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(54) **Deodorant holder, particularly for water closet pans.**

(57) A deodorant holder, typically for water closet pans, comprises a perforated container (10) for containing a block (2) of deodorant material and including at least one mouth (11) for insertion of said block, the mouth being provided with a perimetral series of blades (12) which projectingly converge

towards the centre of said mouth in such a manner as to at least partially close them, and to deflect elastically on insertion of said block (2) into said container (10).

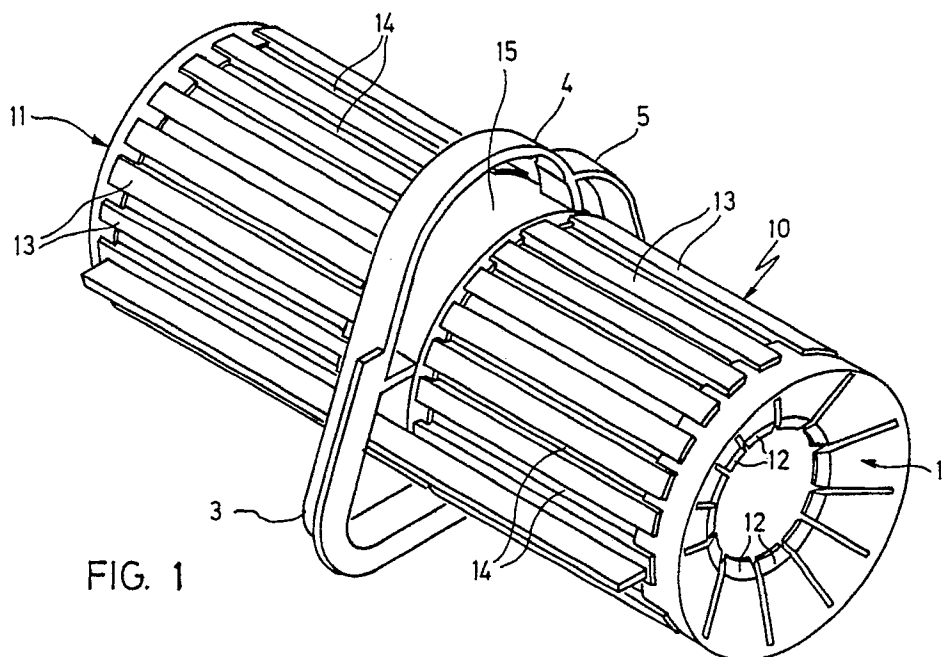


FIG. 1

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DEODORANT HOLDER, PARTICULARLY FOR WATER CLOSET PANS

This invention relates to a deodorant holder, in particular for water closet pans, of the type comprising a perforated container arranged to contain and retain in its interior a suitable block of deodorant material.

In this specific sector, there has for some time been a deeply felt need to automate the assembly of the deodorant holder (ie the insertion of the deodorant block and the joining together of the component parts of the perforated container), this assembly having until now been done manually, with all the known drawbacks which this entails. However the mechanization of such assembly would require the construction of specific machines of such high cost as to inconveniently affect the cost of the product concerned.

The attempts made up to the present time to automate or at least facilitate the assembly operations by means of simple low-cost devices have produced no positive result.

The main cause is the operations involved in fixing together the component parts of the deodorant holder.

For example, deodorant holders are known comprising a perforated cage consisting of two frusto-conical parts to be joined together at their major base, which is open.

At the centre of the cage there is externally provided a hook by which the cage is hooked to the upper rim of a water closet pan.

In some cases a connection collar to be fixed between two said frusto-conical parts is associated with the hook of such known deodorant holders, whereas in other cases said hook is moulded in one piece with one of said parts.

Deodorant holders are also known in which the perforated cage is of cylindrical shape and is divided in half as in the preceding case.

Finally, a further case comprises a cylindrical cage provided with a mouth for insertion of the deodorant block and a closure lid which is snap-inserted into the mouth.

The difficulties of mechanizing or otherwise facilitating the assembly operations are most apparent in the joining together of the component parts of the cage, and are enhanced by the fact that said component parts are of such a shape as to render them relatively unstable, difficult to handle by usual conveying systems and difficult to arrange in an ordered manner to allow the parts to be joined together.

An object of the present invention is to provide a deodorant holder, particularly but not exclusively for water closet pans, the assembly of which is quicker and more simple than for known systems

to the extent of allowing it to be automated or otherwise facilitated by relatively simple means, within the framework of a simple and rational construction.

These and further objects are attained by the present invention, as characterised in the claims.

The invention is described in detail hereinafter with reference to the accompanying figures, which illustrate a preferred but not exclusive embodiment thereof.

Figure 1 is a perspective view of the holder according to the invention.

Figure 2 is a front view of the holder of Figure 1.

Figure 3 is a side view of the holder of Figure 1 shown in partial section on a plane passing through the axis of the container.

The invention comprises a perforated container 10 for containing and retaining in its interior a suitable block 2 of deodorant material (indicated by dashed and dotted lines in Figures 2 and 3).

Said container 10 comprises at least one mouth 11 for the introduction of the block 2, and a series of elastically flexible blades 12 joined rigidly to the peripheral edge of said mouth 11 and projectingly converging towards the centre of the mouth to at least partly close said mouth 11.

According to the illustrated embodiment, the container 10 is substantially of right circular cylindrical form and comprises two mouths 11 for the entry of the deodorant block, provided in both end faces of the cylinder and both at least partly closed by said blades 12.

On the cylindrical outer surface of the container 10 there are provided various axial ribs or bars 13 extending over its total length. Between these ribs 13 there are provided in the container wall a like number of longitudinal slots 14 through which air and water can circulate, to connect the inner region of the container to the surrounding environment.

The blades 12 are trapezium shaped, are separated from each other by narrow radial slits and extend to define a free central region of the mouth 11. This region is of smaller diameter than the block 2. Moreover, the blades 12 advantageously converge slightly towards the centre of the container 10 to limit the axial movements of the block 2 within the container.

The entire container 10 and the blades 12 are advantageously constructed in one piece from synthetic resin by known moulding methods.

The slots 14 and ribs 13 are interrupted at their centre by a smooth circular portion 15. From this portion 15 there extends a strip-like element 3 the profile of which defines a substantially broken line which embraces said circular portion 15 and is

joined thereto by its ends 4 and 5 and by a number of break-off 6 tabs in intermediate positions.

In use, the end 5 and the tabs 6 are broken and the element 3 bent to form a sort of hook for hanging the container 10 to the rim of the water closet pan.

On assembly, to insert the block 2 into the container 10, the block 2 is pushed axially from the outside inwards against the blades 12 of one of the mouths 11. The blades 12 deflect elastically inwards, and after the block 2 has been completely inserted into the container they return automatically to their normal non-deflected position to close the mouth 11 and thus confine the block 2 within the container 10 in a reliable and stable manner.

Consequently by virtue of the invention, the need to join together the component parts of the container for assembly purposes no longer exists as this is now in the form of a single body. The only operation remaining to be carried out, ie the insertion of the deodorant block 2 into the container is extremely simple in that it consists merely of axially urging the block 2 axially into the container 1.

Consequently the deodorant holder according to the invention can advantageously be automatically fitted to the deodorant block by relatively simple machine means. In any event, even if the fitting is done manually it is relatively much simpler and quicker than in the known art.

Numerous modifications of a practical and applicational nature can be obviously made to the invention, and in particular the container 10 can be of different geometrical shapes from the illustrated cylindrical shape, without leaving the scope of the inventive idea as claimed hereinafter.

Claims

1. A deodorant holder, particularly for water closet pans, of the type comprising a perforated container (10) arranged to contain and retain in its interior the scheduled block (2) of deodorant material, characterised in that said container (10) comprises at least one mouth (11) for the introduction of the deodorant block (2), and a series of elastically flexible blades (12) joined rigidly to the peripheral edge of said mouth (11) and projectingly converging towards the centre of the mouth (11) to at least partly close said mouth (11); said blades (12) deflecting elastically during the insertion of the deodorant block (2) and returning to their normal position when said block (2) is inside the container (10).

2. A container as claimed in claim 1, characterised in that said blades (12) are constructed in one

piece with the container (10).

3. A container as claimed in claim 1, characterised in that said flexible blades (12) converge slightly towards the centre of the container (10) and leave a central circular region of said mouth (11) free.

4. A container as claimed in claim 1, characterised in that said container (10) is substantially of right circular cylindrical form, said mouths (11) for entry of the deodorant block (2) being provided in both end faces of the cylinder and being both at least partly closed by said blades (12).

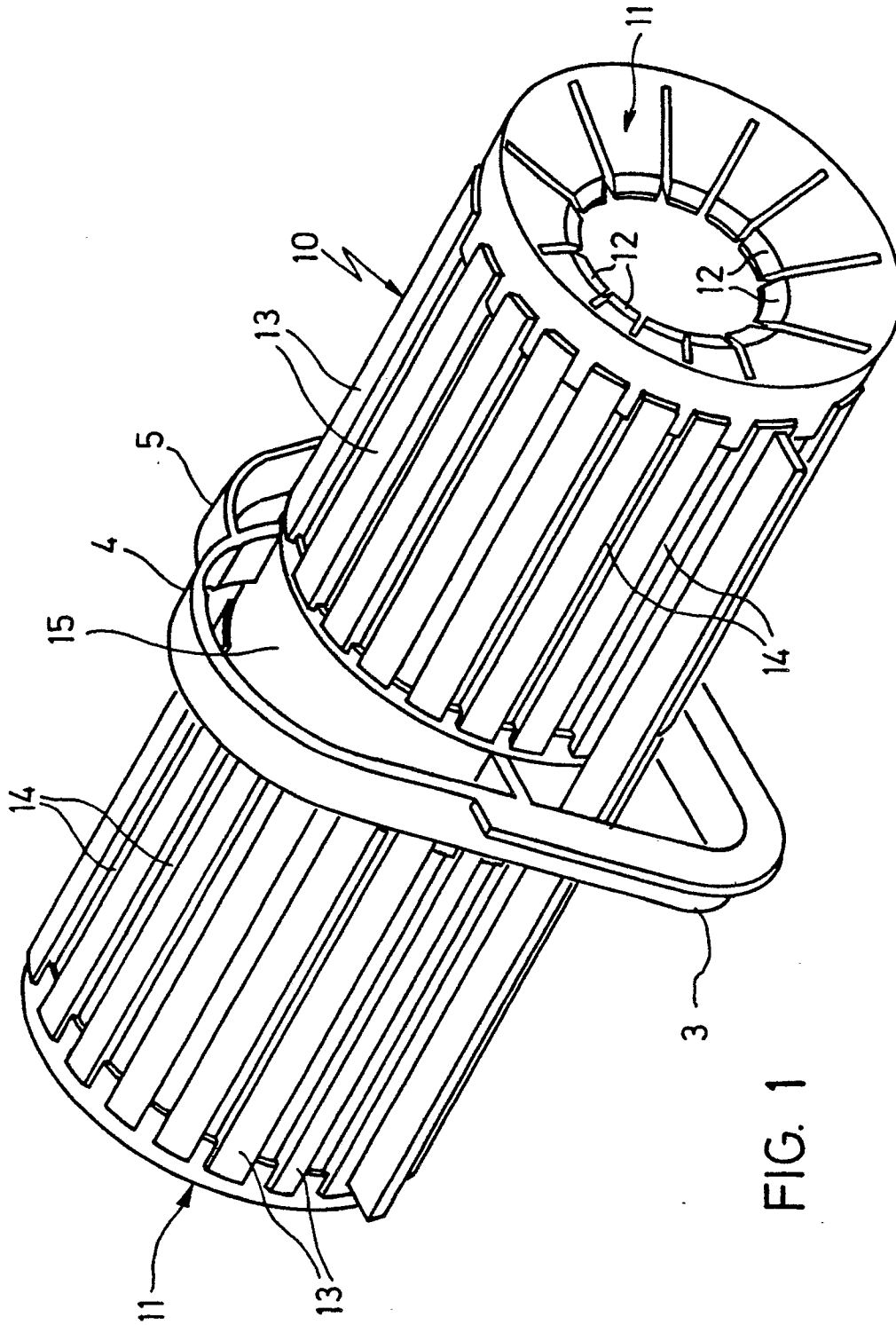


FIG. 1

FIG. 2

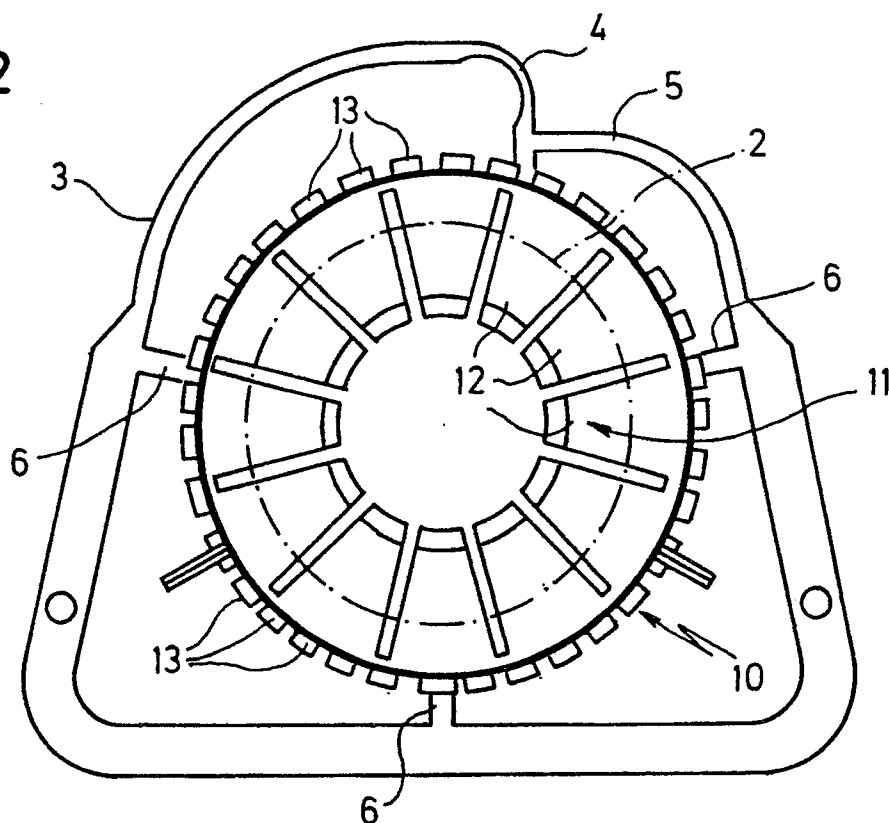
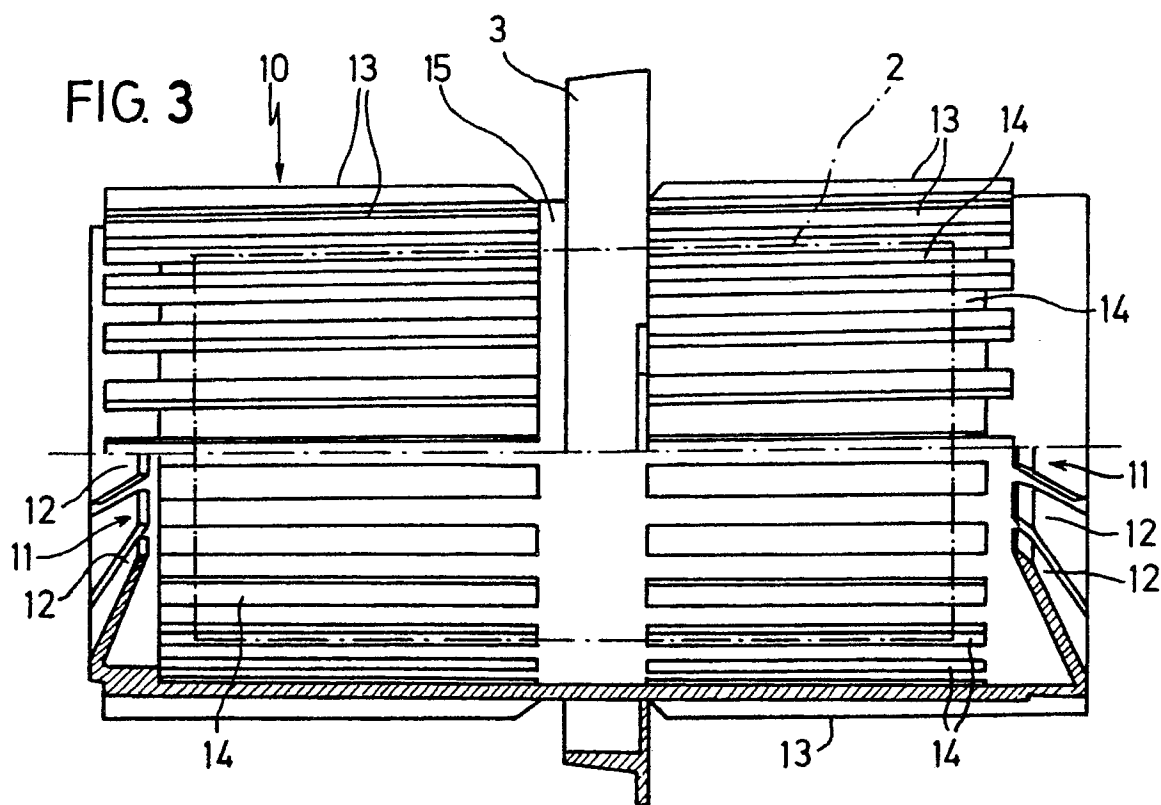


FIG. 3





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EUROPEAN SEARCH REPORT

Application Number

EP 90 20 1445

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	DE-A-3 002 833 (GLOBOL-WERK) * Complete document * -- --	1-2	E 03 D 9/02
A	GB-A-2 052 990 (GONCALVES) * Figure 3 * -- --	4	
A	FR-A-7 191 91 (PHILIPS) * Figures 2,5 * -- --	3	
A	US-A-4 372 598 (QUELCH) -- -- -- --		
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			B 65 D
The present search report has been drawn up for all claims			
Place of search		Date of completion of search	Examiner
The Hague		05 February 91	HANNAART J.P.
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