April 13, 1937. G. K. PARSONS 2,076,587

CONVERTIBLE WASHING MACHINE CONSTRUCTION

Filed March 9, 1935 2 Sheets-Sheet 1

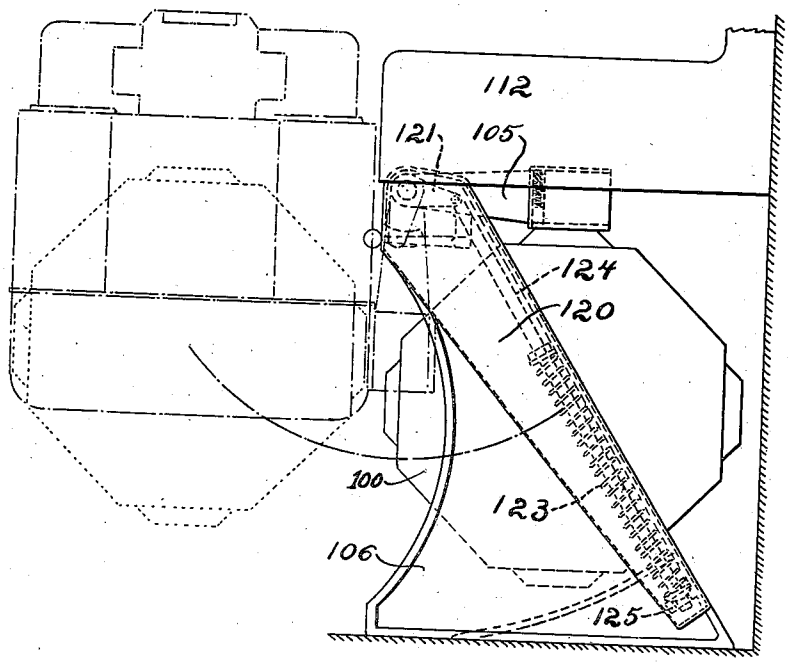



Fig. 1

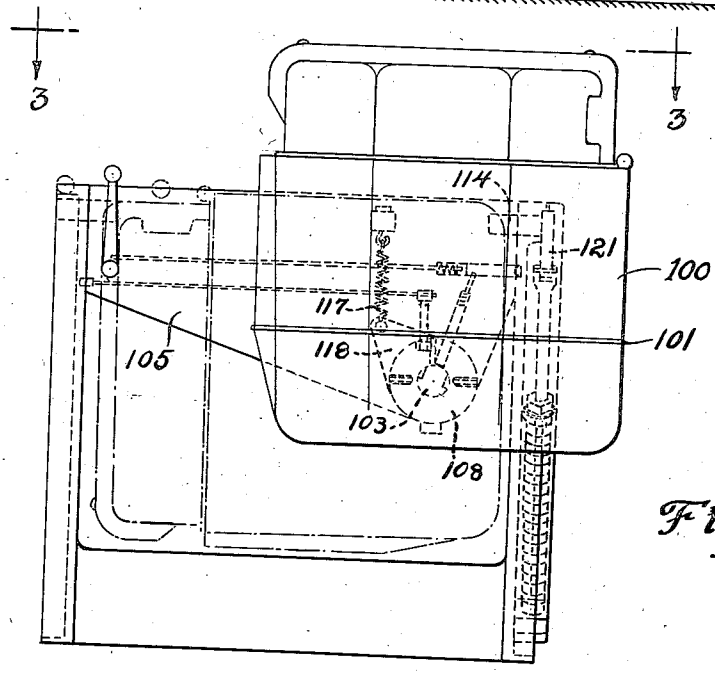



Fig. 2

INVENTOR:
George K. Parsons
BY
Sloan, Taylor & Hardesty
ATTORNEYS

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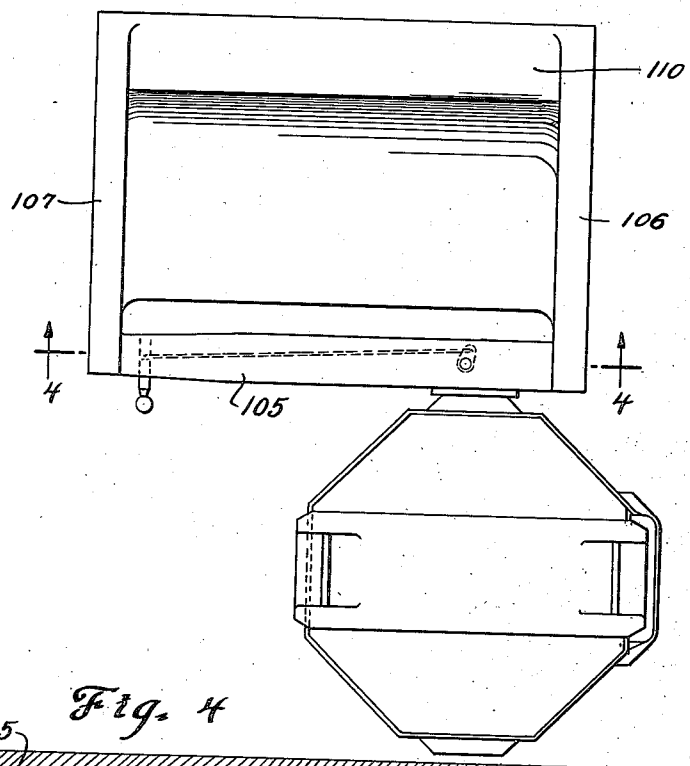
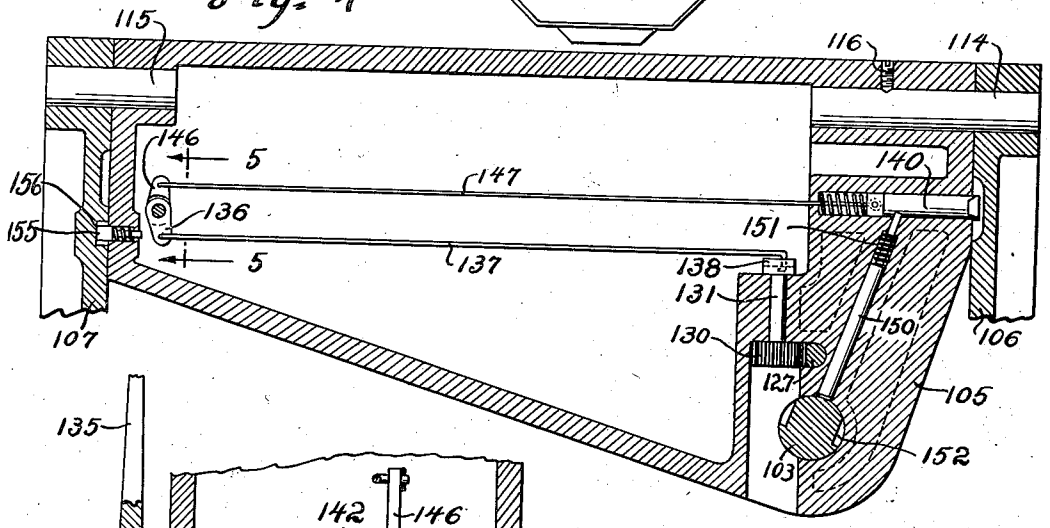



Fig. 3

Fig. 4



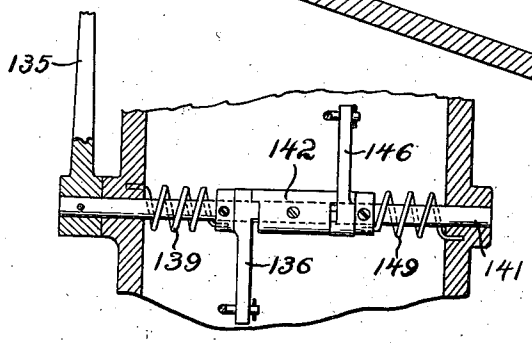




Fig. 5

INVENTOR.
George K. Parsons
BY
Sutton, Tate & Hardesty
ATTORNEYS.

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# UNITED STATES PATENT OFFICE

2,076,587

## CONVERTIBLE WASHING MACHINE CONSTRUCTION

George K. Parsons, Detroit, Mich.

Application March 9, 1935, Serial No. 10,193

4 Claims. (Cl. 248—13)

This invention relates to the construction of convertible machines for household use, and particularly to those of the sort which are adaptable to the performance of various household tasks such as the washing of clothing and dishes and/or implements and articles of food, ironing, mixing, beating and the like.

An important object of the invention comprises the provision of improved foldable supporting means whereby machines and other objects desired to be supported may be movably mounted in a manner enabling very easy reduction of the space occupied thereby when not in use, and movement of the same from a folded or collapsed position of non-use to operative position quickly and with very little effort, as well as enabling convenient storage of the machine or other mounted object in such a confined space as that available beneath a sink or in a small closet. I also aim to provide in such improved foldable supporting means novel safeguards against movement of the machine in undesired directions, and compelling the movement thereof in the various directions possible only in desired sequence.

Other objects and advantages will be apparent from the following description wherein reference is made to the accompanying drawings illustrating a preferred embodiment of my invention and wherein similar reference numerals designate similar parts throughout the several views.

In the drawings:

Figure 1 is a side elevational view of my improved foldable household machine and its support, indicating the manner in which it may be supported from beneath a sink and folded therebeneath when not in use;

Figure 2 is a front elevation of the machine in upright position;

Figure 3 is a plan view taken substantially on the line 3—3 of Figure 2 and looking in the direction of the arrows;

Figure 4 is an enlarged vertical section of a portion of the supporting means, taken substantially on the line 4—4 of Figure 3 and looking in the direction of the arrows;

Figure 5 is a fragmentary detail section taken substantially on the line 5—5 of Figure 4 and looking in the direction of the arrows.

As shown in Figures 1 to 5 inclusive, the machine assembly, generally designated 100, may be carried by a sub-base, as 101, supported by and rotatable about the axis of a shaft 103, which projects, horizontally when the machine is in its position of use, from one side of the sub-base and into the supporting hanger 105, in which it is journaled. The hanger is trunnioned in the upwardly projecting arms 106—107 of a supporting standard of generally U-contour. The standard comprises a base plate portion 110 adapted to be screwed or otherwise secured to the floor, as beneath the sink 112, while arms 106—107 project upwardly and forwardly from the base plate, being preferably of such length as to terminate directly beneath the front edge of the sink when the machine is installed in the preferred manner indicated in Figure 1. At their upper ends the arms carry inwardly projecting stub shafts 114—115 rotatably supporting the elongated hanger 105, which extends the full distance between the arms 106—107, as best shown in Figures 3 and 4. The bearing portion 108 of the hanger 105 in which the supporting shaft 103 for the machine is journaled, is preferably arranged near one end of the hanger and at such distance below the axis of the trunnion bearings 114—115 that the machine is held at a convenient height when elevated to the erected position shown in dot-dash lines in Figure 1, while it may project far enough beneath the sink when folded to the position shown in full lines in that view to create no interference with use of the sink. It will be seen that the trunnion supports 114—115, and the shaft 103 by which the machine is directly carried, provide axes perpendicular to each other about which the machine may be swung to enable both laying the machine over on its side by turning it about the axis of shaft 103, as indicated in dotted lines in Figure 1, (to reduce the height) and swinging it about the trunnion axis from the projecting position of use in which it extends forwardly from the sink, to a position therebeneath, to reduce the front to rear dimension of the assembly comprising machine and base and enable storing it conveniently beneath the sink.

A counterbalance spring, as 117, may be provided to balance the weight of the machine when tilted about the axis of shaft 103, such spring being shown in Figure 2 as of simple coil form and acting in tension at one end upon an arm 118 rigidly secured to and turning with the machine about the axis of shaft 103. The shaft 103 also turns with the machine, being journaled in the hanger portion 108, as previously stated, and such bearing portion 108 of the hanger preferably extends entirely therethrough, so that the shaft 103 may be inserted from and the machine accordingly supported upon either side of the hanger. The hanger is also reversible end for end in the trunnion bearings, so that complete

reversal and folding of the machine in the opposite direction may be effected. The locking portions presently to be described are also of complementary construction at symmetrically opposite portions of the structure to enable such reverse assembly and operation, as will become apparent and is indicated in the drawings. The shaft 141 upon which the handle 135 is mounted may also project from both sides of the hanger, as shown in Figure 5, to enable attachment of the handle to the opposite side upon reversal of the hanger.

Shaft 114 is rigidly secured in and turns with the hanger, being shown held by a set screw 116, and projects from the arm 106 into a housing 120 carried by the side of such arm. A lever 121 is secured to the end of the shaft within the housing. Also within the housing and acting upon such lever is a counterbalance spring 123 for maintaining the machine in desired positions with respect to the longitudinal trunnion or hanger axis. Such spring acts in compression upon the lever 121, tending to throw it to either of the extreme positions shown in Figure 1 by virtue of the over center movement of the lever with respect to the line of thrust of the spring. The spring may be retained by a rod as 124, articulated to the lever at its upper extremity and freely slidable at its lower extremity, as in bracket 125.

The machine may be locked against swinging about the axis of shaft 103 by a pin 127 slidable in the hanger to and from engagement with the sub-base of the machine in a path parallel to the axis of such shaft. Upon a portion of the pin within the hanger are rack teeth (undesignated) providing for driving the pin by means of a pinion, as 130. The pinion may be turned to slide the pin by means of the hand lever 135, which, when swung in one direction, is arranged to turn a lever 136 connected by a link 137 to an arm 138 attached to shaft 131 upon which the pinion is mounted. A torsion spring 139 acts upon the lever 136 to yieldably hold it normally in the position in which the pin 127 is projected into engagement with the sub-base to hold the machine in either of the extreme positions shown, (one in dot-dash lines and the other in dotted lines in Figure 1); that is, in either the vertical or horizontal position.

Movement of the machine and hanger about the trunnion axis may be prevented by a pin 140 projectable from one end of the hanger into engagement with a slot as 117 in a supporting arm as 106. Movement of the pin 140 is similarly controllable by means of a link 147 connecting the same to a lever 146, also actuable by the hand lever 135. A torsion spring 149 also acts upon the lever 146 to urge it in the direction tending to throw the pin 140 into the locking position in which it is shown in Figure 4. Lost motion connection between the hand lever 135 and actuating levers 136—146 is provided by the loose mounting of the two last mentioned levers upon the handle shaft 141, and the driving thereof by means of the clutch 142 fast upon such shaft and arranged between and having lost motion connection provided by teeth loosely interfitting with teeth carried by the driving levers. Retraction of locking pin 140 is prevented when the machine is in vertical position by means of a detent pin 150 controllable by the shaft 103 and slidable in the hanger into and out of locking engagement. A spring 151 acting upon the detent 150 tends to retract it from locking engagement with pin 140, but such retraction cannot be effected until the machine has been laid over in a horizontal position, and the shaft 103 thereby turned to a point which aligns a cutout area 152 thereof with the detent 150, and so permits retracting movement thereof. Upon reverse tilting movement of the machine to upright position the pin 140 is again locked by pin 150. This will be seen to forestall any attempt of an inexperienced person to swing the machine beneath the sink while still in a vertical position with respect to the axis of shaft 103. In order to prevent turning the machine about the axis of shaft 103 while beneath the sink and until it has been moved out from under the same, I may provide for blocking movement of the arm 136 and so of the pin 127, as by means of a blocking element 155 slidable in and projecting from one end of the hanger into a groove 156 in which it travels when the machine is swung about the trunnion axis. One of such grooves is of course formed upon the inner face of each arm, so that the blocking pin may be similarly actuated whichever arm it may face, which of course depends upon the positioning of the hanger. Groove 156 is concentric with the trunnion axis, and the pin is held retracted and clear of the arm 136 by a spring, thereby allowing free movement of the arm 136, only when the depth of slot 156 is sufficient. The slot is only deep enough to free the pin from blocking engagement with the lever, however, in that area which the pin occupies when the machine has been turned with respect to the trunnion axis so that shaft 103 projects horizontally in the proper position in which the machine is intended to be used.

It will thus be seen that considering the machine to be in the upright position of use indicated in dot-dash lines in Figure 1, lever 135 may be swung to the right as viewed in Figure 2 to retract pin 127, and so permit laying the machine over on its side, but pin 140 cannot be retracted to permit swinging the machine beneath the sink until the machine has been so swung to the horizontal position, after which, however, the pin 140, being freed, may be retracted and the machine moved back under the sink about the trunnion axis to the full line position of Figure 1. In such position pin 155 prevents movement of the handle to the right, but pin 140 being free, the machine may be manually pulled out from beneath the sink at any time, after which, the pin 155 being freed, the machine may be moved to vertical position.

While it will be apparent that the illustrated embodiment of my invention herein disclosed is well calculated to adequately fulfill the objects and advantages primariy stated, it is to be understood that the invention is susceptible to variation, modification and change within the spirit and scope of the subjoined claims.

What I claim is:

1. Supporting means for household devices and the like comprising in combination with a pair of spaced standard portions, a support element swingable about a substantially horizontal axis in said standard portions, a rockable sub support element swingable about an axis transverse to and below the first for carrying a desired load, and interlocking detent means for preventing swinging of one of said elements until the other has been moved to a predetermined degree.

2. Supporting means for household devices and the like comprising in combination with a pair of spaced standard portions, a hanger element

swingable about a substantially horizontal axis in said standard portions, supporting means rockable in said hanger element about an axis below and substantially normal to the first, and detent means preventing movement of one element when the other is in predetermined position.

3. Apparatus as set forth in claim 2 in which said detent means includes a latching element for preventing movement of one element, and means actuable by movement of the other element for controlling operation of said latching element.

4. Apparatus as set forth in claim 2 in which said detent means includes latching members for preventing movement of each element about its axis of support, and means interconnecting one of said latching members and the other element for preventing actuation of a latching member while an element is in predetermined position.

GEORGE K. PARSONS.