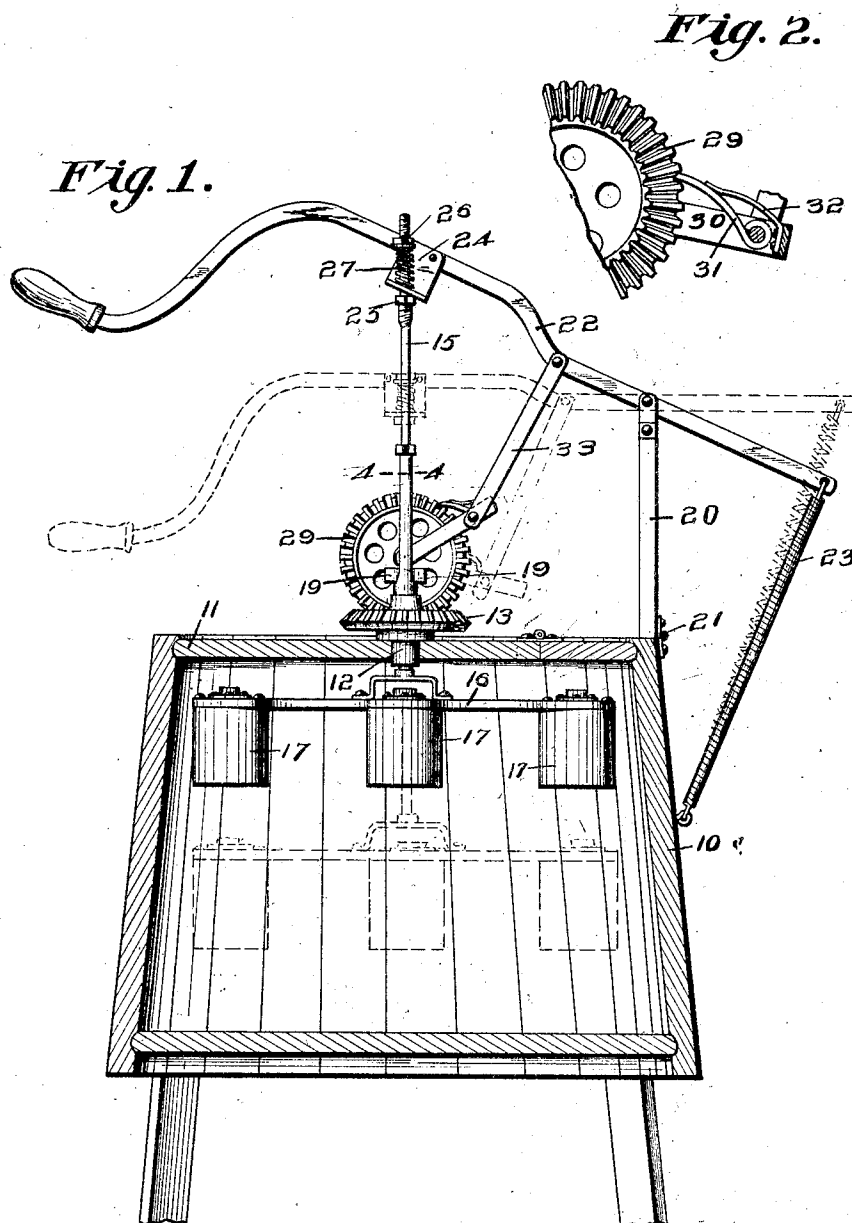


W. H. JOHNSON.
GEARING DEVICE FOR WASHING MACHINES.
APPLICATION FILED MAR. 13, 1909.

940,253.

Patented Nov. 16, 1909.

2 SHEETS—SHEET 1.



Witnesses.
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Inventor:
Wm. H. Johnson.
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Fig. 3.

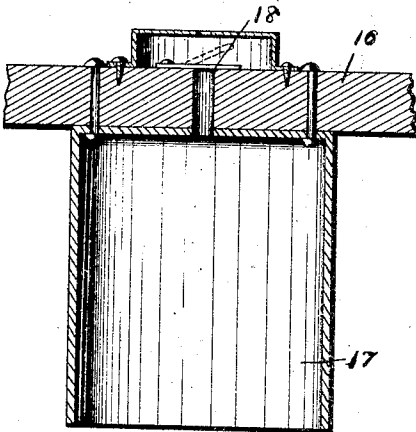


Fig. 4.

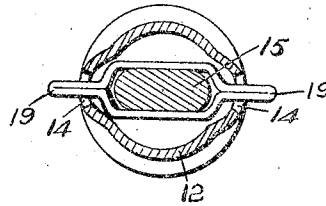
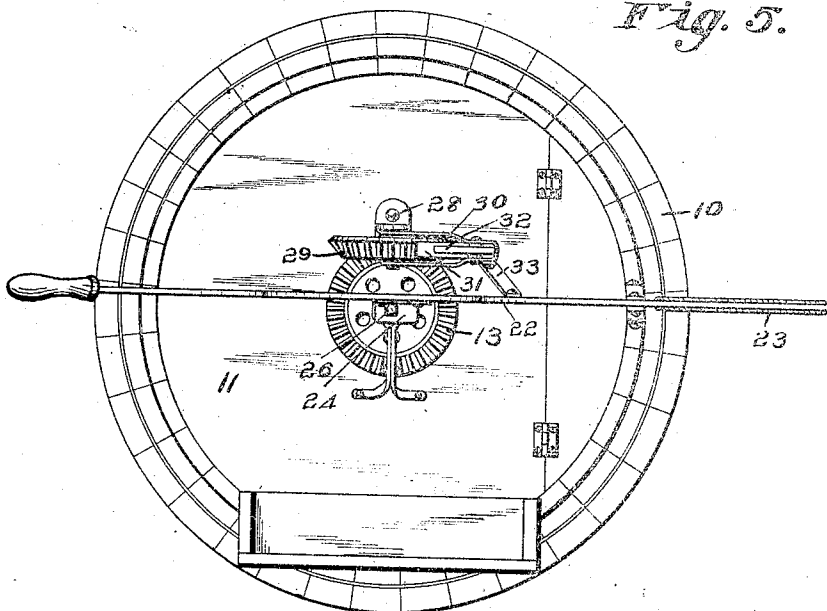


Fig. 5.



Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM H. JOHNSON, OF DES MOINES, IOWA.

GEARING DEVICE FOR WASHING-MACHINES.

940,253.

Specification of Letters Patent.

Patented Nov. 16, 1909.

Application filed March 18, 1908. Serial No. 433,192.

To all whom it may concern:

Be it known that I, WILLIAM H. JOHNSON, a citizen of the United States, residing at Des Moines, in the county of Polk and State of Iowa, have invented a certain new and useful Gearing Device for Washing-Machines, of which the following is a specification.

My invention relates to a gearing device for washing machines of the class that are provided with a set of plungers arranged to be vertically reciprocated and also to be turned a part of a revolution each time that the set of plungers is moved upwardly.

My object is to provide a gearing device of simple, durable and inexpensive construction, so arranged that when the operating lever is moved downwardly, the plunger shaft will be moved downwardly, and then, when the handle of the operating lever is released, it will be automatically elevated, and during each elevation, the plunger shaft will be rotated part of a revolution.

My invention consists in the construction, arrangement, and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 shows a sectional view of a washing machine having my improved gearing device applied thereto. The dotted lines show the position of the parts when the operating lever is at its lower limit of movement. Fig. 2 shows an enlarged detail view illustrating the spring actuated pawl for engaging the driving gear wheel. Fig. 3 shows an enlarged detail sectional view of one of the plungers. Fig. 4 shows an enlarged, detail sectional view on the line 4—4 of Fig. 1, and—Fig. 5 shows a top or plan view of a device embodying my invention applied to a washing machine.

Referring to the accompanying drawings, I have used the reference numeral 10 to indicate the body of the machine. The body portion 10 is provided with a hinged portion 11 at its top and in the hinged portion is a rotatable sleeve 12 extended vertically and having a beveled gear wheel 13 fixed thereon. The upper portion of the sleeve above the beveled gear wheel is provided with slots 14 in its sides for purposes hereinafter made clear.

Extended vertically through the sleeve 12 is a shaft 15 on the lower end of which is a cross piece 16 within the body 10 having a series of plungers 17 attached thereto. These plungers are open at their lower ends and are provided with valves 18 at their upper ends, as clearly shown in Fig. 3. The shaft 15 is provided with flat sides, as clearly shown in Fig. 4, and mounted thereon is a guide device 19 having its ends projected through the slots 14 so that the shaft is required to rotate with the sleeve 12, and yet the shaft has an independent up and down movement relative to the sleeve 12. By having the guide device 19 loosely mounted on the shaft 15, it is obvious that it need not move up and down as far as the movement of the shaft 15.

Mounted upon the body portion 10 is an upright fulcrum piece 20 connected with the body 10 by means of a hinge 21 and capable of swinging outwardly away from the center of the body portion, but not capable of moving inwardly. Fulcrumed to the part 20 is the operating lever 22 which is provided at one end with a contractible spring 23 also attached to the body 10 to hold the handle end of the operating lever at its upward limit of movement. Fixed to the operating lever 22 is a bracket 24 having an opening through it to admit the shaft 15. Below this bracket is a nut 25 adjustably fixed to the shaft and above the bracket is a nut 26 and an extensible coil spring 27, the latter being held in engagement with the top of the bracket by the nut 26. By this arrangement it is obvious that when the handle end of the operating lever is moved downwardly, the shaft 15 and the plungers will be moved downwardly with it and when the handle end is released, the spring 23 will cause it to be elevated. And by means of the spring 27, it is obvious that when the plungers strike upon objects within the body 10, the pressure of the shaft 15 will be cushioned by the spring 27. Furthermore, when the hinged portion 11 is elevated the support 20 may incline outwardly away from the body portion 10 to permit the operating lever and attached parts to freely swing away from the top of the body portion.

Mounted on top of the hinged portion 11 is a bracket 28 having mounted therein a beveled pinion 29, said pinion being in mesh with the pinion 13. Pivoted to the shaft

of the pinion 29 is a bifurcated arm 30 having pivoted therein a pawl 31 to engage the beveled pinion 29. A spring 32 is provided for yieldingly holding the pawl in engagement with said pinion. Pivoted to the arm 30 is a link 33 which is also pivoted to the operating lever 22. By means of this arrangement, it is obvious that when the operating lever is moved downwardly, the pawl 30 will move relative to the pinion 29 until the arm 30 is at its lower limit. Then, when the operating lever is elevated, the pinion 29 will be turned a part revolution which will result in turning the pinion 13 and the sleeve 12, and by means of said sleeve, the guide 19 will be turned and it will also turn the shaft 15 which carries the plungers so that upon each reciprocation of the shaft 15, the plungers will be turned a part revolution within the body and will therefore engage the clothes within the body portion at different positions upon each reciprocation.

It is obvious that the gearing device is of simple, durable and inexpensive construction, and that the rotary movement of the parts is comparatively slow so that the parts are not subjected to excessive wear, and, furthermore, the operation of the device will be comparatively noiseless. Furthermore, by providing a spring for elevating the operating lever, the machine may be operated by a minimum of applied power which may be applied by the operator in a convenient and easy manner. The cushioning effect of the spring 27 is also very advantageous in a machine of this kind.

I claim as my invention.

1. A gearing for washing machines, comprising a body portion, a sleeve rotatably mounted therein, a beveled pinion on the sleeve, said sleeve having slots in its sides above the beveled pinion, a shaft extended through the sleeve, a guide device slidably

and non-rotatably mounted on the shaft with its ends extended through the slots in the sleeve, an operating lever, means for connecting the operating lever with the said shaft, a second beveled pinion in mesh with the first, an arm pivotally supported at the center of the second beveled pinion, a spring actuated pawl carried by the arm to engage the second pinion, and a link connecting said arm with the operating lever.

2. A device of the class described, comprising a body portion, a fulcrum member hinged to the body portion, an operating lever fulcrumed to the fulcrum member, a spring attached to the operating lever and to the body portion, a sleeve rotatably mounted in the body portion and having slots in its sides, a beveled pinion fixed to the sleeve, a shaft extended vertically through the sleeve, said shaft having flat sides, a guide device loosely mounted on the flat portion of said shaft and having projecting ends extended through the slots in the sleeve, a bracket fixed to the operating lever, a nut adjustably mounted on the shaft to engage the under surface of said bracket, a spring mounted on the shaft to engage the top surface of said bracket, an adjusting nut on the shaft above the spring for adjusting the tension thereof, a bracket mounted upon the body portion, a beveled pinion mounted in said bracket and in mesh with the first beveled pinion, a bifurcated arm pivoted to the shaft of the second pinion, a pawl pivoted between the sides of said arm to engage the second beveled pinion, a spring for said pawl, and a link pivoted to the bifurcated arm and to the operating lever.

Des Moines, Iowa, Feb. 8, 1909.

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Witnesses:

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