Aug. 9, 1927. 1,638,312

P. E. BARKER

WRINGER

Filed Nov. 24, 1924 2 Sheets-Sheet 1

Fig. 1

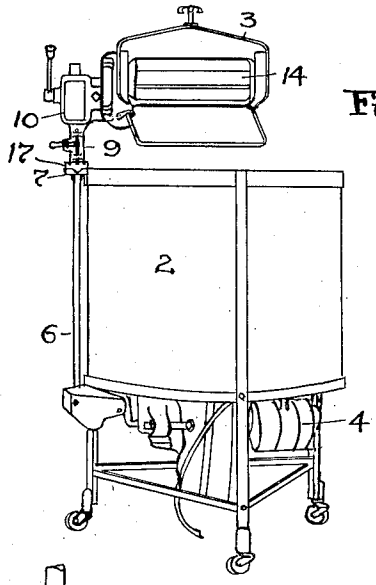


Fig. 2

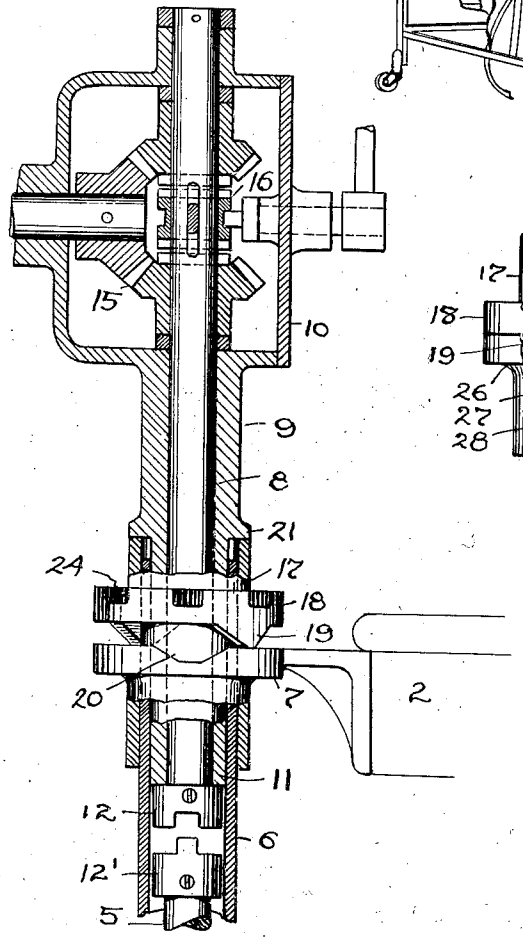
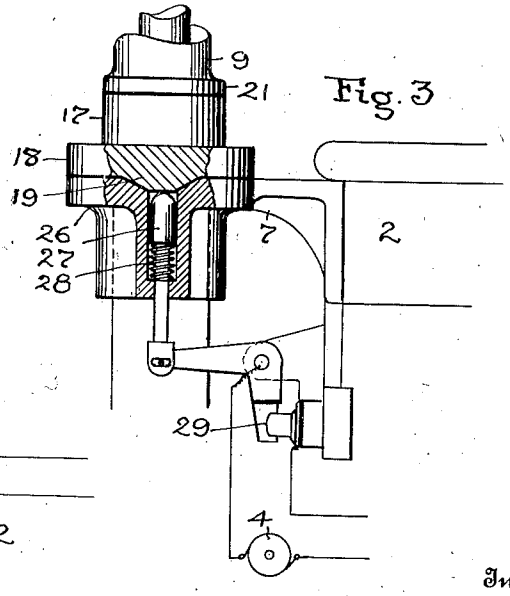


Fig. 3



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Filed Nov. 24, 1924 2 Sheets-Sheet 2

Fig. 4

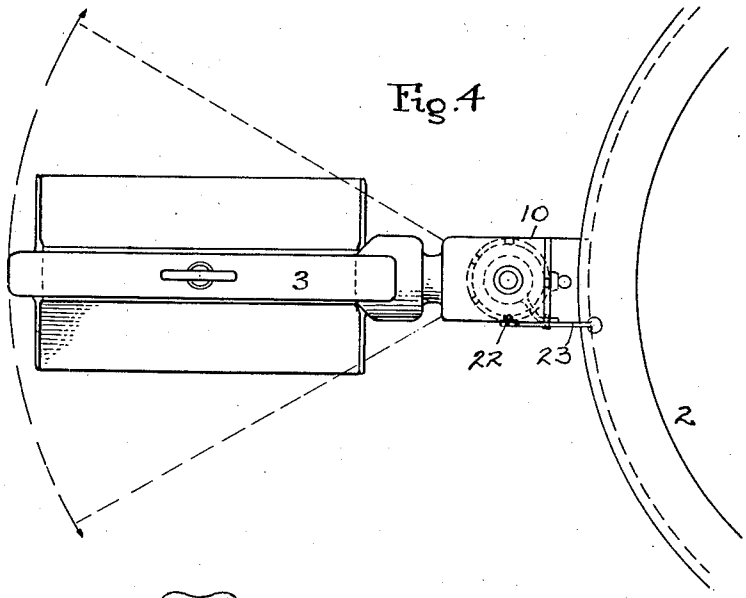
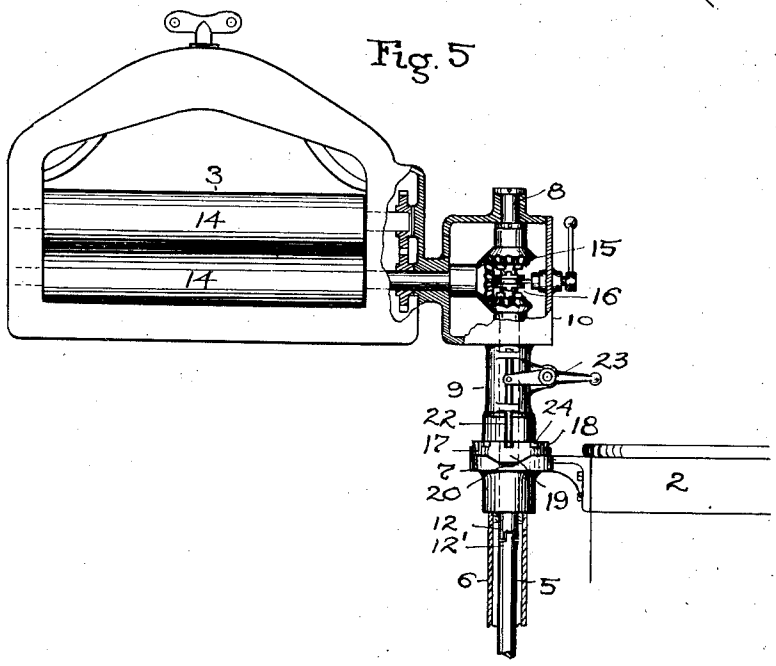


Fig. 5



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Patented Aug. 9, 1927. 1,638,312

UNITED STATES PATENT OFFICE.

PERCY E. BARKER, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-HALF TO ARTHUR B. BETZ, OF CLEVELAND, OHIO.

WRINGER.

Application filed November 24, 1924. Serial No. 751,828.

My invention relates to an improvement in wringers for washing machines, particularly a wringer which is movably mounted upon a washing machine or other suitable support and operatively connected with an electric motor or power transmitting mechanism. The general purpose of my invention is to provide means adapted to safeguard wringing operations, primarily the operator, and secondly the goods and the wringing and operating mechanism. Thus my conception involves the use of means adapted to disconnect or throw-off the power automatically and instantly upon or by shifting the wringer bodily from a predetermined working position. This idea applied to a power wringer rotatably mounted upon a washing machine, permits the wrinker to be immediately thrown out of action by moving the wringer in a short arc from its operative position, either by pulling it forwardly or pushing it back. To illustrate, when a hand is caught in the goods and is being drawn into the wringer the natural impulse of the person endangered is to draw the hand and body away from the wringer, and this natural impulse is utilized in the present invention to shift the wringer and disconnect it from the power operating mechanism. In applying the present invention to a rotatably adjustable wringer, I have also made suitable provision to permit the power to be automatically disconnected when the wringer is turned out of any one of its adjusted working positions.

In the accompanying drawings, Fig. 1 is a perspective view of a power washing machine carrying a wringer embodying my invention. Fig. 2 is an enlarged sectional view of the sectional operating shaft and the gear mechanism for operating a wringer, including my improved self-releasing device, the parts being shown in the position when the sectional shaft is disconnected and the wringer inoperative. Fig. 3 is a side view and section of a modification involving an electric switch adapted to cut off the power at its source. Fig. 4 is a top view of a wringer mounted to swing above and to one side of a washing machine, the radial dotted lines showing the approximate degree of arc movement within which the power is cut off when the wringer is bodily displaced from the working position shown in full lines. Fig. 5 is a side view showing partly in section, of the wringer and my improvement, the wringer being operatively connected to the power transmitting shaft in this view.

The present invention is applicable to various kinds and types of power driven wringers and washing machines, but is suited especially for a washing machine 2 having a wringer 3 rotatably mounted in an upright position at one side of the tub or washing receptacle, substantially as exemplified in Fig. 1. In this common type of washing machine it is customary to employ an electric motor 4 adapted to operate the washing or agitating devices within the tub and the wringer alternatively. In the present case it suffices to say that a power transmitting shaft 5 is housed in a tube 6 held rigidly at its upper end in a bracket 7 at one side of tub 2, and that a short extension 8 for shaft 5 extends upwardly through an upright standard 9 and a gear box 10 which carries wringer 3. The reduced lower portion 11 of standard 9 extends into and has rotatable bearing within the upper end of tube 6, and shaft 5 and separate extension 8 have coacting clutch members 12—12′ adapted to be readily disconnected so that the supporting end of the standard may be withdrawn from the tubular bearing and the wringer bodily removed from the washing machine. Wringer 3 may be any suitable kind or make, and such wringers usually comprise a pair of wringing rollers 14—14 adapted to be rotated in opposite directions alternatively or to be thrown out of action by a set of selective bevel gears 15 and a clutch 16. However, clutch 16 can not always be reached or operated in an emergency, or the person endangered may not have the presence of mind to release clutch 16 in a crisis, and therefore, I have devised a simple expedient for disconnecting the wringer from power shaft 5 by a movement imparted to the wringer itself.

Thus, I mount a collar or sleeve 17 rotatably upon the upper end of bearing tube 6, and the base portion 18 of this collar is enlarged and provided with one or more beveled lugs 19 at its bottom, preferably but not necessarily reversely beveled. The top of bracket 7 is formed with sloping recesses or depressions 20 adapted to receive and nest said lugs, thus normally permitting the collar to rest flat and low upon bracket 7.

Standard 9 has an annular enlargement or shoulder 21 adapted to rest upon the upper edge of collar 17; consequently when said collar is rotated initially the inclined or beveled lugs at the bottom thereof will raise the collar and standard jointly a sufficient distance to separate the clutch member 12—12′, thereby disconnecting the wringer operating extension 8 from power transmitting shaft 5. However, collar 17 must be locked to the standard if the collar is to be rotated by shifting the wringer, and any suitable locking means may be used for that purpose. In the present instance I employ a bolt 22 slidably supported at one side of standard 9 and operatively controlled by a pivoted lever or handle 23, the lower end of the bolt being adapted to enter any one of a series of radial notches or openings 24 in the top of the annular flange or base portions 18. When the bolt is in locking engagement with collar 17 the wringer will become inoperative if the wringer is bodily shifted from an operative position, but if a different operative setting of the wringer is desired, bolt 22 may be raised to permit the supporting standard of the wringer to rotate independently of collar 17 which will remain stationary because its bottom lugs 19 are nested within and interlocked with fixed bracket 7.

Thus the wringer may be rotated from notch to notch in collar 17 without rotating the collar or disconnecting the power shaft, and when rotated to a new position the bolt will again lock the parts together and the collar will then function to raise the standard providing the wringer is turned in either direction from its given working position. A sharp or strong pull on the wringer or the goods passing through the wringer will unseat the wringer from its operative position, and the same result will follow if the wringer is pushed in the opposite drection, but such unseating will not occur during the ordinary operation of the wringer, the angular lugs and the weight of the wringer preventing this. The shape or form of the angular lugs may differ from that shown and other modifications may be made without departing from the scope of the invention. To exemplify, another form of the invention is shown in Fig. 3 wherein sleeve or collar 17 is seated upon a bracket 26 carrying a spring-pressed plunger 27 which is adapted to engage the beveled lug at the bottom of the collar. Plunger 27 is held in a depressed position as long as the collar remains seated in its low position upon the bracket, but whenever the collar is rotated and rides to a higher plane the plunger will be lifted by spring 28 and in so doing open an electric switch 29, thereby cutting off the power or electric current for the electric motor 4 used to operate the washing machine or wringer.

What I claim, is:

1. A wringer having a rotatable supporting standard and a power-transmitting clutch, a device adapted to throw out said clutch, when the wringer and standard are jointly rotated, said standard being freely rotatable independently of said device, and means adapted to lock said device to rotate with said standard.

2. A wringer and a standard adapted to support the same rotatably, a power shaft extending through said standard having a disengageable clutch, a bracket and a rotatable collar thereon, said bracket and collar having inclined portions adapted to raise said standard when the wringer is shifted, and means adapted to releasably fasten said collar and standard together.

3. A wringer having a supporting standard rotatable to different stationary positions, power transmitting mechanism for the wringer extending through said standard, means adapted to automatically throw off the power upon initial rotation of the wringer from any one of its given stationary positions, and a controlling device adapted to disconnect said automatic throw-off means to permit said wringer to be rotated to different positions without disconnecting it from the power.

In testimony whereof I hereby affix my signature.

PERCY E. BARKER.