

D. C. McCANDLESS.
 PHOTOGRAPHIC PRINT WASHER.
 APPLICATION FILED APR. 7, 1910.

1,002,418.

Patented Sept. 5, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

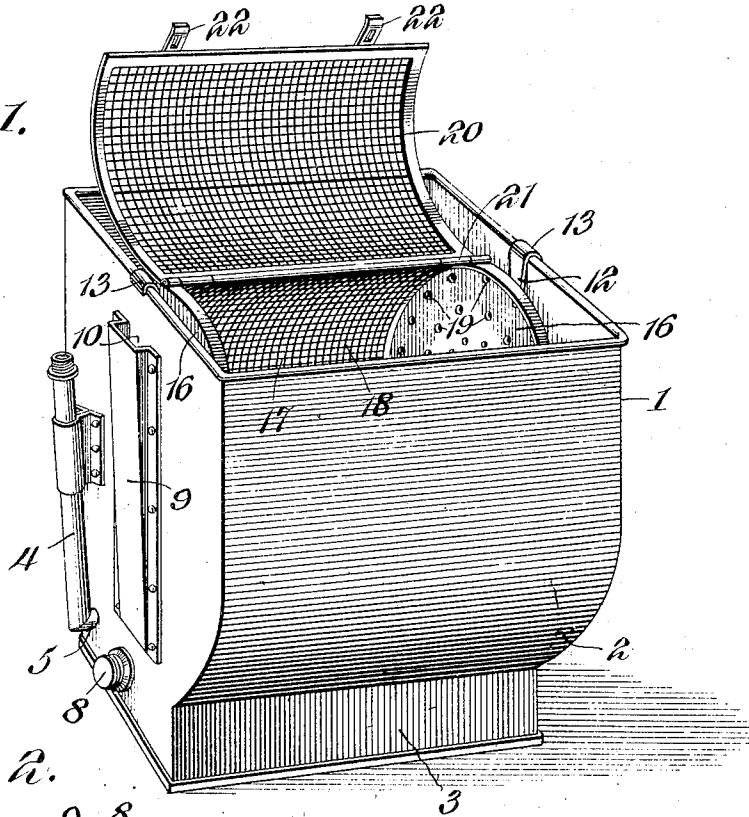


Fig. 2.

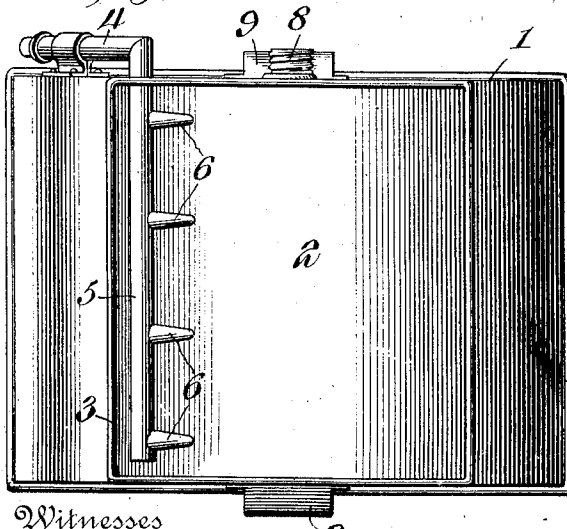
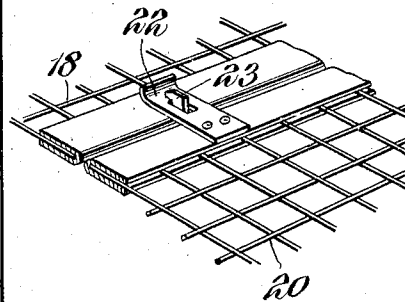


Fig. 6.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

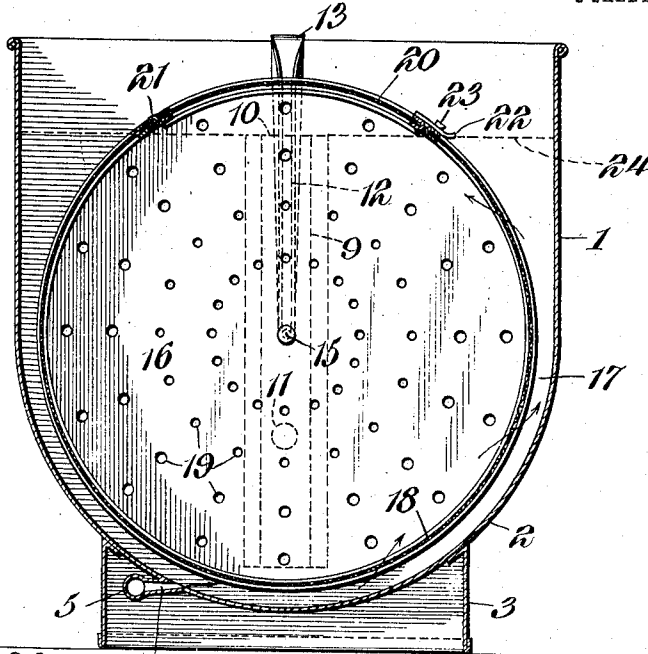


Fig. 4.

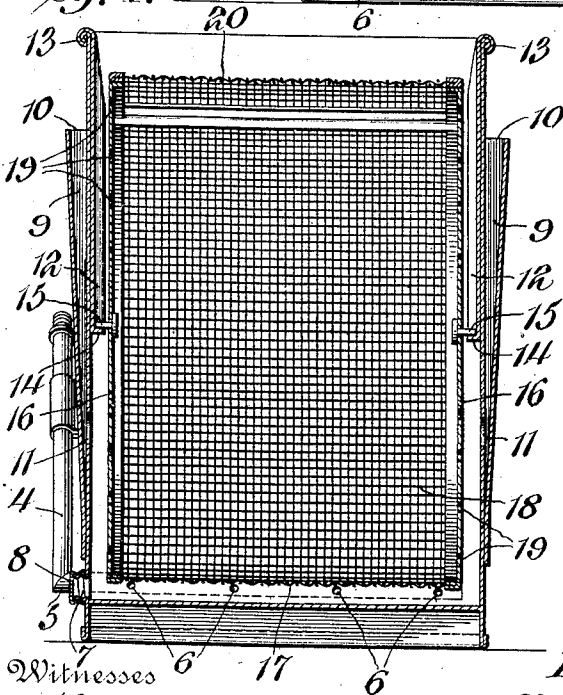
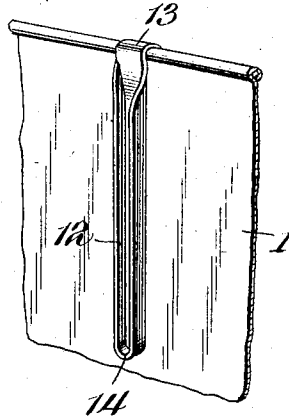


Fig. 5.



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UNITED STATES PATENT OFFICE.

DAVID CHARLES McCANDLESS, OF BOISE, IDAHO.

PHOTOGRAPHIC-PRINT WASHER.

1,002,418.

Specification of Letters Patent.

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Application filed April 7, 1910. Serial No. 554,039.

To all whom it may concern:

Be it known that I, DAVID CHARLES McCANDLESS, a citizen of the United States, residing at Boise, in the county of Ada and State of Idaho, have invented a new and useful Photographic-Print Washer, of which the following is a specification.

This invention relates to machines for washing photographic prints, and the object of the invention is to provide a machine which will be inexpensive to manufacture and simple in its construction, and by the use of which photographic prints may be thoroughly washed with little or no attention on the part of the operator.

A further object of the invention is to provide a machine which will be free of complicated mechanism and in which the prints may be completely immersed in the bath and kept in motion and separated by the flow of the water which supplies the bath.

With these objects, and such other incidental objects as may hereinafter appear, in view, the invention consists in certain novel features of an apparatus such as is illustrated in the accompanying drawings, all of which will be hereinafter first fully described and then more particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of a print washer embodying my improvements. Fig. 2 is a bottom plan view of the same. Fig. 3 is a vertical longitudinal section thereof. Fig. 4 is a transverse vertical section. Fig. 5 is a detail perspective view of one of the bearings for the drum. Fig. 6 is a detail perspective view of the fastening for the door of the drum.

In carrying out my invention, I employ a tank 1 having a semi-circular bottom 2 and provided with a base or support 3, the lower edge or bottom of which is flat so that the tank may be set within a sink or tub and be supported therein without any liability to be upset. To one side of the tank I secure a supply pipe 4 adapted to be attached to a hose or other connection fitted to a faucet whereby water may be supplied from the water service pipes of the building to the said supply pipe, the lower end of which is carried transversely through the base 3, as shown at 5, and provided with a series of nozzles 6 disposed longitudinally of the tank and opening into the bottom of the tank at an angle to the radius of the same. The tank is also provided on one side at its low-

est point with a drain 7 normally closed by means of a cap or similar device 8 by which the water will be maintained in the tank until such time as it may be desired to clean the same when the cap is removed and the water will at once drain therefrom. The tank is also provided on its opposite sides with overflow ducts 9 which are secured close against the sides of the tank at their lower ends and are offset from the tank at their upper ends, thereby providing overflow openings 10 through which the water rising through the ducts may escape. Communication between the interior of the tank and the said ducts is established through openings 11 in the sides of the tank, as clearly shown in Fig. 4, the said openings being located below the bearings 12 which consist of grooved brackets provided at their upper ends with lips 13 adapted to engage the upper beaded edge of the tank and thereby suspend the bearings, as will be readily understood on reference to Figs. 4 and 5. These bearings or brackets are preferably soldered or otherwise rigidly secured to the tank so as to prevent them from shifting thereon, and their lower ends are closed, as indicated at 14, so as to provide supports for the trunnions 15 projecting centrally from the sides of a drum 17 adapted to revolve on the said bearings within the tank and to hold the prints to be washed. This drum consists of circular side plates 16 of sheet metal or similar material and a cylinder 18 of wire netting or other reticulated fabric secured to and extending between the circular side plates. The side plates are provided with perforations 19 whereby a thorough circulation of the water is permitted and also the adhering of the prints to the side plates is prevented. The cylindrical body 18 has a door 20 which is of a similar construction to the main portion of the body and is hinged at one side of the door opening, as shown at 21, and is provided at its free edge with slotted keepers or latch plates 22 adapted to engage over headed lugs or hooks 23 projecting from the corresponding edge of the door opening whereby the door may be held closed after the prints have been placed within the drum. The door being constructed of reticulated fabric, will be sufficiently elastic to permit the latch plates 22 to be drawn over the hooks or headed lugs 23, whereupon the tension of the body of the drum and of the door will draw the said

plates under the projecting portion of the heads of the said lugs so that the door will be firmly held in its closed position.

The construction and arrangement of the several parts of my machine being thus made known, it is thought the operation and advantages of the same will be readily understood and appreciated.

The supply pipe 4 is connected with the water pipes of the building or operating room, as before stated, and the prints to be washed are placed within the drum, the drum closed, and the trunnions on the sides of the same engaged in the upper ends of the grooved brackets or bearings 12, after which the drum is permitted to drop or be lowered until the trunnions 15 rest on the ledges or lips 14 at the lower ends of the said brackets, whereupon the drum will be supported freely within the tank with its body disposed concentric with the curved bottom of the tank. The water is then turned on so as to flow through the supply pipe and will emerge from the nozzles 6 with considerable force so as to strike against the drum in a plane substantially tangential thereto and flow against the curved bottom of the tank so as to rise therein and follow the side of the same, as indicated by the arrows in Fig. 3, the force of the water causing the drum to revolve. As the water rises within the tank, it will flow through the openings 11 into the overflow ducts 9 and will then continue to rise until it reaches the water-line indicated by the dotted line 24 in Fig. 3, which is determined by the position of the upper ends of the said overflow ducts and is located below the highest point of the drum, as will be readily understood. The water continuing to flow into the tank will escape from the upper ends of the overflow ducts 9 and pass into the sink or tub in which the tank is placed and then pass off through the usual waste pipe connections.

It will be observed that no attention on the part of the operator is required in the washing of the prints, inasmuch as the prints will naturally gravitate to the bottom of the drum when placed therein and the water flowing from the nozzle 6 will consequently strike against the prints and drive them against the side of the drum so that the force of the inflowing water will impart a rotary motion to the drum. The prints will thereupon be separated and will 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 of the same, they will float across the drum from the one side to the other along the water-line and will consequently be prevented from adhering to the side of the drum to such an extent as will prevent the water reaching every point of their surfaces or to hold the prints to each other, as will be understood.

The water will, of course, pass upward on the outer side plates of the drum, as will be readily understood on reference to Fig. 4, and will flow through the perforations in the said side plates so as to carry the prints away from the said side plates and prevent the adhering of the prints thereto. The prints may be left in the drum for any desired length of time and during that time the operator may perform such other duties as may be required of him without any necessity of watching the progress of the washing or the condition of the prints. The drum 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 drum serves to hold the prints directly in the path of the flowing water and will thereby keep the prints made on heavy paper separated so that they will be completely washed, and when prints on light paper are being treated, the force of the water will be found sufficient to keep the prints separated and the drum may be dispensed with.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims appended hereto.

Having thus described the invention, what I claim as new, and desire to secure by Letters Patent, is:—

1. A photographic print washer, comprising a suitable tank, a drum for receiving the prints to be washed and mounted for rotation in said tank, said drum having passages through its peripheral walls, and means for causing a flow of water against the peripheral walls of the drum and through the passages therein to the interior of the drum in a direction to impart rotative movement to the drum and to agitate the prints.

2. A photographic print washer comprising a suitable tank, a rotatable drum therein having reticulated walls, and means for introducing water into the lower part of the tank exterior to the drum in a direction to impinge upon the reticulated walls of the drum to impart rotative movement to the drum and also to pass to the interior thereof.

3. A photographic print washer comprising a suitable tank, a rotatable drum pro-

vided with reticulated walls and mounted for rotation within said tank, and a series of nozzles arranged side by side and positioned to direct streams of water against the peripheral walls of the drum to impart rotative movement to said drum and to pass to the interior thereof through said reticulated walls to agitate prints within the drum.

4. A photographic print washer comprising a suitable tank, a rotatable drum mounted within the tank and provided with reticulated peripheral walls and with end walls with passages therethrough, and means within the tank and exterior to the drum for directing water against the peripheral walls of the drum to impart rotative movement thereto and to enter the drum to agitate prints therein.

5. The combination of a tank, grooved brackets secured to the opposite sides of the tank and having inwardly-extending lips at their lower ends, a drum provided with trunnions engaging the said brackets and resting on said lips, said drum consisting of perforated side plates and a reticulated cylindrical body extending between the said side plates, and a series of water-supplying nozzles entering the bottom of the tank at an angle to the radius of the drum.

6. The combination of a tank, a reticulated drum rotatably mounted therein and adapted to contain photographic prints, a series of water-supplying nozzles entering the bottom of the tank at an angle to the radius of the drum, and overflow ducts on the sides of the tank communicating with the interior thereof and having their upper ends disposed below the highest point of the drum.

7. In a print washer, a rotatable receptacle for prints, and water directing means positioned to cause streams of water to impinge upon and pass through the print confining walls of the print receptacle to impart rotative motion thereto and to engage the prints within the receptacle.

8. A print washer comprising a suitable receptacle, a rotatable print holder therein

provided with peripheral walls having numerous passages therethrough, and a plurality of nozzles arranged in a series, which series extends in the same direction as the axis of rotation of the print receptacle, said nozzles being positioned to direct streams of water against the lower portion of the rotatable member and through the passages therein to the interior thereof.

9. A print washer comprising a tank having a curved bottom and a supporting flange below said curved bottom, a rotatable drum mounted in said tank and having its peripheral walls provided with numerous passages, and a supply pipe extending through the supporting flange and provided with a series of nozzles opening through the bottom of the tank and positioned to direct streams of water against the outer walls of the drum to rotate the latter and flow through the passages in said outer walls.

10. A print washer comprising a tank, a print receiving drum therein having the peripheral and end walls provided with numerous passages for water, escape passages in the tank adjacent the end walls of the drum, and a water directing means extending across the bottom of the tank in substantial parallelism with the axis of rotation of the drum and positioned to cause water to impinge the peripheral wall of the drum to rotate the latter and cause an inflow of water to the interior of the drum.

11. A photographic print washer comprising a tank, a rotatable drum therein, and a supply pipe for water having outlets arranged in a series extending in the same direction as the axis of rotation of the drum, said outlets being positioned to direct a plurality of streams of water into approximately tangential relation to the outer surface of the drum.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

DAVID CHARLES MCCANDLESS.

Witnesses:

A. H. BRICKENSTEIN,
R. E. BOYCE.