April 7, 1925. 1,532,366

H. BLUM

WASHING MACHINE

Filed Nov. 21, 1922

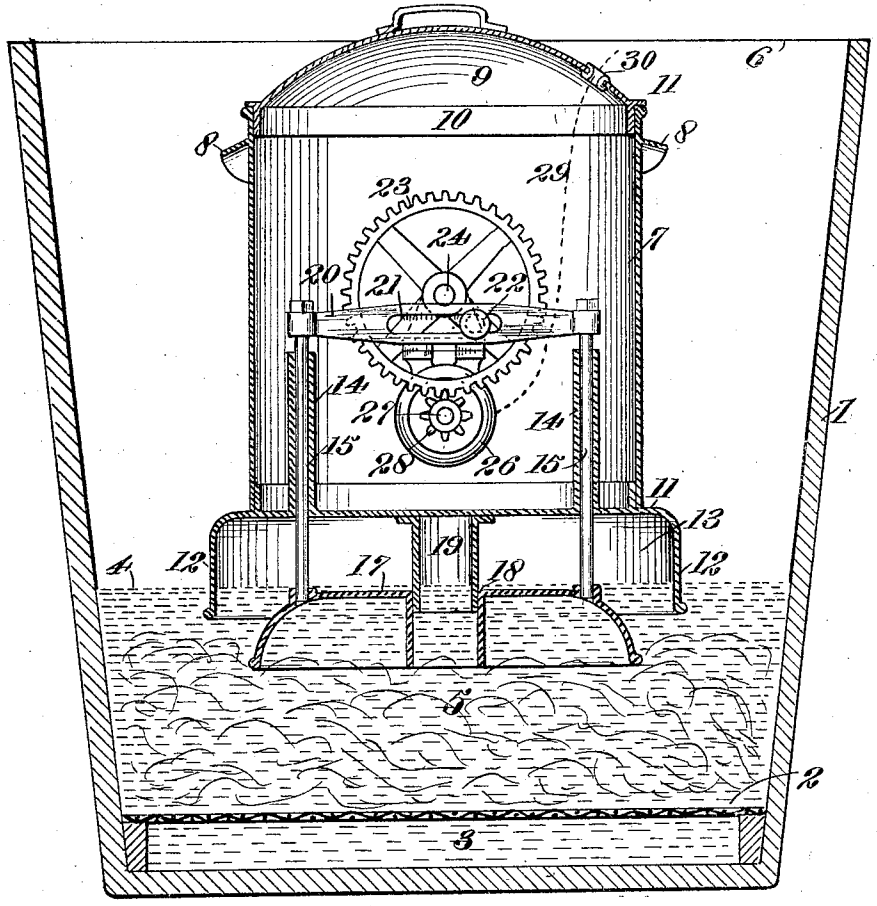


Fig. 1

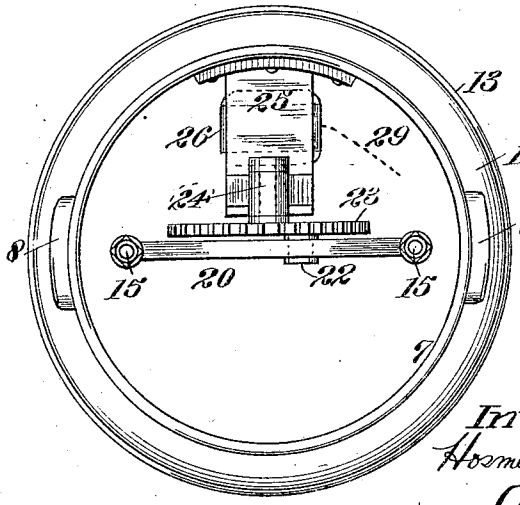


Fig. 2.

Inventor
Homer Blum,
By Ackerson & Totten
Attorneys

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UNITED STATES PATENT OFFICE.

HOSMER BLUM, OF SAN FRANCISCO, CALIFORNIA.

WASHING MACHINE.

Application filed November 21, 1922. Serial No. 602,355.

To all whom it may concern:

Be it known that I, HOSMER BLUM, a citizen of the United States, residing at the city and county of San Francisco, and State of California, have invented certain new and useful Improvements in Washing Machines, of which the following is a specification.

The prevailing types of washing machines now in use either include separate tubs or trays within which the washing mechanism operates and which are separate from the permanent trays installed within a dwelling or are of the type adapted to be attached or secured to a building structure or to the wall of a permanent tray. Both of these constructions require considerable expense in their construction and installation.

The present invention relates to a washing machine designed for positioning within a permanent tray containing articles to be washed and which is supported by and rests on the articles.

This invention has for its objects to provide a multi-cupped structure which is free to move during its operation over the area of the articles contained within the tray, and during such movement to cause by its operation a water circulation through the articles, which circulation is caused by the action of the cupped structures. Another object is to provide a multi-cupped mechanism wherein the cups are mounted for relative reciprocation and alternately support the weight of the operating mechanism.

With the above mentioned and other objects in view, the invention consists in the novel construction and combination of parts hereinafter described, illustrated in the accompanying drawings, and set forth in the claims hereto appended, it being understood that various changes in the form, proportion, size and minor details of construction within the scope of the claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

To more fully comprehend the invention, reference is directed to the accompanying drawings, wherein:—

Fig. 1 is a vertical sectional view of one embodiment of my invention positioned within a tray containing articles to be washed.

Fig. 2 is a transverse sectional view of the washing machine.

Referring more particularly to the several views of the drawings wherein like characters of reference designate corresponding parts, 1 indicates a conventional tray and in the bottom thereof is positioned a grating or other member 2 affording a sump or water circulating space 3 below the same. The tub or tray is adapted to contain water 4 within which are placed the articles 5 to be washed.

Through the upper open top 6 of the tub or tray is positioned the preferred embodiment of my invention, which includes a cylindrical open top chamber 7 mounted with hand grips 8 to facilitate the lifting and transporting thereof and the open top of which is closed by a cover 9, the flange 10 of which preferably is received within the upper end of the chamber, and the supporting flange 11 of which directs moisture exteriorly of the chamber. The chamber 7 rests on a member 11′, the side wall of which is downwardly flanged as at 12 forming an outer cupped member 13. The member 11 is provided with the vertically disposed guide sleeves 14 within which are mounted to reciprocate guides or stems 15 mounting on their lower ends the cupped or bell shaped member 17. This member 17 is formed in its center with a guide opening 18, and into said opening extends the guide tube 19 depending centrally from the under side of the member 11. It will be observed that the member 17 is disposed concentrically within the outer cupped member 13, and is guided in its reciprocating movement by the members 14 and 19. A cross head 20 connects the upper ends of the stems 15, and said head is longitudinally slotted as at 21 to receive a crank pin 22, extending from the spider of a gear 23 rotatable on the spindle 24 carried by a bracket 25 secured to the side wall of the chamber 7. The bracket also mounts a motor 26, the shaft 27 of which carries a pinion 28 which intermeshes with the gear 23. The motor is supplied with current through a conductor 29 which extends exteriorly of the apparatus preferably through an opening 30 in the cover 9.

The apparatus being connected to a source of electricity and positioned within a tub or tray containing wash water and the articles to be washed, the apparatus operates in the following manner:—

It will be observed that the weight of the entire apparatus is supported by the articles

to be washed, and that this supporting of the apparatus is alternately shifted from the inner cupped member 17 to the outer cupped member 13, and that on alternate reciprocating movements the vacuum created by one cupped member and the pressure created by the other cupped member will cause a water circulation between the articles to be washed, this being accomplished by mounting the cupped members for alternative reciprocating movement.

The relative reciprocating movement of the cupped members is repeated and causes the movement of the apparatus over the entire area of the tub, thus the apparatus is prevented from remaining in a single position and in its operation travels over the articles to be washed.

When not in use, the apparatus which is comparatively small, can remain in the tub or tray after the articles to be washed have been removed therefrom and the water drained from the tray, thus the apparatus does not require a separate storage space when not in use. The employment of the grating 2 at the base of the tray prevents the packing of the articles to be washed in the bottom of the tray and enables a water circulation through the articles to be washed to be maintained.

The relative telescoping movement of the cups 12 and 17 creates a powerful alternate suction and compression action on the wash water causing a circulation of the same in alternate directions through the articles to be washed.

Having thus described my invention, what I claim and desire to protect by Letters Patent of the United States is:—

1. A washing machine including a chambered member having an open bottomed cupped member at its lower end, a second cupped member disposed concentrically within the first cupped member, means extending into the chamber and connected with the second cupped member, an electric motor fixed within the chamber, and a geared driving connection between the motor and the means extending into the chamber for simultaneously operating said cupped members toward and from each other.

2. A washing machine including a bell bottomed chamber, a bell bottomed member concentrically disposed within the bottom of said chamber for reciprocating movement into and out of the same, an electric motor fixed within the receptacle, and a geared driving connection between the motor and the second bell bottomed chamber whereby relative reciprocating movement is simultaneously imparted to said bell bottomed members.

3. A washing machine including a casing having a cupped bottom member, guides extending upwardly through said dividing wall into said casing, a second cupped member concentrically disposed within the cupped bottom member of the casing and carried by said guides, a motor fixed within the casing, a cross-head connecting the guides, gear mechanism within the casing and connecting the crosshead and motor for imparting a relative reciprocating movement to said cupped members, said second cupped member adapted for reception within said cupped bottom.

4. A washing machine including a casing having a cupped bottom member, a second cupped member concentrically disposed within the cupped bottom member of the casing, operating means extending upwardly from said second cupped member, an electric motor within the casing and carried thereby, a geared driving connection between the motor and the operating means whereby on the operation of the motor movement is imparted to said cupped members.

In testimony whereof I have signed my name to this specification.

HOSMER BLUM.