

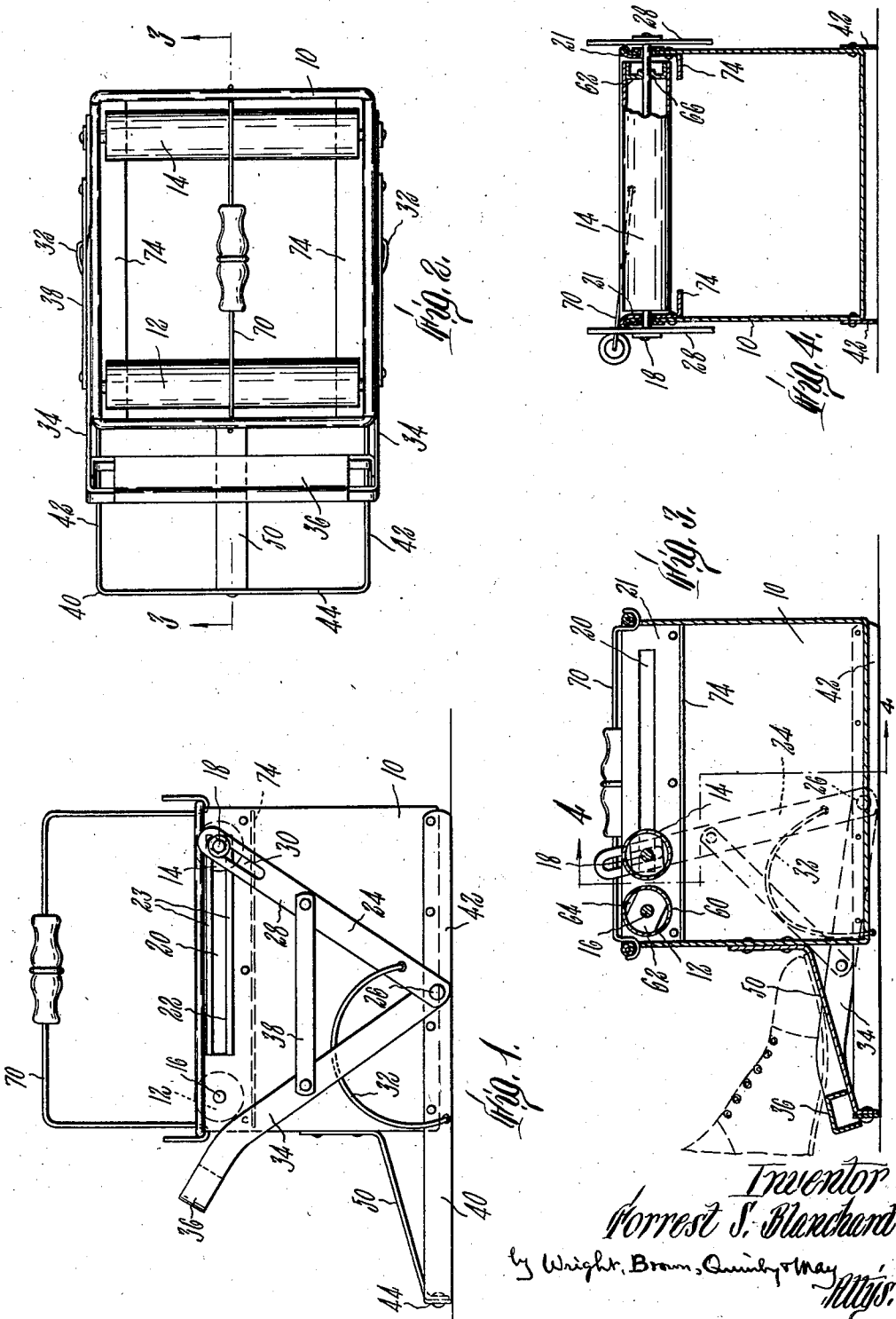
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MOP WRINGER

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MOP WRINGER

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This invention relates to improvements in mop wringers of the type consisting of a rectangular receptacle for water or other cleaning fluid, a pair of wringer rolls mounted within the receptacle, and means for moving the rolls together so as to squeeze a mop or other article inserted between them.

It is an object of the invention to provide a mop wringer of the type described wherein one of the rolls is movable toward the other, improved means for effecting such movement being included in the structure. Another object of the invention is to provide a simple but effective hold-down for permitting the operator to hold the receptacle on the floor against the upward pull of a mop which is being drawn between the rolls. Another object of the invention is to facilitate the regulation of roll pressure by the operator. Another object of the invention is to provide improved bearing structure for the rolls. A further object of the invention is to attach the bail to the receptacle in an improved location.

These and other advantageous features of the invention will be apparent from the disclosure thereof in the following description, and from the drawing of which

Figure 1 is a side elevation of a wringer embodying the invention.

Figure 2 is a plan view of the same.

Figure 3 is a sectional view on the line 3—3 of Figure 2.

Figure 4 is a sectional view on the line 4—4 of Figure 3.

As shown on the drawing, the wringer comprises a rectangular receptacle 10 which is customarily made of galvanized iron or other suitable material. Mounted within the receptacle 10 are a pair of parallel wringer rolls 12 and 14, the roll 12 being journaled on a fixed rod or shaft 16 which extends through the side walls of the receptacle near the front end thereof and near the rim thereof. The roll 12 is thus rotatable about a stationary axis. The roll 14 is journaled on a shaft 18, the length of which is greater than the width of the receptacle 10 so that the ends of the shaft 18 project beyond the side walls of the receptacle. In each side wall is a horizontal slot 20 near the rim of the receptacle, these slots extending a considerable portion of the length of the receptacle. The shaft 18 projects through the slots 20 and rides on the lower edge 22 of each slot. To widen the bearing edges of the slots, reinforcing plates 21 may be secured inside the side walls of the receptacle, these plates hav-

ing lips 23 bent back to provide smooth bearing surfaces for the shaft 18.

Mechanism is provided for moving the roll 14 toward the roll 12, such mechanism consisting of a bell-crank 24 to each side of the receptacle, each bell-crank being pivotally mounted at the adjacent side of the receptacle near the bottom thereof as at 26. The rear arm 28 of each bell-crank, which normally slopes upwardly and rearwardly from the pivot 26, is provided with a longitudinal slot 30 through which the shaft 18 extends. As the bell-cranks rock on their pivots 26, the arms 28 force the roll 14 toward the front of the receptacle. As the roll 14 is moved toward the front of the receptacle, the arms 28 swing toward vertical positions. As is evident from Figure 1, this means that the point of pressure between each arm 28 and the shaft 18 moves nearer the pivot axis 26 so that the bell-cranks act with increasing mechanical advantage as the roll 14 approaches the roll 12. A pair of springs 32 are provided to maintain the roll 14 normally in the position shown in Figure 1, that is, near the rear of the receptacle. The front arms 34 of the bell-cranks project from the pivots 26 upwardly and forwardly beyond the front wall of the receptacle, the ends of these arms being joined by a transverse treadle bar 36. This treadle bar is normally located near the rim of the front wall of the receptacle and when depressed swings downwardly and forwardly as the roll 14 advances toward the roll 12. A tie bar 38 extends between the front and rear arms of each bell-crank to cause these arms to rock as a unit about the pivot 26.

The receptacle is provided with a foundation or base member 40 which projects forward beyond the front wall of the receptacle so as to provide an extended surface for the receptacle on the floor. As shown in the drawing, the foundation member 40 may consist of a single strip of iron having parallel portions 42 secured to the side walls of the receptacle at the bottom thereof and extending forward beyond the front wall of the receptacle. This member also has a transverse portion 44 extending between the forward ends of the side portions 42 and parallel with the front wall of the receptacle. This foundation extension engages the floor at a point spaced from the receptacle to prevent the receptacle from tipping forward when the treadle 36 is depressed. If desired, the lower edge of the member 40 may be lower than the bottom of the receptacle itself so that the member 40 supports the receptacle clear of the floor as indicated in Figure 4.

When a mop is pulled upward in the course of a wringing operation, there is sometimes a strong upward pull exerted on the container, this upward pull frequently being sufficient to lift the container and its contents. Since the treadle 36 is strongly pressed down during a wringing operation, the upward tension on the mop tends to rock the whole wringer structure about the member 44 as an axis. To avoid such raising and rocking of the container, a hold-down or purchase member is provided, this member, comprising a rigid strip 50 which projects from the front wall of the container, preferably midway between the side edges thereof. This provides a purchase for a downward thrust by the shoe of the operator near the front wall of the container to counteract the upward pull of the mop and thus to prevent the container and wringer structure from rocking about the member 44 as an axis. The purchase member 50, as shown in Figure 2, is preferably disposed in a median plane, that is, the plane which bisects the rollers 12 and 14. This prevents any lateral rocking or tilting of the receptacle when a mop is pulled up between the rolls. Thus one foot of the operator serves to operate the wringer mechanism and also to prevent tipping of the container when the mop is pulled upward. To strengthen the member 50 it may be extended and secured to the member 44 as shown and may conveniently slope downward and forward. The wringer pivots 26 are located with reference to the transverse member 44 in such a manner that, when the treadle is depressed, it swings forward and downward to a position immediately above the member 44, as illustrated in Figure 3. In operating the treadle, the toe of the operator's shoe thus comes in contact with the hold-down member 50 before the treadle reaches its extreme position of depression. Resting the toe of his shoe on the hold-down member, the operator can rock his foot about the toe as a fulcrum with the arch of the shoe on the treadle 36, and thus carefully regulate the pressure of the rolls on the mop with minimum resultant fatigue.

The rolls 12 and 14 may be of any preferred construction. As indicated, each of these rolls comprises a cylindrical shell 60 with a pair of bearing members 62 secured within the ends thereof. Each bearing member 62 may conveniently be made from a strip of metal or other suitable material which is narrower than the diameter of the shell, so that, when the bearing members are inserted within the ends of the shell, a pair of clearances 64 are left between the side edges of each strip and the adjacent wall of the shell. This prevents any accumulation of water within the shell which may enter through the shaft bearing. In making the bearing members 62, each metal strip is centrally punched and the sides of the hole are swaged to form an elongated bearing element 66 as indicated in Figure 4.

Since mop wringers of the type described must

usually be carried from place to place, a convenient bail 70 is provided. By reason of the foundation extension 40 and the fact that the receptacle may contain various quantities of water at different times, the center of gravity of the entire wringer and its contents is variable, sometimes being further forward than at other times according to the quantity of water within the receptacle. In order to facilitate carrying the receptacle in a level position, the bail 70 is attached to the front and rear walls of the receptacle instead of to the side walls as has been the prior practice. Thus as indicated on Figures 2 and 3, the bail is attached to the front and rear walls of the receptacle near the mid-points of the rims thereof. The bail is preferably made approximately rectangular so as to be readily swung to either side out of the way of the mop to be inserted between the rolls 12 and 14.

In order to keep the mop strands from getting tangled in the bearings of the rolls, a pair of guide elements 74 are provided within the receptacle. As shown, these may comprise horizontal strips or flanges on the reinforcing plates 21 projecting from the side walls of the receptacle and extending from the front to the rear of the receptacle. These guide members serve to keep the mop clear of the roll bearings.

It is evident that various modifications and changes may be made in the embodiment of the invention herein shown and described without departing from the spirit or scope thereof as defined in the following claims.

I claim:

1. A mop wringer comprising a receptacle, a pair of wringer rolls within said receptacle, means mounted on said receptacle for pressing said rolls together, said means including a treadle in front of said receptacle arranged to be depressed to move the rolls together, and a fixed purchase member projecting from said receptacle in the plane which bisects said wringer rolls and engageable by the toe of the treadle-operating foot at a point adjacent to the receptacle to exert a downward thrust on the receptacle opposing any rocking of the receptacle when a mop is pulled upward between the rolls.

2. A mop wringer comprising a receptacle, a pair of wringer rolls within said receptacle, means mounted on said receptacle for pressing said rolls together, said means including a treadle in front of said receptacle arranged to be depressed to move the rolls together, a fixed base member projecting from said receptacle to engage the floor in front of the receptacle at a point spaced from the wall of the receptacle, and a purchase member secured to said receptacle and engageable by the treadle-operating foot at a point nearer to said front wall than said point of engagement of said fixed base member with the floor and in a plane which bisects said wringer rolls.

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