

[54] **HEAT-SHRINKABLE CAPSULE**
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[58] **Field of Search**..... **215/38 A, 39 R, 38 B,**
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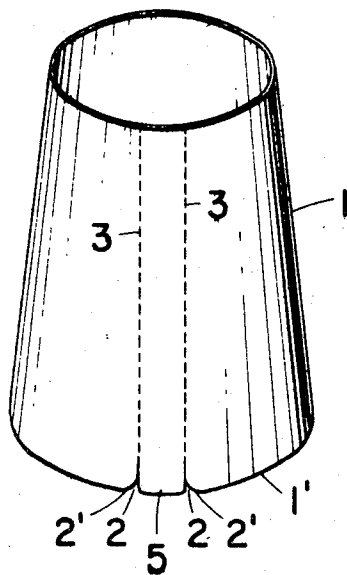
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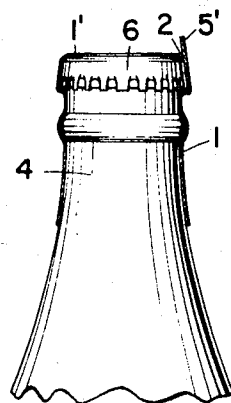
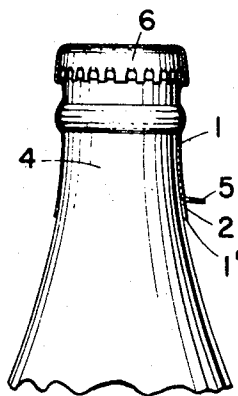
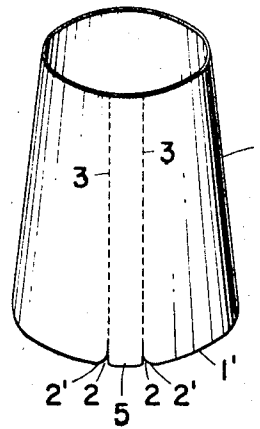
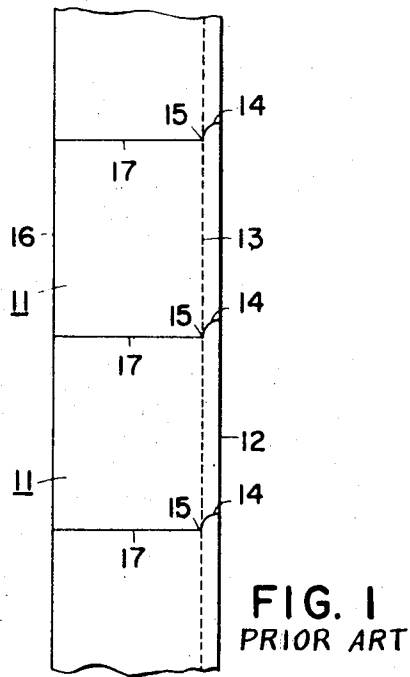
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[57] **ABSTRACT**

A capsule or seal device is disclosed which is made from heat-shrinkable plastic material. The seal device is not provided initially with a tab before it is applied to a bottle. Before the application of the seal device to the bottle, the cylindrical body of the device possesses two perforated lines which extend from end edge to end edge of the body and is provided at one end edge of the cylindrical body with two notches in the form of arc-shaped body portions which continue to the respective perforated or score lines. When the seal or capsule is applied to the bottle and heated to shrink closely to adhere and clinch to the bottle, the tab part located between the two body portions automatically rises up and projects from or is offset with respect to the bottle surface, resulting in forming a tab or lug projection adapted to be grasped by the fingers of a hand when the seal is to be removed from the bottle.

1 Claim, 4 Drawing Figures





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HEAT-SHRINKABLE CAPSULE

SUMMARY OF THE INVENTION

Heat-shrinkable plastic film is advantageously used for manufacturing seals or capsules in the form of cylinders. A conventional capsule of this type has two perforated lines terminaling to form a projection at an end edge of the cylindrical body. This projection facilitates opening of the seal by means of the of a hand when the seal is desired to be torn open along the perforated lines.

The present invention has as one of its objects to provide means resulting in an improved heat-shrinkable seal body or capsule which carries initially no tab or projection at either end of its cylindrical body when it has been manufactured but it automatically engenders a lug or projection-shaped tab when it has been applied to the bottle for sealing purposes.

The invention will now be described with reference to FIGS. 2 to 4 of the accompanying drawings, in which the state of the art is illustrated by FIG. 1.

FIG. 1 illustrates a conventional mode of manufacturing capsules of the type employed for sealing containers, such as closure caps of bottles, such seal or capsule being made from a tubular film of synthetic resinous material which shrinks when heated to a predetermined temperature. The tubular material lies flat and is then cut into pieces 11 provided with a perforated line 13 parallel and adjacent to one of the lateral end edges 12 of the flattened tubular film material. Each piece 11 is severed from the tubular film material by cutting the latter along the line 17 at right angles to the length of the tubular material. The cut line 17 extends from the opposite lateral edge 16 of the flattened tubular material and, at the point 15 where the cutting line intersects with the perforated line 13, an arcuate line 14 is located which extends to the first-mentioned lateral edge 12 at a point where it has entered the area of the adjacent piece beyond the straight cut line 17. The known seal device 11 consists of the cylindrical body with a lug portion defined by the arcuate cut line 14. However, a recess will be obviously formed at the other end of the cylindrical body corresponding to the form of the lug projection. Such recess sometimes spoils the appearance of the seal product. Such recess may be eliminated by clipping off the wall of the cylindrical body at the side where the recess has been formed, but it will cause the product to become short and will result in a loss of the material.

FIG. 2 is a perspective view of a seal pursuant to the invention.

FIG. 3 shows in a vertical cross section the seal of FIG. 2 as applied to the mouth or cap closure of a bottle.

FIG. 4 is a view similar to FIG. 3 but shows the of application of the seal according to the invention in a different position.

DETAILED SPECIFICATION OF A PREFERRED EMBODIMENT

As shown in FIG. 2, the seal or capsule embodying the invention has a cylindrical body 1 made from heat-shrinkable plastic film material. There are formed two notches 2 at one end edge 1' of the cylindrical body, which notches are spaced apart from each other and present each a small arc-shaped formation 2'. One end

of each notch continues to extend into respective parallel, spaced apart perforated lines or incised grooves 3 which terminate at the opposite or upper end edge of the cylindrical body.

When the seal device 1 according to the invention is applied to the bottle 4 by pulling the cylindrical hollow seal body thereover and heating of the plastic material is carried out to a predetermined temperature, the material of the seal shrinks to clinch closely to the exposed surface of the bottle top. But the portion 5 which is defined by the two notches 2, does not adhere to the bottle surface, for the said portion 5 is stressed outwardly and upwardly. Thus, tear tab portion 5 will form a projection, as shown in FIG. 3. This projection end facilitates to be automatically placed in a position, in which grasping the same by means of the fingers of a hand can take place, when the seal device is desired to be torn off and removed from the bottle. According to the invention, therefore, it is unnecessary to provide any initial projection on the seal product when it is manufactured and many other advantages result therefrom.

FIG. 4 shows a modification of the invention. The seal of FIG. 4 was applied to the bottle with the notched end edge 1' of the cylindrical body located at the top of the bottle. By the application of heat to the seal in this case, the top or upper end edge 1' of the cylindrical body 1 of the seal will be stressed to bend inwardly so as to contact the surface of the crown or cap of the bottle, as shown in FIG. 4. But the portion 5' which is defined by two aforesaid notches 2, will remain in its upright position, resulting in a lug projection along the side of the crown or bottle cap.

It is preferred to form notches 2 which assume acute angles, as shown in FIG. 2, since a sharp cutting at an end of the cylindrical body will further the realization of the projection or offset portion 5 and it will also make it easy to tear off the seal or capsule along the perforated lines.

It is also preferable to manufacture the seal device so that it is applicable from either its upper or lower end edge to bottle cap. The manner in which the outlines 2' of the notches 2 are located opposite to each other elucidates from FIG. 2, in which they are rounded convexly. Such configuration has been formed to improve the heat-shrinkage at the rounded edge portions of the notches for close contact with the bottle and to thus cause the tab portion 5' clearly to project from the remaining part of the seal body. The projection 5' of the strip part 5 from the remaining part of the seal will obviously contribute to an easy grip by means of the fingers of an operator's hand for the tearing-off operation.

The notches 2 may be provided on either end edge or on both end edges 1' of the cylindrical seal or capsule body.

It can thus be seen that there has been provided according to the invention a heat-shrinkable seal device of plastic material forming a thin-walled cylindrical body 1 for application to a closure cap 6 of a bottle 4 and the like; comprising opposite upper and lower end edges 1' defining said body, two substantially parallel and spaced apart weakened score lines 33 extending into said body material and located to run between said end edges 1', and arc-shaped opposite end pieces 2', 2' cut into respective body portions 2 to extend from one of said end edges 1' and to terminate at respective ends of said weakened lines 3, 3 adjacent said one end edge 1', thereby to provide between said weakened lines 3,3

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a uniform tear tab 5 devoid of any diminished dimension throughout its extent between said opposite end edges 1', 1'.

The invention herein described has reference to a preferred mode contemplated for carrying out the invention; the scope of patent protection to be granted is defined by the ensuing claims.

I claim:

1. The combination of a bottle having a neck, a closure for said neck, a seal device for said closure and neck, said device comprising a thin-walled tubular body made of heat-shrinkable plastic material shrunk over said neck and closure, said body having opposite

upper and lower end edges and being provided with two spaced apart weakened score lines extending into said body material and extending between and to said end edges, to form a tear tab for said seal device between said weakened lines, said body being formed with notches at adjacent ends of said weakened lines located at one of said end edges, and forming a pull lug at one end of the tear tab, said lug projecting from said body and adapted to be grasped by the fingers of a hand to tear the tab when the seal device is to be removed from the neck and closure.

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