April 21, 1953 S. A. HATCHER ET AL 2,635,274

SWAB

Filed Sept. 8, 1950

FIG 7

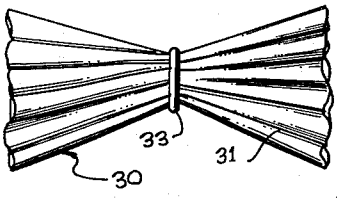


FIG 1

FIG 2

FIG 6

FIG 5

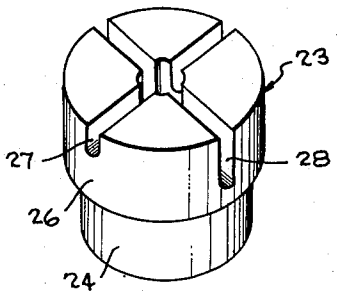


FIG 3

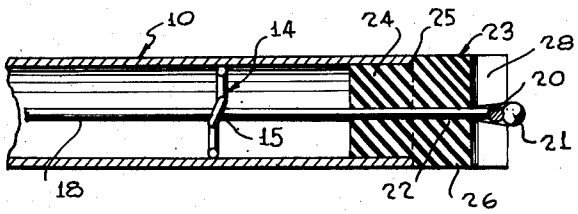
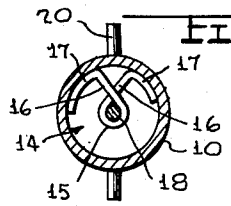


FIG 4



INVENTORS
SARAH A. HATCHER
and JOE P. HATCHER
BY

McMorrow, Berman & Davidson
ATTORNEYS

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SWAB

Sarah A. Hatcher and Joe P. Hatcher,
Prescott, Ariz.

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1 Claim. (Cl. 15—147)

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This invention relates to an improved swab, particularly but not exclusively for swabbing toilet bowls, the primary object of the invention being to provide a more sanitary, more easily operated, and more efficient device of this kind which involves a disposable swab head and mechanism which serves both to secure the swab head to a handle and to disconnect or project the swab head from the handle so that manual handling of the swab head after use of the device to dispose of the swab head is eliminated.

Another important object of the invention is to provide a device of the character indicated above which employs a disposable swab head composed of readily disposable paper and/or cellulose material, and which eliminates the dripping during use, due to its superior absorbency, which characterizes cloth and other material swab heads.

Another important object of the invention is to provide a device of the above indicated character which is composed of a minimum number of simple and mechanically adequate parts, which can be manufactured in a serviceable and attractive form at relatively low cost.

Other important objects and advantageous features of the invention will be apparent from the following description and the accompanying drawings, wherein merely for purposes of illustration herein, a specific embodiment of the invention is set forth in detail.

In the drawings, wherein like numerals designate like parts throughout the several views:

Figure 1 is a side elevation, a portion of the mechanism being shown in an operative position in dotted lines.

Figure 2 is an enlarged fragmentary longitudinal section taken on the line 2—2 of Figure 1.

Figure 3 is a further enlarged fragmentary longitudinal section taken on the line 3—3 of Figure 1.

Figure 4 is an enlarged transverse section taken on the line 4—4 of Figure 1.

Figure 5 is an enlarged perspective view of the plug.

Figure 6 is an enlarged perspective view, partly broken away, of the swab head before being folded and applied to the handle; and

Figure 7 is a diagrammatic view on a reduced scale of the swab arranged for application to the handle.

Referring in detail to the drawings, the illustrated device comprises a handle, generally designated 9, consisting of a non-corrosive metal or other suitable material tube 10 having a relatively long straight portion 11 and a relatively short portion 12 on the lower end of and directed at an angle of about 20° relative to the long portion 11, the tube 10 being open at both ends.

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The lower part 13 of the lower tube portion 12 has a longitudinally and laterally outwardly curved and expanded side wall which renders the part 13 slightly bulbous.

Within the upper end part of the lower tube portion 12 and the upper end part of the upper tube portion 11 are lower and upper guides 14 of similar construction and arrangement. Each guide 14 preferably comprises, as shown in Figure 4, a wire bent between its ends to provide an eye 15 and crossed arms 16 having lateral terminals 17 which are secured in suitable manner to the inside of the top wall of the tube 10 so that the eyes 15 are centered in the tube 10.

Slidably extending through the eyes 15 of both guides 14 is a flexible rod, cord, or wire 18 having on its lower end a rigid hook 19 and having fixed on its upper end a cross bar 20, surmounted by a knob 21. The upper part of the rod 18 passes freely through an axial bore 22 formed in a plug 23 which has a reduced cylindrical lower part 24 fitting into the upper end 25 of the tube 10 and an enlarged cylindrical upper part 26 engaged with the upper end 15 of the tube 10, as shown in Figure 3. As shown in Figures 3 and 5, the top of the plug 23 is formed with diametrical, right angularly intersecting slots or grooves 27 and 28 which open into the bore 22. The grooves 28 are substantially deeper than the grooves 27 and both sets of grooves are formed to receive and position the cross bar 20 on the upper end of the rod 18, the depths of the grooves determining the longitudinal position of the rod 18 in the tube 10 in a manner hereinafter indicated. The rod 18 has a first operative position in which the hook 19 is forward of the forward end 29 of the bulbous tube portion 13, and the cross bar 20 is in the deeper grooves 28, a second operative position in which the hook 19 is retracted within the lower part of the bulbous portion 13, as shown in Figure 2, and the cross-bar 20 is in the shallower grooves 27, and a third operative position in which the rod 18 is further retracted into the dotted line position shown in Figure 1, wherein the hook 19 is at a higher level in the bulbous tube portion 13 than shown in Figure 2.

The disposable swab head 30 preferably comprises two outside sheets 31 of cleansing tissue and an intermediate sheet 32 of cellulose cotton, the sheets being in registered and superimposed

relation. The swab head **30** is folded lengthwise and around its middle is circumposed a small and relatively weak band **33** preferably of rubber, which is then engaged over the hook **19** with the rod **18** in its first position, wherein the hook **19** is beyond the forward end **29** of the bulbous handle portion **13**. The sides of the thus arranged swab head **30** are then brought rearwardly and upwardly around the sides of the bulbous portion **13**, so as to follow the contour thereof and reach slightly above the bulbous part **13**. A second rubber band or the like contractile band **34** is then circumposed about the free ends or edges of the swab **30** and about the adjacent part of the tube portion **12**, above the bulbous portion **13**, as shown in Figure 2, so as to hold the swab head in place. The rod **18** is then retracted to its second position wherein the hook **19** enters the bulbous portion **13**, which, as shown in Figure 2, results in stretching and tensioning the band **33** and firm contact of the swab head **30** with and around the forward end **29** of the bulbous tube portion **13**, thereby conditioning the device for use.

In using the above described device, the swab head **30** can be dipped in sanitizing solution, and when so wet, applied by means of the handle **9** around the upper part of a toilet bowl or the like to wipe and cleanse the same, and then to lower portions of the interior of the bowl or the like, until the bowl is clean. Usually at this stage of use the swab head **30** has undergone some deterioration which renders the swab head relatively easily disintegrated, so that the same can be readily detached and projected from the handle **9** simply by pulling the rod **18** upwardly or rearwardly to its third position illustrated in dotted lines in Figure 1. In reaching this third position the hook **19** is moved upwardly within the bulbous handle portion **13** and the band **33** is stretched further and reaches a degree of tension which acts to pull the swab head **30** somewhat into the lower end of the bulbous portion **13** and forwardly on the bulbous portion **13** whereby the upper part of the swab head **30** is pulled downwardly along with the upper band **34**, and is freed from the bulbous handle portion **13** to fall therefrom into the toilet bowl or other place of disposal over which the device may be held while operating the rod **18** into its third and final position. Should this operation of the rod **18** fail to dislodge the swab head **30**, additional wetting of the swab head **30** and working of the same in the liquid in the bowl will readily disconnect the swab head from the handle without removal of the device from the bowl.

Upon disconnection of a swab head **30** from the handle **9** the bulbous portion **13** can be rinsed and then dried with ordinary toilet tissue. The rinsing and drying of the device renders it clean and attractive enough to be hung next to the toilet bowl readily accessible for use, and the device being in a dry and sanitary condition, problems of objectionable odor and dripping, which characterize other devices of this kind and require special storage, are eliminated.

We claim:

In a swab, a tubular handle, an endwise movable rod mounted longitudinally within said handle, a hook on one end of said rod and a cross bar on the opposite end of said rod, a plug on the end of the handle opposite said hook, said plug being formed with a bore through which said rod freely extends, a pair of grooves extending across said plug and intersecting said bore, one of said grooves being relatively shallow and the other groove relatively deep, said grooves being arranged to selectively receive said cross bar therein to determine the position of said hook relative to the end of said handle opposite said plug, a flexible swab head having an intermediate part engaged across the last mentioned end of the handle and other parts disposed along sides of said handle, contractile means circumposed in the handle and about said other portions of the swab head and releasably securing the swab head in place, and elastic means secured to said intermediate part of the swab head and said hook, said rod being endwise movable relative to said handle in a direction away from said last mentioned end of the handle, from a first position in which said elastic means is unstretched and said cross bar is positioned in the deeper groove in said plug, to a second position in which said cross bar is in the shallower grooves in said plug and said elastic means is stretched to tension said swab head against the adjacent end of the handle, said rod being movable in the same direction to a third position in which said swab head is drawn into said adjacent end of the handle in a manner to free said other parts of the swab head from said contractile means and break said elastic means whereby said swab head is freed to fall from said handle.

SARAH A. HATCHER.
JOE P. HATCHER.

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