Dec. 20, 1932. J. SCHMID-DOMANN 1,891,842

WASHING MACHINE

Filed Feb. 5, 1931

Fig. 1

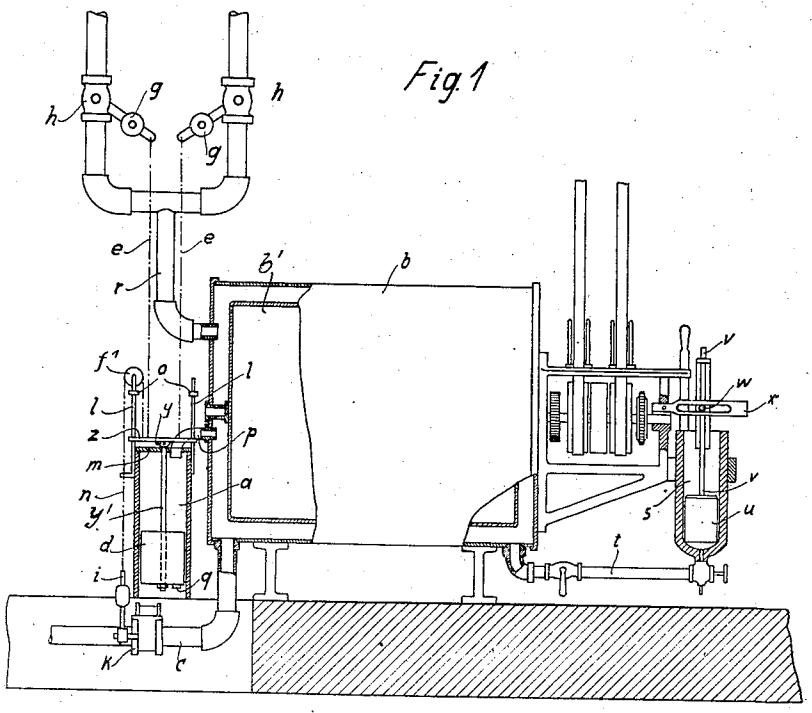
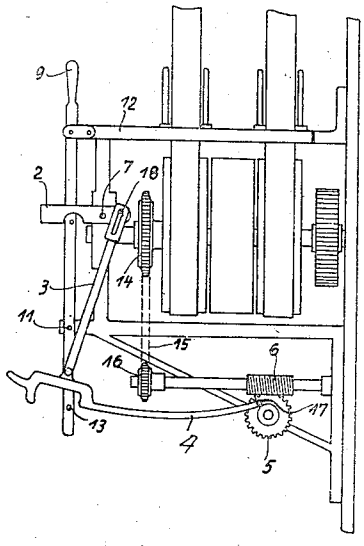


Fig. 2.



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Patented Dec. 20, 1932

1,891,842

UNITED STATES PATENT OFFICE

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WASHING MACHINE

Application filed February 5, 1931, Serial No. 513,565, and in Germany July 21, 1930.

The method usually adopted in the operation of washing machines is first to soak the washing in the machine in cold water, then replace into water by an alkaline solution wherein the washing is agitated and boiled for about 30 minutes, whereupon a rinsing takes place first in hot and then in two changes of cold water.

The object of the present invention is to effect these different changes with as little manual work as possible, and the invention consists in the provision of a movable, vertically guided vessel arranged under an overflow pipe on the washing tank and provided with a draining aperture, said vessel being connected by flexible elements to the different valves and adapted to be lifted on the opening of one of the supply valves and to close the supply valves and open the discharge valve under the weight of the water overflowing from the tank, the discharge valve being controlled by weight which tends to close it.

The washing tank may be provided with a rotatable washing drum, and a float, controlled by the water in the tank, may be used for throwing the gear in operation on the tank being filled and out of operation on the tank being emptied.

Fig. 1 of the accompanying drawing represents a view, partly in section, of the washing machine, and

Fig. 2 is a view of the gear controlling device seen from a direction opposite to that of Fig. 1 and on an enlarged scale.

The washing machine comprises a tank b provided with an inlet pipe r and a discharge pipe c. The inlet pipe r is branched off for the reception of hot as well as cold water, and each branch pipe is fitted with a valve h operated by means of a lever g. Both levers are connected by means of cords or chains e to a horizontal plate or bar z which is guided by means of slots on vertical rods l rising from an upright cylinder a. Connected at y to the bar z is a vertical rod y' which is guided in the top plate m of the cylinder a and which carries a vessel d fitted with a draining aperture q. The tank b has an overflow pipe p which opens to an aperture in the plate m and which discharges into the vessel d. The movements of the bar z on the rods l are limited in downward direction by the plate m and in upward direction by stops o on the rod.

The discharge pipe c is fitted with a slide valve k which is controlled by a weighted lever i tending to close the valve. This lever is also connected to the bar z through the medium of a cord or chain n guided over a pulley f^1, the arrangement being such that the valve k is allowed to close on the vessel being raised whereas it is opened on the vessel being lowered.

The action is as follows:

On one of the levers g being turned by hand for letting water into the tank b, the vessel d will be raised by the respective cord e through the medium of the bar z and the bar y' and will, if it is empty, be retained in this position owing to the frictional resistance of the valve plug. The raising of the vessel causes the discharge valve k to close under the influence of the weighted lever i. When the tank is filled up to the overflow pipe p, the vessel d will receive water from the latter, and, as the discharge aperture q is comparatively small, water will be collected in the vessel and the weight thereof will eventually cause the vessel to close the supply valve or valves h and to open the discharge valve k. During the subsequent emptying of the tank b, the water collected in the vessel d will also be discharged through the small aperture q, and when the tank is empty the operation can be repeated by a renewed opening of one or both of the valves h. While the valves h are closed, the vessel d can be raised and lowered by hand for opening and closing the discharge valve k without affecting the valve h.

The tank may be provided with a rotary washing drum b' which is operated by means of a belt gearing comprising two belts one of which is crossed for reversing the movement. The belts are controlled by belt-forks operated by means of a rod 12 connected to a hand lever 9 pivoted at 11 (Fig. 2). A worm 6, which is driven by means of a chain 15 and sprocket wheels 14 and 16, imparts rotation to a worm wheel 5. A crank pin 17 on the

latter reciprocates a rod 4 provided with a fork which co-operates with a pin 13 on the hand lever 9 for shifting the two belts alternately on to the fast pulley for rotating and reversing the washing drum. Normally the fork rod 4 is held out of engagement with the pin 13 by a link 3 which is suspended by means of an elongated aperture on a pin 18 connected to a lever 2. The latter is mounted on a shaft 7 which also carries a lever arm x. A float u, mounted in a vessel s, carries a rod v which engages by means of a pin w in an elongated slot in the lever arm x. The vessel s communicates through a pipe t with the tank b, and the float u will therefore be controlled by the water level in the tank.

The drawing illustrates the elements in their normal positions, the tank being empty and the washing drum at a standstill. On the tank being filled with water, the float u ascends and turns the shaft 7 which then allows the link 3 and the rod 4 to drop for engagement with the pin 13 on the starting lever. The worm 6 is kept in continuous rotation and the starting lever will therefore be rocked by the fork for starting and reversing the drum. As soon as the float u descends by the emptying of the tank b, the lever 2 is restored to the horizontal position, and the hand lever is disengaged from the reciprocating fork and positioned by the lever 2 for throwing the drum out of gear.

The pipe t is fitted with valves whereby the movements of the float can be regulated and stopped if required.

The levers g may be weighted as shown in order to facilitate the closing of the valves.

I claim:

A washing machine comprising a tank, water supply pipes for said tank, valves in said pipes, a movable vertically guided water vessel having a draining aperture, an overflow pipe on the tank adapted to feed water into said vessel, flexible connections between said valve and the vessel adapted to raise the vessel on one of the valves being opened and adapted to close the valves under the weight of the vessel on the latter being filled with water, an outlet valve for said tank, a weight tending to maintain said outlet valve closed, and a flexible connection between said vessel and said outlet valve adapted to open the latter under the weight of the vessel on the latter being filled with water.

JOSEF SCHMID-DOMANN.