April 26, 1932. I. S. SHOCKLEY 1,855,995

ONE-BELT LAUNDRY WASHER

Filed Nov. 1, 1930 3 Sheets-Sheet 1

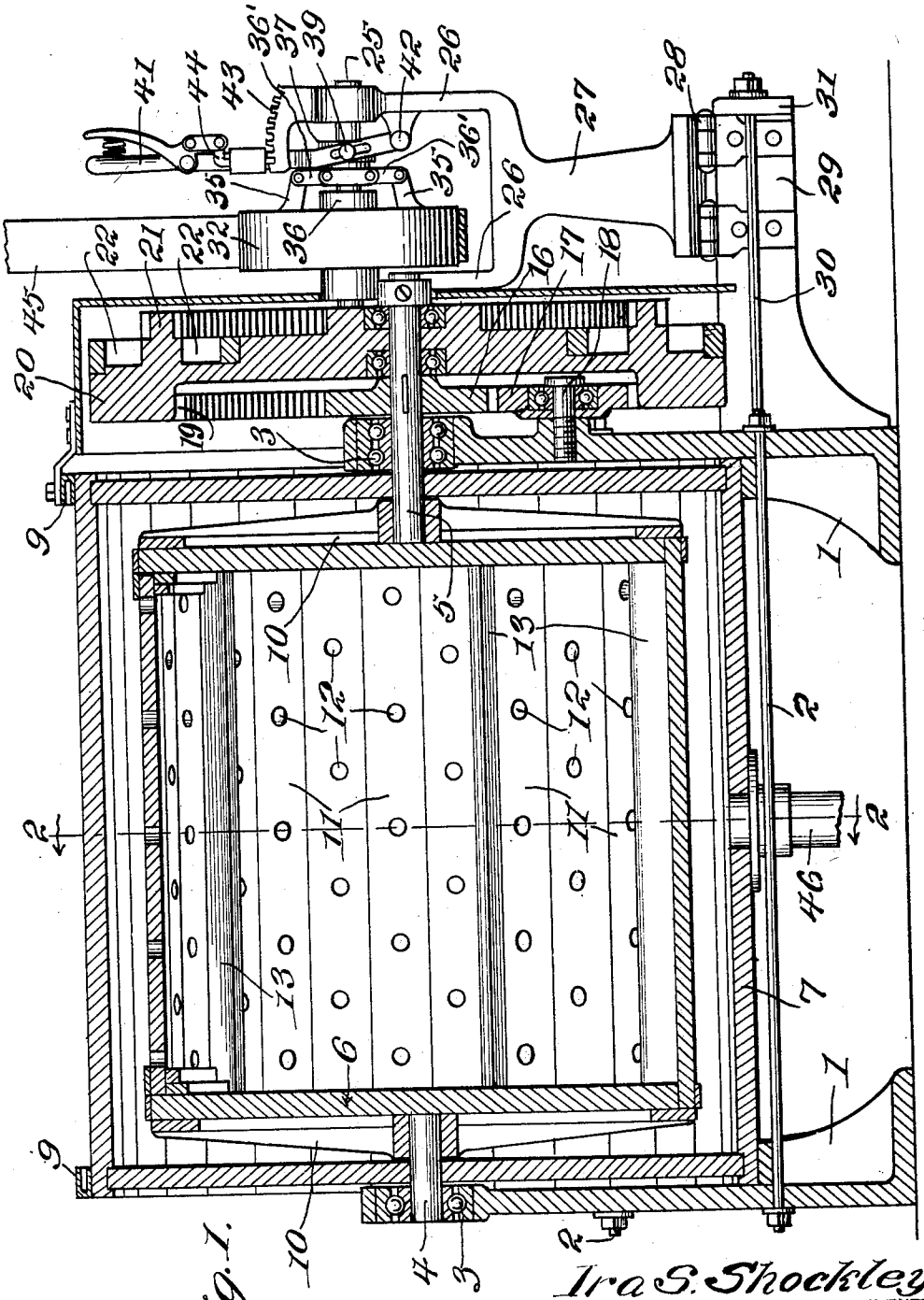

Fig. 1.

Ira S. Shockley
INVENTOR

BY Victor J. Evans
ATTORNEY

J. T. L. Wright
WITNESS:

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ONE-BELT LAUNDRY WASHER

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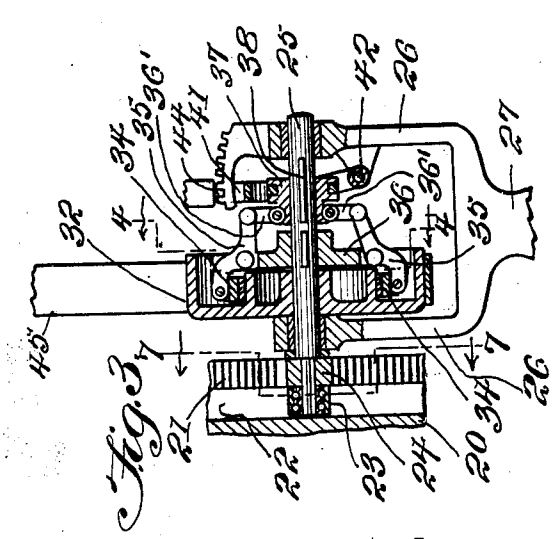

Fig. 3.

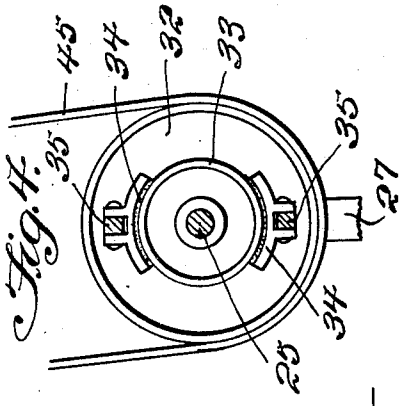

Fig. 4.

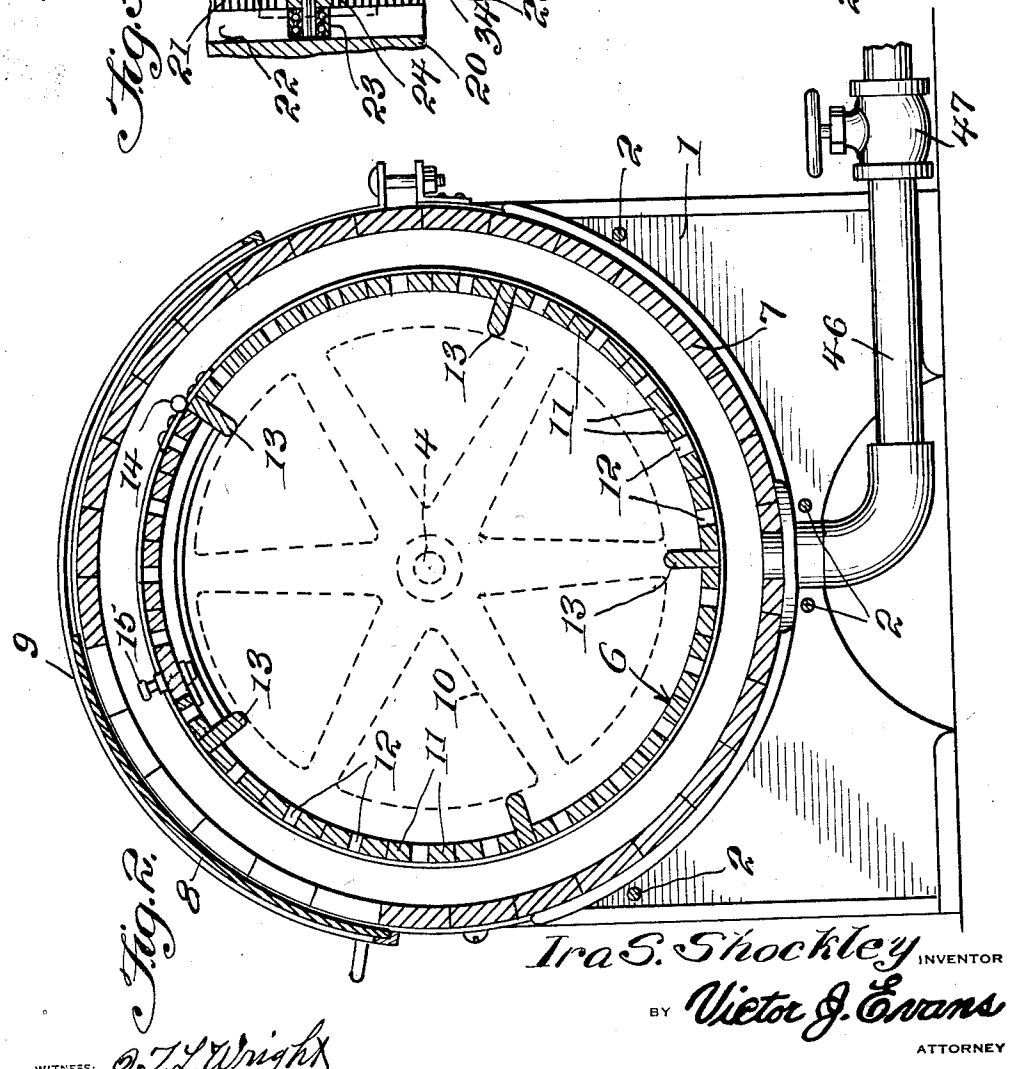

Fig. 2.

Ira S. Shockley INVENTOR

BY Victor J. Evans

ATTORNEY

WITNESS: J. L. Wright

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ONE-BELT LAUNDRY WASHER

Filed Nov. 1, 1930 3 Sheets-Sheet 3

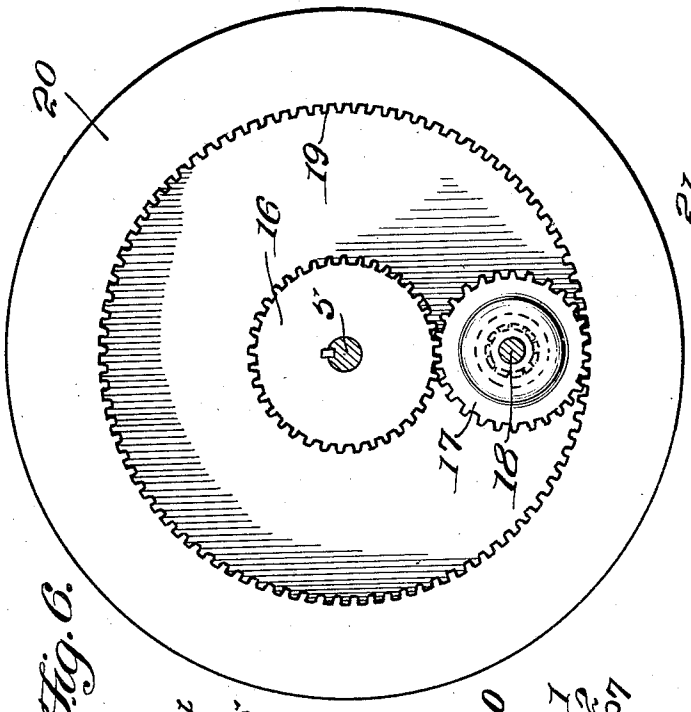

Fig. 6.

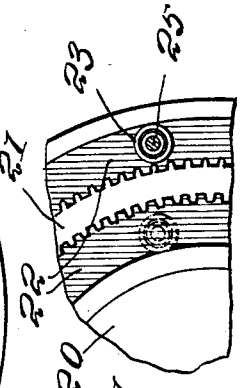

Fig. 7.

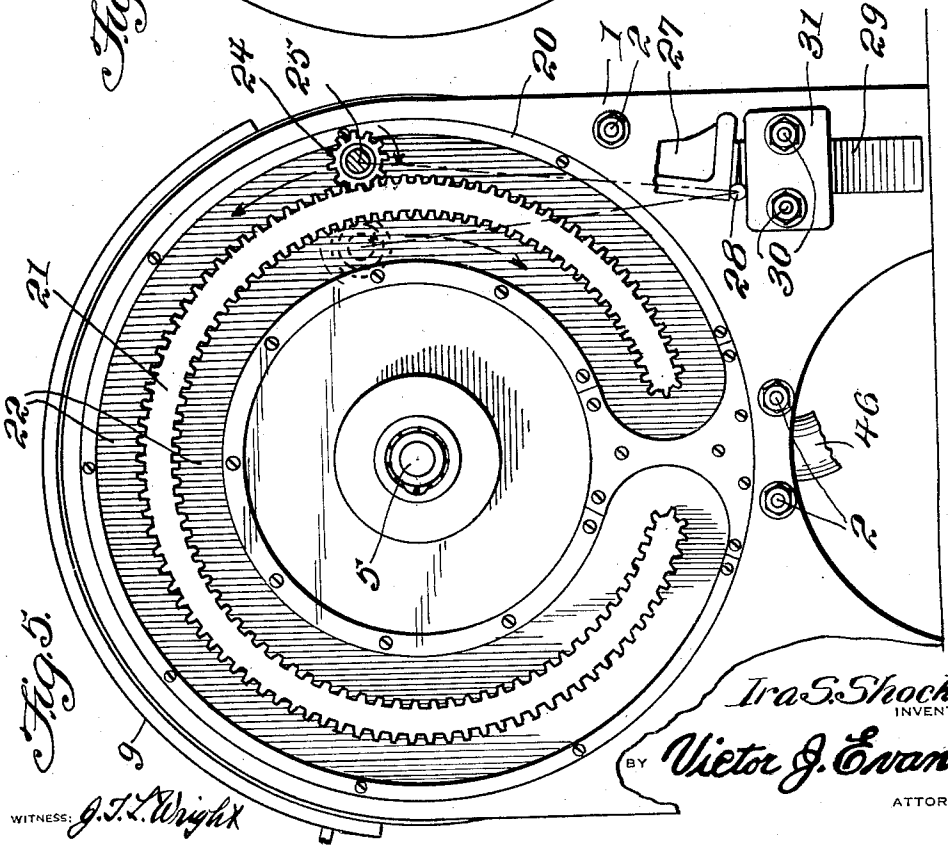

Fig. 5.

Ira S. Shockley
INVENTOR

BY Victor J. Evans
ATTORNEY

WITNESS: J. T. L. Wright

Patented Apr. 26, 1932

1,855,995

UNITED STATES PATENT OFFICE

IRA S. SHOCKLEY, OF COLLEGE VIEW STATION, NEBRASKA

ONE BELT LAUNDRY WASHER

Application filed November 1, 1930. Serial No. 492,809.

My present invention has reference to a laundry washing machine, and among the objects of the invention is the provision of a power driven washing machine in which a single belt is employed for imparting motion to the cylinder thereof, in which clutch mechanism is provided for locking the drive wheel to the operating shaft, the same being readily released so that the operation of the machine may be stopped at any desired interval, to provide means for imparting a uniform motion to the cylinder through nearly a revolution and to permit of the quick return to reverse the cylinder; to provide speed increasing means whereby the cylinder will turn at a greater speed than that of the driving shaft and in general to simplify and improve the usual construction of such devices. The invention will be fully and comprehensively understood from a consideration of the following detailed description when read in connection with the accompanying drawings which form part of the application, with the understanding, however, that the improvement is capable of extended application and is not confined to the exact showing of the drawings nor to the precise construction described and, therefore, such changes and modifications may be made therefrom as do not affect the spirit of the invention nor exceed the scope thereof as expressed in the appended claim.

In the drawings:

Figure 1 is an approximately central longitudinal sectional view through a washing machine in accordance with this invention.

Figure 2 is a transverse sectional view approximately on the line 2—2 of Figure 1.

Figure 3 is a detail sectional view through the clutch control belt pulley, the clutch, and a portion of the mangle rack.

Figure 4 is a sectional view approximately on the line 4—4 of Figure 3.

Figure 5 is an end view of the improvement with the operating shaft in section.

Figure 6 is a view looking toward the inner face of the operating wheel, the shafts for the intermeshing gears or pinions being in section.

Figure 7 is a sectional view approximately on the line 7—7 of Figure 3.

As disclosed by the drawings my improvement is supported upon a suitable stand or frame 1 and the side members of the front are held properly spaced by brace rods 2. Each of the side members has arranged therein, adjacent to the upper end thereof, raceways for anti-friction spheres 3 for the stub shaft 4 and for the longer and operating shaft 5 and the ends of the clothes cylinder 6. The clothes cylinder is enclosed in a cylindrical tub 7 provided with an opening that is normally closed by a segmental door 8 that is movable in a segmental guide 9 on the periphery of the tub. Suitable means is provided for latching the door to establish a water-tight joint between the said door and tub.

The cylinder has fixed on its ends wheels in the nature of spiders 10 and through these spiders the shafts 4 and 5 pass. The wheel-like spiders 10 are in contact with the end discs of the cylinder and are secured thereto, while the body of the cylinder is preferably made up of contacting wooden strips or slats 11, each provided with a series of openings 12 and the openings in the respective slats are disposed in staggered relation to each other, while between certain of the slats there are arranged clothes contacting plates 13. The cylinder is provided with an opening for the segmental door, the said door being also made up of slats which are perforated. The door is hinged to the cylinder, as indicated by the numeral 14, and is latched in closed position thereon as indicated by the numeral 15 in Figure 2 of the drawings. The shaft 5 has keyed thereon a toothed gear wheel 16 which is in mesh with another gear 17 journaled in anti-friction bearings that are carried by a stub shaft 18 secured to one of the end uprights of the frame 1. The gear 17 is in mesh with an internal gear ring 19 on the operating wheel 20 of the improvement. The wheel 20 has formed on its outer face a mangle wheel 21, and to the sides of the mangle wheel the said face of the wheel 20 is depressed, as at 22, to provide for the reception of anti-friction guides 23 for the

pinion 24 which engages with the opposite toothed faces of the rack or wheel 21. The pinion 24 is fixed on a shaft 25 and is journaled in anti-friction bearings in the forked arms 26 of a support 27. The support is in the nature of an elongated arm and has its lower end hinged, as at 28, to the top of a block 29 which is adjustably fixed by means 30 to a block or extension 31 for the frame 1.

On the shaft 25 there is loosely journaled a pulley wheel 32. The wheel has its outer hollow face integrally formed with a drum 33 and the said drum is designed to be engaged by compressible faces on shoes 34 that are pivotally connected to angle levers 35. The angle levers are pivoted, at the center thereof, in notches in the periphery of a disc 36 which is keyed or otherwise fixed on shaft 25. The outer ends of the levers 35 are pivotally secured to links 36′ in a slidable member 37 of the catch. The slidable member is arranged for movement on the shaft 25 through the medium of a key 38 carried by the shaft and received in a key-way in the bore of the member 37. The member 37 is provided with a peripheral groove that receives therein pins 39 that pass through elongated slots 40 in the sides of the bifurcated portion of a lever 41. The lever 41 is pivoted, as at 42, to a lug on the outer arm 26, and the outer or upper end of the said arm is provided with a rack 43 to be engaged by a spring influenced hand operated pawl or dog 44 on the lever 41.

It is to be noted that only a single belt is provided for driving the washing machine and that the motor power for the belt 45 is to be arranged directly above and in a line with the center of the pulley wheel 32. The pulley wheel may be otherwise connected to the drive means. By swinging the lever 41 the clutch means will be operated to bring the shoes 34 into engagement with the drum 33 at desired degrees of friction. The turning of the shaft 25 will, of course, turn the pinion 24. The mangle wheel or rack has its ends spaced a slight or desired distance apart. The anti-friction guides for the pinion 24, traveling in the grooved guide slats will insure a uniform motion through nearly a revolution and a quick return of the pinion to the teeth on the opposite face of the rod so that the cylinder will be given an oscillatory movement in a circular direction. The gears 16 and 17, operated by the internal gear 19 on the wheel 20 insures a rapid movement of the cylinder so that the cylinder is operated at a speed in increase of that of the turning of the shaft 25.

The bottom of the tub has screwed therein or otherwise secured thereto a water outlet pipe 46 which may be likewise employed as a water inlet pipe and the passage through this pipe is controlled by a valve 47.

It is thought the foregoing description will fully and clearly set forth the construction and advantages of the improvement without further detailed description.

Having described the invention, I claim:

In a washing machine, a clothes cylinder having stub shafts on the ends thereof, a gear on one of the stub shafts, a toothed wheel in mesh with the gear, a wheel having an internal gear in mesh with the pinion and which gear is journaled on the stub shaft, said gear having on its outer face a mangle wheel, grooved guides on the face of the wheel opposite the mangle wheel, a toothed wheel to engage with the mangle wheel, a shaft therefor, anti-friction rollers on the shaft received in the guides, a bearing for the shaft, a belt driven pulley loosely mounted on the shaft and lever operated means for clutching the pulley to the shaft or releasing the pulley from the shaft and a hinged support for the pulley and shaft.

In testimony whereof I affix my signature.

IRA S. SHOCKLEY.