March 10, 1942. G. W. DUNHAM 2,275,847

WASHING MACHINE

Filed July 27, 1939

Fig. 1.

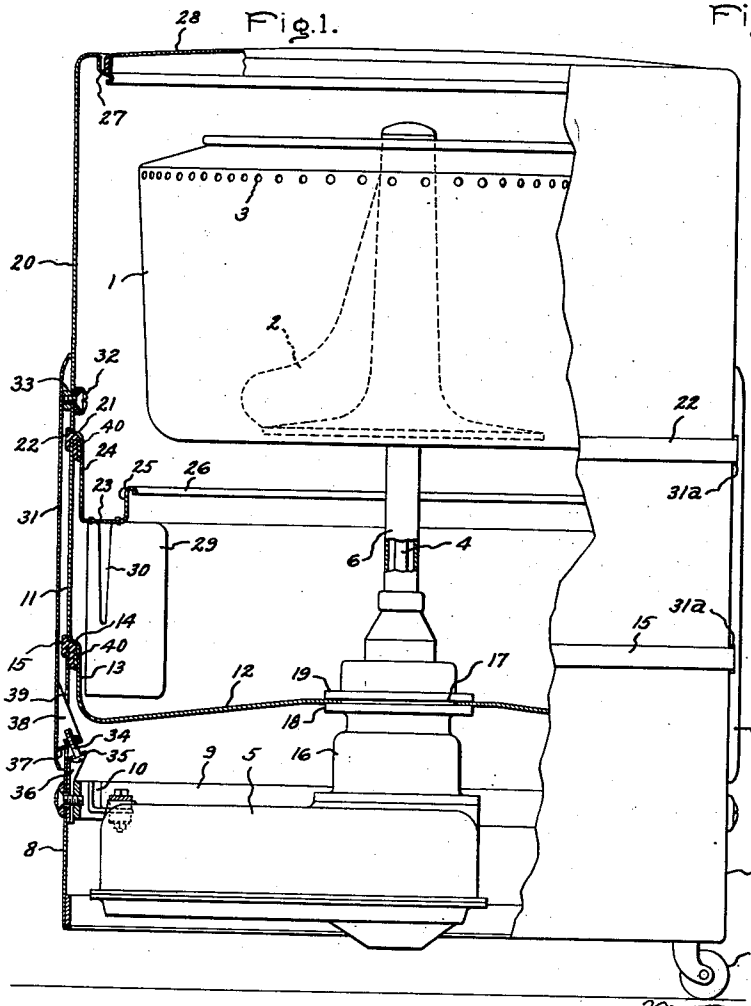


Fig. 3.

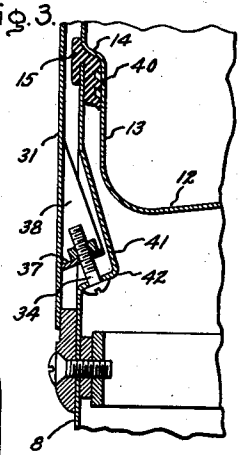


Fig. 4.

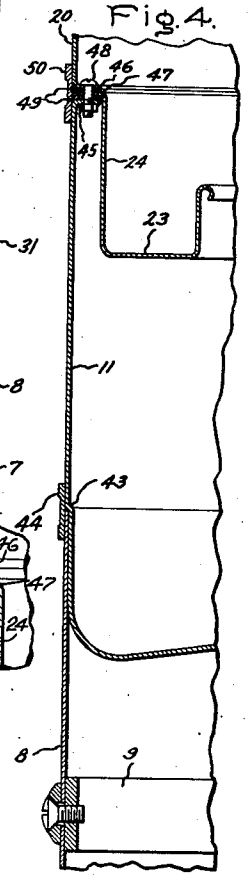


Fig. 5

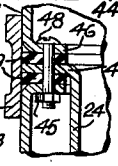
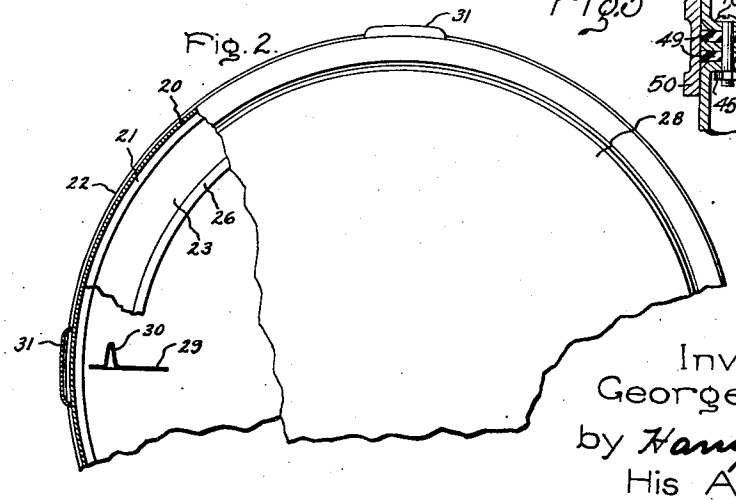


Fig. 2.



Inventor:
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UNITED STATES PATENT OFFICE

2,275,847

WASHING MACHINE

George W. Dunham, Westport, Conn., assignor to General Electric Company, a corporation of New York

Application July 27, 1939, Serial No. 286,817

2 Claims. (Cl. 210—75)

The present invention relates to washing machines of the type in which the clothes are washed and centrifugally dried in a single tub or receptacle.

The object of my invention is to provide an improved construction and arrangement in washing machines of this type, and in particular to provide an improved construction for the outer casing.

For a consideration of what I believe novel and my invention, attention is directed to the following description and the claims appended thereto.

In the accompanying drawing, Fig. 1 is a sectional elevation of a washing machine embodying my invention; Fig. 2 is a top plan view partly broken away; Fig. 3 is a fragmentary view of a modification; Fig. 4 is a fragmentary view of another modification, and Fig. 5 is an enlarged view of the flange joint of Fig. 4.

Referring to the drawing, I have shown my invention applied to a machine of the construction of my application Serial No. 264,156, filed March 25, 1939. In this construction the clothes are washed and centrifugally dried in an imperforate receptacle 1. During washing the receptacle is filled with liquid and clothes, and the washing is effected by oscillation of an agitator 2 located in the receptacle. At the conclusion of the washing operation the clothes are centrifugally dried by rotation of the receptacle, the liquid being centrifugally discharged from the receptacle through openings 3 at the upper part thereof. The agitator is oscillated and the receptacle is rotated by a vertical shaft 4 extending upward through a sleeve 6 and driven by mechanism located within a casing 5 at the lower end of the sleeve. Suitable driving connections are provided between the shaft and the agitator and receptacle so that the agitator is oscillated during oscillation of the shaft and the receptacle is rotated during rotation of the shaft. The above described construction is well known in the art, and further illustration is believed unnecessary for the purposes of the present invention.

The machine is supported by casters 7 suitably connected to a cylindrical skirt 8. The skirt has fixed thereto a ring 9 to which is fixed a bracket 10 supporting the casing 5. Telescoped within the upper end of the skirt 8 is a lower casing having cylindrical side walls 11 and a bottom wall 12. At the lower end of the cylindrical walls 11 is a section 13 of reduced diameter, connected to the walls 11 by a flange 14 providing a shoulder by means of which the lower section is seated on a rubber ring 15 fitting over the upper edge of the skirt 8. The rubber ring 15 provides a tight connection and compensates for variations in dimensions. The casing 5 is provided with a tubular post 16 connected to the sleeve 6 and extending up through a central opening 17 in the bottom wall 12. The bottom wall is clamped between flanges 18 and 19 on the post 16.

Telescoped within the upper end of the lower casing section is an upper casing section 20 having an inwardly extending flange 21 at its lower part seated on a rubber ring 22 on the upper edge of the lower casing section. Depending from the inner edge of the flange 21 is an annular trough or gutter member 23 arranged to receive the liquid centrifugally discharged from the receptacle 1. The outer walls 24 of the trough are integral with the flange 21. The inner walls 25 of the trough terminate in a rounded upper edge 26. With this arrangement the upper casing section and trough may easily be formed from a single piece of sheet metal. The upper edge of the casing section 20 has an opening defined by an inwardly extending flange 27, the opening being closed by a cover 28 resting on the flange. Fixed to the underside of the trough are radial vanes 29 which depend into the lower casing section and prevent surging of the liquid therein during the centrifugal drying operation. The vanes are provided with stiffening ribs 30.

The casing sections are secured together by vertical channel-shaped straps 31 having their edges presented to the outer surface of the casing and the intermediate portions spaced from the casing. The edges of the straps have notches 31*a* fitting over the rings 15 and 22. The upper ends of the straps are fixed to the upper casing section 20 by screws 32 threaded into nuts 33 fixed to the inner surface of the straps. The lower ends of the straps are fixed to the skirt 8 by bolts 34 extending from flanges 35 on brackets 36, fixed to the skirt 8, through flanges 37 on brackets 38 fixed to the inner surface of the straps 31. The brackets 38 project through openings 39 in the skirt. The brackets 36 are clamped between the ring 9 and the inner surface of the skirt 8 and are thereby fixed to the skirt. In the above described construction it is obvious that as the bolts 34 are tightened, the casing sections are drawn together. The rubber rings 15 and 22 tightly seal the joints between the section parts and yield to compensate for irregularities. The compensating effect of the rubber rings is increased by the presence of flexible beads 40 on the inner surfaces thereof.

With the above described casing construction

the sections can be conveniently made of sheet metal with a porcelain enamel finish. Each of the sections is of a shape easily formed. The sections are held together in such a manner that variations in dimensions inherent in the porcelain enamel finish do not effect the finished structure.

In Fig. 3 is shown a fragmentary view of another construction for securing the lower ends of the straps 31 to the skirt 8. In this construction the skirt is provided with indentations 41 providing flanges 42 through which the bolts 34 extend. As the bolts 34 are tightened the casing sections are drawn together.

In the modification shown in Fig. 4 the lower casing section 11 is telescoped within the upper end of the skirt 8 and the joint between the upper edge of the skirt and the adjacent shoulder 43 on the lower casing section is covered by a metal band 44. At the upper edge of the lower casing section is an inwardly extending flange 45, and at the lower end of the upper casing section 20 is an inwardly extending flange 46. The trough 23 is formed as a separate part, the outer walls 24 thereof being provided with a flange 47 extending between the flanges 45 and 46. The flanges 45, 46 and 47 are clamped together by bolts 48, suitable gaskets 49 being arranged between the abutting surfaces. The joint between the upper and lower casing sections is covered by a metal band 50. This construction likewise is adapted to the manufacture of the casing parts from sheet metal with a porcelain enamel finish.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. In a washing machine of the type having a rotatable clothes receptacle, a casing surrounding the receptacle and arranged to receive the liquid discharged therefrom comprising a cylindrical upper section having a flange at its lower edge, a lower section having a flange at its upper edge, an annular gutter member having spaced inner and outer side walls and means connecting said side walls in fluid tight relationship below the tops of said walls within the casing for receiving liquid centrifugally discharged from the receptacle, a flange on the outer wall of said gutter member adjacent the upper edge thereof, and means for clamping said flanges together.

2. In a washing machine of the type having a rotatable clothes receptacle, a casing surrounding the receptacle and arranged to receive the liquid discharged therefrom, said casing comprising upper and lower sections, a joint between the sections adjacent the bottom of the receptacle, an annular trough having spaced inner and outer side walls and means connecting said side walls in fluid tight relationship below the tops of said walls supported at its outer edge on the casing, said trough having its outer edge adjacent said joint and depending therefrom within the lower casing section, and radial vanes fixed to the trough and depending therefrom within the casing for preventing surging of the liquid within the casing.

GEORGE W. DUNHAM.