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A. C. BURLEIGH ET AL

MEANS FOR EMPTYING WASHING MACHINES

Filed Feb. 24, 1921

Fig. 1.

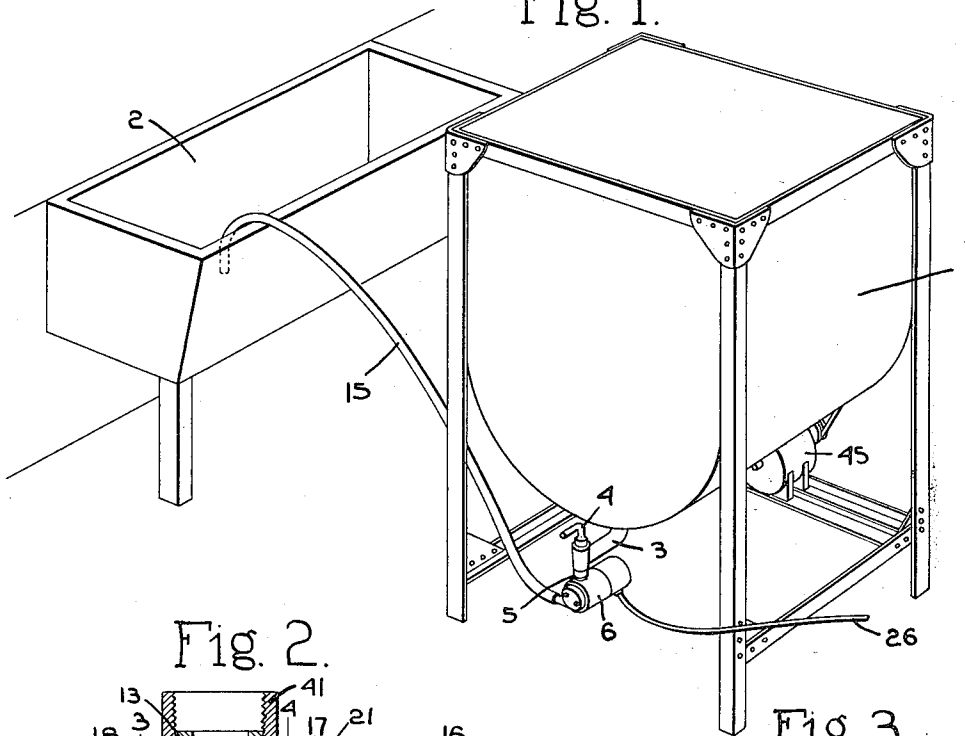


Fig. 2.

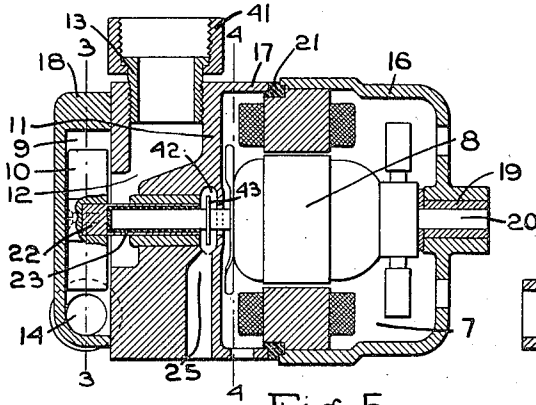


Fig. 3.

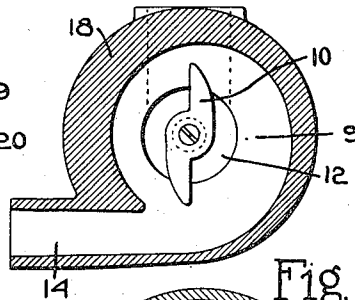


Fig. 4.

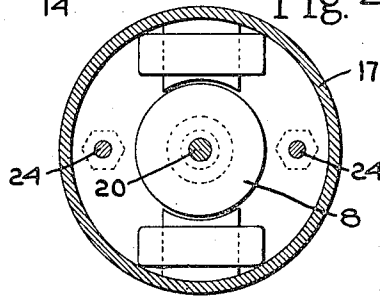
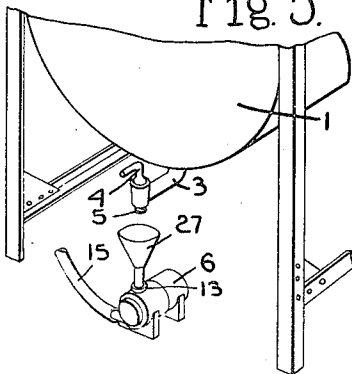


Fig. 5.



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UNITED STATES PATENT OFFICE.

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MEANS FOR EMPTYING WASHING MACHINES.

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To all whom it may concern:

Be it known that we, ARTHUR C. BURLEIGH and ALBERT C. GOWING, both citizens of the United States, residing, respectively, at Wollaston, county of Norfolk, and Braintree, county of Norfolk, State of Massachusetts, have invented an Improvement in Means for Emptying Washing Machines, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

This invention relates to household washing machines such as are used for laundry purposes and particularly to a device adapted to be used in connection with a washing machine for the purpose of emptying the machine and discharging the water at a level higher than the outlet of the washing machine.

In the installation of household washing machines, such as are used for laundry purposes, it is not always convenient or possible to place the machine so that the discharge opening from the tub of the machine will be at a higher level than some opening into the sewer or drainage system from the house, and when these conditions exist, it is necessary either to tap into the sewer system at a point below the level of the washing machine and then connect the outlet of the washing machine to the sewer system, or it is necessary to draw the water from the tub into pails and then empty the pails into a set tub or sink. The first expedient involves considerable expense which many householders do not wish to incur, and the second expedient involves the manual labor of carrying the pails of water from the washing machine to the set tub or sink.

It is the object of our invention to provide a simple device which can be used in connection with any washing machine for the purpose of forcing the water from the discharge opening up to a higher level, so that with our invention, the water from the washing machine may be automatically forced or pumped up into a set tub or sink and the emptying of the washing machine is accomplished without any manual labor and without the necessity of making a permanent pipe connection between the washing machine and the sewer system.

We accomplish this object by providing a novel pump unit which is separate from the washing machine and is separately operated, and which is also constructed to receive the discharge from the washing machine and deliver it to a higher level. Said pump unit comprises a rotor or impeller and a motor for operating the latter. The inlet of the pump element is arranged to receive the discharge from the washing machine, and the outlet from the pump may have a flexible hose connection which can be led into a set tub or sink. With our invention therefore the operation of emptying the tub of the washing machine consists merely in placing the pump unit so that the inlet thereof will receive the discharge from the tub and then setting the motor in operation to rotate the impeller, this resulting in forcing the water through the flexible discharge hose into the sink or tub.

In order to give an understanding of our invention, we have illustrated in the drawings some selected embodiments thereof, which will now be described after which the novel features will be pointed out in the appended claims.

Fig. 1 is a perspective view showing a washing machine with our invention applied thereto.

Fig. 2 is a longitudinal central section through the pump unit.

Fig. 3 is a section on the line 3—3, Fig. 2.

Fig. 4 is a section on the line 4—4, Fig. 2.

Fig. 5 shows a different way of using the device.

In the drawings 1 indicates generally a washing machine for laundry purposes and 2 indicates a set tub or tray. The washing machine 1 is provided with the usual discharge spout 3 which is controlled by a valve 4 and which has the screw-threaded portion 5 adapted to receive a hose connection. The parts thus far described are, or may be, all as usual and form no part of our present invention, which relates to a pump element constructed to receive the discharge from the spout 3 and pump or force it into the set tub 2 or some other receptacle. This pump element is indicated generally at 6 and it comprises a casing formed with a chamber 7 in which is situated an electric motor 8 and with another chamber 9 which receives an

impeller or rotor 10 that is actuated by the motor 8. These two chambers 7 and 9 are separated by a partition 11 and the chamber 9 is provided with an inlet opening 12 to which is connected a nipple 13 that can be connected to the screw-threaded portion 5 of the spout 3 by means of a union 41. The pump chamber 9 is also provided with the outlet 14 to which a flexible hose 15 is connected, said hose being of sufficient length to lead into the tray 2 or other receptacle.

In order to simplify the construction of the pump element 6, we propose to make the casing in three sections 16, 17 and 18. The section 16 partially encloses the motor 8 and it is provided at one end with a bearing 19 for one end of the motor shaft 20. The other end of the motor shaft has a bearing in the partition 11, said shaft extending through the partition and having the impeller 10 secured on the end thereof. In this way a construction is provided having two bearings only for the shaft which supports the motor and impeller and the construction is correspondingly simplified.

It is desirable to insulate the motor and for this purpose we propose to place a ring 21 of insulating material between the two sections 16 and 17 of the casing and also insulate the motor shaft 20 from the casing section 17. This latter end is accomplished by making the shaft supporting the motor and impeller in two sections, one section 22 having the impeller fast thereon and being provided with an axial recess to receive the end of the other shaft section said shaft sections being insulated from each other by the insulation 23.

The impeller-receiving chamber 9 is shown as formed in the section 18 and the various sections of the casing are secured together by means of tie rods 24 extending longitudinally through the casing.

In order to eliminate any possibility of water working through the bearing in the partition 11 and finding its way into the motor chamber 7, we have shown said partition as provided with a drip port 25 which extends from the shaft through the bottom of the casing. The partition 11 is formed with a chamber 42 at the upper end of the port 25 and the motor shaft has a disk 43 thereon operating in said chamber. Any water which works its way along the shaft and reaches the disk will be thrown off from the shaft by centrifugal force while the shaft is running, and if the shaft is not running any water which works its way along the shaft will meet the disk 43 and drop from the disk into the drip port. Any water which tends to leak along the shaft will thus be discharged through the drip opening. The pump unit is provided with a cord 26 having a suitable connection at its end for connecting into a lamp socket or wall

plug for the purpose of furnishing power to operate the motor. With this arrangement the operation of emptying the washing machine 1 involves simply attaching the pump element to the spout 3, placing the end of the discharge hose 4 into the tray 2, attaching the cord 26 to the lamp socket or cord plug thereby setting the pump in operation and opening the valve 4. When this is done the pump will automatically empty the tub and discharge the water into the tray 2.

It is not necessary that the pump 6 should be attached to the discharge spout 3 so long as said pump is placed so that it will receive the water from the discharge spout.

In Fig. 5 we have shown a construction wherein the pump is supported independently of the washing machine. In this embodiment the pump is resting on the floor and a funnel 27 is set into the inlet 13 of the pump and the latter is placed so that the funnel will receive the discharge from the discharge spout 3.

Our invention thus provides an attachment which is separate from the washing machine but can be easily attached to any washing machine or used in connection therewith for discharging the water from the washing machine into a sink, tub or other receptacle at a higher level than the washing machine.

While we have described our invention as it would be used in emptying a washing machine, yet we desire to state that the invention is not necessarily limited to this use but may be used for emptying other receptacles, where it is desirable to discharge the liquid in the receptacle at a higher level than the receptacle.

The motor for operating the washing machine is shown at 45 and it will be noted that the pump unit herein described is operated by means entirely separate from the driving means for the washing machine, and hence the attaching of the pump to the washing machine or its removal has no effect upon the operating mechanism for the washing machine.

We claim:

1. The combination with a receptacle having a discharge spout, of a pump unit comprising as a unitary structure a pumping element having an inlet and an outlet and a motor for operating said pumping element, means associated with the inlet for detachably connecting the unitary pump unit to said discharge spout, said unit being supported entirely by the discharge spout, and a hose connected to the outlet of the pump.

2. The combination with a receptacle having a discharge spout, of a pump unit comprising as a unitary structure a pumping element having an inlet and an outlet and a motor for operating said pumping element, and means associated with the pump inlet

for securing the pump unit to and supporting it from the discharge spout.

3. The combination with a receptacle provided with a discharge connection, of a self-
5 contained pump unit comprising a pump element and a motor element contained in the same housing, said pump element having an

inlet and an outlet, and means associated with the inlet for detachably securing said self-contained pump unit to the discharge spout. 10

In testimony whereof, we have signed our names to this specification.

ARTHUR C. BURLEIGH.

ALBERT C. GOWING.