C. W. CRAWFORD.

DRIVING MECHANISM.

APPLICATION FILED JUNE 19, 1909.

979,441. Patented Dec. 27, 1910.

Fig. 1

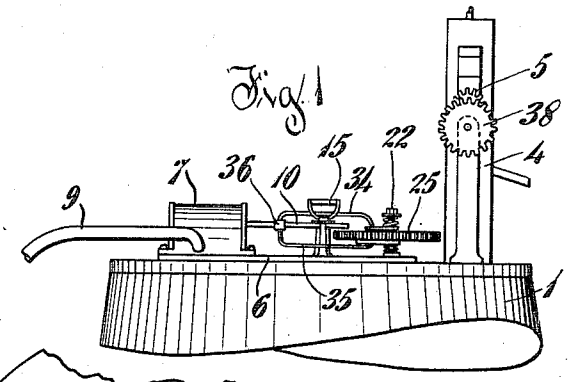


Fig. 2

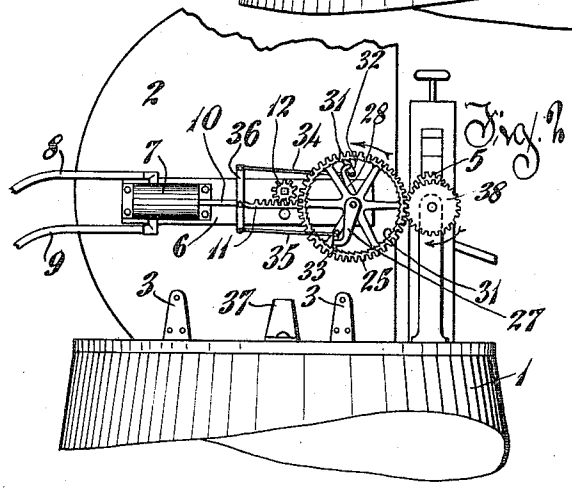


Fig. 3

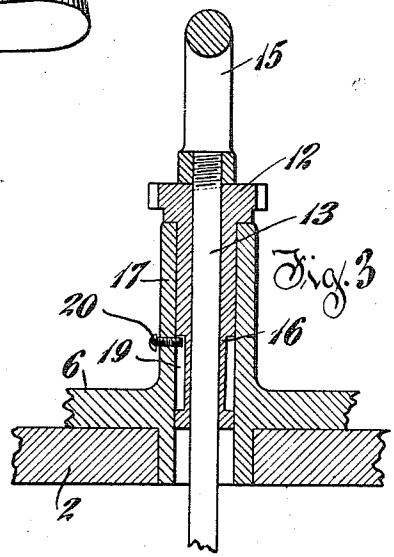
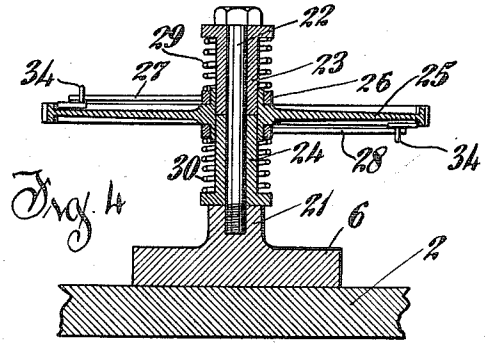
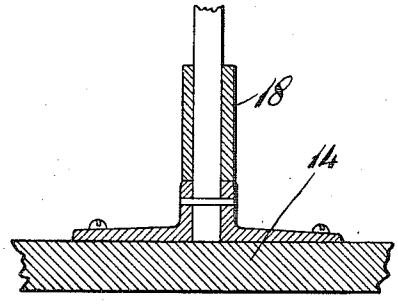


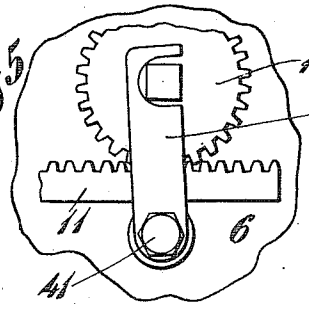
Fig. 4





Witnesses
Earl W. Griffin
Arthur H. Ewald.

Fig. 5



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UNITED STATES PATENT OFFICE.

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DRIVING MECHANISM.

979,441. Specification of Letters Patent. Patented Dec. 27, 1910.

Application filed June 19, 1909. Serial No. 503,108.

To all whom it may concern:

Be it known that I, CHARLES W. CRAWFORD, a citizen of the United States, residing in Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Driving Mechanism, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

The object of my invention is to provide mechanism for use in connection with a motor driven washing machine, whereby the mechanism for driving the washing machine may be readily and easily shifted to drive the clothes wringer, so that when the articles have been washed in the machine they may be passed at once through the wringer.

The invention consists of that certain novel construction and arrangement of parts to be hereinafter particularly pointed out and claimed.

In the drawings Figure 1 is a side elevation of the upper portion of a washing machine with wringer attached, embodying my improvement, as used in driving the washing machine. Fig. 2 is a similar view as connected with the wringer. Fig. 3 is a central vertical section of a portion of the washing machine shaft, and its connections. Fig. 4 is a central vertical section of the intermediate gear for driving the wringer. Fig. 5 is a detail view of the locking bar for the driving pinion of the washing machine.

1 is the upper portion of a washing machine, provided with a hinged lid 2 which is secured by hinges 3, 3, to the edge of the receptacle, and mounted on one side of the washer is the wringer frame 4, carrying the usual wringer rolls driven by intermeshing gear, the upper portion of one of the gears 5 being shown in Figs. 1 and 2. The portion of the top of the washing machine which supports the wringer is fixed, and only the balance of the lid 2 is hinged.

Mounted on the plate 6 secured on the upper surface of the hinged lid 2, is a water motor 7, which may be of the rotary or reciprocating type, or of any other old and well known construction, the water under pressure being fed to the motor through one of the pipes 8, and the exhaust water from the motor taken off through the exhaust pipe 9. 10 is the piston rod of this motor, which is formed with a rack 11 on its outer end, and which engages with the pinion 12, secured on the shaft 13 of the washing machine, so that the motor will drive this shaft in the usual way for oscillating or rotating the paddles or rubbers of the washing machine. This rod or shaft 13 of the washer carries the rubbing device 14 at its lower end, and is provided with a handle 15 at its upper end. The pinion 12 is provided with a square hole to receive the squared rod 13, so that the pinion will slide on the shaft, but rotate or oscillate with it. This pinion is provided with an elongated sleeve 16, which is journaled in the sleeve 17, secured to or a part of the bed plate 6 which carries the motor. The lower or inner end of the rod 13 is also provided with a collar or sleeve 18 fixed thereon, and the rod 13 is allowed a limited play in the sleeve 16 of the pinion within the limits of the slot 19 in the sleeve 16, the sleeve 16 being held in its bearing 17 by the set screw 20.

Mounted on the boss 21 on the bed plate 6 on the bolt 22 are the flanged and abutting sleeves 23, 24. Loosely mounted on these sleeves is the gear wheel 25, while on the hub 26 of this gear are loosely mounted one on each side, the arms 27, 28. These arms and the gear 25 are held in a central position on the sleeves 23, 24 by the coiled springs 29, 30, which bear between the flanges of the sleeves and the hubs of the arms.

The inner periphery of the gear 25, is provided with ratchet teeth 31, and each of the arms 27, 28 carries a pawl 32, 33, pivoted on the outer end of the arm, so that these pawls will engage the ratchet teeth of the gear. The inner ends of these pawls are connected by the rods 34, 35 with a cross head or cross bar 36 secured to the piston rod 10. It will be evident from this construction that as the piston rod is moving away from the motor, the pawl 33 will engage the ratchet teeth and as the piston rod is moving toward the motor the pawl 32 will engage the ratchet teeth, and the reciprocating motion of the piston rod will be converted into a constant rotary motion in one direction of the gear 25. The gear 25 is such a size and so located, that when the lid 2 of the washing machine is raised into vertical position and rests against the stop block 37, mounted on the receptacle 1, the gear 25 will be brought into mesh with the gear 38, mounted on the outer end of the lower shaft of the wringer, so that in this position the motor will drive the wringer. When the lid 2 is closed the driving gear 25

is simply disconnected from the wringer gear.

In order that when the wringer is being operated and the lid is raised, the washing machine apparatus may not be actuated, I provide the construction above described in which the driving pinion 12 will permit the handle 15, secured on the washing machine shaft 13, to slide in the pinion until the collar 18 is brought into contact with the sleeve 16 of the pinion, and then the pinion itself will be raised within the limits of the slot 19, and disconnect the pinion from the rack 11 on the piston rod.

In order that in the use of the washing machine the rod 13 may not be raised accidentally by the clothes in the machine, so as to disconnect the pinion, I provide the locking bar 40 pivoted on a stud 41 on the plate 6, which is arranged to be swung over the face of the pinion 12, as shown in Fig. 5 to prevent any accidental disconnection.

The operation of my device will be clear from the foregoing description. When the clothes are to be washed, the lid 2 is lowered and the pinion 12 engages the rack 11, and the device operates in the usual way under the action of the water motor. When it is desired to wring out the clothes, the operator simply raises the handle 15. The first action is that the washing machine apparatus is drawn up close to the lid 2, so as to be out of the way. Further draft on the handle 15 disconnects the pinion 12 from the rack 11, and the gear 25 is brought into mesh with the gear 38 to drive the wringer.

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

1. In a driving mechanism, the combination of a base, a motor support hinged thereto, an element to be operated mounted thereon, a standard supported on said base, and another element to be operated mounted on said standard, a motor mounted on said support, connecting mechanism between said motor and said first named element when said support is in one position, and connecting mechanism between said motor and said second named element when said support is in another position, with means for shifting the motor support and connection therefor to disconnect the first named element from its connecting mechanism when the support is shifted to its second position.

2. In a driving mechanism, the combination of a base, a motor support hinged thereto, an element to be operated mounted thereon, a standard supported on said base, and another element to be operated mounted on said standard, a motor mounted on said support, a train of gearing intermediate said motor and said first named element when said support is in one position, and a train of gearing intermediate said motor and said second named element when the support is in another position, and means for shifting the motor support and connection therefor to disconnect the first named element from its train of gearing when the support is shifted to its second position.

3. In a driving mechanism, the combination of a base, a standard supported on said base, and an element to be operated mounted thereon, a motor support hinged to the base, a shaft and pinion to be operated mounted on said support, and a motor mounted thereon, with gearing intermediate the motor and shaft for operating same in one position of the support, and gearing intermediate said motor and said base supported element for operating the same when the support is in another position, with means for shifting the motor support and connection therefor to disconnect said pinion from said gearing when the motor support is shifted to its last named position.

4. A driving mechanism comprising a base, a motor support hinged thereto, a shaft mounted on and passing through the support and having an external handle, a pinion slidingly mounted on said shaft, a motor and connecting mechanism mounted on said support to operate the pinion, and a sleeve on the shaft to disconnect the pinion when the motor support is moved into another position.

5. A driving mechanism comprising a base, a motor support hinged thereto, a shaft mounted on and passing through the support and having an external handle, a pinion slidingly mounted on said shaft, a motor and connecting mechanism mounted on said support to operate the pinion, and a sleeve on the shaft to disconnect the pinion when the motor support is moved into another position, a standard for another element to be operated, supported on said base, and connecting mechanism between said motor and said element when said support is in such other position.

CHARLES W. CRAWFORD.

Witnesses:
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EARL W. GRIFFIN.