Sept. 30, 1930. J. H. MALLOY 1,777,008

WASHING AND DRYING MACHINE

Filed March 20, 1926 2 Sheets-Sheet 1

Fig. 1.

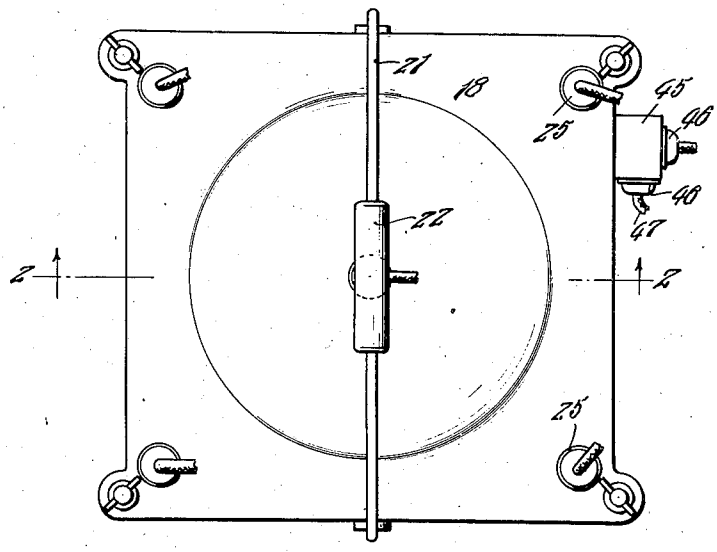

Fig. 3.

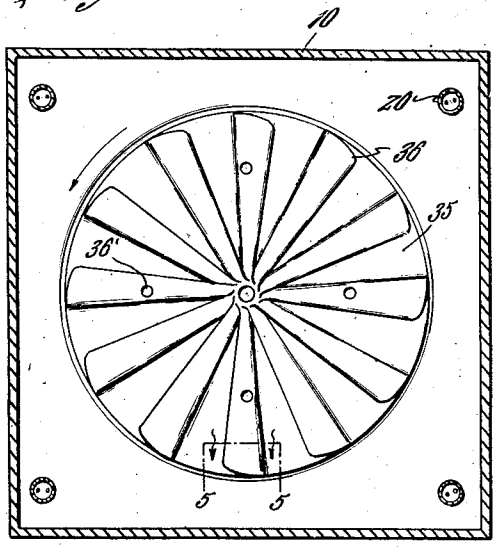

Fig. 5.

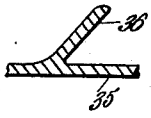

Fig. 4.

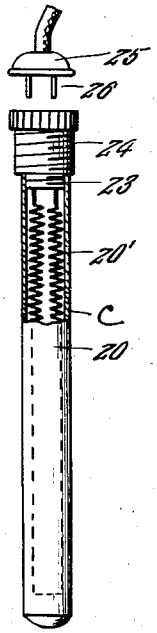

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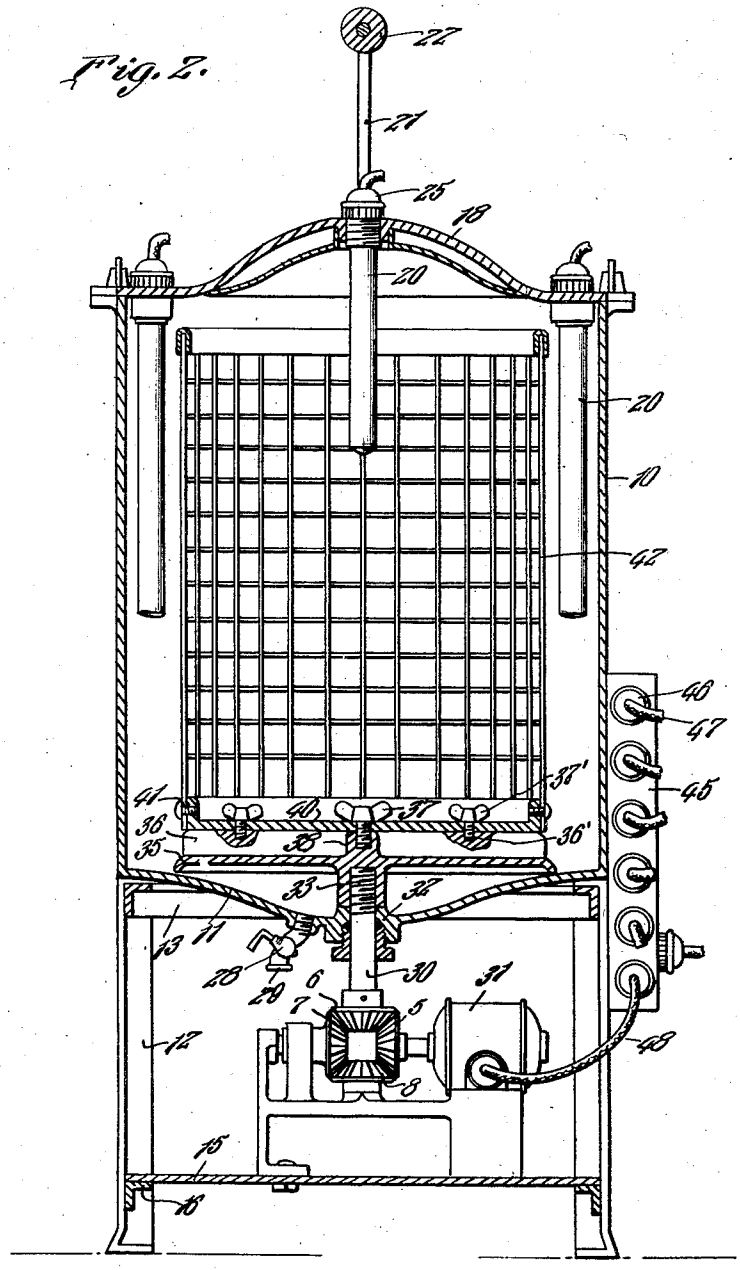
Fig. 2.



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UNITED STATES PATENT OFFICE

JOHN HARWOOD MALLOY, OF SAN DIEGO, CALIFORNIA

WASHING AND DRYING MACHINE

Application filed March 20, 1926. Serial No. 96,357.

The object of this invention is to provide a machine especially adapted for use where space is limited, and where a machine at moderate cost is desired.

A further object is to provide a machine comprising a main receptacle adapted to house a cage for receiving the clothing, a propeller mounted beneath the cage, and independently mounted electric resistance units adapted to extend into the space between the cage and the walls of the receptacle, these units each including an outer casing, for use when the receptacle contains water for washing purposes, the casings of the separate resistance units being removable however when the water has been drained off and the clothes are to be dried.

A further object is to provide special means for mounting and driving the movable elements.

With the foregoing and other objects in view, the invention consists in the novel construction and arrangement of elements described, illustrated and claimed, it being understood that modifications may be made within the scope of the claim, without departing from the spirit of the invention.

In the drawings forming part of this application,

Figure 1 is a top plan view of the machine.

Figure 2 is a view in vertical section on the line 2—2 of Fig. 1.

Figure 3 is a horizontal section, below the cage element.

Figure 4 shows one of the resistance units, in elevation, a portion being broken away.

Figure 5 is a detail in section on the line 5—5 of Figure 3.

The main receptacle or tub is designated 10, and includes the concave bottom 11, resting upon a supporting structure including the vertical elements 12, the upper transverse element 13, and the lower transverse member 15 carried by angle member 16, on the uprights members 12.

The cover 18 is apertured for the accommodation of electric heating units, such as 20, and a handle 21 of bail form, serves an obvious purpose, being provided with a centrally located hand hold 22.

The elements 20 are shown in detail in Figure 4, and each of these devices includes a tube or casing C having threaded connection at 23 with mounting means 24, the latter constituting an element of a two part plug of commercial type. The other part of this plug is designated 25 and includes the usual fingers 26. The resistance element per se is designated 20′, and the heat radiated therefrom passes thru the walls of the casing, when the latter is employed, that is when the receptacle is filled with fluid, or contains water for washing purposes. When the resistance units are employed for drying purposes, the water having been drained off from the receptacle by means of pet-cock 28 controlling an outlet 29, the casings of the resistance units are removed.

A vertical shaft 30 is driven thru suitable gearing by motor 31, and this shaft 30 passes thru a boxing 32 in the bottom of the tub, and is threaded into a socket 33, the socket constituting the hub of a propeller designated 35 and including a desk portion and integral blades 36, of the form shown in Figure 5 in cross section. It will be observed that the blades are radial and are inclined upwardly with reference to the disk on which they are formed. A thumb screw 37 is threaded into element 38, the screw passing thru the bottom member or transverse member 40 secured at 41 to the vertical walls of the cage 42. The latter is preferably circular in cross section, and constitutes a clothes receptacle, it being noted at this point that the housing 10, or water receptacle is illustrated as being of rectangular cross section.

A terminal box is designated 45, and is adapted to receive elements such as 46 for connection thru conductors 47 with the element 25 of Figure 4. These elements 46 correspond in construction with a commercial type of plug. Motor 31 is connected by conducting means 48 with the lower element 46 in the terminal box, and connections for any electrical appliance can also readily be made from this box.

In connection with the propeller, it will be observed that a portion of the edges of

each blade project beyond the edges of adjacent blades leaving spaces thru which suction takes place.

Several of the blades 36 of propeller 35 are connected with the bottom 40 by thumb screws 37′, as shown in Figure 2, the apertures for the screws being shown at 36′ in Figure 3. The drive for propeller 35 includes gear wheel 5 on the main shaft of the motor, wheel 6 on the propeller shaft, and wheels 7 and 8 meshing with the wheels first named and arranged in this manner to provide a balanced drive.

The clothes are placed within the cage or container 42, the main receptacle or tub 10 is filled with water, and current is supplied to the motor and to the electric resistance units 20 inclosed in their outer casings, for protection from the water.

The cage being rotated by the motor, shafting, and gearing, by means of which the propeller is also rotated, the water will be agitated and will pass around and thru the cage while the latter is moving, and the clothes will be cleaned because sufficient force is applied to the fluid to drive it thru the cage.

For drying purposes, the water is merely drained off and the casing of the separate resistance units removed, so that the drying operation may be performed by the air current developed by the propeller acting as a fan, and heated by the resistance elements.

Having thus described the invention, what is claimed as new is:

In a device of the class described, a receptacle including a bottom, a rotatable perforated clothes container within the receptacle spaced from the bottom thereof, a device in said space, comprising a disk provided with upper and lower integral hub portions, a plurality of radial and inclined blades connected to the upper surface of the disk and contacting at their upper edges with the bottom of the container, a driving shaft extending through the bottom of said receptacle and connected to the lower hub portion, and means for detachably connecting the bottom of the container with the upper hub portion and the upper parts of certain of the blades.

In testimony whereof I affix my signature.

JOHN HARWOOD MALLOY.