March 18, 1947. G. V. HUTCHINS 2,417,416

MOP WRINGER

Filed Oct. 23, 1945 2 Sheets-Sheet 1

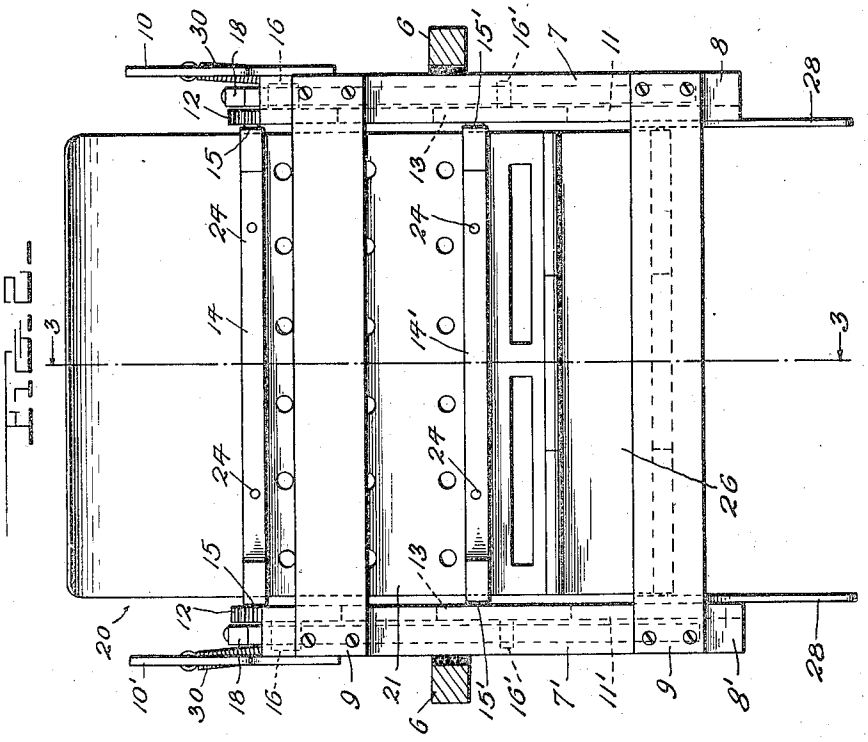


FIG. 2.

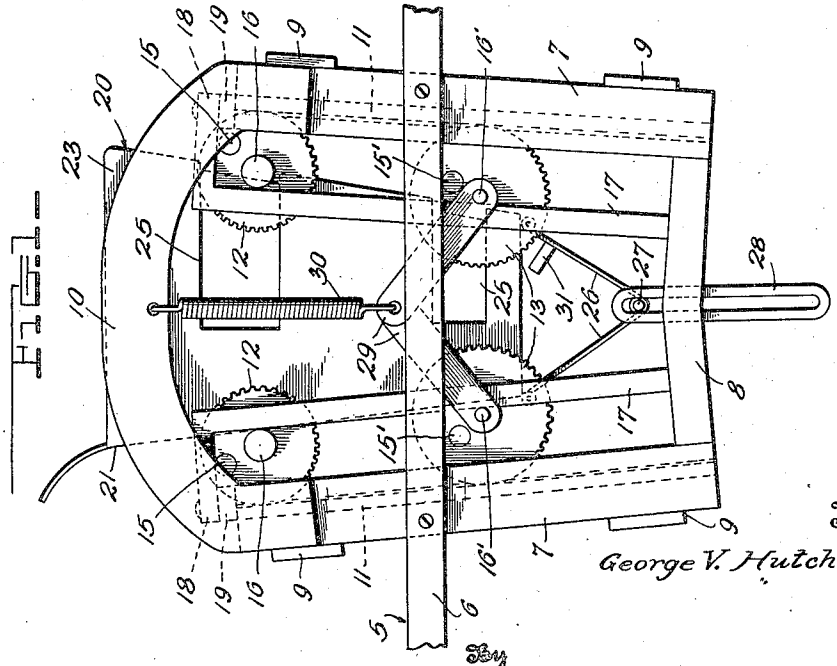


FIG. 1.

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March 18, 1947. G. V. HUTCHINS 2,417,416

MOP WRINGER

Filed Oct. 23, 1945 2 Sheets-Sheet 2

FIG. 4

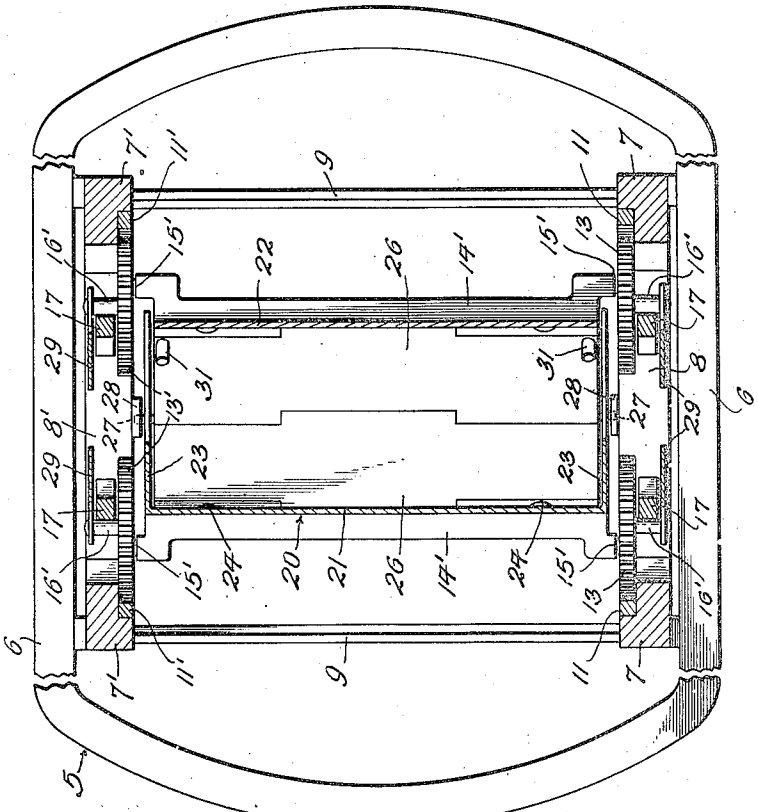
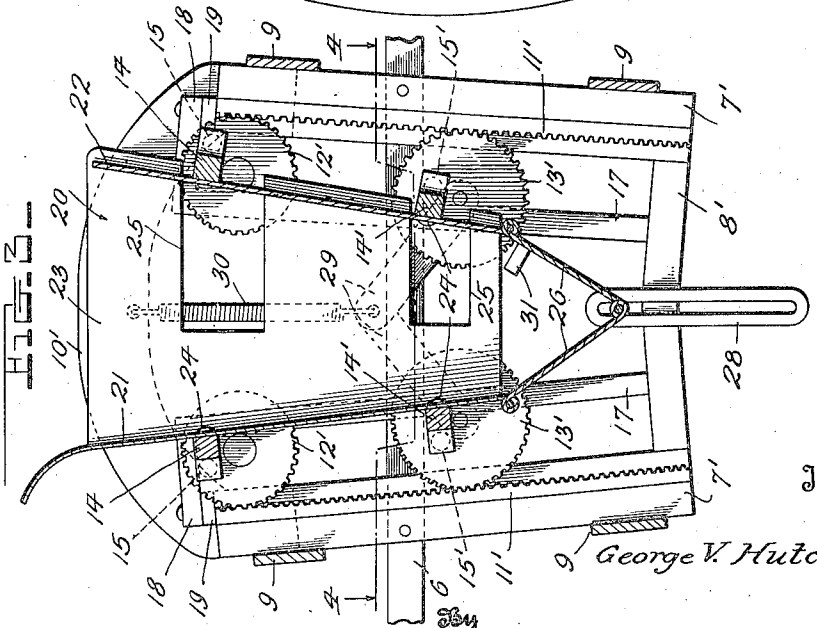


FIG. 3



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MOP WRINGER

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11 Claims. (Cl. 15—261)

1

The invention aims to provide a new and improved mop wringer of the general type in which a depressible mop receptacle is mounted on a frame to be supported by a scrub bucket, said receptacle having relatively movable side walls which squeeze surplus water from the mop when said receptacle is depressed either by downward forcing of the mop or by mechanical means.

Another object of the invention is to provide improved means for relatively moving the receptacle walls as the receptacle is depressed, said means utilizing the rolling action of wheels upon tracks and eccentric members operated by said wheels to perform this function.

A further object is to provide a construction in which the mop squeezing operation is intensified by inclination of the aforesaid tracks.

A still further object is to provide for squeezing the lower end of the mop more intensively, as it always contains more water.

Another aim is to provide a highly efficient, desirable and durable construction, yet one which may be readily manufactured and marketed at a reasonable price.

Figure 1 of the accompanying drawings is an end elevation with portions broken away.

Fig. 2 is a side elevation partly in section.

Fig. 3 is a vertical sectional view on line 3—3 of Fig. 2.

Fig. 4 is a horizontal sectional view partly broken away, on line 4—4 of Fig. 3.

The construction disclosed in the drawings may be considered as preferred, attention, however, being invited to the possibility of making variations within the scope of the invention as claimed.

The general frame structure of the device includes a horizontal frame 5 to rest upon a scrub bucket. Suitably secured to the side bars 6 of this frame, are four corner posts 7, 7 and 7', 7'. The lower ends of the posts 7 are connected by a substantially horizontal bar 8, and a similar bar 8' connects the lower ends of the posts 7'. Then too, the lower ends and the upper ends of the posts 7 are connected with the corresponding ends of the posts 7' by horizontal bars 9. The upper ends of the two posts 7 are connected by an arched crown bar 10 and a similar bar 10' connects the upper ends of the posts 7'. Each of the posts 7 is provided with a longitudinal rack bar 11 and each of the posts 7' has a similar rack bar 11'. Two upper gear wheels 12 and two lower gear wheels 13 mesh with the rack bars 11, and corresponding gears 12' and 13' mesh with the rack bars 11'. The upper gears 12 and

2

12' are connected by horizontal bars 14, the ends of said bars being connected with said gears at eccentric points 15. Similarly, the lower gears 13 are connected by horizontal bars 14', the ends of said bars being connected with eccentric points on said gears, as shown at 15'. The upper and lower gears are provided with central projecting hubs 16 and 16' respectively, which engage vertical rails 17, whereby the various gears are held in mesh with the coacting racks. In the present disclosure, the upper ends of the rails 17 have lateral projections 18 secured on spacers 19 on the upper ends of the posts 7 and 7', and the lower ends of said rails 17 are suitably secured to the bars 8 and 8'.

A mop receptacle 20 is provided, said mop receptacle having two side walls 21 and 22, and two end walls 23 secured to the wall 21 but not to the wall 22. The wall 21 is secured by screws or the like 24 to the upper and lower bars 14 and 14' at one side of the device; the wall 22 is similarly secured to the upper and lower bars 14 and 14' at the other side of the device, and the end walls 23 have suitable notches 25 which receive the last named bars as the two walls 21 and 22 move inwardly toward each other. Two downwardly converging bottom sections 26 are hinged to the lower ends of the walls 21 and 22 and are hinged to each other, the lower extremities of said bottom sections having projecting studs 27 vertically slidable in guides 28 secured to the lower bars 8 and 8'.

Upwardly converging links 29 are pivoted at their lower ends to the hubs 16' of the lower gears 13 and 13', the upper ends of said links being connected with tension springs 30 hooked into openings in the crown bars 10 and 10'. The upward pull of these springs normally holds the receptacle and the gears raised as shown in the drawings.

When the receptacle 20 is depressed either by downward pushing of a mop inserted into said receptacle, or by some mechanical means which might be provided, the gears 12 and 13 and 12' and 13' roll downwardly upon their respective rack bars 11 and 11' and the eccentric connections 15 and 15' thus force the bars 14 and 14' inwardly, thus moving the receptacle side walls 21 and 22 inwardly to effectively squeeze surplus water from the mop. The bottom sections 26 squeeze the lower end of the mop with great intensity, which is greatly desirable as the most water is always in the lower end of the mop.

It is preferable that the rack bars 11 converge downwardly with respect to each other, and the

same is true of the rack bars 11'. Thus, while the receptacle 20 is being depressed to move the side walls 21 and 22 inwardly, the upper and lower gears are shifted inwardly, thus producing a combination of forces to squeeze the mop.

Downward movement of the receptacle may be limited by any desired means. In the drawings, however, I have disclosed stop pins 31 on one of the bottom sections 26, to strike the other of said bottom sections when the receptacle has been closed to the desired extent.

From the foregoing, taken in connection with the accompanying drawings, it will be seen that novel and advantageous provision has been made for carrying out the objects of the invention, and while preferences have been disclosed, attention is again invited to the possibility of making variations within the scope of the invention as claimed. For example, while gear wheels and coacting racks are shown, some other type of wheels might well be used to coact with trackage formed by elements other than actual rack bars. Further, while the springs 30 have been disclosed for raising the receptacle body and causing the wheels to effect opening of said receptacle, it will be understood that if mechanical means be provided to depress said receptacle, the same mechanical means could be utilized to raise it, making the springs unnecessary.

I claim:

1. A mop wringer comprising a receptacle having opposed side walls, at least one of which is inwardly movable toward the other, a supporting frame upon which said receptacle is mounted for downward movement, an upright track carried by said frame, a wheel engaging said track, and means connecting said wheel with said receptacle to cause downward rolling of said wheel on said track as said receptacle is depressed, said connecting means including an eccentric member operated by said wheel for inwardly moving said wall as said wheel rolls downwardly.

2. A structure as specified in claim 1; said track being inclined in a direction to shift said wheel in the direction of movement of said movable side wall as said receptacle is depressed.

3. A mop wringer comprising a receptacle having opposed side walls, at least one of which is inwardly movable toward the other, a supporting frame upon which said receptacle is mounted for downward movement, upright trackage carried by said frame, upper and lower wheels engaging said trackage, and means connecting said receptacle and wheels to cause downward rolling of said wheels on said trackage as said receptacle is depressed, said means including upper and lower eccentric members operated by said upper and lower wheels for inwardly forcing the upper and lower ends of said movable side wall as said receptacle is depressed.

4. A structure as specified in claim 3; said trackage being inclined in a direction to shift said wheels in the direction of movement of said movable side wall as said receptacle is depressed.

5. A mop wringer comprising a supporting frame, a mop receptacle movable vertically with respect to said frame and having opposed side walls, at least one of which is movable inwardly toward the other, upper and lower horizontal bars secured to said movable side wall, two upper and two lower wheels connected at eccentric points with the ends of said upper and lower bars respectively for inwardly pushing said movable side wall when said wheels are rotated in one direction, and upright trackage on said frame and engaging said wheels for rotating said wheels in said one direction as said receptacle is depressed.

6. A mop wringer comprising a frame having four corner posts, each of which is formed with a longitudinal track, an upper and a lower wheel engaged with each of said tracks to roll downwardly thereon, a mop receptacle between said posts and having inwardly movable side walls, means connecting the upper ends of said side walls with eccentric points of the four upper wheels, and means connecting the lower ends of said side walls with eccentric points of the four lower wheels, said wheels and means being so constructed and arranged as to be operable to inwardly move said side walls as said wheels roll downwardly along said tracks during depression of said receptacle.

7. A structure as specified in claim 6; said tracks being so inclined as to shift the wheels connected to each side wall in the direction of movement of said each side wall during depression of said receptacle.

8. In a mop wringer having a supporting frame, a mop receptacle mounted for vertical movement in said frame, said receptacle having upright walls including oppositely disposed side walls movable inwardly toward each other, and means for moving the said side walls inwardly as the receptacle is depressed in said frame; two downwardly converging bottom sections hinged at their upper edges to the lower edges of said side walls and hinged at their lower edges to each other, to intensively squeeze the lower end of the mop.

9. A mop wringer comprising a supporting frame, a vertically movable mop receptacle within the frame and having oppositely disposed side walls, end walls and two downwardly converging bottom sections hinged to each other at their lower edges and hinged at their upper edges to the lower edges of said side walls, guiding means on said frame for the hinged lower edges of said bottom sections, upright trackage at each end of said frame, upright guides at each end of said frame, upper and lower pairs of wheels at each end of said receptacle, said wheels being positioned to run on said trackage and having concentric hubs to coact with said guides, means connecting the upper and lower wheels to said side walls adjacent the ends of the latter, the last mentioned means including pivots positioned eccentrically on said wheels, and spring means attached to said frame for normally holding the receptacle in its elevated position.

10. A mop wringer comprising a substantially rectangular supporting frame, upright tracks carried by the four corners of said frame, an upper and a lower wheel engaged with each of said tracks to roll downwardly thereon, means for maintaining said wheels in contact with said tracks, a vertically movable mop receptacle within said frame and having inwardly movable side walls, means connecting the upper ends of said side walls with eccentric points of the four upper wheels and means connecting the lower ends of said side walls with eccentric points of the four lower wheels, said wheels and said connecting means being so constructed and arranged as to be operable to inwardly move said side walls as said wheels roll downwardly along said tracks during depression of said receptacle.

11. A mop wringer comprising a supporting frame, a mop receptacle movable vertically with respect to said frame and having opposed side walls at least one of which is movable inwardly toward the other, two upper and two lower wheels

connected at eccentric points with the upper and the lower portions respectively of said movable side wall for inwardly pushing said movable side wall when said wheels are rotated in one direction, and upright trackage on said frame and engaging said wheels for rotating said wheels in said one direction as said receptacle is depressed.

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