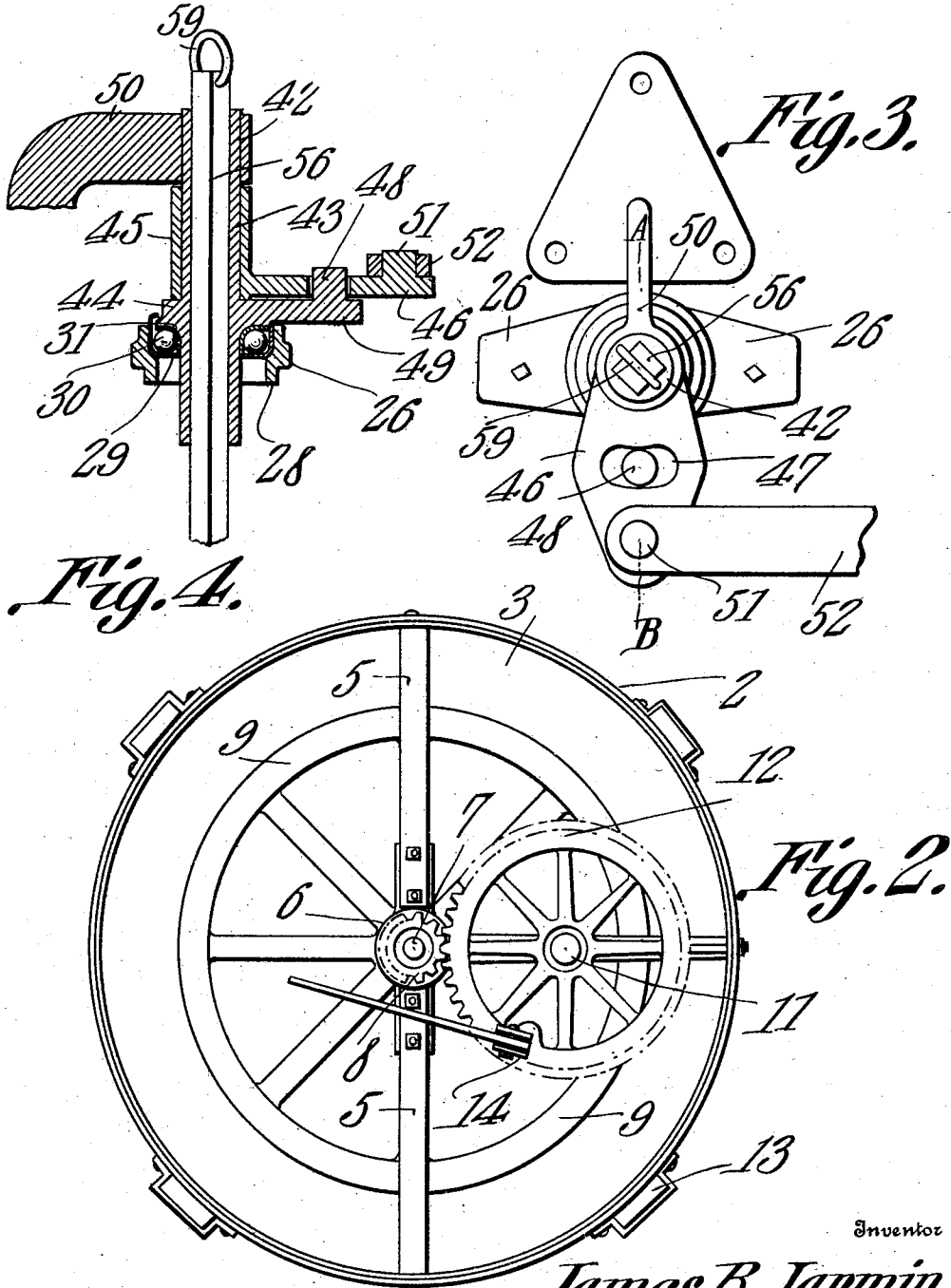


J. B. JARMIN.
 ACTUATING MECHANISM.
 APPLICATION FILED FEB. 24, 1910.

978,893.

Patented Dec. 20, 1910.

2 SHEETS—SHEET 2.



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES B. JARMIN, OF SPOKANE, WASHINGTON.

ACTUATING MECHANISM.

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Specification of Letters Patent.

Patented Dec. 20, 1910.

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To all whom it may concern:

Be it known that I, JAMES B. JARMIN, a citizen of the United States, residing at Spokane, in the county of Spokane and State of Washington, have invented a new and useful Actuating Mechanism, of which the following is a specification.

This invention relates to mechanism for actuating washing machines and its principal object is to provide mechanism whereby the rotary agitator or pounder of a washing machine may be given an intermittent movement in opposite directions successively, each movement thereof beginning abruptly or with a sudden jerk so as to force the fabric very rapidly through the water within the tub and thus drive the water through the fibers and therefore facilitate the cleansing of the fabrics.

Another object is to provide a machine of this character the operating mechanism of which is compact in construction and easy to operate.

With these and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims.

In the accompanying drawings, the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a view partly in section and partly in elevation of a washing machine constructed in accordance with the present invention. Fig. 2 is a bottom plan view of the machine the actuating lever and its connections being removed. Fig. 3 is a plan view of the connection between the actuating pitman and the shank or spindle of the agitator and of adjacent parts. Fig. 4 is a section on line A—B Fig. 3.

Referring to the figures by characters of reference 1 designates a tub preferably cylindrical and having a flange 2 at its lower end to which is riveted or otherwise secured the bottom 3. A bracket 4 is secured to the flange at the bottom of the tub and extends under said bottom to a point under the center of the tub, the said bracket being provided at this point with oppositely extend-

ing arms 5 which are also secured to the flange. A journal 6 is formed at this end of the bracket and has a shaft 7 mounted for rotation therein, the said shaft being provided at its lower end with a gear 8 while a fly wheel 9 is secured to the upper end of the shaft and bears downwardly upon the journal 6. This fly wheel lies close to the bottom of the tub.

A hanger 10 is formed upon the bracket at a point between the ends thereof and a shaft 11 is journaled within this hanger and has a gear 12 secured to the lower end thereof and meshing with the gear 8. It is of course to be understood that these gears are held above and out of contact with the floor or other supporting surface by means of legs 13 which are attached to the tub and extend downwardly therefrom.

A wrist pin 14 is secured to and mounted for rotation in the gear 12 and has a pitman 15 pivotally connected to it, the said pitman being also connected, by means of a universal joint 16 to the lower arm of a bell crank lever 17 which is fulcrumed in a bracket 18 secured to the flange 2 and extending outwardly therefrom. The upper arm of this bell crank lever is connected by a strip 19 to the lower arm of another bell crank lever 20. This last mentioned lever is fulcrumed upon a bracket 21 secured to the wall of the tub 1. The other arm of the lever 20 is elongated to constitute an operating handle 22 which extends a considerable distance above the tub. If desired this handle may be removably mounted within a socket 23 integral with the lever 20. The top 24 of the tub is removable and has a central opening 25. A bearing plate 26 is secured to the cover 24 and has a central opening 27 arranged above the opening 25, there being a reduced extension 28 upon the plate and which projects into the opening 25. A bearing ring 29 is arranged within the opening 27 and is supported by the reduced portion 28, this ring constituting a race for a series of anti-friction balls which support a bearing ring 31 extending around a sleeve 42. This sleeve has an angular passage 43 extending longitudinally

therethrough and is also formed with an annular shoulder 44 which bears downwardly on the ring 31.

A tubular member 45 is mounted for rotation on the sleeve 42 and is formed at one end with an arm 46. This arm has a slot 47 therein at a point between the ends thereof, the said slot being preferably concentric with the sleeve 42 and having a stud 48 loosely mounted within it. Said stud extends upwardly from an arm 49 which is integral with and extends radially from the sleeve 42. The upper end of the sleeve 42 bears within the end of a bracket 50 which may be secured in any suitable manner to the cover 24. A stud 51 projects from the arm 46 and is engaged by a pitman 52 having a hooked extension 53 at one end and which detachably engages a connecting pin 54, which is supported by ears 55 extending from the socket portion 23 of the lever 20.

An angular spindle 56 is slidably mounted within the annular passage 43 in sleeve 42 and has a head 57 at its lower end from which extend downwardly diverging agitating fingers 58. A ring 59 may be connected to the upper end of the spindle so as to limit the downward movement thereof within the sleeve 42 and to facilitate the elevation of the spindle and the head which is connected to it.

In using the machine herein described the pitman 52 is disengaged from the pin 54 and the cover 24 can then be raised and the water and fabric placed within the tub. The parts are then replaced and when the handle 22 is oscillated motion will be transmitted through the lever 20 and strip 19 to lever 17 and this will in turn transmit motion through the pitman 15 to the gear 12. Gear 8 and its shaft 7 will thus be rotated at a high speed and the fly wheel 9 will move therewith. At the same time motion will be transmitted through the pitman 52 to the arm 46 and said arm will be partly rotated back and forth. During the first portion of each movement of the arm 46 it will move independently of the arm 49 but, at a predetermined point during such movement of the arm 46, one of the end walls of the slot 47 will strike the lug 48 and thus start a corresponding movement of the arm 49 and sleeve 42. Spindle 56 and the agitator at the lower end thereof will thus be also started and, during the reverse movement of the arm 46 the agitator, its spindle 56 and the arm 49 will remain stationary until the other end wall of slot 47 strikes lug 48, whereupon said parts will be again started with a sudden jerk in the opposite direction. Importance is attached to this intermittent jerking movement of the agitator because it starts the clothes through the water at a speed which is maintained throughout the movement of said agitator

and causes the water to rush between the fibers of the fabrics and thoroughly cleanse them to an extent not possible where the starting and stopping of the fabrics and their agitator is gradual.

By providing a fly wheel, the high speed of the operating mechanism can be maintained irrespective of the sudden starting and stopping of the agitator. It is to be understood that said agitator can be raised or lowered whenever desired after the cover 24 has been placed upon the tub and without disconnecting it from its operating means.

Various changes can of course be made in the construction and arrangement of the parts without departing from the spirit or sacrificing any of the advantages of the invention as defined in the appended claims.

What is claimed is:—

1. A machine of the class described including a revoluble device, a member mounted for oscillation, an element movable with the said device, coöperating means upon said element and member for imparting jerking movements to the element and said device in opposite directions successively during the movement of the member.

2. A machine of the class described including a supporting structure, a tubular member mounted for rotation thereon, an element slidably connected to said member and revoluble therewith, an arm extending from said member, an oscillating device pivotally mounted upon said member, means for actuating said device and coöperating means upon said device and the arm for producing lost motion during the first portion of the movement of said device in each direction, said device operating to actuate the arm during the completion of each movement of the device.

3. A machine of the class described including a supporting structure, a tubular member mounted for rotation thereon, a device revoluble with said member and slidably connected thereto, an arm extending from said member, an arm mounted for oscillation upon said member, said oscillating arm engaging and having a limited movement relative to the arm on said member, and means for actuating the oscillating arm.

4. A machine of the class described including a supporting structure, a revoluble device, a sleeve mounted for rotation upon the said structure, said device being movable therewith and slidably connected thereto, an arm extending from and movable with said member, an actuating arm mounted to oscillate upon said member and loosely engaging the arm on said member, the two arms coöperating to produce lost motion on each movement of the oscillating arm and to impart an intermittent jerking movement to the said member and the revoluble device.

5. A machine of the class described in-

cluding a supporting structure, a tubular member mounted for rotation thereon, a device slidably connected thereto and revoluble therewith, an arm radiating from said member, an arm mounted for oscillation upon
5 said member and having a flattened portion loosely engaging the first mentioned arm, and means for actuating the oscillating arm to impart an intermittent movement to the

arm engaged thereby and to the revoluble 10 device.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JAMES B. JARMIN.

Witnesses:

H. S. STOOLFIRE,
A. E. DOYLE.