

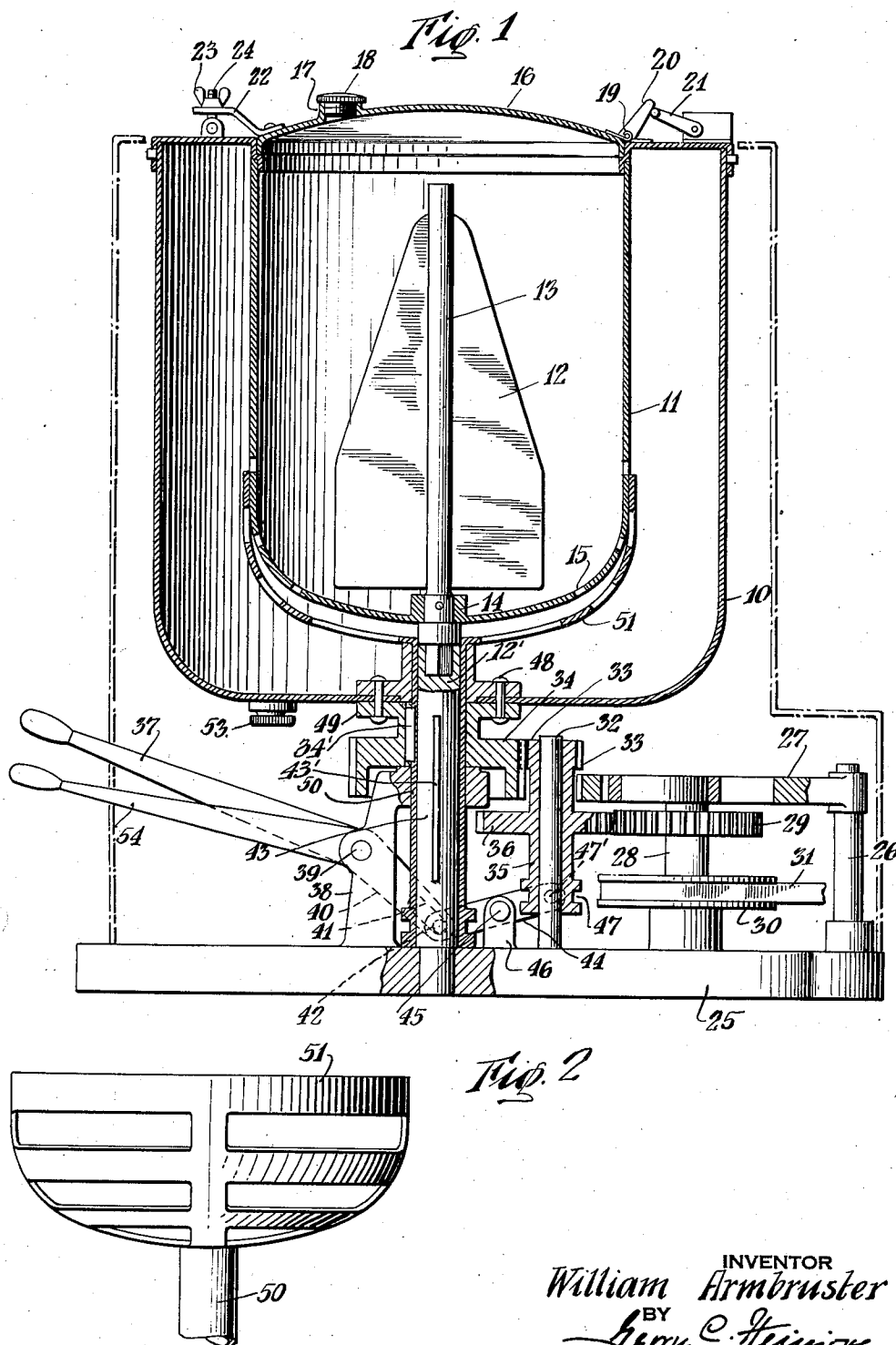
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COMBINED WASHER AND DRIER

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COMBINED WASHER AND DRIER

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1 Claim. (Cl. 74-81)

This invention relates to improvements in washing machines, particularly such machines having combined therewith a drying apparatus, and it is the principal object of my invention to provide the drying apparatus concentrically and entirely within the body of the washing machine in order to avoid the inconveniences and dangers inherent to the use of similar washing machines in which the drying apparatus or wringers are arranged on the outside of the machine.

It is a well known fact that the transfer of the wash from the washing machine to a separate drier is accompanied by inconveniences, as for instance the soiling of the wash and clothes of the operator, the wetting of the floor and consequent danger of slipping and falling, and injuries sustained thereby, or in case wringers are employed the danger of the operators' hair and garments becoming entangled therein.

All these inconveniences and dangers are positively avoided by the use of my entirely enclosed drying apparatus, and it is another object of my invention to provide a washing machine the agitator of which is arranged within an inner receptacle while the drying of the wash is effected within a receptacle completely surrounding the agitator housing by means of centrifugal force and making use of the heat developed during the washing process. Both operations, the washing and the drying may be carried on selectively at will.

Still another object of my invention is the provision of a washing machine and drying apparatus combined therewith equipped with novel and improved means for closing the discharge openings of the agitator housing in which the washing is done against the housing in which the drying is performed, and means suitably connected with the operating mechanism of the machine for operating the closing means to allow a convenient discharge of the waste water.

A further object of my invention is the provision of a washing and drying machine equipped with novel and improved means to suitably alternately spin the inner washing chamber agitator and the outer drying chamber at will by a mechanism which may be operated by any suitable driving power, such as for instance electricity.

A still further object of my invention is the provision of a washer and drier of a comparatively simple and economical construction, yet durable and highly efficient in use, which can be operated only when its cover is closed and which

is provided with suitable means to supply and discharge the water used.

It is furthermore one of the objects of my invention to provide a washing machine and drying apparatus combined therewith the various operations of which are controlled by a mechanism common to both washer and drier by the simple operation of a suitable lever.

These and other objects and advantages of my invention will become more fully known as the description thereof proceeds, and will then be specifically defined in the appended claim.

In the accompanying drawing forming a material part of this disclosure:

Fig. 1 is a sectional front elevation of the washing machine and drying apparatus constructed according to my invention.

Fig. 2 is a detail view of the means for closing the water discharge openings from the agitator housing.

As illustrated, the body 10 of the washing machine of standard type has incased therein a concentrically arranged central compartment 11 in which the agitator 12 of well known type is arranged on its shaft 13, removably held at its lower end in a socket 14 of compartment 11. This compartment has in its wall near its lower end a plurality of water discharge openings 15, and at its upper end a cover 16 having a water supply nipple 17 closed by a screw cap 18 or the like. The cover is hinged to the machine at one end, as at 19, and contact levers 20, 21 secure the cover against opening as long as the machine is in operation. The cover is moreover secured in closed position by a latch 22 which can be secured in place by means of a thumb screw 23 on a screw bolt 24.

The drive of the machine comprises a base 25 on which a post 26 is erected and carries an eccentric drive 27 on a post 28 carrying a gear 29, and a pulley wheel 30 for a belt 31 adapted to be operated from a source of power as for instance an electric motor or the like. A post 32 carries at its upper part a gear 33 adapted to mesh with the eccentric drive 27 and the lower part of a gear wheel 34, and slidably arranged on post or shaft 32 is a sleeve 35 with which is formed gear 33 as well as a gear 36. The sleeve can be lifted and lowered on its post by means of a lever 37 pivoted at its inner end to a bracket 38, as at 39, while a link 40 fixed to lever 37 has a slot 41 formed therein in which a pin 42 is traveling behind a shaft 43. This pin projects from the inner end of a link 44 pivoted, as at 45 to a lug 46 intermediate the ends of the link, while the

outer end of the link is pivoted, by a raising pin 47' engaging in the groove 47 of the sleeve 35. The bottom of the body 10 is secured by means of bolts 48 or the like to a sleeve or socket 49 with which the wheel 34 is integrally formed which turns or revolves with a sleeve 50 to which it is keyed, as at 34', and in which the shaft 43 is vertically arranged. The openings 15 in the bottom wall of compartment 11 are closed during the operation of the washer 11 by means of a substantially cup-shaped member of a construction best shown in Figure 2, when sleeve 50 to which the stem 52 of member 51 is engaged, is raised by means of a lever 54 also pivoted intermediate its ends at 39 to bracket 38 and secured with its outer end to the sleeve 50. As shown in Figure 1, the shaft 43, sleeve 50 keyed thereto, as at 43', gear 34 and socket 49 form a unit of which sleeve 50 of member 51 forms a part, as well as socket 14 of the compartment 11 to which shaft 13 of the agitator 12 is secured, the lower squared end of this shaft 13 being embedded in the material of the shaft 43. When said openings 15 are uncovered by the lowering of sleeve 50 by means of the lever 54, the water can be poured from compartment 11 and is then discharged through the discharge opening in the bottom of casing 10 which is normally closed by a plug 53.

If now lever 37 is depressed, the leverage connection with sleeve 35 lowers the same and thus brings eccentric drive 27 into mesh with the gear 33 now engaging the lower gear part of wheel 34 and the washing can be done in compartment 11 in the usual well known manner, as soon as belt 31 is operated, while gear 29 is out of engagement with gear 36.

If drying of the wash in compartment 10 is to be done, the lever 37 is raised again and through the leverage connection will raise sleeve 35 to bring gear 36 in mesh with gear 29 on the drive shaft, while the raising of gear 33 will bring the same out of mesh with the eccentric drive 27 and in mesh with the upper part of gear wheel 34 so that the apparatus will revolve and dry the wash by means of centrifugal force and assisted by the heat still prevailing in the machine. As mentioned above, and as shown in Figure 1, the gear 34 is keyed to the sleeve 50, as at 34', and has an upwardly extending body or socket 49 to which the body 10 of the washer is secured by means of

the bolts 48, and in this socket the sleeve 50 of the member 51 is held, while shaft 43 is keyed to the sleeve 50, as at 43', and the squared end of the rod 13 is embedded into the material of the shaft 43, as at 12', while the compartment 11 is attached to the rod 13 by means of the socket 14. Thus, container 11 and the agitator 12 as well as body 10 will form a unit participating in the rotation of the sleeve 50 when the upper part of gear 34 is in mesh with gear 33, and in an oscillatory or spinning movement when gear 34 is actuated from the eccentric drive 27.

Lever 37 operates the gear coupling 35, 33 and 34 through the intermediary of pin 42 traveling in slot 41 of link 40 and link 44, while lever 54 works the sleeve 50 up and down with its pin engaging in a groove of sleeve 50.

It will be understood that I have described and shown the preferred form of my invention as one example only of the many possible ways to practically construct the same and that I may make such changes in its general arrangement and in the construction of its minor parts, as come within the scope of the appended claim without departure from the spirit of my invention and the principles involved.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

In a washing and drying machine as described, a drive comprising a substantially cup shaped movable member, a sleeve formed with said member, a shaft within said sleeve and keyed thereto, a comparatively high gear keyed to said sleeve and having a socket, means to raise and lower said sleeve to operate said cup-shaped member, a post parallel to said shaft, a sliding sleeve on said post, an upper and a lower gear on said sliding sleeve, an operating gear in mesh with said lower gear, an eccentric drive on the shaft of said operating gear, a means to raise and lower said post sleeve to alternately bring the upper gear in mesh with the lower part of said high gear to rotate said shaft sleeve gear and parts connected thereto by the operating gear, and to bring the upper gear in mesh with the upper part of said high gear to impart to said shaft sleeve gear and parts connected thereto an oscillating or spinning movement by the eccentric drive.

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