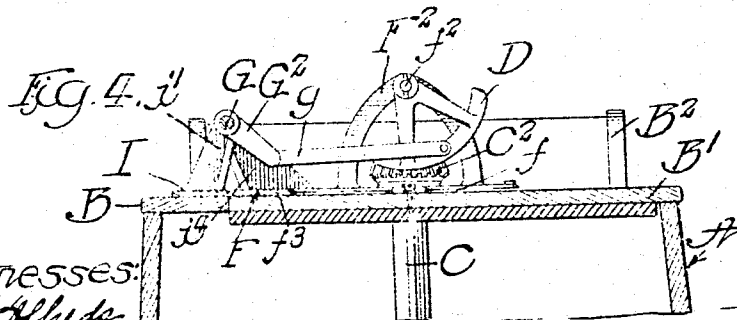
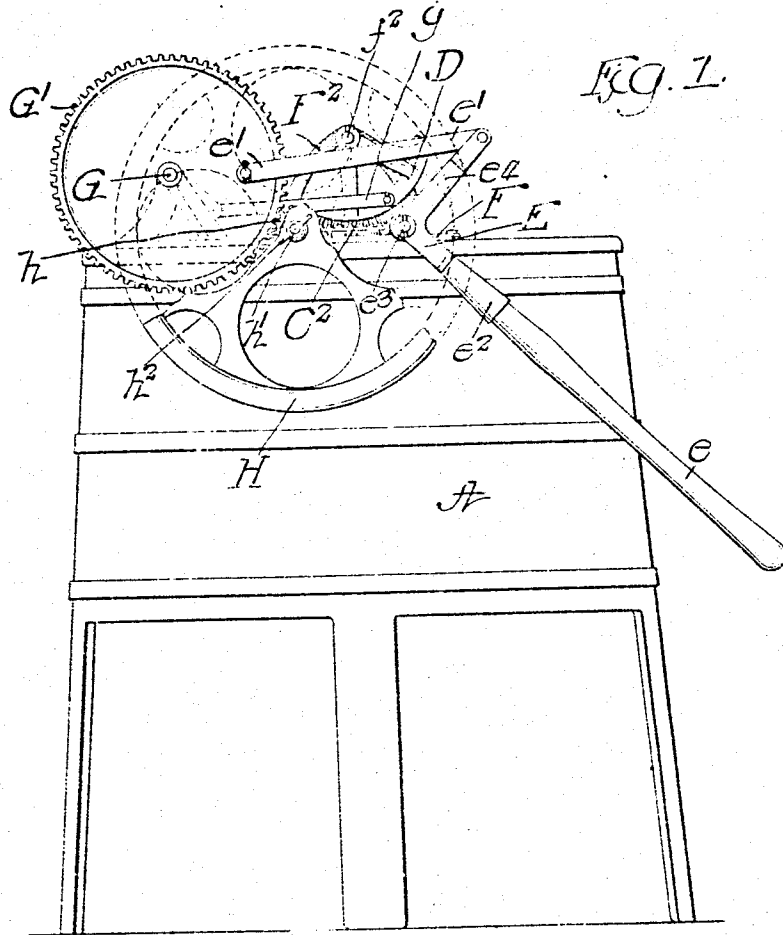


G. N. MEVES.
OPERATING MECHANISM FOR WASHING MACHINES.
APPLICATION FILED APR. 10, 1909.

933,913.

Patented Sept. 14, 1909.
2 SHEETS—SHEET 1.



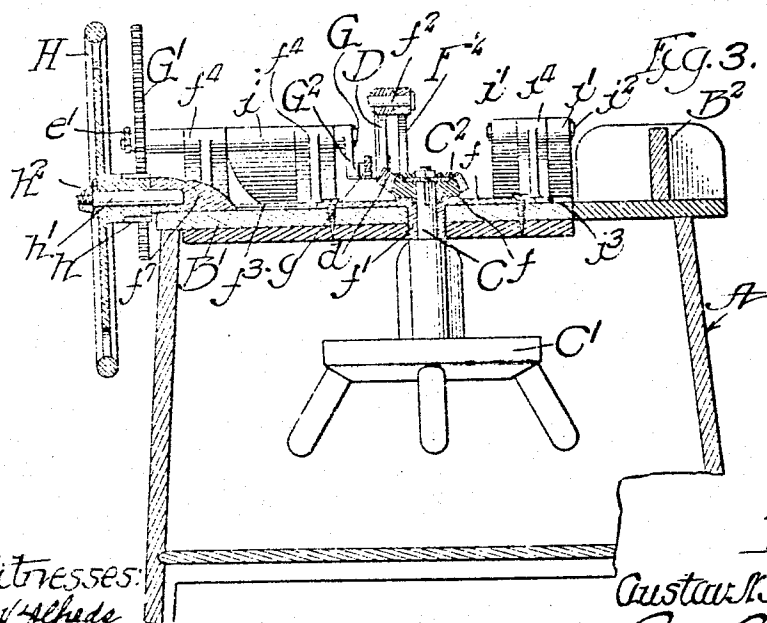
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UNITED STATES PATENT OFFICE.

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OPERATING MECHANISM FOR WASHING-MACHINES.

933,913.

Specification of Letters Patent. Patented Sept. 14, 1909.

Application filed April 10, 1909. Serial No. 489,066.

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 means for operating washing machines of that type whereby the agitator clothes operating shaft within the tub is given a rotary reciprocating motion in alternate directions, the prime mover being a rocking hand lever.

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

In the drawings illustrating this invention:—Figure 1 is a side elevation of a washing machine provided with my improvement. Fig. 2 is a top plan view of the same. Fig. 3 is a vertical, sectional view taken upon the irregular dotted line 3—3 of Fig. 2, and looking in the direction indicated by the arrow. Fig. 4 is a vertical, sectional view taken upon the irregular dotted line 4—4 of Fig. 2, looking in the direction indicated by the arrow.

Like letters of reference indicate the same parts throughout the several figures.

In the drawings, A represents the washing machine tub of familiar form mounted upon supporting legs, the tub being of the usual cylindrical structure; B is a portion of the top secured to the tub; B¹ a hinged lid for the remaining portion of the tub; C is the operating shaft vertically and rotatively mounted in the lid B¹ and carrying the clothes agitator of familiar type C¹ at its lower end and provided at its upper end outside of the lid B¹ with the actuating pinion C².

D is a rocking member, the teeth *d* whereof are adapted to engage and actuate the teeth of the pinion C², said rocking member D being in the form of a pivoted segment.

E is the prime mover, the same consisting of a rocking lever which may be operated by a handle *e*.

G is a rotating shaft provided at one end

with a gear wheel G¹ and at its other end with a crank G². The crank G² is connected with the rocking segmental member G by a link *g* and the gear wheel G¹ is connected to the actuating rocking lever E by a link *e*¹. The lever E which is pivotally mounted upon a stud *e*² and secured thereto by any suitable means, may be comprised of two arms one of which *e*² is provided with a suitable socket or other means for receiving the handle *e* and the other arm *e*¹ of which is pivotally connected to the link *e*¹.

A suitable casting, designated as a whole by the letter F, is mounted by screws or otherwise upon the hinge portion of the lid B¹. The central portion *f* of the casting F is provided with a downwardly projecting apertured sleeve *f*¹ (see Fig. 3) which affords a suitable journal bearing for the agitator operating shaft C. An arch frame F² projects from the central portion *f* of the plate F and carries a pivot bolt or stud *f*² upon which the rocking member D is supported. Another portion *f*³ of the plate F is provided with two upwardly projecting members *f*⁴ which afford journal bearings for the rotating shaft G. The remaining portion *f*⁵ of the base plate F is provided with two upwardly projecting hubs *f*⁶, *f*⁷, the former supporting the outwardly projecting stud *e*² on which the actuating lever E is mounted and the latter supporting the outwardly projecting stud *h*¹.

A fly wheel H which is mounted upon the stud *h*¹ is held in position by a nut *h*² and is provided with an inwardly projecting hub carrying a pinion *h*, the teeth of the latter meshing with the gear wheel G¹.

Upon the top of the tub B is a casting I having at one end an upwardly projecting apertured member *i* adapted to afford a journal bearing for the shaft G and also adapted, in connection with the bearing *f*⁴ and its shaft G, to constitute a hinge for the lid B¹. At the other end of the casting I are upwardly projecting apertured members *i*¹ adapted to hold a hinge pin *i*². Secured upon the lid B¹ is a casting *i*³ provided with an upwardly projecting apertured member *i*⁴. The members *i*¹ and *i*⁴ together with the hinge pin *i*² constitute a hinge, the longitudinal axis of the pin *i*² being in line with the longitudinal axis of the shaft G.

B² designates a wringer support of the

ordinary form common to this type of washing machine, said wringer support being secured to the tub in any suitable manner.

The operation of the device is simple.

- 5 The clothes and soap water being in the tub and the lid closed, the operator takes hold of the handle *e* and rocks the lever *E* up and down, the rocking motion of the lever *E* being translated into continuous rotary motion
- 10 of the shaft *G* by means of the link *e'* and the gear wheel *G'*. The rotary motion of the shaft *G* is translated into oscillating motion of the rocking member *D* by means of the crank *G''* and the link *g*. The oscillating
- 15 motion of the rocking member *D* is translated into reciprocating rotary motion of the shaft *C* by means of the teeth *d* of the segmental rocking member *D* and the pinion *C'*, wherefore the clothes within the tub are
- 20 swished around through the water first in one direction and then in the other direction. The rotation of the wheel *G'* in engagement with the teeth of the pinion *h* causes the fly wheel
- 25 *H* to rotate at a high rate of speed and to store up energy which serves to carry the operating parts past the dead centers and to reduce the energy required upon the handle
- 30 *e* to continue the movement of the operating parts after they have once been set in motion.

It will be noted that the special construction of the casting *F* provides a strong and durable frame for the operating parts calculated to withstand the strain and rack and

35 jar of the motion of the several parts.
My machine is simple and cheap in construction and durable in operation and has the advantage of attaining high speed and power in the operating shaft *C* at the minimum exertion of power upon the prime

40 mover *E*.
I claim as my invention:—

1. Means for operating a washing machine comprising, in combination, a rotating
- 45 shaft, an operating shaft and an actuating lever, means for translating the rocking motion of the actuating lever into rotary motion of said rotating shaft, and means for translating the rotary motion of said shaft
- 50 into rotary reciprocating motion in said operating shaft.

2. Means for operating a washing machine comprising an actuating lever, a rotating
- 55 shaft, means for translating the rocking motion of the actuating lever into continuous rotary motion of the said rotating shaft, an operating shaft, a pinion upon the upper
- 60 end of the said operating shaft, a rocking member in engagement with said pinion, and means for translating the continuous rotary motion of the rotating shaft into rocking reciprocating motion of the rocking member.

3. Means for operating a washing machine comprising, in combination, a rotating

shaft, an operating shaft and an actuating 65 lever, means for translating the rocking motion of the actuating lever into rotary motion of said rotating shaft, and means for translating the rotary motion of said shaft into rotary reciprocating motion in said operating shaft, and a fly wheel independently 70 mounted, and means for rotating said fly wheel from said rotating shaft.

4. Means for operating a washing machine comprising, in combination, an operating 75 shaft, a pinion on the said operating shaft, a rocking member provided with segmental teeth in mesh with said pinion, a rotating drive shaft having a crank at one end and a gear wheel at the other, a link connection 80 between the rocking member and the crank, an actuating lever, a link connection between the actuating lever and the gear wheel, and a fly wheel independently 85 mounted and provided with a pinion in engagement with the gear wheel.

The combination with an operating shaft, of a pinion on said shaft, a pivoted segmental gear adapted for engagement with 90 said pinion, a rotating shaft, a gear wheel on said rotating shaft, a pivoted actuating lever connected with said gear wheel whereby the rocking motion of said lever is translated into rotary motion of said rotating 95 shaft, and a fly wheel provided with a pinion on its hub adapted for engagement with said gear wheel.

6. The combination with a base plate adapted to be secured to a suitable support and provided with a vertically arranged journal 100 bearing, an operating shaft in said bearing, raised journal bearings, and a rotating shaft in said raised journal bearings, said base plate being provided with an arched portion, a rocking member pivotally secured to said 105 arched portion, gear connections between said rocking member and the operating shaft, means for translating the rotary motion of the rotating shaft into the rocking motion of the rocking member, said base plate 110 being provided also with two outwardly projecting studs, a fly wheel loosely mounted on one of said studs, a pinion connected with said fly wheel, and means for translating the rocking motion of the actuating lever into 115 rotary motion of the rotating shaft and the fly wheel, said means embracing a gear wheel mounted on the rotating shaft and in mesh with the pinion attached to the fly wheel.

7. The combination with an operating 120 shaft, of a rotating shaft provided with a crank arm which is connected with said operating shaft, and a base plate adapted to be secured to a suitable support, said base plate being provided with a vertically 125 arranged journal bearing for the operating shaft and with raised journal bearings for supporting the rotating shaft horizontally

above the base plate at a sufficient distance to afford clearance for the said crank arm.

8. The combination with an operating shaft, of a rotating shaft, a crank arm on said rotating shaft operatively connected with the said operating shaft, and means for actuating the rotating shaft, of a base plate adapted to be secured to a suitable support and provided with a vertically arranged bearing for said operating shaft and with raised bearings for the rotating shaft, and hinging means for the base plate support embracing a casting plate secured to said support and provided with an upwardly projecting horizontally apertured member, and a second casting supported independently of the base plate support and provided at one end with an upwardly projecting horizontally apertured member through which the rotating shaft passes and provided at its other end with upwardly projecting members horizontally apertured in line with the aperture in the upwardly projecting member of the first named casting, and a hinge pin inserted through said

aligned apertures, the hinge pin and the rotating shaft being in axial alinement.

9. The casting F provided with the vertical bearing f^1 , pivot pins f^2 , h^1 and e mounted thereon and with horizontally apertured raised members f^4 , f^3 , in combination with the actuating lever e supported on pivot pin e^2 , the rotating shaft G journaled in the raised members f^3 , f^4 and operatively connected with the lever e , the fly wheel H supported on the pivot h^2 and operatively connected with the shaft G, the rocking member D supported on the pivot f^2 and operatively connected with the shaft G, and the operating shaft C journaled in the bearing f^1 and operatively connected with the rocking member D.

In testimony, that I claim the foregoing as my invention I affix my signature in the presence of two witnesses, this 31st day of March A. D. 1909.

GUSTAV N. MEVES.

Witnesses:

WILLIAM L. HALL,
TAYLOR E. BROWN.