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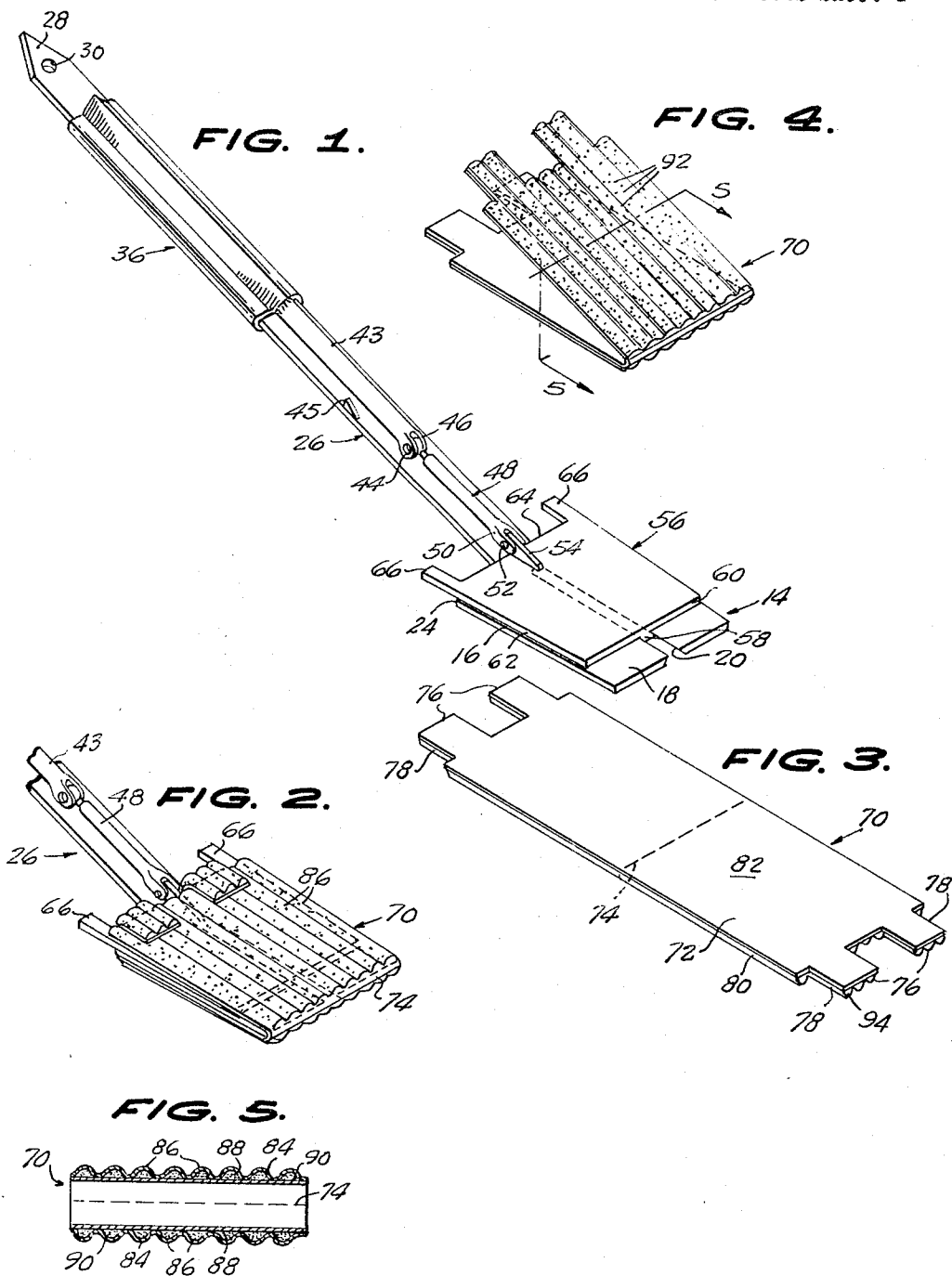
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3,383,158

TOILET BOWL CLEANER WITH DISPOSABLE SWAB

Filed May 27, 1966

2 Sheets-Sheet 1



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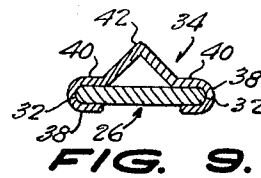
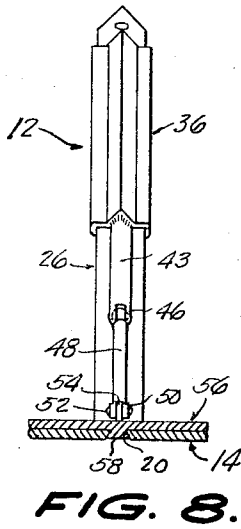
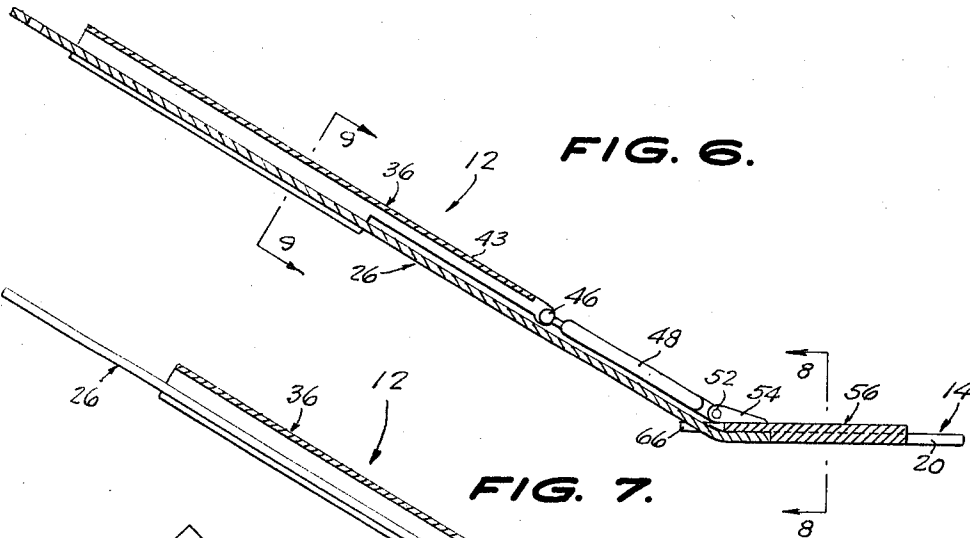
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TOILET BOWL CLEANER WITH DISPOSABLE SWAB

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ABSTRACT OF THE DISCLOSURE

A device for cleaning a toilet bowl having a handle and a head. A manually-operated slide plate is seated on and moves longitudinally of the head. A disposable swab is disposed about the head and slide plate, and includes corrugations housing a detergent which is dispensed through holes in the corrugations, for cleaning. After use, the swab is disposed of by sliding the slide plate relative to the head to eject the swab.

This invention relates to a toilet bowl cleaner having a disposable swab.

The primary object of the invention is the provision of a practical, efficient, and easily used device of the kind indicated, which uses disposable swabs which are adapted, after use, to be flushed down a toilet bowl, the device having means associated with its head and its handle, adapted to be manipulated to push a swab off its head, for disposal.

Another object of the invention is the provision of a simple and inexpensive device of the character indicated above, which is composed of a small number of uncomplicated and easily assembled parts.

A further object of the invention is the provision, in a device of the character indicated above, of an efficient, inexpensive, one-piece swab, adapted to contain soap or other detergent material, and adapted to being manufactured by means of a single stamping operation.

In the drawings:

FIGURE 1 is a perspective view of a device of the invention, devoid of an associated swab;

FIGURE 2 is a fragmentary view, like FIGURE 1, showing a swab in place on the device;

FIGURE 3 is a perspective view of the swab, in open position;

FIGURE 4 is a perspective view of the swab, in folded position;

FIGURE 5 is an enlarged sectional view, taken on the line 5-5 of FIGURE 4.

FIGURE 6 is a longitudinal section, taken through the device, showing the head slide in normal retracted position, and devoid of a swab;

FIGURE 7 is a view, like FIGURE 6, showing the head slide in a forward, swab removing position, and in contact with the fold of a swab shown in phantom lines.

FIGURE 8 is a vertical transverse section, taken on the line 8-8 of FIGURE 6; and,

FIGURE 9 is an enlarged vertical transverse section, taken on the line 9-9 of FIGURE 6.

Referring in detail to the drawings, the illustrated device 12 comprises a flat rectangular head 14 having substantially parallel side edges 16, and a squared forward end 18. The head 14 is forward with a centered longitudinal dovetail slot 20, which opens to its forward end 18, and has a closed rear end 22 near the rear end 24 of the head.

Preferably integral with and centered relative to the rear end 24, of the head 14, is an acutely and upwardly angled handle 26, which is straight and flat, and has a pointed rear end 28, relative to which is centered a hang-

2

ing-up hole 30. The handle 26 preferably has rounded side edges, as indicated at 32.

A manual slide assembly 34 is mounted on the handle 26 and comprises a longitudinally elongated channel slide 36, substantially shorter than the handle and having arcuate cross section hook flanges 38, which slidably embrace the side edges 32 of the handle, as shown in FIGURE 9. The slide flanges 38 merge into flat web portions 40, which bear slidably upon the upper surface of the handle, the web portions 40 being connected by an inverted V-shaped central web portion 42. A stop 45, fixed on the handle 26, is provided between the manual slide 36 and the head 14, at a location such that, when the slide is worked forwardly to eject a swab 70, the head slide will be stopped with its forward end only a necessary distance forwardly beyond the forward end of the head 14.

At its forward end, the central V-shaped web portion 42, of the slide 36, is formed to provide a longitudinal arm 43 which terminates, at its forward end, in a ball socket 44, in which is rotatably confined a ball 46, fixed on the rear end of link 48. The link 48 has a clevis 50, on its forward end, which is traversed by a pivot pin 52, which extends through an upstanding centered longitudinal ear 54, on the rear part of a head or ejector slide 56.

The head slide 56 has, on its underside, a centered longitudinal dovetail rib 58, which is slidably confined in the dovetail slot 20, of the head 14. The head slide 56 is of substantially the same width as the head 14, has a forward end 60, and parallel side edges 62, the latter being registered with the side edges of the head 14. As shown in FIGURES 6 and 7, the slide 56 is shorter than the head 14, and, in the normal retracted position of the slide 56, its forward end 60, is spaced rearwardly from the forward end 18 of the head 14. The slide 56 has on its rear end 64, and flush with its side edges, rearwardly extending, relatively narrow ears 66, which extend in the plane of the slide 56, and with the handle 26, defined notches at opposite sides thereof.

With the head slide 56 in the retracted position, shown in FIGURE 6, the device is ready to receive a swab 70, of the present invention. The swab 70 is formed, as by a simple stamping operation, from a single elongated rectangular sheet or plate 72 of absorbent, compressible paper or paper-like material. The sheet 72 is formed with a single, centered transverse fold 74, which permits the sheet to be folded into the positions shown in FIGURES 2 and 4, for application to the device.

The sheet 72 is formed, on the opposite ends thereof, with pairs of tabs 76, which are spaced apart from each other, at distances at least as great as the width of the handle 26, where it joins the head 14. The outer side edges 78, of the tabs 76, are spaced inwardly from the side edges 80, of the sheet 72, at distances at least equal to the widths of the ears 66 of the head slide 56.

The swab sheet 72 has a smooth and unindented inner surface 82, which is adapted to engage the upper surface of the head slide 56, and the undersurface of the head 14, when folded and applied thereto, as shown in FIGURE 2, with the forward end 18, of the head 14, engaged with the fold 74.

The swab sheet 72, as shown in FIGURE 5, has an outer surface 84 on which are formed or secured, longitudinal, immediately adjacent corrugations 86, the hollow chambers 88 of which form containers for soap powder or other powdered detergent 90, which when wet, as by being dipped in the water in a toilet bowl, constitute the cleaning solution to be applied to the surfaces of the bowl, by manipulation of the device. As shown in FIGURE 4, the walls of the corrugations 86 are formed with very small uniformly distributed pores or holes 92, through which the cleaning solution can pass to the work surfaces,

3

as the swab 70 is applied thereto. The ends 94, of the corrugations 86 being open, water can freely enter the chambers 88 for contact with the detergent powder therein. When the corrugations are under pressure, as when forced against a work surface, the pores 92 are adapted to be enlarged, so as to facilitate escape of detergent solution therethrough. Further, when the swab is ejected from the device and dropped into the water in a toilet bowl, the swab weakens along the lines between the corrugations 86, so that the swab disintegrates and is easily washed down the toilet bowl drain. The corrugations 86 also serve as non-abrasive scrapers against the surfaces to be cleaned.

The swab is applied to the device, in folded condition, as shown in FIGURE 4, so that the halves of the swab respectively underlie and overlie the head 14 and the head slide 56. The tabs of the upper half of the swab are bent downwardly through the notches defined by the head ears 66 and handle 26 and engaged with the underside of the lower half. The tabs 76 of the lower half of the swab are bent up through these notches, and onto the top of the head slide 56.

In use and operation, a swab 70 on the device having been used by moving it in contact with surfaces to be cleaned, ejection of this swab is accomplished simply by moving the manual slide 36 forwardly along the handle 26, so that the head slide 56 is moved forwardly, from the position of FIGURE 6, to the position of FIGURE 7, so that the forward end of the head slide bears against the fold 74 of the swab and pushes the swab forwardly off the head. As this action takes place, the tabs 76, of the swab, are reverse bent and freed from their engagements with the rear end of the slide 56 and the rear end of the head 14, and the swab can fall off the device.

What is claimed is:

1. A device of the character described, comprising a flat head, a handle on and projecting from the head, a disposable swab composed of paper-like sheet means having a transverse fold line at its middle defining halves, said halves being engaged with the opposite sides of the head, tab means on the halves adapted to be bent around an edge of the head, and movable ejecting means mounted on the handle and engageable with the fold of the swab, for removal of the swab, said ejecting means comprising a manual slide mounted on the handle, a head slide engaged with a side of the head, and means operatively connecting the manual slide to the head slide.

2. A device according to claim 1, including means connecting the head slide to the head for longitudinal movement relative thereto.

3. A device according to claim 1, and including means connecting the head slide to the head for longitudinal movement relative thereto, said connecting means comprising a fixed arm extending from the manual slide toward the head, a link extending between said arm and the head slide, said link being articulated to the arm and the head slide.

4. The device of claim 1, wherein said head is flat and

4

rectangular and has forward and rear ends, and upper and lower surfaces, said handle being flat and disposed at an upward angle relative to the head, said head slide bearing upon the upper surface of the head, said head slide being shorter than the head, said head slide having forward and rear ends, said head being formed with a dovetail slot extending longitudinally therein, said head slide having a dovetail rib engaged in said slot, a manual slide means shorter than the handle, said manual slide means being mounted on the handle to move therealong, a link extending between the manual slide means and the head slide, said link being pivoted at its end to the manual slide means and the head slide.

5. The device of claim 1, wherein said head is flat and rectangular and has forward and rear ends, and upper and lower surfaces, said handle being flat and disposed at an upward angle relative to the head, said head slide bearing upon the upper surface of the head, said head slide being shorter than the head, said head slide having forward and rear ends, said head being formed with a dovetail slot extending longitudinally therein, said head slide having a dovetail rib engaged in said slot, a manual slide means shorter than the handle, said manual slide means being mounted on the handle to move therealong, a link extending between the manual slide means and the head slide, said link being pivoted at its ends to the manual slide means and the head slide, said handle being centered relative to the head, the rear end of the head slide being provided with a recess to form notches at opposite sides of the handle, said tab means of the swab being spaced ears on the ends of the swab sheet means adapted to be bent through the notches.

6. The device of claim 1, wherein said swab sheet means has an unindented inner surface adapted to engage the head, said sheet means having an outer surface formed with longitudinal corrugations.

7. The device of claim 1, wherein said swab sheet means has an unindented inner surface adapted to engage the head, said sheet means having an outer surface formed with longitudinal corrugations, said corrugations defining chambers adapted to contain powdered detergent.

8. The device of claim 1, wherein said swab sheet means has an unindented inner surface adapted to engage the head, said sheet means having an outer surface formed with longitudinal corrugations, said corrugations defining chambers adapted to contain powdered detergent, the walls of the corrugations being formed with pores through which wet detergent solution can pass.

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