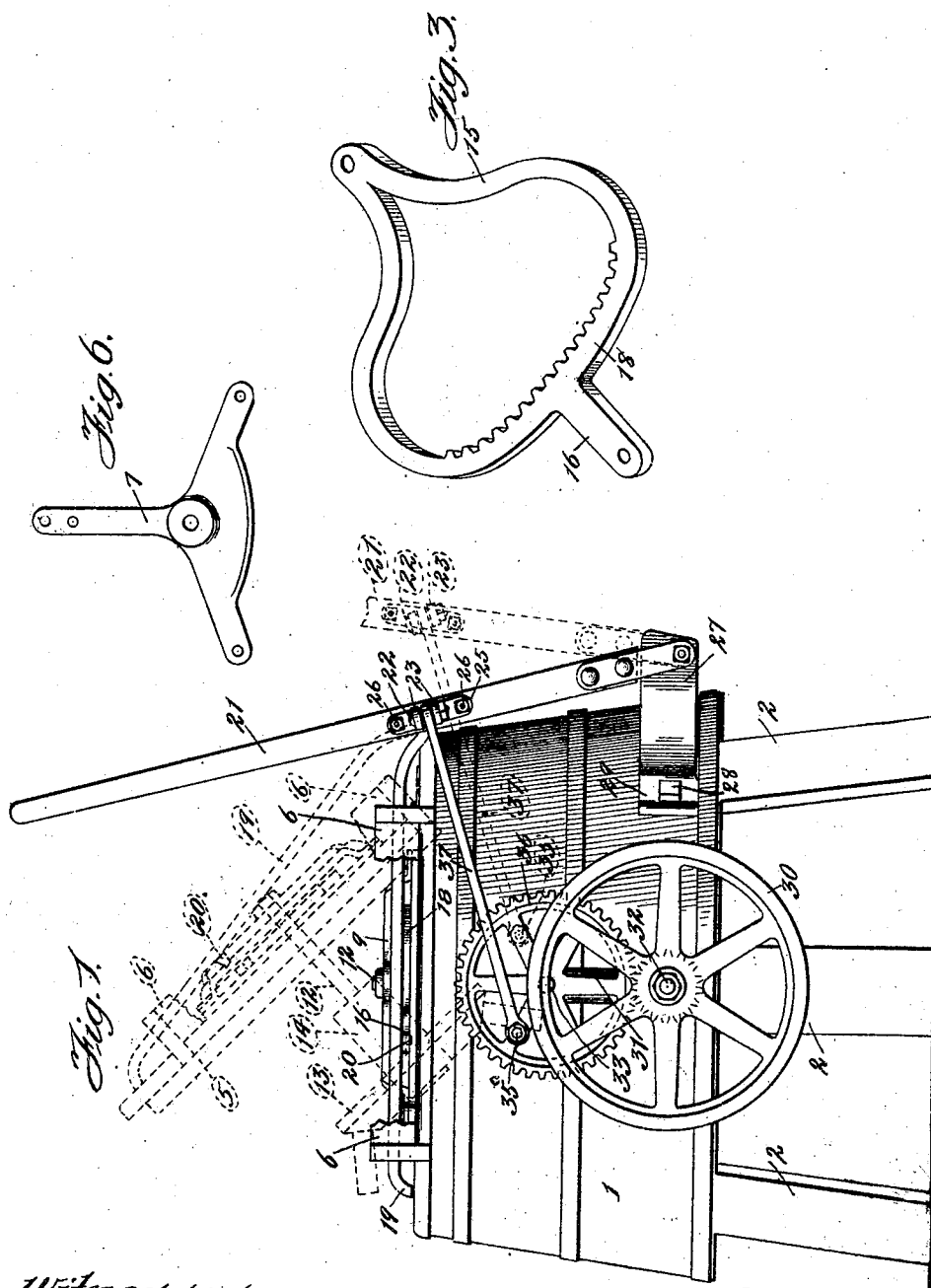


GEARING.

933,672.

2 SHEETS--SHEET 1.



Edw. D. Perry
W. H. Liddens

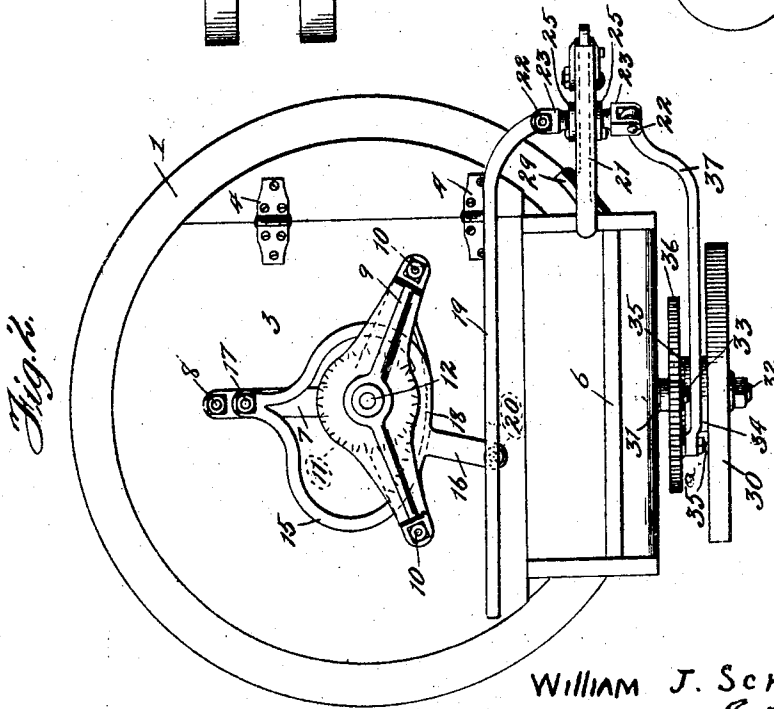
William J. Schoonover

By Jones & Waddington.
HIS ATTORNEYS

His ATTORNEYS

APPLICATION FILED APR. 11, 1906.

2 SHEETS--SHEET 2.



Chas. D. Perry
A. H. Lidders.

BY *Jones & Cuddington.*
HIS ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM JACKSON SCHOONOVER, OF DES MOINES, IOWA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO IOWA WASHING MACHINE COMPANY, OF DES MOINES, IOWA, A CORPORATION OF IOWA.

GEARING.

933,672.

Specification of Letters Patent.

Patented Sept. 7, 1909.

Application filed April 11, 1906. Serial No. 311,145.

To all whom it may concern:

Be it known that I, WILLIAM J. SCHOONOVER, a citizen of the United States, residing at Des Moines, in the county of Polk and State of Iowa, have invented new and useful Improvements in Gearing, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to improvements in gearing devices, and its objects are to provide a gearing device of simple and inexpensive construction which shall be durable and highly efficient in use.

To accomplish the foregoing objects, my invention consists in the features of construction and in the combination of parts and arrangement of devices hereinafter described and claimed.

Other objects and advantages of the invention will be brought out and made to appear in the following specification, reference being had to the accompanying drawings, in which,

Figure 1 is a side elevation of the gearing device with a part of the wringer stand broken away, and show in dotted lines the cover and parts attached thereto raised up from the top of the tub; Fig. 2 is a plan of the top of the washing machine; Fig. 3 is a view in perspective of the pivot-rack; Fig. 4 is a detail showing the swivel clevis on each side of the lever; Fig. 5 is a view on the dotted lines 5—5 of Fig. 4; and, Fig. 6 is a view in perspective of the bearing plate.

In the foregoing construction which I have worked out to embody my invention in practical form, a tub 1 mounted on legs 2 has its interior fluted or ribbed in the usual manner to provide a rubbing surface. A cover 3 is hinged to the top of the tub by the hinges 4. The cover has a reinforcing piece 5 on its underside, (see Fig. 1). On one side of the top of the tub a wringer-stand 6 is secured. A three-armed bearing plate 7 is secured to the door 3 by the bolt 8, and a yoke-head 9 is mounted on said bearing plate and secured by bolts 10 passing through the plate and secured to the door 3. A pinion 11 has a shaft 12, which journals in the yoke-head 9 and extends through the bearing plate into the tub. This shaft is designed for operating an agitator of ordinary form, indicated by the numerals 13 and 14, and

shown in dotted lines in Fig. 1. The particular form of this agitator however, forms no part of my present invention, and is therefore not particularly shown or described herein. A substantially heart-shaped pivot rack 15 provided with the arm 16 is pivotally mounted at 17 on the bearing plate 7, and has its front portion 18 bearing on a ridged portion of the said supporting plate.

In operation, the mechanism on the cover 65 of the tub is connected to the pitman 19 by inserting a pin 20 on the underside of the pitman into a socket at the end of the arm 16. This pitman is pivoted to a bolt 22 in the clevis 23 which clevis is connected to the operating lever 21 by a swivel joint shown in detail in Figs. 4 and 5. As there shown, the clevis is pivotally mounted on the pin 24 which projects from the plate 25 secured to the lever 21 by the bolts 26. The forward portion of the pitman 19 is bent downwardly to have the end thereof in juxtaposition to the top of the cover whereby when the latter is raised the pitman is automatically disconnected from the pivot rack (see Fig. 1). The lower end of the lever 21 is bifurcated and fits over and is pivotally fulcrumed on the bracket 27 secured to the tub by bolts 28 through the flanges 29. On the side of the tub is secured a plate 31 to which journals 32 and 33 are secured. A fly-wheel 30 provided on its inner side with an extended hub 34 and pinion 35 is mounted on the journal 32. The spur-wheel 36 is mounted on the journal 33 in mesh with the pinion 35 on the fly-wheel and the pitman 37 is connected at one end with a crank pin 35^a on the spur wheel 36, and at the other end is connected with the operating hand lever 21 in a manner exactly similar to that heretofore described with respect to the pitman 19.

With the above arrangement of devices, the operation of the machine is as follows: The cover is opened to place the contents in the tub. As stated hereinbefore when the cover is opened the pitman associated with the pivot rack is automatically detached therefrom. After placing the contents in the tub, the cover is closed and the pin on the pitman is inserted in the socket of the arm on the pivot-rack. If, now, the operating lever is oscillated, an alternating rotary motion is communicated to the agitator head while a continuous rotary motion is communicated to the fly-wheel. It will

readily be understood that the fly-wheel in the above arrangement has a steadying effect in the working of the machine and renders the operation thereof easier.

I wish it to be understood that I do not desire to be limited to the exact details of construction shown and described for obvious modifications will occur to a person skilled in the art.

The invention herein disclosed does not relate in any way to improvements in the washing machine proper, but consists wholly of the improved gearing device for operating the agitator shaft of a washing machine or other similar device. However, one of the important features of my invention consists in the means for automatically throwing the gearing out of engagement with the agitator shaft when the hinged cover on the washing machine is raised. And for this reason, it is necessary in the specification and claims to include a body portion which may be the tub of a washing machine, and a hinged member which may be the cover of a washing machine.

One of the advantages that is gained by the construction and arrangement of the gearing device that embodies my invention is that by arranging the balance wheel in a vertical plane at one side of the support and by also arranging the large gear wheel in a vertical plane adjacent to the balance wheel, a single upright operating lever may be used and it may be connected by a pitman direct with the large gear wheel, and the said pitman may be connected with the lever at any desired distance above the fulcrum of the lever so that the operator may give to the lever a length of stroke that is most convenient for the average operator, and the large gear wheel may be conveniently and easily operated by the pitman connected with the lever when the lever is given a length of stroke most convenient for the operator.

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

1. An improved gearing device, comprising a body, a hinged member on the body, a shaft mounted in the hinged member, a lever fulcrumed to the body, a pitman connected with the lever, means interposed between the pitman and said shaft for imparting an alternating rotary motion to the shaft, said means including a detachable element, said pitman being provided with an extension designed to engage said hinged member, and said parts being so arranged and assembled that when the hinged member is raised, the pitman will be detached from the device for imparting an alternating rotary motion to the shaft.

2. A gearing device, comprising a body, a hinged member, an upright shaft connected with the hinged member, a pinion thereon,

a pivoted rack in mesh with the pinion, said pivoted rack having a projecting arm with an opening therein, a lever fulcrumed to the body, a pitman connected with the lever having a pin to engage the opening in said arm, and also having an extension to engage said hinged portion, said parts being so arranged that when the hinged portion is raised, the extension on the pitman will engage it and force the pin out of engagement with the arm of the rack.

3. An improved gearing, comprising a body, an upright shaft connected therewith, a lever fulcrumed to the body, a pitman connected with it, means interposed between the pitman and the upright shaft for imparting an alternating rotary motion to the shaft, a balance wheel at the side of the body, a second pitman connected with said lever, and a speed increasing gearing device connected with the second pitman and with said balance wheel.

4. A gearing device, comprising a body, a hinged member on the body, an upright shaft in the hinged member, a lever on the body, means interposed between the lever and the shaft for imparting an alternating rotary motion to the shaft, said means including a detachable feature arranged to be automatically disengaged when the hinged member is raised.

5. An improved gearing, comprising a body, an upright shaft connected therewith, a lever fulcrumed to the body, a pitman, a swivel joint at one side of the lever connected to the pitman, and means interposed between said pitman and said upright shaft for imparting an alternating rotary motion to the shaft when the pitman is reciprocated, a second pitman, a swivel joint connecting it with the opposite side of said lever, a gear wheel connected with the second pitman and arranged at the side of the body, a balance wheel adjacent to the gear wheel, and a small pinion connected with the balance wheel and in mesh with said gear wheel.

6. An improved gearing device, comprising a support, a lever fulcrumed to the support, a pitman connected with the lever above its fulcrum; a large gear wheel connected to said pitman, a small gear wheel in mesh with the large one, a balance wheel connected with the small gear wheel, an upright shaft, and means for imparting an alternating rotary motion to said upright shaft during the time that the balance wheel is being continuously rotated in one direction.

7. An improved gearing device, comprising a support, a lever fulcrumed to the support, a pitman pivoted to the lever, a large gear wheel at the side of the support in an upright position having said pitman connected to it, a small gear wheel in an upright position in mesh with the large one, a

balance wheel in an upright position at the side of the support connected to the small gear wheel, an upright shaft, and means for imparting an alternating rotary motion to the upright shaft during the time that the balance wheel is being continually rotated in one direction.

8. A gearing device of the class described, comprising a support, an upright shaft, a lever, means operated by a reciprocation of the lever for imparting an alternating rotary motion to said shaft, a pitman operatively connected with the lever above its fulcrum, a large gear wheel in an upright position

connected to said pitman, a small gear wheel in mesh with the large one, and a balance wheel in an upright position connected with the small gear wheel, for the purpose of imparting a continuous, rotary motion to the balance wheel when the said lever is reciprocated.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

WILLIAM JACKSON SCHOONOVER.

Witnesses:

W. H. CARR,

H. C. RICHARDSON.