J. G. SEELIG.

REVERSING GEARING.

APPLICATION FILED SEPT. 21, 1912.

1,047,579. Patented Dec. 17, 1912.

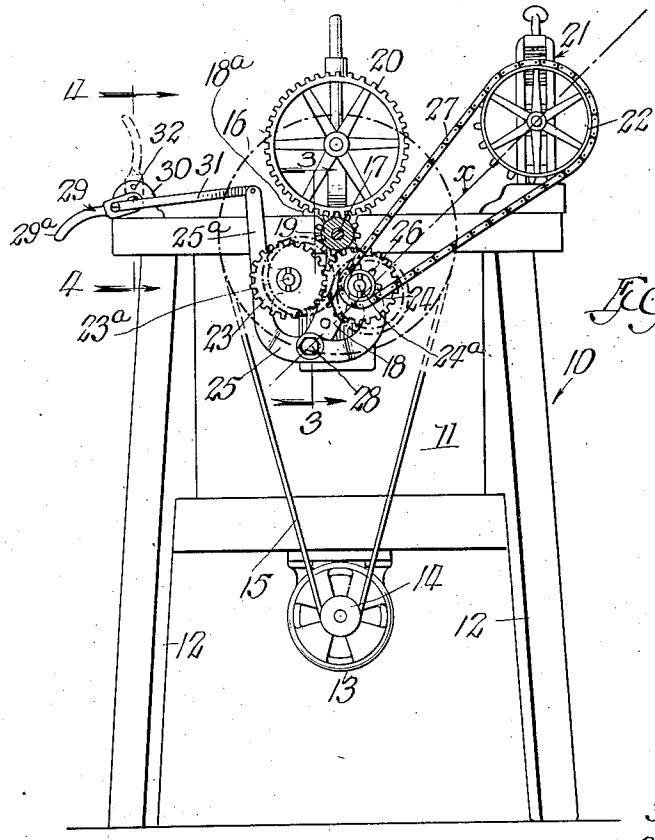

Fig. 1.

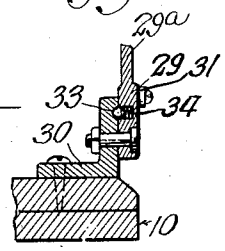

Fig. 4.

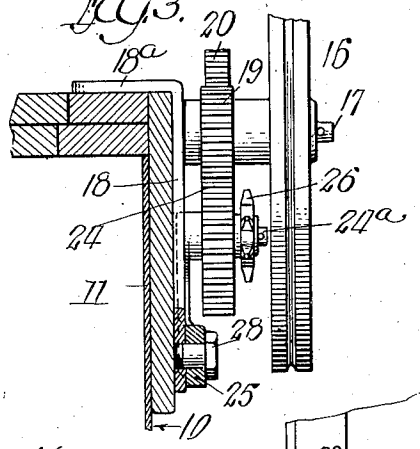

Fig. 3.

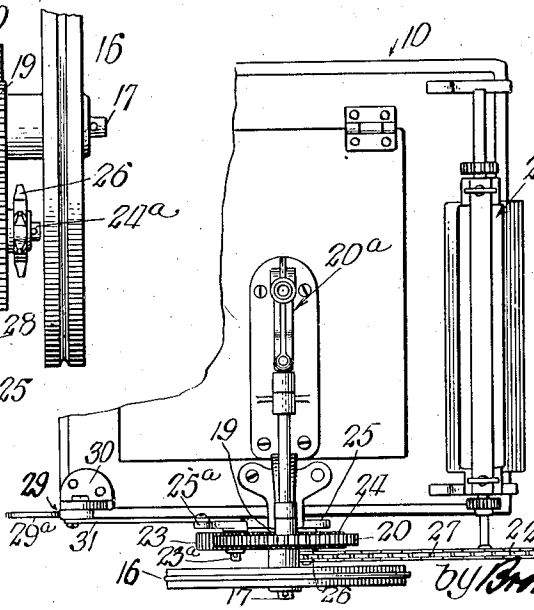

Fig. 2.

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REVERSING-GEARING.

1,047,579. Specification of Letters Patent. Patented Dec. 17, 1912.

Application filed September 21, 1912. Serial No. 721,535.

To all whom it may concern:

Be it known that I, JOHN G. SEELIG, a citizen of the United States, and a resident of Ripon, in the county of Fond du Lac and State of Wisconsin, have invented certain new and useful Improvements in Reversing-Gearing; 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 improvements in reversing gearing and consists of the matters hereinafter described and more particularly pointed out in the appended claims.

The improved gearing is shown herein as applied to the operation of a wringer mounted on the tub of a washing machine and driven by means of my improved reversing gearing from the same driving shaft which actuates the operating gearing of the washing machine.

Referring now to the drawings:—Figure 1 is a view representing in side elevation a washing machine having a wringer and provided with my improved reversing gearing. Fig. 2 is a partial top plan view of the same. Fig. 3 is a view representing a partial vertical section through Fig. 1 in a plane indicated by the line 3—3 thereof. Fig. 4 is a view representing a partial vertical section through Fig. 1 in a plane indicated by the line 4—4 thereof with the operating lever in the position indicated by dotted lines.

Referring now to the drawings, 10 indicates the support, in this case a washing machine tub, having a body 11 and supporting legs 12, 12. The gearing is driven by a motor 13 secured to the bottom of the tub body and having a driving pulley 14 which is operatively connected by a belt 15 to a large driven pulley 16 that is also, as shown, a fly-wheel. Said fly-wheel is in a vertical plane and has bearing on a stud-shaft 17 made integral with a vertical plate 18 attached to the side of the tub. Said plate is in the form of an angle plate and has a horizontal part 18^a which bears upon and is attached to the top of the tub body.

19 indicates a pinion fixed to the hub of the fly-wheel. Said pinion meshes on its upper side with a large gear 20 which forms a part of the gearing for actuating the operating member of the washing machine mechanism 20^a and on its lower side is adapted to mesh with the gears of the reversing mechanism as will now be described.

21 indicates a wringer of familiar construction, mounted on the top of the tub body. One of the rolls of the wringer has its shaft longitudinally extended and has keyed to it beyond the wringer frame a sprocket-wheel 22 which is in a vertical plane adjacent to the plane of the pinion. Located below the pinion 19 and in the vertical plane thereof are two intermeshing gears 23, 24, either of which is adapted to be brought into operative engagement with said pinion, the other gear being at the same time disengaged from said pinion. Said gears 23, 24, are journaled on suitable studs 23^a, 24^a, respectively, which are made rigid with an L-shaped rock-arm 25. A small sprocket-wheel 26, located in a plane parallel to the plane of the gears 23, 24, is made rigid with one of the gears 23, 24 and is mounted on the same stud-shaft, in this case the stud-shaft 24^a. Said sprocket-wheel is operatively connected by means of a sprocket-chain 27 with the sprocket-wheel 22 of the wringer.

The rock-arm 25 is fulcrumed on a bolt 28 secured to the lower end of the plate 28 and is adapted to be swung in a vertical plane to bring either one or the other of the gears 24, 23, into mesh with the pinion 19. As the gears 23 and 24 rotate in opposite directions, it is apparent that by bringing one or the other into mesh with the pinion 19 which is continuously driven by the motor in one direction, a rotative movement in either direction will be imparted to the small sprocket-wheel 26 and thence through the sprocket-chain 27 and the sprocket-wheel 22 to the rolls of the wringer.

In order that the sprocket-chain may not be slack when either of the gears 23 or 24 are in mesh with the pinion 19, on account of the change of position of the sprocket wheel 26, I so locate the fulcrum of the arm

25 that, when said arm is in such position that neither the gear 23 nor the gear 24 is in mesh with the pinion 19, that is to say, when it is in a neutral position, the fulcrum of the arm 25 and the centers of the two sprocket-wheels 26 and 22 are all in a straight line, as indicated by the broken line x in Fig. 1. This is the position of the rock-arm when the centers of the sprocket-wheels are nearest together. When the arm 25 is swung to bring either of the gears into engagement with the pinion 19, the center of the sprocket wheel 26 is swung to one side (as shown in full lines in Fig. 1) or to the other side (as shown in dotted lines in Fig. 1) of the straight line x connecting the fulcrum of the arm and the center of the large sprocket-wheel 22 and as the distance between the center of the sprocket-wheel 25 and the fulcrum 28 is constant, this movement increases the distance between the two sprocket-wheels, thus taking up any slack in the chain. Thus the only position in which the chain is slack is that in which the reversing gears are in inoperative or neutral position, when the fact that the chain is slack makes no difference.

To operate the rock-arm 25 and to lock it in either of its three positions, I provide the following mechanism: The arm 25 has an end part 25^a extended above the top of the tub. 29 indicates a short lever of the first class pivoted to the side of a block 30 secured to the top of the tub at a distance from the upper end part 25^a of the arm 23. Said lever is connected to said arm by means of a link 31. The parts are so proportioned and the distance of the pivotal connection of the arm 31 to the lever 29 from the fulcrum of the said lever is so spaced that when the lever 29 is swung in one direction beyond a dead center into contact with the tub top, the gear 24 is brought into operative engagement with the pinion 19 and when it is swung in the opposite direction beyond a dead center and into engagement with the tub top on the other side of its fulcrum, the gear 23 is brought into operative engagement with the pinion 19. Thus it is necessary to bring the arm 29 beyond the dead center in order to operatively engage either of the reversing gears with the driving pinion 19 and any further movement of the lever is stopped by striking the top of the tub, which acts to hold the gears in operative position. The lever has a curved handle 29^a for convenience in grasping it when in position on one side of its fulcrum, while on the other side it is so located that it projects beyond the tub top so that said tub top does not in this position interfere with its being grasped.

To lock the lever 29 in an intermediate neutral position the face of the block 30 is provided with an aperture or recess 32 adapted to be engaged by a spring controlled ball 33 located in a recess 34 in the adjacent face of the lever 29. Said ball comes to bear in the recess 32 when the lever is in the intermediate position and thus locks said lever in that position.

I claim as my invention—

1. In combination, a driving pinion continuously rotatable in one direction, a driven member rotatable in either direction, said driving pinion and driven member having axes of rotation that are spaced apart, a rock-arm fulcrumed to swing in a plane parallel to the plane of said driving pinion, two intermeshing reversing gears carried by said rock-arm, either of said gears being adapted to be brought into engagement with said driving pinion, the fulcrum of said rock-arm and the centers of the said reversing gears being arranged relative to the rotative axis of the driven member so that when said reversing gears are in neutral position, the fulcrum of said arm, the axis of rotation of said driven member and the center of one of said reversing gears are all in line, a member rotative with and coaxial with that reversing gear, and an endless flexible member operatively connecting the last-named rotative member with said driven member.

2. In combination, a driving pinion continuously rotatable in one direction, a driven shaft rotatable in either direction, said shaft being spaced from and being parallel to the axis of rotation of said driving pinion, a sprocket wheel fixed to said driven shaft, a rock-arm fulcrumed to swing in a plane parallel to the plane of said driving pinion, two intermeshing gears carried by said rock-arm either of which is adapted to be engaged with said pinion, the fulcrum of said rock-arm and the centers of the said reversing gears being arranged relative to the rotative axis of the driven shaft so that when said reversing gears are in a neutral position the said fulcrum, the center of the sprocket wheel on said driven shaft and the center of that reversing gear which is nearest to said sprocket wheel are in line, a second sprocket wheel rotative with the reversing gear nearest the said first-named sprocket wheel, and an endless sprocket chain connecting said two sprocket wheels.

3. In combination, a driving pinion continuously rotatable in one direction, a driving member rotatable in either direction, a rock-arm fulcrumed to swing in a plane parallel to the plane of said driving pinion, two intermeshing gears carried by said rock arm either of which is adapted to be engaged with said pinion, means operatively connecting one of said reversing gears with said driven member, an operating lever, a link connecting said operating lever with said rock-arm, means for pivotally supporting said operating lever, and a stop adapted to

be struck by said operating lever to arrest its movement after it has passed a dead center in bringing one or the other of said reversing gears into operative engagement with said pinion.

In testimony, that I claim the foregoing as my invention I affix my signature in the presence of two witnesses, this 16th day of September A. D. 1912.

JOHN G. SEELIG.

Witnesses:
CHAS. COWAN,
A. HARTER.