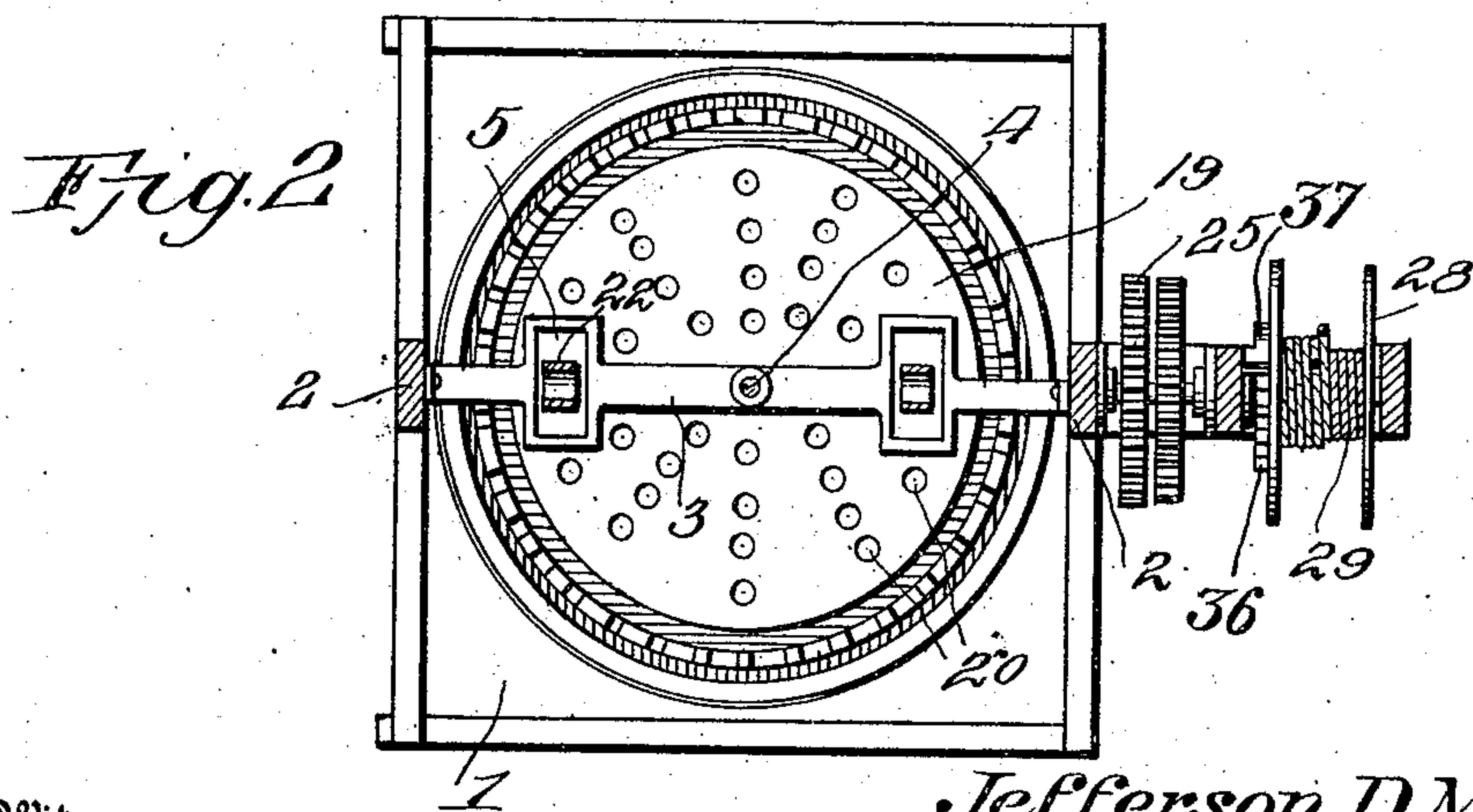
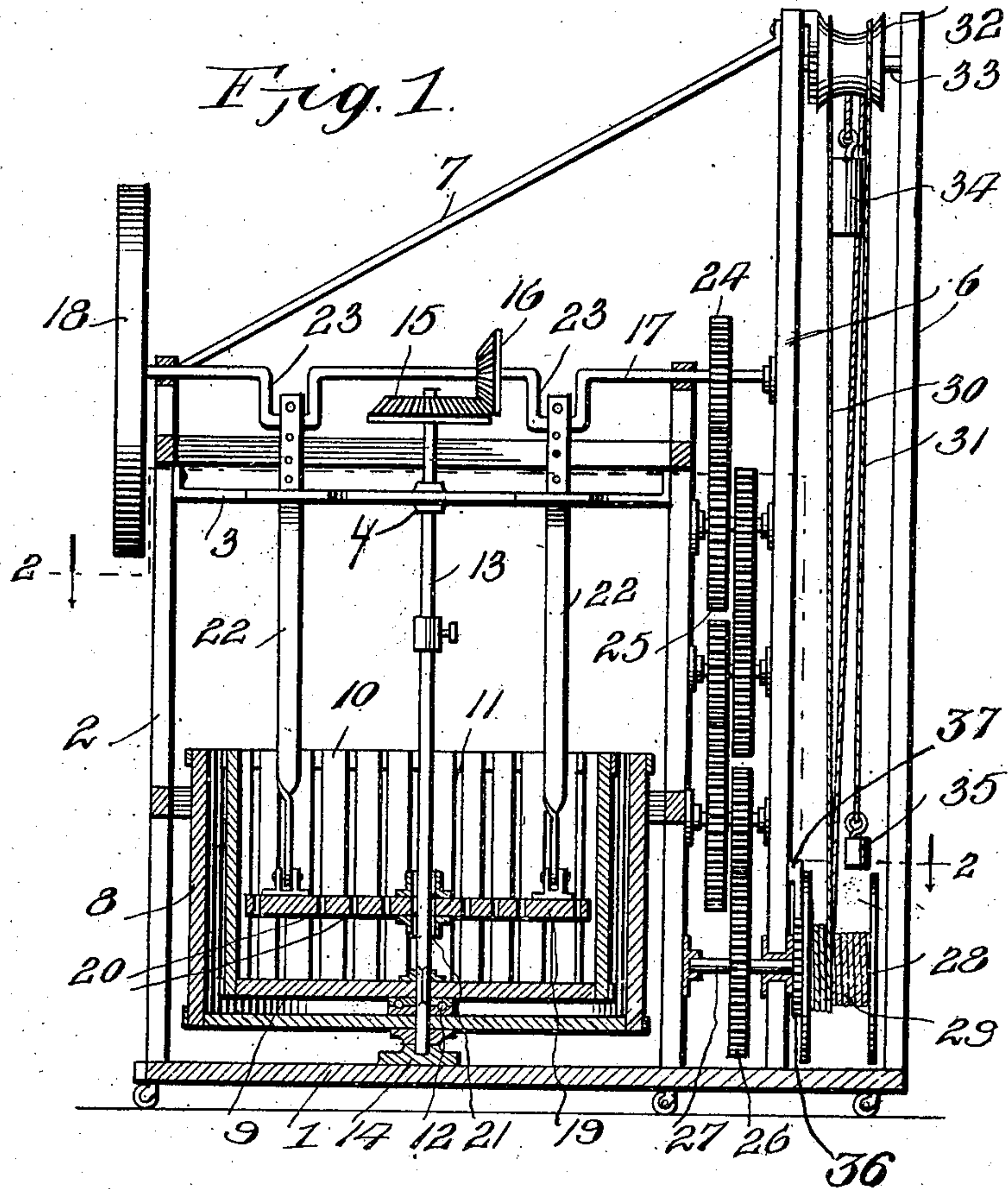


No. 850,031.

PATENTED APR. 9, 1907.

J. D. METCALF.
WASHING MACHINE.
APPLICATION FILED OCT. 17, 1906.



Inventor

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WASHING-MACHINE.

No. 850,031.

Specification of Letters Patent.

Patented April 9, 1907.

Application filed October 17, 1906. Serial No. 339,414.

To all whom it may concern:

Be it known that I, JEFFERSON D. METCALF, a citizen of the United States, residing at Bewelcome, in the county of Amite and State of Mississippi, have invented new and useful Improvements in Washing-Machines, of which the following is a specification.

This invention relates to washing-machines, and embodies in its organization an outer vessel or tub, an inner rotary receptacle or drum adapted to receive the clothes or other fabric to be cleansed, and a reciprocatory pounder arranged to act upon the material in the receptacle.

The invention has for its objects to provide a comparatively simple inexpensive device of this character wherein the water and suds will be forced back and forth through the fabric for rapidly and thoroughly cleansing the same, one wherein motion will be imparted simultaneously to the receptacle and pounder during the washing action, and one in which the parts may be readily disconnected at will to permit removal of the receptacle and pounder.

A further object of the invention is to provide a simple and efficient power mechanism for operating the movable parts of the machine and one through the medium of which a maximum speed of said parts is attained with a minimum expenditure of power.

With these and other objects in view the invention comprises the novel features of construction and combination of parts more fully hereinafter described.

In the accompanying drawings, Figure 1 is a sectional elevation of a machine embodying the invention, the section being taken on a vertical line centrally through the tub. Fig. 2 is a horizontal section taken on the line 2 2 of Fig. 1.

Referring to the drawings, it will be seen that the main frame of the machine comprises a base 1, to which is attached the lower ends of a pair of vertical uprights or standards 2, connected adjacent their upper ends by means of a horizontal cross-bar 3, provided with a central bearing-opening 4 and with a pair of elongated guide-openings 5, disposed, respectively, on opposite sides of and at points suitably remote from the opening 4, there being also attached at their lower ends to the base 1 a pair of relatively spaced vertical uprights or standards 6, of which the in-

nermost is spaced a suitable distance from the adjacent upright 2 and has its upper end connected to the upper end of the far upright 2 by means of a diagonal bracing-rod 7.

Mounted in the frame is a stationary vessel or tub 8, in which is disposed an inner receptacle or container 9, the side walls of which are composed of spaced slats or staves 10, forming openings or passages 11 therebetween, the receptacle 9, between the bottom of which and the tub there is arranged a series of antifriction-balls 12, being fixed for rotation, with a vertical shaft 13 extended through the bearing-opening 4 and stepped at its lower end in a bearing 14 on the frame and having fixed upon its upper end a bevel-gear 15 in mesh with a pinion 16, fixed on a horizontal shaft 17, journaled at the upper ends of the uprights and equipped with a balance-wheel 18, while arranged for vertical reciprocation in the receptacle 9 is a pounder 19, provided with a series of vertical perforations 20 and with a central bearing-opening 21 to receive the shaft 13, the pounder being attached to the lower ends of and for operation by a pair of pitman members or links 22, in turn engaged at their upper ends with crank portions 23, formed in the shaft 17.

Fixed on the shaft 17 is a gear 24, connected by a train of gears 25 with a master-gear 26, in turn fixed on a drum-shaft 27, journaled in suitable bearings in the uprights 2 and 6 and carrying at its outer end between the uprights 6 a drum 28, on which is reversely wound or coiled a flexible operating member or cable 29, the unwound portions 30 and 31 of which are led upward over an idler-pulley 32, journaled on a shaft 33 at the upper ends of the uprights 6, there being terminally attached to the portion 30 of the cable an operating-weight 34 and to the portion 31 of the cable a counterbalancing-weight 35, the gravity of which latter, it will be noted, is considerably less than that of the weight 34.

Fixed on the drum-shaft 27 is a ratchet 36, adapted for engagement by a pawl 37 to lock the parts against movement for stopping the operation of the machine.

In practice, supposing the parts to be in the position illustrated in Fig. 1, with the weight 34 raised, said weight will in descending act through the medium of the portion 30 of the cable for rotating the drum 28, thus

transmitting motion from the gear 26 through the train of gears 25 and gear 24 to the shaft 17. During rotation of the shaft 17 the shaft 13 will be driven through the medium 5 of the gear 15 and pinion 16 for rotating the inner receptacle 9, which, it will be understood, receives the clothes or other fabric to be washed, while at the same time the pounder 19 will be reciprocated through the 10 medium of the pitman connections 22, which in turn will be operated by the shaft 17. After the weight 34 has reached the limit of its descent it is again raised by grasping the portion 31 of the cable and drawing the same 15 downward to impart a reverse rotation to the drum 28 for rewinding the cable 30 on the drum to again raise the weight 34.

It will be understood, of course, that the water and suds are during the washing process 20 contained in the vessel 8 and will pass therefrom through the openings 11 into the fabric within the inner receptacle 9. Also it is to be noted that during operation of the pounder the material in the receptacle will be 25 compressed at regular intervals, thereby driving the water and suds outward through the fabric, thus to effect a rapid and thorough cleansing of the clothes.

Having thus described my invention, what 30 I claim is—

1. In a washing-machine, a frame, a vessel sustained therein, a receptacle arranged for rotation in the vessel, a drive-shaft journaled in the frame and having crank portions, a second shaft driven from the first-

named shaft and connected for operating the receptacle, a pounder disposed for reciprocation in the receptacle and for sliding movement on the second shaft, pitman connections between the crank portions of the 40 drive-shaft and the pounder for operating the latter, and means for operating the drive-shaft.

2. In a washing-machine, a frame, a vessel sustained therein, a receptacle arranged 45 for rotation in the vessel, a drive-shaft journaled in the frame and having crank portions, a driven shaft operated by the drive-shaft and connected for rotating the receptacle, a pounder slidably disposed on the 50 driven shaft and for reciprocation in the receptacle, pitman connections between the crank portions of the drive-shaft and the pounder, and means for operating the drive-shaft comprising a drum having gearing connections with the said shaft, a cable wound 55 in reverse directions on the drum, an idler-pulley sustained in the frame and having portions of the cable led for travel thereover, an operating-weight connected with the end 60 of one of said portions of the cable, and a counterbalancing-weight connected with the end of the other of said portions.

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

JEFFERSON D. METCALF.

Witnesses:

D. J. ANDERS,
J. T. LOWRY.