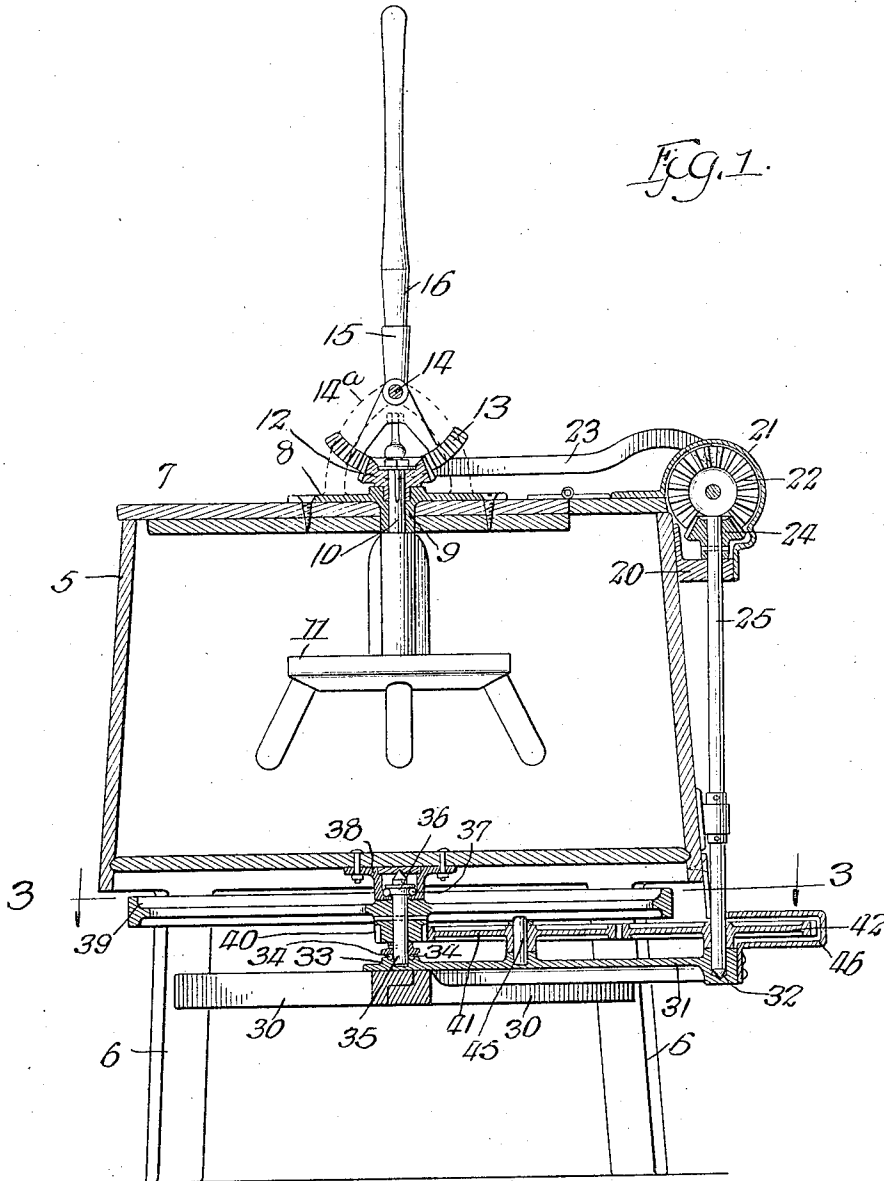


G. N. MEVES.
OPERATING MECHANISM FOR WASHING MACHINES.
APPLICATION FILED AUG. 2, 1909.

962,158.

Patented June 21, 1910.

2 SHEETS—SHEET 1.



Witnesses:
J. H. Hedges
J. W. Daggett.

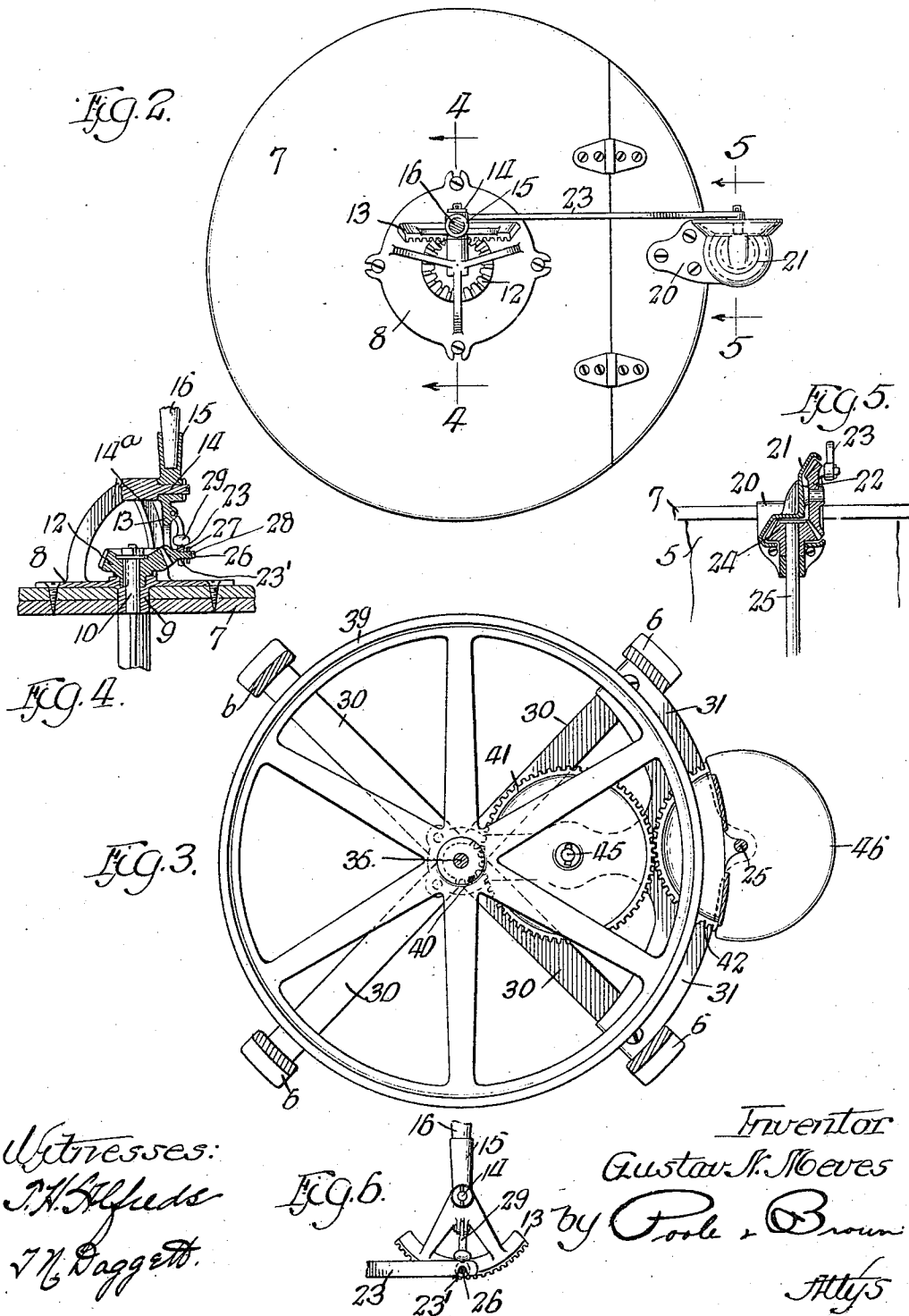
Inventor
Gustav N. Meves
by Cook & Brown
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UNITED STATES PATENT OFFICE.

GUSTAV N. MEVES, OF DAVENPORT, IOWA.

OPERATING MECHANISM FOR WASHING-MACHINES.

962,158.

Specification of Letters Patent. Patented June 21, 1910.

Application filed August 2, 1909. Serial No. 510,780.

To all whom it may concern:

Be it known that I, GUSTAV N. MEVES, a citizen of the United States, and a resident of Davenport, in the county of Scott and State of Iowa, have invented certain new and useful Improvements in Operating Mechanism 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 an improvement in mechanism for operating washing machines wherein the beater within the tub or receptacle is given a rotary reciprocating motion, and more particularly to a high speed mechanism operating through a fly-wheel to diminish the work of the operator after the parts have been started in motion.

The invention consists in the matters hereinafter set forth and more particularly pointed out in the appended claims.

In the drawings illustrating the invention: Figure 1 is a view in vertical cross-section of a washing machine embodying my invention. Fig. 2 is a plan view of the same. Fig. 3 is a horizontal cross-sectional view taken upon line 3—3 of Fig. 1. Fig. 4 is a detail sectional view taken upon line 4—4 of Fig. 2. Fig. 5 is a detail cross-sectional view taken upon line 5—5 of Fig. 2. Fig. 6 is a fragmentary detail view of parts relating to this invention.

In the drawings, 5 designates a washing machine tub of the usual form mounted upon supporting legs 6, 6 and provided with a hinged lid 7. Located centrally of said lid is a base-plate 8 provided with a vertically arranged bearing 9 which extends downwardly through the lid and in which is rotatably supported an operating shaft 10. Said shaft depends into the tub 5 and has therein secured to it an agitator 11 of any usual form. Upon the upper end of the operating shaft 10 is mounted an operating gear 12 which meshes with a segmental gear 13. Said segmental gear 13 is pivotally supported upon a horizontally arranged stub-shaft 14 carried at the upper end of a three arm bracket 14^a formed upon and rising from the base plate 8. A socket 15 is formed upon the hub of the segmental gear 13 to receive an actuating lever 16.

Secured to the edge of the tub 5 is an an-

gular supporting bracket 20 upon which is formed a gear casing 21 supporting a bevel gear 22. Said bevel gear 22 is operatively connected by a pitman 23 with the segmental gear 13 and is in mesh with a bevel gear 24 located in said casing 21, and mounted upon the upper end of a vertically arranged shaft 25 which is operatively connected with a fly-wheel in the manner hereinafter described. As shown in Fig. 5, the pitman 23 is provided with a downwardly opening notch 23¹ which engages an outwardly extending stud 26 secured to the segmental gear 13.

27 indicates a washer interposed between the outer end of the stud 26 and the adjacent face of the pitman 23, said washer being held in place by a cotter pin 28 extending through said stud. Said pitman is held in place while in operation by a weight 29 which is swingingly supported upon the segmental gear 13 and is adapted to bear upon the upper edge of said pitman near the inner end thereof. For disconnecting the pitman to open the lid of the tub the weight 29 is swung upon its pivot and the inner end of said pitman is lifted from the stud 26 and swung outwardly. At its outer end said pitman is curved upwardly to clear the tub while in operation.

As shown in the drawings (Figs. 1 and 3) there are mounted upon the supporting legs 6, 6 below the tub 5 two cross-bars 30, 30 which cross each other in the vertical axis of the tub. Mounted upon said cross-bars and extending outwardly therefrom is a base-plate 31 provided on its outer end with an upwardly opening recess 32 adapted to receive and rotatably support the lower end of the vertically arranged shaft 25. Upon the inner end of said base plate is formed an upwardly opening cup bearing 33 provided with a ball race within which are a plurality of ball bearings 34, 34. A vertically arranged stub-shaft 35 which is adapted to ride at its lower end within the ball bearings 34, 34 is provided near its upper end with a cone 36 which rides upon ball bearings 37, 37 carried in a cup 38 secured to the central portion of the tub bottom. 39 indicates a horizontally arranged fly-wheel mounted upon said stub shaft 35. A pinion 40 on the hub of the fly wheel meshes with a gear 41 which in turn meshes with a gear 42 mounted upon the lower end of the vertically arranged shaft 25. The

gear 41 is mounted upon a vertically arranged stub shaft 45 supported near the central portion of the base plate 31. The gear 42 projects beyond the edge of the tub 5 and is preferably inclosed in a casing 46 secured to the side of the tub and the end of the base plate 31.

In the operation of the machine the rocking motion of the hand lever 16 is translated into rotary reciprocating motion of the agitator 11 through the segmental gear 13 and the gear 12 and into continuous rotary motion of the fly-wheel 39 by means of the pitman 23, the bevel gears 22, 24, the shaft 25, the gears 41 and 42, and the pinion 40 on the hub of said fly-wheel. The proportions of the gears through which the rotary motion is given to the fly-wheel 39 are such that said fly-wheel will be driven at a high rate of speed and the momentum thereof serves to absorb the shock of the reversals of the operating lever 16 and to insure the free and easy operation of the agitator. Moreover, said fly-wheel being mounted in ball bearings will require but little power to start and maintain the same at its running speed.

I claim as my invention:—

1. Operating mechanism for washing machines and the like comprising in combination with a body, an operating shaft, an operating gear secured to said operating shaft, a segmental gear in mesh with said operating gear, a rocking hand lever attached to said segmental gear, a horizontally arranged fly-wheel located beneath said body, a vertical driving shaft, means for translating the rocking movement of the hand lever into continuous rotary movement of said driving shaft, and gearing between said driving shaft and said fly-wheel.

2. Operating mechanism for washing machines and the like comprising in combination with a body, an operating shaft, a bevel gear secured to said operating shaft, a segmental gear in mesh with said bevel gear, a rocking hand lever secured to said segmental gear, a horizontally arranged fly-wheel located beneath said body, a vertically arranged driving shaft mounted at one side of said body, a gear mounted upon the upper end of said driving shaft, a second gear in mesh with said first named gear, a pitman connecting said second gear with said segmental gear, and gears connecting the lower end of said driving shaft with the fly-wheel.

3. Operating mechanism for washing machines and the like comprising in combination with a body, an operating shaft, an operating gear secured to said operating shaft, a segmental gear in mesh with said operating gear, a rocking hand lever attached to said segmental gear, a horizontally arranged fly-wheel located beneath said body, a pinion formed on the hub of said fly-wheel, a ver-

tically arranged driving shaft, a gear upon the upper end of said driving shaft, a second gear in mesh with the said first named gear, a pitman connecting said second gear with said segmental gear, and gears intermediate the lower end of said driving shaft and said pinion.

4. Operating mechanism for washing machines and the like comprising in combination with a body, a base plate thereon, a vertically arranged operating shaft mounted thereon and capable of rotary reciprocating motion, an operating gear mounted upon the upper end of said shaft, a supporting bracket formed upon and extending upwardly from said base plate, a horizontally arranged stub shaft supported upon said bracket, a segmental gear pivotally supported on said stub-shaft and engaging said operating gear, a rocking hand-lever attached to said segmental gear, an angular bracket secured to the edge of the washing machine body, a gear casing, a gear journaled in said casing with its axis parallel to the axis of said segmental gear, a pitman connecting said gear with said segmental gear, a second gear located in said casing and meshing with the first named gear in said casing, a vertically arranged driving shaft upon the upper end of which the said second gear in said casing is keyed, a second base plate located beneath said body, a bearing cup upon the outer end of said second base plate in which the lower end of the vertical driving shaft bears, a driving gear upon the lower end of said driving shaft, a gear casing inclosing said driving gear, a horizontally arranged fly-wheel located beneath said supporting body, a pinion formed upon the hub of the fly-wheel, a gear wheel supported upon said second named base plate and engaging said pinion and said driving gear upon the lower end of the vertically arranged driving shaft, a vertically arranged shaft upon which said fly-wheel is carried, ball bearings for the lower end of said fly-wheel shaft carried upon the inner end of said second base plate, and ball bearings for the upper end of said fly-wheel shaft supported upon the lower central portion of said supporting body.

5. The combination of an operating shaft capable of rotary reciprocating motion, an operating gear thereon, a rocking segmental gear in mesh with said operating gear, an outwardly extending stud on said segmental gear, a fly-wheel, a driving shaft for said fly-wheel, gearing intermediate said driving shaft and said fly wheel adapted to continuously rotate said fly wheel, a gear keyed to said driving shaft, a driving gear meshing with said driving shaft gear, a pitman connected at one end to said driving gear, said pitman being curved upwardly at its outer end and provided at its inner end with a

downwardly opening notch engaging said outwardly extending stud on the segmental gear, and a swingingly supported weight attached to said segmental gear and adapted 5 to engage said pitman to hold same in place during the operation thereof.

6. The combination of an operating shaft capable of rotary reciprocating motion, an operating gear thereon, a rocking segmental 10 gear in mesh with said operating gear, an outwardly extending stud on said segmental gear, a fly-wheel, a driving shaft for said fly-wheel, gearing intermediate said driving shaft and said fly wheel adapted to continu- 15 ously rotate said fly wheel, a gear keyed to said driving shaft, a driving gear meshing with said driving shaft gear, a pitman con-

nected at one end to said driving gear, said pitman being provided on its inner end with a downwardly opening notch engaging said 20 outwardly extending stud on the segmental gear, and a swingingly supported weight attached to said segmental gear and adapted to engage said pitman to hold same in place during the operation thereof. 25

In testimony that I, G. N. MEVES, claim the foregoing as my invention I affix my signature in the presence of two witnesses, this twenty third day of July—A. D. 1909.

GUSTAV N. MEVES.

Witnesses:

GEO. E. BROWN,
GEO. R. BIRCHARD.