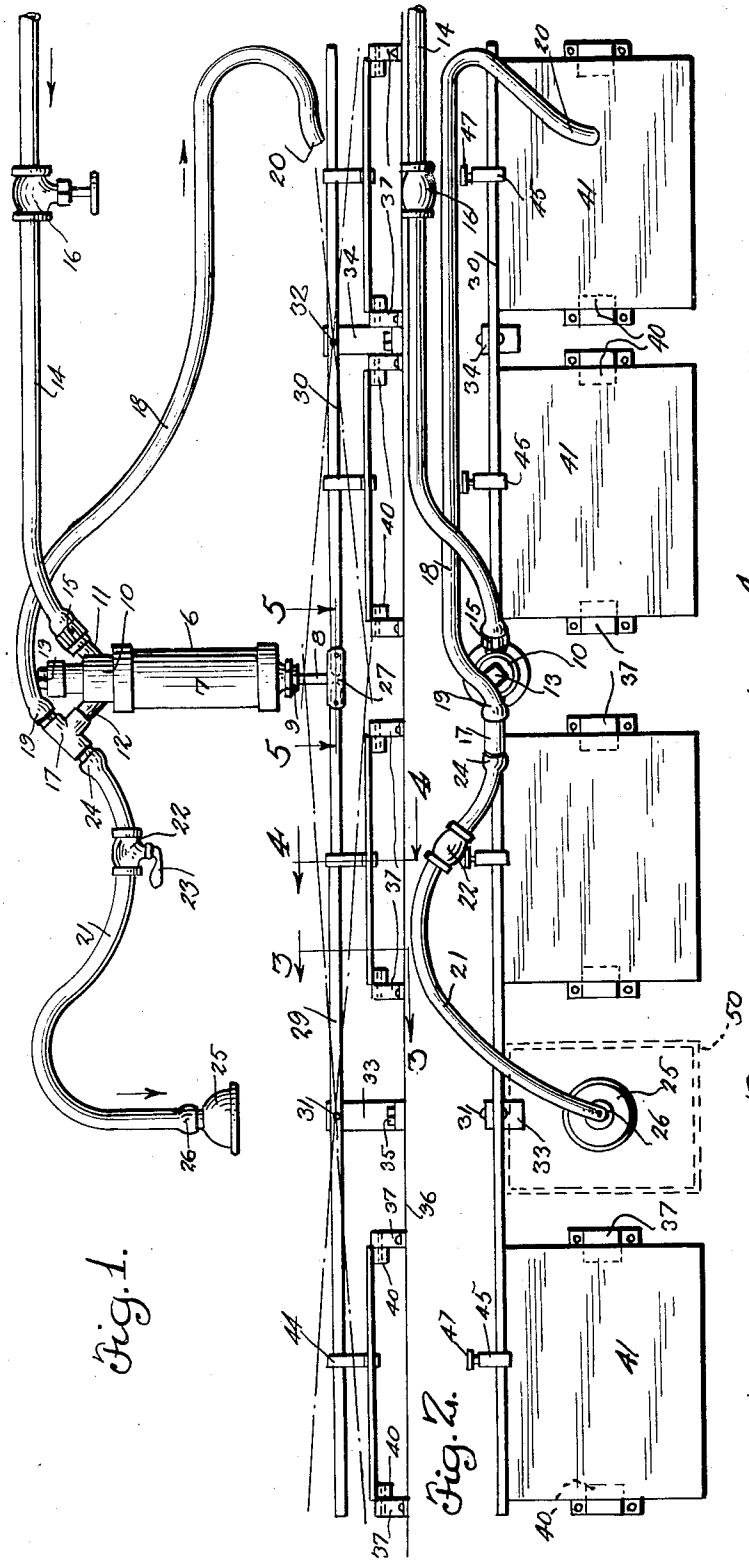


Fig. 1.

Fig. 2.

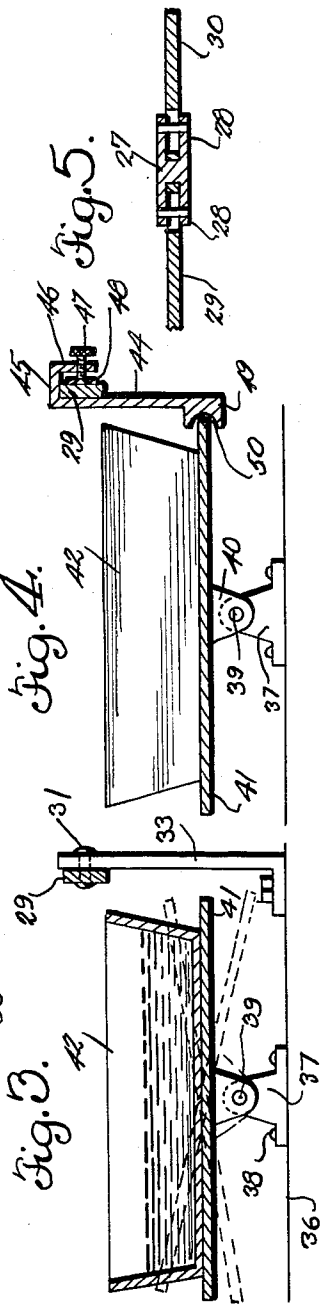


Fig. 3.

Fig. 4.

Fig. 5.

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DEVELOPING AND PRINTING TRAY

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5 Claims. (Cl. 259—73)

This invention relates to improvements in developing and printing trays particularly adapted for use by photographers and the invention comprises a fluid operated motor which may be connected to a domestic water supply line and said motor is provided with a reciprocating connecting rod connected by means of a cross-head to a pair of rocking levers. The invention further comprises tiltable platforms mounted on suitable trunnions adapted to be rocked on the horizontal trunnion by means of the rocking levers and means is provided for connecting the tiltable platforms to the rocking levers so that the platforms upon which the printing or developing trays are placed may be rocked to a minimum or maximum degree as is required.

The primary object of this invention is to provide a device of the above mentioned character which may be easily installed where a domestic water supply is available in order that a plurality of prints may be developed by the fluid moving back and forth over the prints accomplished by the rocking of the print developing trays containing the developing fluid.

A further object of this invention consists in providing a device of a simple character which may operate a plurality of developing trays whereupon the prints to be developed may be subjected to a constantly moving fluid which has been found most desirable in the photographic art.

Other objects and advantages of the invention will become apparent during the course of the following description, taken in conjunction with the drawing wherein,

Figure 1 is a side elevation of the apparatus embodying this invention illustrating the manner in which the developing tray platforms are arranged relative to the rocking levers and the fluid operated motor;

Figure 2 is a top elevation of the device embodying this invention and further illustrating the arrangement of the tray supporting platforms and showing the arrangement of motor therefore relative to the rocking levers;

Figure 3 is a vertical cross-sectional view taken on line 3—3 of Figure 1, looking in the direction of the arrows, illustrating the arrangement and construction of one of the tray supporting platforms relative to the rocking lever;

Figure 4 is a vertical cross-sectional view taken on line 4—4 of Figure 1, looking in the direction of the arrows, illustrating the adjustable connection between the tiltable tray supporting platform and the rocking lever; and

Figure 5 is a cross-sectional view taken on line 5—5 of Figure 1 on a horizontal plane, illustrating the connection or cross-head between the reciprocating connecting rod and the fluid motor with the rocking levers.

In the drawing, showing a preferred embodiment of the invention, the reference character 6 designates a fluid motor including a cylinder 7 having mounted within a reciprocating piston to which is connected a rod 8 operating through a packing gland 9 located at the extreme lower end of the cylinder 7. Secured to the upper end of the cylinder 7 is a head 10 having suitable inlet and outlet valves connected to an inlet 11 and an outlet 12. Also formed on the head 10 is a removable cleaner plug 13 which may be removed for the purpose of cleaning the head or adjusting the valve gearing therein.

Connected to the inlet pipe 11 is a hose 14 held in place by a detachable connection 15 and said hose 14 may be connected to a domestic water supply, not shown, with a valve 16 interposed therein for controlling the flow of fluid to the valve gearing of the cylinder 7. The outlet 12 is provided with a T-connection 17, one side of which is connected to a hose 18 by a slip joint 19 so that the free end 20 of the hose may be positioned close to or presented to one of the pans for the purpose of filling or it may be disposed in a tank for discharging the water employed in operating the fluid motor. The opposite side of the T-connection 17 is provided with a pipe 21 having a shut-off valve 22 interposed therein provided with a handle 23. The hose 21 may be of a flexible nature and is connected to the T-connection by a slip joint 24 while on the opposite end of the hose 21 there is provided a spray nozzle 25 by means of a slip joint 26. In operation of the fluid motor 6, the pipes 18 and 21 may be arranged so that the free ends are presented to a water or fluid outlet or they may be used as before described in supplying fluid to the developing trays or tanks.

The reciprocating motor 6 may be supported in any well known fashion such as by means of a suitable bracket secured to a support, not shown, and the reciprocating connecting rod 8 has rigidly secured to the lower end thereof a cross-head 27 having bifurcated ends 28. Connected to the bifurcated ends of the cross-head 27 is a pair of opposite rocking levers 29 and 30 fulcrumed on pins 31 and 32 respectively carried by supporting brackets 33 and 34. In Figure 1, the dotted lines represent the full rocking stroke of the levers 29 and 30 when the fluid motor 6 is

operated and when the connecting rod 8 is travelling its full limit. The brackets 33 and 34 may be screwed to a table or work bench on which the fluid motor 6 is supported by means of fastening elements 35 passing through the foot portion of the angle brackets 33 and 34.

Arranged in spaced relation on the table or platform represented by the line 36 in Figure 1, is a plurality of trunnion brackets 37 adapted to be fastened to the bench or table 36 by means of fastening screws 38. Each of the trunnions 37 is provided with pins 39 which are adapted to pass through lugs 40 formed on the underside of the tray supporting platforms 41. Each of the tray supporting platforms is preferably rectangular and the top surface may be roughened if desired to prevent displacement of the developing trays which may contain the developing solution or which may be filled with a washing fluid.

It will be noted that the tray supporting platforms 40 are free to rock on the fulcrum pins 39 supported by the trunnion brackets 37 on the bench 36 and the platforms are adapted to be connected to the rocking arms 29 by adjustable connections 44 having formed at the upper end, as shown in Figure 4, an angle portion 45 bent back upon itself as at 46 so that a thumb screw 47 may be threaded in the portion 46 to cause the foot 48 to bear against the rocking lever 29. The lower end of the connecting arm 44 is provided with an enlarged portion 49 having an arcuately cut away portion 50 adapted to engage one of the lateral edges of the rocking tray supporting platforms 41.

It is to be noted that the fulcrum bracket 33 is spaced a distance greater from the fluid motor 6 than the fulcrum bracket 34 whereby the trays rocked by the rocking lever 29 may be spaced a greater distance than the trays of the tray rocking platforms operated by the rocking lever 30 and it is intended to insert between the spaced rocking platforms 41 a suitable tank 50 for receiving prints after they have been developed so that they may be sprayed with a cleansing water passing through the flexible pipe 21 and the spray nozzle 25. In Figure 2, the spray nozzle 25 is shown presented to the tank 50 for this purpose.

It is to be noted that the connecting arms 44 may be adjusted on the rocking arms 29 to cause the trays 41 to be rocked from a minimum to a maximum degree. For instance if the connecting arms 44 on the rock arm 29 are moved closer or further away from the fulcrum bracket 33, the tray supporting platforms 41 will be rocked proportionately. This adjusting feature is very advantageous and the connecting arms 44 may be adjusted so that the trays will rock at varying degrees thereby causing the liquid contained in the developing trays 42 to be agitated in the required manner.

It is to be understood, that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the sub-joined claims and that the form of the invention herewith shown and described is to be taken as the preferred embodiment of the invention.

I claim:—

1. A photographic print washing and developing device of the character described comprising a series of aligned rocking tray supporting platforms, a pair of fulcrum levers mounted to rock at right angles to the rocking plane of the platforms, adjustable arms carried by the fulcrumed levers connecting the levers to the tilting tray supporting platforms, said adjustable arms including an angular upper portion secured to the fulcrumed rocking levers and a lower portion having an arcuately cut-out section engaged with a lateral edge of the tilting platform and a fluid motor for rocking the fulcrumed levers to cause the rocking of the tray supporting platforms in unison or alternately.

2. A photographic print washing and developing device of the character described, comprising a series of aligned tilting platforms arranged on a suitable supporting surface, rocking trunnions supporting the platforms on the supporting surface, a pair of fulcrumed levers arranged to rock at right angles to the rocking plane of the tilting platform, adjustable arms carried by the fulcrumed levers connecting the tilting tray supporting platform, said arms being capable of being moved longitudinally on the rocking levers for effecting a minimum or maximum rocking of the tray supporting platform, a fluid reciprocating motor for rocking the fulcrumed levers arranged between the inner ends of the fulcrumed levers and a cross-head connecting the fulcrumed levers for allowing the rocking of the same.

3. A photographic film developing device of the character described, comprising a plurality of aligned tray supporting rocking platforms, a pair of fulcrumed levers arranged to rock at right angles to the rocking of the tray supporting platforms, said fulcrumed levers being in alignment and having their inner ends arranged in end to end fashion, a cross head connecting the fulcrumed levers, said cross head being provided with transverse pins operating in slots formed in the ends of the fulcrumed levers, adjustable arms for connecting the fulcrumed levers to the tilting platforms and a fluid operating motor for reciprocating the cross-head.

4. A photographic print washing and developing device of the character described, comprising a support having a plain surface, a plurality of trunnions mounted in aligned spaced relation on the support, a series of tray supporting platforms supported by the trunnions, developing and washing trays mounted on the platforms, a pair of fulcrumed levers mounted to rock at right angles to the rocking plane of the tray supporting platforms, said fulcrumed levers also being aligned in end to end fashion, a series of arms carried by the fulcrumed levers, one for each of the platforms, said arms being capable of being moved longitudinally relative to the fulcrumed levers, each of the arms including an angular upper portion fastened to the fulcrumed levers and a lower section having an arcuately curved portion engaged with the lateral edge of a tilting tray supporting platform whereby a rocking movement imparted to the fulcrumed levers will cause a corresponding rocking movement of the tilting platforms, a cross-head connecting the inner ends of the fulcrumed levers, said cross-head comprising an elongated bar having bifurcated ends for receiving the ends of the fulcrumed levers, pins passing through the bifurcated ends of the cross-head for being received in slotted portions of the fulcrumed levers and a reciprocating fluid motor having a reciprocating connecting rod connected to the cross-head whereby the fulcrumed levers will be rocked simultaneously.

5. A photographic print washing and developing device of the character described, comprising a

support having a series of aligned trunnions arranged thereon in spaced relation, photographic tray supporting platforms mounted between the trunnions capable of being rocked thereon, a pair of fulcrumed levers arranged to rock at right angles to the rocking movement of the tray supporting platforms, said fulcrumed levers being arranged in end to end fashion, adjustable connecting arms for connecting the fulcrumed levers to the photographic tray supporting platforms, each of said arms including an upper angular portion secured to a lever, a lower portion formed on the connecting arms engaged with a lateral edge of the rocking tray supporting platforms, a cross head connecting the inner ends of the fulcrumed levers comprising an elongated bar having slotted ends for receiving the inner ends of the fulcrumed levers, pins passing through the slotted ends of the cross head for operating in slots formed in the ends of the fulcrumed levers, a reciprocating fluid motor for reciprocating the cross head and means for admitting and discharging a fluid under pressure to the reciprocating motor.

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