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INDICATING SCREW PLUG FOR BARRELS AND OTHER CONTAINERS AND SEALING MEANS FOR SAID PLUG

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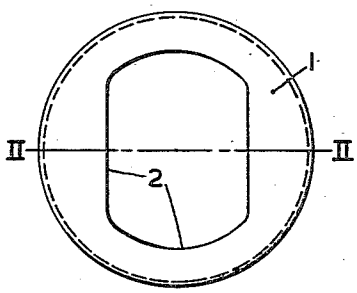

FIG.1

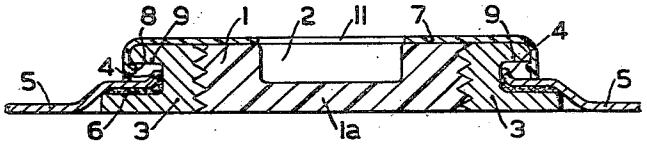

FIG.3

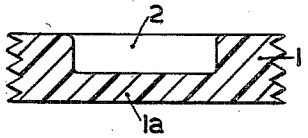

FIG.2

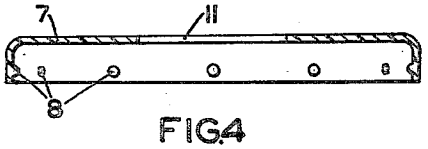

FIG.4

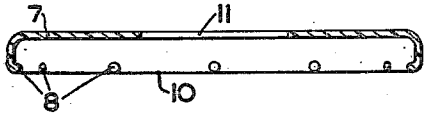

FIG.5

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INDICATING SCREW PLUG FOR BARRELS AND OTHER CONTAINERS AND SEALING MEANS FOR SAID PLUG

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3 Claims. (Cl. 220—39)

The invention relates to screw plugs for barrels and other containers through which the contents of the container may be observed.

It has for its main objects, to provide a plug of this type which will enable a person to ascertain whether or not a container is filled and containing the amount of merchandise which it is supposed to contain. Another object is to provide a screw plug which may be manufactured and attached to the container at a very low price and which can replace the usual metal screw plugs.

A still further object is to provide sealing means for said indicating plugs which do not obstruct the observation of the contents of the container through the plug and by which the container may be sealed in such a manner that unauthorised opening may be readily detected.

These and various other objects and advantages will be readily understood from the following specification and from the accompanying drawing of preferred embodiments of the invention, in which, however, various modifications may be made without departing from the scope of the appended claims.

Fig. 1 is a plan view of a screw plug embodying my invention.

Fig. 2 is a section on the line II—II in Fig. 1.

Fig. 3 is a fragmentary section showing the assembly of the plug shown in Figs. 1 and 2 in a bung ring and the sealing element for sealing the plug and ring.

Fig. 4 is a cross section through the sealing cap of Fig. 4.

Fig. 5 is a cross section through a sealing cap having a different construction.

In the drawings, 1 indicates a screw plug of a usual form for metal plugs provided with a socket 2 of non circular shape, so that by means of a suitable tool the plug may be screwed in and out.

According to the invention the whole body of the plug 1 is made of transparent plastic, e. g. polystyrene or a transparent mixture of plastics on a cellulose or casein base.

It will be appreciated that the form and dimensions of the usual metal plug have been maintained, so that for screwing the plug in and out the usual tools can be used. Moreover the application of transparent plastic for this known form of plug has the important advantage, that the thin wall 1*a* under the socket 2 for the tool automatically provides for a special good visibility of the contents of the container. As most plastics are more or less elastic, it will also be possible to choose a material of such elasticity that the plug without the application of gaskets or the like, can be directly sealed in liquid tight relation with regard to the bung ring into which the plug is screwed.

Referring particularly to Figures 3 and 4, a transparent plug 1 according to the Figures 1 and 2 is screwed in the usual metal bung ring 3, fitting into an annular shoulder 4 of the cover 5 of the container.

6 indicates a gasket placed between the bung ring 3 and the cover.

According to my invention the closing is sealed by means of a thin sealing cap 7 of transparent plastic materials, e. g. nylon, covering the plug 1 and the bung ring 3. The sealing cap 7 is provided with a plurality of projections 8 on the inner surface of the cap catching under a shoulder 9 of the bung ring 3 in the sealed position of the cap. Preferably the side wall of the sealing cap 7 is extended downwards as shown in Figure 3, so that the lower edge abuts the wall of the cover, in order to make removal of the cap less easy. However, it will be obvious, that the sealing cap can be made lower, as shown in Fig. 5, so that the projections 8 divided around the lower edge 10 of the cap will abut the shoulder 9 of the bung ring 3. The lower edge of the cap may also be formed as a continuous bead. Preferably the sealing cap is provided with a central hole 11 lying over the cavity or socket 2 in the screw plug 1. This hole 2 preferably has at least the same dimensions as the said socket. When the sealing cap is provided with said hole 11, the screw plug 1 can be screwed out by means of the tool and the cap is simultaneously removed, it now being not necessary to remove the sealing cap first.

The sealing cap 7 may be pressed down over the shoulder of the bung ring 3 in a cold condition, in which case the parts of the cap between the projections 8 must have a sufficient elasticity to allow such method, the projections after the pressing down of the cap catching under the shoulder 9 of the bung ring 3.

In some cases, however, it is also possible to press the cap down in a heated condition, e. g. by means of an electrically heated tool, so that the cap during cooling is contracted on the bung ring, the projections or a continuous closing bead being pressed against the shoulder 9 of the bung ring.

The appliance of the transparent sealing cap 7 does not in the least obstruct the good visibility of the contents of the container through the transparent screw plug 1.

To those skilled in the art to which my invention relates, many changes in construction and widely differing embodiments and applications of the invention will suggest themselves without departing from the spirit and scope of the invention. My disclosures and the description herein are purely illustrative and are not intended to be in any sense limiting.

What I claim is:

1. A metal barrel for storing and transporting liquids having a metal cover formed with an opening for charging and discharging the barrel, said opening being provided with an internally-threaded metal bung ring secured in said opening to the adjacent portions of the cover, said bung ring having a radially opening peripheral groove defined by upper and lower spaced flanges, said groove receiving the portions of said cover defining said opening, a self-sealing screw plug threadedly engaged in said bung ring and a transparent sealing cap covering said bung ring and said screw plug and engaging the surface of the screw plug to hold said plug against accidental loosening, said sealing cap being flexible and having projections extending inwardly from and at spaced positions around the skirt of said sealing cap to be resiliently engageable in the annular groove of the bung ring to secure the cap frictionally thereto, said screw plug being formed of transparent plastic material and being provided with an external central cavity for reception of a tool, the interior of said barrel being viewable through the base of said cavity, said sealing cap having a central aperture aligned with said cavity to permit entrance of the tool into the cavity, whereby, upon rotation of said screw plug to remove said plug from the bung ring, the sealing cap is simultaneously removed.

2. A metal barrel for storing and transporting liquids having a metal cover formed with an opening for charging

and discharging the barrel, said opening being provided with an internally-threaded metal bung ring secured in said opening to the adjacent portions of the cover, said bung ring having a radially opening peripheral groove defined by upper and lower spaced flanges, said groove receiving the portions of said cover defining said opening, a self-sealing screw plug threadedly engaged in said bung ring and a transparent plastic sealing cap covering said bung ring and said screw plug and engaging the surface of the screw plug to hold said plug against accidental loosening, said sealing cap being flexible and having projections resiliently engageable in the annular groove of the bung ring to secure the cap frictionally thereto, said screw plug being formed of transparent plastic material and being provided with an external central cavity for reception of a tool, the interior of said barrel being viewable through the base of said cavity, said sealing cap having an integral window aligned with the window in said screw plug, whereby the contents of said barrel are visible at all times.

3. A metal barrel for storing and transporting liquids, having a metal cover formed with an opening for charging and discharging the barrel, said opening being provided with an internally-threaded metal bung ring secured in said opening to the adjacent portions of the cover, said bung ring having a radially opening peripheral groove defined by upper and lower spaced flanges, said annular groove receiving the portions of said cover defining said opening, a self-sealing screw plug threadedly engaged in said bung ring and a transparent sealing cap covering

said bung ring and said screw plug and engaging the surface of the screw plug to hold said plug against accidental loosening, said sealing cap being flexible and having projections extending inwardly from and at spaced positions around the skirt of said sealing cap to be resiliently engageable in the annular groove of the bung ring to secure the cap frictionally thereto, said sealing cap having a side wall which extends to the cover of the barrel when the projections on the sealing cap are engaged in said groove, said screw plug being formed of transparent plastic material and being provided with an external central cavity for reception of a tool, the interior of said barrel being viewable through the base of said cavity, said sealing cap having a central aperture aligned with said cavity to permit entrance of the tool into the cavity, whereby upon rotation of said screw plug to remove said plug from the bung ring the sealing cap is simultaneously removed.

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