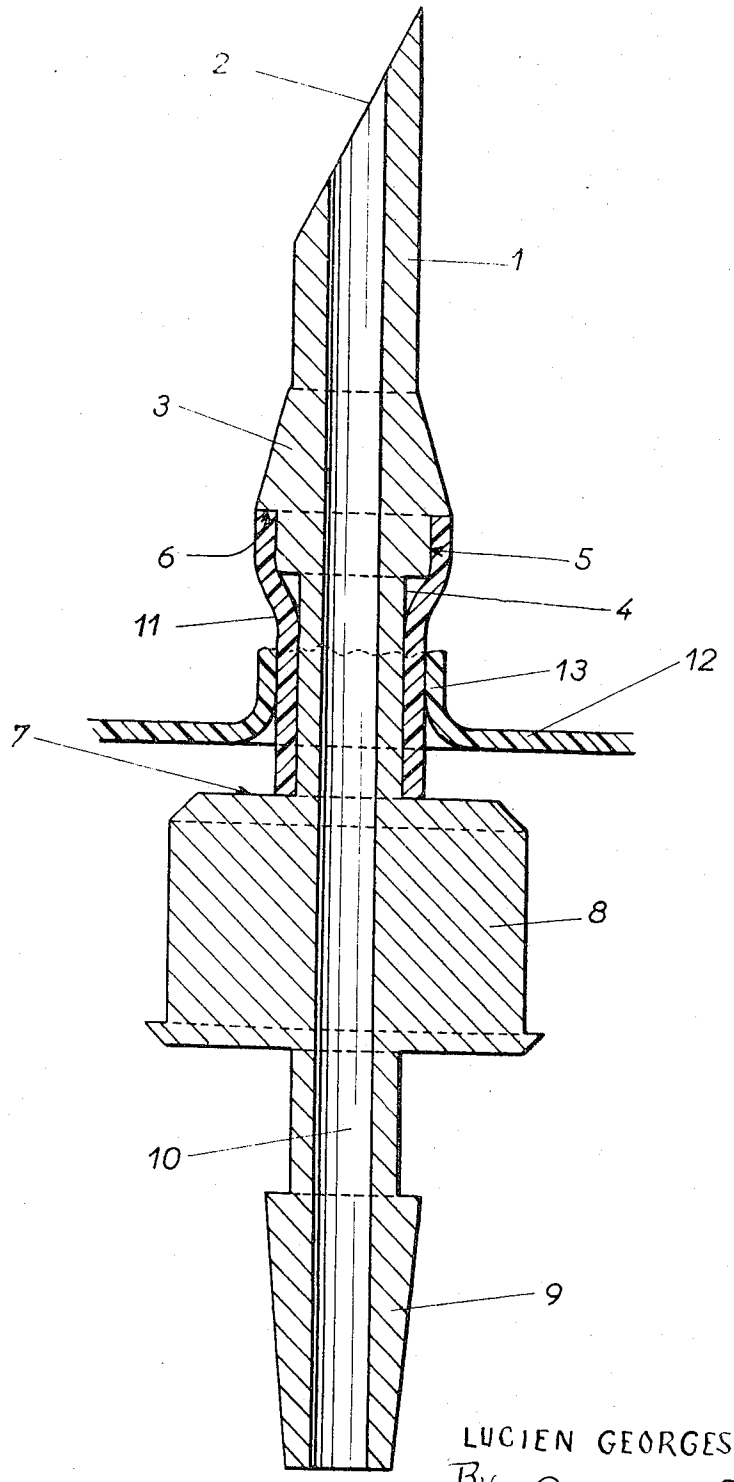
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PERFORATED PLUG SUITABLE FOR TAKING LIQUIDS FROM A CONTAINER WITH FLEXIBLE WALLS

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PERFORATED PLUG SUITABLE FOR TAKING LIQUIDS FROM A CONTAINER WITH FLEXIBLE WALLS

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The present invention relates to an axially perforated plug or bung made of a rigid plastic material and capable of easily perforating the flexible wall of a container which may be made of plastic without special means thereon or the provision of a special place thereon for the purpose.

This perforated plug or bung is arranged to remain attached to the flexible wall once the latter has been perforated, the joint between the said perforated plug or bung and the said container wall being tightly sealed.

The present invention is a perforated plug or bung for taking liquids from a container with flexible walls, comprising an axially perforated head provided on the end of a tubular part made of a rigid plastic material, the surface of the tubular part, behind the perforated head, having a high coefficient of friction. A flexible rubber sleeve surrounds a portion of the plug.

Preferably the plug or bung of the present invention is made of plastic material and is of moderate cost. Appreciable savings can be made in manufacturing containers and certain defects therein can be avoided by the method described.

Preferably the tubular part of the plug consists of a needle having an axial bore and being bevelled at its extremity.

After the wall of the flexible container has been perforated, the bent portion of this wall of the container is pressed inside of the container by the tapered part of the axially perforated plug or bung to form a stub tube which surrounds the flexible rubber sleeve during the further penetration. A tight seal is thus obtained between the axially perforated plug or bung and the container wall, which joint further resists withdrawal of the plug or bung.

An embodiment of the present invention will now be described, by way of example, with reference to the accompanying drawing the single figure whereof shows, in longitudinal section and on an enlarged scale, an axially perforated plug or bung according to the present invention.

Referring to the drawing, the axially perforated plug or bung consists of a tubular part 1 of the plug of a rigid plastic material, such as nylon, which terminates in an axially perforated head 2 formed by an oblique cut in the usual manner.

When the perforated head has been pushed upward against the container wall and has passed through the flexible wall of the container which may be made of plastic it is necessary to ensure, at least temporarily, the locking of this head to the wall. This locking is intended at the same time to ensure the tight sealing of the joint between the axially perforated head and the flexible wall of the container.

For this purpose and in accordance with the present invention, the tubular part 1, of the plug carrying the head 2, is extended by a tapered frusto-conical section 3, the diameter whereof increases in the direction opposite to the head 2. Behind this tapering section, there is a cylindrical section 4 made of the same kind of material and of smaller diameter having a shoulder 5 at its front end and abutting on with the tapering section 3 by a flat surface 6. The rear end of cylindrical section 4 abuts

against the front face 7 of a cylindrical boss 8 provided with a spigot 9 for the attachment of a pipe (not shown). An axial duct 10 passes from end to end through the perforated plug or bung from head 2 to spigot 9 permitting liquid to flow out from the container. A sleeve 11 of a flexible material such as rubber and having a high coefficient of friction, is pulled over the cylindrical housing 4 and is held thereon by bearing against the flat surfaces 6 and 7.

If, after the terminal oblique cut head 2 of the plug has penetrated the flexible container wall 12, which may be made of plastic the tubular part 1 of the plug is pressed further into the container, the flexible material of the wall 12 of the container surrounding the resulting hole is pressed inside of the container by the tapered section 3, thus forming a stub portion of a tube 13. Penetration in this manner is continued until this stub tube 13 passes over the portion of flexible rubber sleeve 11 behind the shoulder 5. Sleeve 11 is formed of material substantially more flexible than container wall 12.

The flexibility of the sleeve 11 and the shape of the stub tube 13 ensure a fluid tight joint between the axially perforated plug or bung and the flexible plastic wall of the container.

Moreover, the stub tube 13 forms a re-entrance into the container and therefore opposes the withdrawal of the plug or bung from the container wall by a movement downward in the opposite direction to the original penetration, and in this manner it is possible to proceed quite safely with the taking of liquid from the container.

The head 2 may be formed with a plurality of bevelled surfaces.

Furthermore, the flexible sleeve 11 pulled over the plug may be of a material other than rubber provided such material is sufficiently flexible and has a comparatively high coefficient of friction.

Such a sleeve 11 or the like element providing, behind the head, a region of the plug in which the surface has a high coefficient of friction, may be associated with a metallic axially perforated head inserted in the plug or bung.

Finally, the perforated plug or bung may be made entirely of metal having a flexible sleeve 11 made of rubber or the like.

I claim:

1. In a dispensing plug for dispensing liquid from a container having flexible walls, a tubular terminal plastic member having an axial bore and being terminally bevelled, said tubular member having at its end opposite said bevel a frusto-conical extension which is flaringly tapered larger away from said bevel, a cylindrical section having an enlarged shoulder terminal portion having a radial face which abuts the larger terminal face of said frusto-conical extension and has a diameter somewhat smaller than the diameter of said larger terminal face of said frusto-conical extension, a cylindrical boss mounted coaxially with said cylindrical section and having a flat radial face which abuts the radial face of said section remote from said shoulder portion, said boss and said section and its shoulder portion having a continuous axial bore which communicates with the axial bore in said tubular terminal member and its extension, and a flexible rubber sleeve mounted surrounding said cylindrical section and its enlarged terminal shoulder portion and extending between the larger terminal face of said frusto-conical extension and the radial face of said boss which abuts the radial face of said section remote from said shoulder, said sleeve providing a tight seal with the flexible wall of said container when said plug has penetrated said wall of said container, and the portion of said sleeve over said shoulder portion opposing the withdrawal

of said plug after its insertion through the wall of said container.

2. A plug according to claim 1, the surface of said flexible sleeve having a high coefficient of friction.

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