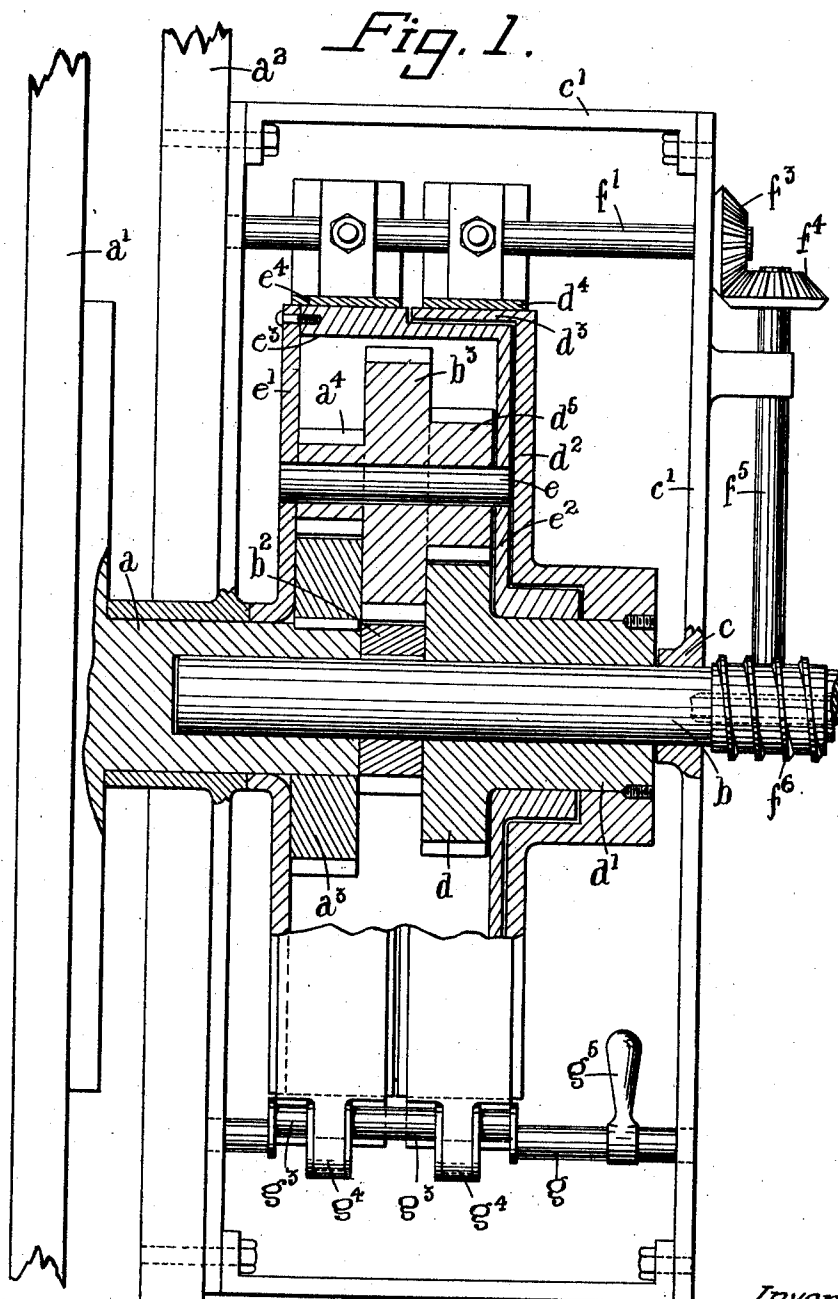


A. E. READWIN.
 GEARING FOR LAUNDRY MACHINES.
 APPLICATION FILED FEB. 18, 1911.

1,002,450.

Patented Sept. 5, 1911.

2 SHEETS—SHEET 1.



Witnesses
 H. K. Kelly
 C. Everett Lancaster

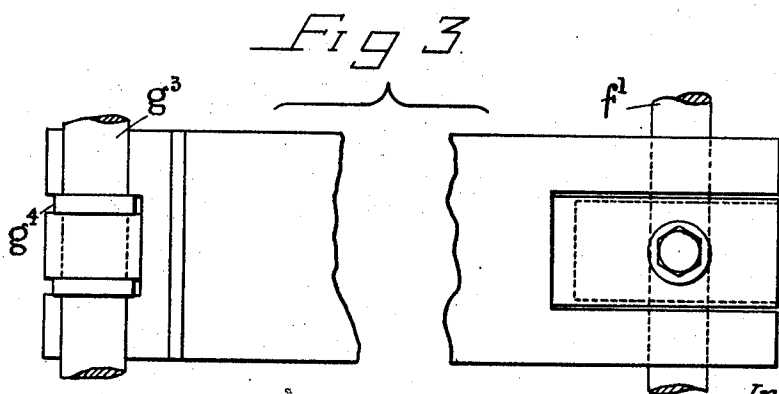
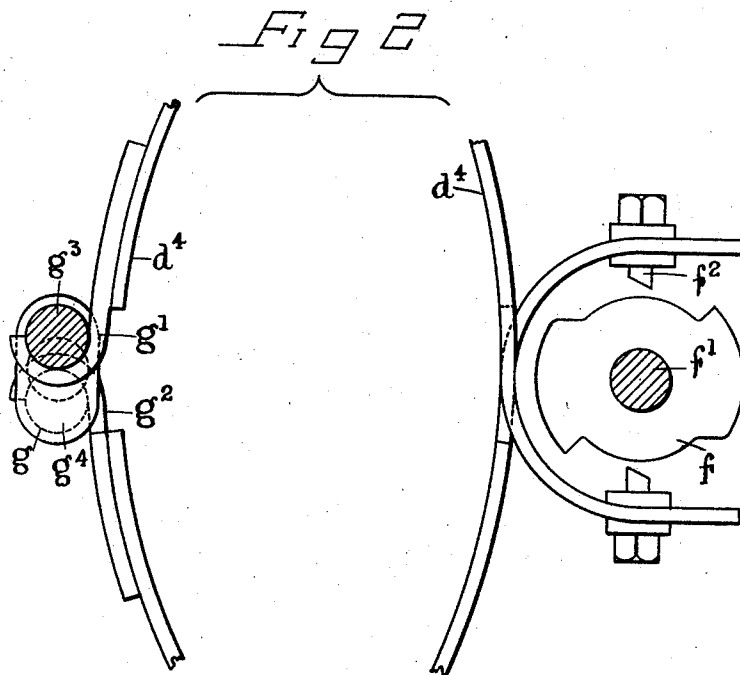
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 Attorney.

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Witnesses.
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UNITED STATES PATENT OFFICE.

ARTHUR EDWARD READWIN, OF RICHMOND, ENGLAND.

GEARING FOR LAUNDRY-MACHINES.

1,002,450.

Specification of Letters Patent.

Patented Sept. 5, 1911.

Application filed February 18, 1911. Serial No. 609,295.

To all whom it may concern:

Be it known that I, ARTHUR EDWARD READWIN, a subject of the King of Great Britain, residing at 223 Lower Mortlake road, Richmond, in the county of Surrey, England, have invented a new and useful Gearing for Laundry-Machines, of which the following is a specification.

This invention relates to means for driving washing machines or other laundry appliances which are driven first in the one direction and then in the reverse direction, and has for its object to dispense with the countershaft and fast and loose pulleys which are usually mounted upon the machine.

According to my invention, one of the trunnions of a washing machine, or the driving shaft of any other laundry machine, is provided with a train of spur gears driven by a spindle or sleeve preferably mounted co-axially with the trunnion or with the shaft of the machine. This spindle or sleeve is constantly rotated in one direction and the gear is so arranged in conjunction with brake mechanism that the machine may be driven first in the one direction and then in the reverse direction.

The accompanying drawings illustrate an embodiment of my invention as applied by way of example to a washing machine.

Figure 1 is a sectional view, to an enlarged scale of the driving gearing. Figs. 2 and 3 are detail views of the brake mechanism.

In the construction illustrated, the trunnion a at one end of the washing drum a' is recessed to receive one end of a spindle b , the opposite end of which is supported in a bearing c , provided upon a frame c' , which is secured in the casing a^2 of the machine. The spindle b rotates freely within the trunnion a and is furnished with a pulley and spur pinion b^2 . On the one side of the pinion b^2 is a spur wheel a^3 which is keyed to the trunnion a , and on the opposite side of the said pinion is a spur wheel d fast upon a sleeve d' which is freely mounted upon the spindle b . The sleeve is secured to a flanged disk d^2 , about the flange d^3 of which is a brake strap d^4 . The pinion b^2 and the spur wheels a^3 and d respectively mesh with spur wheels b^3 , a^4 , and d^5 ; and these latter three wheels are secured together and mounted to rotate freely upon a spindle e , the opposite

ends of which are carried in the side walls e^5 e' , e^2 of a hollow drum which is mounted to rotate freely upon the trunnion a and the sleeve d' . About the periphery e^3 of the drum is a second brake strap e^4 .

The brake straps d^4 , e^4 are capable of being alternately tightened and loosened upon the respective bearing surfaces, same being accomplished automatically, during the working of the machine by the following means: The ends of each strap are crossed and extend laterally so that the one end of the strap is disposed above the other end; one end of each strap being reduced in width and passing through a slot in the other end. Between the projecting ends of each strap is a cam f , and these two cams are keyed at right angles to each other upon a shaft f' . The ends of each brake strap are respectively provided with an adjustable stud or projection f^2 having a beveled end which bears against the cam f . The shaft f' is mounted in the frame c' and is provided at one end with a beveled pinion f^3 which meshes with a beveled pinion f^4 mounted at the one end of a shaft f^5 , the opposite end of which is furnished with a toothed wheel driven by a worm f^6 upon the spindle b .

In order to provide supplementary means for tightening and slackening the brake straps, the latter may be in halves and attached to a cranked shaft g as shown in Figs. 2, 3, and 4. The upper half of each brake strap is provided with a bifurcated hook g' and the lower half of the strap with a hook g^2 . These hooks respectively engage with cranks g^3 , g^4 arranged at an angle of 180° to each other, so that by rotating the shaft g half a revolution in the one or the other direction these cranks tighten or loosen the brake straps; a handle g^5 being provided for rotating the crank shaft g .

The working of the driving mechanism is as follows:—Assuming the spindle b to be rotating and the brake strap e^4 to be tightened about the periphery e^3 of its drum, the spindle e of the spur wheels a^4 , b^3 , d^5 will be held from moving in a circular path. In this condition rotary motion from the spindle b will be transmitted through the pinion b^2 , spur wheels b^3 , a^4 , a^3 to the trunnion a , with the effect that the washing drum a' is rotated in the same direction as the spindle b . The drum a'

having rotated the desired number of revolutions in this direction, the brake strap e^4 is slackened by its cam f and the brake strap d^4 tightened by the cam f pertaining thereto. This strap now holds the spur wheel d against rotation whereupon the pinion b^2 drives the spur wheels a^4 , b^3 , d^5 bodily about the spindle, and in the same direction therewith, the effect being to rotate the trunnion a and the washing drum a' in the opposite direction to the spindle b . The washing drum a' is rotated in this direction for a certain number of revolutions, and then the brake-strap d^4 is slackened by its cam f , and the other brake-strap tightened to rotate the said drum in the reverse direction.

The gearing for driving the cam shaft f' is so proportioned that the two cams f alternately tighten and slacken their respective brake-straps e^4 , d^4 for a certain period of time; the washing drum a' thus being caused to rotate first in one direction and then in the reverse direction for a certain number of revolutions.

To stop the rotation of the washing drum a' for the purpose of removing its contents and re-charging, both the straps e^4 , d^4 are released by means of the cranked shaft g , which is rotated by its handle g^5 to bring the cranks g^3 , g^4 into position to slacken the said straps. The machine is again started by rotating the cranks g^3 , g^4 and tightening the brake straps e^4 , d^4 .

Although I have described an embodiment of my invention as applied by way of example to a washing machine, it will be obvious that my invention is also applicable to other laundry machines having reciprocally moving parts, such as blocking and ironing machines wherein a reciprocating table is employed. Moreover, the gear train is susceptible of various modifications without departing from the invention, which consists primarily in providing the machine with reversing means driven from a spindle which constantly rotates in one direction, while the gear train is so arranged and controlled by brake mechanism that the machine is driven automatically in the one and the other direction.

What I claim as my invention and desire to secure by Letters Patent is:—

1. Gearing for laundry machines comprising in combination with a body to be operated and having a gear thereon, a constantly driven shaft, a gear fast on said shaft, a gear loosely mounted on said shaft, a brake drum concentric with said shaft, a gear element carried by said drum and meshing with said shaft gear, body gear and loosely mounted gear, a brake element fast on said loosely mounted gear, brake bands engaging said drum and brake element, and means actuated by said shaft for

alternately operating said bands to arrest said drum and brake element for reversing the operation of said body.

2. Gearing for laundry machines comprising in combination with a body to be operated having a gear thereon, a shaft constantly driven in one direction, a gear fast on said shaft, a gear loosely mounted on said shaft, a brake drum concentric with said shaft, a gear element carried by said drum and meshing with said shaft gear, body gear and loosely mounted gear, a brake element fast on said loosely mounted gear, brake bands for said drum and brake element, means operated by said shaft for alternately actuating said bands to arrest said drum or brake element for reversing said body, and supplemental means for shifting both of said bands out of braking position, substantially as and for the purposes set forth.

3. Gearing for laundry machines comprising in combination with a body to be operated having a gear thereon, a shaft constantly driven in one direction, a gear fast on said shaft, a gear loosely mounted on said shaft, braking mechanism, gearing operatively connected with said mechanism and meshing with said body gear, shaft gear and loosely mounted gear, braking means connected with said loosely mounted gear, and means operated by said shaft to alternately actuate said braking mechanism and brake means to reverse the operation of said body.

4. A gearing for laundry machines comprising in combination with a body to be operated having a gear thereon, a shaft constantly driven in one direction, a gear on said shaft, a gear loosely mounted on said shaft, braking mechanism, gearing operatively connected with said mechanism and meshing with said body gear, shaft gear and loosely mounted gear, braking means connected with said loosely mounted gear, and means operated by said shaft to alternately actuate said braking mechanism and brake means to reverse the operation of said body, and supplemental means for rendering said braking mechanism and brake means inoperative.

5. A gearing for laundry machines and the like comprising in combination a body adapted to be reversed in operation, a constantly driven shaft, brake mechanisms operatively connected with said shaft and body, and devices operated by said shaft and coacting with said mechanisms for intermittently reversing the operation of said body.

6. A gearing for laundry machines and the like comprising in combination, a body adapted to be reversed in operation, a constantly driven shaft, mechanism held against rotation and operatively connected

with said shaft and body, and means operated by said shaft and coacting with said mechanism for intermittently reversing the operation of said body.

5 7. A gearing for laundry machines and the like comprising in combination, a body adapted to be reversed in operation, a constantly driven shaft, brake mechanism operatively connected with said shaft and body,
10 and non-rotary means operated by said

shaft and coacting with said mechanism for intermittently reversing the operation of said body.

In witness whereof I have hereunto set my hand in the presence of two witnesses. 15

ARTHUR EDWARD READWIN.

Witnesses:

EDWARD LAURENCE HEYWARD ELLIOTT,
JOHN OSWALD GARRER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
