

C. P. JOHNSON.

GEARING.

APPLICATION FILED SEPT. 30, 1909.

960,945.

Patented June 7, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

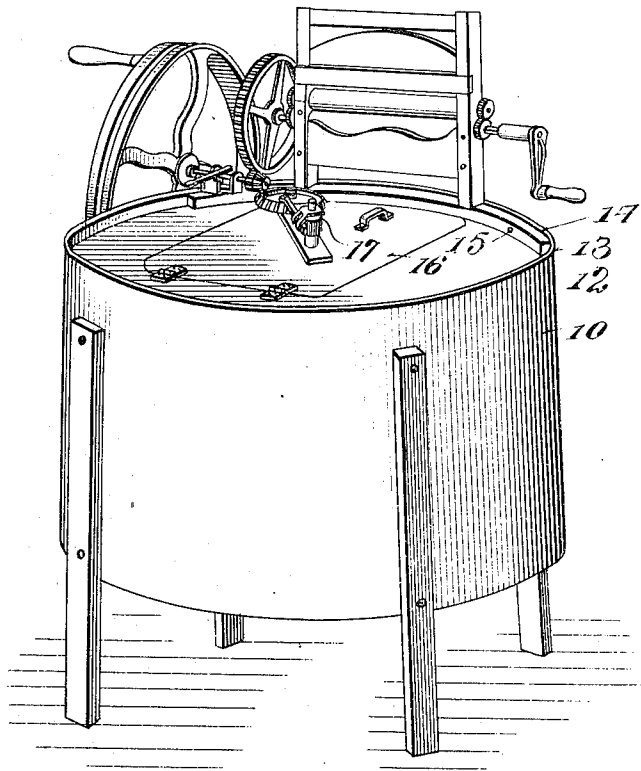
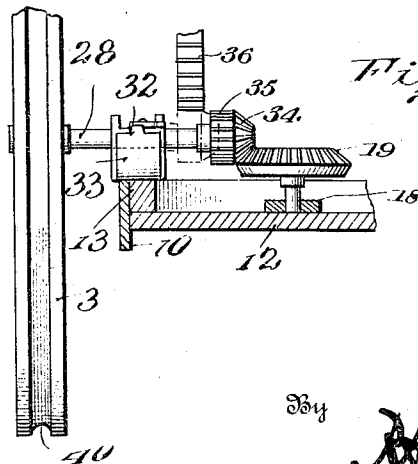


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

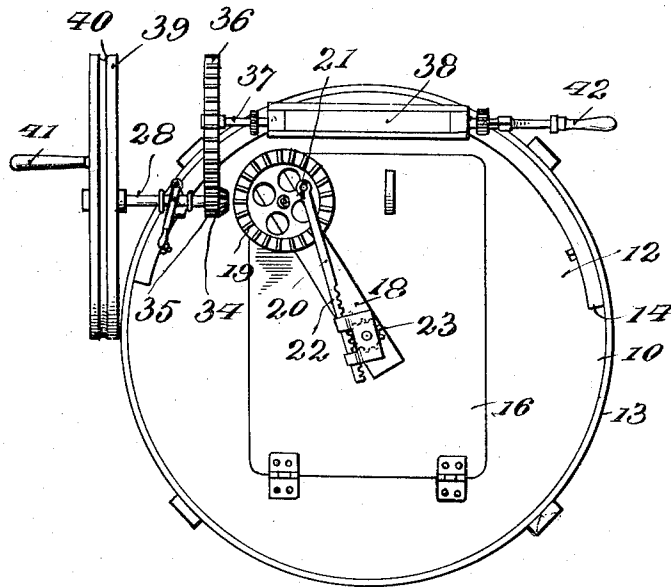


Fig. 4.

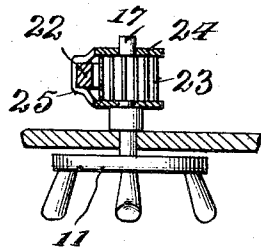


Fig. 5.

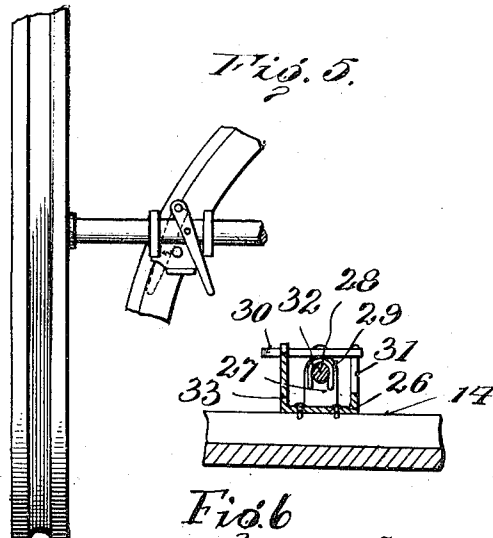


Fig. 6.

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UNITED STATES PATENT OFFICE.

CHRIS P. JOHNSON, OF NEWCASTLE, CALIFORNIA.

GEARING.

960,945.

Specification of Letters Patent.

Patented June 7, 1910.

Application filed September 30, 1909. Serial No. 520,233.

To all whom it may concern:

Be it known that I, CHRIS P. JOHNSON, citizen of the United States, residing at Newcastle, in the county of Placer and State of California, have invented certain new and useful Improvements in Gearing, of which the following is a specification.

This invention relates generally to gearing and refers particularly to an improvement in a mechanism adapted to washing machines.

An object of the invention is to provide a novel form of gearing whereby the washing machine may be operated either by hand or by other power and to which may be also attached for operation a wringer which is mounted upon the washing machine.

The invention has for another object the provision of an improved means whereby the washing machine or the wringer may be thrown into and out of operation at the will of the operator when it is desired to operate but one of the devices.

The invention further provides a novel arrangement of gears whereby a rotary motion is converted into a reciprocating motion and wherein a great leverage is obtained upon the dasher of the washing machine proportionately to the amount of work exerted upon the drive shaft of the device.

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 perspective view of the complete washing machine having the wringer attached thereto; Fig. 2 is a detailed view of the gear mechanism for actuating the washing machine, the parts being shown in section; Fig. 3 is a top plan view of the complete device; Fig. 4 is a detailed sectional view through the pinion and rack bar, for actuating the dasher; Fig. 5 is a top plan view of the shifting mechanism for detaching the washing machine and the wringer from the power shaft, and Fig. 6 is a transverse sectional view through the same.

Corresponding and like parts are referred to in the following description and indicated

in all the views of the accompanying drawings by the same reference characters.

Referring to the drawings the numeral 10 designates the support for the gearing, which is disclosed as a washing machine which is of common formation and comprising a cylindrical receptacle or tub in which a dasher 11 is inserted. The body or support 10 is provided with a head 12 at its upper end which is spaced downwardly from the upper edge of the sides of the body 10 in order to form a flange 13 for the reception of an arcuate metallic strip 14. The strip 14 is positioned against the inner face of the flange 13 and secured thereon by bolts 15 or the like. The head 12 is formed with a hinged cover 16 which is provided with a suitable bearing for the reception of a dasher shaft 17 to retain the same in a vertical position. Disposed diagonally across the cover 16 is a brace 18 which is formed from a strip of flattened metal and through which the dasher shaft 17 extends adjacent one end of the brace 18, the opposite end of the brace 18 being located adjacent the outer corner of the cover 16 in order to position a beveled gear 19 toward the edge of the body portion 10. The gear 19 is provided with a pitman 20 which is mounted upon the gear 19 through the medium of a wrist pin 21 and which is provided at its outer end with a rack 22 for engagement with a pinion 23 located upon the upper end of the dasher shaft 17. For the purpose of retaining the rack 22 against the pinion 23 during the reciprocation of the pitman 20 the shaft 17 is provided with a metallic plate 24 which is bent into U-formation and which is suitably apertured for positioning over the shaft 17 against the opposite sides of the pinion 23, the bent portion of the plate being extended upwardly and about the rack 22 forming a guide 25 for the same. The plate 24 is thus permitted a free rotary movement with respect to the shaft 17 and pinion 23 and permits the rack 22 to slide through the guide 25 formed on the same.

Mounted upon the arcuate strip 14 is a plate 26 provided with upstanding journals 27 at its opposite ends through which is mounted a drive shaft 28. The drive shaft 28 is adapted for a sliding movement

through the journal 27 and to effect such result the shaft 28 is angularly curved immediately between the bearings 27 for the reception of a fork 29 which is swivelly mounted intermediately upon a hand lever 30. The hand lever 30 is provided at one end upon an upwardly projected arm 31 formed at one side of the plate 26 and is retained from sliding movement by engagement with the opposite sides of a lug 32, located upon an arm 33 which is extended upwardly from the opposite side of the plate 26.

Upon the inner end of the drive shaft 28 a beveled pinion 34 is mounted which meshes with the large beveled gear in order to impart rotation to the same and to reciprocate the dasher 11. Adjacent the beveled pinion 34 is located a pinion 35 having straight teeth which mesh at times with the large gear 36 carried upon the wringer shaft 37 which is extended outwardly from a wringer 38 mounted intermediately of the arcuate strip 14. The gear 36 is disposed in such a plane relative to the gear 19 and the pinions 34 and 35 that when the gear 19 and the pinion 34 are meshed the pinion 35 is out of alinement with the gear 36.

The outer extremity of the drive shaft 28 is provided with a large fly wheel 39 which is provided at its periphery with a groove 40 for the reception of a round belt, should such be desired and a handle 41 is also provided and extended outwardly from the fly wheel 39 to permit of manual operation of the device. The wringer 38 is provided also with a handle 42 in the usual manner when it is desired to operate the same by hand independently of the gear mechanism.

In operation, when it is desired to actuate the gears by power a belt is engaged over the fly wheel 39, either a flat belt or a round belt being adaptable, in order to rotate the shaft 28. The rotation of the shaft 28 is imparted through the pinion 34 and gear 19, when so adjusted as disclosed in Fig. 2, whereby the gear 19 is rotated and the pitman 20 given a reciprocating movement. The rack 32 is thereby actuated and caused to rotate the pinion 23 reciprocally in order to vibrate the dasher shaft 17 and dasher 11. When it is desired to release the dasher 11 from the mechanism and to actuate the wringer 38 the handle 30 is raised upwardly from engagement with the rack 32 and swung outwardly whereby the swiveled fork 29 carries the shaft 38 therewith and drives the pinion 35 into alinement with the gear 36; when in this position the lever 30 is released and permitted to drop down upon the arm 33 upon the opposite side of the lug 32 which thereby prevents the lever 30 from returning to the first position and also holds

the pinion 35 against the gear 36. When in this position the cover 16 may be raised as the pinion 34 is receded from the beveled gear 19 and thereby clears the passage above the same, thus permitting of the swinging upwardly and backwardly of the cover.

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

1. A device as specified including a support, a drive shaft mounted adjacent the edge of said support and adapted for reciprocation thereon, a pinion carried by said drive shaft, a gear mounted on said support for engagement with said pinion, a vertical shaft disposed on said support, and means connected to said vertical shaft and said gear for reciprocating said vertical shaft upon the rotation of said gear.

2. A system of gears including a drive shaft, a support for said drive shaft, a lever mounted on the support and connected with said drive shaft to longitudinally reciprocate the same, a beveled pinion located upon the inner end of said drive shaft, a gear mounted on said support, adjacent the pinion, a pitman carried by said gear and having rack teeth, a brace mounted on the support, and extended inwardly from the gear, a reciprocating shaft mounted on the support and through the opposite end of the brace, a pinion carried by said reciprocating shaft, and meshing with the teeth of said pitman, a guide mounted upon said reciprocating shaft and engaging said pitman, a spur gear mounted upon the inner end of said shaft adjacent said beveled pinion, a second shaft carried by said support, and a gear mounted on said second shaft adjacent said spur gear, said drive shaft being adapted to reciprocate to alternately engage the spur gear and the pinion with the respective gears.

3. The combination with a support of a brace located across the top thereof, said brace being apertured, a vertical shaft carried through one end of said brace, a pinion located upon the upper end of said shaft, a beveled gear mounted upon the outer end of said brace, a pitman carried by said gear and having rack teeth meshed with said pinion, a guide carried by said shaft for engagement with said rack to retain the same against said pinion, a drive shaft mounted on said support, a beveled pinion carried upon the inner end of said drive shaft for intermeshed relation with said beveled gear, and a hand-lever carried by said support and connected to said drive shaft to reciprocate the same to disengage the beveled gear at times.

4. A device as specified including a support, a shaft located on said support, a pinion carried by said shaft, a guide carried by

said shaft adjacent said pinion, a gear carried by said support, a pitman carried by said gear for engagement through said guide, said pitman having rack teeth meshing with said pinion, a drive shaft carried by said support and adapted for longitudinal reciprocation, a beveled pinion located on said drive shaft for engagement with said beveled gear, a fly-wheel located upon the
5 outer end of said shaft to impart rotation to
10

the same, and means carried by the support for reciprocating said shaft to throw said beveled pinion out of engagement with said gear at times.

In testimony whereof I affix my signature 15
in presence of two witnesses.

CHRIS P. JOHNSON. [L. s.]

Witnesses:

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