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W. G. WAGENHALS
DRUM FOR WASHING MACHINES

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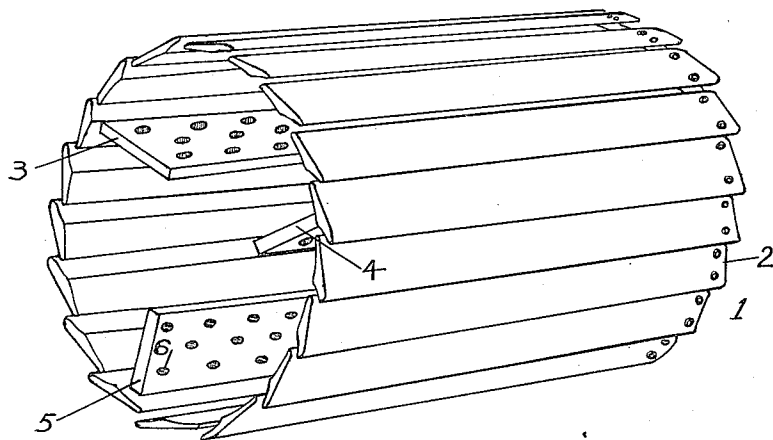


Fig. 1

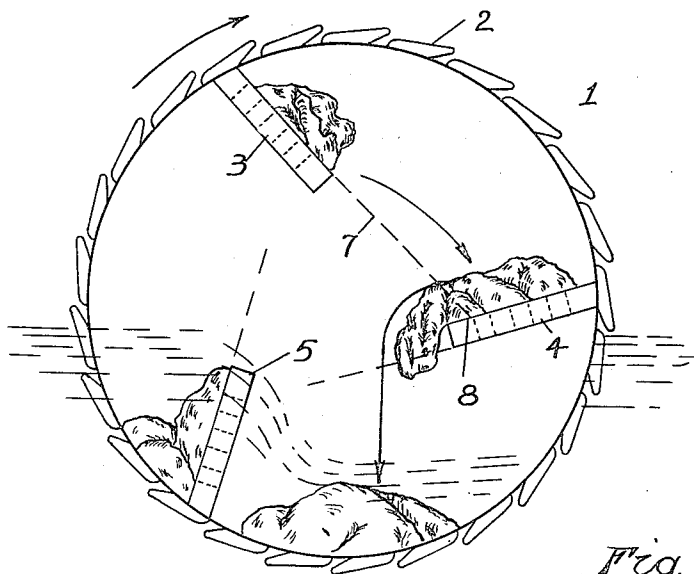


Fig. 2

William G. Wagenhals

INVENTOR

BY
Geo. B. Miller

ATTORNEY

UNITED STATES PATENT OFFICE.

WILLIAM G. WAGENHALS, OF SAGINAW, MICHIGAN.

DRUM FOR WASHING MACHINES.

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To all whom it may concern:

Be it known that I, WILLIAM G. WAGENHALS, a citizen of the United States, residing at Saginaw, in the county of Saginaw and State of Michigan, have invented certain new and useful Improvements in Drums for Washing Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to washing machines and pertains more particularly to an improved construction and arrangement of the interior baffles of the drum of a washing machine, the drum being of that type adapted to operate by revolving continuously in one direction.

The objects of my invention are to provide in a continuously rotatable washing machine drum an improved arrangement of baffles within the drum adapted to so manipulate the materials being washed that those materials at each revolution of the drum will be subjected to the impact of quantities of water forcibly directed against the materials so as to pass entirely through them. After this first rinsing action, the materials are partially drained and then, by reason of the relative location of the baffles, are thrown from the advancing face of one baffle to the receding face of the next baffle ahead, the materials being turned upside down while being thrown from one baffle to the other. After striking the second baffle and while resting thereon, the materials pass around to the lower periphery of the drum, thereby being again partially turned over, and are then forcibly thrown or slapped against the advancing side of the baffle upon which the materials originally rested.

My invention pertains more specifically to the relative angular arrangement of the interior baffles whereby the above-mentioned operations are performed upon each lot of material during one revolution of the drum.

It is old in the art to provide the revolving drums of washing machines with radially disposed interior baffles, but by my improved arrangement of baffles I am enabled to greatly increase the effectiveness of the washing operation and also to increase the capacity of the machine and decrease the

time required for washing a given lot of material.

With these and certain other objects in view which will appear later in the specification, my invention comprises the devices described and claimed and the equivalents thereof.

In the drawings, Fig. 1 is a perspective view of a washing machine drum embodying my improvements, the drum being shown with one end removed.

Fig. 2 is an enlarged end view of the drum shown in Fig. 1, the flow of the water inside the drum and the flushing being indicated by dotted lines and the turning and beating operations of the baffles as above described indicated by the representation of the materials in the various successive positions.

As is clearly shown in the drawings, 1 indicates a drum of a washing machine, preferably of the type adapted to operate by revolving continuously in one direction. 2 is the slatted exterior surface of the drum, the successive slats or their equivalents arranged to deflect streams of water into the drum in a direction substantially along the interior periphery of the drum. These streams are produced by revolving the drum while its lower periphery is submerged.

My improvement, as above noted, relates particularly to the relative arrangement of the baffles 3, 4 and 5, which are preferably perforated as indicated at 6.

Any suitable number of baffles may be employed, but I have for purpose of illustration shown an arrangement of three baffles.

The dotted lines, as 7, show that the advancing surface of baffles 3 if projected would be substantially tangent to an imaginary cylinder described inside of and coaxial with the cylindrical drum. The advancing surface of baffle 3, as indicated by line 7, preferably intersects the receding surface of baffle 4, and similarly the advancing surfaces of baffles 4 and 5 would preferably if projected, intersect the receding surfaces of baffles 5 and 3 respectively.

The purpose of this angular or non-radial baffle arrangement, or its equivalents, which constitutes the essential feature of my invention, will be understood by reference to Fig. 2, in which material being washed is shown on the advancing surface

of baffle 3, the drum being revolved in the direction of the arrows.

The baffles, beside being perforated, are of suitable width to serve as trays or platforms to carry the materials in a mass bodily to the upper part of the drum into the position indicated at 3.

From the position 3, the material falls, and in falling turns over and lands upside down on the upper or receding surface of baffle 4. Throwing the material thus from the advancing surface of one baffle to the receding surface of the next baffle ahead is made possible by the fact that the baffles are non-radial, the non-radial arrangement being preferably such that the plane of the advancing surface of one baffle, if projected, will intersect the plane of the receding surface of the next baffle ahead, as above described.

Baffle 4, with the clothes on its upper surface, soon passes below the level of the water on the outside of the drum, and streams of water spurt inward against the material through the spaces between the slats or louvers 2 and through the baffle perforations. When the material has reached the bottom of the periphery of the drum, it drops over upon the slats, the streams of water being now directed against it from underneath. The material rolls over rearwardly upon the slats, being impelled by the intruding water, and is forcibly met by the advancing face of the next baffle, so that at the end of the first revolution of the drum it rests on the advancing side of the baffle, the water pouring through the spaces between the baffles and striking the material from above and passing through the material and the perforations, as shown at baffle 5 in Fig. 2.

Heretofore it has been difficult in washing machines employing continuously revolving slatted drums, to avoid the tendency of the materials to roll up into balls, or to form cylindrical rolls, or to tangle.

I have found in practice, however, that a continuously revolving slatted drum provided with baffles arranged substantially as herein described not only prevents the forming of rolls or balls of the material, but also

increases the rapidity and effectiveness of washing by turning the material over while throwing it from one baffle to the next baffle ahead, then rolling it over while submerged, impinging it forcibly against the advancing face of the next succeeding baffle and then carrying it upward through streams of water that are forced downward through the material from above.

It has been found in practical use of the machine herein described, that the required tray or baffle operations of bodily lifting the clothes to the top of the drum, throwing them upside down upon the next baffle ahead, etc., are satisfactorily performed with a drum containing three trays or baffles, but with two baffles or more than three the work is not so well performed. I, therefore, prefer to employ three baffles in practice.

I thus secure not only the advantages of the continuously revolving drum type of machine, but I also employ flushing, turning, rolling and beating actions, which are generally recognized as being essential for the proper and effective washing of clothes and similar articles. These automatic manipulations are made possible by the tangential or non-radial arrangement of the baffles substantially as herein set forth.

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

In combination, a rotatable drum for washing machines, said drum having a continuous cylindrical surface, a set of three longitudinally disposed perforated baffles enclosed within said drum, said baffles so located with respect to each other that the projecting plane of the advancing surface of one of said baffles intersects the plane of the receding surface of the next baffle ahead, said baffles being of sufficient width to serve as trays to carry materials in a mass bodily to the upper part of said drum and to discharge therefrom onto the rearward face of the next baffle ahead, for the purposes set forth.

In testimony whereof, I affix my signature.

WILLIAM G. WAGENHALS.