July 13, 1926. 1,592,239

A. A. WARNER

WRINGER

Filed August 17, 1923 2 Sheets-Sheet 1

Fig. 1.

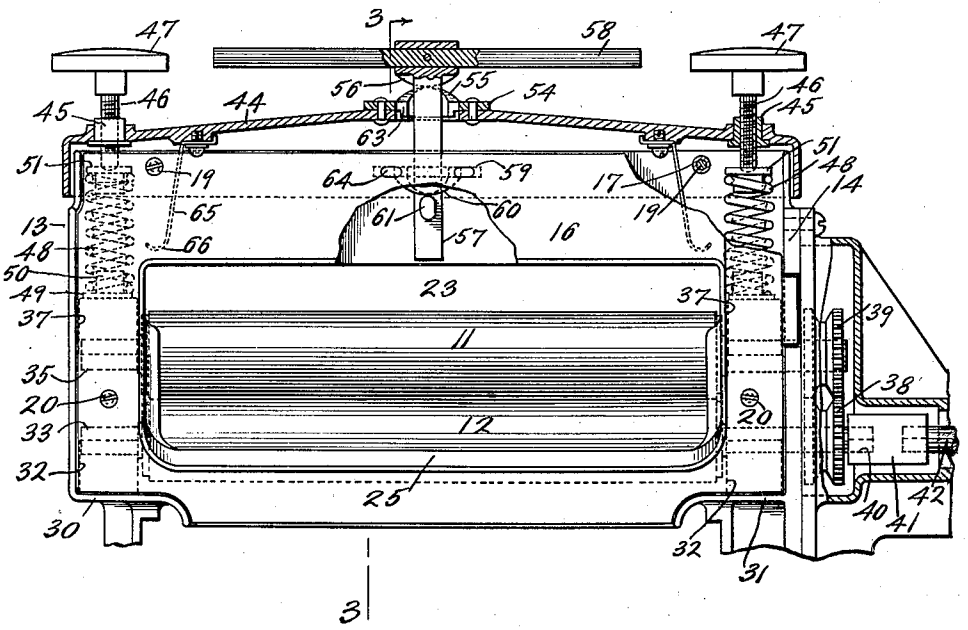
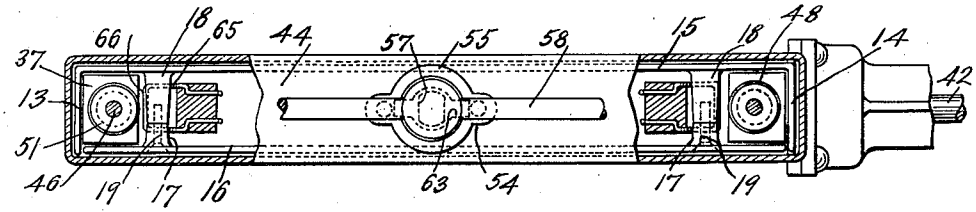


Fig. 2.



Inventor

Alonzo A Warner

By his Attorneys

Philips Vaughn Rice & Kenny

July 13, 1926. 1,592,239

A. A. WARNER

WRINGER

Filed August 17, 1923 2 Sheets-Sheet 2

Fig. 3.

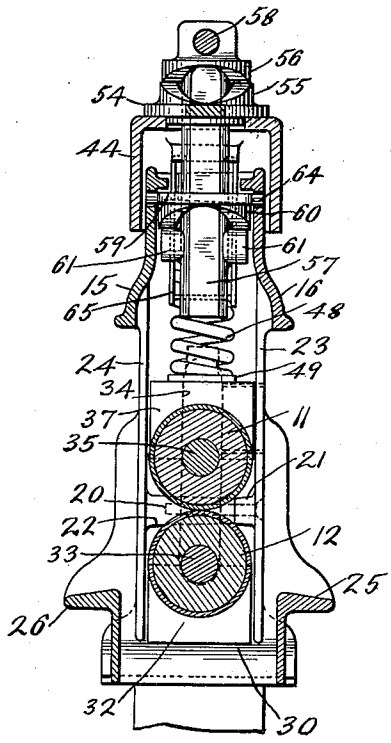


Fig. 4.

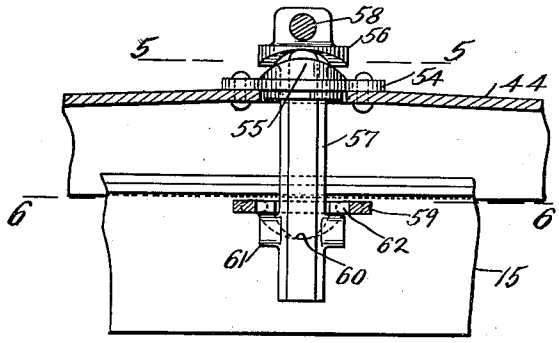


Fig. 5.

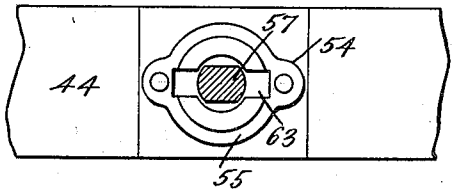
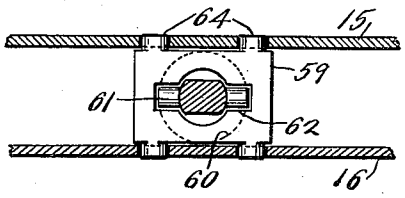


Fig. 6.



Inventor

Alonzo A Warner

By his Attorneys

Philipp Sawyer Rice Kenny

Patented July 13, 1926. 1,592,239

UNITED STATES PATENT OFFICE.

ALONZO A. WARNER, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO LANDERS, FRARY & CLARK, OF NEW BRITAIN, CONNECTICUT, A CORPORATION OF CONNECTICUT.

WRINGER.

Application filed August 17, 1923. Serial No. 657,858.

This invention relates to wringers.

It is the principal object of the invention to provide an improved wringer, and particularly a wringer in which the rolls are readily released from and replaced and held in wringing relation.

With this general object in view, the invention consists in the combinations, details of construction and arrangements of parts which will first be described in connection with the accompanying drawings and then more particularly pointed out.

In the drawings—

Fig. 1 is a view partly in section and partly in side elevation of a wringer constructed in accordance with the invention;

Fig. 2 is a view of the same partly in plan and partly in section;

Fig. 3 is a sectional view taken on the line 3—3 of Fig. 1;

Fig. 4 is a view in vertical section of part of the wringer with the parts in a different position from that shown in Fig. 1; and,

Figs. 5 and 6 are sectional views taken on the lines 5—5 and 6—6 respectively, of Fig. 4.

Referring to the drawings, a pair of wringer rolls 11, 12, are movably mounted in a frame. As here shown as an example, the frame comprises end plates 13, 14 and a side plate 15 formed in one piece and a separate side plate 16 cooperating with the single piece to form a boxlike frame. To secure the separate side plate in spaced position, the latter has two internally threaded bosses 17 which abut similar bosses 18 on the side plate 15. The parts are connected by screws 19 passing through the two sets of abutting bosses. Additional screws 20 pass through similar bosses 21, 22 near the bottom of the frame.

The side plates of the frame have corresponding central openings 23, 24 for the passage of the articles passed between the rolls, and corresponding guide flanges 25, 26.

The ends of the frame have bottom ledges 30, 31 on which are supported bearings for the shaft of the lower roll. As shown, these bearings are wooden blocks 32 having a free sliding fit in the channel formed by the side and end plates of the frame. The blocks are grooved at the top for the reception of the ends of the shaft 33 of the lower roll 12. The ends of the shaft 35 of the upper roll 11 are journaled in bearing blocks 37 which are like blocks 32 except that they face downwardly. The blocks 37 are also slidable in the frame and are forced toward the lower blocks to hold the rolls in operative wringing relation by means to be described.

At one end of the frame, the right end as viewed in Fig. 1, the roll shafts extend through a suitable slot or opening in the end plate 14 of the frame, and the extensions are provided with intermeshing duplex gears 38, 39. The lower shaft has a squared end 40 beyond its gear and is connected, by a coupling 41, with the squared end of drive shaft 42 to which power may be applied in any suitable manner.

There is provided means for releasably pressing the rolls together, which may conveniently include a pair of coil springs and a spring-compressing supplemental frame element. Although capable of various constructions, in that here shown as an example, the main frame above described has an open upper rim. Telescoping over this rim is a frame top or cover 44. Near each end, this top has a threaded thimble 45 through which passes a spring-compressing screw 46 having an operating knob or handle 47. As appears in Fig. 1, the screws 46 extend downwardly in line with the shaft bearings and between the screws and the upper bearing blocks are coil springs 48. As here shown, the lower end of each spring bears against an abutment plate 49 seated on the corresponding bearing block and having a spring-centering plug 50. The upper ends of the springs bear against similar abutment plates 51, against which the ends of the compressing screws 46 bear.

When the frame top 44 is moved down toward the rolls, the top telescopes down over the rim of the main frame and the ends of the screws, being forced against abutments 51, compress the springs 48 and press the wringer rolls together in wringing relation. The parts are held in this position as hereinafter described. For a given position of the frame top, the degree of spring compression may be adjusted by adjustment of the screws 46. When the frame top is released, the springs are free to expand, the top telescoping upwardly, and the rolls are thus freed from pressure.

There is provided means for releasably holding the supplemental frame element in spring-compressing position and returning

it to such position after a release. In structures embodying the invention to the best advantage, this means includes mechanism having a compound cam action.

Although capable of various constructions, in that here shown as an example, associated with a suitable opening in the top of the frame cover 44 is an eye plate 54 having two oppositely disposed cam elements 55, the high points of which extend upwardly. Above each cam element is a curved cooperating lug 56 on a spindle 57 which extends down through the opening or eye of plate 54. Passing through the upper end of spindle 57, above the frame cover 44, is an emergency operating handle 58 by which the spindle may be turned. Mounted in the main frame a short distance below the open top thereof is an eye plate 59 having two oppositely disposed cam elements 60, the high points of which extend downwardly. The spindle 57 passes through the opening or eye of plate 59 and has a curved lug 61 below each cam 60.

When the parts are in the position shown in Fig. 1, with the two sets of lugs at the high points of the corresponding cams, the frame top is held down with the ends of the screws 46 holding the springs compressed and the springs, through the upper bearing blocks 37, cause the upper roll to be pressed against the lower roll. That is to say, the parts are in normal position for the wringing operation. The degree of pressure can be adjusted by means of screws 46.

Should it be desired to effect an emergency release of the roll pressure, a quick blow on the handle 58 is sufficient. This rotates the spindle 57 to remove the lugs 56 and 61 from the high points of the corresponding cams, whereupon the frame top 44 is free to move upwardly, thus allowing the springs to expand. In this connection it is noted that the spindle 57, when in release position, is free to move upwardly with the top 44, the eye plate 59 having notches 62 for the passage of the lugs 61 on the spindle. Consequently, in so far as the spindle is concerned and save for the provision of separate means hereinafter described, there is no limit to the relative upward movement of the top 44. The eye plate 54 has similar notches 63 to permit assembly and disassembly of the spindle. The release position is shown in Fig. 4.

To reset the parts, the spindle 57 is rotated to cause lugs 56 and 61 to ride up the corresponding cams, thus camming down the frame top 44. This downward movement causes, through the engagement of screws 46 with the spring abutments 51, recompression of the springs and repositioning of the rolls in normal operative position. When the lugs again reach the high points of the cams, the frame top is again locked down.

With the construction described there is a compound cam action. That is, there is a cam action between the spindle and the movable top and a cam action between the stationary frame and the spindle. As a result, the supplemental frame top may be returned to its spring-compressing position without releasing the screws 46.

In the embodiment illustrated the cams 55 and 60 and the corresponding lugs 56 and 61 are double or reverse acting. Consequently the release handle 58 may be moved in either direction to effect release and in either direction to reset the parts.

In the present embodiment the eye plate 59 is removably mounted in the frame. As shown, the plate has a width to fit freely between the frame side plates when the separate plate is assembled. On the plate 59 are two pair of lugs 64 which are received by corresponding pairs of holes formed in the side plates of the frame. By this construction, when the separate frame plate is in place the plate 59 is securely suspended in the frame. (Fig. 6).

There is provided releasable stop means for limiting the upward movement of frame top 44 upon release of the catch and expansion of the springs. As here shown, secured to the top 44 are two loops 65 of wire formed with hook portions 66 at their lower ends. (Fig. 1) These hook portions 66 are located below the abutting bosses 17, 18 and hook under the bosses upon a given movement of the top 44 to limit such movement. If it is desired to disassemble the top, however, the loops 65 can be sprung inwardly to permit the hooks to pass by the bosses, whereupon the top can be removed.

With the construction described, coil springs are used for pressing the rolls into operative position. At the same time, the construction is strong, compact and simple; the emergency release is easily and quickly operated; and the parts are readily assembled and disassembled.

The operation of the wringer will be clear from the above without further description.

What I claim is:

1. In a wringer, in combination with a pair of wringer rolls, a main frame in which the rolls are mounted, one roll being movable toward and away from the other, coil springs for releasably pressing the rolls together, a spring-compressing supplemental frame element movable with respect to the main frame, and means for releasably holding the supplemental frame element in spring-compressing position and returning it to such position after a release, said means comprising a rotatable spindle associated with the frame, a cam device between the spindle and the supplemental frame element for camming down the latter and a cam device between the spindle and the main

frame, for camming down the former, as the spindle is rotated.

2. In a wringer, in combination with a pair of wringer rolls, a main frame in which the rolls are mounted, one of said rolls being movable toward and away from the other, a supplemental frame element movable with respect to the main frame, coil springs located between the supplemental frame element and the movable roll, an eye-plate on the supplemental frame element, an eye-plate on the main frame, a rotatable spindle extending through said eye-plates, a handle for rotating said spindle, and cooperating cam and abutment elements associated with the spindle and the two eye-plates, whereby the supplemental frame element is movable into spring-compressing position with a compound cam action.

3. In a wringer, in combination with a pair of wringer rolls, a main frame in which the rolls are mounted, one of said rolls being movable toward and away from the other, a supplemental frame element movable with respect to the main frame, coil springs located between the supplemental frame element and the movable roll, an eye-plate on the supplemental frame element, a cam element on said eye-plate having its high point extending upwardly, a second eye-plate on the main frame, a cam element on the second eye-plate having its high point extending downwardly, a rotatable spindle extending through the eye-plates, a cooperating abutment on the spindle above the cam element on the first eye-plate, a cooperating abutment on the spindle below the cam element on the second eye-plate, and a handle for rotating said spindle.

4. In a wringer, in combination with a pair of wringer rolls, a main frame in which the rolls are mounted, one roll being movable toward and away from the other, coil springs for releasably pressing the rolls together, a supplemental frame element movable with respect to the main frame, adjustable spring-compressing screws carried by the supplemental frame element, and means for releasably holding the supplemental frame element in spring-compressing position and returning it to such position after a release, said means comprising a rotatable spindle associated with the frame, a cam device between the spindle and the supplemental frame element for camming down the latter and a cam device between the spindle and the main frame, for camming down the former, as the spindle is rotated.

In testimony whereof, I have hereunto set my hand.

ALONZO A. WARNER.