July 28, 1925. 1,547,484

M. WUERPEL

WRINGER GUARD FOR POWER DRIVEN WRINGERS

Filed March 2, 1921 2 Sheets-Sheet 1

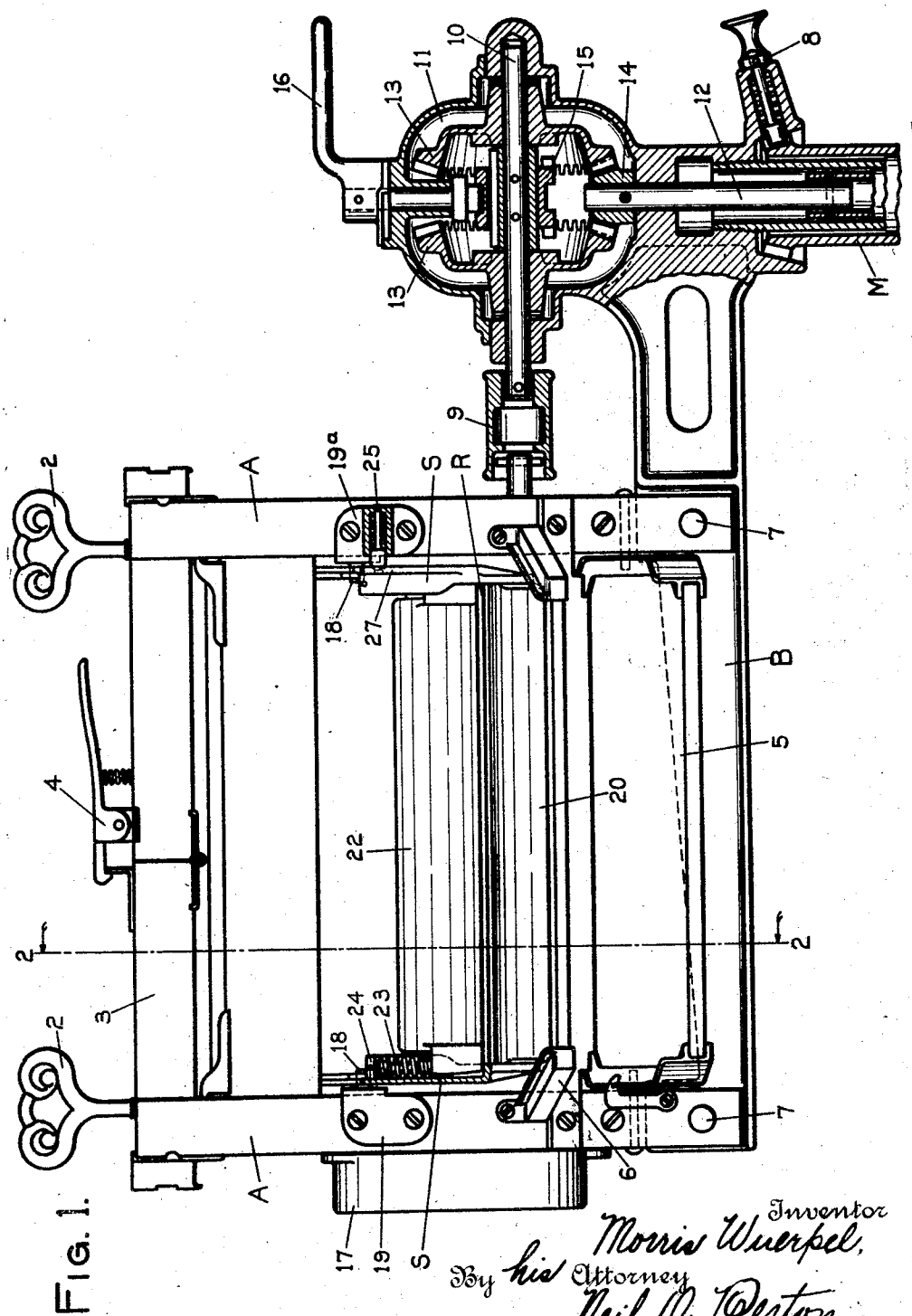


FIG. 1.

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FIG. 2.

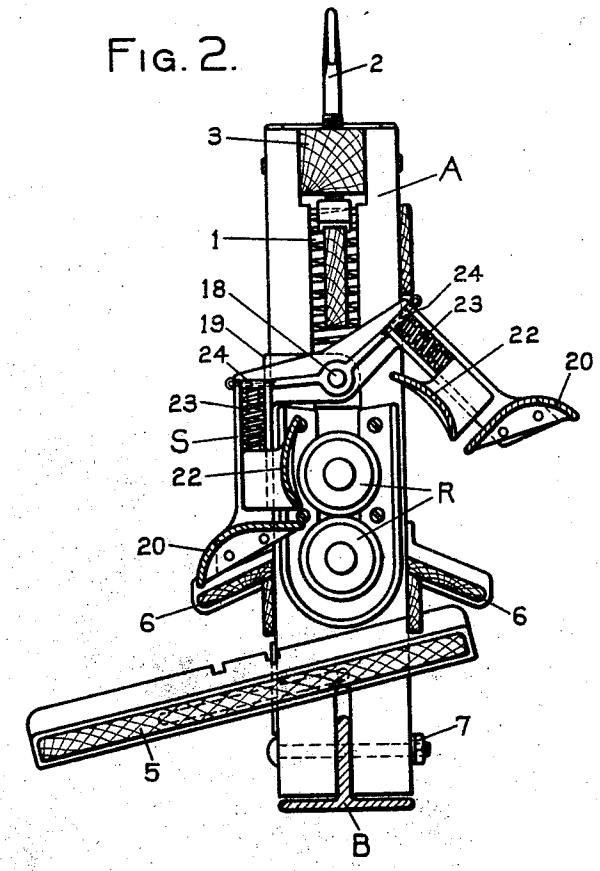
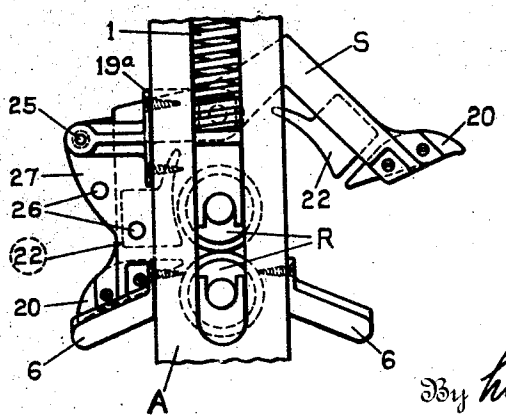


FIG. 3.



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UNITED STATES PATENT OFFICE.

MORRIS WUERPEL, OF ROCHESTER, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE G. R. S. PRODUCTS, INC., OF COLONIE, NEW YORK, A CORPORATION OF NEW YORK.

WRINGER GUARD FOR POWER-DRIVEN WRINGERS.

Application filed March 2, 1921. Serial No. 449,014.

To all whom it may concern:

Be it known that I, MORRIS WUERPEL, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Wringer Guards for Power-Driven Wringers, of which the following is a specification.

This invention relates to safety guards for power operated wringers designed to protect the fingers of the operator.

When feeding clothes through the ordinary wringer, it is necessary to get an end or fold of the garment close enough to the rolls to be gripped, and operators in their efforts to get the clothes started, sometimes carelessly or accidentally get their fingers caught between the moving rolls, with the result that the fingers and hand are often severely crushed and injured before the rolls can be stopped or the pressure released. Guards to compel the operator to keep the fingers out of danger have been proposed, but such guards as ordinarily constructed are objectionable because they seriously interfere with the regular use of the wringer, or injure the clothes when they bunch up or wind around the rolls.

The present invention is designed to afford the desired protection to the operator, to assist rather than hinder the feeding of clothes to the wringer, and to prevent injury to the clothes if they bunch up or wind around the rolls. Other detail features and advantages of the invention will be pointed out hereinafter as the description progresses.

One preferred embodiment of the invention is illustrated in the accompanying drawing, in which Fig. 1 is a front view, with some parts in section, of a power operated wringer with my improved safety guard applied thereto;

Fig. 2 is a vertical section on the line 2—2 in Fig. 1; and

Fig. 3 is a fragmentary side view.

Referring to the drawings, the present invention has been shown applied to a swinging reversible power operated wringer of a well-known type and construction. This wringer comprises upright side members A which support the upper and lower rolls R in the usual way, said rolls being pressed together by springs 1 adjustable by hand screws 2. The screws 2 are carried in the ends of a breakable bar 3 held together by a releasable catch 4. Below the rolls is the usual drain board 5; and in the particular construction illustrated, guide boards 6 are also provided on opposite sides of the rolls but these guide boards are not essential with the improved guard.

The upright members A of the wringer are slotted at their lower ends to fit over the vertical web of a supporting arm or bracket B, and are fastened to said web by bolts 7. The bracket B is mounted to swing horizontally on a vertical axis, and in the construction shown, said bracket is supported upon an upper part M of the mechanism casing of the washing machine (not shown), being held in its different position by a spring-pressed latch bolt 8. The lower roll R of the wringer is driven through a loose coupling 9 by a short horizontal shaft 10 supported in bearings in a gear case 11, forming part of the bracket B. The shaft 10 is connected by suitable reversible gearing to an upright shaft 12, which is connected in any suitable manner to the operating mechanism of the washing machine. In the construction illustrated, the reversible gearing comprises two bevel gears 13 loose on the shaft 10 and meshing with a bevel pinion 14 fixed to the driven shaft 12, and a clutch member 15 splined to the shaft 10 and shiftable by a handle 16 from the neutral position shown into engagement with one or the other of the gears B. The upper and lower rolls R of the wringer are connected together by the usual gearing (not shown) which is shown as covered by a cap 17.

The safety guard constituting the present invention comprises two end members S, which are pivotally supported on pins 18 integral with or fastened to brackets 19 and 19[a] screwed or otherwise suitably fastened to the upright end members A of the wringer frame. These end members S, as best shown in Fig. 2, have a general form of the letter M, the sides of which straddle the rolls. The parts of the guard proper are duplicated on opposite sides of the rolls, and are carried by the tilting end members S so that they may be alternately moved into the working position as the operator feeds clothes to the wringer from opposite sides thereof. For convenience these duplicate parts are given the same reference numbers

and a description of one set will suffice for both.

The end members S are connected at their lower ends, on each end of the wringer rolls, by a curved guide or feed board 20, which is preferably made of aluminum or similar rustless metal, with its upper surface smooth and polished. Above this feed board 20 is a curved guard 22, which is formed with end lugs guided in grooves in the end members S, the bottom of said grooves limiting the downward movement of said guard. Within each of said grooves is a light compression coil spring 23, which is held in place by a follower 24, fastened by a cotter pin or the like. These springs 23 bear against the end lugs of the guard member 22 and press it downward to its lowest position, in which the lower edge of said guard member and the inner upper face of the guide board 20 define a narrow slot, sufficiently wide to receive clothes, but too narrow to allow the fingers of the operator to pass.

In order to hold said end members in the desired position, as the two sets of guard members 20—22 on opposite sides of the wringer rolls are swung alternately into and out of position the bracket 19^a is provided with a spring-pressed locking plunger 25, having a rounded end adapted to engage in holes 26 in a web portion 27 of the adjacent end member S. The plunger 25 yieldingly holds the end members S, when the guard is in either of its working positions, and another hole may be provided, if desired, to receive said locking plunger when the guard is in its central or neutral position.

Referring to Fig. 2, it can be seen that the guard on the right, which is not in its working position, is so located as to interfere with the feeding of clothes to the rolls from that side of the wringer. Also, if the clothes were fed from the righthand side of the wringer, as viewed in Fig. 2, with shifting the guard, there would be interference with the movement of the clothes out of the rolls. Consequently, it is assured that the operator will shift the guard as the clothes are fed into the different sides of the wringer.

The parts are preferably so arranged and proportioned that the slot between the guard member 22 and feed board 20 is too narrow to admit the fingers, and the tension of the springs 23 is selected so that the operator may press hard against the guard member 22 without lifting it. The operator, therefore, in feeding the clothes, may push them directly through the slot between the parts 20—22 and into the rollers. The guard 22 may raise, however, to allow bunches of clothes to pass through; and if the clothes should wind around the rolls, as sometimes happens, the guard as a whole can swing out away from the rolls, thereby avoiding tearing or injury of the clothes. In this connection it is noted that the tension of the spring operating the latch 25 is proportioned so that it will prevent the guard shifting by ordinary jar and vibration, but will allow it to be easily swung by hand or by clothes.

My improved guard serves to keep the fingers of the operator out of direct contact with the rolls, thereby obviating chance of the fingers being caught, while at the same time the clothes may be fed to the rolls in the usual way. Also, no damage will be done to the clothes in case they pass through in bunches or wrap around the rolls. If the fingers of the operator happen to be caught in a fold, or should tangle up in the clothes and be pulled through the guard between the rolls, the guard itself affords a convenient grip for holding the fingers from being carried between the rolls, it being possible in some cases to cause the clothes to tear or the machine to stall before the hand is carried in. Also, with something to grip easily and hold back the fingers, more time is given to operate the safety pressure release device. Another advantage of the improved construction is that the smooth surface of the guard 22 and feed board 20 act to straighten out buttons and the like and cause them to pass through the rolls flatwise and not be cracked or torn off as much as with the ordinary wringer. It may be added that the guard in many respects facilitates feeding the wringer, since it allows the operator to push the clothes in between the rolls with no danger of the fingers going too far and being caught, the guard members 20—22 serving to keep the fingers a safe distance from the rolls.

The particular construction shown and described is merely illustrative of the invention, and various adaptations and modifications may be made without departing from the invention.

What I claim is:—

1. A safety guard for wringers comprising a support attached to the wringer frame having a smooth curved feed board terminating at its inner edge near the line of contact of the wringer rolls, a vertically movable guard member arranged above said feed board on said support and yieldingly held in position with its lower edge above the inner edge of the feed board and thereby forming a narrow slot permitting the introduction of clothes to the rolls, said slot being too narrow to allow the fingers of the operator to pass through.

2. A safety guard for wringers comprising two end members pivotally supported to rock on a horizontal axis, guards carried by said members and arranged to be alternately rotated into and out of position, in which position such guard prevents a hand from entering between the wringer rolls, and

means for retaining said members in different positions.

3. A safety guard for wringers comprising two rocking end members connected by a curved feed board, a curved guard above the feed board, and slidably guided at its ends in grooves in said members, the movement of the guard toward said board being limited by said grooves, and springs acting at each end of the guard to maintain it normally close to said feed board.

4. The combination of a clothes wringer, of a safety device therefor comprising safety guards on opposite sides of the wringer, only one of which can be placed in the operative position at one time, each of said safety guards consisting of a feed board and a guard member movable on the guard relatively to the feed board.

5. The combination of a clothes wringer, of a safety device therefor, said safety device comprising a support pivotally mounted on each end of the wringer, a curved feed board carried by said supports and terminating just below the plane of contact of the wringer rolls, and a guard member supported yieldingly on said supports.

6. A safety guard for wringers comprising, two end members pivotally supported from the wringer frame, curved feed boards and guard members carried by said members and arranged to be alternately swung into and out of position with respect to the wringer rolls, and yieldable means for holding said guard members yieldingly in position against a stop.

In testimony whereof I affix my signature.

MORRIS WUERPEL.