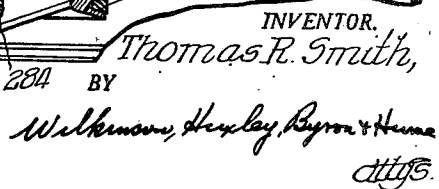


Filed Oct. 11, 1950

WASHING MACHINE

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April 27, 1954

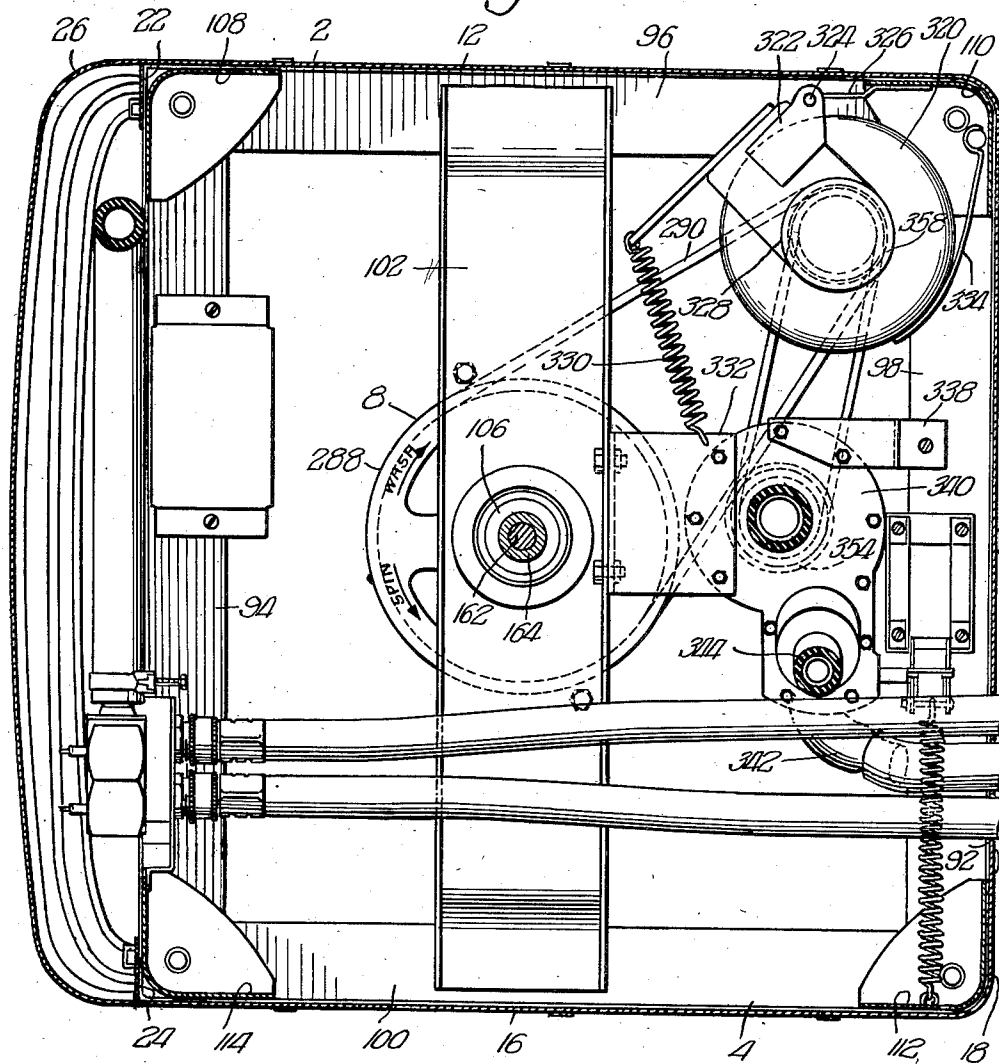
T. R. SMITH
WASHING MACHINE

2,676,476

Filed Oct. 11, 1950

4 Sheets-Sheet 2

Fig. 2.



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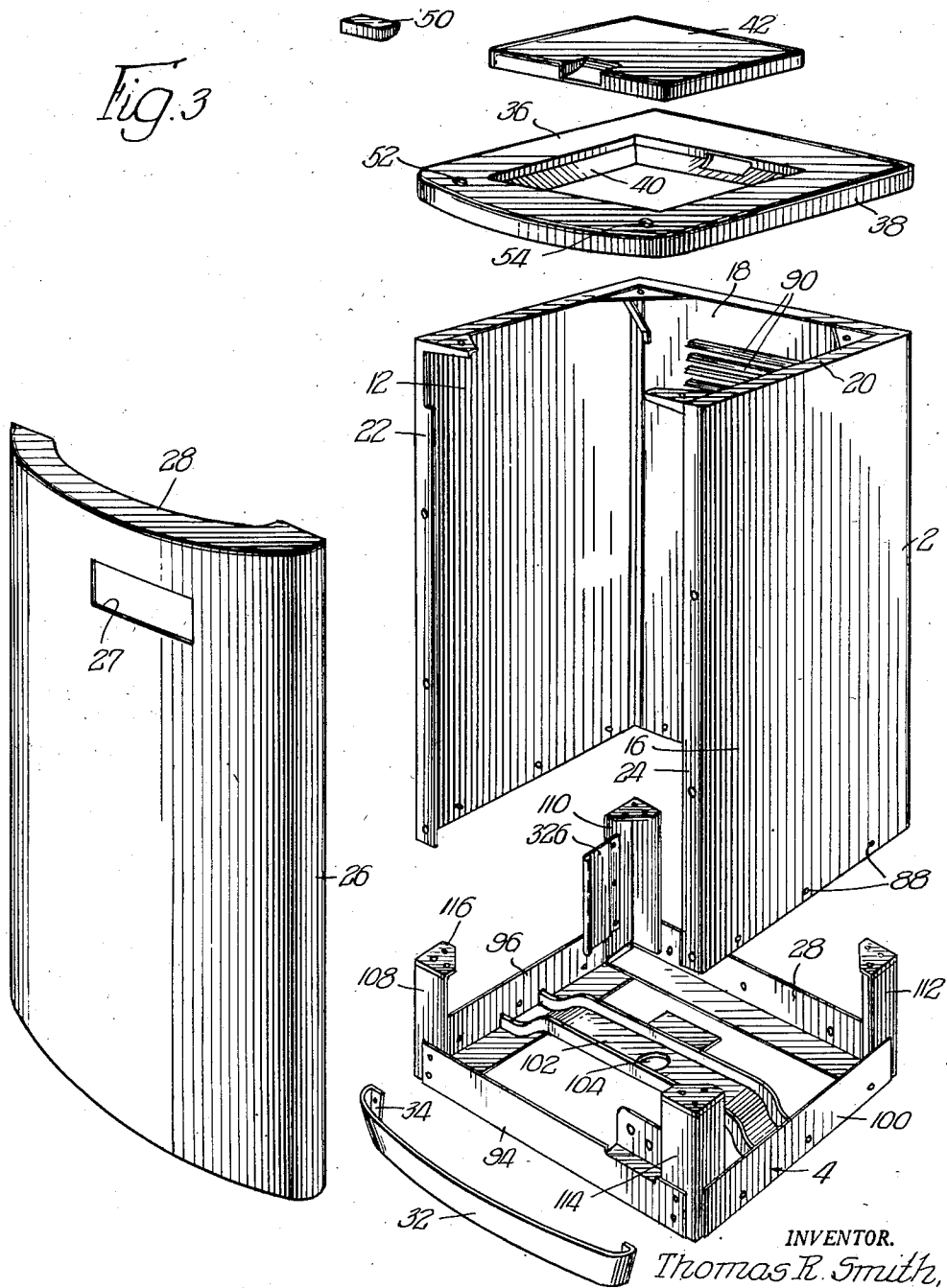
April 27, 1954

T. R. SMITH
WASHING MACHINE

2,676,476

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4 Sheets-Sheet 3



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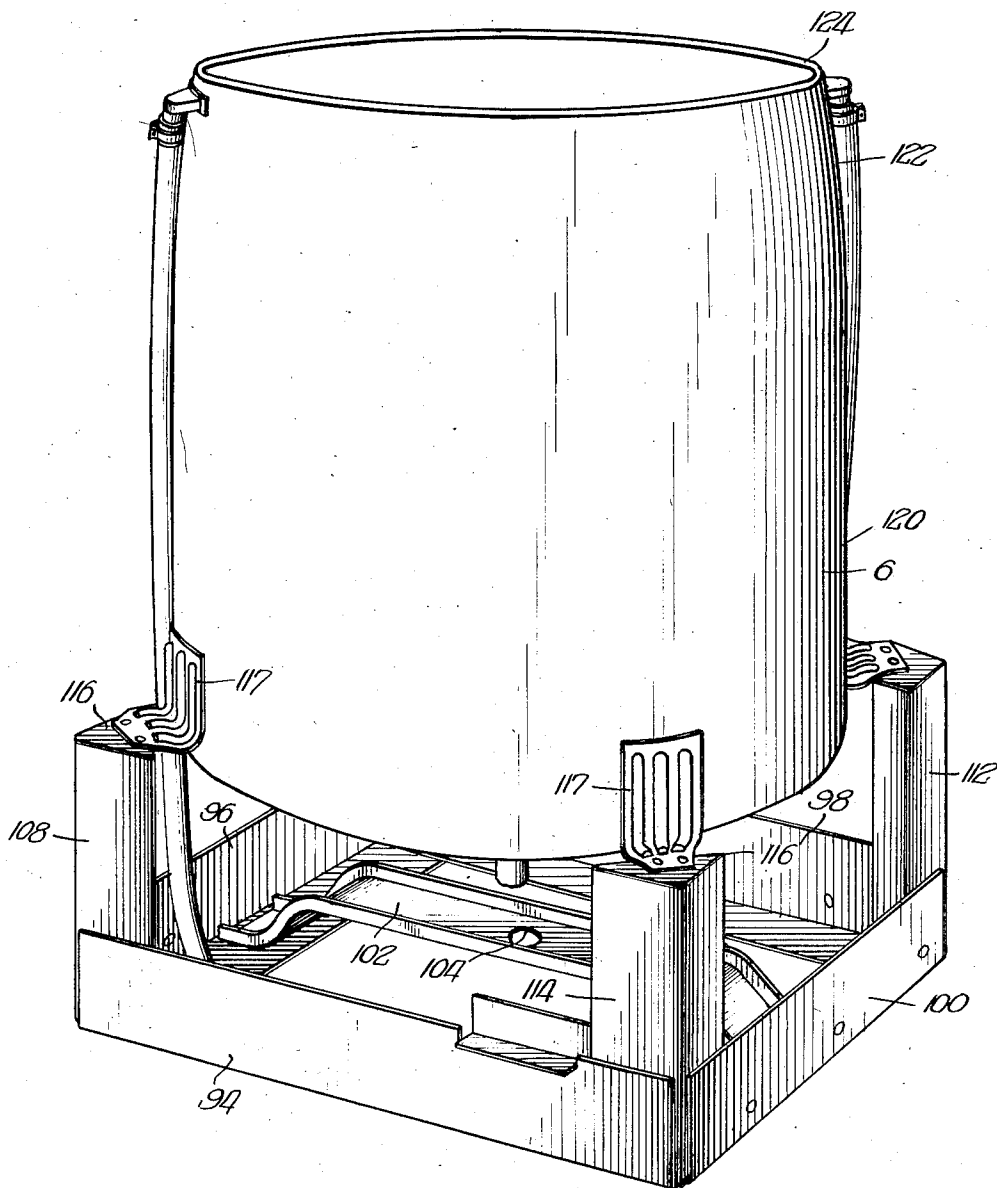
T. R. SMITH
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2,676,476

Filed Oct. 11, 1950

4 Sheets-Sheet 4

Fig. 4



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UNITED STATES PATENT OFFICE

2,676,476

WASHING MACHINE

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Application October 11, 1950, Serial No. 189,519

4 Claims. (Cl. 68—23)

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The present invention relates to washing machines, and more particularly to washing machines of the type in which a washing operation is accomplished by agitating the liquid and material contained therein and in which the tub is thereafter rotated to extract the liquid from the material to effect a partial drying thereof.

This application is a continuation-in-part of the parent application Serial No. 66,229 filed December 20, 1948, now Patent No. 2,645,107, issued July 14, 1953, and assigned to the assignee of the present invention.

One object of the invention is to provide a washing machine which is relatively simple in construction with relatively few moving parts, and in which the rotating tub assembly is supported for operation by a single bearing, thus providing a device which is readily and easily maintained in operating condition at a relatively low cost.

Another object is to provide a simple, compact and efficient frame structure in combination with operating parts effectively supported thereby in a manner to meet the requirements for successful use and operation.

Other objects, features, capabilities and advantages are comprehended by the invention, as will later appear and as are inherently possessed thereby.

Referring to the drawings:

Figure 1 is a vertical cross-sectional view of an automatic washing machine embodying the present invention;

Figure 2 is a horizontal cross-sectional view taken substantially in the plane represented by lines 2—2 of Figure 1 of the drawings;

Figure 3 is an exploded view in perspective of the cabinet and base assembly for the washing machine shown in Figures 1 and 2 of the drawings; and

Figure 4 is a perspective view of the supporting base structure showing how the outer tub is mounted thereon.

Referring now more in detail to the drawings, an embodiment selected to illustrate the combined washing and drying machine for washing, rinsing and spin drying fabrics and the like, generally comprises an outer casing or cabinet 2 for completely enclosing the various parts of the washing machine, and which is supported upon a base structure 4 which also serves to support an outer stationary tub 6, an inner tub 10 rotatably mounted therein, and power operated means generally referred to as 8, for the washer.

The casing or cabinet 2 is formed of a plu-

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ality of parts made from sheet metal, one of said parts being fabricated from a single sheet of metal to provide oppositely disposed side wall panels 12 and 16 and a back wall panel 18, said panels being provided with an inturned horizontally flanged portion 20 along their upper edge, and the said panels 12 and 16 at the forward marginal edges remote from the back panel being provided with inturned oppositely disposed vertically extending flanges 22 and 24. These flanges 22 and 24 are adapted to mate with and be rigidly secure to similar vertical flanged portions provided on opposite sides of a curved front panel 26. This front panel is also provided with an upper horizontally disposed inturned flange 28 disposed in the plane of the horizontal flanges 20 on the side and the back wall panels. The lower portion of the front panel terminates with an inwardly extending flanged portion 30 above the lower edge of the side and back wall panels to provide a toe space for the operator. A separate cover or foot board 32 of somewhat the same contour as the front wall, but fitting closer to the forward marginal edges of the side wall panels, covers this space to provide a smooth-looking front, the same being secured to the base assembly 4 through the inturned flanges 34 at the ends thereof. Disposed above the inturned horizontal flanged portions of the sides, back and front walls is a horizontal relatively flat cover or top 36, preferably formed from a single piece of metal and having vertically extending side portions 38 terminating in the inturned horizontal flanged portions 40 at the lower end thereof which mate with the flanged portions 18 and 28, the same being fastened thereto in any desired manner to form a substantially rectangular unitary box structure with an open bottom adapted to fit about the base assembly 4.

The front panel 26 is provided with an opening 27 preferably at the upper portion thereof, in which is mounted a nameplate 29 of translucent material and made easily readable by means of a pilot light 31.

The top wall or cover 36 is formed with a centrally located access opening defined by a downwardly and inwardly extending flange 40 to permit access to the inner receptacle or tub 10. This opening is normally closed by the lid or door 42 hinged by the U-shaped member 44 at one end thereof by means of horizontally disposed hinge pins 46 mounted in spaced brackets 48 on the under side of the cover or top wall 36. This lid swings upwardly to a substantially vertical position and is provided with a handle or grip 50

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at the end opposite the hinge 44 to provide means for raising or lowering the lid. Adjacent the front panel 26, the top cover member 36 is formed with openings 52 and 54 through each of which loosely extends a shaft of a control device as described in the parent application.

It will be noted that the lower edge portion of the back and side walls is provided with a series of openings 88 adapted to be aligned with similar openings in the base structure 4 for receiving screws, bolts or other means, for rigidly securing the outer casing to the base member 4 to provide a unitary structure. The back wall of the cabinet may also be provided with a plurality of spaced louvers 90 to permit circulation of cooling air around the motor. The back panel of the cabinet is also provided with an opening 92 through which water supply and removal conduits extend.

The base structure comprises four horizontally disposed L-shaped angle irons 94, 96, 98 and 100, disposed to form a rectangular assembly, one leg of the angle irons forming the outer vertical walls of the assembly and the other leg thereof being disposed inwardly to form the horizontal bottom wall of the structure. The horizontally disposed leg portions of the angle irons are overlapped and are fastened together in any desired manner, as by spot welding, or the like, to form a rigid structure. The vertically disposed leg portions of the angle irons constitute structure to which the cabinet 2 is attached or connected as hereinbefore described. Extending between the oppositely disposed angle irons 96 and 100, and rigidly secured in any desired manner to the horizontally disposed leg portions thereof, is an arched U-shaped channel member 102 formed with a centrally disposed opening 104 adapted to receive a combined radial and thrust bearing, generally referred to as 106, which constitutes the sole means for supporting the inner receptacle 10 on the base structure 4. At each corner of the base assembly 4 there is provided relatively short vertically upstanding L-shaped angle irons 108, 110, 112 and 114 which are rigidly secured to the vertical leg portions of the angle irons 94, 96, 98 and 100 and each of which is provided with an inwardly disposed bracket element 116 secured to the upper end thereof. Foot elements 117 secured to the outer tub 6 are also secured to the bracket elements 116 for forming supporting connections for the outer tub 6.

Adjacent each corner of the base assembly 4 there is provided an adjustable leg 118 which may be adjusted to maintain all four supporting points of the assembly in contact with the floor or support for the washing machine to maintain the same level and to provide for a solid contact between the machine and the floor or support to reduce vibrations which tend to be set up in the cabinet during operation of the machine.

The outer stationary tub or receptacle 6 is preferably formed at its lower portion with a cylindrical wall 120 and its upper portion has a frusto-conical wall 122 terminating in an open upper end adjacent the cover or top wall 36 to permit access thereto. The upper open end of the tub is provided with an inwardly extending flange 124 formed with a semi-spherical groove in the upper portion thereof which is adapted to receive an annular hollow ring shaped seal 126 adapted to engage and press against the under face of the cover or top wall 36 to maintain a fluid-tight seal between the outer receptacle and the cover and to prevent water from being forced from the

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outer receptacle into the outer casing or cabinet 2. The bottom 127 of the outer stationary tub is formed to facilitate the drainage of washing fluid therefrom to a conically shaped passage 128.

The bottom 127 of the stationary tub 6 is formed with a centrally disposed opening defined by the upstanding annular flange 154 to which is secured stand-pipe 156 in the form of an upstanding sleeve or tubular shaped member. The sleeve 156 projects downwardly below the bottom of the tub, as at 158, and extends upwardly above said bottom and terminates in an enlarged cylindrical portion 160. This up-standing sleeve provides means through which concentrically arranged shafts 162 and 164 extend, these shafts being driven to actuate the agitators 166 and 168 and for rotating the inner tub or receptacle 10. The up-standing sleeve 156 is spaced from the concentrically arranged shafts to permit lateral and gyratory movement thereof, and the same is of sufficient height to prevent any washing liquid which accumulates in the bottom of the tub 6 from flowing out of the central opening defined by the flange 154. The central portion of the tank bottom 127 adjacent to and outwardly of the annular flange 154 is provided with a spherical surface 170 for a purpose to be hereinafter more fully disclosed.

The inner rotary tub or receptacle 10 is disposed within the upper portion of the stationary tub 6 and is spaced from the side walls thereof a sufficient distance to permit of a certain amount of lateral or gyratory movement thereof without contacting the same. The said inner tub is in the general form of a truncated spherical hollow body member terminating in a horizontal plane at its upper marginal edge to provide an access opening 172 which is in alignment with the opening in the cabinet formed by the flange 40 whereby the interior thereof is accessible to the operator. This hollow body member is provided with a substantially horizontally disposed bottom wall 174 opposite the opening 172.

The upper and lower portions of the receptacle 10 are formed with mating hub portions which extend outwardly and in opposed relation to one another to provide the horizontally aligned hubs 176 and 178 which are adapted to receive the stub shafts 180 and 182 secured therein by means of pins or the like 184, upon which the agitators 166 and 168, respectively, are mounted for rotation about a horizontal axis. The tub 10 is further provided with the oppositely disposed offset portions 204 and 206 to accommodate the agitators 166 and 168, respectively, and the driving mechanism therefor, and in the side wall of which is formed a plurality of relatively large openings 186, each having its lower marginal edge disposed slightly above the horizontal axes of the stub shafts 180 and 182 which define a maximum liquid level for liquid within the tub 10 and serve to permit the washing liquid to flow therethrough when the level thereof tends to rise above the plane of the lower marginal edges of these openings and also when the tub is rotated about its vertical axis.

The bottom wall 174 of the tub 10 is provided with an integrally formed housing structure 188 concentrically arranged with respect to the vertical axis of the receptacle 10 and having an annular and outwardly extending flange 190 seating upon, and being secured as by bolts or the like, to the outwardly disposed flange 192 of the hub

member 194 which is secured to the outer hollow shaft 164 through the medium of pins 196, or any other suitable connecting means. The hollow rotatable shaft 164 extends downwardly through the opening provided in the sleeve member 156 of the outer tub 6 and is formed at its lower end with a reduced portion 198, having a shoulder 200 engaging a combined radial and thrust bearing assembly 106, whereby the inner tub is supported axially solely by this bearing, the said combined radial and thrust bearing assembly serving as a pivot point about which the said tub 10 is rotated, as will be explained more fully hereinafter. The bottom of the tub 10 adjacent the central axis of the same, and immediately above housing 188, is provided with a raised or crowned surface 202 for accommodating certain driving mechanism disposed within the said housing 188.

The agitators 166 and 168 are of similar construction and each comprises a substantially spherical shaped base or disk portion 208 fitting within the offset portions 204 and 206, respectively, to provide a substantially uninterrupted inner surface for tub 10. The agitators are removably secured to shafts 180 and 182 by means of the spring retaining rings 210 fitting within complementary annular grooves formed in the shafts 180 and 182 and the hubs 212 and 214 of the agitators 166 and 168, respectively. The disk portions 208 of the agitators are provided with a plurality of openings 216 which extend therethrough so that water or washing liquid may flow through such openings to the openings 186 and into the outer tub 6. Each of the agitators is preferably provided with a single vane, as illustrated, which extends vertically outwardly from the base and extends substantially across the entire width of said base. These vanes, when the agitators are mounted within the receptacle 10, project toward the center of the inner tub 10 and the same are capable of agitating the liquid disposed within the tub or container when the same are rotated.

The inner shaft 162 is journaled in the outer sleeve 164 with its upper and lower portions in the bearings 218 and 220, respectively, and extends upwardly beyond the flange 192 and into the housing 188, the upper end thereof having the bevel pinion 222 secured thereto. The bevel gear 222 is mounted on the upper surface of the outer shaft 164 through the thrust bearing 224, which prevents the inner shaft 162 from moving in a downward vertical direction, and to position the same with respect to the hollow shaft 164. The bevel pinion 222 meshes with the bevel gears 226 and 228 mounted adjacent the inner ends of drive shafts 230 and 232, respectively, which extend outwardly and horizontally in opposed relation and are journaled adjacent their inner ends in the inner bearings 234 and 236 formed in the housing 188 and adjacent their outer ends in the bearings 238 and 240. The bearings 238 and 240 are provided in the recess housings 242 and 244 disposed adjacent to and immediately below the agitators 166 and 168, respectively. Mounted on the drive shafts 230 and 232 adjacent their outer ends are spur pinions 246 and 248 which mesh with spur gears 250 and 252 of relatively large diameter, which may be integrally formed with the agitators 166 and 168, respectively, or formed separately and connected thereto. It will be seen from the drawings, that as the drive shaft 162 is rotated in any given direction that the bevel gear 222 connected thereto will rotate the bevel gears 226 and 228 in opposite directions for driving the shafts 230 and 232 and the agitators 166 and 168 operatively con-

nected in driving relation thereto, in opposite directions. Due to the opposite rotation of the agitators, the liquid or cleaning fluid within the receptacle 10 is forced from one side or face of one of the agitators to the oppositely facing side of the other agitator and is forced downwardly and over to the other side of the face thereon and is discharged therefrom and is then caused to flow back to the adjacent face of the first agitator by the second agitator. The opposite rotation of the agitators causes the liquid to flow in a continuous direction in a horizontally circular manner between the agitators and in a vertical semicircular manner at and adjacent the agitators. The flow, however, will be very turbulent as the body of liquid is moved in the general direction indicated.

The housings 242 and 244 formed as an integral part of the tub or container 10 adjacent the junction of the side and bottom walls are each in communication with the interior of the tub by way of channels, such as 254, and the openings 216 in the agitators. Laterally and on both sides of shafts 230 and 232, the housings 242 and 244, respectively, are formed with radially extending portions 266 connected to the bottom wall 174 of the inner tub to provide passageways communicating at one end with the recesses formed by the housings 242 and 244 and at the other end with the interior of the inner tub 10 through openings 268 provided in the bottom wall 174.

Each of the housings 242 and 244 is provided with an opening exteriorly of the tub 10 which is closed by a wall element 256 connected to the tub 10 in any desired manner. The wall is apertured, as at 258, to permit water or cleaning fluid to be discharged from the tub 10 when the same is rapidly rotated in the washing cycle. The opening 258 is normally closed by a valve member 260, spring pressed into such position by means of the spring member 262 which permits the valve member 260 to be opened against the action of the spring during relatively high speed of the tub 10. The outward movement of the valve members 260 is limited by stop elements 264 connected to the tub 10 in any desired manner.

The primary object of the valves 260 is to provide means for flushing dirt and other foreign matter away from the pinions and gears, which may have collected during the washing cycle in the recesses formed by the housings 242 and 244. Water or cleaning fluid for this flushing operation passes from the interior of the tub 10 outwardly through openings 216 in the agitators and channels 254 and through the openings 268 into the recesses formed by the housings 242 and 244.

As previously pointed out, the hollow shaft 164 is formed with a reduced portion 198 providing the shoulder 200 which is in operative association with the radial and thrust bearing assembly generally referred to by the reference numeral 106. More particularly, the said shoulder 200 engages the inner race ring 270 of the bearing 106 to support the shaft 164 in vertical position. The outer race ring 272 is mounted in and connected to an annular member 274, S-shaped in vertical cross-section, the same being provided with a lower inward flange 276 for supporting the outer race ring 272 and with an upper outwardly disposed flange 278 which overlaps and engages an annular shaped rubber bushing 280. This bushing, which may be of any desired resilient material, is positioned by an annular dish-shaped retaining member 282 and has an inwardly disposed flange 284 on which the annular resilient bushing 280 is mounted and an upper and outwardly extend-

ing flange 286 disposed within the opening 104 of the channel member 102 and overlaps the same and is rigidly connected thereto in any desired manner.

The extreme lower end of the shaft 162 projects downwardly beyond the restricted portion 198 of the hollow shaft 164 and has a driving pulley or wheel 288 keyed thereto in any suitable manner, whereby the same is adapted to drive the shaft 162. It is to be noted that the reduced end portion 198 is disposed to have its end in abutting relation to the hub of the pulley 288 so as to prevent relative axial movement of the two shafts 162 and 164.

From the foregoing it will be seen that the combined radial and thrust bearing 106 not only supports the receptacle 10 but, through the thrust bearing 224 disposed between the bevel pinion 222 and the supporting hub member 194, maintains the pulley 288 in its proper operative position. As the receptacle 10 is caused to move laterally within the stationary tub 6 during the spinning operation, or if the same is moved in any manner away from its vertical position, the receptacle 10 will tilt about the bearing assembly 106, it being noted that the bearings constitute the sole support for the receptacle 10 and the agitators, and their operating mechanism. The pulley 288 is dish shaped in such a manner that the horizontal plane defining the center of the groove for the driving belt 290 fitting therein, extends through the pivot point of the bearing assembly 106 in order to minimize deflection of the driving belt.

In order to maintain the receptacle 10 in substantially its vertical position, there is provided a combined stabilizing and damper mechanism, generally referred to as 292, disposed immediately below the bottom 127 of the stationary tub 6. This mechanism includes a hollow sleeve-like member 294 surrounding the hollow shaft 164 which is provided with two radial bearings 296 and 298 journaled upon the hollow shaft 164 adjacent the upper and lower end portions of the tubular member 294. The upper end of the central tubular member 294 is formed with a spherical shaped wall 300 reinforced by a plurality of downwardly extending webs or brackets 302 which provides a spherical shaped friction surface. The spherical shaped wall 300 is adapted to contact a spherical shaped member 304 formed of friction material mounted upon the lower wall 127 adjacent the spherical shaped portion 170 through an annular tubular member 306 which surrounds the downwardly extending end portion 158 of the sleeve 156. The hollow tubular member is preferably formed of some resilient material, the same being adapted to engage an annular shoulder 308 provided adjacent the inner marginal edge of the member 304. Adjacent the lower end of each of the webs or brackets 302, four being provided in the illustrative embodiment, there is provided an opening engaged by one end of a coil spring 310, which has its other end connected to the stationary tub 6 by means of a bracket 312 connected to the bottom wall 127 thereof. These springs are uniformly spaced around the member 294 so that springs of each pair are disposed in opposite relation to one another and due to the angular position of these springs with respect to the tub and the connection at the lower end of the webs 302, a component of the spring force is applied in a vertical direction to the friction member 304. Since each spring is equally loaded and opposed by an oppositely disposed spring, the tub 10 will be main-

tained in its vertical position under normal conditions. Should the receptacle 10 tend to move away from the vertical, the spring forces acting through the member 294 will tend to return it to its neutral or vertical position where the spring forces are all equal and opposite. As will be apparent, the surface of the spherical wall 300 is forced by the springs 310 toward the friction member 304 and, as the tub tends to move in a horizontal plane, a certain portion of the energy tending to move the tub is absorbed by the friction member. This friction member, therefore, tends to reduce the amplitude or extent of horizontal movement of the tub and absorbs some of the energy applied thereto.

The driving means for the pulley 288 comprises a reversible motor 320 vertically mounted in, and supported by a frame 322 pivoted to the stationary bracket 326 connected to the vertical supporting element 110 of the base structure 4 for movement about a vertical shaft or axis 324 in remote relation to the axis of the motor. A drive pulley 328 having a V-shaped peripheral groove is connected to the rotor shaft of the motor and is adapted to drive the pulley 288 through the belt 290. The belt 290 is maintained under its proper belt tension by means of a horizontally disposed preloaded spring 330 connected at one end to the housing 322 and at its other end to the bracket 332 secured to the base assembly 4, said spring acting to move the motor and its supporting frame 322 about its vertical supporting axis 324 in a direction away from the driven pulley 288.

In bringing the tub 10 and its contents up to spinning speeds, a motor of the size which it is desirable to use in a washing machine of the type herein disclosed, will not attain its operating speed fast enough to prevent the starting winding thereof from burning out. In order to eliminate this difficulty, the motor 320 is pivotally mounted as described and operates in a counter-clockwise direction, as disclosed in Figure 2 of the drawings, to spin the tub 10 and in a clockwise direction to rotate the agitators 166 and 168. The pivot 324 is arranged with respect to the motor so that the reactive torque of the motor operates against the spring 330 which holds the belt 290 tight so that the belt is loosened during the rotation of the motor in a counter-clockwise direction sufficiently to allow the motor pulley 328 to slip on the belt 290. The spring 330 is adjusted so that the motor pulley will slip on the drive belt at a value considered to be the maximum safe output torque of the motor. In the operation of the washing machine, as soon as the motor is rotated in a counter-clockwise direction, as viewed in Figure 2 of the drawings, the same immediately comes up to speed and slips on the belt 290 and provides a maximum safe torque which gradually accelerates the pulley 288 and the structure which is to be rapidly rotated thereby, including the tub 10 and the contents thereof. When the motor is rotated in the reverse direction for operating the agitators, it is evident that the torque required to cause slipping is much greater as the pulley tends to move up on the side of the belt which is closer to the pivot point 324 and, accordingly, there is less leverage tending to move the frame structure 322 against the action of spring 330. With this arrangement, slipping of the motor can be provided for spinning the tub 10 in one direction and ample torque is provided for operating the agitators without danger of belt

slippage in the reverse direction. When the motor 320 is operated to spin the tub 10 there will be a tendency under some conditions for the motor to hunt or oscillate about the pivot point 324. In order to prevent this oscillation or hunting of the motor a friction damper is provided. This friction damper comprises a leaf spring 334 connected to the motor housing at one end thereof and being provided at its other end with a transverse groove adapted to hold the friction member 336 therein and against the inside face of the angle iron 110 upon which the motor is pivotally supported.

Rigidly secured to brackets 332 and 333 of the base assembly, and disposed between the drive and driven pulleys 288 and 289, is a reversible pump 340 capable of operating in either direction of rotation of the motor 320 for pumping liquid from the tub 6 either through a conduit 342 to drain, or through a conduit 344 back to the receptacle 10 for recirculation. The pump 340 is driven by the motor 320 through motor pulley, belt 356 and pump pulley 354.

Mounted on the inner side of the hub of the driving pulley 288 is a one-way clutch 384 comprising a body portion having tapered slots therein which have their openings disposed adjacent the reduced end portion 198 of the hollow shaft 164. A plurality of rollers are disposed in these slots so that when the driving pulley 288 is rotated in a clockwise direction, as viewed in Figure 2 of the drawings, as, for example, when the agitators 166 and 168 are being operated, the roller will be disposed in the larger part of the slots and, accordingly, no turning movement is applied to the hollow shaft 164 upon rotation of the pulley 288. At this time the pulley 288 which is connected to the shaft 162 causes rotation thereof for operating the said agitators. When the direction of rotation of the pulley 288 is reversed, however, the rollers move along the tapered slots and grip the hollow shaft 164 to effect a driving connection between the pulley 288 and said hollow shaft 164. It will be apparent that during this operation the inner and outer shafts 162 and 164 are rotated together in the same direction, and at the same speed, and inasmuch as there is no relative movement therebetween, the agitators 166 and 168 are maintained stationary with respect to their axes of rotation but the same will be revolved about the vertical axis of the tub 10.

During the rotation of the inner shaft 162, when the agitators 166 and 168 are rotated for a washing operation, there is a natural tendency for the receptacle 10 to rotate with the inner shaft 162 which, if permitted, would reduce the effectiveness of the washing action of the agitators. In order to maintain the tub 10 stationary during the washing operation there is provided a one-way clutch 386 mounted in the lower end of member 294 of the stabilizing and damper mechanism 292 which is adapted to hold the tub 10 and to prevent its rotation. This one-way clutch is similar to the one-way clutch 384, except that the tapered slots formed in the body portion are disposed oppositely to the tapered slots in the one-way clutch 384. When the shaft 162 is rotated to rotate the agitators, the rollers of this one-way clutch 386 are positioned to grip the hollow shaft 164 and, inasmuch as the stabilizing and damper mechanism 292 is connected to the stationary tub 6 through the springs 310, rotation of the hollow shaft 164 cannot occur. When the rotation of the driving

pulley is in the reverse direction and the one-way clutch 384 grips the outer hollow shaft 164 to cause the tub 10 to rotate about its vertical axis, the one-way clutch 386 is released.

By means of the cooperative action between the various supporting elements themselves and between said supporting elements and the various operating elements herein described a combination is provided for producing a simple, sturdy, reliable and efficient washing machine adapted to meet all of the requirements for successful operation.

While I have herein described and upon the drawings shown an illustrative embodiment of the invention, it is to be understood that the invention is not limited thereto but may comprehend other constructions, arrangements of parts, details and features without departing from the spirit of the invention.

I claim:

1. In a washing machine, the combination of an inner rotatable tub having operating shaft means, an outer stationary tub having a plurality of peripherally spaced brackets connected thereto adjacent the bottom thereof, a base frame for supporting said tubs and provided with a plurality of corners, a plurality of spaced upwardly extending pedestals secured in at least some of said corners adjacent their lower ends, means connecting said brackets to said pedestals whereby said outer tub is supported therethrough to said base frame, a removable cabinet surrounding said tubs and base frame and having an opening in its upper wall to permit access to said inner rotatable tub, said cabinet being spaced from said outer stationary tub and pedestals, means for securing said cabinet to said base frame, and a member extending between and connected to opposite side portions of said base frame having means cooperating with said shaft means providing the sole support for said inner tub.

2. In a washing machine, the combination of an inner rotatable tub having operating shaft means, an outer stationary tub having a plurality of peripherally spaced brackets connected thereto adjacent the bottom thereof, a substantially rectangular base frame for supporting said tubs and provided with a plurality of corners, an upwardly extending pedestal secured in each of said corners adjacent the lower ends, means for connecting said brackets to said pedestals whereby said outer tub is supported thereby, a removable cabinet surrounding said tubs and base frame and having an opening in its upper wall to permit access to said inner rotatable tub, said cabinet being spaced from said outer stationary tub and pedestals, means for securing said cabinet to said base frame, a member extending between and connected to opposite side portions of said base frame structure, and means for resiliently mounting said shaft means on said last named member to permit tilting movement of said inner tub and providing the sole support therefor.

3. In a washing machine, the combination of an inner rotatable tub having actuatable clothes treating means, an outer stationary tub having a plurality of peripherally spaced brackets connected thereto adjacent the bottom thereof, a substantially rectangular base frame structure for supporting said tubs and provided with a plurality of corners, an upwardly extending pedestal secured in each corner adjacent their lower ends, means for connecting said brackets to the

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upper ends of said pedestals whereby said outer tub is supported therethrough to said base frame, a removable cabinet surrounding said tubs and base frame and having an opening in its upper wall to permit access to said inner rotatable tub, said cabinet being spaced from said outer stationary tub and pedestals, means for securing said cabinet to said base frame, a supporting member extending between and connected to opposite side portions of said base frame structure having means providing the sole support for said inner tub, and a motor operatively connected with said clothes treating means and said inner tub supported by one of said pedestals.

4. In a washing machine, the combination of an inner rotatable tub having concentrically disposed shafts, actuatable clothes treating means within said tub connected to the inner of said shafts, an outer stationary tub having a plurality of peripherally spaced brackets connected thereto adjacent the bottom thereof, a substantially rectangular angle iron base frame for supporting said tubs provided with a plurality of corners, an upwardly extending pedestal secured in each corner adjacent their lower ends, means for connecting said brackets to the upper ends of said pedestals whereby said outer tub is supported therethrough to said base frame, a removable cabinet surrounding said tubs and base

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frame and having an opening in its upper wall to permit access to said inner rotatable tub, said cabinet being spaced from said outer stationary tub and pedestals, means for securing said cabinet to said base frame, an arched member extending between and connected to opposite side portions of said base frame structure provided with an aperture intermediate the ends thereof adapted to receive the lower ends of said shafts to permit tilting movement of the inner tub and providing the sole support therefor, and a motor including a connection for operating said clothes treating means and said inner rotatable tub carried by one of said pedestals.

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