July 9, 1940. C. G. LUNDSTROM 2,207,436

SAFETY DEVICE FOR WRINGERS

Filed Aug. 28, 1937 2 Sheets-Sheet 1

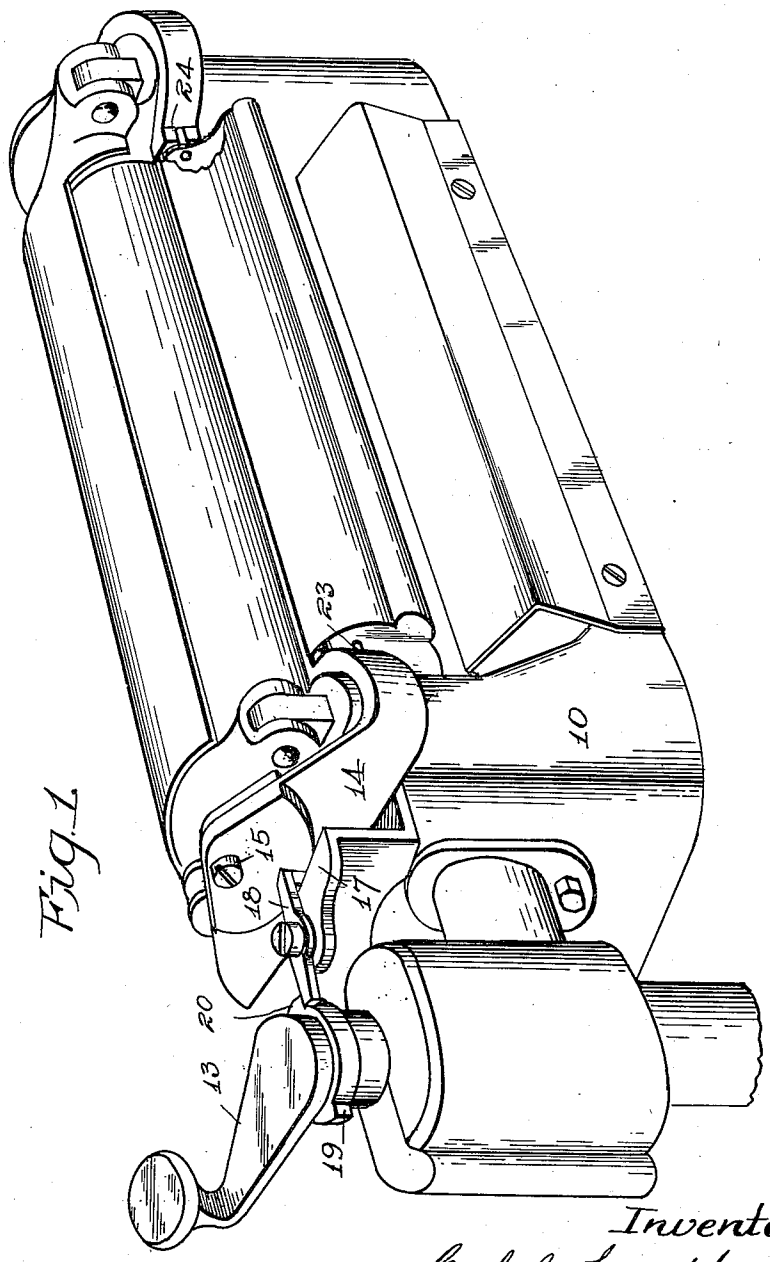


Fig. 1

Inventor
Carl G. Lundstrom
By Owing & Hague Attys

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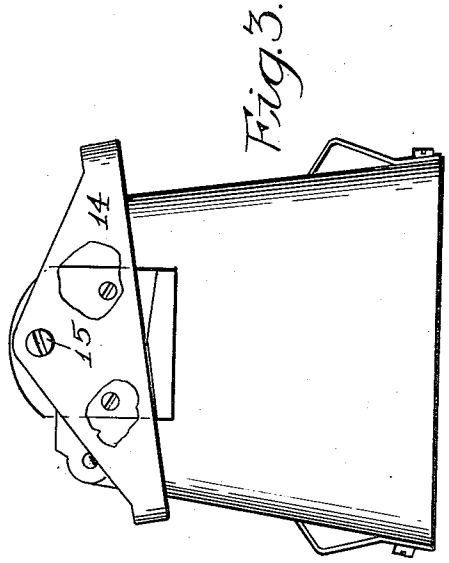


Fig. 3.

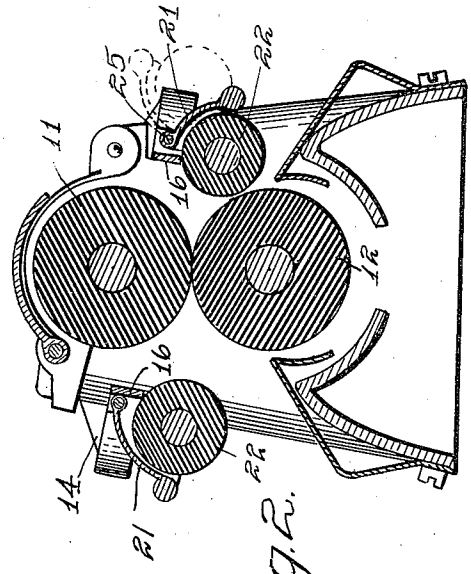


Fig. 2.

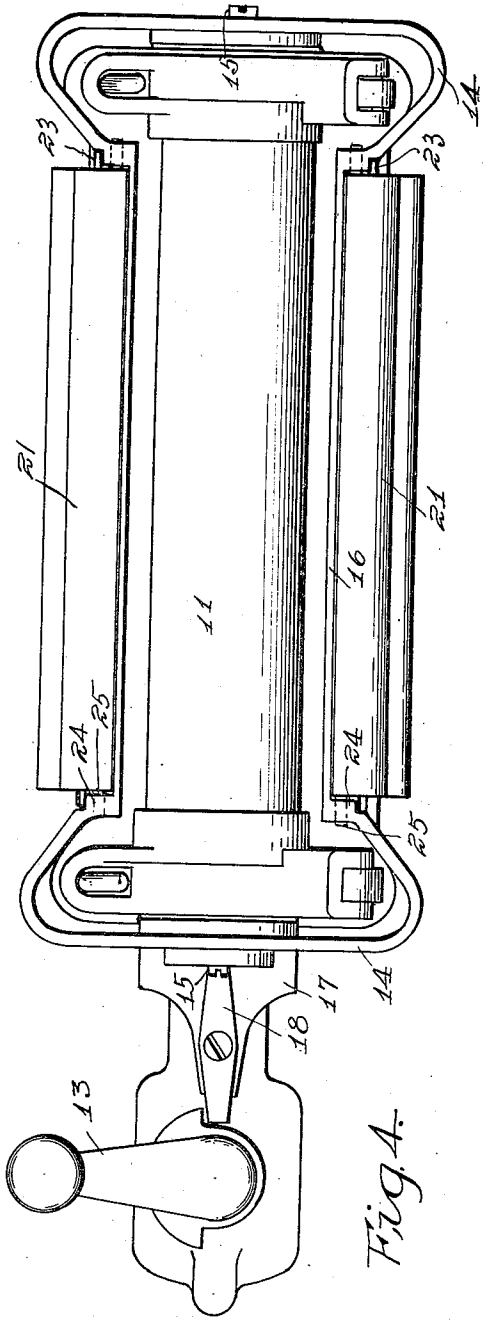


Fig. 4.

Inventor
Carl G. Lundstrom
Owing & Teague Atty's

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UNITED STATES PATENT OFFICE

2,207,436

SAFETY DEVICE FOR WRINGERS

Carl G. Lundstrom, Des Moines, Iowa, assignor of one-fourth to A. Anstrom, Boone, Iowa

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2 Claims. (Cl. 68—266)

The object of my invention is to provide a safety device in the nature of an attachment which may be readily and quickly applied to the ordinary power-operated clothes wringer, and which will prevent an operator's fingers from becoming caught in the wringer rolls and at the same time will not interfere with the ordinary operation of the wringer.

A further object is to provide a device of this character which will be automatically reversed in its position relative to the wringer rolls when the direction of rotation of the wringer rolls is reversed.

Referring to the accompanying drawings,

Figure 1 shows a perspective view illustrating a power-operated wringer having my improved safety device applied thereto.

Figure 2 shows a vertical transverse sectional view of same.

Figure 3 shows an end view of same; and

Figure 4 shows a top view of same.

I have used the reference numeral 10 to indicate generally the frame of an ordinary power-operated wringer having an upper wringer roll 11 and a lower wringer roll 12. The power-operated wringer is of the reversible wringer type and is provided with a crank 13 which, when moved, operates a wringer roll reversing mechanism which is of the ordinary construction not herein illustrated and described.

My improved safety device comprises a frame, indicated generally by the numeral 14 and pivotally mounted on the wringer frame at 15 above the center of the upper wringer roll. It is provided at each side with a longitudinally arranged frame member 16 which normally extends longitudinally across the side of the wringer adjacent the lower portion of the upper wringer roll, as clearly shown in Figure 2. At the end of the wringer frame adjacent the crank 13 is a bracket 17, to which is fulcrumed a lever 18. One end of this lever enters a notch formed in the frame member 14 and the other end extends outwardly away from the end of the wringer in position to be engaged by the lugs 19. These lugs are formed on a collar 20 fixed to the crank 13, and are so positioned relative to the crank 13 that when the crank is moved to position for causing the wringer rolls to be power driven in one direction, one of the shoulders 19 will hold the lever 18 in position with one of the frame members 16 adjacent the upper wringer roll 11 and the other one widely spaced from it, as shown in Figure 2, and when the crank 13 is moved to position for reversing the wringer rolls, the opposite shoulder 19 will, during such reversing movement, engage the lever 18 and move it in the direction for tilting the frame member 14 to position with the opposite frame member 16 close to the wringer rolls and the other one away from the wringer rolls in a position opposite to that shown in Figure 2. In this manner the safety device is always positioned so that the side of the tilting frame is in its lower position on the side of the wringer rolls through which clothes are fed between the wringer rolls, and said tilting frame is by this means also firmly held in said position.

Pivotally mounted on each of the frame members 16 is a guard member, preferably formed of sheet metal, and comprising a body portion 21 which is curved outwardly away from the upper roll and downwardly, and pivotally mounted in this guard member is a guard roll 22. Means are provided for limiting the movement of the guard roll toward the lower wringer roll, comprising a pin 23 carried by the guard member to engage a shoulder 24 carried by the frame member 14, as shown in Figure 1, and this movement is so limited that the guard roll 22, when moved to its limit in a direction toward the lower wringer roll, will always stand spaced apart from the lower wringer roll so that the rotation of the lower wringer roll will not tend to rotate the guard roll 22. The position of the guard roll, when on the side of the tilting frame which is at its lower limit, is such that it extends downwardly to a point near the horizontal center of the lower wringer roll, and the guard 21 and roll 22 completely close the entrance between the wringer rolls to such an extent that an operator's fingers could not be inserted therein without first swinging the guard roll outwardly away from the wringer rolls.

In this connection it is important to note that the pivotal point 25 of the guard 21 is above and spaced outwardly away from the upper wringer roll further than the pivotal center of the guard roll 22. By this arrangement the following advantageous results are attained: The only way in which an operator's fingers or articles of clothing can enter between the wringer rolls is by first moving the guard roll to uncover the entrance between the wringer rolls. The guard roll is held firmly against movement toward the wringer rolls, and the only way in which the guard roll can be placed in position for permitting the normal operation of the wringer is to swing it outwardly away from the wringer rolls and upwardly, and on account of its pivotal arrangement, the only way in which an operator's fingers could remove the

guard roll from its position for preventing the entrance of an operator's fingers between the wringer rolls is for the operator to press upon the guard roll in a direction outwardly away from the wringer. Pressing upwardly will not accomplish this purpose.

In practical operation, and assuming that the safety device is in the position shown by solid lines in Figure 2, then when articles of clothing are presented to the lower wringer roll below the guard roll, they will be carried by the lower wringer roll upwardly to the space between the wringer rolls, and this upward travel of the clothes will cause parts of the clothes, if thick enough, to engage the guard roll and swing it outwardly and upwardly away from the lower wringer roll so that in this normal feeding of clothes into the wringer the guard device does not interfere, and so far as the discharge of clothes from the wringer is concerned, the opposite guard roll is widely spaced apart from the wringer rolls at the discharge side and does not interfere in the ordinary discharge of the clothes from the wringer.

Assuming that an operator should carelessly insert his fingers below the guard roll **22**, the finger tips would first engage the rotating lower wringer roll, and the space between the lower wringer roll and the guard roll is so small that the fingers could not be moved further toward the space between the wringer rolls and the operator's fingers could be inserted between the wringer rolls only if they engaged the guard roll and moved it outwardly away from the wringer rolls, and such movement would, of course, prevent the fingers from ever entering the space between the wringer rolls.

Assuming that the guard roll **22** could be removed from its position enclosing the entrance between the wringer rolls, by a straight upward movement, then it would be possible for an operator to place his fingers under the guard roll and against the lower wringer roll, which at that point would be traveling upwardly, and this upward movement would elevate the guard roll and permit the operator's fingers to enter between the wringer rolls. Furthermore, I have found in practice that it is advantageous to have the guard roll above the place where the clothes enter the space between the wringer rolls, and it is also desirable to have the guard roll freely rotatable and not mechanically rotatable in use with the wringer rolls. By this means I have avoided all tendency for clothes to wrap upon the guard roll.

I claim as my invention:

1. The combination with a power-operated wringer having a wringer reversing mechanism and a crank for operating the reversing mechanism, of a frame, two guard devices carried by the frame, one on each side of the wringer rolls, a frame pivotally supported upon the wringer frame and having said guard devices attached thereto, a lever fulcrumed to the wringer frame and connected at one end to said guard frame, and two shoulders fixed to said crank for engaging said lever and moving it to position for swinging said guard frame from one of its limits of movement to the other, and for securely holding it in such position.

2. The combination with a wringer having a frame and upper and lower wringer rolls, of a guard frame pivotally mounted at the ends of the wringer frame and extended laterally beyond the wringer rolls at both sides of the wringer, means for tilting the guard frame and for securely holding it in various positions of its adjustment, a guard device at each side of the guard frame pivoted to the guard frame and extended downwardly therefrom whereby it may be moved toward and from the wringer rolls independently of the guard frame, and a guard roll rotatably mounted in each guard device.

CARL G. LUNDSTROM.