G. MORE.

OPERATING GEARING FOR WASHING MACHINES.

APPLICATION FILED NOV. 9, 1914.

**1,139,893.**

Patented May 18, 1915.

2 SHEETS—SHEET 1.

Fig. 1.

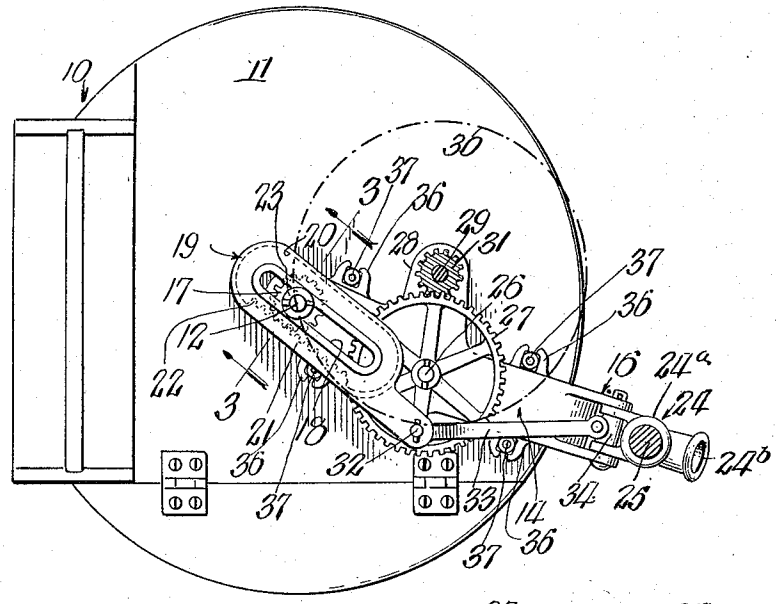
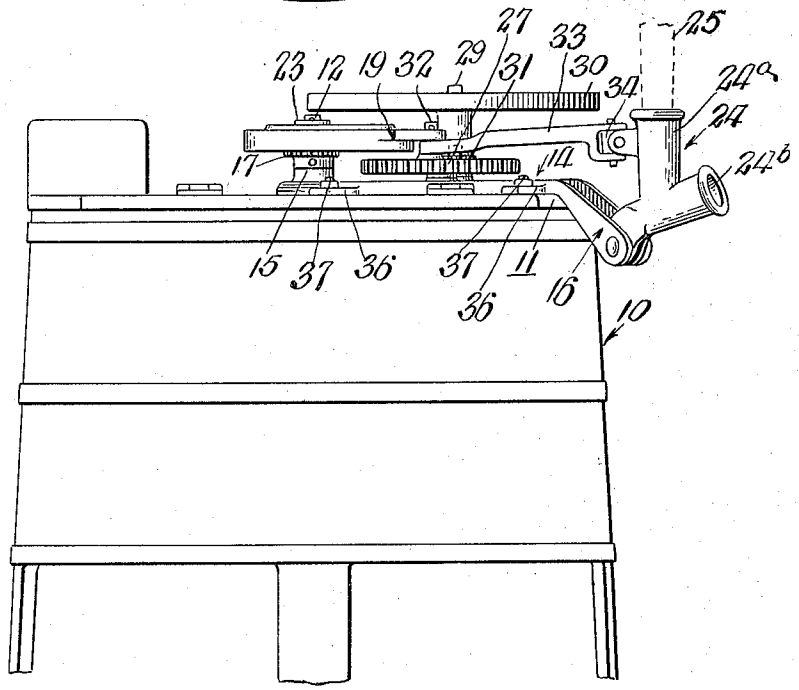



Fig. 2.




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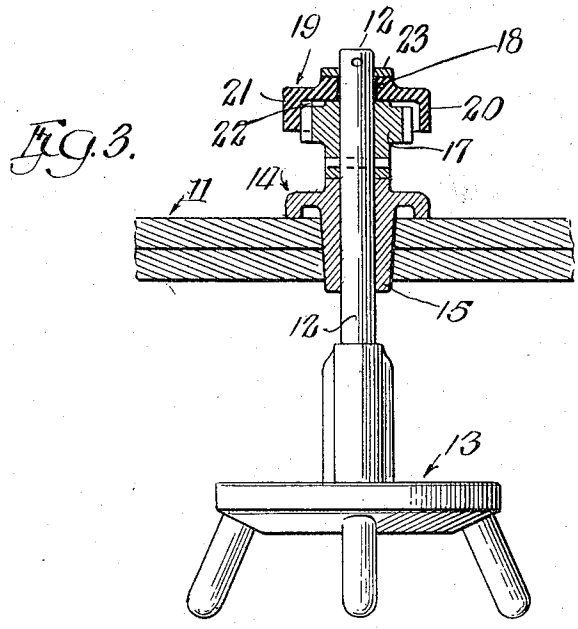



FIG. 3.

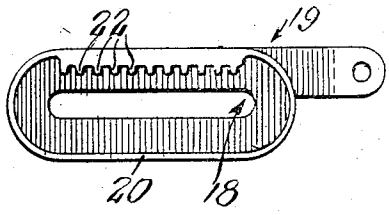



FIG. 4.

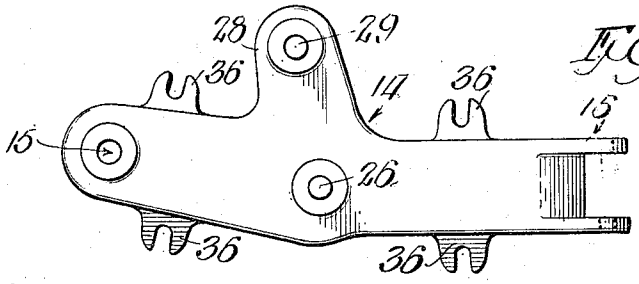



FIG. 5.

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# UNITED STATES PATENT OFFICE.

GLENN MORE, OF JAMESTOWN, NEW YORK, ASSIGNOR TO THE BLACKSTONE MANUFACTURING COMPANY, OF JAMESTOWN, NEW YORK, A CORPORATION OF NEW YORK.

## OPERATING-GEARING FOR WASHING-MACHINES.

1,139,893. Specification of Letters Patent. Patented May 18, 1915.

Application filed November 9, 1914. Serial No. 870,973.

*To all whom it may concern:*

Be it known that I, GLENN MORE, a citizen of the United States, and a resident of Jamestown, in the county of Chautauqua and State of New York, have invented certain new and useful Improvements in Operating-Gearing for Washing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in operating gearing for washing machines and the like and consists of the matters hereinafter described and more particularly pointed out in the appended claims.

The invention is applied as illustrated herein to a washing machine of the alternating-rotary-agitator type, that is to say, washing machines commonly known to the trade as dolly washing machines. The gearing is of the high speed fly wheel lever operated kind and the object of the invention is to provide a gearing which is of economical manufacture, which is of simple construction and operation and which is so arranged and assembled that it may be all mounted on a single base plate carried by the lid of the tub. In addition the gearing may be accommodated in such a comparatively narrow space that the weightier parts may be all located near the hinges of the tub lid, so that notwithstanding the entire gearing is carried by the tub lid, said lid may be lifted with the exercise of very little force.

In the drawings: Figure 1 is a top plan view of a washing machine provided with my improved gearing. Fig. 2 is a view representing a side elevation of the same. Fig. 3 is a view representing on an enlarged scale a partial vertical section through Fig. 1 in the plane indicated by the line 3—3 of Fig. 1. Fig. 4 is a bottom plan view of a slotted rack bar which constitutes a part of my improved gearing. Fig. 5 is a top plan view of the base plate on which my improved gearing is mounted.

Referring now to that embodiment of my invention illustrated in the drawings, 10 indicates the support, in this case the washing machine tub. on which my improved gearing is mounted. Said support has a hinged member 11, which in this case is the lid of the tub. The entire gearing is mounted upon and carried directly by the hinged member or lid 11.

12 indicates the alternating-rotary-agitator shaft (see Fig. 3) which carries at its lower end the familiar dolly 13, by means of which the washing operation is carried on.

14 indicates a base plate fixed to the top of the tub lid 11. Said base plate is comparatively narrow and of somewhat greater length than the radius of the top of the tub. It is arranged with one end at the center of the tub lid where it is provided with a bearing sleeve 15, which depends through a suitable opening formed in the tub lid. The other end of said base plate extends beyond the peripheral edge of the tub lid in the neighborhood of the axis of the hinged line of the tub lid and is further provided with an arm 16 which projects beyond the periphery of the tub lid and depends somewhat below the level of the same.

The sleeve 15 provides bearing for the agitator shaft 12, which extends through said sleeve and above the bearing plate 14 where it has fixed to it a pinion 17. Said pinion has a thrust bearing against the top of the sleeve 15 and thus acts to support the agitator shaft from the bearing plate. The agitator shaft 12 is prolonged upwardly above the top of the pinion 17 and engages in a slot 18 of a bar 19. Said bar 19 is provided with depending lateral flanges 20—21 which embrace the pinion 17 and one of which, namely, that indicated by the numeral 21, is provided with rack teeth 22 which are engaged with the teeth of the pinion 17. The shaft extension through the slot 18 of the bar 19 acts to guide said bar and hold the rack 22 in engagement with the pinion in the operation of the gearing. The bar 19 is retained in a position where its rack will properly engage with the pinion by means of a washer 23 held on the shaft 12 by a suitable pin.

At the end of the arm 16 there is fulcrumed a prime moving lever 24. As shown said prime moving lever consists of a socket member having an upright arm $24^a$ and a horizontal arm $24^b$ in each of which may be inserted a wooden handle 25 to operate the gearing either by a forward and back motion if the operator is in an upright position or by an up and down motion if

the operator is in a stooped position, in a familiar manner.

Intermediate the agitator shaft 12 and the prime moving lever 24, and as shown about half way therebetween, there is rotatively mounted on a stud 26 arising from the base plate 14, a large gear wheel 27. The base plate is provided at one side with a lateral extension 28 which carries an upright stud 29 on which is rotatively mounted a fly wheel 30. Below the plane of the fly wheel and co-axial therewith is provided a pinion 31 which is fixed to the fly wheel and is engaged by the large gear 27.

32 indicates a crank pin fixed to the large gear 27 and extending into the space between the horizontal plane of said large gear and the horizontal plane of the fly wheel.

33 indicates a pitman pivotally connected at one end to the prime moving lever 24 by means of a suitable swivel connection 34 and at the other end to the crank pin 32. The slotted rack bar 19 is likewise pivotally connected to said crank pin. Both the said rack bar and the link 33 are located in the plane between the large gear and the fly wheel.

The operation of the gearing is apparent from the above description. Oscillation of the prime moving lever 24 will impart a continuous rotary movement to the large gear 27 through the pitman 33 in a familiar manner and the said rotating movement of the large gear will be imparted at high speed to the fly wheel 30. At the same time a longitudinally reciprocatory movement will be imparted to the rack bar 19 so that an alternating rotary motion will be given to the agitator shaft.

The base plate 14 may be attached to the tub lid or hinged member in any suitable fashion, that shown in the drawing consisting of slotted lateral projections 36 which are engaged by bolts and nuts 37. Manifestly from the construction described the entire gearing, including the base plate, may be attached to or removed from the lid in assembled relation before the dolly is attached. The simplicity and economy of the gearing is manifest, and it is apparent that although the entire gearing is carried by the lid, the lid may be lifted with little effort since the heavier parts of the gearing are all located near the hinges.

I claim as my invention:

A gearing for washing machines and the like, comprising, in combination with a support and a member hinged to said support, a base plate fixed to the top of said hinged member and having an arm projecting beyond and below said hinged member, a prime moving lever fulcrumed at the lower end of said arm, an operating shaft depending through said hinged member and having bearing in said base plate, a pinion fixed to said operating shaft, a horizontal fly wheel rotatably mounted upon said base plate at a point between but spaced to one side of the vertical plane of said prime moving lever and said operating shaft, a large gear operatively connected with said fly wheel located in a horizontal plane below said fly wheel and in a position intermediate said operating shaft and said prime moving lever, a slotted rack bar operatively connected with said pinion, a crank pin on said large gear, and a link connected with said prime moving lever, said rack bar and link being pivotally connected to said large gear by said crank pin and being both located intermediate the planes of said large gear and fly wheel.

In testimony that I claim the foregoing as my invention I affix my signature in the presence of two witnesses, this 30th day of October, A. D. 1914.

GLENN MORE.

Witnesses:
MAE LARSEN,
FLORENCE SUNDERLAND.

**Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."**