F. B. SCHUYLER.

OPERATING MECHANISM FOR WASHING MACHINES.

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1,208,843. Patented Dec. 19, 1916.

Fig. 1.

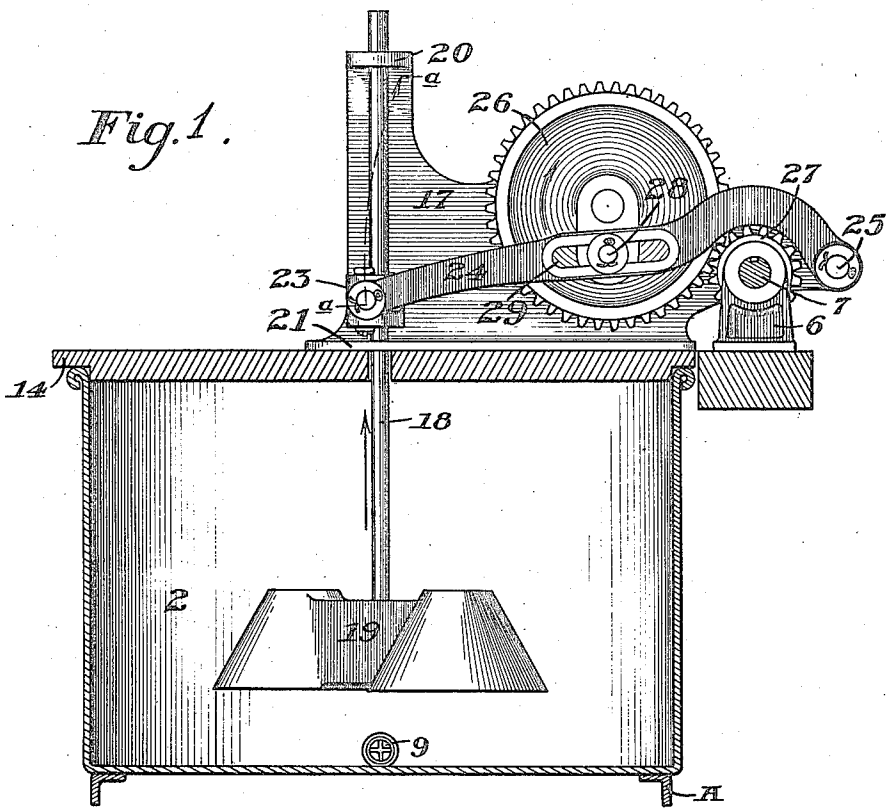
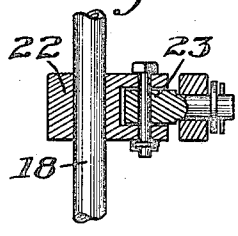


Fig. 2.



WITNESSES:

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OPERATING MECHANISM FOR WASHING-MACHINES.

1,208,843. Specification of Letters Patent. Patented Dec. 19, 1916.

Application filed December 22, 1915. Serial No. 68,166.

To all whom it may concern:

Be it known that I, FRANK B. SCHUYLER, a citizen of the United States, residing at Berkeley, in the county of Alameda and State of California, have invented new and useful Improvements in Operating Mechanisms for Washing-Machines, of which the following is a specification.

This invention relates to a washing machine.

One of the objects of the present invention is to provide a simple, compact, easily operated washing machine, requiring the expenditure of little effort, time or attention on the part of the operator.

Another object of the invention is to provide a novel form of power driven mechanism for washing or scrubbing the clothes.

Further objects will hereinafter appear.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings in which—

Figure 1 is a cross section of a washing machine embodying the invention. Fig. 2 is an enlarged section of the connection between the plunger rod and the lever.

Referring in detail to the drawings, A indicates a frame, constructed of channel, angle iron or like material, upon which is mounted a tub, indicated at 2, having a drain plug 9. Supported on one side of the frame is a bearing bracket 6, in which is journaled a driving shaft 7.

Forming a closure for the scrubbing tub 2 is a hinged cover 14. Suitably secured upon the cover is a bearing bracket 17, on one end of which is mounted a vertical rod 18 which projects through the cover and down into the tub. Secured on the lower end of said rod is a double plunger cup 19, and secured on the rod intermediately of bearings 20 and 21 is a collar 22 which is connected, through means of a universal joint 23, with a rocker-arm 24 pivotally mounted, as at 25, on the outer end of the bracket 17. Journaled on said bracket, intermediately of the pivot 25 and the plunger rod 18, is a spur gear 26 which is adapted to intermesh with a driving pinion 27, secured upon shaft 7, and forming a driving connection between arm 24 and gear 26 is a crank pin 28 which projects through a slot 29 formed in the arm. Rotary movement of the pinion 27 transmitted through the gear 26 causes an oscillating movement of the arm 24, which in turn is transmitted through the universal connection 23 and collar 22 to partly turn and reciprocate the rod 18, with connected plunger cups 19.

The relative position or mounting of the arm 24, with relation to the vertical rod 18, forms one of the important features of this structure. The pivot pin 25 is mounted at a point approximately in alinement with the lowest position assumed by the crank pin 28. This relative position between the pivot of the arm, the crank pin 28 and rod 18 causes the rod, with connected plunger cups, to make about one-quarter of a rotary movement horizontally in the top half of the perpendicular movement and a slight reverse turning movement during the remainder of the reciprocal or downward stroke of the rod.

By referring to Fig. 1 it will be seen that the dotted line *a—a* indicates the sweep of the arm 24. By this line it can be seen that the turning movement of rod 18, during its downward stroke, practically all takes place during the first half of the stroke and that the remainder is practically vertical. This is, as above described, obtained by mounting the pivot 25 in a position approximately in alinement with the lowest position attained by the crank pin 28.

The first turning movement of the cups causes the clothes to be moved about within the tub and the remaining perpendicular stroke or movement of the cups causes air and water to be forced through the meshes of the fabric and also causes a suction on the return or upward movement. The combined plunging and turning action of the cups, causing a constant change of position of the different articles, insures a thorough washing of the entire contents without any attention on the part of the operator.

The provision of the hinged cover permits the latter, with attached scrubbing mechanism, to be tilted back out of mesh with gear 27. The closure of the lid brings the gears into mesh and the starting of the driving shaft through the driving means immediately sets the mechanism in operation.

The mounting of the scrubbing mechanism permits this to be thrown into and out of gear by merely closing or opening the cover 14, this being possible whether the driving shaft is revolving or standing still.

The whole arrangement and structure of the mechanism permits the complete or several operations of washing to take place with the least possible exertion on the part of the operator.

The materials and finish of the several parts of the machine are otherwise such as the experience and judgment of the manufacturer may dictate.

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

1. In a washing machine, a frame, a plunger rod having laterally extending arms on its lower end, a lever pivotally mounted at one end to the frame and having its opposite end pivotally connected to the rod, the lowest movement of the last end of the lever being slightly below the horizontal plane of the pivot of the first end of said lever whereby during the upstroke of the plunger rod the lateral arms of the latter will initially be given a slow, short forward rotation and then, with gradually increasing speed, a larger rearward rotation, and means for swinging the lever.

2. In a washing machine, a frame, a plunger rod having laterally extending arms on its lower end, and means for reciprocating the rod and rotating the same whereby during a stroke the lateral arms will initially be given a slight and short forward movement and then a larger reverse movement with increasing velocity.

3. In a washing machine, a receptacle, a hinged cover therefor, a rotatable drive gear, a frame fixed to the cover and provided with a bracket arm extending outwardly of the gear for movement with the cover toward and away from the gear, said frame being further provided with alined bearings, a plunger rod slidable in the bearings of the frame and through the cover, a gear meshing with the drive gear and journaled on the frame intermediate the latter and the plunger rod, a lever pivoted at one end to the bracket arm of the frame and at its opposite end to the plunger rod, said lever extending above the drive gear, and a drive connection between the second gear and the lever for oscillating the latter.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FRANK B. SCHUYLER.

Witnesses:
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W. W. HEALEY.