F. W. WAPPAT.

WRINGER ATTACHMENT FOR WASHING MACHINES.

APPLICATION FILED FEB. 5, 1915.

1,217,540. Patented Feb. 27, 1917.

2 SHEETS—SHEET 1.

FIG. 2

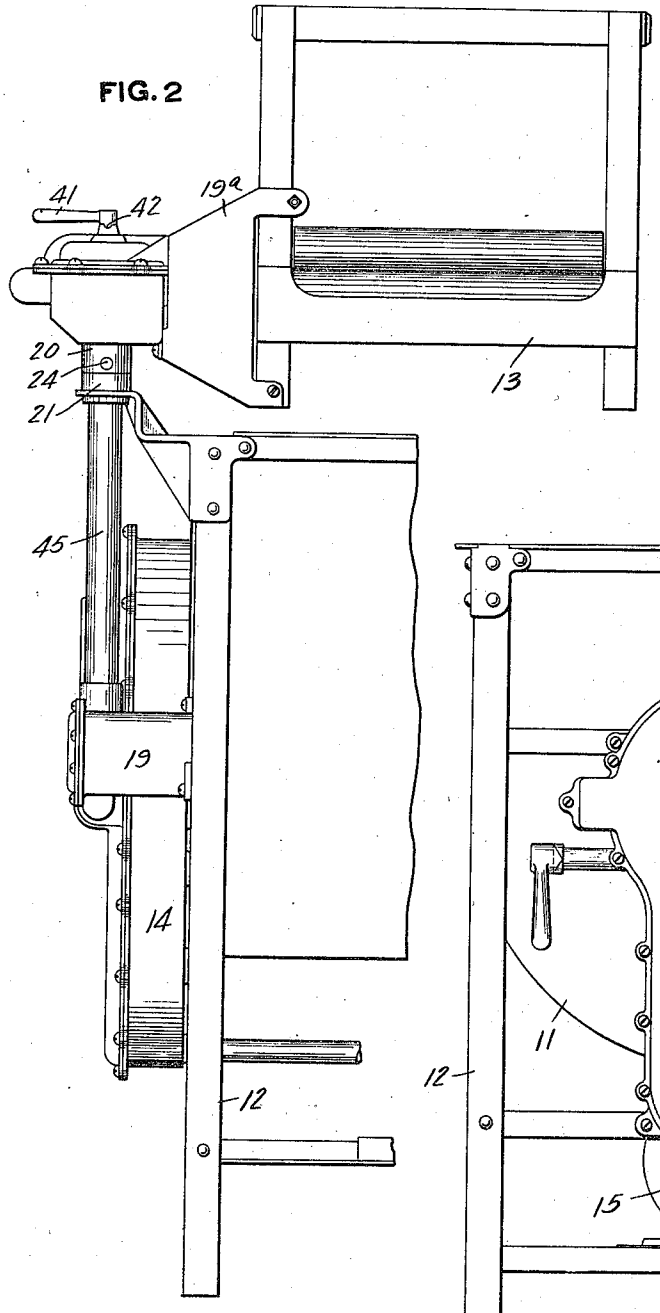
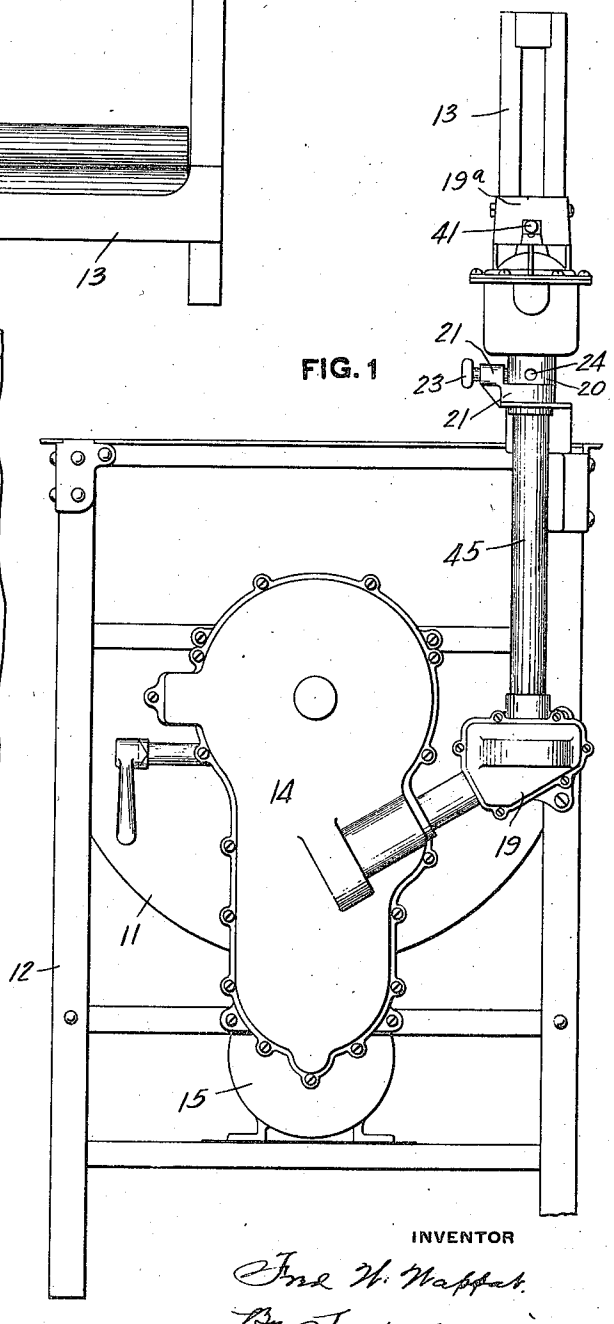


FIG. 1



WITNESSES

C. F. Holman

Elbert L. Hyde.

INVENTOR

Fred W. Wappat.

By Frick W. Munn,

Attorney.

F. W. WAPPAT.

WRINGER ATTACHMENT FOR WASHING MACHINES.

APPLICATION FILED FEB. 5, 1915.

1,217,540.

Patented Feb. 27, 1917.

2 SHEETS—SHEET 2.

FIG. 5

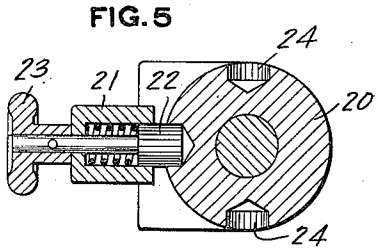


FIG. 4

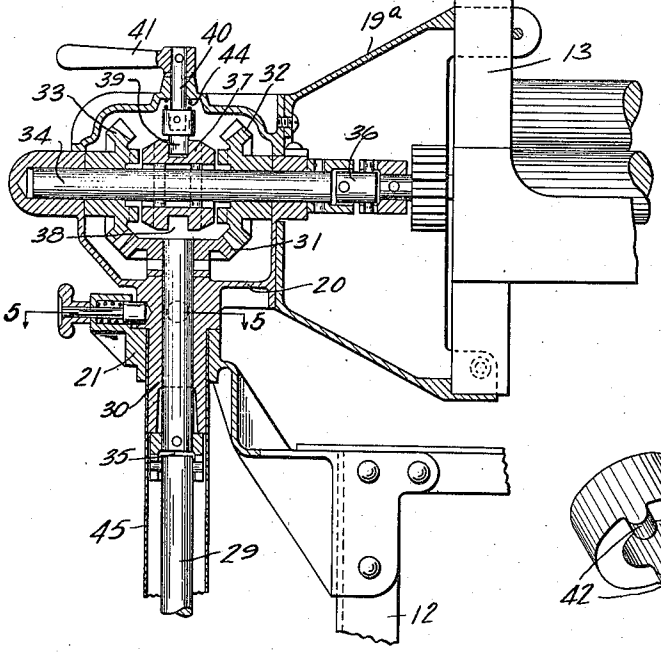


FIG. 6

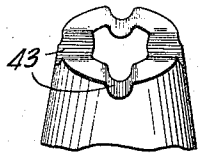


FIG. 7

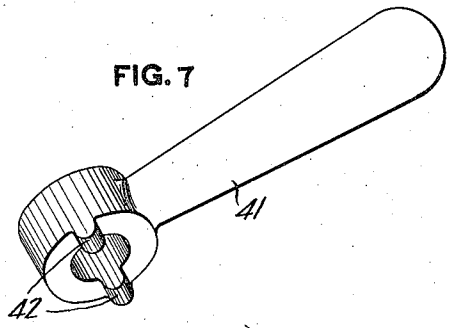


FIG. 8

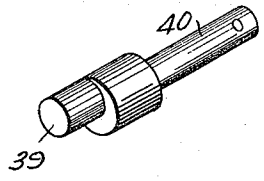


FIG. 3

WITNESSES

W. T. Holman

Elbert L. Byde.

INVENTOR

Fred W. Wappat.

By Frank W. Mines.

Attorney.

UNITED STATES PATENT OFFICE.

FRED W. WAPPAT, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO PITTSBURGH GAGE AND SUPPLY COMPANY, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

WRINGER ATTACHMENT FOR WASHING-MACHINES.

1,217,540. Specification of Letters Patent. Patented Feb. 27, 1917.

Original application filed February 5, 1915, Serial No. 6,331. Divided and this application filed February 5, 1915. Serial No. 6,330.

To all whom it may concern:

Be it known that I, FRED W. WAPPAT, a resident of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Wringer Attachments for Washing-Machines, of which the following is a specification.

This invention relates to washing machines and particularly to a swinging wringer and driving mechanism therefor. The object of the invention is to provide a swinging wringer and driving mechanism therefor which can be readily embodied in any washing machine, and particularly motor driven machines, which is of simple construction, is positive in its action and is very simple to operate, in which, further, the swinging wringer frame may be readily disconnected from the washing machine and is capable of being turned about a vertical axis without affecting its driving connections, so that it can be operated in various positions of the wringer, either over the washing machine frame or to one side thereof. A further object of the invention is to provide swinging wringer mechanism of the class described embodying a reversing mechanism for rotating the wringer rolls selectively in either direction and for positively locking the swinging wringer frame in any desired position. A further object of the invention is to provide a construction of this kind in which the swinging wringer frame is very solidly mounted upon the washing machine but is nevertheless capable of being easily turned about its vertical axis.

The invention comprises the construction and arrangement of parts hereinafter described and claimed.

In the drawings, Figure 1 is an end view of a washing machine embodying the invention; Fig. 2 is a front view, on a larger scale, part of the frame being omitted; Fig. 3 is a detail view of the connection between the drum driving and wringer driving mechanisms; Fig. 4 is a sectional elevation of the wringer driving and reversing mechanism; Fig. 5 is a cross section on the line 5—5, Fig. 4; and Figs. 6, 7 and 8 are detail perspective views of the clutch controlling devices.

In the drawings, the body or tub of the washing machine is indicated at 11, one of the end frames is shown at 12, the swinging wringer is indicated at 13, and the housing or casing for inclosing the agitator driving and reversing mechanism is indicated at 14. These parts may be varied within wide limits, as the features of the invention are directed more particularly to the driving and reversing mechanism for the wringer, its connection to the agitator driving mechanism and the support for the wringer carrying frame.

The machine is driven by any suitable means, such as the electric motor 15 supported beneath the frame and having its armature shaft connected to the first one of a train of speed reducing gears inclosed within the casing 14 and which gears include suitable automatically operated reversing mechanism for rotating the agitator shaft of the machine. This mechanism is not shown in detail but may, for example, be of the same construction and arrangement as shown, described and claimed in my co-pending application for reversing mechanism, filed of even date herewith, Serial No. 6,331, of which this application is a division. From the train of gears referred to a diagonal shaft extends upwardly at one side of the casing and terminates in a bevel gear 16 meshing with another bevel gear 17 pinned to a vertical stub shaft 18, these gears and shafts being inclosed within a supplemental casing 19 carried by the machine frame.

The wringer 13 is bolted or otherwise secured to a casting 19^a which in turn is secured to a head 20, which is swiveled upon a vertical axis in the casting or bearing member 21 secured to the machine frame and lying directly above the casing 19 before referred to, so that said wringer can be swung into operative position over the tub or out of that position so as to be out of the way. As shown, this wringer is adapted to be locked in three different positions, one position over the tub, one position 90 degrees therefrom, and a third position at 180 degrees therefrom. This is secured by means of a spring pressed plunger 22 mounted in the bearing member 21 and provided at its outer end with a pulling member or head 23, and whose inner end is adapted to engage any one of three sockets or depressions 24 in the head 20. In order to swing the wringer to

these several positions it is merely necessary to pull the spring plunger 22 outwardly and move the wringer to the desired position and allow the spring plunger to engage the proper depression in the head 20. This can be very easily effected and is very much easier on the operator than in prior machines employing swinging wringers in which the wringer must be lifted in order to unlock it from one position to permit it to be swung to another position. The old arrangement requires the expenditure of considerable force because these wringers are quite heavy. This is avoided in the arrangement shown, but nevertheless the wringer is effectively locked in any one of three positions.

The driving mechanism for the wringer is as follows:—The stub shaft 18 at its upper end is connected by a transverse pin 25 to a sleeve 26, the latter being provided with open slots 27 at right angles to the pin 25, and which are engaged by a transverse pin 28 in the lower end of shaft member 29, whose upper end is journaled in bearing 30 in the head 20, and has secured to its extreme upper end a bevel gear 31 meshing with two oppositely facing bevel gears 32 and 33, both loose upon wringer driving shaft 34 journaled in the upper portion of head 20. The vertical shaft 29 is provided with a universal joint 35 which may be of any suitable construction, and the wringer shaft 34 is similarly provided with a universal joint 36, so as to compensate for any slight differences in alinement of the different portions of said shafts. Splined to the shaft 34 between the gears 32 and 33 is a clutch member 37 arranged to be locked to either the gear 32 or 33, and thereby secure the driving of the wringer in opposite directions, as desired. Fig. 4 shows the clutch member 37 in neutral position. This clutch member is provided with an annular groove 38 which is engaged by the end 39 of a vertical spindle 40 rotatable in the top portion of the head 20. The end 39 is eccentric to the axis of the spindle 40, so that the rotation of the latter will move the clutch member 37 to its various positions. The spindle 40 is provided with an operating handle 41, which is provided with a downwardly projecting portion or portions 42 arranged to engage in notches 43 in the upper face of the bearing through which the spindle 40 projects. Four sets of such notches are provided, arranged at 90 degrees to each other, so that when the projection 42 engages one of said notches the clutch member 37 will be in neutral position, and by moving the handle in one position to bring the projection 42 into registration with another notch, said clutch member will be shifted into locking connection with, say the pinion 32, and drive the wringer in one direction, while by turning the handle 41 in the opposite direction from neutral position and bringing the projection 42 into engagement with another notch 43, said clutch member will be moved into locking engagement with the gear 33 and thus drive the wringer in the opposite direction. A spiral spring 44 is arranged to normally hold the plunger downwardly, so as to hold the projection 42 against accidental displacement from whichever notch 43 it may be engaged with. By this clutch mechanism the wringer can be driven in either direction or entirely stopped.

The shaft 29 and the universal coupling members in said shaft are preferably inclosed by a tube 45, which is a tight fit on the lower end of the head 20, and whose lower end fits loosely into the casing 19. In order to remove the wringer entirely the spring plunger 22 is withdrawn, when the wringer, together with the head 20 and shaft 29 and inclosing sleeve 45 can be lifted out, the open slots 27 of the universal coupling at the lower end of shaft 29 permitting these parts to be lifted out without the necessity of unfastening any of the gearing.

The universal couplings 35 and 36 may likewise be provided with open slots into which the transverse pins fit so that these shafts can be readily disconnected by a mere endwise movement. The drawings show these universal couplings, but this feature is not essential in these two couplings.

What I claim is:—

1. A wringer supporting and reversing mechanism provided with a support adapted to be attached to a washing machine, a frame pivoted to said support and arranged to be removable therefrom without detaching any of the parts of the mechanism, a wringer rigidly fixed to said frame, and reversing mechanism carried by said frame and fixedly connected to the wringer mechanism, said reversing mechanism being arranged so that it may be detachably connected to a driving shaft on the washing machine, whereby the frame, wringer and reversing mechanism may be swung about the support to any desired position and readily removed as a unit.

2. A wringer supporting and reversing mechanism provided with a support adapted to be attached to a washing machine, a frame pivoted to said support so as to swing about a vertical axis and arranged to be removable from said support without detaching any of the parts of the mechanism, a wringer rigidly fixed to said frame, and a reversing mechanism carried by said frame and attached by a universal joint to the wringer mechanism, said reversing mechanism being also arranged so that it may be detachably connected to a driving shaft on the washing machine, whereby the frame, wringer and reversing mechanism may be

moved about the support to any desired position and readily removed as a unit from said support, and means on the support for locking the mechanism in any one of several positions.

3. In combination, a washing machine, a driving shaft carried thereby, a support attached to the washing machine, a frame pivoted to said support and arranged to be removed therefrom without detaching any fixed parts, a wringer fixed to said frame, and a reversing mechanism carried by the frame and fixedly connected to the wringer mechanism, said reversing mechanism being arranged to be detachably connected to the driving shaft and to reverse the direction of the wringer independently of the direction of rotation of the driving shaft, whereby the frame, wringer and reversing mechanism may be moved about the support and readily removed as a unit therefrom.

4. A wringer supporting and reversing mechanism comprising a support adapted to be attached to a washing machine, a frame pivoted to said support and arranged to be removable therefrom without detaching any fixed parts, a wringer fixed to said frame, and a reversing mechanism carried by said frame and connected to the wringer mechanism, said reversing mechanism being arranged so that the direction of rotation of the wringer may be reversed without affecting the connection between said mechanism and the wringer mechanism and also without changing the direction of rotation of the driving shaft of said reversing mechanism, whereby the frame, wringer and reversing mechanism may be moved about the support to any position and operated and reversed in said position or be readily removed as a unit from the support.

5. In combination, a wringer, a frame rigidly attached to said wringer, a shaft carried by said frame and attached to the wringer mechanism by a universal joint, a second shaft carried by said frame at an angle to the first, said latter shaft being arranged to be detachably connected to a driving shaft carried by a washing machine, means between said shafts for reversing the rotation of the shaft connected to the wringer mechanism independently of the direction of rotation of the other shaft, a support adapted to be attached to a washing machine, said support being arranged to receive the frame so that it may be swung on a vertical axis and the entire frame with the reversing mechanism and wringer readily removed as a unit from said support, and means on the support for positively locking the frame in different positions.

In testimony whereof, I have hereunto set my hand.

FRED W. WAPPAT.

Witnesses:
ELBERT L. HYDE,
GLENN H. LERESCHE.