Dec. 6, 1927. 1,651,674

C. R. COLLINS

DISH MOP

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Fig. 2.

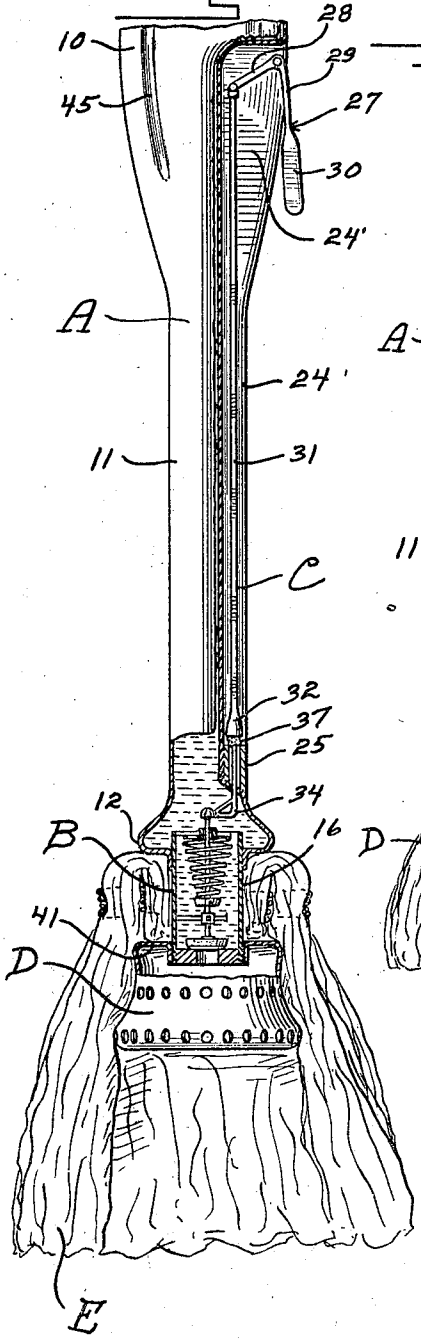


Fig. 1.

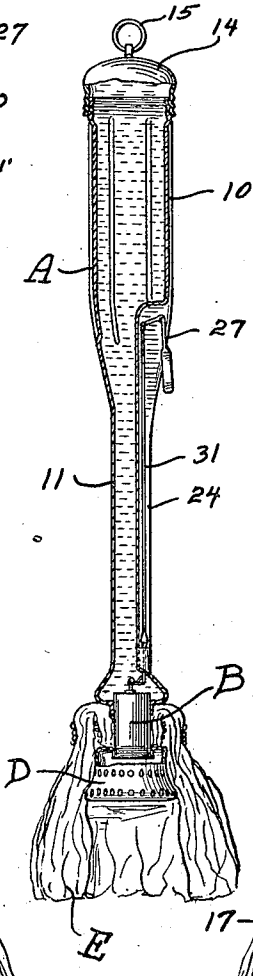
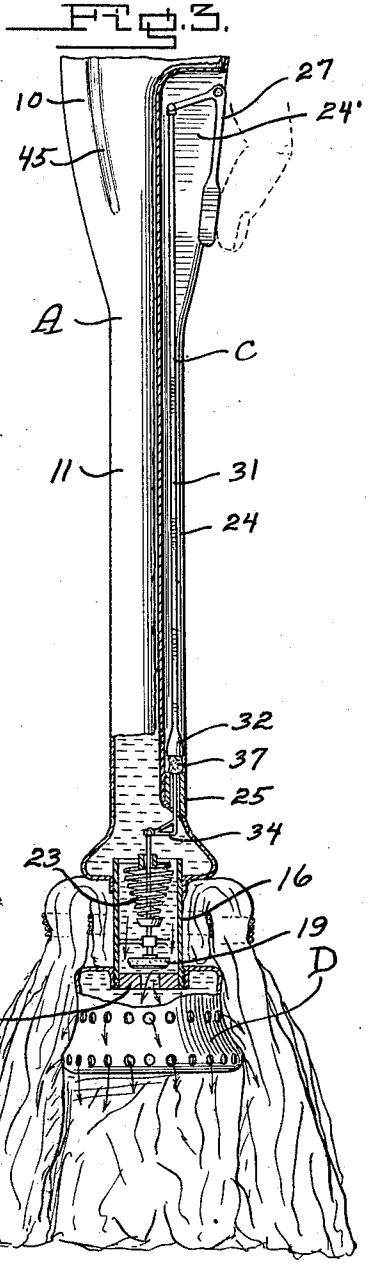


Fig. 3.



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Fig. 4.

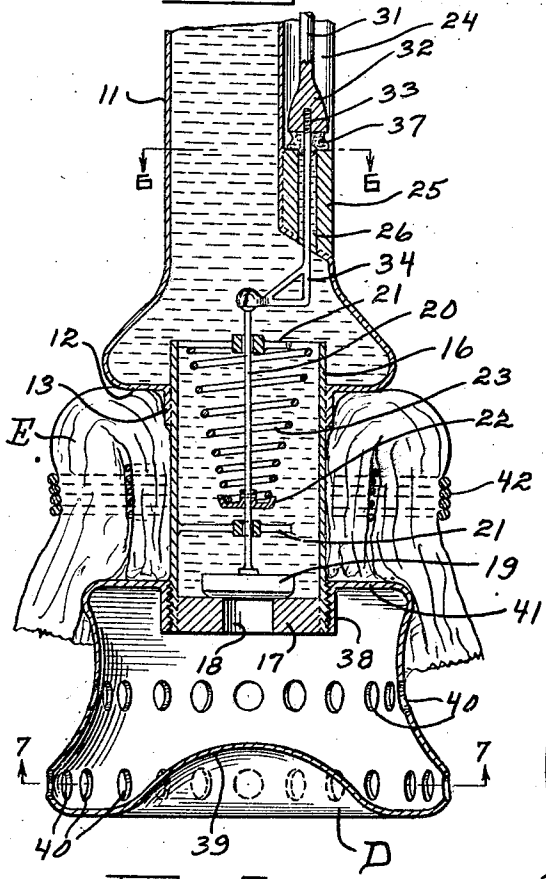


Fig. 5.

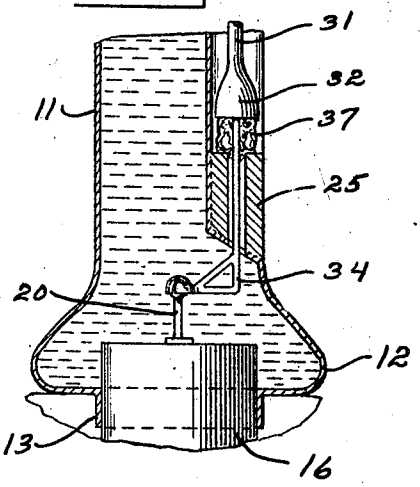


Fig. 7.

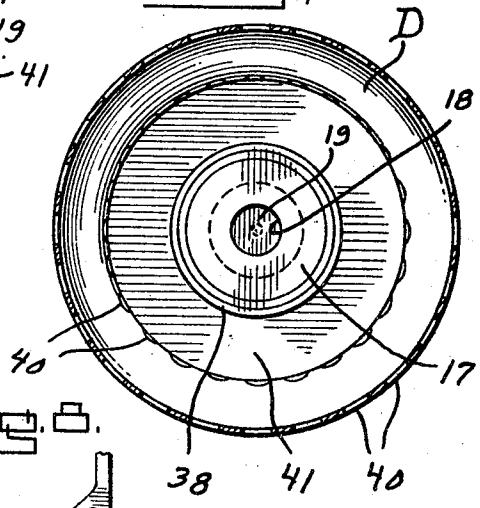


Fig. 6.

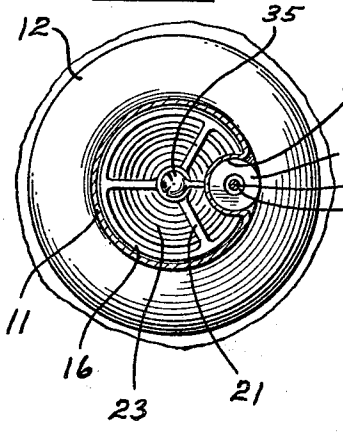
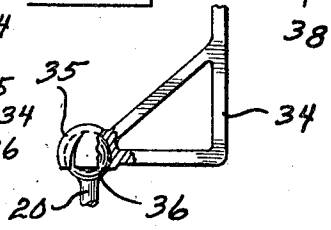


Fig. 8.



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Patented Dec. 6, 1927. 1,651,674

UNITED STATES PATENT OFFICE.

CLAUDE R. COLLINS, OF ASTORIA, NEW YORK.

DISH MOP.

Application filed September 9, 1926. Serial No. 134,533.

This invention relates to improvements in mops primarily intended for use in the cleaning of dishes and the like, and the primary object of the invention resides in the provision of an improved dish mop having incorporated therein means for automatically soaping the same.

A further object of the invention resides in the provision of an improved dish mop embodying a chambered handle and mop proper, with means readily controlled by the operator for feeding a liquid soap contained in the handle to the mop proper while the device is being used.

A further object of the invention is to provide an automatically soaping dish mop embodying control means whereby liquid soap may be delivered to the mop head in any desired quantities.

A further object of the invention resides in the novel construction and arrangement of parts whereby the mop head is readily removable from the handle portion for permitting of cleaning or renewing of the mop head.

A still further object of the invention resides in the provision of a mop of the aforementioned character embodying a handle portion so constructed as to serve as a protecting means for the control means of the valve for the mop.

Other objects and advantages of the invention will be apparent during the course of the following detailed description, taken in connection with the accompanying drawings forming a part of this specification and in which drawings:

Figure 1 is a central longitudinal section thru a mop constructed in accordance with my invention.

Figure 2 is an enlarged fragmentary sectional view of the lower portion of the mop and showing the control means in its normal closed position.

Figure 3 is a view similar to that as illustrated in Figure 2 but showing the control means in an open position for permitting of the soap to flow thru the mop head.

Figure 4 is an enlarged central longitudinal section thru the lower portion of the mop, showing the construction of the valve means and the manner in which the mop head is removably connected with the handle portion.

Figure 5 is a fragmentary sectional view showing the control means in an open position and the arrangement whereby the liquid soap is prevented from leaking from the handle portion of the mop when the control means is in open position.

Figure 6 is a transverse sectional view on line 6—6 of Figure 4.

Figure 7 is a transverse section taken on line 7—7 of Figure 4 and looking in the direction of the arrows.

Figure 8 is a fragmentary plan view illustrating the manner in which the coupling link of the control means is connected with the valve stem of the device.

Referring to the drawings in detail, and wherein similar reference characters designate corresponding parts throughout the several views, the letter A designates the handle portion of the device, B valve means carried by the lower end of the handle A, C means for controlling the valve B, D a soap distributing cup or cap, and E a mop proper or head retained in position by means of the cup or cap D.

Referring now to the handle portion A, and which is preferably formed of metal, the same is of hollow formation and embodies a grip 10 tapering at its lower end into a tubular shank 11. The lower end of the tubular shank 11 is flared outwardly for providing an annular shoulder 12 provided with a depending ring flange 13. The upper end of the grip 10 is threaded for removably receiving a threaded closure cap 14, and which cap may be provided with a suitable ring 15 whereby the mop may be hung up while not being used.

This closure cap 14 when removed from the grip 10 provides an opening whereby the hollow handle may be readily filled with a suitable liquid soap.

The valve means B, and which is disposed at the lower end of the tubular shank 11, embodies a tubular valve chamber 16 adapted to fit snugly within the ring flange 13 and be secured thereto in any suitable manner such as by welding, soldering or the like. This valve chamber 16 and which extends coaxially of the tubular shank 11, is closed at its lower end by a disc 17 provided with an axially disposed opening 18, and which disc provides a seat for the valve head 19 reciprocably mounted in the chamber 16. Connected to the upper side of the head 19, is a valve stem 20 which is adapted for sliding movement in suitable valve stem guides 21 carried by the chamber 16. Rigidly car-

ried by the valve stem 20 between the guides 21, is a suitable stop 22 for receiving one end of an expansion coil spring 23, the opposite end of which spring acts against the uppermost guide 21. This expansion spring 23 normally retains the head 19 in closing relation over the aperture 18 provided in the valve seat 17.

Formed inwardly of one side of the handle portion A, is a longitudinally extending channel 24 having its upper end extending for a slight distance into the lower portion of the grip 10, and having its lower end terminating just above the flared lower end of the tubular shank 11. Mounted at the lower end of the inwardly pressed channel 24 and as by soldering, welding or the like, is a guide bearing 25 provided with a guideway 26 opening inwardly of the lower end of the tubular shank 11. By extending the channel 24 upwardly into the lower end of the grip 10, and as will readily be observed in Figures 1, 2 and 3, a relatively deep pocket 24′ is provided at the upper end of the channel.

Referring now to the control means C for operation of the valve B, the same embodies an operating lever 27 in the form of a bell crank lever and embodying a relatively short pull arm 28 and a longer arm 29 having a thumb piece 30 provided at its free end. This lever 27 is pivotally mounted at the juncture of the arms 28 and 29 within the pocket 24′ with the arm 28 extending inwardly toward the axis of the handle portion A, and with the arm 29 extending toward the tubular shank portion 11 with the thumb piece 30 normally disposed outwardly past the external peripheral surface of the handle portion A. Pivotally connected at its upper end to the inner end of the pull arm 28, is a lift rod 31 which extends longitudinally within the channel 24, and which rod has an enlargement 32 formed at its lower end provided with a threaded bore 33.

Reciprocably mounted in the guide bearing 25, is an L-shaped coupling link 34, one arm of which projects upwardly past the guide bearing 25 and is threaded at its upper end for threaded engagement in the bore 33 of the lift rod 31. The opposite arm of the L-shaped coupling link 34 is provided at its end with a split coupling 35 which is adapted to be clamped about the spherical head 36 formed at the upper end of the valve stem 20.

Disposed about the upwardly projecting end of the coupling link 34 and between the guide bearing 25 and enlarged lower end 32 of the lift rod 31, is an expansible packing 37 which serves for sealing the guideway 26 thru which the arm of the coupling means reciprocates. As will be observed in Figure 4, when the control means C is in its normal position and the valve head 19 in seating relation upon the valve seat 17, this packing 37 is compressed for effectively preventing escape of the liquid soap thru the guideway 26. In Figures 3 and 5, and when the control means is depressed for opening the valve head 19, the expansible packing 37 still serves for effectively closing the guideway 26.

The soap distributing cup or cap D, and which is intended for distributing the liquid soap to the mop head E, is of substantially bell shaped formation, being closed at its lower end and provided at its upper side with a threaded flange 38 for threaded engagement with the lower end of the tubular valve chamber 16. The bottom wall of the cup D is bulged upwardly at its axial center as at 39, and which bottom formation of the cup tends to deflect the soap toward the side walls of the cup whereby the soap is directed thru suitable rows of apertures 40 against the mop head E. These apertures 40 are provided in the side walls of the cup for insuring distributing of the liquid soap to the mop head. By observing Figure 4, it will be seen that the ring flange 38 extends inwardly from the upper wall of the distributing cup, and provides an annular shoulder 41 which encircles the valve chamber 16 and is disposed in confronting relation with the shoulder 12 of the tubular shank 11.

The mop proper or head E and which may be formed of any suitable material, is preferably of tubular formation and bound at its upper end by means of suitable binding strings 42. In securing the mop head in position, the distributing cup or cap D is first removed from the valve chamber 16, after which the mop head may be readily slipped over the valve chamber into abutting relation with the shoulder 12. The cup D may then be threaded upon the lower end of the valve chamber for retaining the mop head against withdrawal off of the valve chamber, and in which position it will be seen that the material of the mop head engages the cylindrical side walls of the distributing cup.

The grip 10 is preferably provided with longitudinally extending corrugations 45 for permitting of a firm grip being obtained upon the handle portion during use of the mop.

In use, and when it is desirable to soap the mop head E, the operator merely places his thumb or any finger upon the thumb piece 30 and presses the same inwardly whereupon the valve head 19 will be raised from the seat 17 and allow a suitable quantity of the liquid soap retained in the hollow handle A to flow into the distributing cup or cap D and hence thru the apertures 40 upon the material of the mop head. Upon releasing pressure on the thumb piece 30, the expansion spring 23 will readily move the valve head 19 to a closed position and the thumb piece

30 outwardly of the pocket 24′ into a position for subsequent operations.

It will be seen that the channel 24 and pocket 24′ provide means whereby the control means may be mounted in a protected and out of the way position. The manner of attachment of the mop head to the lower end of the handle portion A, also serves as a protecting means for the valve B during use of the mop.

From the foregoing description it will be apparent that an improved type of dish mop has been provided, having means incorporated therein for soaping of the mop head of the device, and embodying novel features of construction whereby the operating parts of the device are protected against possible distortion or injury, and which operating parts are so arranged as to permit of the mop being used in a like manner as that of the present type of non-soaping dish mops. It will also be apparent that a novel control means has been provided whereby the mop head may have soap fed thereto during use of the mop.

Changes in detail may be made to the specific form of the invention herein shown and described, without departing from the spirit of the invention or the scope of the following claims.

I claim:

1. A device of the class described comprising a hollow handle portion for receiving liquid soap, a valve chamber carried by one end of the handle portion, a valve reciprocally mounted in the chamber, means for normally retaining the valve in a closed position, a mop head secured to and encircling said chamber, a removable distributing cap connected at one end of the chamber and serving to retain the mop head in position about the valve chamber, and manually operable means connected with said valve for opening of the latter and permitting the soap to flow from the handle into said distributing cap.

2. A device of the class described comprising a hollow handle portion provided with a longitudinally extending inwardly projecting channel, a perforated distributing cap, a valve chamber connecting said cap and handle portion, a mop head encircling said cap and secured to the chamber, a valve mounted in said chamber and normally closing communication therethrough, a lift rod operatively connected at one end with the valve and extending longitudinally within said channel of the handle portion, and an operating lever pivotally mounted in the channel and connected with the opposite end of the lift rod for manually opening said valve upon depressing of the operating lever.

3. A device of the class described comprising an elongated hollow handle provided with an inwardly formed longitudinally extending channel terminating inwardly of the ends of the handle, a distributing cap, a valve chamber connecting said cap and handle portion, a mop head encircling said cap and secured about the chamber, a valve head reciprocally mounted in the chamber and normally closing communication therethrough, a coupling link operatively connected to said valve head and having a portion extending thru the handle portion into said channel, a lift rod connected at one end to the projecting end of the coupling link and extending longitudinally in said channel, and a pivoted operating lever connected with the opposite end of the lift rod and movable for unseating of the valve head.

4. A device of the class described comprising an elongated hollow handle portion embodying a grip and a reduced tubular shank portion having a flaring lower end, said shank portion being provided with an inwardly formed longitudinally extending channel extending into the lower portion of the grip and providing a pocket, a perforated distributing cap, a valve chamber connecting said cap and handle portion at its flaring lower end, a mop head encircling said cap and secured about the chamber, a valve reciprocally mounted in the chamber and normally closing communication therethrough, a coupling link operatively connected with the valve head and having a portion extending longitudinally of the handle portion and projecting into the channel thereof, a lift rod connected at one end to the projecting end of the coupling link, and an L-shaped operating lever pivotally mounted in the pocket of the handle portion and connected with the opposite end of the lift rod for manually operating the valve head.

5. A device of the class described comprising an elongated hollow handle having an inwardly formed longitudinally extending channel terminating inwardly of the ends of the handle, a guide bearing mounted at one end of the channel and having a guide way opening inwardly of the handle, a perforated distributing cap, a valve chamber connecting said cap and handle, a mop head encircling the cap and secured about said chamber, a valve head reciprocally mounted in the chamber and normally closing communication therethrough, an L-shaped coupling link operatively connected to the valve head and embodying an arm extending thru the guideway of the guide bearing and having a threaded end portion projecting into the channel of the handle, a lift rod having an enlarged lower end provided with a threaded bore for receiving the threaded terminal of the coupling link arm, a pivoted operating lever mounted in the channel for imparting longitudinal movement to the

lift rod in one direction for unseating of said valve head, and an expansible gasket disposed between the enlarged end of the lift rod and said guide bearing for closing the guideway of the guide bearing when the lift rod is either in an open or closed position.

6. A device of the class described comprising an elongated hollow handle, a tubular valve chamber mounted at one end of the hollow handle and having a valve seat provided at its lower end, a valve head reciprocally mounted in the valve chamber in closing relation with an aperture provided in the valve seat, spring means mounted in the valve chamber for normally urging the valve head to a closed position, a coupling link operatively connected with the valve head and having a portion projecting thru the hollow handle into said channel, a lift rod connected with the projecting portion of the coupling link and extending longitudinally within the channel, an operating lever mounted in the channel and connected with the lift rod for unseating of the valve head, a mop head secured to and encircling the valve chamber, and a perforated distributing cap detachably connected at the lower end of the valve chamber and having communication with the hollow handle thru the opening in the valve seat.

7. In a dish mop, a handle portion having a flaring lower end, a reduced neck portion projecting coaxially of the handle portion at the flaring end of the latter and providing an annular shoulder, a tubular mop head slidably fitting over the neck portion and engaging said annular shoulder, and a cap threaded upon the lower end of the neck portion for removably retaining the mop head in position upon the neck portion.

8. A self-soaping dish mop comprising a hollow handle having a flaring lower end, a tubular valve chamber mounted coaxially of the handle at the flaring end of the latter and providing an annular shoulder, a valve head reciprocally mounted in the valve chamber and normally held in a closed position, control means for manually unseating the valve head, a tubular mop head encircling the valve chamber and engaging the annular shoulder provided at the flaring end of the handle, and a perforated distributing cap threaded upon the lower end of the valve chamber and providing an annular shoulder for preventing withdrawal of the mop head off of the valve chamber, said distributing cap having communication with the hollow handle upon the unseating of the valve head.

CLAUDE R. COLLINS.