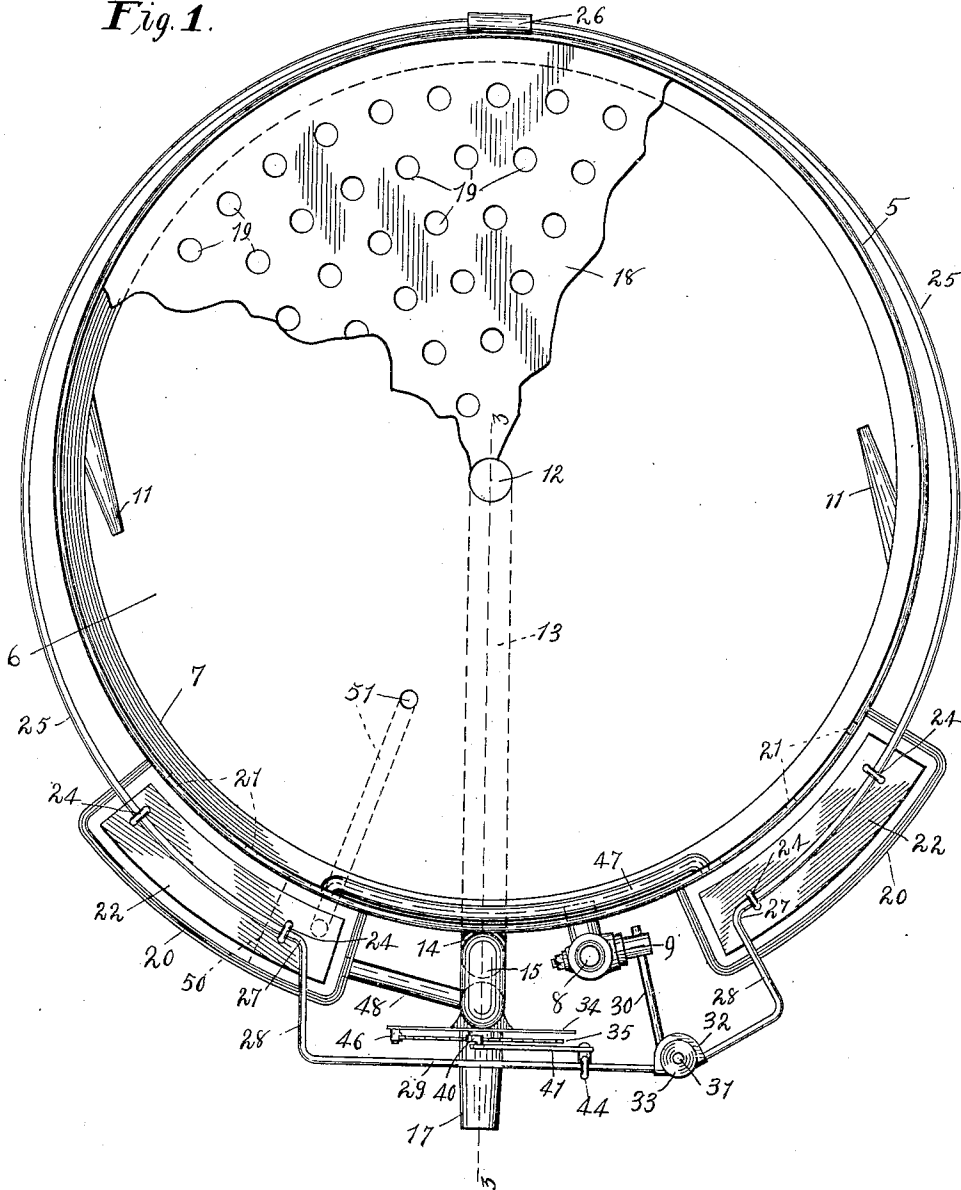


Fig. 1.



Witnesses

Char. F. Bassett

E. W. Clark

Inventor

Walter A. Amon

By Frederick Benjamin
Attorney

W. A. AMON.
 PHOTOGRAPHIC WASHING TANK.
 APPLICATION FILED JAN. 11, 1909.

926,380.

Patented June 29, 1909.

2 SHEETS—SHEET 2.

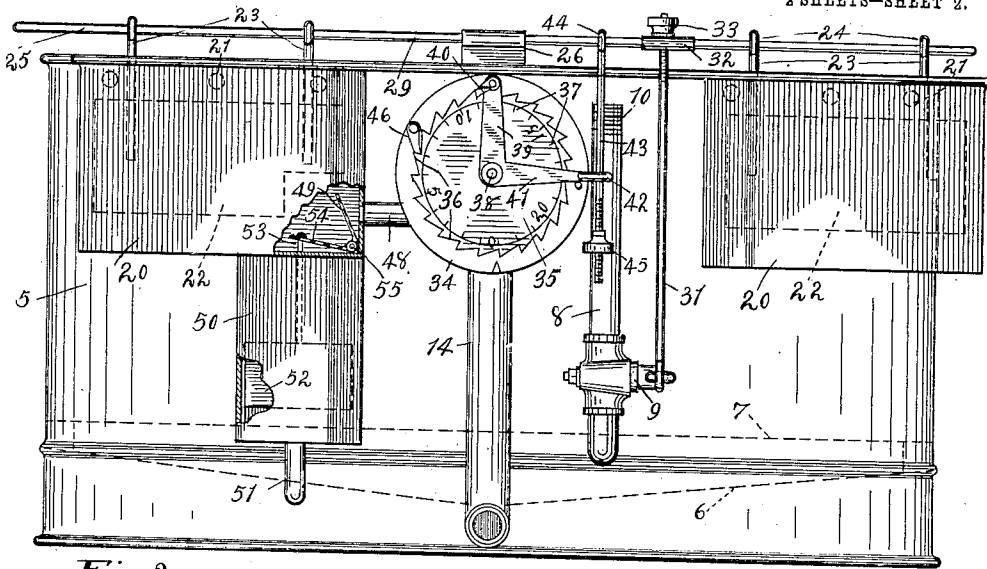


Fig. 2.

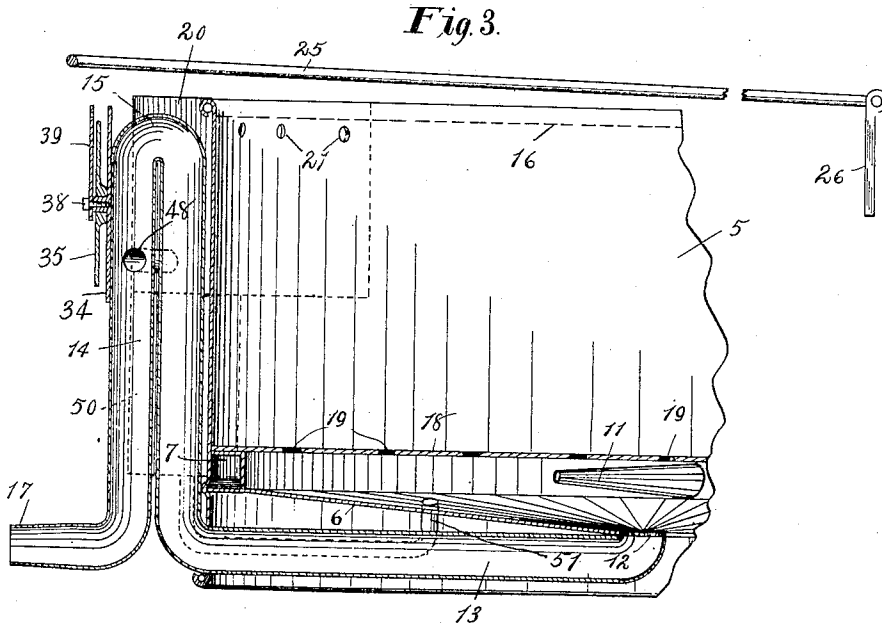


Fig. 3.

Witnesses
 Chas. F. Barrett
 E. A. Clark

Inventor
 Wilbert A. Amon.
 By Frederick S. Linn, Attorney

UNITED STATES PATENT OFFICE.

WILBERT A. AMON, OF WASHINGTON, PENNSYLVANIA.

PHOTOGRAPHIC WASHING-TANK.

No. 926,380.

Specification of Letters Patent.

Patented June 29, 1909.

Application filed January 11, 1909. Serial No. 471,681.

To all whom it may concern:

Be it known that I, WILBERT A. AMON, citizen of the United States, residing at Washington, in the county of Washington and State of Pennsylvania, have invented certain new and useful Improvements in Photographic Washing-Tanks, of which the following is a specification.

My invention relates to photographic apparatus and refers particularly to washing devices applicable to the process of preparing photographic prints or negatives.

The chief objects of the improvements which form the subject matter of this application are to provide a photographic print washing apparatus that will be automatic in its operation, means being provided for shutting off the water supply when the water in the tank has reached the required level to retain the water in the tank for a predetermined period of time, to automatically empty the tank at the expiration of said time period and to renew the water supply when the tank has become empty. Provision is also made for introducing the water into the tank in such a manner as to produce a desirable gyratory movement of the washing fluid, and to supply a suitable guard for the exit ports to prevent the prints from being carried along with the escaping water and thus choking the outlet, and to prevent contact of the negatives or prints with sediment which may collect in the tank.

A further object of the invention is to provide a suitable indicating device for automatically registering the total number of times the water in the tank has been changed.

I accomplish the desired results by means of the apparatus illustrated in the accompanying drawings which form a part of this application, the details of construction being disclosed in the following views:—

Figure 1 is a top plan view of the entire apparatus with a portion of the false bottom broken away; Fig. 2 is a front elevation, and Fig. 3 is a sectional view on the line 3—3 of Fig. 1.

Referring to the details of the drawing, the numeral 5 indicates a washing tank, preferably circular in form, constructed of galvanized iron or zinc, and having a bottom 6, raised above the lower margin thus permitting the latter to rest upon a table or other support. The bottom is made conical in shape or dished with its upper surface sloping downwardly from the periphery to the center

to secure proper drainage. Arranged peripherally within the tank and resting upon the bottom is a conduit 7, rectangular in cross section and formed of the same material as the tank. An inlet or supply pipe 8 communicates with this conduit, and is furnished with an inlet valve 9, its upper end being provided with threads 10 for connection with a pipe (not shown) leading from any convenient source of water supply. The conduit 7 is provided upon opposite sides with inlet nozzles 11 which project at a slight angle with the side of the tank, thus directing the streams in such a manner as to cause a circular movement of the water within the tank. At the central depressed point of the bottom is located an orifice 12 which serves as an outlet for the tank and from this is led an outlet or waste pipe 13, which terminates upon the outside of the tank in a siphon 14. The upper end 15 of the siphon extends to a suitable point below the upper margin of the tank so as to bring the water level to the required height, as indicated by the reference numeral 16, the lower end of the pipe terminating in a suitable discharge nozzle 17.

The upper side of the conduit 7 constitutes a ledge upon which rests the margin of a removable circular disk 18 which thus forms a false bottom for the tank and is supplied with perforations 19. This disk covers the entire bottom of the tank and serves as a guard to prevent the prints from being drawn with the current into the waste pipe 13 when the tank is being emptied, and keeps the prints from the sediment from the chemicals which will accumulate below said disk.

Upon the outside of the tank and arranged upon opposite sides of the supply and waste pipes are two receptacles or float cups 20 which communicate with the interior of the main tank by orifices 21 located at about the desired water level 16, so that the tank will be approximately filled before the water will flow into said cups. Within each float cup 20 is arranged a float 22, which may be of any suitable material, such as cork, although I prefer to make hollow floats of sheet metal, and give them the requisite specific gravity by exhausting the air from the interior. Each float is provided with upwardly projecting arms 23 terminating at their ends in eyes 24 through which passes a wire or rod bent in the shape of a ring 25 having a slightly greater diameter than the tank 5. The rear side of the ring or wire opposite to

the location of the siphon, is loosely supported by a bracket 26 attached to the tank and the front portion of the wire is bent at the points 27 to form radially extending arm 28, the portion 29 connecting these ends being approximately straight. The connection of the ring with its bracket 26 is practically a hinge which allows the opposite side of said ring to move with the floats 22 which rise and fall in a manner hereinafter described.

The valve 10 is furnished with an operating arm 30 to the end of which is pivoted a link-rod 31, extending vertically through a clip 32, secured to the portion 29 of the ring-member 25. The upper end of this link rod is threaded and furnished with an adjusting thumb nut 33. It will thus be seen that the member 25 constitutes a ring-lever, operated by the movement of the floats 22 to control the valve 10, the adjustment being so made that when the said floats rise they will cause the valve 10 to close. Adjacent to the said portion 29 of the ring-lever 25 is arranged an indicating device constructed as follows. Upon the front member of the siphon 14, since this forms a convenient support, is attached a circular bracket plate 34, and upon the face of this plate is pivotally mounted an indicating disk 35, having a series of ratchet teeth 36 cut in its margin, and provided upon its face with graduations 37 corresponding with the said teeth. Upon the pivot 38 of the disk is mounted a pawl-arm 39 carrying a gravity pawl 40 for engaging the teeth 36. Extending beyond the bracket plate 34 and attached to said pawl-arm is an operating arm 41 terminating in an eye 42. Passing loosely through this eye is a lift-link or rod 43, having its upper end formed into an eye 44, through which passes the portion 29 of the said ring-lever 25. The lower end of said lift rod is threaded and furnished with an adjusting thumb nut 45. When the ring-lever 25 is raised by the action of the floats the nut 45 will engage the arm 41 and the pawl 40 will move the disk 35, the adjustment being such that the said disk will be moved but one tooth or step each time the said lever 25 is elevated. A dog 46, pivoted on the bracket plate 34 prevents the disk from moving backward.

The float tanks or cups 20 are connected by a suitable pipe 47, located within the washing tank 5, so that the water in both cups will always be at the same level. Another pipe or tube 48 connects one of the cups 20 with the descending leg of the siphon 14. This pipe is controlled by a leaf-valve 49 arranged in the cup 20 from which said pipe leads, and operated in the following manner. Below the said cup is arranged a float chamber 50, which communicates with the main tank 5 through a pipe 51, and in this chamber is located a valve operating

float 52. A stem consisting of a rod 53 projects upwardly through the bottom of the float cup 20 which is directly over said chamber, and is suitably connected with an arm 54 attached to the outlet-valve 49 which is hinged at 55. As soon as sufficient water has entered the main tank, in the process of filling, to reach the level of the said float 52, the latter will close the leaf valve 49 and retain it in closed position, so long as the water in said tank 5 remains above the level of the float 52, and thus prevent escape of water from the cups 20 while the valve remains closed. Whenever the water in the main tank is drawn off until it is below the level of the float 52, the latter will descend and open the valve 49, and the water in the cups 20 will escape through the pipe 48 and allow the floats 22 to descend and depress the ring-lever 25, which opens the supply valve 9.

The functions of the various parts having been explained in connection with the details of the construction the operation of the machine as a whole will now be described:— The pipe 8 having been properly connected with a water main or other convenient source of water supply, the washing-tank 5 and cups 20 being empty and the false bottom 18 in position on the ledge formed by the annular conduit 7, the weight of the floats 22 will be sufficient to open the valve 9, and the water will flow through the supply pipe 8 into the main or washing tank. As soon as the water has reached the opening of the tube 51, it will flow therethrough into the chamber 50 and raise the float 52 to close the opening of the tube 48. The water in the tank will continue to rise until it reaches the orifices 21, through which it will pass to the cups 20. As these fill the floats 22 will rise and through the ring-lever 25 will operate the disk 35 one notch and close the supply valve 9. The mechanisms are relatively adjusted so that the water will fill the siphon and set it in operation at the same time that the valve 9 is closed. The action of the siphon will be to draw the water from the washing tank 5, but having no effect upon the valve 9 until the water in said tank is below the level of the float 52. The latter will then descend, opening the leaf-valve 49 and allowing the water in the cups 20 to escape through the pipe 48, while the weight of the floats 22 will depress the lever 25 to open the inlet or supply valve 9 and allow the weight of the operating arm 41 to carry the pawl arm and pawl 40 back one notch to the initial position. The valve 9 being thus opened the water will flow into the tank 5 and another cycle of similar automatic actions will be repeated.

It will be obvious that various changes may be made in the details of construction, without departing from the spirit and scope of the invention, such, for instance, as the

arrangement of a leaf-valve in each of the float cups, and I do not wish, therefore, to be restricted to the precise construction shown.

Having thus described my invention what

5 I claim as new, is:—

1. In a photographic print washer, a tank having an inlet, a valve controlling said inlet, a siphon forming an outlet for said tank, a float-cup communicating with the tank, an outlet for said cup, a valve controlling said outlet, means for automatically operating said outlet valve, a float in said cup, and mechanism operatively connecting said float with the inlet valve.

15 2. In a photographic print washer, a tank having an inlet, a valve controlling said inlet, a siphon forming an outlet for said tank, a float-cup communicating with the tank, an outlet for said cup, a valve controlling said outlet, means for automatically operating said outlet valve, said means comprising a float chamber communicating with said tank, a float in said chamber, and connection between said float and the outlet valve, a float in said cup, and mechanism connecting the last mentioned float with the inlet valve.

25 3. In a photographic print washer, a tank having an inlet, a valve controlling said inlet, a siphon forming an outlet for said tank, a float-cup communicating with the tank, an outlet for said cup, a valve for said outlet, a float chamber communicating with said tank, a float in said chamber, operative connection between said float and the outlet

valve, a float in said cup, an operating lever, 35 connection between the lever and said inlet valve, and an indicating device connected with said lever.

4. In a photographic print washer, a tank having an inlet pipe, a valve controlling said inlet, a conduit arranged peripherally upon the bottom of said tank, inlet nozzles projecting at an angle with the conduit, a perforated false bottom supported on said conduit, a siphon forming an outlet for said tank, a float-cup communicating with the tank, an outlet for said cup, a valve controlling said outlet, means for automatically operating said outlet valve, a float in said cup, mechanism connecting the said float with the inlet valve. 40 45 50

5. In a photographic print washer, a tank having an inlet pipe, a valve controlling said inlet pipes, a siphon forming an outlet for said tank, a float-cup communicating with said tank, an outlet-pipe for the float-cup, an outlet-valve controlling the outlet-pipe, means for automatically operating the outlet-valve, an indicator, a float in said float cup, a ring-lever connected with said float and connection between the ring-lever and the inlet-valve and with said indicator. 55 60

In testimony whereof I affix my signature in the presence of two witnesses.

WILBERT A. AMON.

Witnesses:

EARLE R. FORREST,
C. V. HARDING.