Oct. 1, 1957 H. MAJER 2,808,168

CONICAL BOTTLE CAPSULE

Filed Aug. 6, 1954

FIG. 1

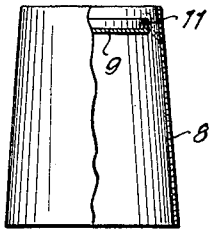


FIG. 2

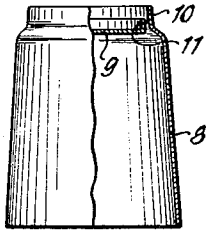


FIG. 3

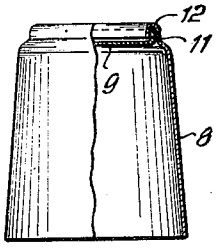


FIG. 4

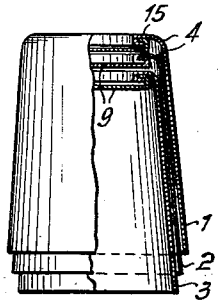


FIG. 5

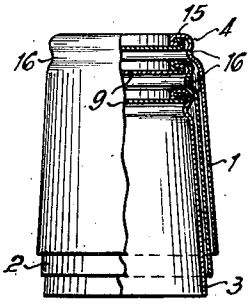
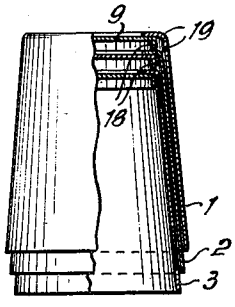


FIG. 6



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CONICAL BOTTLE CAPSULE

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1 Claim. (Cl. 215—38)

The present invention relates to conical bottle capsules generally made of pliable material such as metal foil and applied exteriorly to bottle necks suitably closed by corks or the like so as to form auxiliary closures for decorative and protective purposes.

Such bottle capsules are placed one inside the other for despatch, in order that large numbers may be housed in a small space. These capsules, assembled together in rod-like form, become pressed into one another in the axial direction by shocks and impacts in transport. Due to the slight conicity of the bottle capsules, depending on the bottle neck to be stoppered, the contact pressure of the individual cap skirts against one another becomes so great that air no longer remains between any two bottle capsules placed one inside the other. Thus, the individual bottle capsules stick very firmly to one another and in one another and, in use, can only be separated with great difficulty by damaging the skirts. Furthermore, the characteristic slight wall thickness of the bottle capsules causes greater difficulty, the skirt part of an inserted second capsule, protruding from the one bottle capsule, extending only a little way out, so that it is then hardly possible to grip this skirt part.

In order to avoid the sticking of bottle capsules in one another, it is known to place strips or other intermediate layers of paper, cork or the like between the capsules. These means involve pointless waste of material and, in each case, an additional working operation for the insertion thereof and thus increased expense.

All the above is valid not only for one-piece capsule constructions but also for multi-piece constructions. In the case of the latter, which as a rule consist of a skirt portion and a top part, drawn as a so-called flanged cover or merely formed as a disc, secured in the conical skirt part by folding and pressing, it has also appeared that the parts pressed together at the outer top edge offer too much resistance when placed upon the bottle, so that the capsule fits badly on the neck of the bottle. This defect is caused mainly when the diameter of the drawn upper flanged cover or of the disc corresponds to the inner diameter of the upper end of the conical skirt part, and the pressed upper top edge, after folding and pressing, is of a thickness corresponding to double the thickness of the material of the skirt plus double the thickness of the material of the drawn cover or the single thickness of the material of the disc.

An object of the present invention is to provide a construction of bottle capsule which will enable the above-mentioned disadvantages to be avoided, and in accordance with the invention, the capsule is characterised by provision of a free, externally open, air space between the capsules placed one in another for transport, due to appropriate shaping of the skirt and/or of the top of the capsule, the externally substantially plane shape of the top being maintained, so that the nested bottle capsules cannot remain firmly held together by suction and stick fast to one another. In a favored embodiment, the skirt

and/or the top of the capsule is or are made to project locally inwards or outwards in the region which would be covered by the next capsule placed thereon. More especially there may be provided projections or recesses in the form of grains, ribs, grooves and notches of any desired nature, or the like, preferably arranged in the region of the top edge of the capsule in a circle on the skirt of the capsule. A projection in the form of an inner peripheral rib serving as end abutment for the next capsule pushed in can equally well be provided. According to their height, the projections form distance pieces or end abutments, which prevent the walls from resting closely together and prevent the formation of vacuum on extraction.

The invention is similarly suitable for bottle capsules consisting of one or more parts and produced or assembled in a manner known per se without seams or by drawing, elongation, folding or sticking.

In the case of multi-part bottle capsules consisting of a skirt and an inserted top part, in accordance with the invention the free air space may also be ensured, on fixing one capsule within another, by constricting the skirt at the junction with the top edge into a narrowed neck, into which a flanged cover of correspondingly small dimensions, forming the top part, is fitted by folding. By means of the aforesaid constriction accordingly a well rounded top edge of only single material thickness is obtained.

Finally, where the top part is stuck in, it may have a smaller diameter than the skirt at the corresponding point, and have an edge bent into the interior of the capsule, serving as a distance piece, by abutment with the top part of the next capsule.

Where a plane disc is used as top part, inwardly or outwardly projecting raised portions can be provided in the skirt, as has already been mentioned in the case of one-piece bottle capsules.

Some examples of embodiment of the subject of the invention are illustrated in the accompanying drawing wherein each figure is shown half in elevation and half in longitudinal section. In the drawing:

Figs. 1, 2, 3, 4 and 5 show bottle capsules with folded-in and pressed-in flanged covers; and

Fig. 6 shows a bottle capsule with flanged cover stuck in.

Figs. 1, 2, 3 and 4 relate to the progressive deformation of a two-part bottle capsule, the conical skirt **8** of which is connected with a flanged cover **9** by means of a fold. Fig. 1 shows the unconnected parts in the initial position. As shown in Fig. 2, first the top end of the skirt **8** is constricted with a rounded transitional part into a neck **10**, the edge of which is thereupon (Fig. 3) folded about a drawn up edge **11** of the flanged cover **9**, and pressed, as shown in Fig. 4.

In this embodiment the top itself can serve as abutment for limiting the depth of penetration of one capsule into another, since a fold **15** is somewhat depressed to a certain distance from the well rounded top edge **4**, due to the selection of an appropriately smaller flanged cover. The top edge here is only of single material thickness, so that the skirt remains yieldable, and can be well fitted on the neck of the bottle.

As indicated by Fig. 5, bottle capsules assembled in such a manner can be given raised portions or depressions in the skirt in the form of grains, notches, ribs, grooves, or the like.

Actually in this figure, the part of the skirt adjoining the top edge **4** is additionally formed into a neck **16**, for example constricted in undulatory fashion, the narrowest part of the constriction serving as an abutment for limiting the depths of penetration of the next capsule.

In the case of bottle capsules with tops or covers stuck

in, air cushions or air spaces are provided between the inserted bottle capsules according to Fig. 6 by making the disc area of the flanged cover 9 smaller in diameter than the minimum internal diameter of the skirt 8, when an inwardly bent flange edge 18 of the flanged cover 9 rests against a top surface 19 of the next bottle capsule pushed in, and keeps this at such a distance that here again there is an air cushion between each two bottle capsules pushed one inside the other.

It will, of course, be understood that various details of construction may be varied through a wide range without departing from the principles of this invention and it is therefore, not the purpose to limit the patent granted hereon otherwise than necessitated by the scope of the appended claim.

I claim:

A cup-like conical bottle capsule of the type wherein a plurality of such capsules may be nested and easily separated from each other, said capsule being made of pliable foil, preferably metal foil, adapted to be applied to the neck of a sealed bottle and comprising a conical skirt portion and a separate disk-like top portion, the skirt portion at its upper narrow end being bent inwardly so as to form an inwardly extending rounded edge zone terminating at its free end in an annular inwardly reversely bent bead, the top portion being set deeply within the skirt, and the skirt portion being permanently connected to the top portion in that the inwardly extending edge zone at the upper end of the skirt portion is bent downwardly and then outwardly so as to form said reversely bent bead with its open side facing the inner wall of the skirt portion, and the outer rim of the top portion extending upwardly being bent inwardly so as to form a bead with its open side facing the center of the top portion, said two beads engaging each other in a clamp-like manner and squeezed together in axial direction of the capsule and being disposed well within the rounded edge zone with the bead of the top portion in spaced relation to the rounded edge portion of the skirt so that in the nesting of the capsules all beaded portions are spaced inwardly of the conical skirts of the capsules with the beaded portions axially aligned and contacting to maintain separation of the conical skirt portions of the nested capsules.

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