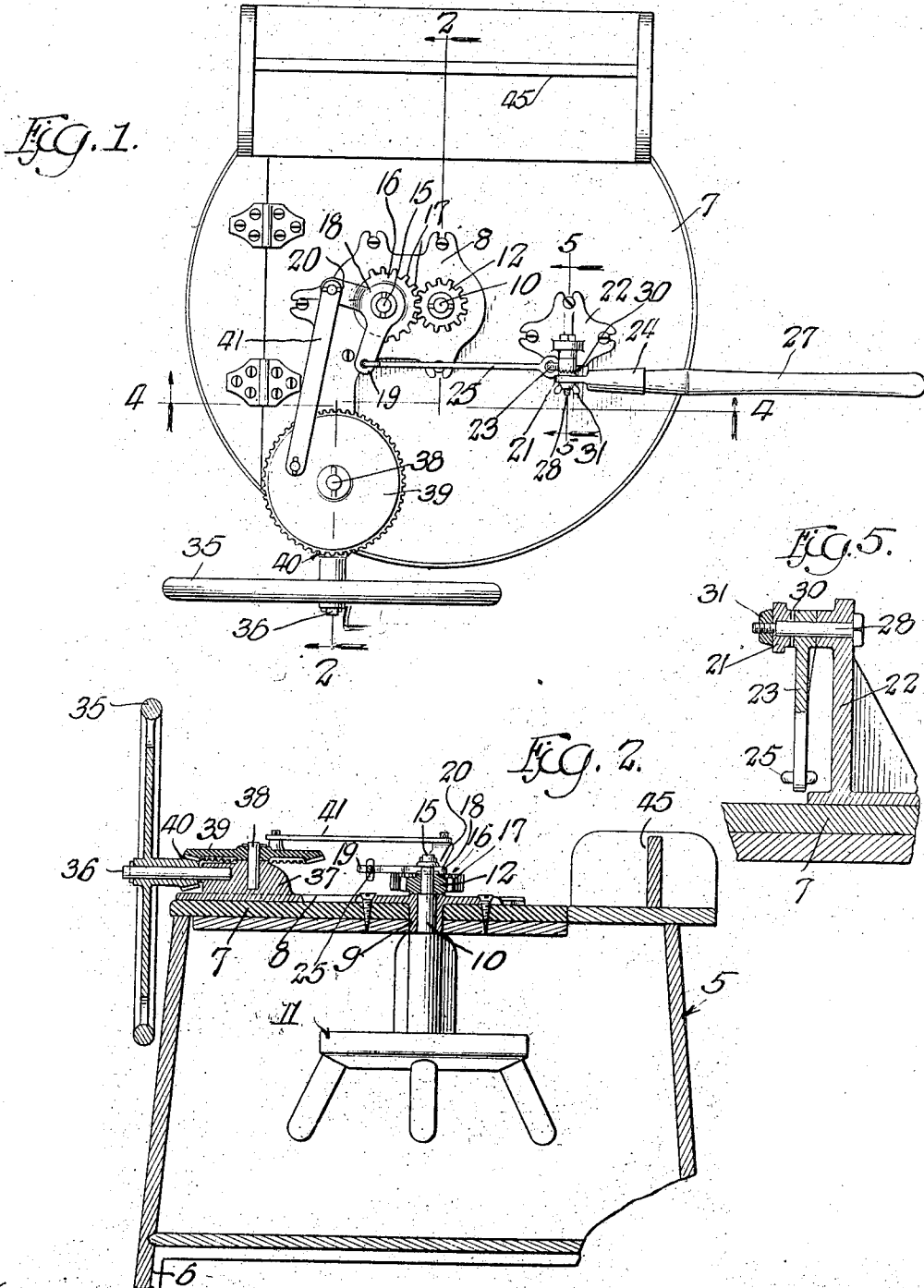


J. EDENS.
 OPERATING MECHANISM FOR WASHING MACHINES.
 APPLICATION FILED APR. 30, 1909.

933,895.

Patented Sept. 14, 1909.

2 SHEETS—SHEET 1.



Witnesses:
 J. H. Alfred
 L. R. Wilkins

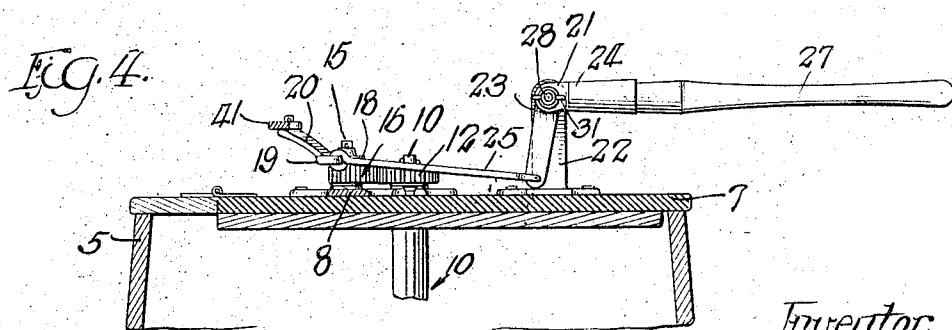
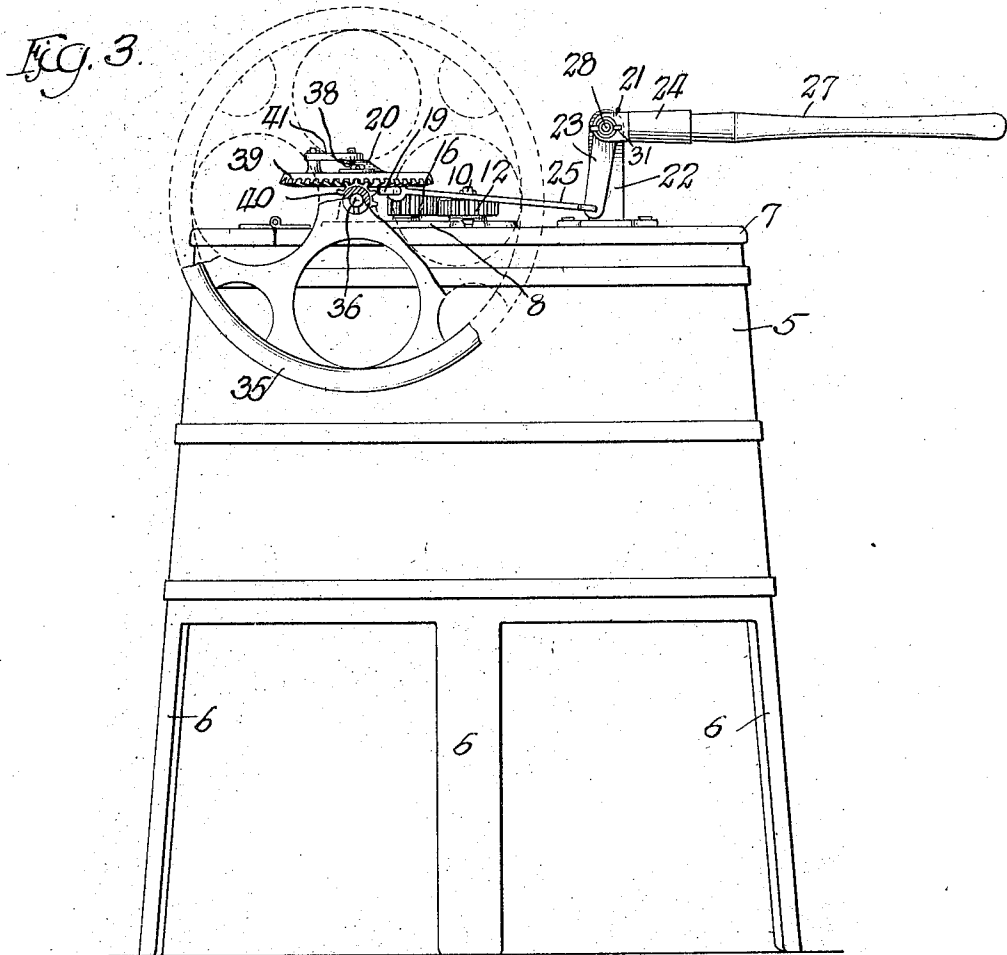
Inventor
 John E. Edens
 by *Robert Brown* Attys

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 J. H. Alfred
 L. R. McKenna

Inventor:
 John Edens
 by *Paul Brown*
 Attys

UNITED STATES PATENT OFFICE.

JOHN EDENS, OF DAVENPORT, IOWA, ASSIGNOR TO THE H. F. BRAMMER MANUFACTURING COMPANY, OF DAVENPORT, IOWA, A CORPORATION OF IOWA.

OPERATING MECHANISM FOR WASHING-MACHINES.

933,895.

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

Application filed April 30, 1909. Serial No. 493,092.

To all whom it may concern:

Be it known that I, JOHN EDENS, 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 numerals of reference marked thereon, which form a part of this specification.

This invention relates to means for operating washing machines of the type wherein the clothes agitator operating shaft within the tub is given reciprocating movement, the prime mover being a lever arm located upon the tub.

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 plan view of a washing machine and the parts relating to this invention. Fig. 2 is a vertical cross-sectional view, taken upon the irregular line 2—2 of Fig. 1. Fig. 3 is a view in side elevation of a washing machine and the parts relating to this invention. Fig. 4 is a cross-sectional view, taken upon line 4—4 of Fig. 1. Fig. 5 is a detail cross-sectional view taken upon line 5—5 of Fig. 1.

In the drawings, 5 designates a washing machine tub of familiar cylindrical type mounted upon supporting legs 6, 6 and provided with a hinged top 7. Upon the hinged top 7 is mounted an L-shaped base plate 8 which is secured thereto in any suitable manner and upon which are mounted various parts of the operating mechanism hereinafter referred to. Formed upon a portion of the base plate 8 is a downwardly projecting apertured sleeve 9 which forms a journal bearing for the vertical operating shaft 10. Upon the lower end of this shaft is mounted the usual agitator 11 of a familiar type and upon the upper end of the operating shaft is secured a spur gear or pinion 12 which is acted upon by parts hereinafter described to give rotative reciprocating movement to the said operating shaft and its agitator.

Referring now to the parts through which rotary reciprocating motion is transmitted to the said agitator, the same embrace features of construction as follows: Mounted upon a vertically arranged stub shaft 15 which is supported in the base plate 8 is a segmental gear 16 provided with teeth 17, 17 which are in mesh with the teeth of the pinion 12. Secured to the said segmental gear 15 is a horizontally arranged bell crank lever 18 comprising two arms 19 and 20. Operatively connected with the arm 19 of the said bell crank lever 18 is an actuating lever 21 which is pivotally mounted upon a horizontally arranged stub shaft 28 supported in the upper end of a vertical support 22 secured to the hinged portion 7 of the tub. The said actuating lever 21 is adapted to swing in a vertical plane and it constitutes the prime mover. It may be comprised of two arms 23 and 24, which are rotatively mounted upon the stub shaft 28 and are provided at 30 with notched or serrated portions which, by their engagement with each other, serve to operatively connect the two arms together. The arm 23 is connected by means of a link 25 to the arm 19 of the bell crank lever 18, while the arm 24 is adapted to receive a handle 27. The outer end of the stub shaft 28 is screw-threaded to receive a wing nut 31 which serves to lock the said arms 23 and 24 together, and to permit the same to be adjusted to any desired position with relation to each other.

A fly wheel 35, mounted upon the outer end of the base plate 8, is operatively connected with the bell crank lever 18 and serves to store up energy or momentum which, in the operation of the machine, is transmitted back to the agitator. The said fly wheel is loosely mounted upon the outer end of a horizontally arranged stub shaft 36 which is supported at its inner end in a raised shoulder or lug 37 formed upon the base plate 8. Also mounted in said shoulder is a vertically arranged stub shaft 38 upon the upper end of which is mounted a horizontally arranged bevel gear 39, the teeth of which are on the underside thereof and are adapted to mesh with a bevel pinion 40 formed upon the inner end of the fly wheel

hub. A link 41 is eccentrically connected at one of its ends to the bevel gear 39, the other end being connected to the arm 20 of the bell crank lever 18, whereby the gear 39 is rotated.

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

In the operation of a machine embracing the parts herein shown and described, the clothes and soap water are put into the tub, the lid is closed down, the operator then grasps the handle 27 and rocks the actuating lever 21 up and down. The rocking motion of the lever 21 rocks or swings the bell crank lever 18 and the segmental gear 16, which rocking movement is translated through the gear pinion 12 into rotative reciprocating movement of the agitator shaft 10, thus moving the agitator 11 to agitate and swing the clothes back and forth through the water within the tub whereby the clothes are cleansed. Moreover, the rocking or swinging movement of the bell crank lever 18 transmits, through the link 41, a continuous rotating motion to the bevel gear 39 which in turn rotates the fly wheel 35 to store up energy and add momentum to the moving parts of the mechanism.

Among the advantages of a mechanism embodying my invention are the features of lightness and durability of structure, making the machine inexpensive and easily constructed, the simplicity of the parts whereby they may be easily and quickly replaced, and the novel combination of the parts whereby there is obtained a maximum of power upon the agitator operating shaft by a minimum exertion of power upon the prime mover. Moreover, the providing of the actuating lever or prime mover with two arms which are relatively adjustable is of a decided advantage inasmuch as by this means the operating handle may be adjusted to any position suitable to the operator.

I claim as my invention:—

1. Means for operating a washing machine comprising, in combination, an operating shaft, a pinion mounted upon said shaft, a segmental gear in mesh with said gear pinion, an oscillating lever for actuating said segmental gear, an actuating lever, a link connecting said actuating lever with said oscillating lever, a fly wheel, and means connected with the oscillating lever for operating the said fly wheel.

2. Means for operating a washing machine comprising, in combination, an operating shaft, a pinion mounted upon said operating shaft, a segmental gear in mesh with said pinion, a lever adapted to oscillate in a horizontal plane and to actuate the segmental gear, a vertically swinging actuating

lever operatively connected with said oscillating lever, a fly wheel, and means connected with the oscillating lever for actuating the same.

3. Means for operating a washing machine, comprising a vertically arranged operating shaft, a pinion secured to said operating shaft, a segmental gear in mesh with said pinion, a horizontally swinging lever adapted to oscillate said segmental gear, a vertically swinging actuating lever, a horizontally extending stub shaft upon which said lever is mounted, and an operating link connected at one end to the horizontally swinging lever and at its other end to the vertically swinging lever.

4. The combination of an operating shaft, an actuating lever, a horizontally arranged lever operatively connected to the said actuating lever and adapted to transmit rotary reciprocating motion to the operating shaft, a fly wheel and means for translating oscillatory motion of the horizontal lever into continuous rotating motion of the fly wheel.

5. The combination of an operating shaft, a prime mover, a fly wheel, means for actuating the said shaft embracing a bell crank lever, one arm of which is connected with the prime mover, and means connected with the other arm of the bell crank lever for driving the said fly wheel.

6. The combination of an operating shaft, a prime mover, means for actuating the said operating shaft embracing a horizontally arranged bell crank lever, one arm of which is connected with the prime mover, a vertically arranged fly wheel provided with a pinion on its hub, a horizontally arranged gear wheel provided on its lower face with teeth which mesh with the pinion on the fly wheel hub, and a pivotal driving link connected at one end to the said gear wheel and at its other end to the other arm of the said bell crank lever.

7. Means for operating a washing machine comprising a base plate, a suitable support therefor, and a vertical journal bearing therein, an operating shaft, an oscillating lever mounted on said base plate and suitably geared to the operating shaft to actuate the latter, and an actuating lever adapted to operate the oscillating lever.

8. Means for operating a washing machine comprising, in combination, an operating shaft, an oscillating lever adapted to give rotary reciprocating movement to the said operating shaft, and an actuating lever adapted to operate said oscillating lever, said actuating lever comprising two arms which are relatively adjustable.

9. Means for operating a washing machine comprising, in combination, an operating shaft, an oscillating lever, gear connections between said shaft and said lever adapted to give rotary reciprocating movement to the

said shaft, and an actuating lever comprising two arms which are relatively adjustable, one of said arms being operatively connected with the said oscillating lever, and an operating handle connected with the other of said arms.

In testimony, that I claim the foregoing as

my invention I affix my signature in the presence of two witnesses, this 13th day of April A. D. 1909.

JOHN EDENS.

Witnesses:

A. G. SAMPSON,

T. A. MURPHY.