

Feb. 11, 1930.

D. C. McCANDLESS
PHOTOGRAPHIC PRINT WASHER

1,746,667

Filed Nov. 26, 1926

2 Sheets-Sheet 1

Fig. 1.

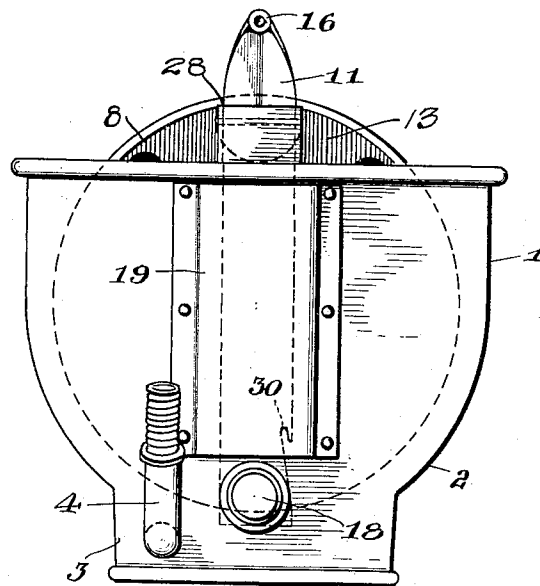
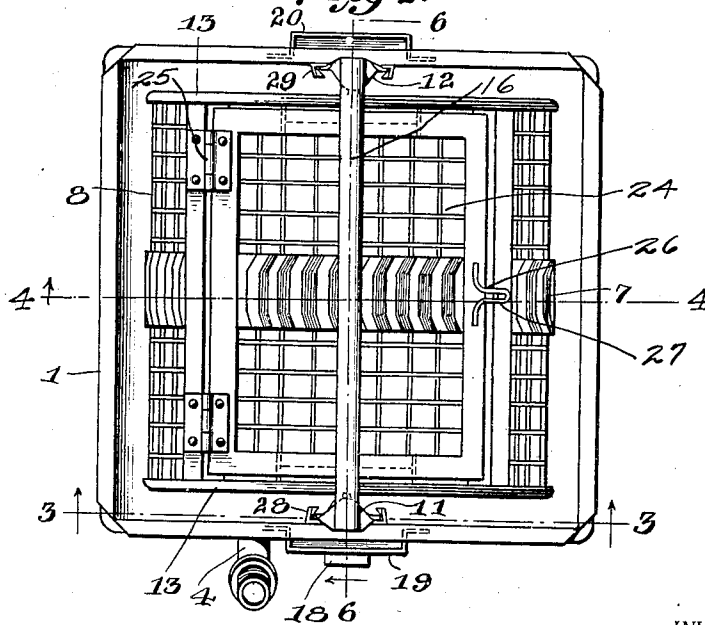


Fig. 2.



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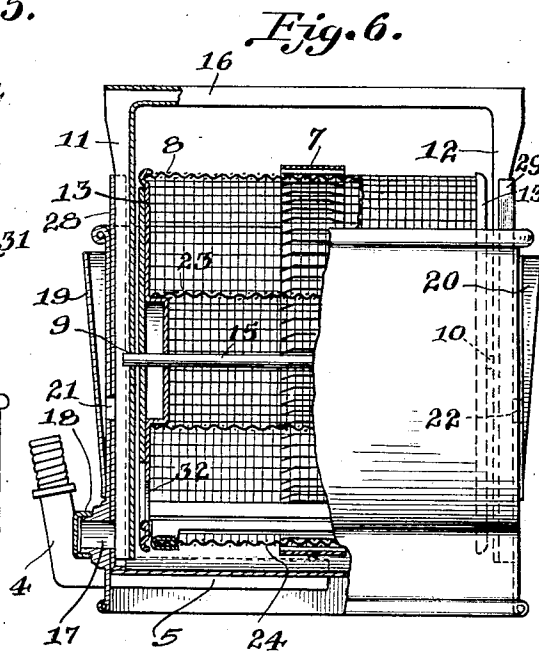
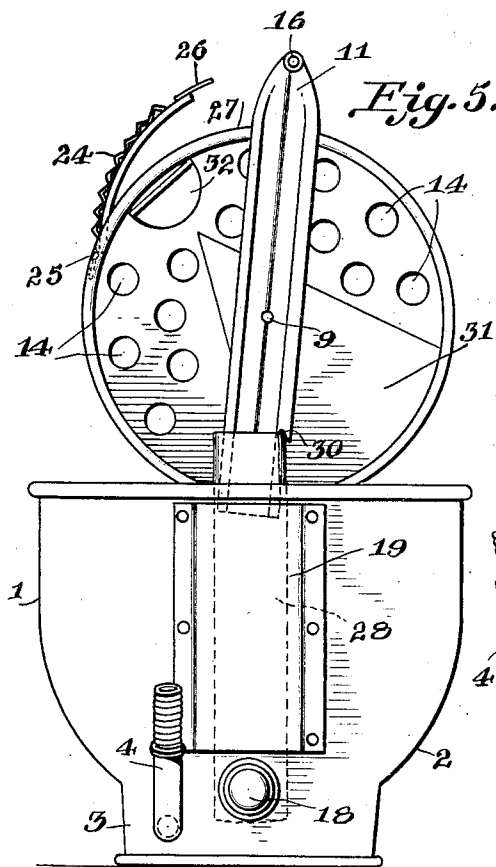
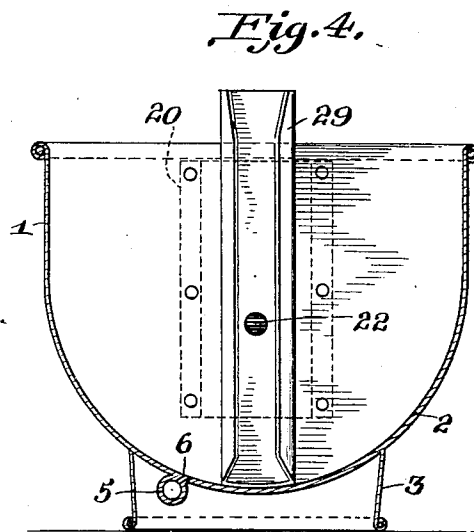
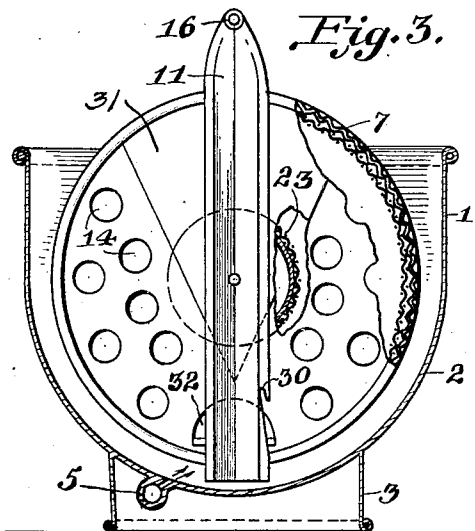
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PHOTOGRAPHIC PRINT WASHER

Filed Nov. 26, 1926

2 Sheets-Sheet 2



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PHOTOGRAPHIC-PRINT WASHER

Application filed November 26, 1926. Serial No. 150,332.

This invention relates to improvements in photographic print washers, particularly pertaining to improvements in a device patented by this applicant September 5, 1911, No. 1,002,418.

An object of this invention is to provide a photographic print washer, inexpensive to manufacture, and by means of which photographic print washing may be accomplished with a minimum amount of attention.

A further object of this invention is to provide a print washer free from objectionable elements of mechanism, and by means of which the prints may be completely immersed in the bath and maintained in motion, at the same time being separated by the flow of the water which supplies the bath.

A further object of this invention is to provide means for easily guiding the revolving cylinder into operative position and at the same time enable it to rise out of the bath without difficulty; also means at the ends of the cylinder for enabling the liquid of the bath to enter and leave the cylinder through its ends, thereby preventing suction and causing the prints to revolve with the direction of rotation of cylinder.

A further object of this invention is to provide auxiliary accelerating means for rotating the cylinder, also for preventing the force of liquid entering the container in which the cylinder rotates from causing prints to buckle and kink.

Other objects will appear from the following detailed description of the device, and as disclosed in the two sheets of drawings which are herewith made a part of this application.

In the drawings, Fig. 1 illustrates an end elevational view of the photographic print washer.

Fig. 2 represents a top plan view of the print washer with the elements in assembled relationship.

Fig. 3 illustrates a sectional elevational view of Fig. 2, taken along lines 3—3 and disclosing portions of the rotatable cylinder broken away.

Figure 4 represents a substantially vertical central sectional view with the cylinder omitted.

Fig. 5 illustrates an elevational view of the photographic print washer disclosing the rotatable cylinder partly removed from the receptacle or container for the bath.

Fig. 6 represents a sectional elevational view taken along line 6—6 of Fig. 2.

Numeral 1 designates a receptacle or tank for holding the liquid bath used in print washing, and may be made from any suitable material having, preferably, a semi-circular bottom portion as at 2, and provided with a base support 3 adapted to be placed in a sink or tub in such a manner that it will not be liable to be upset. The supply pipe 4 is adapted to be attached to a hose or other connection fitted to the faucet, whereby water may be supplied from the ordinary service pipes of buildings. A portion of the pipe 4 extends through the base 3 as at 5 a suitable distance along the bottom of the receptacle or container 1 and 2. A nozzle element 6 is adapted to extend in open communication from the pipe 5 through the bottom portion 2 of the container 1. The nozzle 6 is preferably located about midway between the sides of the container 1 in such a position that the liquid forced into the tank or receptacle 1 through the nozzle will impinge upon the corrugations or blades 7 fastened circumferentially to the rotatable cylinder 8. The cylinder 8 is adapted to be carried in suitable bearings 9 and 10 formed in the guide members 11 and 12. The cylinder 8 may be formed of any suitable material, having, preferably, its ends 13 made of sheet metal and provided with perforations 14, preferably counter-sunk inwardly on the cylinder, or outwardly, as may be desired, in order to enable the water or other liquid to enter and leave the cylinder through the ends, thereby preventing suction and causing prints to revolve with the direction of rotation of cylinder, thus causing the water to pass between the ends of the cylinder and the prints and preventing kinking and adhesion of prints at the ends. The main surface of the cylinder 8 may be composed of wire netting or other fabric secured to and extending between the circular side plates 13. The cylinder 8 is securely mounted upon the spindle 15, which is adapted to be loosely

mounted in the bearings 9 and 10 of the side guide plates 11 and 12. A cross bar 16 is adapted to extend between the guide members 11 and 12 and integrally attached thereto in such a manner that the bar 16 may be utilized as a handle or gripping member when it is desired to remove the cylinder from the bath in the container 1. The handle portion 16 and guide members 11 and 12 may be constructed in any desirable manner, provided they will function as a hanger for the revoluble cylinder 8 and as an efficient means for removing the cylinder from the bath.

The tank 1 is provided at the lowest point of one side with a drain element 17, normally closed by means of a cap portion 18, by which the liquid bath will be maintained in the tank until such time as it may be desired to clean the receptacle 1, when the cap is removed and the water will drain therefrom. The receptacle 1 is also provided on its opposite sides with over-flow ducts 19 and 20, which are adapted to be securely fastened against the sides of the tank at their lower ends and offset from the tank at their upper ends. Openings 21 and 22 are provided in the ends of the tank 1, at a point below the bearings 9 and 10, through which the water may flow into the ducts 19 and 20 and escape therefrom.

An auxiliary cylinder 23, of a smaller diameter than cylinder 8 is adapted to be concentrically located on the spindle 15 within the outer cylinder 8 in such a manner that it will rotate therewith and prevent prints from accumulating at the center of the outer cylinder. The inner cylinder 23 may be made of any suitable material, either perforated or solid, and is preferably attached by means of soldering or otherwise to the inner end portions 13 of the outer cylinder 8.

A door 24 of similar construction to the main body portion of the cylinder is hinged at one side of the door opening as at 25 in the outer circumference on the cylinder, and is provided at its free edge with suitable slotted keepers or latch plates 26 adapted to engage over lugs or hooks along the cooperating edge of the door opening as at 27.

Elements 28 and 29 securely fastened to the inner end portions of the container 1 are arranged and formed to receive in telescopic relationship the guide portions 11 and 12, thereby providing means for enabling the cylinder to be retained in the water or other liquid used as a bath, or easily raised from the bath for draining or removing the prints, the hanger for the cylinder comprising the side guide elements and a cross bar which may be used as a handle for raising or lowering, and at the same time as a brace for increasing the strength and rigidity of the device. In order to hold the cylinder in position at a desired point when removing from the bath, suitable notches 30 are provided in the

guide members 11 and 12 preferably near the free ends thereof in such a manner that when the cylinder is raised in its telescopic guide elements, the notched portions 30 may be brought into mesh with a portion of the guide plates 28 and 29, as clearly disclosed in Fig. 5 of the drawings, thereby enabling the cylinder to be self-retained in position for draining or removing the prints, as may be desired.

As an aid in draining the liquid from the cylinder and tank, the end plates 13 of the revolving cylinder 9 may be provided with suitable counterbalances 31, arranged to bring enlarged openings 32 in the plates 13 in register or approximate register with the drain opening 17 and the bottom of the tank 1.

In operation, this invention provides a photographic print washer in which a supply pipe 4 is connected with the water pipes of the building and the prints to be washed are located in the cylinder and the door in the cylinder closed, after which the cylinder is lowered into position within the tank 1 and in the telescopically arranged guides, whereupon the cylinder will be supported freely within the tank, having its axis concentric with the grooved bottom thereof. The water is then turned on and flows through the supply pipe and emerges from the nozzle 6 in the bottom of the container or tank with considerable force, striking the plates 7 on the circumference of the cylinder, with a substantial tangential force, at the same time the liquid from the nozzle will flow against the bottom of the receptacle and rise therein, the force of the incoming water will cause the cylinder to revolve. As the water rises in the tank, it will flow through the openings 21 and 22 into the over-flow ducts and out therefrom. The water line within the tank, of course, depends upon the point of over-flow in the ducts. The water continues to flow into the tank and will escape from the upper ends of the over-flow ducts and pipes into the sink or tub in which the tank is placed, and then flow off through the usual waste pipe connections.

In this device, the required attention of the operator is reduced to a minimum, inasmuch as the prints naturally gravitate to the bottom of the cylinder when placed therein and the water flowing from the nozzle 6 will strike against the prints and drive them against the side of the cylinder so that the force of the inflowing water will impart a rotary motion, both for this reason and for the reason of striking against the corrugations 8. The prints will, thereupon, be separated and naturally follow the course of the water so as to be thoroughly and rapidly washed. As the prints rise with the water and reach the surface, they flow across the cylinder from one side to the other along the

water line and will consequently be prevented from adhering to the side of the cylinder. An inner cylinder 23 is provided, of either a perforated or solid construction, rotatable, which will prevent the prints from accumulating at the center of the outer cylinder. The ends of the cylinder 13 are perforated and the perforations counter-sunk inwardly or outwardly as may be desired, in order to enable the water or other liquid to enter and leave the cylinder through the ends, thereby preventing suction and causing the prints to revolve with direction of rotation of cylinder, thus causing water to pass between the ends of cylinder and prints, preventing kinks, buckle and adhesion of the prints to the ends. A very great aid in the matter of revolving the cylinder in the bath has been provided in the form of corrugated iron or other suitable plates attached to the circumference of the outer cylinder edge, approximately at right angles to the direction of motion, which will function as paddles to accelerate the rotary motion of the cylinder, thus preventing the force of liquid entering the container in which the cylinder rotates from causing the prints to buckle and kink. The hanger in this invention is removable with the cylinder and easily adjusted in position by means of the telescopic guide members, and is provided with a means for holding the cylinder at a point in cooperation with the container removed from the liquid bath for draining purposes or removing prints and the like. The cylinder will, by its rotation, keep the prints thoroughly agitated so that uneven washing of the prints will be avoided, and will accommodate prints of any size or weight. The cylinder serves to hold the prints directly in the path of the flow of water and will thereby keep the prints made on heavy paper separated so that they may be completely washed.

It is to be understood that the device as disclosed and described above is merely illustrative and that substitutions and alterations may be made therein, when desired, as are within the scope of this invention.

What I claim is:—

1. A print washer comprising a container, a rotatable cylinder in the container for receiving the prints, means for rotating the cylinder consisting of projections from the cylinder, openings in the bottom of the container through which the washing liquid may be forced for impinging against the projections and rotating the cylinder, a hanger for rotatably mounting the cylinder, guiding means for receiving the hanger within the container.

2. A print washer comprising a container, a rotatable cylinder in the container for receiving the prints, means for rotating the cylinder consisting of projections from the cylinder, openings in the bottom of the container

through which the washing liquid may be forced for impinging against the projections and rotating the cylinder, a hanger for rotatably mounting the cylinder, guiding means for receiving the hanger within the container, means on the hanger for retaining the cylinder at a desired point in relation to the container.

3. A print washer comprising a container, a rotatable cylinder in the container for receiving the prints, means for rotating the cylinder consisting of projections from the cylinder, openings in the bottom of the container through which the washing liquid may be forced for impinging against the projections and rotating the cylinder, a hanger for rotatably mounting the cylinder, guiding means for receiving the hanger within the container, means within the cylinder for preventing the prints from accumulating at the center of the cylinder.

4. A print washer comprising a container, a rotatable cylinder in the container for receiving the prints, means for rotating the cylinder consisting of projections from the cylinder openings in the bottom of the container through which the washing liquid may be forced for impinging against the projections and rotating the cylinder, a hanger for rotatably mounting the cylinder, guiding means for receiving the hanger within the container, means within the cylinder for preventing the prints from accumulating at the center of the cylinder, consisting of an auxiliary cylinder concentrically arranged within the first named cylinder.

5. A print washer comprising a container, a rotatable cylinder in the container for receiving the prints, means for rotating the cylinder consisting of projections from the cylinder, openings in the bottom of the container through which the washing liquid may be forced for impinging against the projections and rotating the cylinder, a hanger for rotatably mounting the cylinder, guiding means for receiving the hanger within the container, the washing liquid being allowed to enter and leave the cylinder through the ends thereof thereby preventing suction and causing the prints to revolve with the direction of motion of the cylinder and the water to pass between the ends of the cylinder and the prints.

6. A print washer comprising a container, a rotatable cylinder in the container for receiving the prints, means for rotating the cylinder consisting of projections from the cylinder, openings in the bottom of the container through which the washing liquid may be forced for impinging against the projections and rotating the cylinder, a hanger for rotatably mounting the cylinder, guiding means for receiving the hanger within the container, the washing liquid being allowed to enter and leave the cylinder through the

ends thereof thereby preventing suction and
causing the prints to revolve with direction
of motion of the cylinder and the water to
pass between the ends of the cylinder and the
5 prints, consisting of suitable perforations in
the ends of the cylinder.

In testimony whereof I affix my signature.
DAVID CHARLES McCANDLESS.

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