May 21, 1929. W. G. BEATTY 1,713,686

WRINGER

Filed March 24, 1928 2 Sheets-Sheet 1.

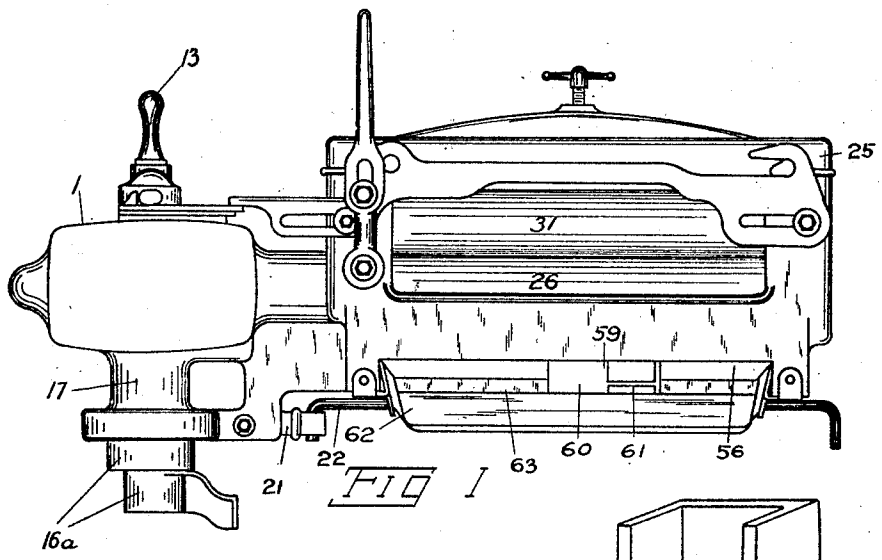


FIG 1

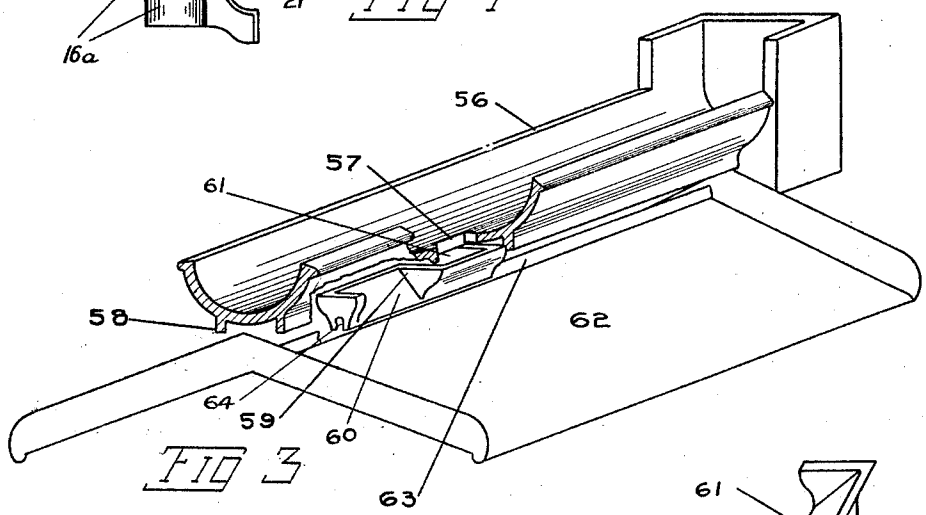


FIG 3

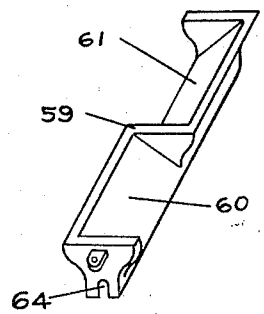


FIG 4

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WRINGER

Filed March 24, 1928 2 Sheets-Sheet 2

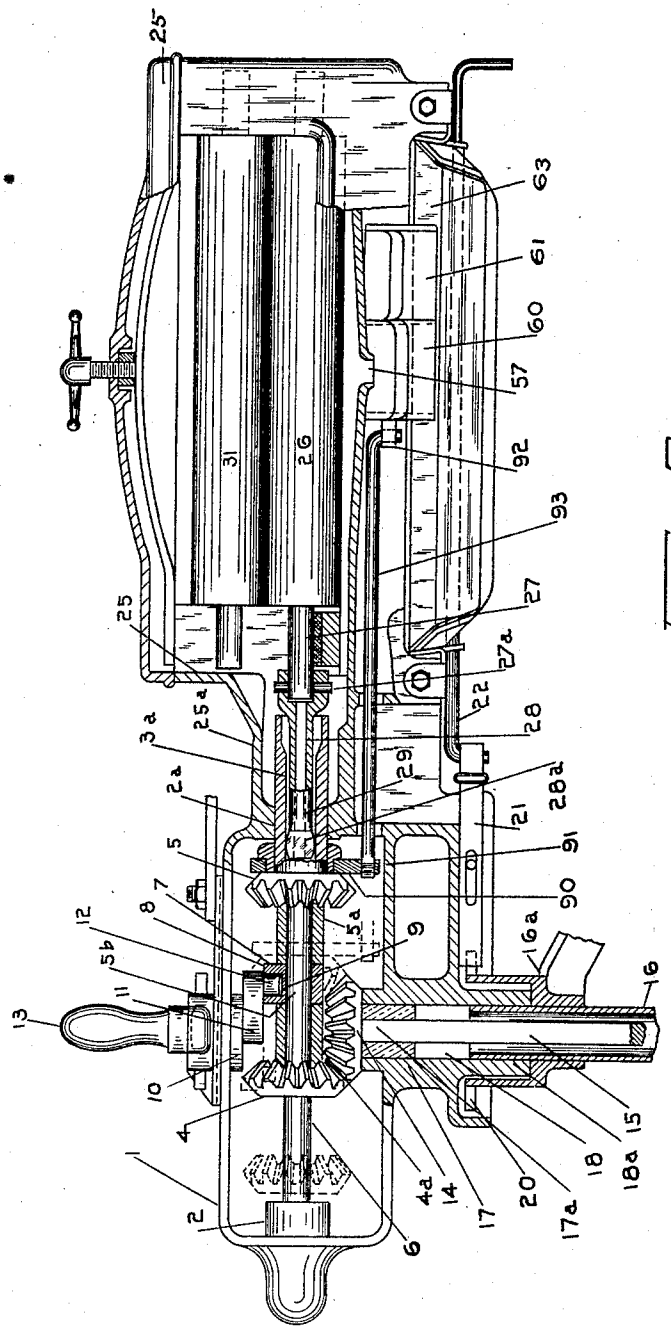


FIG 2

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Patented May 21, 1929. 1,713,686

UNITED STATES PATENT OFFICE.

WILLIAM GEORGE BEATTY, OF FERGUS, ONTARIO, CANADA.

WRINGER.

Application filed March 24, 1928. Serial No. 264,468.

According to my invention the wringer frame is constructed or provided with a trough located below the wringer rolls and extending lengthwise of them. This trough may be either an integral part of the wringer frame or a separate unit fastened to it and has a drainage orifice through which the water is discharged. Beneath the trough is an adjustable spout movable lengthwise of the rolls and this spout has two water chutes set in opposite directions for delivering the discharge from the orifice at opposite sides of the wringer. The wringer rolls are operated by a power mechanism so constructed and controlled that the rolls can be selectively rotated in a forward or reverse direction and the stoppage of the rolls and the direction of their rotation can be controlled at will, and the spout is adjusted by the power mechanism to automatically position one of the water chutes below the drainage orifice for delivering the discharge to that side of the wringer corresponding with the rotation of the wringer rolls.

A suitable power mechanism for this purpose comprises an axially adjustable driven shaft which has a slidable connection with one of the wringer rolls and two driven gear wheels which are fixed on the shaft and adjustable with it. When the driven shaft is moved to either limit of its axial adjustment the corresponding gear wheel is brought into mesh with the driving gear wheel for the rotation of the driven shaft and wringer rolls, and when the driven shaft is moved to a position intermediate the limits of its axial adjustment both of the driven gear wheels are out of mesh with the driving gear wheel for the stoppage of the rotation.

The power mechanism when operated to cause the rotation of the wringer rolls in either direction automatically adjusts the spot to bring the corresponding chute into position below the drainage orifice of the trough, for delivering the discharge to the respective side of the wringer and the power mechanism when operated to reverse the rotation of the rolls automatically adjusts the spot to bring the other water chute into position, with the drainage orifice for delivering the discharge to the other side of the wringer.

In a power mechanism such as above described the spout may be connected with one of the driving gear wheels or with the shaft and moves simultaneously with them during the axial adjustment so that when either of the driven gear wheels is brought into mesh with the driving gear wheel the corresponding water chute will be automatically moved into position beneath the orifice.

The power mechanism is mounted in a driving head which may be turned or swung to any one of a plurality of positions and is maintained in its set position by a lock which can be operated from either end of the wringer. The wringer frame may be an integral part of the driving head or may be bolted or otherwise rigidly fastened to it and is adjusted by the turning or swinging movement of the driving head to suit any arrangement of tubs or other vessels.

For an understanding of the invention reference is to be had to the following description and to the accompanying drawings, in which:

Fig. 1 is a front elevation of the wringer,

Fig. 2 is a longitudinal vertical section of the wringer on a larger scale than Fig. 1,

Fig. 3 is a fragmentary perspective view of the wringer shown in Figs. 1 and 2, and

Fig. 4 is a perspective view of the spout.

Like numerals of reference refer to like parts throughout the specification and drawings.

The driving head 1 comprises a housing substantially rectangular in cross-section and of a length greater than its depth or width, and this housing is constructed with two horizontally arranged bearings 2, 2^a the axes of which are alined lengthwise of the housing. Within and extending lengthwise of the housing is the driven shaft 6, one end of which is slidably journalled in the bearing 2. Two spaced and inwardly facing gear wheels 4 and 5 are keyed or otherwise fastened to the shaft 6. The gear wheel 4 has an inwardly projecting hub 4^a, and the gear wheel 5 has an inwardly projecting hub 5^a, surrounding the shaft, and these hubs are separated by an intervening space 5^b. The gear wheel 5 has also an outwardly projecting hub 3^a surrounding the shaft 6 and this hub 3^a forms a journal for the shaft and is slidably and rotatably mounted in the bearing 2^a. Loosely encircling the shaft, between the hubs 4^a, 5^a, is a gear shift member 7, the lateral dimensions of which are such as to fill the space between and engage the hubs, and extending horizontally from the gear shift member 7 is a link 8. Vertically journalled in the driving head 1

above the link 8 is a mandrel 10 and eccentrically fixed to the mandrel is a disc 11. Extending from the disc 11 is an eccentric pin 12 entered in the link 8, and at the upper end of the mandrel 10 is the gear shift lever 13 for rotating the mandrel, eccentric disc and pin. The rotation of the disc 11 and pin 12 moves the gear shift member 7 and shaft axially and this axial movement of the shaft to the limit of its adjustment in one direction brings the gear wheel 4 into, and the gear wheel 5 out of, mesh with the driving gear wheel 14, and the movement of the shaft 6 axially to the limit of its adjustment in the opposite direction brings the gear wheel 5 into, and the gear wheel 4 out of, mesh with the driving gear wheel 14, and the adjustment of the shaft 6 axially to a position intermediate its limits of adjustment brings both gear wheels 4 and 5 out of mesh with the driving gear wheel. The gear wheel 14 has an arbor 17 formed with an axial socket 17^a substantially rectangular in cross-section and this arbor is entered through an aperture 18 in the bottom of the housing to receive the upper end of the driving shaft 15. The driving shaft is entered in the rectangular socket 17^a and causes the rotation of the driving gear wheel 14 during the revolution of the shaft. Surrounding the aperture 18 on the outer side of the bottom of the driving head is a boss 18^a entered in a cup-shaped bracket or bearing 16^a for the rotatable adjustment of the driving head. The driving shaft 15 is enclosed by a tubular casing 16, the upper end of which is pressed through the bracket or bearing 16^a into the bore of the boss 18^a and forms a journal around which the driving head rotates. The bottom of the boss 18^a and the bottom of the bracket or bearing 16^a are faced and contact each other, but the cylindrical wall of the bracket or bearing and the cylindrical wall of the boss do not contact and therefore it is not necessary to face them. The bottom of the bracket 16^a thus forms a thrust bearing for the boss and rotatably supports the driving head and those parts connected to it. In the bracket or bearing 16^a are a plurality of radially arranged notches 20 and slidably connected to the under side of the driving head is a locking bolt 21. The entry of the locking bolt into any one of the notches effectively secures the driving head in its selected rotatable adjustment. A rod 22 is connected to the locking bolt 21 for its actuation and this rod extends from the locking bolt to the opposite side of the wringer for releasing the locking bolt 21 from the notch when the driving head is to be rotated from one position to another. The wringer roll 26 is journalled in the frame 25 at or near the bottom of the wringer, and the shaft 27 of the wringer roll 26 extends through the frame 25 into the housing 25^a, forming part of or connected to the driving head. A coupling member 28 is connected by an universal joint 27^a to the shaft 27 and this member 28 extends from the shaft 27 into the hub 3^a. The coupling member 28 has a clutch 28^a and the hub 3^a has a bore 29 of corresponding cross-sectional shape and dimensions to the clutch 28^a, to engage it and turn the coupling member 28. The clutch 28^a is entered in and slides lengthwise of the bore of the hub 3^a the length of which is greater than the maximum axial movement of the gear wheels 4 and 5 between the limits of the adjustment of the shaft 6. The rotation of the hub 3^a causes the rotation of the coupling member 28, shaft 27 and wringer roll 26 when the driven shaft 6 revolves. When the gear wheel 4 is in mesh with the gear wheel 14, as shown in full lines in Fig. 2, the gear wheel 5 is out of mesh with it, as shown in full lines in the same figure, and motion is then transmitted from the gear wheels 14 and 4 and shaft 6 to the wringer roll 26 by means of the coupling member 28. During this adjustment of the gear wheels 4 and 5 the clutch 28^a is fully entered in the bore 29 of the hub 3^a. When the gear wheels 4 and 5 are adjusted to bring the gear wheel 5 into mesh with the gear wheel 14 and the gear wheel 4 out of mesh with it, the rotation of the wringer is reversed, and during this adjustment the gear wheels 4 and 5 move in an axial direction away from the wringer. The hub 3^a being an integral part of the gear wheel 5 is adjusted with it and when the gear wheels have reached the limit of their adjustment the clutch 28^a is near the outer end of the bore 29 but still in it. When both the gear wheels 4 and 5 are out of mesh with the gear wheel 14 the clutch 28^a is about midway between the ends of the bore.

Below the wringer rolls 26 and 31 and extending lengthwise of them is a trough 56 which may be an integral part of the wringer frame or may be a separate unit and bolted to it, and centrally formed through the trough is a discharge aperture 57. The under side of the trough is formed with a slideway 58 and beneath the trough and movable lengthwise of the slideway is an adjustable spout 59. This spout 59 has two separated and oppositely inclined water chutes 60, 61 which receive the discharge from the orifice 57, and beneath the spout 59 is a double inclined tray or table 62 extending beyond each side of the wringer. On the ridge of the tray or table 62 is a vertical fin 63 which enters a groove 64 in the under side of the spout 59 and assists the slideway 58 in maintaining the movement of the spout in a fixed path as the water chutes 60, and 61 are selectively brought into discharge relation with the orifice or aperture 57.

The water chutes 60 and 61 discharge in opposite directions and one chute directs the water to one side of the wringer and the corresponding surface of the tray or table 62 and the other chute directs it to the other side of the wringer and the other surface of the tray or table. When the wringer rolls are revolving in one direction the water chute 60 is brought into position below the discharge orifice and when the wringer rolls are revolving in the opposite direction the other water chute 61 is brought into position below it.

The hub 3ª of the gear wheel 5 is encircled by a loose ring 90 having an apertured lug 91, and the spout is formed with an apertured lug 92. Entered in the apertured lugs 91 and 92 is a connecting rod 93 which couples the spout to the ring 90 and during the adjustment of the driving mechanism to bring the gear wheel 4 into mesh with the gear wheel 14, automatically moves the spout to position the chute 60 below the drainage orifice 57 and during the adjustment of the driving mechanism to bring the gear wheel 5 into mesh with the gear wheel 14, moves the spout to position the chute 61 below the drainage orifice 57.

The specific mechanism above described is merely explanatory of one mechanical device by which the wringer may be operated and it is not intended that the invention should be confined to that particular construction, as other combinations and structural arrangements of mechanical parts may be employed both in the operation of the wringer rolls and the spout.

Having thus fully described my invention what I claim as new and desire to secure by Letters Patent is:

1. A wringer comprising a wringer frame, wringer rolls therein, a drainage orifice in the bottom of the frame, an adjustable spout below the wringer having two water chutes set in oposite directions for delivering the discharge from the orifice at either selected side of the wringer, and movable lengthwise of the rolls to bring either chute into operative relation with the orifice, a power mechanism for operating the wringer rolls and selectively rotating them in a forward or reverse direction, and means actuated by the power mechanism for adjusting the spout to bring the chute corresponding to the direction of rotation into position below the drainage orifice of the trough.

2. A wringer comprising a wringer frame, wringer rolls therein, a drainage orifice in the bottom of the frame, an adjustable spout beneath the frame movable lengthwise of the rolls and having two water chutes set in opposite directions, either of which may, by said lengthwise adjustment of the spout, be moved into operative relation with the orifice for delivering the discharge from the orifice at either selected side of the wringer, a power mechanism for operating the wringer rolls and selectively rotating them in a forward or reverse direction, and means actuated by the power mechanism for adjusting the spout to bring the chute corresponding to the direction of rotation into position below the drainage orifice of the trough.

3. A wringer comprising a wringer frame, wringer rolls therein, a trough beneath and extending lengthwise of the rolls, a discharge orifice for the trough, an adjustable spout below the trough having two water chutes set in opposite directions and movable lengthwise of the rolls to bring either chute into operative relation with the discharge orifice for delivering the discharge from the orifice at either selected side of the wringer, a power mechanism for operating the wringer rolls and selectively rotating them in a forward or reverse direction, and means actuated by the power mechanism for adjusting the spout to bring the chute corresponding to the direction of rotation into position below the drainage orifice of the trough.

4. A wringer comprising a wringer frame, wringer rolls therein, a trough beneath and extending lengthwise of the rolls, a discharge orifice for the trough, a spout below the trough and movable lengthwise of the rolls having two separate water chutes set in opposite directions, either of which may be moved into operative relation with the orifice for delivering the discharge from the trough at either selected side of the wringer, a power mechanism for operating the wringer rolls and selectively rotating them in a forward or reverse direction, and means actuated by the power mechanism for adjusting the spout to bring the chute corresponding to the direction of rotation into position below the drainage orifice of the trough.

5. A wringer comprising a wringer frame, wringer rolls therein, a trough, beneath and extending lengthwise of the rolls, a discharge orifice for the trough, an adjustable spout below the trough, having two separate water chutes set in opposite directions, movable lengthwise of the wringer rolls, either of which may by said adjustment of the spout be moved into operative relation with the orifice for delivering the discharge from the trough at either selected side of the wringer, a power mechanism for operating the wringer rolls and selectively rotating them in a forward or reverse direction, and means actuated by the power mechanism for adjusting the spout to bring the chute corresponding to the direction of rotation into position below the drainage orifice of the trough.

6. A wringer comprising a wringer frame, wringer rolls therein, a trough, beneath and extending lengthwise of the rolls, a dis-

charge orifice for the trough interjacent its ends, an adjustable spout below the trough, having two separate water chutes set in opposite directions, said spout being movable lengthwise of the wringer rolls for bringing either of the water chutes into discharge relation with the orifice, a power mechanism for operating the wringer rolls and selectively rotating them in a forward or reverse direction, and means actuated by the power mechanism for adjusting the spout to bring the chute corresponding to the direction of rotation into position below the drainage orifice of the trough.

7. A wringer comprising a wringer frame, wringer rolls therein, a trough beneath and extending lengthwise of the rolls, a discharge orifice for the trough, an adjustable spout below the trough having two separate water chutes set in opposite directions which by selective adjustment delivers the discharge from the orifice at either selected side of the wringer, said spout being movable lengthwise of the rolls to bring either chute into operative relation with the orifice, a double inclined drainboard with its ridge beneath the trough for receiving the discharge from the spout, a power mechanism for operating the wringer rolls and selectively rotating them in a forward or reverse direction, and means actuated by the power mechanism for adjusting the spout to bring the chute corresponding to the direction of rotation into position below the drainage orifice of the trough.

8. A wringer comprising a wringer frame, wringer rolls therein, a trough beneath and extending lengthwise of the rolls, a discharge orifice for the trough, an adjustable spout below the trough having two separate water chutes set in opposite directions either of which may, by the adjustment of the spout be moved into operative relation with the orifice for delivering the discharge at either selected side of the wringer, said spout being movable lengthwise of the wringer rolls to bring either chute into operative relation with the orifice, a double inclined drainboard with its ridge beneath the trough for receiving the discharge from the spout, a power mechanism for operating the wringer rolls and selectively rotating them in a forward or reverse direction, and means actuated by the power mechanism for adjusting the spout to bring the chute corresponding to the direction of rotation into position below the drainage orifice of the trough.

9. A wringer comprising a wringer frame, wringer rolls therein, a trough, beneath and extending lengthwise of the rolls, a discharge orifice for the trough, an adjustable spout below the trough having two separate water chutes set in opposite directions, either of which may, by the adjustmeent of the spout, be moved into operative relation with the orifice for delivering the discharge at either selected side of the wringer, said spout being movable lengthwise of the wringer rolls to bring either chute into operative relation with the orifice, a double inclined drainboard with its ridge beneath the trough for receiving the discharge from the spout, a power mechanism for operating the wringer rolls and selectively rotating them in a forward or reverse direction, and means actuated by the power mechanism for adjusting the spout to bring the chute corresponding to the direction of rotation into position below the drainage orifice of the trough.

10. A wringer comprising a wringer frame, wringer rolls therein, a trough, beneath and extending lengthwise of the rolls, a discharge orifice for the trough interjacent its ends, an adjustable spout below the trough, having two separate water chutes set in opposite directions either of which may, by the adjustment of the spout, be moved into operative relation with the orifice for delivering the discharge at either selected side of the wringer, said spout being movable lengthwise of the wringer rolls for bringing either of the waterways into discharge relation with the orifice, a double inclined drainboard with its ridge beneath the trough for receiving the discharge from the spout, a power mechanism for operating the wringer rolls and selectively rotating them in a forward or reverse direction, and means actuated by the power mechanism for adjusting the spout to bring the chute corresponding to the direction of rotation into position below the drainage orifice of the trough.

Dated at the town of Fergus, in the county of Wellington, and Province of Ontario, Dominion of Canada, this 25th day of May, 1927.

WILLIAM GEORGE BEATTY.