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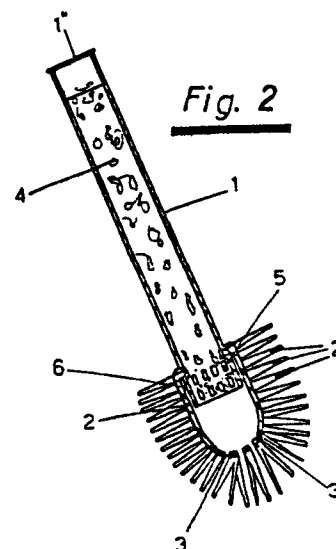
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Brush, particularly apt to clean W.C. vessels.

The invention concerns a hygienic brush, particularly for W.C. vessels, in which the brushing portion of said hygienic brush comprises a flexible support (2) from which the brush bristles (2) spread out, such a support having the form of a hollow cap provided with holes (3) disposed among said bristles (2) and apt to communicate the interior of said cap with the exterior, such a cap being in communication with a reservoir containing a mixture (4) of substances apt to hygienically treat and to deodorize the surfaces of the W.C. vessel, such a reservoir being in its turn apertured in order to be penetrated by a water jet which removes partly the mixture, said mixture being then discharged through the holes of said hollow cap in order to provide for the treatment of the vessel surfaces during the brush employ.



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Brush particularly apt to clean W.C. vessels

This invention concerns a brush particularly apt to clean W.C. vessels.

The cleaning of the hygienic-sanitary installations,
5 particularly for water-closet vessels, is at present
executed using brushes which perform the cleaning
combining a rubbing action of the brush with a water jet.
This mode of procedure, however, allows to remove from the
concerned zones only solid substances or residuals. To
10 obtain a deeper cleaning the user must pour on the
surface to be cleaned anyone of the detergents
available on the market. This operation, however, allows
to obtain the cleaning but does not solve the problem of
bad smells. The latter are at present eliminated using
15 deodorizing packages which are positioned in the most
suitable locations, for example suspended on the border
of the W.C. vessel. Said packages present the
disadvantages to be within the reach of children, to
easily release and to fall in the bottom of the vessel
20 syphon and to be unaesthetic.

This invention is related to a brush particularly for W.C. vessels, said brush, besides to remove solid substances with the aid of a water jet, is able to deterge, to deodore, to disinfect or to execute any other
5 treatment of the surfaces of the same vessel.

The hygienic brush of the invention is of the kind wherein the brushing portion is constituted by a support in plastic yieldable moulded material integral with the
10 brush bristles projecting outwardly, said brushing portion being insertable to the end of a handle and is characterized by the fact that said plastic support is in the form of a hollow cap, from which the brush bristles spread out, such a hollow cap being provided with holes
15 interposed among the bristles and communicating the interior of said hollow cap with the exterior, a reservoir being provided near said cap and communicating with the interior of the same cap and being provided with suitable holes and containing a mixture of substances, having a
20 liquid or solid form, apt to clean, to deodore, to disinfect or to execute any other treatment on the walls of the W.C. vessel, the whole in a way that the jet of washing water, during the use, penetrates into said reservoir, dissolving or removing partially said
25 substances, to discharge through the holes provided on the cap of the brushing portion, to contact the bristles and the surface to be cleaned.

The object of the invention is shown with reference to
30 the accompanying drawings, referring to some embodiments

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of the invention, wherein.

Figure 1 is an axial cross-section of the brush of the invention in a first embodiment;

5 Figure 2 is a second embodiment, in axial cross-section;

Figure 3 is a third embodiment;

Figure 4 is a further embodiment concerning a brush not provided with an elongated handle.

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As shown in figure 1, the hygienic brush of the invention is composed by a brushing portion constituted by a support 2 in plastic yieldable material, such as P.V.C., from which the bristles 2' of the brush spread out
15 integrally, in radial direction. The support 2 has the form of an internally hollow cap opened, from a part, for the insertion of a hollow handle 1, preferably in a metal resistant to oxidation, such as brass. The handle 1 has its end 1' entering the support 2, said end being
20 opened or in any case communicating with the internal recess of said support, while the opposed end can be closed by a plug 1" preferably applied by screwing.

From the side opposed to the handle, the support 2 is
25 provided with holes interposed among the bases of the bristles 2', said holes being of a diameter and a number such as to allow a water jet, investing the brushing portion, to penetrate inside the recess and to come out therefrom.

In the case of figure 1, both the handle and the recess of the support 2 constitute a reservoir for containing deterging, deodorizing, disinfecting substances and/or for other objects, said substances, from time to time, are dissolved and removed from the water penetrating inside the support 2 and then it is possible, during the employ of the brush, besides to remove the solid residual substances, also to execute on the walls of a W.C. vessel all the treatments necessary for the hygienic preservation of said walls.

In the case wherein the mixture 4 of substances disposed inside the handle 1 and the cap 2 is composed by solid substances, it may be provided in a granulous form, or in the form of tablets or candles. Whatever is the form of said substances, they can be introduced from the distal end of the handle 1 after removing the plug 1".

In case the substance used is a mixture of liquid substances, the holes 3 will have a slit form apt to pass the liquid substance exerting with a handle a pressure on the cap 2 in order to squirt, from time to time, the liquid material through said slits.

In the embodiment of figure 2 there is only the handle acting as a reservoir and its end entering inside the support 2 is closed, so as the communication between the interior of the handle and the recess of the support 2 takes place through communicating holes 5, so that the water entering inside the support 2 can arrive inside

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the handle through an annular gap 6 provided between the support walls and the cylindrical outer wall of the handle 1 and through the holes 5 distributed along the cylindrical wall of the same handle.

5

In this case the holes 5 can be also provided outwardly the support 2, so that the water jet enters directly inside the handle and therefrom arrives inside the support 2 carrying the dissolved substances and comes out from
10 the holes 3.

In the embodiment of figure 3 there is the support 2 acting as a reservoir, so that the removal of the substances takes place by means of water entering and going out
15 through the holes 3. In this embodiment there will be the necessity of a more frequent recharge of the reservoir, but there is the advantage to proportion from time to time the amounts of substances which have to be dissolved, avoiding unuseful wastes of the same substances.

20

In the case of figure 4, the brush is embodied in such a form that its body 2 constitutes the handle of the brush and is inwardly filled with the substances to be removed by water, in this case the bristles 2' and the holes 3
25 will be obtained on a particular surface, preferably flat. The support 2, acting as a handle too, will be provided with a filling hole, not shown, closed by a suitable plug.

In all the above examined cases, the cleaning,
30 deodorization, disinfection, besides to interest the

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vessel walls, interest also the brushing portion which always remains cleaned, deodored and disinfected, with a remarkable advantage from the hygienic point of view.

Claims

1. A hygienic brush particularly apt for W.C. vessels, of the kind wherein the brushing portion is constituted by
5 a support in plastic material from which the brush bristles spread out, such a support being insertable on the end of a handle, characterized by the fact that said support (2) in plastic material has the shape of a hollow cap and is provided with holes (3) interposed among the
10 brush bristles (2'), communicating the space of the cap recess with the exterior, said space being in communication with a reservoir, carried by the same brush and containing a mixture (4) of substances in a solid or liquid form, apt to clean, to deodore, to disinfect or to execute
15 any other treatment on the walls of the W.C. vessel, the whole in a way that the jet of washing water, during the use, penetrates into said reservoir, dissolving or removing partially said substances, to come out from the holes provided on the cap of the brushing portion, to
20 contact the bristles and the surface to be cleaned.

2. A hygienic brush according to claim 1, characterized by the fact that the handle (1) has a hollow cylindrical form, apt to act as a reservoir, said handle being provided on
25 the distal end of a removable plug (1"), allowing the filling of the mixture of substances.

3. A hygienic brush according to claims 1 and 2 wherein the hollow cylindrical handle (1) has an end (1')
30 entering the hollow cap in the brushing portion opened

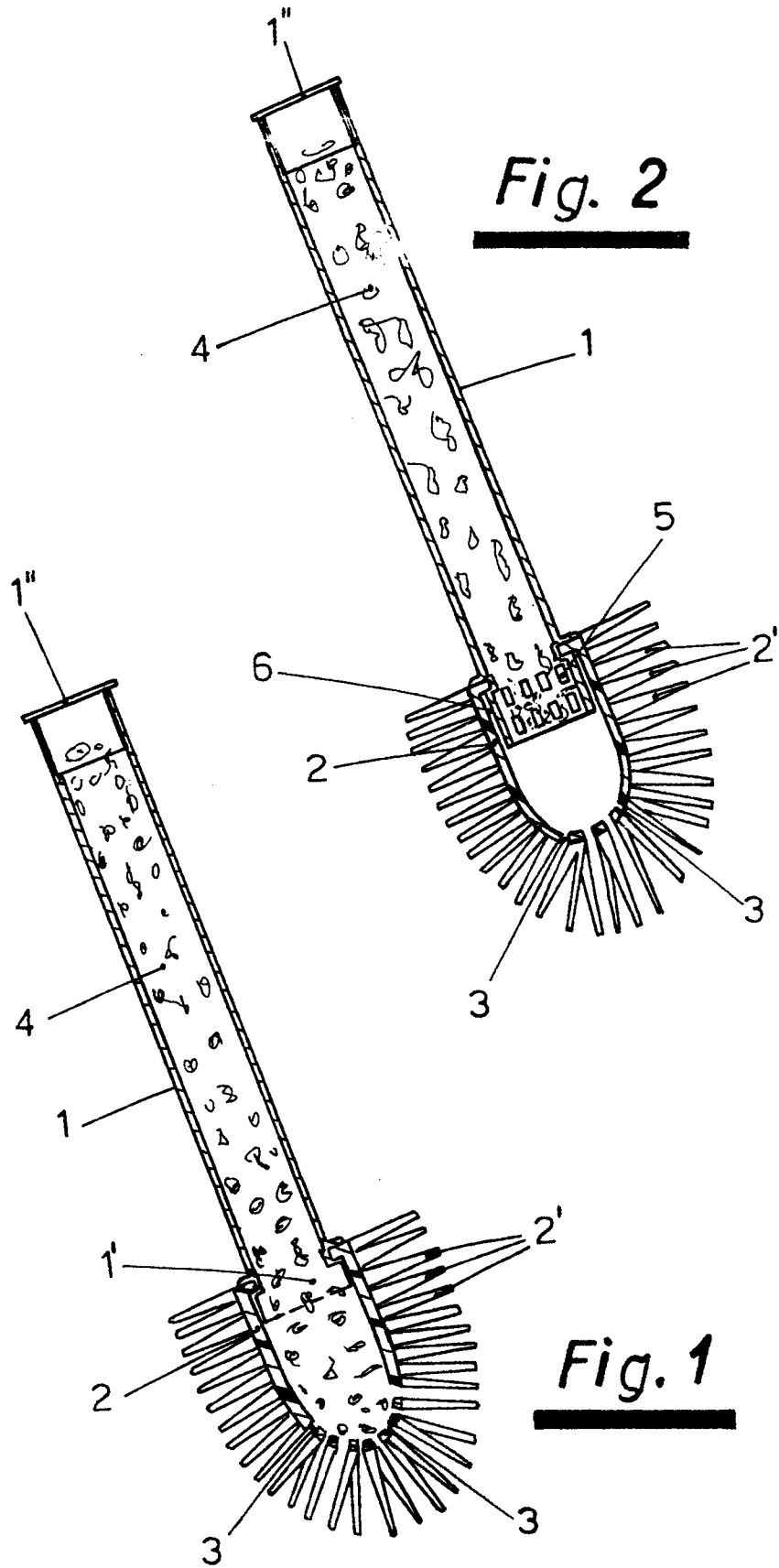
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toward said cap, so that said cap (2) and said handle (1) constitute together the reservoir of the mixture (4) of the substances.

- 5 4. A hygienic brush according to claim 1, characterized by the fact that as a reservoir apt to contain the mixture (4) of substances is employed the space enclosed only by the cap (2).
- 10 5. A hygienic brush according to anyone of the preceeding claims wherein the mixture of solid substances has a granulous or powdered form.
6. A hygienic brush according to anyone of the claims 1
15 to 4, wherein the mixture of solid substances has the form of tablets.
7. A hygienic brush according to anyone of the claims 1
20 to 4 wherein the mixture of solid substances has the form of candles insertable inside the hollow handle.
8. A hygienic brush according to anyone of the claims 1
to 4 wherein in case of using a mixture of liquid
substances the holes (3) of the hollow cap have the form
25 of slits apt to allow the passage of the liquid mixture resiliently pressing said cap.
9. A hygienic brush characterized by the fact that the
same hollow cap is shaped in a way to constitute a handle
30 and is apt to contain the mixture of substances for the

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treatment of the surfaces of a W.C. vessel, in said case the bristles (2') and the communicating holes (3) being provided on a wall of the cap preferably flat.



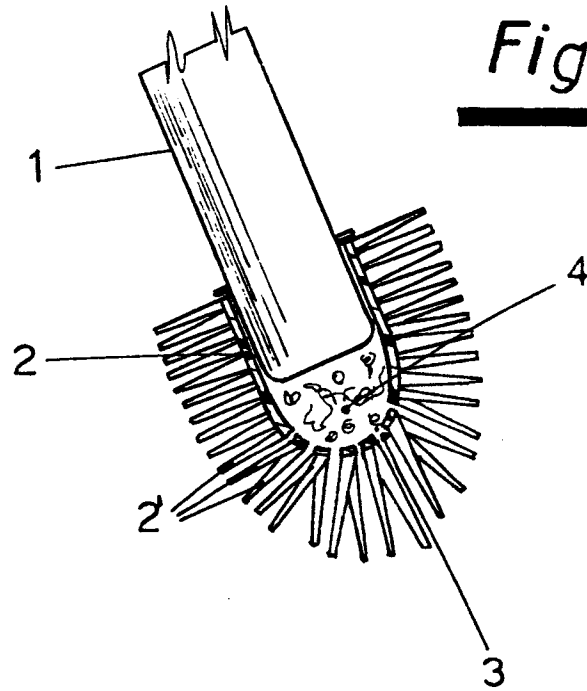


Fig. 3

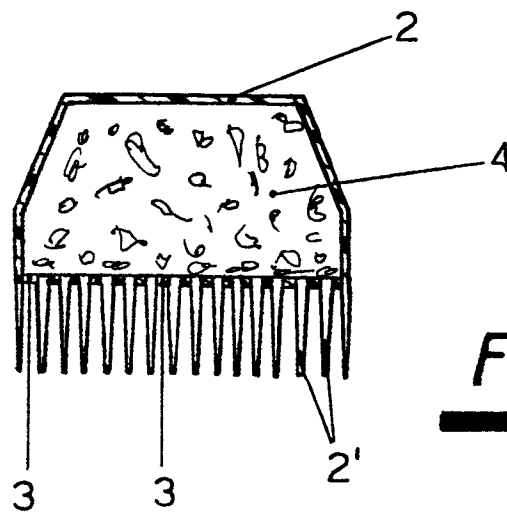


Fig. 4



| DOCUMENTS CONSIDERED TO BE RELEVANT | | | CLASSIFICATION OF THE APPLICATION (Int. Cl.?) |
|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | |
| | <p><u>FR - A - 1 332 841</u> (DIETSCHE)</p> <p>* page 1, column 1, lines 1-9; page 2, column 1, lines 45-58; column 2, lines 1-42; figures 1,2 *</p> <p>---</p> | 1,2,3,4,5 | A 46 B 11/04 A 47 K 11/10 |
| | <p><u>DE - A - 2 331 694</u> (UGRINSKY)</p> <p>* page 1, lines 15-36; figures *</p> <p>---</p> | 1,2,7 | TECHNICAL FIELDS SEARCHED (Int.Cl.?) |
| | <p><u>US - A - 2 867 828</u> (TRUTNEFF)</p> <p>* column 1, lines 47-64; figure 1 *</p> <p>---</p> | 5 | A 46 B A 47 K |
| | <p><u>GB - A - 793 119</u> (COHEN)</p> <p>* page 2, lines 108-119; figures 1,2 *</p> <p>---</p> | 6 | |
| | <p><u>FR - A - 459 098</u> (HODLER)</p> <p>* page 1, lines 57-60; page 2, lines 13-21; figures *</p> <p>-----</p> | 8 | CATEGORY OF CITED DOCUMENTS |
| | | | <p>X: particularly relevant</p> <p>A: technological background</p> <p>O: non-written disclosure</p> <p>P: intermediate document</p> <p>T: theory or principle underlying the invention</p> <p>E: conflicting application</p> <p>D: document cited in the application</p> <p>L: citation for other reasons</p> |
| | | | &: member of the same patent family, corresponding document |
| <p>The present search report has been drawn up for all claims</p> | | | |
| Place of search | Date of completion of the search | Examiner | |
| The Hague | 17-08-1979 | SCHOLS | |