July 28, 1936. P. E. GELDHOF 2,049,056

HAND CONTROL WRINGER

Filed Jan. 3, 1930 2 Sheets-Sheet 1

Fig- 1

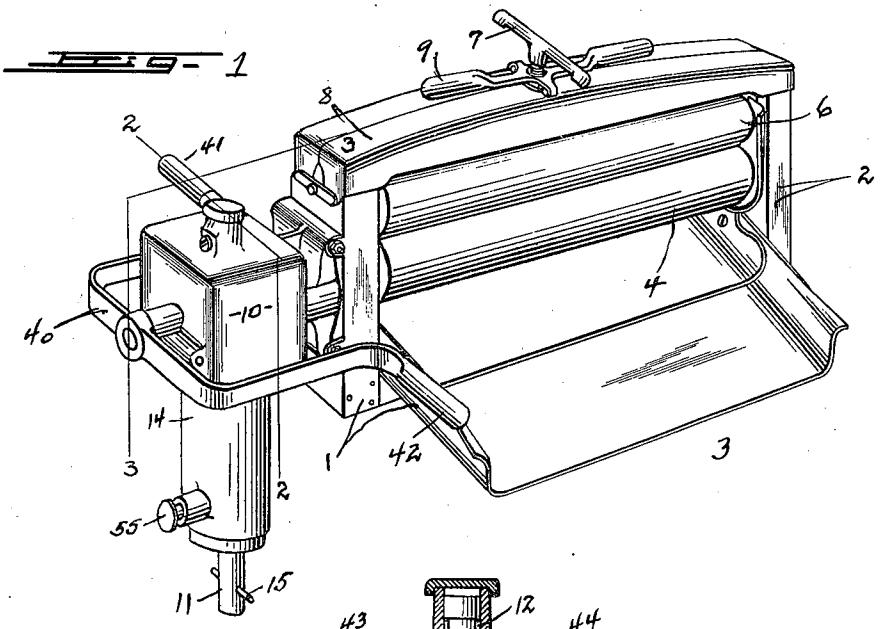
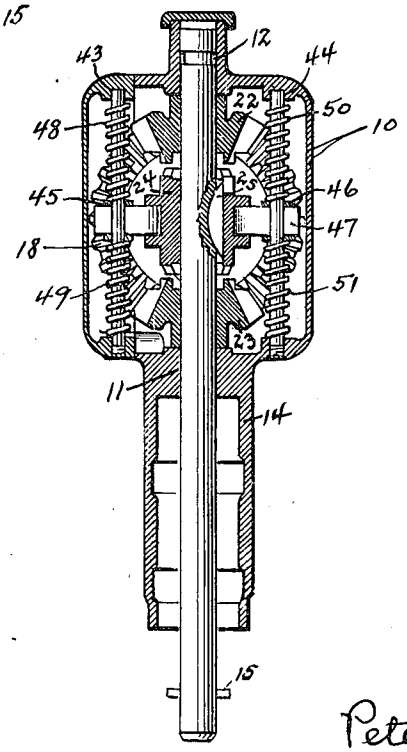


Fig- 2



Witness
K. L. Meade.

Peter E. Geldhof
Inventor

By
Denison & Thompson
Attorneys.

July 28, 1936. P. E. GELDHOF 2,049,056

HAND CONTROL WRINGER

Filed Jan. 3, 1930 2 Sheets-Sheet 2

Fig. 3

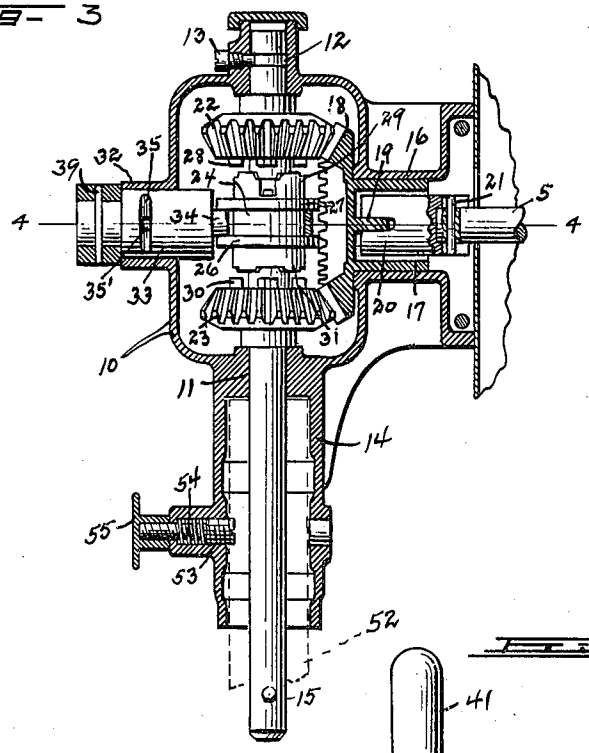


Fig. 5

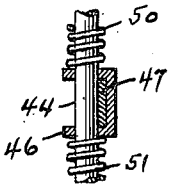
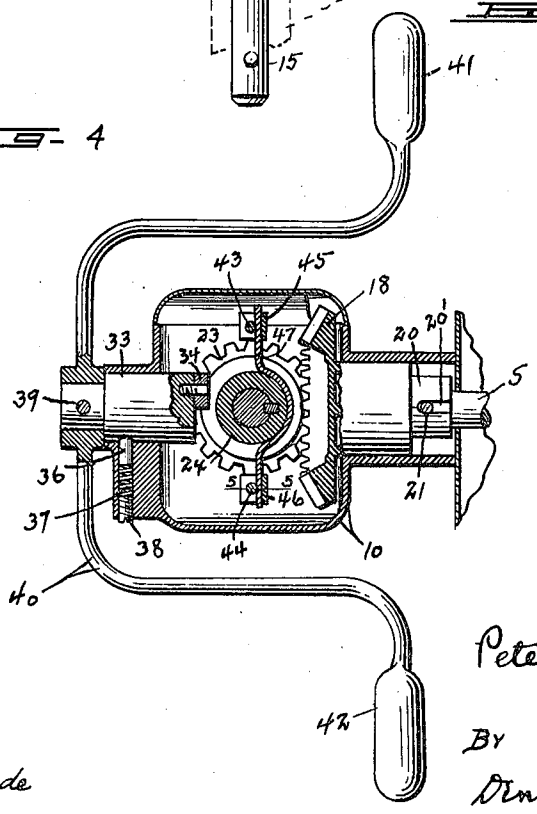


Fig. 4



Witness
K. L. Meade

Peter E. Geldhof
Inventor

By
Dinsmore & Thompson
Attorneys

Patented July 28, 1936 2,049,056

UNITED STATES PATENT OFFICE

2,049,056

HAND CONTROL WRINGER

Peter Eduard Geldhof, Syracuse, N. Y., assignor to Easy Washing Machine Corporation, Syracuse, N. Y., a corporation of Delaware

Application January 3, 1930, Serial No. 418,229

1 Claim. (Cl. 192—133)

This invention relates to a new and improved hand control wringer.

This invention is particularly well adapted to be used with power driven wringers which are used to extract moisture from clothes after they have been washed in a washing machine.

Wringers of this type are usually driven from the power plant of the washing machine itself and they are either permanently connected to the frame containing the washing machine apparatus or, which is preferable, are so constructed that they may if desired be removed bodily from the washing machine frame.

For the purpose of illustrating my invention, I have here shown a wringer of a type which is adapted to be bodily removed from the washing machine if desired and which is so constructed that it may be driven from a shaft supported on the washing machine.

The main object of my invention is to provide a means for controlling the movement of the rolls of the wringer while the same is connected to the driving mechanism on the washing machine.

Another object is to provide a convenient means whereby the direction of movement of the rolls of the washing movement may be changed as desired.

Other objects and advantages relate to the size, shape and arrangement of parts all as will more fully appear from the following description taken in connection with the accompanying drawings in which:—

Figure 1 is a perspective view of my improved wringer.

Figure 2 is a section on line 2—2 of Figure 1.

Figure 3 is a section on line 3—3 of Figure 1.

Figure 4 is a section on line 4—4 of Figure 3.

Figure 5 is a section on line 5—5 of Figure 4.

Inasmuch as my invention is particularly directed to the driving means and the control thereof for the rolls of a wringer it may be used in conjunction with any desired type of wringer but for the purpose of describing my invention, I have here shown a wringer 1 comprising a main frame 2 having on the lower opposite longitudinal edges thereof drip pans 3, one only being shown.

The lower roll 4 is journaled in the opposite ends of frame 2 and has a shaft 5 extending outwardly beyond one end of frame 2.

The upper roll 6 is, as is common practice, journaled in floating bearings, not shown, in frame 2 and there is provided the usual spring means for varying the pressure of roll 6 against roll 4. I have not here shown the spring itself but I have shown at 7 a member by means of which the tension of such spring is controlled.

A cover 8 is positioned above roll 6 and is divided into two halves each pivotally mounted on frame 2. The cover 8 is held in the normal closed position by means of a latch 9.

In case it is desired to suddenly release the pressure of roll 6 on roll 4 in case something is caught between the rolls, the latch 9 may be pivoted which will permit the two halves of cover 8 to move about their pivots away from each other to cause the tension on the spring to be released which in turn will permit roll 6 to move upwardly away from roll 4.

On one end of frame 2 is secured a gear housing 10. A vertical stub shaft 11 is rotatably mounted in gear casing 10. Shaft 11 is provided at its upper end with an annular groove 12 in which is seated the end of a screw 13 to secure shaft 11 against axial displacement.

The lower end of gear casing 10 carries a downwardly extending boss 14. Shaft 11 extends downwardly through tubular boss 14 and in spaced relation to the sides thereof and carries on its lower end a transverse pin 15 which is adapted to engage the upper end of a drive shaft not shown.

On the side of casing 10 adjacent frame 2 is provided a tubular extension 16. Extension 16 functions as a bearing for the hub 17 of a bevel gear 18 which is positioned in casing 10.

The hub 17 of gear 18 is tubular in form and carries on its inner end a transverse tongue 19.

A coupling 20 has one end in engagement with tongue 19 and has its other end provided with a slot 20' in which is engaged a pin 21 carried on shaft 5 of roll 4.

A bevel gear 22 is rotatably mounted on shaft 11 at the upper end of casing 10 and in mesh with gear 18. Another bevel gear 23 is rotatably mounted in the lower end of casing 10 on shaft 11 and is also in mesh with gear 18.

Between gears 22 and 23 is provided a clutch member 24 which is slidably mounted on shaft 11 and which is secured against rotary movement relatively thereto by means of a key 25 seated in shaft 11 with its outer edge positioned in a slot in member 24.

Member 24 is provided with opposed spaced annular flanges 26 and 27.

The lower face of gear 22 is provided with a plurality of circumferentially spaced jaws 28 adapted to engage jaws 29 carried on the upper end of member 24.

Similarly, the upper face of gear 23 is provided with a pair of circumferentially spaced jaws 30 adapted to engage jaws 31 on the lower end of member 24.

The distance between gears 22 and 23 is such that member 24 may be held intermediate such gears and out of engagement with them. On the side of casing 10 opposite the tubular boss 16 is provided a second tubular boss 32 which functions as a bearing for a shaft 33.

The inner end of shaft 33 carries an eccentrically positioned cam 34 which is positioned between the flanges 26 and 27 so that the rotation of shaft 33 will cause cam 34 to move member 24 upwardly to bring jaws 29 into engagement with jaws 28 or to move member 24 downwardly to bring jaws 31 into engagement with jaws 30 depending upon the direction of rotation of shaft 33.

For the purpose of securing shaft 33 against axial displacement, I provide in such shaft 33 a slot 35 in which is seated a pin 36 slidably mounted in casing 10.

A spring 37 interposed between pin 36 and a threaded plug 38 urges pin 36 into registration with the slot 35.

In the center of slot 35 is provided a recess 35'. When pin 36 is in registration with recess 35' shaft 33 will be held in a fixed position.

The position of recess 35' is such that when pin 36 is in registration with it, the position of shaft 33 and cam 34 will be such that member 24 will be held in the intermediate position between gears 22 and 23.

On the outer end of shaft 33 and secured thereto as by a pin 39 is secured a yoke 40 having opposed outwardly extending ends 41 and 42 to provide a convenient means of rotating shaft 33 in the direction desired to bring member 24 into engagement with either gear 22 or gear 23.

For the purpose of maintaining member 24 normally in a position where it is out of engagement with both gears 22 and 23, I provide in opposite sides of casing 10 vertically extending shafts 43 and 44.

A yoke 45 is slidably mounted on shaft 43 and a similar yoke 46 is slidably mounted on shaft 44.

A U-shaped strap 47 has its central portion between flanges 26 and 27 and has one end extending outwardly through yoke 45 and has its other end extending outwardly through yoke 46.

On one end of shaft 43 is positioned a spiral spring 48 having one end abutting against the upper end of casing 10 and having the other end abutting against the upper end of yoke 45.

A similar spring 49 of the same tension as spring 48 is positioned on the lower end of shaft 48 with one end abutting against the bottom end of casing 10 and with the other end abutting against the lower end of yoke 45 so that the opposed springs 48 and 49 exerting equal pressure against the opposed ends of yoke 45 will normally hold such yoke 45 and one end of strap 47 in a position midway between the upper and lower ends of casing 10 with member 24 out of engagement with gears 22 and 23.

Shaft 44 is similarly provided on its upper end with a spring 50 which has its upper end abutting against the upper end of casing 10 and has its lower end abutting against the upper end of yoke 46, and carries on its lower end a spring 51 of equal tension with spring 50.

Spring 51 has its lower end abutting against the lower end of casing 10 and has its upper end abutting against the lower end of yoke 46.

The action of springs 50 and 51 supplements the action of springs 48 and 49 to normally hold strap 47 in a position midway between the upper and lower ends of casing 10. When shaft 33 is rotated member 24 will be moved axially against the action of springs 48 and 50 or against the action of springs 49 and 51 depending upon the direction of rotation of shaft 33.

When it is desired to use the wringer mechanism, it is placed in position on a supporting tubular post member 52 indicated in dotted lines on Figure 3 which is secured to the washing machine frame and houses a shaft, not shown, which is adapted to engage pin 15 on shaft 11 to transmit rotary motion to shaft 11.

For the purpose of releasably securing the wringer mechanism in position on post 52, I provide in boss 14 a plunger 53 adapted to be urged by a spring 54 into a selected one of a plurality of apertures, not shown, in post 52.

For the purpose of providing a convenient means for retracting plunger 53 so that the wringer mechanism may be removed from post 52, I provide on the outer end of plunger 53 a button 55.

When the wringer mechanism is in position on post 52 with the pin 15 in engagement with the drive shaft, not shown, shaft 11 will be continuously rotated.

With the member 24 in the normal intermediate position out of engagement with gears 22 and 23, the rotary movement of shaft 11 will not be transmitted to the roll 4 because of the fact that the gears 22 and 23 are rotatably mounted on the shaft 11.

When it is desired to rotate the roll 4 in one direction, one end of yoke 40 is moved downwardly as for example the end 41.

This movement of yoke 40 will cause shaft 33 to be rotated and this, in turn, will cause cam 34 to carry member 24 downwardly to bring jaws 31 into engagement with jaws 30 on gear 23.

When this movement has been accomplished gear 23 will be locked to member 24 and inasmuch as member 24 is keyed to shaft 11, the rotary movement of shaft 11 will be transmitted to gear 23.

Gear 23 being in mesh with gear 18 which in turn is coupled to shaft 5, rotary motion will be communicated to gear 18 and thus to shaft 5 to cause the rotary movement of roll 4.

When the end 41 of yoke 40 is released the springs 49 and 51 will cause the strap 47 to move upwardly carrying with it member 24 to the intermediate position out of engagement with gear 23 and roll 4 will then come to rest.

When it is desired to rotate roll 4 in the opposite direction the end 42 of yoke 40 is pressed downwardly and this movement through the rotary movement of shaft 33 will cause cam 34 to carry member 24 upwardly to bring jaws 29 into engagement with jaws 28 on gear 22.

Member 24 and gear 22 then being locked together, and member 24 being keyed to shaft 11, the rotary movement of shaft 11 will be transmitted to gear 22.

Gear 22 being in mesh with gear 18 which is coupled to shaft 5, this rotary movement will be transmitted to roll 4.

When yoke 40 is released springs 48 and 50 will cause strap 47 to move downwardly carrying with it member 24 to move the same out of engagement with gear 22 and roll 4 will come to rest.

Gears 22 and 23 having their teeth in opposed relation in mesh with gear 18, the rotary movement transmitted to gear 18 from gear 23 will

cause gear 18 to be rotated in one direction while the rotary movement transmitted to gear 18 from gear 22 will cause gear 18 to be rotated in the opposite direction.

The driving and control mechanism here disclosed provide a very convenient and much improved method of operating a wringer mechanism because the movement of the rolls and their direction of movement is under instantaneous control of the operator and that being the case insertion of clothes between the rolls of the wringer is very much facilitated and it is much easier to send such clothes through the wringer in the proper shape to obtain the maximum wringing effect from the operation.

Although I have shown my driving and control mechanism in conjunction with a particular type of wringer mechanism, it will be obvious that my invention may be used with any type of wringer mechanism in which a rotary roll is employed.

It will also be obvious that my drive and control mechanism is adapted to be used with other devices besides wringer mechanism where such devices are provided with rolls the rotary movement of which and the direction of movement of which it is desired to have under instantaneous and convenient control of the operator.

In describing my device I have shown a particular arrangement and association of parts and particular shapes and designs of parts but it will be understood that considerable changes may be made in the size, shape and arrangement of parts without departing from the spirit of my invention, for although I have shown and described a specific structure and form of part as an exemplification of an embodiment of my invention, I do not desire to restrict myself to the exact size, shape or relation of parts as various changes may be made within the scope of the appended claim.

I claim:

In a machine for wringing clothes, the combination with a pair of rotatable rolls, of a driving mechanism therefor comprising a drive shaft, a clutch member slidably mounted thereon, a pair of gears rotatably mounted on said shaft and operably connected with said rolls, each of said gears having a driven clutch element associated therewith for rotating said rolls when said clutch member is moved into contact therewith, a pair of oppositely acting springs on each side of said clutch member operably connected therewith for normally maintaining said clutch member out of engagement with said driven clutch elements and a manually operable control element for engaging said clutch member with either of said driven clutch elements for rotating said rolls in either direction, said control element including a pair of opposed arms extending on opposite sides of said rolls and terminating in gripping handles adjacent one end of said rolls so as to be in a convenient position for operation on either side of the machine, said springs serving to automatically restore said clutch member to a position out of engaging relations with said clutch elements when manual contact with said gripping handles is released.

PETER EDUARD GELDHOF.