R. B. GOODRICH.

GEARING FOR WASHING MACHINES.

APPLICATION FILED APR. 12, 1910. RENEWED SEPT. 14, 1911.

1,008,537. Patented Nov. 14, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

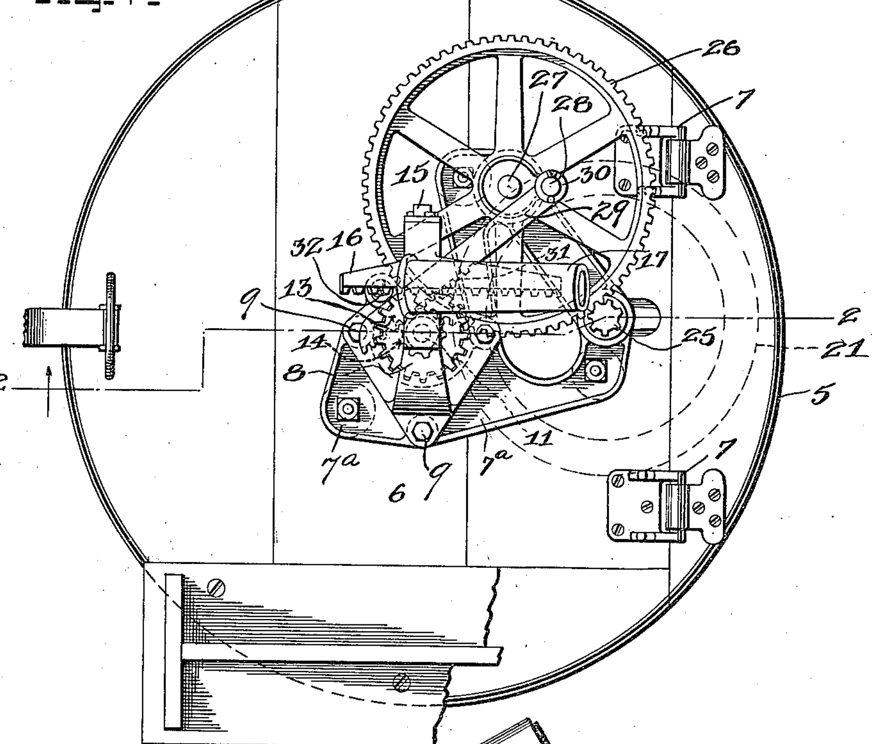
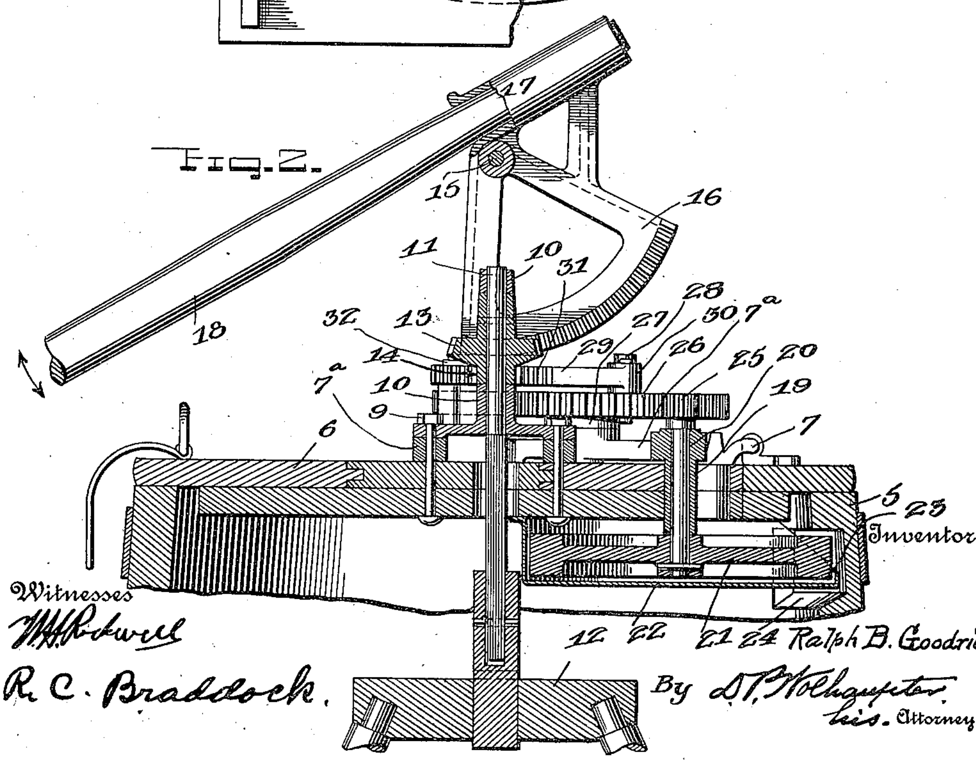


Fig. 2.



Witnesses

W. H. Rockwell

R. C. Braddock.

Inventor

Ralph B. Goodrich

By D. P. Wolhaupter,

his Attorney

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

R. B. GOODRICH.

GEARING FOR WASHING MACHINES.

APPLICATION FILED APR. 12, 1910. RENEWED SEPT. 14, 1911.

1,008,537. Patented Nov. 14, 1911.

2 SHEETS—SHEET 2.

Fig. 3.

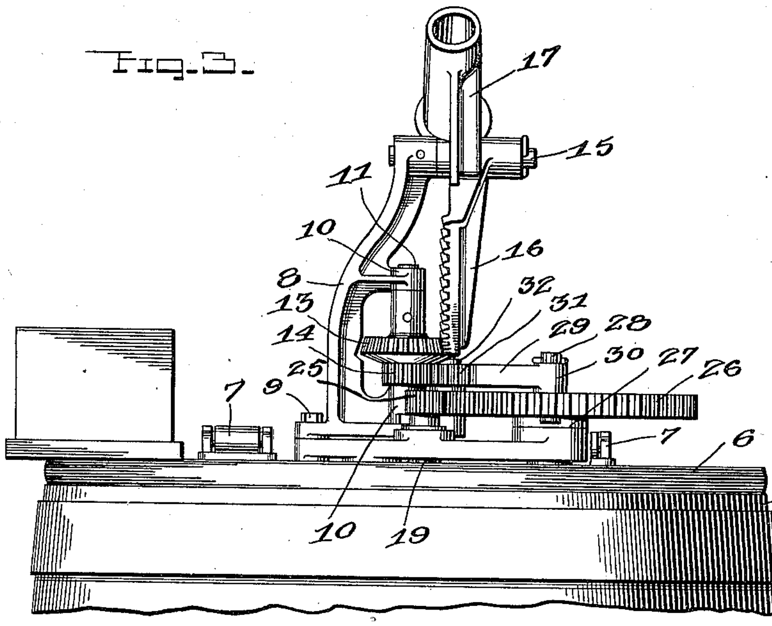
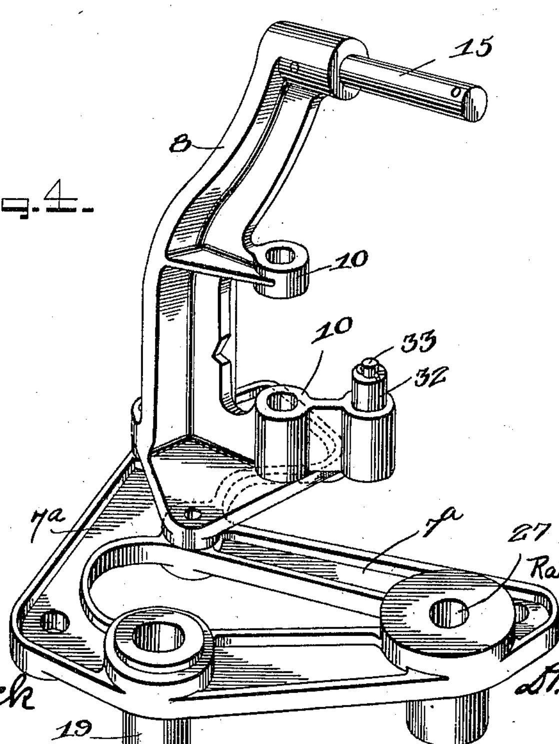


Fig. 4.



Witnesses
W.H. Rockwell
R. C. Braddock

Inventor
Ralph B. Goodrich

D. T. Wolhaupter
his Attorney.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

RALPH B. GOODRICH, OF CINCINNATI, OHIO, ASSIGNOR TO THE EAGLE MANUFACTURING COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF OHIO.

GEARING FOR WASHING-MACHINES.

1,008,537. Specification of Letters Patent. **Patented Nov. 14, 1911.**

Application filed April 12, 1910, Serial No. 555,039. Renewed September 14, 1911. Serial No. 649,481.

To all whom it may concern:

Be it known that I, RALPH B. GOODRICH, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Gearing for Washing-Machines, of which the following is a specification.

The present invention relates more particularly to the operating mechanism of washing machines and like apparatus having an oscillatory dolly or agitator.

One of the primary objects of the invention is to provide an exceedingly compact operating mechanism which includes a balance wheel that is disposed directly adjacent to the other elements or members, and yet is entirely out of the way and completely housed, the arrangement being such that the manipulation of the cover is not materially interfered with, although the said entire mechanism is mounted directly thereon.

A further and important object is to provide a simple arrangement of gearing whereby an oscillatory operating device imparts a corresponding movement to the dolly or agitator, and a continuous rotary motion is imparted to the balance wheel.

An embodiment of the invention that has proven entirely satisfactory is disclosed in the accompanying drawings, wherein:—

Figure 1 is a plan view of the washing machine, showing the mechanism thereon. Fig. 2 is a vertical sectional view on the line 2—2 of Fig. 1. Fig. 3 is a view in elevation of said mechanism. Fig. 4 is a perspective view of the supporting bracket.

Similar reference numerals designate corresponding parts in all the figures of the drawings.

In the embodiment disclosed, the tub or body is designated 5, and may be of any well known form. The usual cover 6 is employed, which is hinged, as shown at 7 to the body. Mounted on the upper face of the cover is a bracket, comprising a base section 7^a and a standard section 8, the standard section in the embodiment disclosed being bolted, as illustrated at 9 to the base section, though it may be made integral therewith if desired. This standard section is provided with a pair of vertically alined journal boxes 10, in which is journaled the usual shaft 11 of a dolly or agitator 12, and mounted on the shaft between the two bearings is a beveled gear 13 and a pinion 14. The bracket at its upper end has a horizontal stem 15, on which is journaled a segmental gear 16 having an angularly disposed socket 17, in which is fitted a handle lever 18. The stem 15 thus constitutes in effect the fulcrum of the operating lever. The segmental gear 16 is in mesh with the beveled gear 13, as will be evident by reference to Figs. 2 and 3. The base section 7^a of the bracket has a depending sleeve portion 19 that extends through the cover, and journaled therein is a shaft 20, on the lower projecting end of which is fixed a horizontal balance wheel 21, said balance wheel being thus disposed directly beneath the cover and having its axis of movement arranged between the shaft 11 and the hinged edge of said cover. This balance wheel is preferably housed in a sheet metal casing 22 fixed to the under side of the cover and having its rear portion open, as shown at 23 and arranged in a recess 24 formed in the wall of the body. The upper end of the shaft 20 has secured to it a pinion 25 that is in mesh with a crank gear 26 journaled on the base, as shown at 27, said crank gear having a crank pin 28. A rack bar 29 has a terminal collar 30 journaled on the crank pin, and this bar is provided with a rack 31 that is in mesh with the pinion 14 of the agitator or dolly shaft 11. The engagement of the rack with the pinion is maintained by means of a bearing roller 32 that bears against the rear side of the bar, said roller being journaled on a gudgeon 33 formed on the bracket.

It is believed that the operation of this structure can now be made entirely clear. When the lever 18 is oscillated, a similar motion will of course be imparted to the agitator or dolly 12, and as the pinion 14 alternately turns in opposite directions, the rack bar 19 will be given a reciprocal and gyratory movement, thus imparting rotary motion to the idler gear 26, which in turn transmits this motion to the pinion 25, and consequently through the shaft 20 to the balance wheel. It will be clear by reference to the drawings that an exceedingly compact mechanism is produced, and the balance wheel is disposed directly adjacent to the operating mechanism. At the same time this balance wheel is entirely out of the way in a non-interfering position, and inasmuch as it is supported on the cover directly ad-

jacent to the hinged edge thereof, its weight is not a material encumbrance on the cover, and said cover can be readily opened and closed.

From the foregoing, it is thought that the construction, operation and many advantages of the herein described invention will be apparent to those skilled in the art, without further description, and it will be understood that various changes in the size, shape, proportion and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

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

1. In gearing for washing machines, the combination with a support, of a driven member located beneath the support, and operating means for the driven member including a substantially horizontal balance wheel carried at the under side of the support and having its journal axis located between the axis of the driven member and the edge of the support.

2. In gearing for washing machines, the combination with a hinged support, of a driven shaft journaled on the support and extending below the same, a casing secured to the under side of the support between the shaft and the hinged edge of said support, a balance wheel journaled in the casing, an oscillatory actuating lever, and gearing interposed between the lever, the shaft and the balance wheel for imparting an oscillatory movement to said shaft and a continuous rotary movement to the balance wheel.

3. In gearing for washing machines, the combination with a support, of an oscillatory driven member mounted thereon, an oscillatory operating device, gearing connecting the device and driven member, a pinion mounted on the driven member, a horizontal gear wheel, a horizontal fly wheel, a pinion carried by the fly wheel and operated by the gear wheel, and a horizontal rack bar meshing with the pinion of the driven member and having a crank connection with the horizontal gear wheel.

4. In gearing for washing machines, the combination with a hinged support, of a bracket mounted thereon, a balance wheel located beneath the support and journaled on the bracket, a driven shaft journaled in the bracket, a gear wheel and a pinion mounted on said driven shaft, an actuating lever fulcrumed on the bracket and meshing with the gear wheel, a crank gear journaled on the bracket and geared to the balance wheel, said crank gear having a crank pin, and a rack pivoted on the crank pin and meshing with the pinion of the driven shaft.

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

R. B. GOODRICH.

Witnesses:
ROGER MORRISON,
E. M. GRUB.