Sept. 19, 1950 I. D. TICE 2,523,165

WASHING MACHINE

Filed Sept. 10, 1947

FIG. 1.

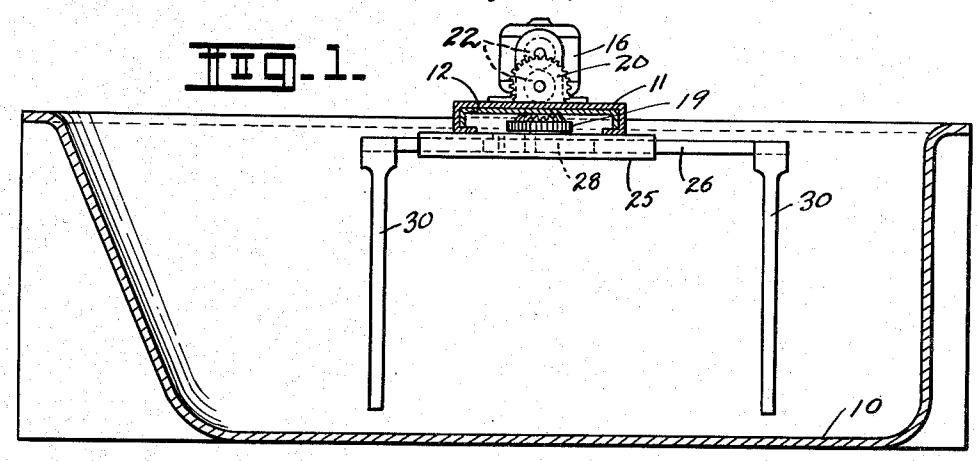
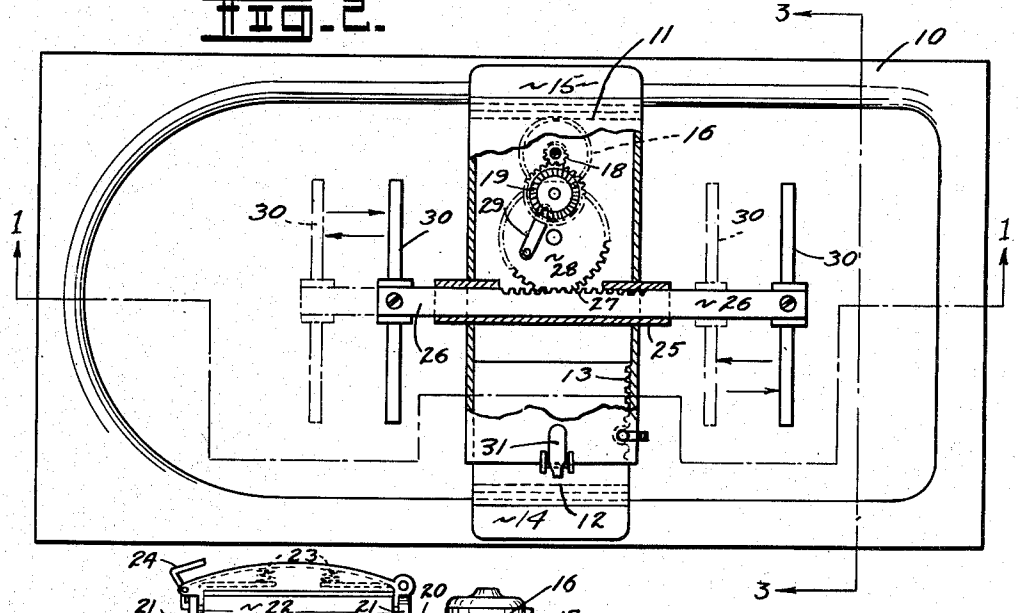


FIG. 2.



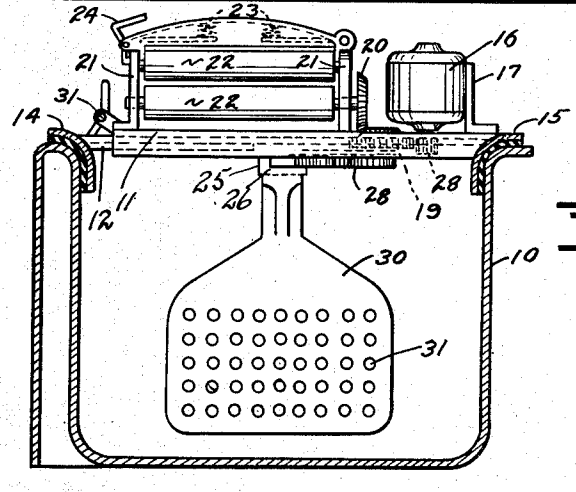


FIG. 3.

INVENTOR.
Irvin D. Tice.
BY
W. B. Harpman
ATTORNEY.

Patented Sept. 19, 1950

2,523,165

UNITED STATES PATENT OFFICE

2,523,165

WASHING MACHINE

Irvin D. Tice, Chicago, Ill.

Application September 10, 1947, Serial No. 773,152

3 Claims. (Cl. 68—131)

1

This invention relates to a washing machine and more particularly to washing machine apparatus usable in connection with a receptacle such as a bathtub.

The principal object of the invention is the provision of a portable washing machine apparatus.

A further object of the invention is the provision of a washing machine apparatus usable with a receptacle such as a bathtub for performing a clothes washing operation.

A still further object of the invention is the provision of a simple and inexpensive apparatus which may be used in washing and wringing clothes and the like.

The washing machine shown and described herein comprises a mechanism adapted to be placed in operative position on a receptacle such as a laundry tub or bathtub and the like and which in position thereon will perform a washing operation with respect to soiled clothes and the like positioned therein. The machine includes a power source and reciprocating arms for engaging the clothes to be washed and utilizes a simple mechanical movement for transmitting the power from the power source to the said arms. It also includes a ringer, power driven from the power source, and the whole device is of relatively light and inexpensive construction and adapted for ready portability.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawing, wherein—

Figure 1 is a side view with parts in cross section and parts broken away illustrating the washing machine in position in a bathtub.

Figure 2 is a top plan view of the washing machine with parts broken away and parts in cross section showing the same in position in a bathtub.

Figure 3 is an end elevation of the washing machine taken on line 3—3 of Figure 2.

By referring to the drawings and Figures 1 and 2 in particular it will be seen that a bathtub of conventional design has been disclosed which is indicated by the numeral 10 and that a portable washing machine has been positioned therein and that the washing machine comprises a transversely positioned telescopic frame including framing members 11 and 12, respectively, the framing member 12 lying within the area defined by the framing member 11 and movable transversely thereof by reason of a rack 13 formed in operative position therebetween. The outermost ends of the framing members 11 and 12 are adapted to engage the bathtub 10 so as to support the washing machine in operative relation thereto.

2

One means of supporting the machine is illustrated in the drawings and comprises the formation of curved tub engaging members or shoes 14 and 15, respectively (see Figure 3), on the outermost ends of the framing members 11 and 12, respectively, and which tub engaging members or shoes 14 and 15 are preferably formed with resilient surface pads. It will be obvious to those skilled in the art that various forms of shoes can be employed for engaging the tub 10 as long as the washing machine is adequately supported thereby.

The framing member 11 is of relatively longer length than the framing member 12 and serves as the principal support for the mechanism positioned thereon. A motor 16 is positioned on the framing member 11 by means of a bracket 17 and the motor 16 is positioned in operative relation to a pinion gear 18 positioned on suitable bearings on the framing member 11 and in operative engagement with a combination gear 19 which includes a conventional gear tooth area on its periphery and a beveled gear on its uppermost surface. The conventional gear on the periphery of the combination gear 19 is in registry with the pinion gear and the combination gear is driven thereby.

The beveled portion of the combination gear 19 is in registry with a beveled gear 20 which is positioned on an upstanding frame 21 which in turn supports a pair of resilient ringer rolls 22, one of which is driven directly by the beveled gear 20 and the other of which idles with respect thereto. The ringer rolls 22 are spring tensioned with respect to one another by a plurality of springs 23 positioned in an appropriate housing above the said rolls 22 and the housing is hinged with respect to the frame 21 at one end and provided with a safety release catch 24 at the other end.

Positioned transversely of the framing member 11 there is a tubular member 25, the ends of which extend outwardly beyond the sides of the framing member 11 a short distance and which serves to position in transverse relation to the framing

member 11 and in longitudinal relation to the bathtub 10 a rod 26 which is adapted to be reciprocated in the tube 25 by appropriate means formed in connection therewith. The means comprises a rack 27 formed in the rod 26 and an adjacently positioned engaged gear 28 which is reciprocally mounted on the framing member 11 and is connected by a crank 29 with the combination gear 19 as best illustrated in Figures 2 and 3 of the drawings.

By referring to Figure 2 of the drawings in particular it will be seen that motion imparted to the pinion gear 18 will be transmitted by the combination gear 19 through the gear 29 to the gear 28 which will be caused to turn back and forth by reason of the difference in diameter of the combination gear 19 and the gear 28 and their interconnection by the gear 29. The gear 28 will be moved in an alternate back and forth motion, the motion being imparted by means of the rack 27 to the rod 26 and hence to a pair of reciprocating arms 30 positioned on the ends of the rod 26 and depending therebelow, as best shown in Figures 1 and 3 of the drawings.

Each of the depending reciprocating arms 30 is formed in the manner of a paddle and is preferably formed of a plurality of perforations 31 so that too great a displacement of material in the tub 10 is avoided. It will be obvious that when the washing machine is operated the arms 30 will move back and forth as illustrated in solid and dotted lines in Figure 2 of the drawings wherein the alternate end positions of the arms 30 are illustrated thereby causing a displacement of the water and clothes in the tub 10 in the manner effecting a satisfactory washing operation on the clothes.

When the clothes have been washed they may be lifted manually and run through the ringer rolls 22, heretofore described, which operate continuously in one direction as long as the motor 16 is operating. It will be obvious to those skilled in the art that if desired clutch means may be employed as a connection means between the gear 20 and the ringer rolls 22 permitting selective engagement or reversal of the motion thereof.

It will thus be seen that a simple and efficient washing machine has been disclosed, the various portions of which are of relatively small overall size and that certain portions thereof may be readily formed in a collapsible manner, for example, the reciprocating arms 30 may be folded upwardly against the bottom of the device thereby facilitating the storage of the washing machine when not in use.

It will also be obvious that suitable housing may be provided, if desired, for the motor and the several gears, enclosing the gears from the bottom of the framing member 11 in which they are positioned so as to prevent the same from coming into accidental engagement with clothes being washed. The same is true of the exposed gear 20 on the uppermost surface of the device as a suitable housing may obviously be provided thereabout without departing from the scope of the invention.

It will be seen that means is provided for holding the telescopic framing members 11 and 12 in relative position and such means may comprise a latch member 31 positioned on one end of the framing member 11 and engaging appropriate portions of the framing member 12 so as to hold it in desirable extended relation with respect thereto and thereby efficiently and safely position the device on or over a receptacle in which the washing is performed by the washing machine.

Having thus described my invention, what I claim is:

1. A washing machine for use in combination with a receptacle and comprising a frame engageable with the said receptacle, a transversely positioned tubular guide on said frame and a reciprocating member positioned in said tubular guide and extending out of the ends thereof, depending paddle-like arms positioned on the ends of the said reciprocating member, a motor on said frame and gear means and a crank for conveying motion from the said motor to the said reciprocating member.

2. A washing machine comprising a two part horizontal frame member adjustable as to length and having a tubular guide positioned thereon, a rod reciprocally mounted in said tubular guide, the ends of which extend beyond the said tubular guide, a rack formed in the said rod and a slot in said tubular guide and gear means engaging the said rack for imparting alternate back and forth movement thereto, a motor mounted on said frame for imparting movement to said gear means and clothes engaging paddles positioned on the said rod.

3. A washing machine comprising a pair of telescopically engaged framing members, shoes on the ends of the said telescopic framing members, a tubular member positioned transversely of the said telescopic frame, a rod positioned in the said tubular member, a rack formed in the said rod and a gear on said telescopic frame engageable with said rack, and a crank pivotally connected to said gear for imparting back and forth movement thereto, and a motor and secondary gear for imparting movement to the said crank, paddles positioned on the ends of the said rod and depending therefrom.

IRVIN D. TICE.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
101,408	Roach	Mar. 29, 1870
988,633	Evenden et al.	Apr. 4, 1911
1,831,914	Hovey	Nov. 17, 1931
1,995,998	Nefedov	Mar. 26, 1935
2,034,244	Mikulasek	Mar. 17, 1936