F. W. EMERSON.

PRINT WASHING MACHINE.

APPLICATION FILED APR. 20, 1908.

930,654. Patented Aug. 10, 1909.

Fig. 1

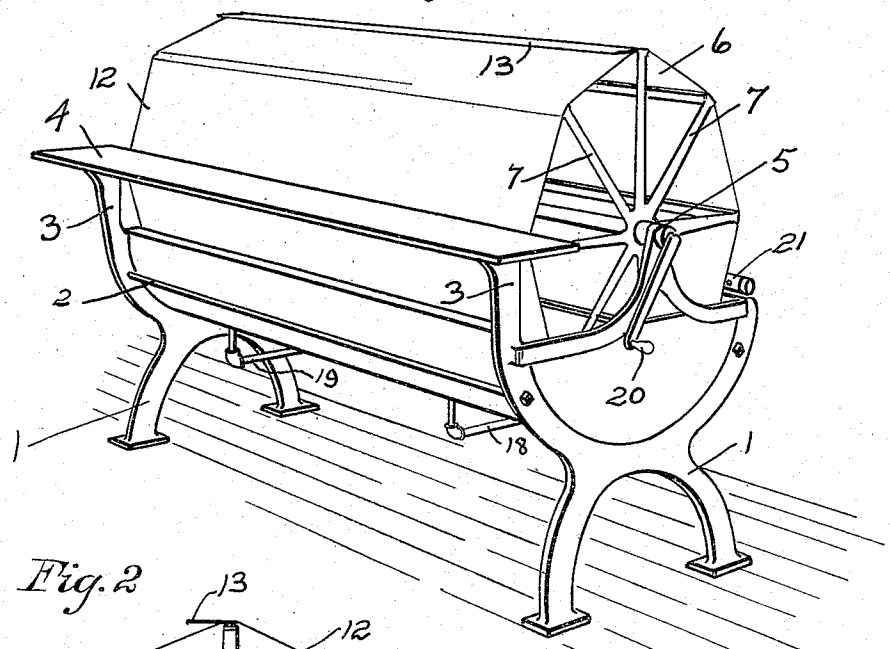


Fig. 2

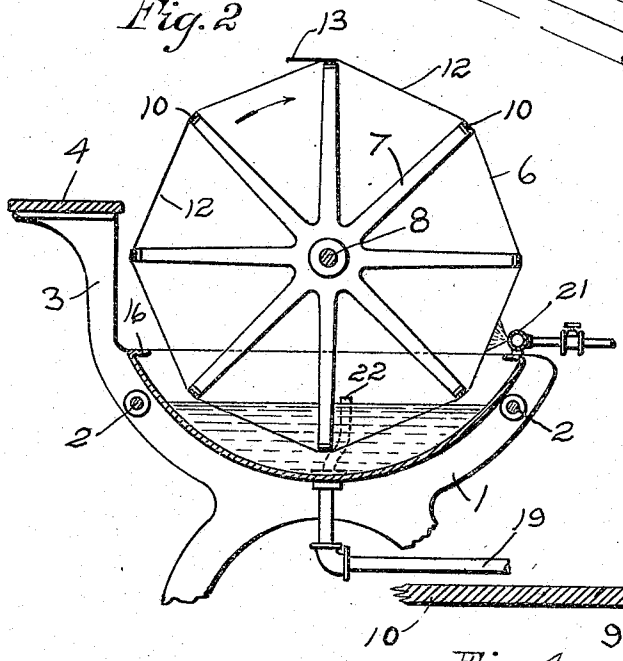


Fig. 3

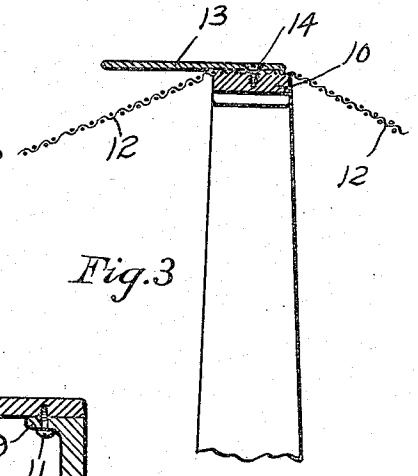


Fig. 4

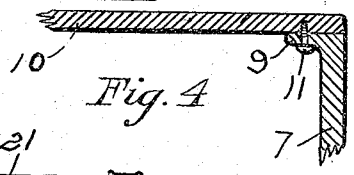
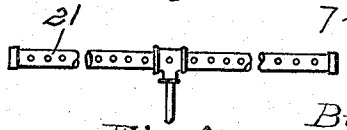


Fig. 5



Witnesses

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PRINT-WASHING MACHINE.

No. 930,654. Specification of Letters Patent. Patented Aug. 10, 1909.

Application filed April 20, 1908. Serial No. 428,189.

To all whom it may concern:

Be it known that I, FRANK W. EMERSON, a citizen of the United States, residing at the city of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Print-Washing Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to print washing machines, and has for its object to provide a simple, practical and effective device for washing prints, the same being more particularly adapted for use in connection with the drafting room of engineers, architects, and the like, for washing the chemicals from sun-prints of large size such as blue-prints, black-prints, and the like, taken from tracings, and the like.

My improved machine is constructed of a poly-sided prism shaped drum or body mounted on a central shaft to be rotated in suitable bearings supported in a frame. The lower portion of said body being immersed in a bath of water, or other liquid, retained in a suitable tank for the purpose of washing the chemicals from the face of the print as the body is rotated therein.

An essential feature of my construction is that this body portion is formed of a plurality of longitudinally disposed slats around which is tightly stretched a covering of heavy duck or canvas.

Another and important feature of this construction is that a thin plate is provided which is secured to one of said slats and extends the length of said body portion, said plate projecting outward forming an overhanging lip under which the end of the print is tucked to hold the same firmly in position and prevent the liquid from getting under and raising the print from the canvas.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings: Figure 1— is a perspective view showing the complete device. Fig. 2— is a central sectional end view showing the construction of the body portion and its relation to the frame and bath tank. Fig. 3— is an enlarged view illustrating the overhanging lip plate under which the end of the print is held. Fig. 4— is a detail illustrating the manner of securing the cross bars or slats to the ends of the spider arms of the skeleton head. Fig. 5— shows a detail of the sprinkler pipe which extends along the drum to throw jets of water onto the print.

Referring to the drawings, at 1—1 are the two end supporting frames which may be made in any suitable or desired form and connected by means of the rods 2. Arms 3—3 extend up from the front of either frame the same being adapted to support a shelf or table 4 on which the roll of printed paper may be rested while placing the same in position on the drum to be washed. Bearings 5 are also arranged on each of said frames for supporting the rotatable drum or body 6. This drum may be made in any suitable form or size, but I preferably construct the same with skeleton frames or heads formed of a plurality of arms 7—7, the same being mounted on a central shaft 8 which is adapted to be rotated in bearings 5 on either end thereof. The outer ends of these arms 7 are turned inward forming a lip, see Fig. 4, to which are secured the slats or cross bars 10—10 by means of the screws 11. Where the body portion is of any considerable length one or more of these skeleton frames may be placed between the outer heads in order to support these slats or cross bars 10.

It has been found by practical experience in the use of this device that heavy canvas or duck 12 when moistened or wet provides the most practical and effective surface for receiving and retaining the print. This cover is very easily applied by simply drawing the same tightly around the cross bars to which it may be tacked, or otherwise secured in a simple and effective manner, thus forming a many sided drum which is very durable and light in weight.

A feature of my improved construction is that a thin narrow plate 13 has been provided to extend across the length of the drum and is secured to one of the cross bars 10 by means of screws 14, see Fig. 3, or other convenient means, the same being adapted to extend forward over the canvas forming a lip under which the end of the print is passed, holding the same down firmly onto the canvas to prevent the water from getting thereunder to raise the same as the drum is revolved in the bath.

A tank 15, see Fig. 2, is supported in the frames 1—1 for the purpose of retaining a liquid such as water, or the like, in which the prints may be washed or developed. This tank is provided with inwardly turned lips 16—17 at its upper edges on either side for the purpose of preventing the liquid from splashing or spattering when the drum is revolved therein. An inlet pipe 18 is provided to admit water to the tank and a drain pipe 19 is provided for drawing the water from the tank when it is desired to empty the same, or when a fresh supply is required. The surplus may run out through the over-flow pipe 22.

In the operation of my device a small quantity of developing fluid, such as water or the like, may be admitted through the supply pipe 18. The drum, which is made of any desired size, is rotated by means of the handle 20 until the surface of the canvas is thoroughly wet. The print or roll of paper is placed on the shelf 4 in front of the machine and its end tucked under the overhanging lip 13. The drum is then slowly revolved in a direction away from the operator and the print is laid face outward around its angular faces upon the canvas, the wet surface of which causes the paper to cling and adhere closely thereto. As the drum continues to revolve in the same direction the face of the print is carried into the bath, the flat sides of the drum causing the same to strike with some force against the water, which striking effect greatly increases the effectiveness of the washing process and quickly removes the chemicals from the face of the print.

Another advantage in this construction is that these angles on the face of the drum also serve to assist in retaining the print in position thereon, effectually preventing the same from slipping or moving after it has once been laid upon the dampened surface of the canvas. As the edge of the paper is tucked way up in under the overhanging lip said edge is held down close to the canvas and the water is thus effectually prevented from getting in under and raising the same, the overhanging lip serving to assist in shielding said edge from the force of the water while the drum is being rapidly rotated therein.

It is also found in practice by the use of this simple device that it is very convenient to rotate the drum part way to bring up any portion of the print which may have been overexposed, so that a wash, such as potash, or other chemical, may be applied thereto by means of a brush, without the necessity of immersing the whole print in such a bath. This chemical may then be quickly washed off by again rotating the drum.

The print is easily removed from the drum by raising one of its ends and then rotating said drum in the opposite direction.

Another feature of the invention is that a sprinkler pipe 21 may extend along the face of the drum so as to force a plurality of streams of water, or other developing fluid, onto the print as it is revolved by the drum to assist in washing the same.

My improved print washing machine is very compact and takes up but little room compared to the size of prints that may be washed thereon, it is extremely simple and inexpensive in construction, effective in its operation, and by its use prints of any character may be quickly washed and cleaned, thus doing away with the old method of using a cumbersome tank and a hose for running water over the prints.

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

1. A print washing machine comprising a polygonal drum provided with a body of heavy fabric, and a paper engaging clip formed of a narrow overhanging plate secured at one edge to the periphery of said drum and extending longitudinally thereof, said plate being arranged to prevent liquid from getting beneath the edge of the paper held in position thereby.

2. A print washing machine comprising a drum formed of end heads, longitudinal bars connecting said heads, a covering of heavy fabric for said drum engaging said bars in such manner as to form a polygonal body, and a paper engaging clip formed of a narrow overhanging plate secured at one edge to one of said bars and extending throughout the length of the latter, said plate being arranged to prevent liquid from getting beneath the edge of the paper held in position thereby.

3. A print washing machine comprising a drum formed of spaced apart spiders provided with radiating arms, longitudinal bars connecting the ends of the corresponding arms of each spider, a flexible body stretched over said bars, and a paper engaging clip formed of a narrow overhanging plate secured at one edge to one of said bars and extending throughout the length of the latter, said plate being arranged to prevent liquid from getting beneath the edge of the paper held in position thereby.

4. In a print washing machine, the combination with a frame comprising end members each provided with an arm or extension, brace rods connecting said end members, a shelf supported by said arms or extensions, a tank supported by said end members, a drum mounted in said end members, and an exteriorly arranged securing plate extending longitudinally of said drum throughout the length thereof and arranged to prevent liquid from getting beneath the edge of the paper held in position thereby.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK W. EMERSON.

Witnesses:

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