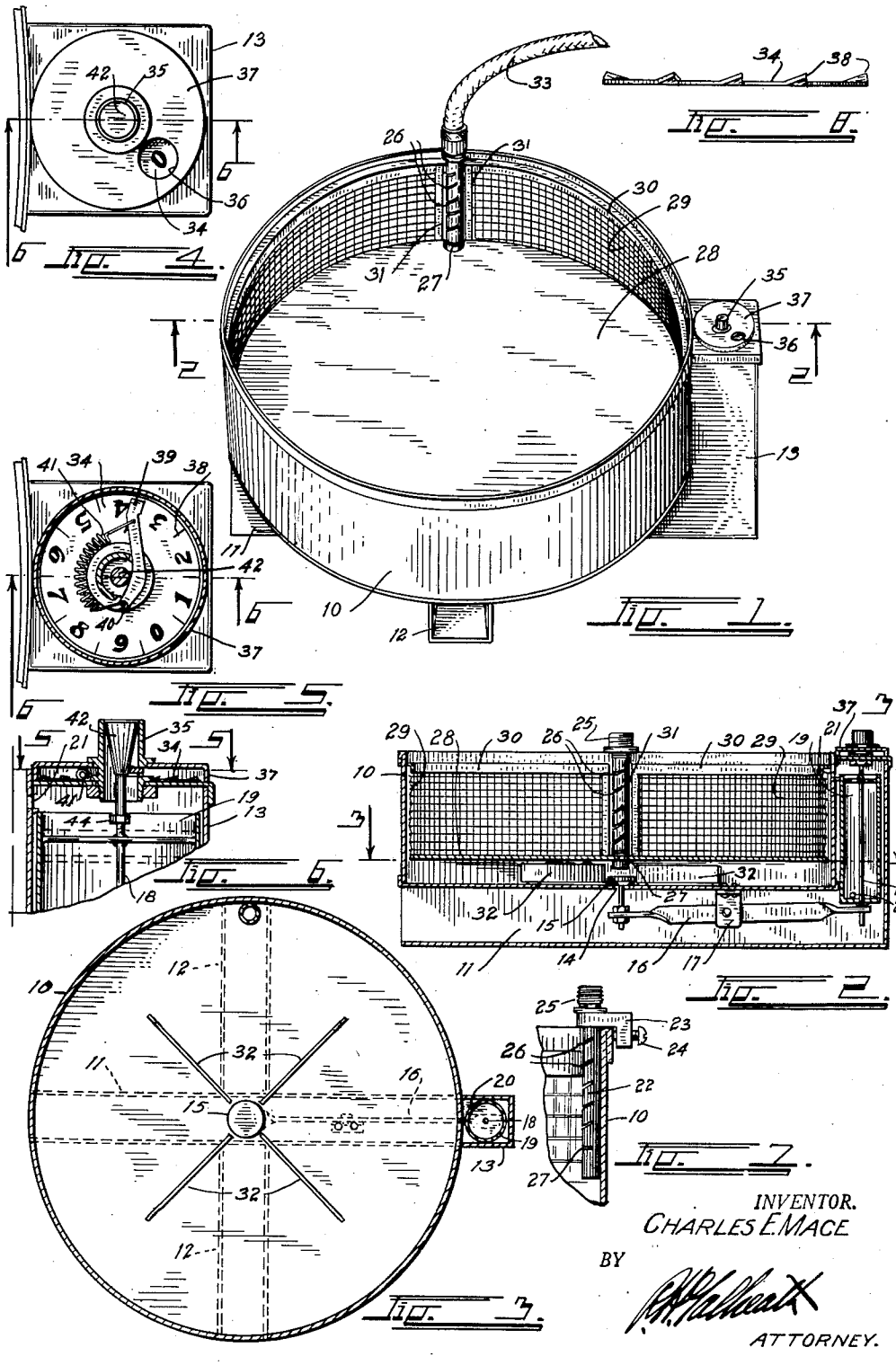
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INTERMITTENT PHOTOGRAPHIC PRINT WASHER

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INTERMITTENT PHOTOGRAPHIC PRINT WASHER

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5 Claims. (Cl. 95—97)

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This invention relates to a photographic print washer, and has for its principal object the provision of a device of this character which will automatically subject the prints to any desired number of changes of water without attention on the part of the operator.

Another object of the invention is to so construct the device that it will be impossible for prints to adhere to or pile on the sides and bottom of the washing tank, and in which the prints will be constantly kept separated from each other so as to obtain complete surface washing of each and every print.

Other objects and advantages reside in the detail construction of the invention, which is designed for simplicity, economy, and efficiency. These will become more apparent from the following description.

In the following detailed description of the invention, reference is had to the accompanying drawing which forms a part hereof. Like numerals refer to like parts in all views of the drawing and throughout the description.

In the drawing:

Fig. 1 is a perspective view of the improved print washer;

Fig. 2 is a cross-section therethrough, taken on the line 2—2, Fig. 1;

Fig. 3 is a horizontal section, taken on the line 3—3, Fig. 2;

Fig. 4 is an enlarged plan view of a counting device employed in the improved washer;

Fig. 5 is a horizontal section through the counting device, taken on the line 5—5, Fig. 6;

Fig. 6 is a fragmentary vertical section, taken on the line 6—6, Fig. 5; and

Fig. 7 is a detail view illustrating a water distributing nozzle employed in the improved print washer.

The improved photographic print washer employs a washing tank 10, preferably circular in shape. The tank is supported upon a tunnel tube 11 secured to, and extending diametrically across, the bottom thereof and on two sidewardly extending supporting tubes 12. The tunnel tube 11 is open at one of its extremities, which forms the discharge from the tank, and extends upwardly alongside the tank 10 at its other extremity to form a hydraulic weight chamber 13.

The tank 10 is provided with a central water discharge opening 14 closed by means of a weighted mushroom valve 15. The stem of the valve 15 extends downwardly through the discharge opening 14 into the tunnel tube 11, where it is connected to the extremity of a rocking arm

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16. The rocking arm 16 is pivotally mounted in a mounting bracket 17 extending downwardly from the bottom of the tank 10 and extends to a position in the weight chamber 13.

A vertically positioned weight cup rod 18 extends through the extremity of the rocking arm 16 in the chamber 13. An open-topped weight cup 19 is mounted on the rod 18 and rests upon the latter extremity of the rocking arm 16. The cup 19 is provided with a bleed hole 20 in or near its bottom. The upper extremity of the cup 19 is positioned immediately below an overflow opening 21 in the upper portion of the tank 10.

It can be readily seen that if the tank 10 is filled with water, the water will overflow through the overflow opening 21 into the cup 19. Since the volume of the overflow exceeds the volume discharging through the bleed hole 20, the cup 19 will gradually fill with water. Where the weight of the water in the cup 19 exceeds the weight on the mushroom valve 15, the latter will be pushed from its seat over the discharge opening 15, allowing the weight cup 19 to fall.

The water will now flow from the tank 10 through the discharge opening 14 and will drain from the cup 19 through the bleed hole 20. As soon as the water has drained from the cup 19, the weight of the valve 15 will force it closed again, lifting the weight cup 19 to its former position. The size of the bleed hole 20 is such that the cup 19 will not empty until after all of the water has been discharged from the tank.

The water is admitted to the tank through a vertical, removable nozzle tube 22 which can be clamped against the inside wall of the tank at any desired circumferential position by means of an L-shaped tank clamp 23 provided with a clamp screw 24. The bottom of the nozzle tube 22 is sealed. The upper extremity of the nozzle tube 22 terminates in a hose nipple 25 to which any suitable supply hose 33 may be attached.

A plurality of relatively narrow, inclined discharge slits 26 are formed in one side of a nozzle tube 22 in vertically spaced relation, and a horizontal bottom slit 27 is similarly formed therein. For the purposes of illustration, the slits 26 and 27 in Fig. 7 have been turned away from the side wall of the tank 10. In actual use they are turned to a tangential position, as shown in Figs. 1 and 2.

The tank 10 contains a removable, circular print tray 28, forming a false bottom therein. The sides of the print tray are formed from wire cloth 29 of a relatively coarse mesh. The upper edge of the wire cloth sides is bordered by means

of an angle strip 30 which extends outwardly therefrom into contact with the wall of the tank 10 to maintain the wire cloth in uniform, spaced relation thereto. The wire cloth sides are cut away at one point, as indicated at 31, to leave space for the insertion of the nozzle tube 22.

The print tray 28 is supported above the bottom of the tank 10 upon radially extending spacing members. The top of the print tray and the horizontal slit 27 in the nozzle tube are so positioned that, when the entire device is assembled, the latter split will be positioned immediately above the print tray 28. This is an important feature, since it maintains a sheet of rapidly moving water immediately over the bottom of the tray, which prevents prints from descending to, and adhering on, the bottom of the tray 28. It also prevents splashing as the tray is filling, since the fan-shaped jets from the inclined slits 26 are absorbed by the moving sheet of water on the bottom. The purpose of the plurality of inclined slits 26 is to provide a fan-shaped jet immediately above the surface of the water at all levels as the tank fills. These thin, fan-shaped jets separate the prints and maintain them separated by maintaining strata of differing velocity in the tank.

The wire cloth 29 serves an important purpose in that it prevents prints from adhering to the sides of the tank 10. It is impossible for the prints to adhere to the wire cloth, since a ring of high velocity water is maintained between the wire cloth and the tank wall which flows through the interstices thereof to force the prints away therefrom.

The radially extending partition members 32 serve a purpose in addition to supporting the print tray 28. It was found that the whirling water in the bottom of the tank would remain at the periphery thereof due to centrifugal force and would not flow to the discharge opening 14 until the water's velocity had subsided. These partition members, however, break up this circular flow below the tray 28 so that the water will rapidly discharge through the opening 14.

It is, of course, desirable to provide some means for indicating how many times the water in the tank has changed. This is accomplished in this improved print washer by providing a change counter. The counter consists of a number disc 34 mounted to rotate about a bushing 35. The number disc carries ten numbers which are individually visible through an opening 36 in a cap member 37. Between each number on the disc 35, the edge of the disc is slotted and turned upwardly to form a ratchet tooth 38. A ratchet arm 39 extends across the face of the disc to a point to successively engage the teeth 38. The ratchet arm 39 is pivoted at 40 on the bushing 35 and is constantly returned after each stroke by means of a spring 41.

The ratchet arm is actuated by means of an inverted cone 42 which is threaded on the upper extremity of the weight cup rod 19 and may be locked in the proper position thereon by means of a jam nut 44. The cone 42 rides in the bushing 35 and provides a guide for the upper extremity of the weight cup rod 18. The spring 41 holds the ratchet lever 39 against the surface of the conical member 42 so that each time the weight cup 19 drops, the surface of the cone 42 will swing the ratchet member 39 one stroke to revolve the number disc 34 one number space.

Thus, the operator can ascertain at any time how many washings the prints have been subjected to by simply glancing at the number on the disc 34.

In use, the tank is placed in or over any suitable sink or drain to receive the water discharging from the tunnel tube 11.

While a specific form of the improvement has been described and illustrated herein, it is desired to be understood that the same may be varied, within the scope of the appended claims, without departing from the spirit of the invention.

Having thus described the invention, what is claimed and desired secured by Letters Patent is:

1. A photographic print washer comprising: a circular tank having a discharge opening in the middle of its bottom; hydraulically-actuated means for opening said discharge opening at predetermined intervals; a circular removable imperforate sub-bottom in said tank of less diameter than the latter; partition members extending radially from said discharge opening and supporting said sub-bottom above the bottom of said tank; a cylindrical screen arising from the periphery of said sub-bottom in spaced relation to the wall of said tank; and means for admitting water to said tank.

2. A photographic print washer comprising: a circular tank having a discharge opening in the middle of its bottom; hydraulically-actuated means for opening said discharge opening at predetermined intervals; a circular removable sub-bottom in said tank of less diameter than the latter; partition members extending radially from said discharge opening and supporting said sub-bottom above the bottom of said tank; a cylindrical screen arising from the periphery of said sub-bottom in spaced relation to the wall of said tank; means for admitting water to said tank; a nozzle tube extending downwardly into said tank adjacent the wall thereof, therebeing a vertical open space in said screen and an opening in said sub-bottom for the passage of said nozzle tube and therebeing a plurality of relatively thin inclined water discharge slits formed in said nozzle tube and directed downwardly toward said sub-bottom.

3. A photographic print washer comprising: a circular tank having a discharge opening in the middle of its bottom; hydraulically-actuated means for opening said discharge opening at predetermined intervals; a circular removable sub-bottom in said tank of less diameter than the latter; partition members extending radially from said discharge opening and supporting said sub-bottom above the bottom of said tank; a cylindrical screen arising from the periphery of said sub-bottom in spaced relation to the wall of said tank; means for admitting water to said tank; a nozzle tube extending downwardly into said tank adjacent the wall thereof, therebeing a vertical open space in said screen and an opening in said sub-bottom for the passage of said nozzle tube and therebeing a plurality of relatively thin inclined water discharge slits formed in said nozzle tube and directed downwardly toward said sub-bottom; and a horizontal slit in said nozzle tube immediately above said sub-bottom to direct a sheet of water over the latter.

4. A photographic print washer comprising: a circular tank having a central discharge opening in its bottom; hydraulically-actuated means for opening said discharge opening at predetermined intervals; a removable imperforate sub-bottom in said tank; partition plates extending radially from said discharge opening and support-

ing said sub-bottom above the bottom of said tank; an annular wire screen secured to and extending upwardly about said sub-bottom to form a wall thereabout; means for uniformly spacing said screen inwardly from the side wall of said tank; and means for admitting water to said tank.

5. A photographic print washer comprising: a circular tank having a central discharge opening in its bottom; hydraulically-actuated means for opening said discharge opening at predetermined intervals; a removable imperforate sub-bottom in said tank; radially extending partition plates supporting said sub-bottom above the bottom of said tank; an annular wire screen secured to and extending upwardly about said sub-bottom to form a wall thereabout; an angle strip surrounding the upper edge of said screen and extending outwardly therefrom into contact with said tank for spacing said screen inwardly from the side wall of said tank; and means for admitting water above said sub-bottom, said partition plates preventing swirling of the water below said sub-bottom.

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