March 27, 1934. S. SCHULMAN 1,952,824

MOP WRINGER

Filed June 22, 1931

Fig. 1

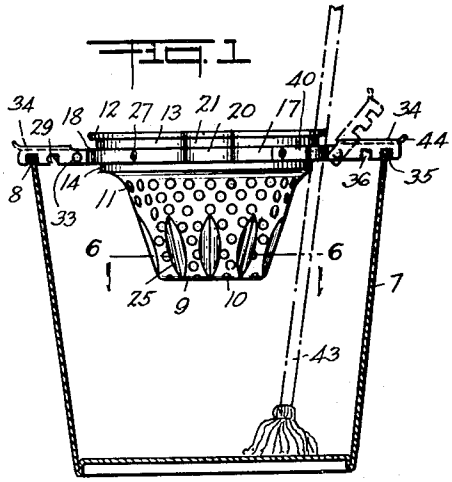


Fig. 2

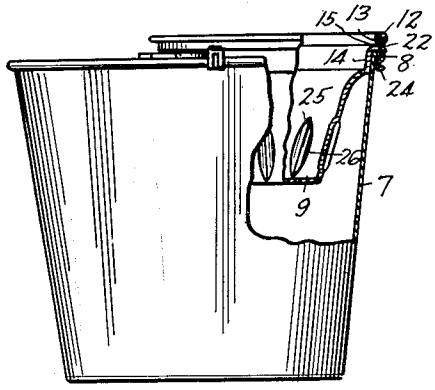


Fig. 3

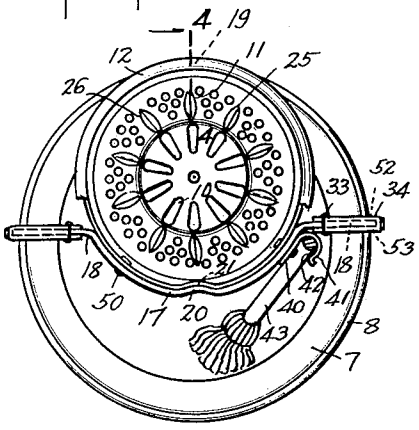


Fig. 4

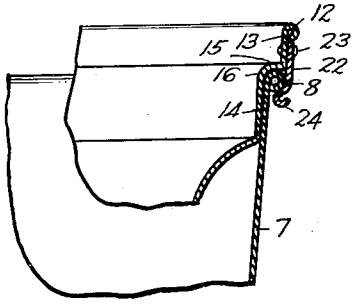


Fig. 5

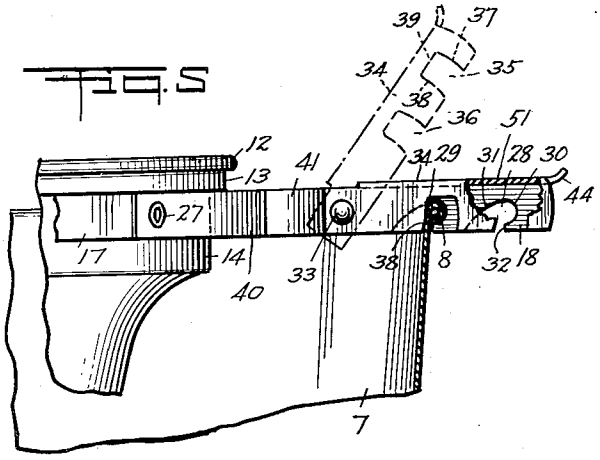
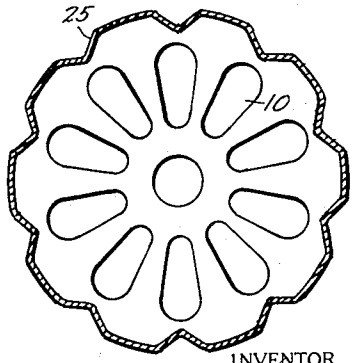


Fig. 6



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UNITED STATES PATENT OFFICE

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MOP WRINGER

Solomon Schulman, Brooklyn, N. Y.

Application June 22, 1931, Serial No. 545,999

19 Claims. (Cl. 15—263)

My invention relates to mop wringers of the general type in which a drain cup is mounted within a pail, and used in connection therewith and with a mop, for removing excess water from the mop.

More particularly stated, my invention comprehends a mop wringer of the general type just mentioned, in which I provide an improved supporting bar, connected with the drain cup, and used for detachably and securely connecting the drain cup with a pail, against relative movement thereof and independently of the bail-holding ears of the pail.

My invention contemplates the provision of an improved drain cup so constructed that excess water is more effectively removed from the mop. My invention further contemplates the provision of means, pivoted to the supporting bar and cooperating therewith and with the pail to lock the supporting bar and the drain cup securely in its operative position and also contemplates the provision of simple and convenient means for supporting the mop handle. My invention further contemplates the provision of a number of improvements over my prior Patents Nos. 1,652,800, dated December 13th, 1927, and 1,725,213, dated August 20th, 1929.

Reference is made to the drawing forming a part of this specification, and in which like reference characters indicate like parts throughout all of the figures.

The various objects of my invention will be clear from the description which follows and from the drawing, in which

Figure 1 is a substantially central vertical section and partial elevation of my improved mop wringer.

Figure 2 is a side elevation of the same, partly broken away.

Figure 3 is a top plan view of the device shown in Figure 1.

Figure 4 is an enlarged vertical section of part of the pail and of the drain cup, taken on the line 4—4 of Figure 3, showing the spring catch for detachably holding the cup to the pail at a given point.

Figure 5 is an enlarged fragmentary elevation similar to Figure 1, showing the auxiliary means for locking the supporting bar in place to the pail, and

Figure 6 is a horizontal section of the drain cup, taken on the line 6—6 of Figure 1.

In that practical embodiment of my invention which I have illustrated by way of example, the pail 7 is made preferably of galvanized sheet steel, and is provided with an annular bead 8 serving as a rim, these parts being of the usual or of any desired construction.

My improved drain cup is indicated by the numeral 9 and is made preferably of sheet material, being provided with a series of drain holes 10 in the bottom thereof and a second series of drain holes or perforations 11 in the preferably conical wall thereof, said holes being of the proper shape to facilitate the discharge of excess water from the mop to be wrung. The drain cup 9 is provided with a rim 12 of annular form, said rim being smooth and rounded and provided with an annular depending flange 13 and with a second annular flange 14 of less diameter than the flange 13. Said flanges 13 and 14 are joined by a suitable shoulder 15, suitably rounded as at 16 at the point where it joins the upper part of the flange 14. The rounded corner 16 is adapted to rest upon the inner part of the rim 8 of the pail at one place as at 19, and to rest upon a suitably shaped portion 17 of the supporting bar 18 along a diametrically opposite place.

I prefer to indent the arcuate portion 17 of the supporting bar as at 20 and to similarly indent the flange 13 of the drain cup as at 21. The indent 20 fits into the indent 21 and aids to secure the drain cup to the supporting bar. The indent 20 further serves as a support for the handle of the mop which may rest therein when the cup is not in use.

To insure the proper position of the drain cup upon the pail, and to resist lifting and rotational movement of said drain cup relatively to the pail, I prefer to provide a spring catch as 22 secured to the flange 13 by any suitable means such as the rivet 23. Said spring catch 22 terminates at its lower end in a bent spring portion 24 adapted and designed to snap past the rim 8 of the pail, to engage the outer part of said rim and to resist lifting movement of the drain cup as well as to resist rotary movement thereof.

The wall of the drain cup is further provided with a series of preferably imperforate, comparatively narrow and elongated projections 25 extending inwardly of the wall and substantially V-shaped in horizontal section. Said projections are limited by preferably curved peripheral edges as 26 at the intersection of said projections with the remainder of the wall of the cup.

It will be understood that as the mop is wrung, to remove excess water therefrom by rotating the mop within the drain cup under pressure, the

projections 25 offer obstructions to the rotation of the mop, thereby exerting more pressure on the mop than would be possible were the wall of the cup smooth. A substantially better wringing effect on the mop is thereby attainable.

The drain cup 9 is removably supported upon the pail, as has been previously indicated, by the supporting bar 18, said bar and said cup being removable from, and attachable to, the pail as a unit. Toward this end, the arcuate portion 17 of the supporting bar is secured to the flange 14 by suitable fastening means such as the eyelets 27, (Fig. 5), preferably though not necessarily, symmetrically spaced about the indent 20. It will be understood, however, that in place of the eyelets, I may use suitable bolts or screws as 50, whereby the drain cup is removably secured to the bar 18, and so that these parts may be separated for ease in shipping, packing and assembly, if desired.

At each end of the supporting bar, I prefer to provide a series of spaced, suitably shaped notches 28, 29, each adapted to receive the rim 8 of a pail and in the form substantially of a hook. That is, each of said notches comprises a circular outer portion 30, an inclined inner edge 31 extending inwardly and downwardly to the bottom edge of the supporting bar and a substantially vertical edge 32 connecting the lowermost end of the circular portion 30 to the bottom edge of the bar. By providing a series of such notches 28, 29, it will be understood that the bar and the drain cup carried thereby may be readily attached independently of the bail supporting ears of the pail to pails having rims differing not only in outer diameters but differing also in cross-sectional diameters.

Pivoted near each end to the supporting bar as by means of a suitable rivet 33, and at a point between the arcuate portion 17 and the inner notch 29 is the pivoted locking member 34. Said locking member is preferably U-shaped in cross-section, having a top 51 and depending parallel sides 52 and 53, each arranged on one side of the bar 18, and each provided with a series of substantially rectangular notches or recesses 35, 36 spaced apart a distance corresponding to that between the notches 28, 29 of the supporting bar. Each of the notches or recesses 35, 36, however, includes substantially parallel sides 37, 38 which may, if desired, be in the form of circular arcs having as a center, the center of the rivet 33. The walls 37, 38 of the notch 35 are joined by the edge 39, the depth of said notch being somewhat greater than the diameter of the bead or rim 8 of the pail.

It will be seen, as illustrated in Figs. 1 and 5, that the supporting bar and the drain cup are moved in place by slipping the cup into the pail, snapping the spring catch 22 over the rim, and arranging the supporting bar so that the rim enters one of the notches 28 or 29, the locking member 34 at this time being in the open position indicated by the dotted lines of Figs. 1 and 5. Said locking member is now swung in a clockwise direction, as viewed in Figure 5, about its pivot 33. The inner wall 38 of each of the notches 35 or 36 of the depending sides 52 and 53 thereby engages the inner surface of the pail, on each side of the bar 18, and forces the rim together with the adjacent part of the wall of the pail toward the curved edge 30 of the notch in the bar and thereby locks said rim in place.

Should the rim be comparatively large in cross-sectional diameter, the outer part of the rim may be forced into engagement with the curved edge 30 of the bar notch. However, regardless of the diameter of the rim, the vertical edge 32 of the notch engages the outer surface of the pail and tends to force the pail portion which it engages in between the walls 38 of the adjacent notches in the depending sides 52 and 53 of the locking member. It will be seen, therefore, that the locking action is independent of the size of the pail rim, and that the edge 32 acts as a pressure member to clamp, or even to slightly bend the pail wall against and between the notch walls 38 of the spaced sides of the locking member. The member 34 is manipulated by the finger piece 44.

The operation is repeated with the locking member 34 at the other end of the supporting bar. It will be understood that the rim of the pail has sufficient resiliency to be moved inwardly by the edge 32 or outwardly by the walls 38 the required distance to accomplish the locking operation just described.

Secured to the supporting bar, as by means of the eyelet 27, or the bolt or screw 50, is a suitable holder 40 for the mop handle. The ends 41 of said holder is bent first inwardly and then outwardly relatively to the arcuate portion 17, so that the space 42 therebetween is somewhat less than the diameter of the handle 43 of the mop. Said end 41 has sufficient resiliency to spring back into its initial position after it has been moved therefrom. The mop is therefore retained in place merely by forcing the handle past the spring end 41 and into the space 42, and may be easily removed from said space when it is desired to use the mop.

Similarly, the drain cup and the supporting bar may be readily removed from the pail by merely swinging the locking members 34 into unlocking position and then lifting the supporting bar and the drain cup off the pail.

It will be seen that I have provided simple and effective means for detachably supporting a drain cup upon a pail and for locking the drain cup in position thereon against possibility of rotation or other undesirable movement, that I have provided an improved drain cup effective to wring the mop more thoroughly, and that my invention is well adapted to meet the severe requirements of practical use.

I do not limit myself to the precise structure shown as variations may be made without departing from my invention, the scope of which is commensurate with my claims.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows:

1. In a mop wringer, a pail, a drain cup adapted to be mounted within the pail, a supporting bar connected to said drain cup and provided with notches near its ends for detachably engaging the rim of said pail, and a recessed member pivoted to the supporting bar and adapted to be swung to bring the inner wall of a recess thereof into engagement with the inner surface of the pail to force the rim of the pail toward the outermost wall of the notch in the supporting bar.

2. In a mop wringer, a drain cup, and means for securing said cup to a pail comprising a supporting bar connected to the drain cup and having a hook notch provided with a rounded outer portion near one end thereof and a locking member pivoted to the supporting bar inwardly of the hook notch and provided with a recess extending upwardly from the lower edge thereof, the inner wall of the recess being adapted to engage the

inner surface of a pail to force the rim of the pail outwardly and into the rounded portion of the hook notch of the supporting bar.

3. In a mop wringer, a drain cup, a supporting bar having a hook notch near one end thereof connected to the drain cup, and a locking member pivoted to the bar and adapted to engage the rim of a pail for forcing said rim toward the outermost portion of the hook notch.

4. A mop wringer comprising a pail provided with a rim, a drain cup, a spring catch on said cup adapted to snap about said rim, means spaced from the catch and connected to the cup for engaging the rim to support the cup, and pivoted means for cooperating with the supporting means to lock said supporting means detachably to the rim.

5. In a mop wringer, a drain cup, a supporting bar, means for connecting the cup to the bar, and a locking member pivoted to the bar having a part to engage the inner surface of a pail adapted to force the rim of the pail outwardly into forced operative engagement with the bar.

6. In a mop wringer, a drain cup, a supporting bar for the cup, and a member carried by the bar and having a spring end spaced from the bar and adapted to removably retain a mop handle.

7. In a mop wringer, a drain cup, a supporting bar for the cup, and a holding member terminating at one end in a laterally bent portion spaced from the bar and adapted to removably maintain a mop handle therebetween, the other end of said holding member being secured to the bar.

8. In a mop wringer, a pail, a drain cup, a supporting bar for the cup provided with notches adapted to receive the rim of the pail, and a locking member having spaced depending sides, each having a recess therein and connected to the bar, the inner walls of the recesses being arranged and adapted to engage the inner wall of the pail and to clamp the bar and said member to the pail with said inner wall of the pail therebetween.

9. In a mop wringer, a cup, supporting means for the cup, adapted to engage a pail, and means for locking the supporting means against movement relatively to the pail comprising a recessed locking member adapted to compress a portion of the pail between said member and said supporting means.

10. In a mop wringer, a pail, a drain cup positioned within the open upper end of the pail engaging one of the side walls of the pail and supported thereon at one point, a supporting member carried by the cup and engaging the pail at spaced other points, and locking means carried by said mentioned supporting means, said locking means having a part to engage and press a portion of the pail into locked position between said part and an opposing part of the supporting member.

11. The combination with a pail having a rim portion, of a perforated drain cup form positioned within said pail, said drain cup being of general conical form having its upper open end portion shaped to provide two annular band-like parts one positioned above the other, the lower band part being of relatively less diameter than the upper band part and there being a horizontally disposed part of the cup integrally connecting said two band parts and constituting an annular shoulder upon the cup the under-surface of which at one point is adapted to rest squarely upon the upper surface of the rim of the pail with the outer surface of the lower band part engaging against the inner surface of the pail, a spring catch secured to the outer surface of the upper band part of said cup and depending therefrom downwardly below said shoulder adapted to engage the rim of the pail, and means connected with the cup for detachably connecting the cup with the pail at other points.

12. In a mop wringer, a drain cup provided with an upper flange part and with a downwardly facing shoulder beneath said flange part adapted to rest upon the upper edge of a pail, a spring catch secured to said flange part and extending downwardly therefrom below said shoulder adapted to engage the rim of the pail, a second flange part of relatively less diameter than the first flange part disposed beneath the shoulder and adapted to rest at one point against the inner surface of the pail, a supporting bar having an arcuate portion secured to and carried by the outer surface of the second flange part at points spaced from said spring catch, said supporting bar having projecting portions each provided with means to grip the rim of the pail at points spaced from said spring catch and adapted to co-operate therewith to hold the cup upon the pail.

13. A mop wringer cup adapted for connection with a pail, and a holder for a mop handle formed as a part thereof disposed so as to be co-operative with a part of the pail to hold a mop handle substantially upright therein when the cup is in position upon a pail.

14. A mop wringer cup adapted for connection with a pail and having a wall part thereof bent to form a depression therein constituting a holder for a mop handle disposed so as to hold a mop handle substantially upright when the cup is in position upon a pail.

15. In combination, a pail, a mop wringer cup mounted within the pail, said pail and cup being proportioned and arranged to provide a space between the cup and a wall of the pail through which a mop of the type to be rung in said cup may be dipped into the pail outside of the cup so that the handle of the mop will project upwardly through said space, and a holder for said mop handle arranged in said space, co-operative with the pail to hold the mop handle substantially up-right when the head of the mop is resting upon the bottom wall of the pail.

16. In combination, a pail, a mop wringer cup mounted within the pail, said pail and cup being proportioned and arranged to provide a space between the cup and a wall of the pail through which a mop of the type to be rung in said cup may be dipped into the pail outside of the cup so that the handle of the mop will project upwardly through said space, and a plurality of separate spaced mop handle holders provided upon said wringer cup so as to stand in said space.

17. In combination, a pail, a mop wringer cup, a supporting member serving to support said cup in position upon the pail, said pail and cup being proportioned and arranged to provide a space between the cup and a wall of the pail through which a mop of the type to be rung in said cup may be dipped into the pail outside of the cup so that the handle of the mop will project upwardly through said space, and a holder for said mop handle positioned to stand in said space and being formed jointly by pressed-in parts of said cup and said supporting member.

18. A mop wringer comprising in combination,

a pail having an overhanging rim, a drain cup having a spring hook at one side to snap about relative under portions of said rim to support and hold said side of the cup connected with the rim, a supporting bar carried by the cup at the side opposite to said hook, said bar having opposite end portions extending to opposite sides of the pail and engaging the rim at points spaced from the hook to support the cup, and a separate locking member movably connected with the bar movable into and out of position engaging the rim to lock the bar against lifting from the rim.

19. A mop wringer comprising in combination, a pail having an overhanging rim, a drain cup having a holding means at one side thereof to engage the rim and hold said side of the cup connected with the rim, a supporting bar carried by the cup spaced from said holding means, said bar having opposite end portions extending to opposite sides of the pail and engaging the rim at points spaced from the holding means to support the cup, and a separate recessed locking member movably connected wtih the bar movable into and out of position with its recess receiving the pail rim and with a wall of the recess serving in locking the bar to the rim.

SOLOMON SCHULMAN.