May 12, 1925. 1,537,864

H. L. MORIN

SAFETY FEED AND AUTOMATIC STOP FOR WRINGERS

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Fig. 1.

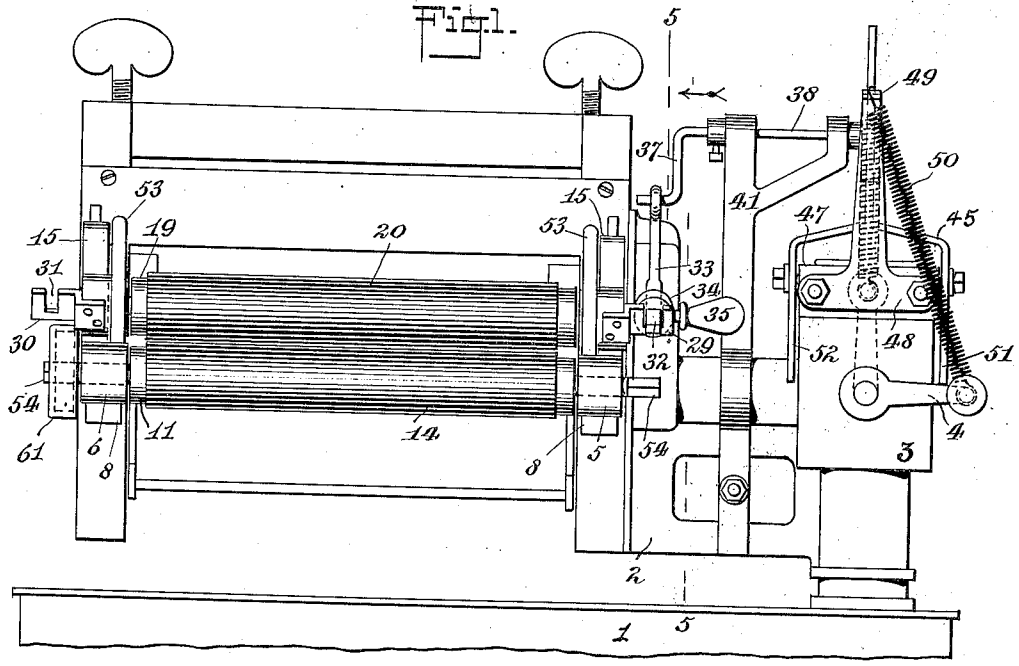
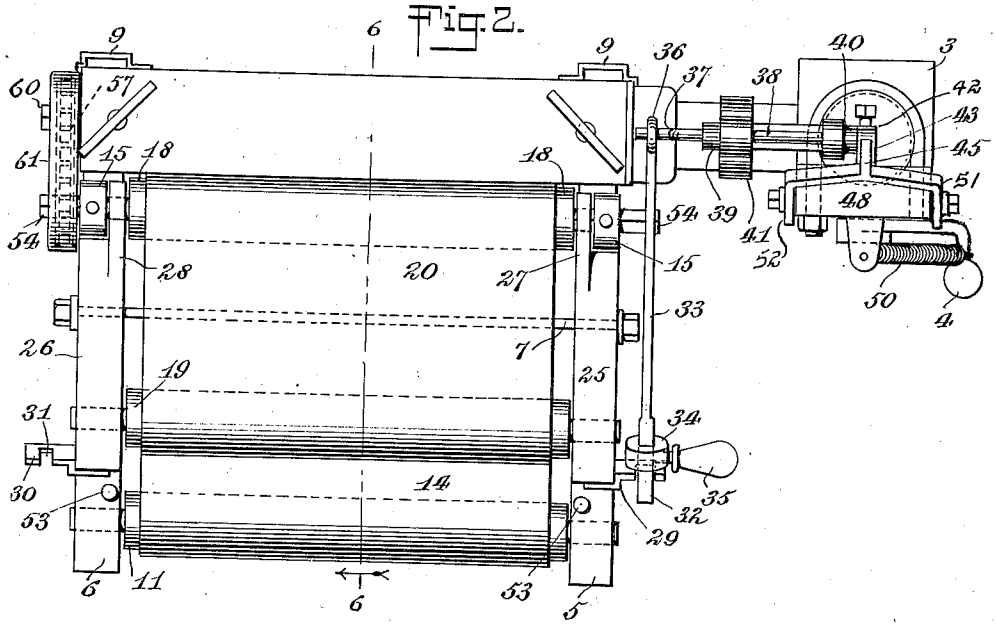


Fig. 2.



WITNESSES

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SAFETY FEED AND AUTOMATIC STOP FOR WRINGERS

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Fig. 3.

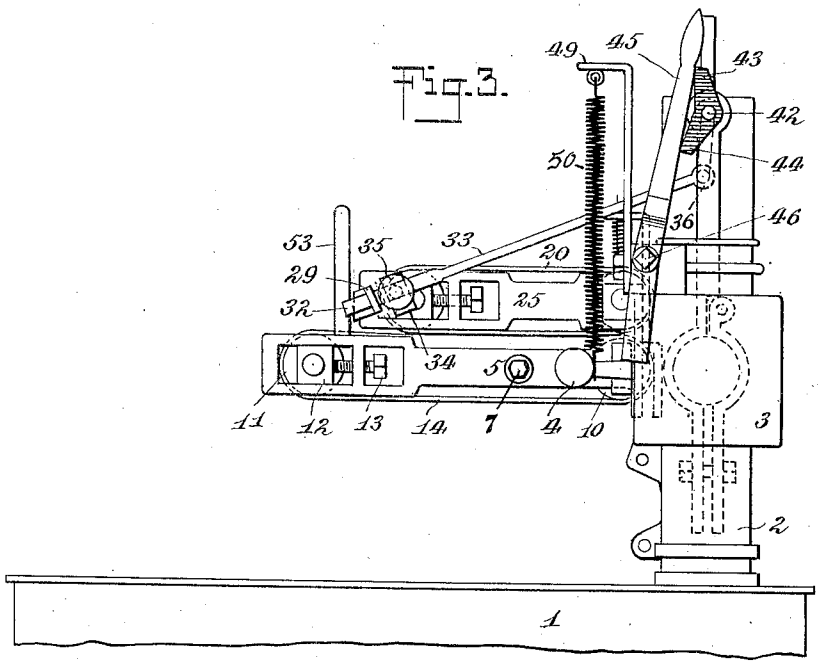
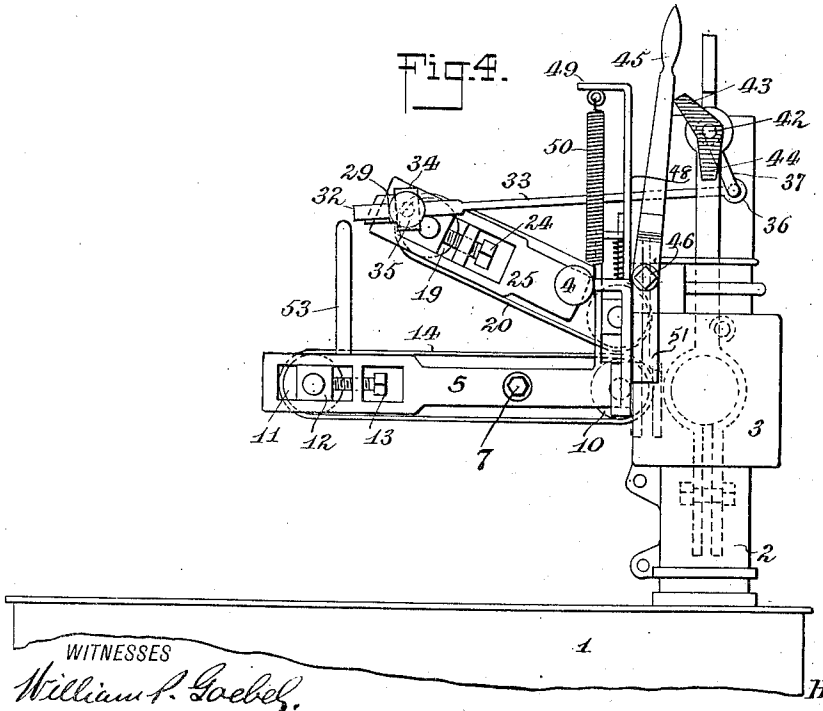


Fig. 4.



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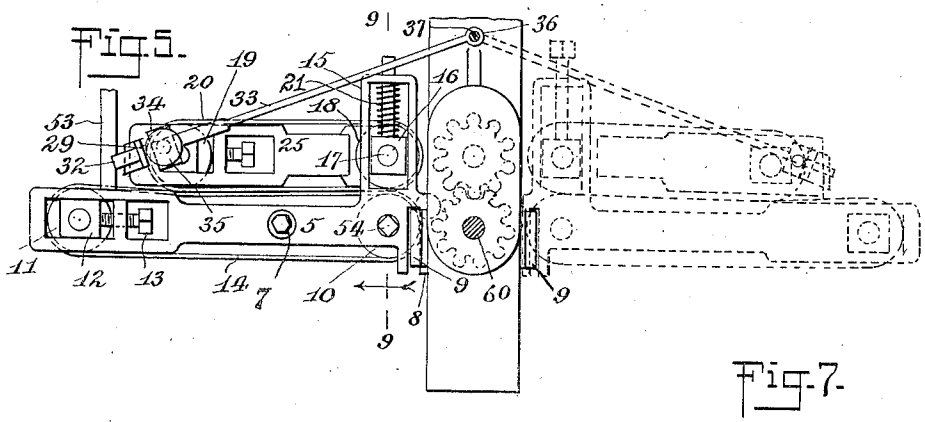
May 12, 1925. 1,537,864

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SAFETY FEED AND AUTOMATIC STOP FOR WRINGERS

Filed April 9, 1924 3 Sheets-Sheet 3

Fig. 5.



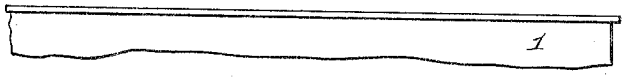


Fig. 6.

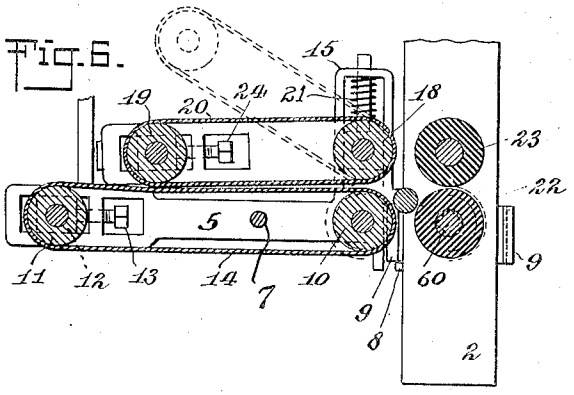


Fig. 7.

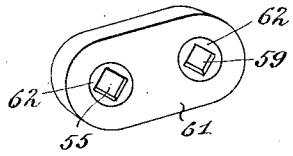


Fig. 8.

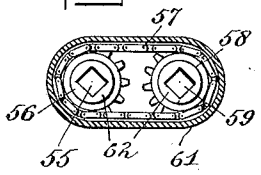
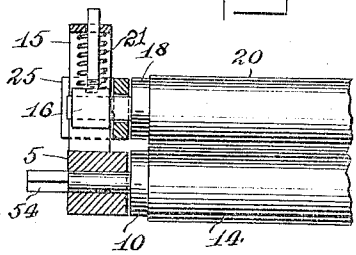


Fig. 9.



WITNESSES

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UNITED STATES PATENT OFFICE.

HENRY LOUIS MORIN, OF SPRINGFIELD, MASSACHUSETTS.

SAFETY FEED AND AUTOMATIC STOP FOR WRINGERS.

Application filed April 9, 1924. Serial No. 705,290.

To all whom it may concern:

Be it known that I, HENRY L. MORIN, a citizen of the United States, and a resident of Springfield, in the county of Hampden and State of Massachusetts, have invented a new and Improved Safety Feed and Automatic Stop for Wringers, of which the following is a full, clear, and exact description.

This invention relates to attachments for wringers and particularly to an improved safety feed and automatic stop wherein articles fed to the wringer may be properly directed while the directing means acts also to throw off the power in case the same is moved to a predetermined point.

Another object of the invention is to provide a safety feed and automatic stop for wringers wherein the feed mechanism when moved to a predetermined position, will actuate a clutch for throwing off the power to both the wringer and the feed.

A still further object of the invention is to provide a simplified form of combined throw off mechanism and feed whereby when the hand of the operator enters the feed mechanism for too great a distance, the position of the same will be shifted for causing a quick and automatic disconnection of the power.

In the accompanying drawings—

Figure 1 is a front view of a wringer of a well known type with an embodiment of the invention applied thereto.

Figure 2 is a top plan view of the structure shown in Figure 1.

Figure 3 is an end view of the structure shown in Figure 1.

Figure 4 is a view similar to Figure 3 but showing the parts moved to a throw off position.

Figure 5 is a sectional view through Figure 1, approximately on line 5—5.

Figure 6 is a sectional view through Figure 2, approximately on line 6—6.

Figure 7 is a detail perspective view of a chain drive embodying certain features of the invention.

Figure 8 is a longitudinal vertical sectional view through the structure shown in Figure 7.

Figure 9 is a fragmentary sectional view through Figure 5, approximately on line 9—9.

Referring to the accompanying drawings by numerals, 1 indicates a support, as for instance, a washtub and 2 a wringer mounted on the support 1 in any desired manner. This wringer is of a well known type driven by any suitable power, as for instance, electric motor. As indicated in the drawing, the wringer is provided with a clutch structure 3 of a well known type which is used with the wringer 2 and, therefore, forms no part of the present invention except in combination.

Heretofore, when the wringer 2 was used, the clutch was thrown into and out of operation by the arm 4 and also the direction of rotation thereof by shifting the arm 4 from the position shown in Figure 1 to the diametrically opposite position. As the rollers of the wringer were driven, the clothes were fed directly thereto which were naturally wrung in the usual manner. Whenever desired, the operator could move the lever 4 to the dotted position shown in Figure 1 whereupon the clutch would disconnect the rollers of the wringer from the power.

In the present invention, means have been provided which will shift the lever or arm 4 automatically to the dotted position shown in Figure 1 and will also guide the clothes to the rollers of the wringer. If preferred, the device embodying the invention could be made more or less integral with the wringer, though for the purpose of illustration, it has been made separate and connected thereto as an attachment.

In forming the device, a frame consisting of arms 5 and 6 and suitable bracing and connecting rods 7 are provided. This frame is connected to the wringer 2 in any suitable manner, as for instance, by having the depending hook 8 (Figure 5) of each of the arms 5 and 6 extending through suitable brackets 9 secured to the wringer. As the arms 5 and 6 are identical and the parts associated therewith are also identical, the description of one will apply to both.

As indicated in Figures 5 and 6, the arms 5 and 6 carry rollers 10 and 11, roller 10 being rotatably mounted in a fixed position while roller 11 is carried by sliding blocks 12 shifted by the set screw 13 whereby the tension of the belt 14 may be varied. This belt is preferably made from rubber though it could be made from canvas or other desired material. As indicated in Figure 5, the respective arms are each provided with an upstanding guideway 15 receiving the respective blocks 16 which carry the journal

rod 17 of the roller 18. This roller co-acts with the roller 19 for supporting the belt 20 which may be of rubber or other desired material. Suitable springs 21 act on the blocks 16 to press the roller 18 against roller 10 or to a position near the roller 10 whereby the clothes to be wrung may be fed properly to the rollers 22 and 23 of the wringer 2. The roller 19 is mounted on a suitable grinding block at each end, which blocks are shifted by the respective set screws 24 in order that the belt 20 may be maintained under proper tension. It will be noted that the belt 14 is mounted to remain in a plane substantially at right angles to the vertical plane while the belt 20 is swung back and forth as indicated in dotted lines in Figure 6. The arms 25 and 26 are provided with extensions 27 and 28 which are pivotally mounted on the shaft 17, said arms carrying the respective blocks adjusted by the set screws 24. Also these arms carry brackets 29 and 30, each bracket having a notch 31 formed therein for receiving the end 32 of the rod 33. The end 32 is preferably square in cross section so that it may slide in the slot or notch 31 without rotation. A stop 34 is slidingly mounted on the end 32 and is clamped in position by a suitable clamping screw 35 whereby the effective length of the rod 33 may be varied as desired. At the end opposite end 32, an eye 36 is provided which fits over the end of the crank 37, which crank may be formed integral with the rock shaft 38 if desired. Suitable stops 39 and 40 are provided on the shaft 38 to prevent its longitudinal movement in the bracket 41, which bracket is bolted or otherwise secured to some part of the wringer 2. At the end of the shaft 38 opposite the crank 37, is provided a double acting cam 42 having cam members 43 and 44. These cam members are designed to act at different times on the lever 45, which lever is pivotally mounted at 46 in a fitting or block 47 secured in any desired manner to the casing of the clutch 3. A bracket 48 is also secured to the block 47, said bracket having a projection or extension 49 to which one end of the spring 50 is secured, the opposite end of said spring being secured to the outer end of arm or lever 4. This spring is normally under some tension and when the parts are moved to the position shown in Figure 1, is under appreciable tension whereby it will move to the dotted position shown in Figure 1 whenever permitted. The lever 45 is bifurcated at its lower end and formed with legs 51 and 52 positioned to normally fit on top of the lever or arm 4 when the wringer is in operation.

When the parts are in the position shown in Figures 1, 2 and 3 and the operator's hand accidentally or otherwise is moved between the two belts 14 and 20, the arms 25 and 26 will be raised, though usually not as high as that shown in Figure 4. The raising, however, of these members is sufficient to cause a longitudinal movement of the rod 33 whereby the crank 37 is moved and shaft 38 rocked until the cam member 43, as shown in Figure 4, has moved the lever 45 until the leg 51 thereof slips off of the lever or arm 4. As soon as this occurs, spring 50 will move the clutch 3 to an inoperative or open position. It is, of course, evident that the rod 33 may be moved independently at any time for causing the leg 51 to move off of the lever 4. By adjusting the stop 34, the upper belt may be swung to a greater or less extent in order to take articles of clothing of different thicknesses. However, the parts are always set to cause an automatic opening of the clutch in case the hand of the operator passes in one-half or two-thirds of the way between the belts 14 and 20. The operator's hand may readily pass in until it almost touches the belts near the inner rollers 10 and 18 without injury, as merely the weight of the rollers, belts and associated parts will be thereon.

It will be noted particularly from Figures 2 and 6 that the lower belt 14 projects beyond the upper belt and suitable guide pins 53 are provided whereby the clothes to be wrung are guided properly beneath the belt 20. As the lower belt is driven, the upper belt automatically moves therewith and transports the clothes to the squeezing rollers 22 and 23. In order that the lower belt 14 shall be driven, the shaft 54 is squared at each end so as to project through the squared aperture 55 of the sprocket wheel 56, said sprocket wheel accommodating a chain 57, which chain also passes over a sprocket wheel 58 having a squared aperture 59 fitting over the squared end 60 of one of the shafts of the rollers 22 and 23. The chain 57 and the sprocket wheels 56 and 58 are located in a housing 61, which may be connected together in any suitable manner, said housing having suitable apertures for receiving the bosses or hubs 62 whereby a driving unit is provided which may be slipped onto the end 60 and the end of shaft 54. If it should be desired to place the device on the opposite side of the wringer 2 as shown in dotted lines in Figure 5, the unit comprising casing 61 and associated parts is removed, the device shifted and then this unit replaced. In the replacing, it would naturally fit on the opposite end of the shaft 54 as this shaft would be turned around. The squared end 32 and rod 33 would also fit into the notch on the opposite bracket 30. When the device is in operation on the opposite side as shown in dotted lines in Figure 5, the lower cam member 44 would function as the lever 4 would be on the opposite side to that shown

in Figure 1 and would co-operate with the leg 52.

What I claim is:

1. The combination with a power driven clothes wringer having a power disconnecting member, of an automatic feed and automatic stop, said automatic feed and stop comprising a pair of feed members for feeding clothes to the rollers of the wringer, one of said feed members being swingable, and means for operatively connecting said swingable feed member with said power disconnecting member whereby when it is swung to a given position said power disconnecting member will be thrown out of operation.

2. The combination with a power driven clothes wringer having a power disconnecting member, of a combination feed and automatic throw out comprising a pair of feed belts for feeding clothes to the wringer, one of said feed belts being swingable, a rod operatively connected with said swingable belt designed to be moved longitudinally as the belt is swung by the entrance of a large object between the belts, means for normally holding said power disconnecting member in operative position, and means actuated by said rod when the same is moved by said swingable belt for shifting the means holding said power disconnecting member whereby the power disconnecting member will move to an inoperative position.

3. The combination with a power driven clothes wringer having a power disconnecting member, of means associated with the wringer for feeding clothes to the wringer and moving said power disconnecting member to an inoperative position, said means including a spring for moving the power disconnecting member to an inoperative position, a pivotally mounted member for normally holding said power disconnecting member in an operative position, a pair of belts for feeding clothes to the wringer, one of said belts being swingable about a given point, and means operated by said swingable belt when an object has swung the same beyond a certain point, said last mentioned means acting to release the pivotally mounted member holding the power disconnecting member whereby said power disconnecting member will automatically be disconnected.

4. The combination with a power driven clothes wringer provided with a power disconnecting member, of means for feeding clothes to the wringer and throwing off said power disconnecting member when an undesirably large article is forced into the feeding means, said means comprising a pair of feeding belts, means for mounting the upper of said feeding belts so that it may swing from a given point as articles are fed between two belts, a rod operatively connected with the swinging belt adapted to be moved longitudinally thereby as the belt swings, a cam actuated by said rod, a swinging lock operatively associated with said power disconnecting member for holding the same in operative position, and a spring operatively associated with said power disconnecting member for moving the clutch to a disconnected or open position whenever permitted.

5. The combination with a power driven clothes wringer having a power disconnecting member, of a combined feed and automatic throw out comprising a spring adapted to be connected with said power disconnecting member for throwing the same out, a pivotally mounted member acting to lock the power disconnecting member in an operative position, means acting as a cam for moving said pivotally mounted member to a disengaged position whereby said spring will be permitted to function, a rock shaft for actuating the means acting as a cam, a reciprocating rod for rocking said rock shaft, a pair of feeding belts for feeding clothes to the wringer, one of said belts being mounted so as to swing independently of the other, and a loose connection arranged between said rod and said pivotally mounted belt whereby when the pivotally mounted belt is moved for a predetermined distance said rod will be moved until said rock shaft actuates the means acting as a cam for unlocking the power disconnecting member.

6. The combination with a power driven clothes wringer provided with a power disconnecting member and an arm for throwing the power disconnecting member in and out, of a spring connected with said arm and tending to continually move the arm to throw the power disconnecting member out, a pivotally mounted structure acting as a lock for normally locking said arm so that the power disconnecting member will be in, a swinging member acting as a cam for moving said lock to an unlocked position whereby said spring is permitted to function, a feeding structure for directing clothes to the squeezing rollers of the wringer, and means actuated by part of the feeding structure for swinging said swingable member to cause said lock to move to an unlocked position.

7. The combination with a power driven clothes wringer provided with a power disconnecting member and means for throwing the power disconnecting member in and out, of a pair of belts acting as feeding means for feeding clothes to the squeezing rollers of the wringer, means acting as frames for supporting said belts, said means including a pair of rollers for each belt, means for pivotally supporting one end of one of said frames, said means permitting said last mentioned frame and the belt car-

ried thereby to rest on the other belt, spring means for resiliently urging one end of the pivotally mounted frame toward the other frame whereby when the clothes are fed between said belts they will be separated and when a large article is forced between said belts the pivotally mounted belt will be swung, and means actuated by the swinging action of said pivotally mounted belt for throwing said power disconnecting member out.

8. The combination with a power driven clothes wringer provided with a power disconnecting member, feeding means for directing clothes into said wringer and means actuated by part of said feeding means for releasing said power disconnecting member, means for moving said power disconnecting member to a disengaged position when released, said releasing means including a bracket connected with said feeding means, said bracket being provided with a slot, a rod extending through said slot, and a stop adjustably mounted on said rod whereby the rod may be adjusted to function under different actions of said feeding means.

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