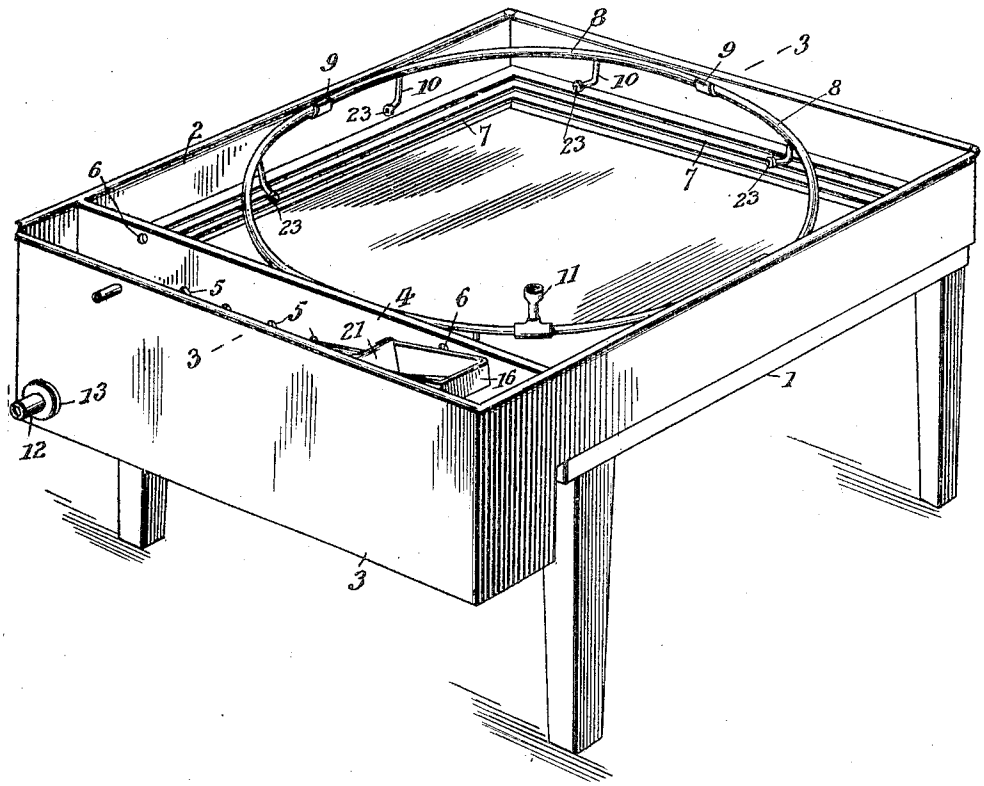
Oct. 9, 1923. 1,470,188

D. E. PRYDE

PHOTOGRAPHIC WASHING TANK

Filed April 21, 1921 2 Sheets-Sheet 1

Fig. 1.



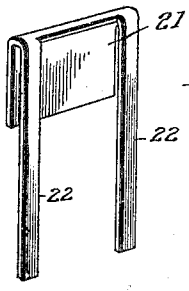


Fig. 2.

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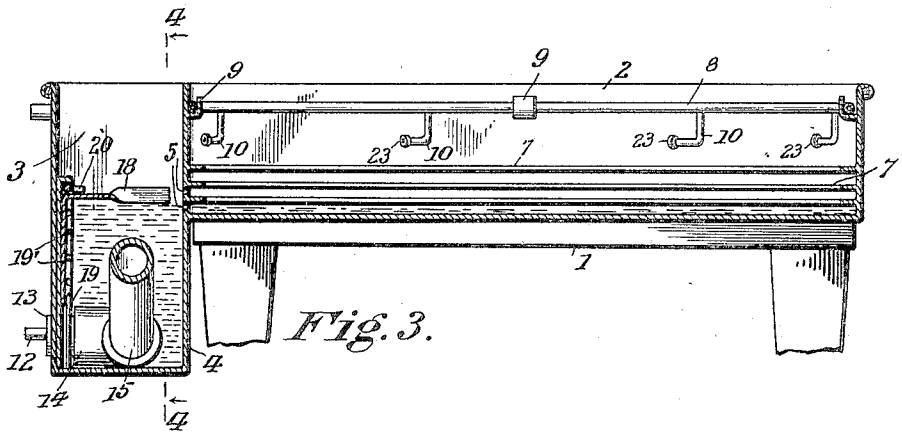


Fig. 3.

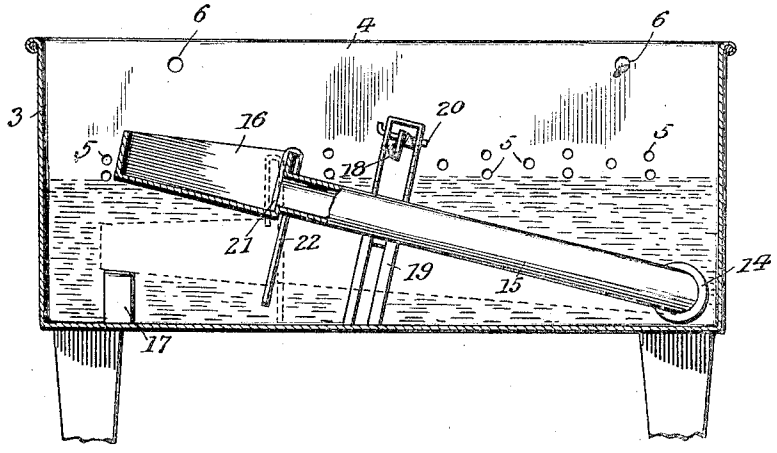


Fig. 4.

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UNITED STATES PATENT OFFICE.

DAVID E. PRYDE, OF HOQUIAM, WASHINGTON.

PHOTOGRAPHIC WASHING TANK.

Application filed April 21, 1921. Serial No. 463,108.

To all whom it may concern:

Be it known that I, DAVID E. PRYDE, a citizen of the United States, residing at Hoquiam, in the county of Grays Harbor and State of Washington, have invented certain new and useful Improvements in Photographic Washing Tanks, of which the following is a specification.

This invention relates to new and useful improvements in photographic washing tanks, and more particularly to a tank for washing prints, plates and films, and the primary object of the invention is to provide an improved device of this character which is automatic in operation, that is, automatic in the changes in the baths for the prints, plates, or films.

A further object of the invention resides in providing a device which is so constructed that it will direct the water of the bath in a circular motion, thus preventing the prints or films from adhering to the sides of the tank or congregating in the center thereof.

A still further object resides in so constructing the sides of the tank as to permit water to flow behind the prints or films which may by chance adhere to the sides of the tank, thus affording a means for removing such adhering prints or films from the sides of the tank.

Still another object resides in providing a float in connection with an outlet pipe for the water which float is provided with a sliding gate to control the opening in the outlet pipe upon the movement of the float upwardly or downwardly.

A still further object resides in providing a device of this character which is simple and durable in construction, inexpensive to manufacture and one which will be very efficient in use.

With these and other objects in view, my invention consists in the novel features of construction, combination and arrangement of parts as will be hereinafter referred to and more particularly pointed out in the specification and claims.

In the accompanying drawings forming a part of this application,—

Figure 1 is a perspective view of a device constructed in accordance with my invention; and set up for use;

Fig. 2 is a perspective view of the sliding gate valve, removed;

Fig. 3 is a longitudinal section as seen on the line 3—3 of Fig. 1, with the support or table broken away; and

Fig. 4 is a transverse section as seen on the line 4—4 of Fig. 3.

In describing the invention I shall refer to the drawings in which similar reference characters designate corresponding parts throughout the several views, and in which 1 designates a table or other support upon which my improved washing tank is adapted to be supported.

It is a well known fact that considerable difficulty has been experienced in various washing apparatus used in photographic laboratories, due to the fact that prints adhere to the sides of the tank or congregate in the center thereof, causing the prints to cling together and making it necessary for the attendant to constantly separate the same. My invention contemplates the provision of means to cause the water in the bath to flow in circular motion, thus preventing the adhering of the prints to the sides of the tank or otherwise congregating in the center thereof.

Another grave difficulty which has been experienced in the use of washing tanks is the changing of the bath. My invention contemplates means whereby the baths are changed automatically, without the use of a siphon.

In carrying out my invention, I provide a metallic tank 2 provided at one end with a compartment 3, the latter being deeper than the tank proper and forming with the tank substantially an L-shaped member. A wall 4 separates the tank from the compartment 3 and said wall is provided with series of openings 5 just above the floor of the tank proper, as clearly shown in Figs. 3 and 4 of the drawings. Additional openings or orifices 6 are provided in the wall 4 adjacent the upper edge thereof, and through the openings 5 and 6, water from the tank proper is adapted to flow to the compartment 3.

The walls of the tank 2 have flanges 7 formed thereon which project inwardly and provide means whereby when prints or films adhere thereto, water may enter between the flanges and in the rear of the prints or films to cause the latter to free themselves and move in the course of the flow of water through the tank.

A circular water conduit 8 is provided and supported upon brackets or the like 9 se-

cured to or formed on the inner walls of the tank 2 adjacent the upper edges thereof, and carried on this circular conduit are the angularly bent feed pipes or nipples 10. These nipples or feed pipes have the bent ends thereof directed somewhat in the same direction to cause a circular flow of water through the tank, as appears obvious from the construction disclosed, but certain of these pipes or nipples have the ends directed slightly toward the center of the tank so that the water at the latter portion will also be directed in a circular motion and thus prevent prints from congregating at this point.

A water inlet connection 11 is provided on the circular conduit 8 to which may be applied a flexible connection, (not shown), the latter in turn being connected with a source of supply. Thus, water may be readily supplied to the conduit to fill the tank.

It is obvious from the construction of the device above described that the water supplied to the tank 2 will be kept in a circular motion, thus causing the prints or films to move about constantly in the bath. At the same time the water in the tank will flow through the openings 5 to the compartment 3, wherein is provided an improved means for automatically controlling the outlet of the water for the changing of the bath.

A nipple 12 is provided in the outer wall of the compartment 3 adjacent the lower portion thereof which is mounted in a bearing or the like 13, and this nipple forms the outlet pipe which may lead to any preferred form of trough or other device for conveying the water away. Pivotally mounted on the bearing 13 within the compartment or chamber 3 is an L-shaped connection 14 to which is secured a pipe 15. This pipe has carried on its free end within the compartment a cup 16 which is adapted to form a float within the chamber or compartment 3. The pipe 15 opens into the cup 16 so that the contents of the latter may flow through the pipe at certain times.

A supporting bracket 17 is mounted on the floor of the compartment 3 which seats the cup 16 when in its lowermost position and a stop member is provided to limit the upward movement of the pipe. This stop member comprises an angularly bent strip 18 which is slidably mounted in a guide member 19 secured to the inner face of the outer side wall of the chamber 3, as clearly shown in Figs. 3 and 4 of the drawings. The guide member is provided in its side walls with pairs of aligning openings 19′ and a pin 20 is adapted to be inserted in these openings to hold the stop member 18 in any desired position over the pipe 15. Thus the pipe will be limited in its upward movement by the stop member and the latter may be adjusted to various positions in accordance with the changes of the bath desired.

When the device is in its normal position, the cup member and the pipe will be disposed in the position as shown in dotted lines in Fig. 4 of the drawings, and as the water flows into the chamber or compartment 3 from the tank 2 the cup, acting as a float, will have a tendency to rise upwardly to the position shown in full lines in Fig. 4.

A gate valve 21 is adapted to cover the opening between the pipe 15 and cup 16, the same being provided with curved and depending legs 22 so that when the cup 16 is in its floating or raised position this gate valve supported on the upper edge of the cup 16 will cover the opening in the cup 16 to prevent any flow of water through the pipe 15. As the water continues to flow into the compartment or chamber 3 and rises to a level, filling the cup 16, the latter will fall to its downward position as shown in dotted lines in Fig. 4, and in this position the legs 22 of the gate valve 21 will strike the floor of the chamber 3 and the gate valve will be held above the opening between the cup 16 and the pipe 15, thus permitting the water in the chamber 3 to flow freely through said pipe 15 and out of the device. Thus it will be seen that the device may be automatically operated to change the baths, the water flowing continuously through the conduit 8.

The free ends of the feed pipes or nipples 10 are threaded and provided with threaded caps 23, which caps have restricted openings therein to allow the water to flow therethrough. When these restricted openings become clogged with dirt or the like, the caps may be readily removed and the openings cleaned.

From the foregoing description of my improved device, the construction and operation thereof will be readily understood and it will be seen that I have provided a simple and inexpensive and efficient means for carrying out the objects of the invention.

While I have particularly described the elements best adapted to perform the functions set forth, it is obvious that various changes in form, proportion, and in the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the principles of the invention.

Having thus described my invention, what I claim as new is:

1. In a photographic washing apparatus, a tank, a circular water conduit supported therein, angularly bent nipples carried on said conduit, said nipples being disposed in substantially the same direction and certain of said nipples being directed slightly toward the center of the tank, means for supplying water to the conduit, and means for automatically controlling the outlet flow of water from said tank.

2. In a photographic washing apparatus, a tank, said tank provided with a plurality

of flanges carried on the inner walls of said tank in spaced relation to one another, means for supplying water to said tank and directing the same in a circular motion therein, a chamber in communication with said tank and means in the said chamber for automatically controlling the outlet flow of water from the tank and chamber.

3. In a photographic washing apparatus, a tank, said tank provided with flanges carried on the inner walls thereof in spaced relation to one another, a circular water supplying conduit removably supported in the upper portion of said tank, outlet nipples on said conduit directing the water to the tank in a circular motion, and means for automatically controlling the outlet flow of water from the tank.

4. In a photographic washing apparatus, the combination with a tank, and means for supplying water thereto; of a chamber in communication with said tank, and provided with an outlet opening, a pipe pivotally carried in said chamber and in direct communication with said outlet opening, a float cup carried on said pipe and in communication therewith, and a gate valve carried by said float cup to automatically control the flow of water from the chamber to said pipe.

5. In a photographic washing apparatus, the combination with a tank. and means for supplying water thereto; of a chamber in communication with said tank, and provided with an outlet opening, a pipe pivotally carried in said chamber and in direct communication with said outlet opening, a float cup carried on said pipe and in communication therewith, and a gate valve carried by said float cup adapted to cover the communication between the cup and the pipe when the former is in a floating and raised position and automatically uncover said communication when said cup is in its lowermost position in the chamber.

6. In a photographic washing apparatus, the combination with a tank, and means for supplying water thereto; of a chamber in communication with said tank, and provided with an outlet opening, a pipe pivotally carried in said chamber and in direct communication with said outlet opening, a float cup carried on said pipe and in communication therewith, a gate valve carried on the float cup to automatically control the flow of water through said pipe, and adjustable means within said chamber to limit the movement of said pipe and float cup.

7. In a photographic washing apparatus, a tank, a circular water conduit supported therein, outlet nipples on the said conduit directing the water to the tank in a circular motion, means carried by the interior walls of the tank to prevent photographic prints from sticking thereto, and means for automatically controlling the outrush flow of water from said tank.

In testimony whereof I affix my signature.

DAVID E. PRYDE.