March 16, 1937. L. A. BONISH 2,074,100

PHOTOGRAPH AND FILM WASHING MACHINE

Filed April 29, 1935

Fig. 1.

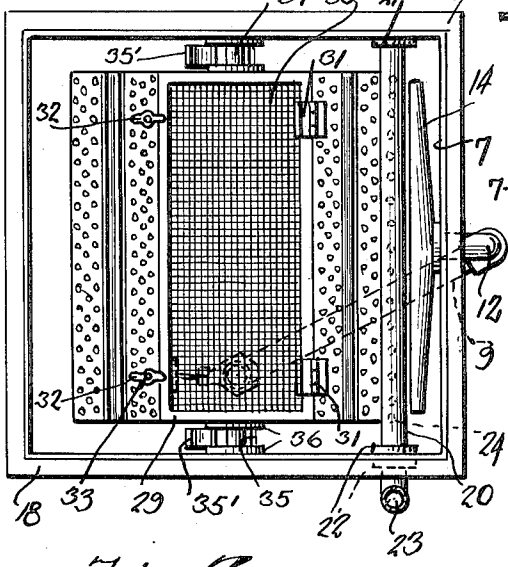


Fig. 3.

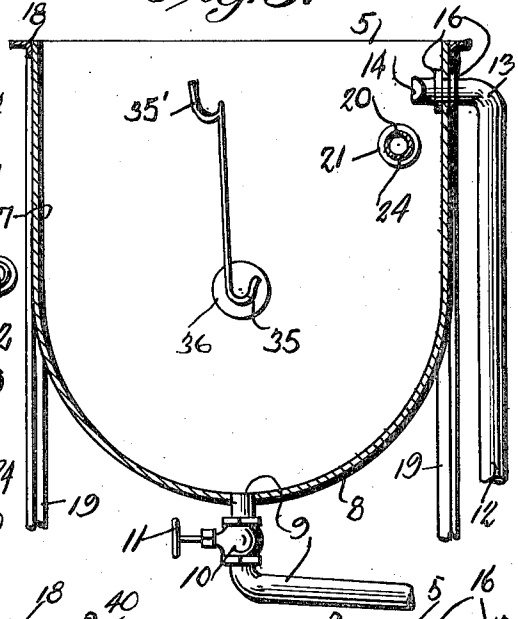


Fig. 2.

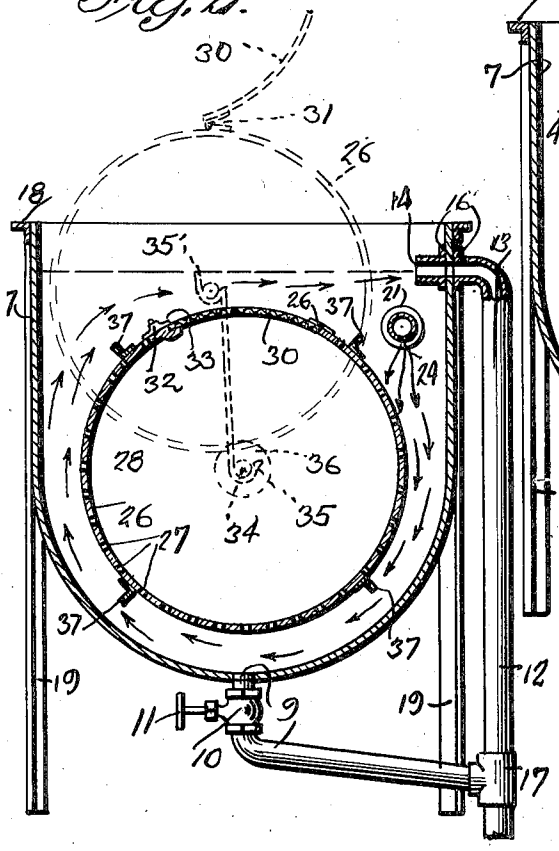
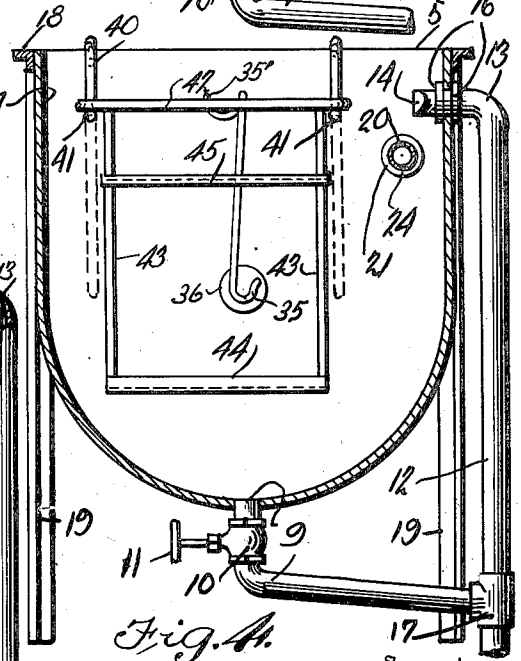


Fig. 4.



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PHOTOGRAPH AND FILM WASHING MACHINE

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Application April 29, 1935, Serial No. 18,898

1 Claim. (Cl. 95—93)

This invention relates to improvements in photograph and film washing machines and the invention comprises a casing mounted upon a suitable support having water inlet and outlet pipes which may be connected to a common source of water supply. Mounted rotatably within the casing is a drum having a perforated wall and an opening adapted to be closed by a screen or other imperforate plate. The invention includes also means provided on the cylinder for being impinged by a water stream or jet to cause intermittent rotation of the cylinder or drum in which the films or photographs are placed, effecting the turbulating of the washing liquid.

The primary object of this invention is to provide a device of the above mentioned character adapted to wash photographs, films and plates in a quicker and more economical manner than has heretofore been accomplished.

A further object of this invention is to provide a photograph washer of the above mentioned character with comparatively few parts to become out of order, requiring a minimum amount of attention, and capable of cleansing or washing with no destruction to photographs.

Other objects and advantages of the invention will become apparent during the course of the following description forming a part of this specification and in which taken with the drawing,

Figure 1 is a top elevational view of the device embodying this invention illustrating the rotary imperforate drum and showing the hinged door therefor whereby photographic prints may be inserted and removed therein;

Figure 2 is a vertical cross-sectional view illustrating the construction and arrangement of the drum within the casing and further showing the manner in which the water supply and outlet pipes are associated with respect to the rotary drum;

Figure 3 is a vertical cross-sectional view illustrating the rotary drum removed from its bearing and further showing the manner in which the water inlet and outlet pipes are arranged; and

Figure 4 is a vertical cross-sectional view of a casing embodying this invention, illustrating the rotary drum removed and showing in lieu thereof a rack for supporting photographic films and plates.

In the drawing, wherein for the purpose of illustrating the invention and wherein like reference characters will be employed to designate like parts throughout the same, the reference character 5 will generally be employed to designate a washing machine casing having end and side walls 6 and 7 respectively. The side walls 7 are connected at the bottom by means of a curved bottom wall 8 and at the lowest extremity thereof is positioned an outlet pipe 9 having interposed therein a valve 10 provided with a conventional operating handle 11.

Mounted on one of the side walls of the casing 5 is an overflow pipe 12 having the upper end as at 13 bent angularly and projecting through an opening formed in the casing whereby an outlet nozzle 14 may be secured thereto as clearly shown in Figure 1. The outlet nozzle 14 is elongated and is provided in the front wall with a slot 15. Bushings or washers 16 may be mounted on both sides of the casing wall 7 surrounding the pipe 13 and the lower end of the pipe 12 may be connected to the pipe 9 as at 17 by means of a suitable union.

The structure thus far described may be supported upon a suitable frame 18 having supporting legs 19 and it will be noted that the upper edge of the frame 18 is bent outwardly to provide a flange lying flush with the upper edge of the casing 5.

Extending between the end walls 6 of the casing 5 is a spray pipe 20 having one end as at 21 connected to a bushing while the opposite end extends through the end wall 6 through suitable bushings 22 and terminates on the outside of the casing wall 6 as at 23 whereby a water supply pipe may be connected thereto having the opposite end connected to a domestic water faucet. Perforations 24 are formed in the bottom of the spray pipe 20 whereby several jets of water will be directed downwardly and toward one side wall 7 of the casing 5. The pipe 20 will normally lie under the water level of the receptacle 6.

Rotatably mounted within the casing 5 is a metal drum 26 made entirely of screen or metal having perforations 27 formed in the periphery thereof and said drum is closed at the ends by means of end walls 28. An elongated opening is formed in the periphery of the drum 26 and is adapted to be closed by a screen frame 29 having a wire fabric 30 stretched thereover as clearly illustrated in Figure 1. The screened frame 29 is hinged to the drum 26 as at 31 and is provided with fasteners 32 pivotally mounted as at 33 upon the drum so that a projection formed on the fastener will overlap the swinging end portion of the frame 29. The drum 26 is provided on the end wall 28 with a stub shaft 34 adapted to be received in bearings 35 secured to the end

walls 6 of the casing 5 by means of a bushing plate 36. Additional bearings 35' are provided for supporting the drum in a raised position partially out of the washing liquid.

Formed at intervals upon the periphery of the drum 26 are elongated fins or vanes 37 adapted to be presented in the path of the downwardly projected water jet from the pipe 20 through the perforations 24. It will be noted that the jet openings 24 are presented tangentially to the drum 26 so that the water will impinge the vanes or fins 37 and cause a rotation of the drum and carrying with it the contents thereof whereby all sides and portions of the photographic films will be exposed to a cleaning liquid such as water thereby saving time in the operation of washing the photographic films and photographs.

As illustrated in Figure 4, there is provided a rack which may be used in lieu of the drum 26 after the drum has been removed from its bearings 35 which necessitates merely the lifting of the drum therefrom providing adequate space for the photographic film rack which includes U-shaped end members 40 adapted to extend over the end walls 6 of the container 5 and said U-shaped members 40 are provided with horizontal bars 41 upon which the photographic film receiving rack may be received which includes a horizontal bar 42 having the ends supported by the horizontal bars 41 and adjacent the bars 41 there are provided downwardly extending bars or channel-shaped frame members 43 connected at the bottom by means of a channel-shaped member 44 and braced at the upper end by means of suitable brace bars 45.

For a consideration of the operation of the invention, it will be first supposed that the operator desires to wash the photographic prints after they have been treated with the usual chemical. The first step comprises inserting the photographic prints within the drum 26 by opening the wire screened frame 29 in the desired manner. Before the photographic prints have been thus placed, the water supply is turned on through the pipe 23 which causes the jets of water issuing through the perforations 24 to impinge upon the vane 37 and rotate the drum 26. After a period of time, the container 29 may be lifted vertically and supported on the bearings 35' to remove the washed prints and replenish the work. Water may run out of the pipe 12 to a waste pipe or sink when the level in the tank 5 exceeds the overflow pipe, 14. After the photographic films have been washed and the apparatus is out of use, the valve 10 may be turned so as to cause the contents of the receptacle 5 to drain through the pipe 9 and out of the entire receptacle.

It is to be understood that the form of the invention herewith shown and described is to be taken as the preferred embodiment of the same and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as claimed.

I claim:—

A photograph and film washing machine comprising a receptacle, a rotary drum having a perforated peripheral wall mounted within the receptacle, longitudinal vanes projecting outwardly of the peripheral wall of the drum and of the same length as the drum, an overflow pipe for the receptacle having one end entering the side wall of the receptacle adjacent its upper end, a water inlet pipe extending longitudinally of the receptacle at the side thereof adjacent the overflow pipe with the ends supported in the walls of the receptacle and substantially in the horizontal plane of the overflow pipe to project a spray of water tangentially downwardly to the rotary perforated drum and in impelling contact with the vanes and a drain pipe at the lower end of the receptacle.

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