

APPLICATION FILED OCT. 2, 1909.

2 SHEETS—SHEET 1.



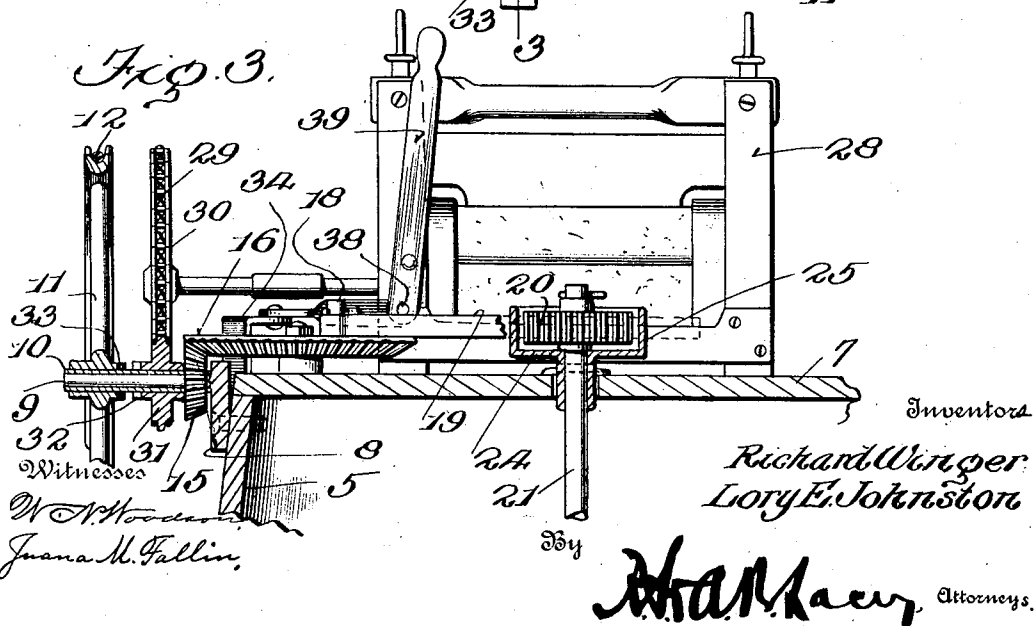
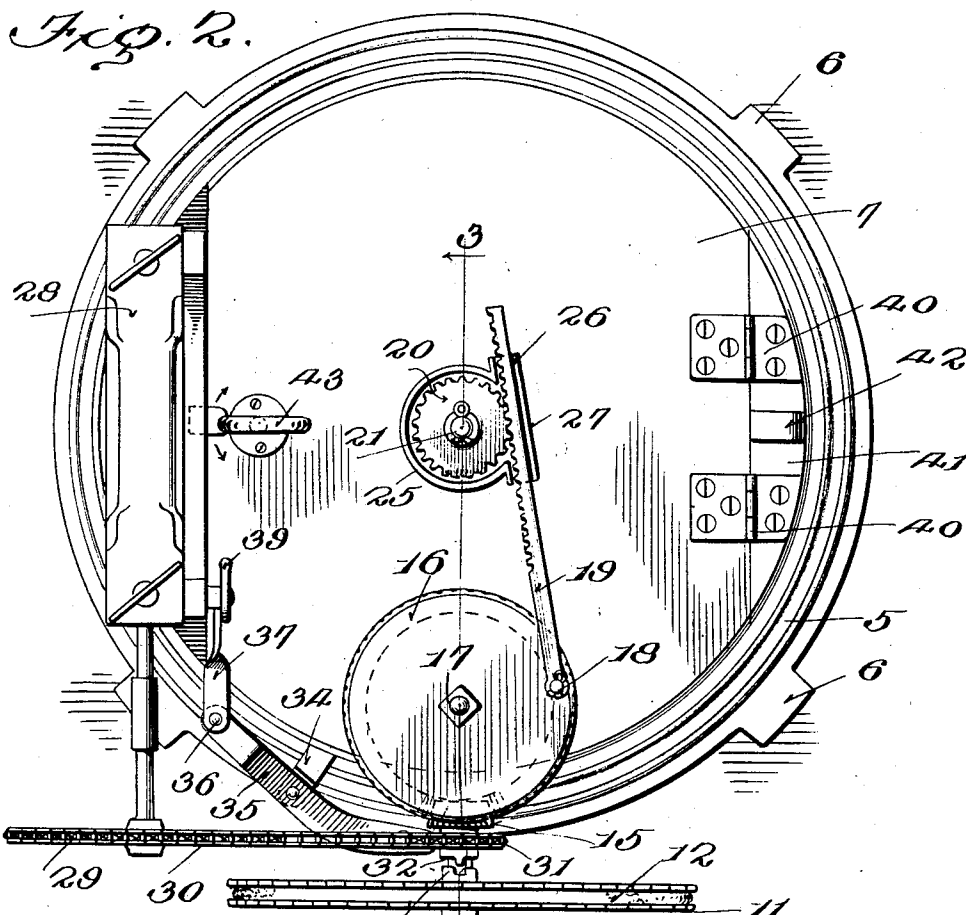
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GEARING FOR WASHING MACHINES.
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968,302.

Patented Aug. 23, 1910.

2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

RICHARD WINGER AND LORY E. JOHNSTON, OF NEWTON, IOWA.

GEARING FOR WASHING-MACHINES.

968,302.

Specification of Letters Patent. Patented Aug. 23, 1910.

Application filed October 2, 1909. Serial No. 520,692.

To all whom it may concern:

Be it known that we, RICHARD WINGER and LORY E. JOHNSTON, citizens of the United States, both residing at Newton, in the county of Jasper and State of Iowa, have invented certain new and useful Improvements in Gearing for Washing-Machines, of which the following is a specification.

This invention relates to washing machines of the oscillating agitator type and has for its object to provide a strong, durable and thoroughly efficient device of the character described, the construction of which is such that a uniform oscillatory movement may be imparted to the dolly or agitator to effect the washing of the clothes.

A further object is to provide a washing machine in which the operating mechanism is driven by a motor disposed beneath the clothes containing receptacle, means being also provided for transmitting motion from the motor to a wringer to operate the latter.

A still further object of the invention is generally to improve this class of devices so as to increase their utility, durability and efficiency.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claims.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction and the means for effecting the result, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a side elevation of a washing machine constructed in accordance with our invention; Fig. 2 is a top plan view of the same; Fig. 3 is a detail vertical sectional view.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The device comprises a tank or receptacle 5, preferably cylindrical in shape, as shown, and provided with depending feet 6 and a cover 7.

Secured to the exterior wall of the receptacle 5 immediately below the cover 7, is a plate or casting 8 having a stub shaft 9 extending laterally therefrom and on which is

mounted for rotation a bushing 10. Keyed or otherwise rigidly secured to the bushing 10 at one end thereof, is a driving wheel 11 having a peripheral groove formed therein for the reception of a belt 12, which latter extends over a grooved pulley 13 on the shaft of a motor 14 preferably disposed beneath the receptacle 5, as shown. Secured to the bushing 10 in spaced relation to the driving wheel 11, is a bevel pinion 15 which meshes with a bevel gear 16 mounted for rotation on a stub shaft 17 extending vertically from the cover 7.

The pinion 15 is provided with a crank pin 18 to which is pivotally connected one end of a rack bar or pitman 19, the teeth of which mesh with a pinion 20 on a vertically disposed shaft 21. The shaft 21 is mounted for oscillation in an opening 22 in the cover 7 and is provided with a terminal agitator or dolly 23 of any suitable construction.

Interposed between the lower face of the pinion 20 and upper face of the cover 7, is a substantially circular guard 24 having a peripheral flange 25 which partially surrounds the pinion 21 and serves to house and protect the latter.

One side of the guard 24 is cut away to afford a passage 26 for the reception of the rack bar or pitman 19 so that as the pitman travels back and forth in the passage 26 an oscillatory movement will be imparted to the guard 24.

A guide plate 27 is preferably secured to the guard 24 at the cut-away portion thereof to assist in maintaining the teeth of the rack in engagement with the teeth of the pinion 21 during the operation of the machine.

Secured to the receptacle 5 is a wringer 28 of any approved construction. The shaft of one of the rollers of said wringer is provided with a sprocket wheel 29 which receives a sprocket chain 30, the latter being passed over a relatively small sprocket wheel 31 loosely mounted on the bushing 10 between the driving wheel 11 and pinion 15. The sprocket wheel 31 is provided with a clutch member 32 adapted to engage a mating clutch member 33 formed on the driving wheel 11 so that motion may be transmitted from the driving wheel 11 through the medium of the sprocket chain 30 to the wringer to operate the latter.

Extending laterally from the exterior

wall of the receptacle 5, is a bar 34 on which is pivotally mounted a substantially horizontally disposed lever 35, one end of which is bifurcated to receive the sprocket wheel 5 31, while the other end thereof is pivotally connected at 36 with a link or bar 37. The inner end of the link or bar 37 is pivotally connected at 38 with an operating lever 39 so that by moving the upper end laterally 10 in either direction, the sprocket wheel 31 may be adjusted on the bushing 10 so as to move the mating clutch members 32 and 33 into and out of engagement with each other.

15 The cover 7 is hinged at 40 to a relatively stationary cover section 41 so as to permit the cover to be swung upwardly and laterally to expose the clothes within the receptacle 5, there being a clip or stop 42 secured to the relatively stationary portion 41 20 for the purpose of limiting the tilting movement of said cover. Thus it will be seen that by exerting an upward pull on the operating handle 43, the cover may be 25 swung laterally so as to disengage the teeth of the bevel gear 16 from the teeth of the pinion 15 and permit the cover carrying the shaft 21, bevel gear 16 and pitman 19, to be swung upwardly into engagement with 30 the stop 42 without stopping the motor. It will also be noted that by moving the lever 39, the wringer may be thrown into and out of operation without interfering with the operation of the agitator.

35 The guard 24 not only serves to form a guide for the rack bar or pitman 19, but also forms a bearing for the pinion 20 and shaft 21, the oscillation of the guard on the cover 7 permitting free reciprocation of the 40 rack bar or pitman without danger of binding or wedging action between the parts.

Having thus described the invention, what is claimed as new is:

45 1. In driving mechanism for washing machines, an oscillating shaft, a pinion on said shaft, a driving shaft, a gear operable from said driving shaft, a guard surrounding the pinion and provided with a depending sleeve, forming a bearing for the guard, said 50 guard being provided at one side thereof with a guide, and a rack pivotally mounted on the gear and slidably mounted in the guide of the guard for engagement with the teeth of the pinion.

55 2. In driving mechanism for washing machines, an oscillating shaft, a pinion on said shaft, a guard surrounding the pinion and having a depending sleeve forming a bearing for the guard, said guard having one 60 side thereof cut away to produce a passage, a stub shaft, a bushing surrounding the stub shaft and provided with a bevel pinion, a bevel gear meshing with the teeth of the bevel pinion and provided with a crank pin, 65 a rack pivotally connected with the crank

pin and slidably mounted in the passage of the guard for engagement with the teeth of the pinion on the oscillating shaft, and a driving wheel secured to the bushing.

3. In driving mechanism for washing machines, an oscillating shaft, a pinion on said shaft, an oscillating guard disposed below the pinion and provided with a depending sleeve forming a bearing for the guard, said guard having a vertically disposed flange a 75 portion of which is cut away to form a passage, a driving shaft, a bushing mounted on the driving shaft, a driving wheel fastened on the bushing, a bevel pinion secured to the bushing in spaced relation to the driv- 80 ing wheel, a bevel gear mounted for rotation and meshing with the bevel pinion, and a rack having one end thereof pivotally connected with the bevel gear and its other end slidably mounted in the passage of the guard 85 for engagement with the teeth on the pinion of the oscillating shaft.

4. In driving mechanism for washing machines, an oscillating shaft, a pinion on said shaft, a stub shaft, a bushing mounted on 90 the stub shaft, a driving wheel fixed to the bushing and provided with a clutch member, a bevel pinion fastened on the bushing in spaced relation to the driving wheel, a bevel gear meshing with the pinion, a rack 95 having one end thereof connected with the bevel gear and its other end engaging the teeth on the pinion of the oscillating shaft, a sprocket wheel slidably mounted on the bushing and provided with a mating clutch 100 member, and means for moving the clutch members into and out of engagement with each other.

5. In driving mechanism for washing machines, an oscillating shaft, a pinion secured 105 thereto, a stub shaft, a driving wheel mounted for rotation on the stub shaft, a bevel pinion spaced from the driving wheel, a bevel gear meshing with the teeth of the pinion, an oscillating guard surrounding the 110 pinion of the oscillating shaft and provided with a guide, a rack pivotally connected with the bevel gear and slidably mounted in the guide of the guard for engagement with the pinion of the oscillating shaft, a 115 motor, a sprocket wheel interposed between the driving wheel and bevel pinion, said last mentioned sprocket wheel and driving wheel being provided with clutch members, means for moving the clutch members into 120 and out of engagement with each other, and means for transmitting motion from the motor to the driving wheel.

In testimony whereof we affix our signatures in presence of two witnesses.

RICHARD WINGER. [L. s.]
LORY E. JOHNSTON. [L. s.]

Witnesses:

C. O. EDGE,
JOHN M. KENNINGTON.