

C. J. MARTH.
GEARING FOR WASHING MACHINES.
APPLICATION FILED MAY 13, 1910.

984,831.

Patented Feb. 21, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

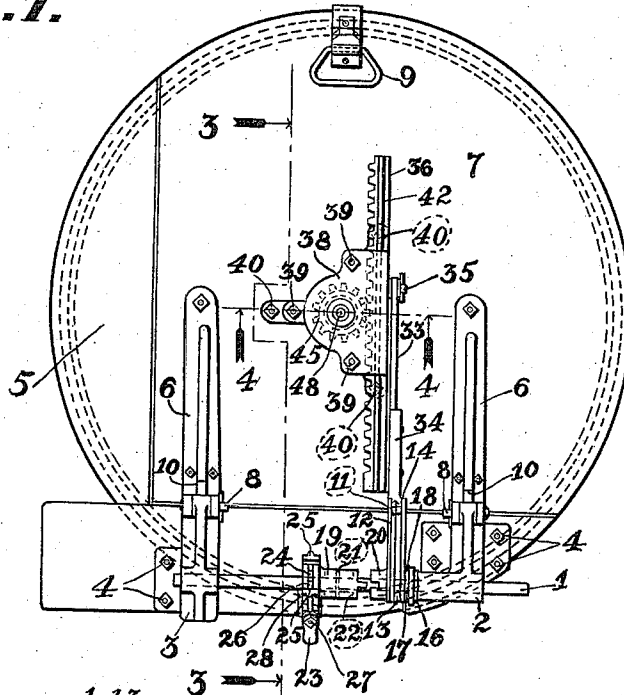
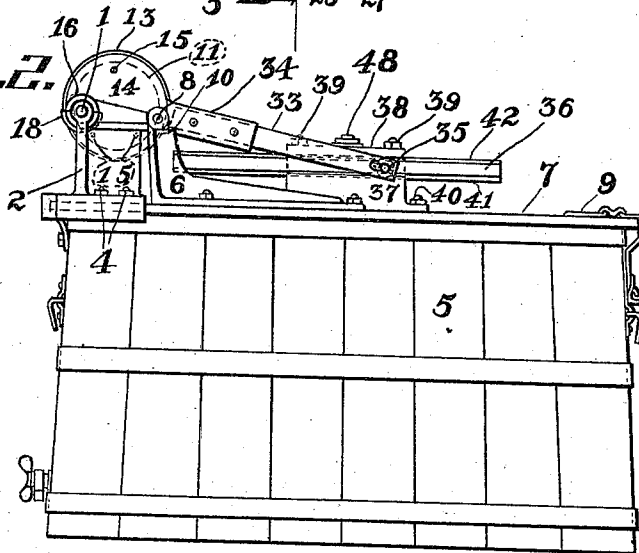


Fig. 2.



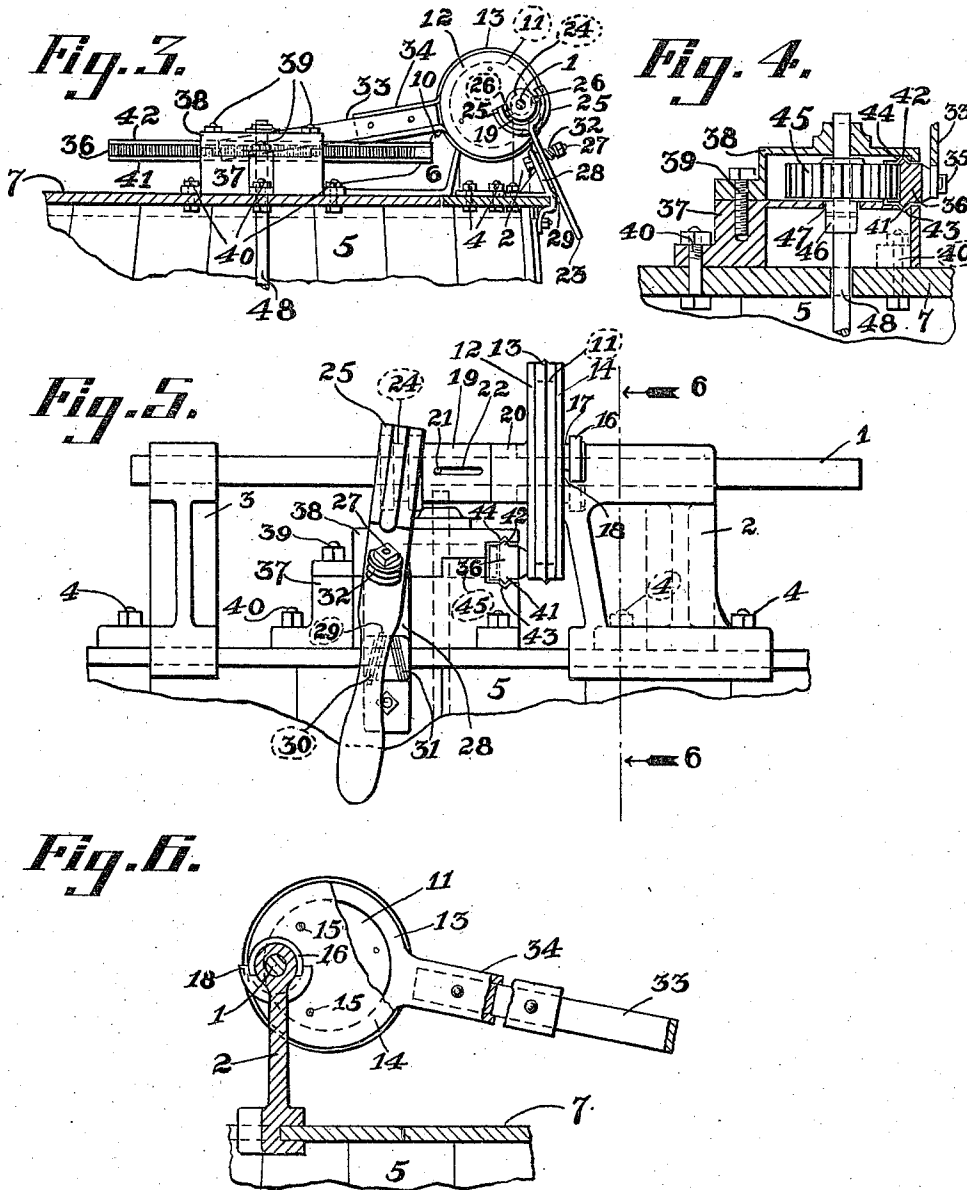
Witnesses:
George B. Anderson.
Jas. R. Koenig.
Inventor:
Charles J. Marth,
By Hugh K. Wagner,
His Attorney.

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George G. Anderson.
Geo. R. Foerig

Inventor:
Charles J. Marth,
By Hugh Kovagne,
His Attorney.

UNITED STATES PATENT OFFICE.

CHARLES J. MARTH, OF ST. LOUIS, MISSOURI, ASSIGNOR TO WAYNE MANUFACTURING COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

GEARING FOR WASHING-MACHINES.

984,831.

Specification of Letters Patent.

Patented Feb. 21, 1911.

Application filed May 13, 1910. Serial No. 561,040.

To all whom it may concern:

Be it known that I, CHARLES J. MARTH, a citizen of the United States, residing in the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in Gearing for Washing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to washing-machines, and has for its object to provide novel means for imparting rotary-reciprocatory motion to the agitator shaft from continuous rotary motion of the driving shaft in one direction, which may be either forward or backward.

In the accompanying drawings forming part of this specification, in which like numbers of reference denote like parts wherever they occur, Figure 1 is a top plan view of a washing-machine having the mechanism embodying this invention attached thereto; Fig. 2 is a right side elevation of the machine depicted in Fig. 1; Fig. 3 is a sectional view on the line 3—3, Fig. 1; Fig. 4 is a sectional view, on an enlarged scale, on the line 4—4, Fig. 1; Fig. 5 is a side elevation, on an enlarged scale, of part of the drive shaft and some of the operating parts thereon; and Fig. 6 is a sectional view on the line 6—6, Fig. 5.

The drive shaft 1, which is preferably disposed substantially horizontal, is journaled in standards 2 and 3 and is driven from any suitable source of power, said standards being fastened by means of bolts 4 or the like to tub 5, which contains suds or other cleansing fluid into which the articles to be washed are placed. Hinges 6, of L-shape borne by cover 7, are pivotally attached at 8 to the standards 2 and 3, respectively, a handle 9 being attached to said cover in order to provide a means for lifting said cover. Each hinge 6 bears a projection or shoulder 10, which engages the upper surface of a standard 2 or 3 when cover 7 is raised and which not only limits the upward movement of said cover, but supports same in its raised position.

An eccentric 11 bearing a flange 12 is loosely mounted on shaft 1 and is preferably located near standard 2. A ring 13 is loosely mounted on eccentric 11 and is held thereon by means of flange 12 on one side of said eccentric and, also, by means of plate

14 fastened with screws 15 or the like to the other side of said eccentric, said plate being formed with substantially the same diameter as said flange. Said plate 14 bears a hub 16 in which an annular groove 17 is formed, said hub being concentric with shaft 1 and, also, loosely mounted thereon. A projection 18 extends from standard 2 into groove 17 and prevents longitudinal motion of eccentric 11 on shaft 1.

A clutch member 19 is slidably mounted on shaft 1 and is located near a clutch member 20 borne by eccentric 11. A pin 21 extends transversely through shaft 1 and projects from opposite sides of said shaft into slots 22 in clutch member 19 to cause said clutch member 19 to rotate with said shaft, said slots being arranged to extend substantially parallel to said shaft in order to allow clutch member 19 to be shifted into or out of engagement with clutch member 20. The forked end of a lever 23 partly encircles an annular groove 24 in clutch member 19, each prong 25 of said forked end being provided with a pin 26 that projects into said groove 24 in order to move said clutch member longitudinally on shaft 1. Said lever is pivoted by means of a bolt 27 to a support 28. A projection 29 is formed on lever 23 and is arranged to seat in either of the notches 30 or 31 in said support 28, a spring 32 preferably borne by bolt 27 being arranged to exert its pressure against lever 23 to cause projection 29 to seat in either of said notches. When lever 23 occupies a position to allow projection 29 to seat in notch 30, the pins 26 hold clutch member 19 in engagement with clutch member 20, thereby causing eccentric 11 to rotate with shaft 1, but when said lever is moved to a position to allow projection 29 to seat in notch 31, the pins 26 move clutch member 19 out of engagement with clutch member 20, whereby the eccentric 11 is allowed to remain at rest upon shaft 1.

A member 33 is fastened to arm 34 of ring 13 and is pivotally attached at 35 to a rack 36 that is arranged to slide longitudinally between a casting 37 and a cover 38 that is fastened to said casting by means of bolts 39 or the like, said casting being secured to cover 7 with bolts or screws 40. Said rack is preferably located adjacent one side of casting 37 and is provided with tongues 41 and 42 that fit into grooves 43 and 44 in

casting 37 and cover 38, respectively, in order to guide rack 36 in its movement. When the eccentric is caused to rotate with shaft 1 in the manner hereinabove described, it actuates ring 13 and causes member 33 to reciprocate rack 36 in order to impart a rotary-reciprocatory motion to gear 45 which meshes with the teeth of said rack. Each of the grooves 43 and 44 is preferably made with such length relative to the length of travel of the pivot 35 that, when cover 7 occupies its normal position to close tub 5 and rack 36 is operated in the manner hereinabove described, said pivot does not travel beyond the ends of said grooves, and for this reason rack 36 is prevented from binding in said grooves as same would obviously do if said pivot moved beyond the ends of said slots. The hub 46 of said gear is journaled in an opening 47 in casting 37 and is secured to the agitator shaft 48, which extends at substantially a right angle to shaft 1, said gear being held in position between cover 38 and said casting. The upper end of shaft 48 is journaled in a perforation in cover 38, and the lower end of said shaft extends into the interior of tub 5. An agitator (not shown in the drawings) preferably like the one disclosed in the copending application of George E. W. Luehrmann, Serial No. 550,576, filed March 21, 1910, is attached to the end of shaft 48 that extends into the interior of tub 5, and, when said shaft rotates, said agitator rotates therewith.

The operation of the machine is as follows: Power being applied from any source to drive shaft 1, same is caused to rotate in either direction and with it clutch member 19. If lever 23 occupies a position to allow projection 29 to seat in notch 30, clutch member 19 is held in position to impart motion to eccentric 11. The rotation of eccentric 11 causes member 33 to reciprocate rack 36, thereby imparting a rotary-reciprocatory motion to gear 45 and causing shaft 48 and

the agitator to rotate in the same manner as said gear. This rotary-reciprocatory motion of the agitator shaft 48 causes the agitator to stir or agitate the articles in the suds or cleansing liquid within tub 5, thereby thoroughly working out all of the dirt. When it is desirable to raise cover 7 in order to obtain access to the interior of tub 5, the lever 23 is moved to a position to allow projection 29 to seat in notch 31, thus moving and holding clutch member 19 out of engagement with clutch member 20 to allow eccentric 11 to remain at rest on shaft 1.

I claim:

In a gearing for washing machine, in combination with a support and an element carried by the support, an agitator shaft carried by the element, a drive-shaft carried by the support, means to secure the drive shaft to the support and to movably relate the element to the support comprising a pair of spaced standards each including a base secured to the support, a vertical part carried by each base, and an inwardly extending horizontal part carried by each vertical part at the top end of the latter, the inner ends of the horizontal parts terminating adjacent the outer end of said element, said drive shaft being journaled in the upper ends of the vertical parts, a pair of spaced L-shaped members having their bases secured to said element and having their vertical legs disposed adjacent the inner ends of said horizontal parts of the standards and being pivotally secured to the inner ends of the horizontal parts, and means connected to the drive shaft for operating said agitator shaft.

In testimony whereof I have hereunto affixed my signature in the presence of two witnesses.

CHARLES J. MARTH.

Witnesses:

GLADYS WALTON,
GEORGE G. ANDERSON.