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SEALING CAP FOR BOTTLES, JARS, CANISTERS
AND SIMILAR CONTAINERS
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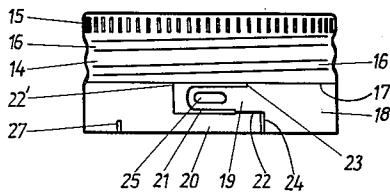


Fig. 1

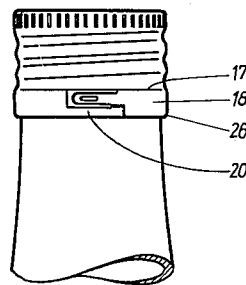


Fig. 2

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SEALING CAP FOR BOTTLES, JARS, CANISTERS AND SIMILAR CONTAINERS

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2 Claims. (Cl. 215-46)

The present invention relates to sealing caps of metal, preferably of aluminum or aluminum alloys, particularly to caps provided with a screw-thread, and comprising a sealing band or tear-off band, which maintains the cap firmly on the opening of the bottle or the like, until this sealing band is removed, which happens when the bottle, jar, canister or similar container is opened for the first time. Since this sealing band is firmly connected to the cap until the container is opened for the first time, it is impossible to open the container without separating the connexion between cap and sealing band. The purpose of this arrangement is to make visible whether the container is still in its unopened state or had already been opened. This distinguishability is important in order to assure the buyer of the merchandise in the container that the contents of the container has not been adulterated and that no refilling with a non-original article after a removal of the first charge has been made.

In order to make possible that in cases, in which the contents of the container is not completely used up immediately after opening, this container may be closed again, the sealing caps are provided with a screw-thread, engaging with a corresponding spiral line at the top of the bottle or the like. Commonly, this spiral line is situated on a reinforced top adjoining the neck of the bottle, the lower edge or collar of this top standing out with respect to the bottleneck and serving as a hold for the sealing band. At its lower rim the sealing band of the cap is flanged inwardly around the said edge or collar so that a removal of the sealing is prevented. In order to open the container the sealing band must be separated from the cap and the cap then be screwed off.

Such sealing caps as have thus far been described only in a general way, are known in several embodiments, all of which however, have substantial disadvantages.

One object of the invention is the provision of a seamless sealing cap, made of one single part in which the disadvantages of the known seals are avoided.

One particular object of the invention is the provision of a sealing cap which may be opened securely and easily, i.e. without the application of a particular strong force and without tools and which leaves no parts on the bottle or the like.

Another object of the invention is the provision of a sealing cap having no sharp edges at its lower rim after the opening of the seal so that injuries are avoided during its further use and of which no parts must be specially removed after the opening of the seal.

Other objects and many of the attendant advantages of this invention will be readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings wherein:

FIG. 1 is a side elevational view of a sealing cap embodying the present invention; and

FIG. 2 is a side elevational view similar to FIG. 1 but showing the cap applied to a bottle.

The invention will now be described with particular reference to one embodiment thereof, alterations and modifications of this example being also included within the scope of this invention.

FIG. 1 shows the sealing cap 14 in the shape given to it before its application to the bottle or the like. The

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portion of the cap above line 17, i.e. the sealing cap proper shows the usual construction, the whole cap being formed of one single seamless piece of aluminum sheet, having a thickness of about 0.25 mm. The upper rim 15 is provided with small impressions in order to facilitate the handling of the cap during the opening or sealing operation. In the interior of part 15 lies a thin cork-plate or cardboard plate (not shown in the drawing), to the lower side of which is fastened a foil of wax paper, metal, resin or the like. The threaded impressions 16 are fitted to correspond projecting parts on the bottle or the like, for the sealing of which the cap is intended.

The impressions 16 may also be omitted if the device employed for the attachment and fastening of the seal to the bottle is adapted to effect also a forcing-in of the threaded impressions 16 in addition to the flanging in of the lower edge of the cap.

The tear-off line 17 made by indentation weakens the metal of the cap along its entire circumference without cutting it completely. Merely in that part of the circumference, which lies between the points 22' and 23, the metal is completely cut along the line 22'-23.

Immediately adjacent to the tear-off line 17 but not extending over the entire breadth of the tear-off band 18 a tongue 19 is punched out of the part of the sealing cap below tear-off line 17, viz. out of the tear-off band 18, this tongue preferably extending from right to left in order to enable a person to open the seal by using his right hand. The tongue 19 may be provided with impressions 25 which facilitate taking a hold on the tongue.

Since the tongue 19 does not extend over the entire breadth of the sealing band 18, a narrow strip 20 is left below tongue 19, the breadth of this strip amounting to about 1/4 to 1/3 of the breadth of the tear-off band 18. Opposite the tip of the tongue 19 and approaching the base of tongue 19 this narrow strip 20 is limited by a cutting line 21. In continuation of this line 21 runs a weakening line 22 made by a mere pressing action and extending a small distance beyond the base of tongue 19 (corresponding to point 23). A cut 24 then runs from the end of the weakening line 22 normal to the lower edge of the sealing band.

The cutting line 24 may also be situated opposite the point 23 marking the other side of the base of tongue 19, i.e. opposite the one end of the cutting line 22'-23, interrupting the tear-off line 17, or may be situated somewhat nearer to the tip of tongue 19 than corresponds to point 23.

In the manner described here the applicant succeeds in providing a cut over the entire breadth of the tear-off band 18 merely interrupted by the weakening line 22, this cut extending from the lower rim of the tear-off band 18 to the annular tear-off line 17 (with the exception of the cutting line 22'-23 formed as a weakening line).

As already stated, this cut extends from the lower rim of the tear-off band 18 perpendicularly to this rim, in the form of the cutting line 24 to the base of tongue 19; this line is continued by the weakening line 22 and that line again by the cutting line 21 along the length of tongue 19 on the lower side thereof and finally by a cut opposite the tip of the tongue normal to the circumference of the cap in the direction towards the tear-off line 17, which is reached by the cut at the point 22'. At point 22' the cut meets the cutting line 22'-23, limiting the upper side of tongue 19.

With reference to FIG. 1 it may be mentioned that here the cutting lines 21 and 24, as well as the cutting line between the tip of the tongue and point 23 at its base, have been shown as narrow gaps in order to illustrate those cutting lines more clearly and to differentiate them from the weakening lines 17 and 22. In reality, the said cutting lines do not result in such openings in the

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form of gaps, but consist only of a plain cut through the entire thickness of the metal.

The lower rim of the tear-off band 18, comprising the narrow band 20, serves for the formation of a flanged-in edge, by means of which the sealing cap may be fastened to a bottle or the like. In FIG. 2 the seal of the invention is shown in the form obtained after the fastening thereof to a bottle or the like. The parts situated above the tear-off line 17 are the same as in FIG. 1 and, consequently, need not be discussed here again by means of the bending-in of the lower rim of the tear-off band 18 about the edge parting the top of the bottle from the bottleneck, a fastening of the cap to the bottle is created at 25 which prevents the cap to be pulled off the bottle. By forming this constriction 26 the circumference of the lower rim of the tear-off band 18 is decreased a little so that owing to the action of the flange-in rolls, employed for the formation of the constriction 26 and moving from right to left around the bottleneck, both lower corners of the two sheet metal portions at the cutting line 24 overlap each other a small distance. Since the cutting line 24 was formed by cutting with a shear-like tool so that the end of the narrow band 20 lies a small distance under the part of the tear-off band 18 opposite to it at the cutting line 24, the lower corner of the narrow band 20 moves at the location of the cutting line under the other end of the tear-off band 18 during the formation of the constriction. Hereby the narrow band 20 is fixed and the guaranty is given that the seal cannot be opened without the removal of the tear-off strip 18. For opening the seal, the thumbnail of the right hand is inserted below the tip of tongue 19, which may easily be raised, then tongue 19 is seized by the thumb and index-finger and by moving it to the right is pulled off the sealing cap.

From the above description obviously follows immediately that during this pulling-off movement the narrow strip 20 is freed by the tongue when the weakening line 22 is torn and the tearing line 17 begins to separate at 23 and that the entire tear-off band 18 is removed from the cap 14 during the continuation of the pulling-off movement.

Depending on the thickness of the sheet metal employed for the manufacture of the seal and depending on the extent of the flanging in (26), the tear-off band 18 may simply be pulled off tangentially to its circumference, which is possible with thinner sheet metals and at smaller extents of the bending-in at 26; or, in case of a stronger sheet metal or a larger extent of the bending-in, the tear-off band 18 may be pulled off to the right in an obliquely downward direction, after it has started to separate at 23. In the first case, in order to avoid any substantial resistance caused by buckles in the tear-off band 18 formed by the tangential tearing-off, one or a few small incisions having approximately the breadth of the bent-in portions, i.e. being shorter than the breadth of the narrow band 20, can be provided over the entire length of the circumference of the tear-off band 18, as is shown in FIG.

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1 at 27. Such incisions (27) may be a simple cut or may have the form of a triangular notch.

On the opening of the sealing cap no parts of the seal are left on the bottle or at the cap 14. On the other hand the tear-off band 17 produces a completely smooth lower rim on the cap 14, comprising no sharp edges which might result in injuries.

The novel caps can simply be produced for all sizes of containers, can easily be applied to bottles and the like and can be opened without difficulty and disadvantageous effects.

The sealing cap can also be used for bottles and the like, which have no screw-thread. In this event the cap 14 need not be threaded as at 16.

Instead of employing the embodiment of the present invention, having one tongue 19 as described above, the sealings may be formed also with two tongues, the tips of which oppose each other. In this case it is advisable to make the weakening lines (22) a little longer than is required with the construction comprising one tongue.

I claim:

1. A sealing cap for bottles, jars, containers and the like comprising a cap having a threaded portion and a sealing band integral with and depending from the lower edge of said cap and formable into a flanged-in edge of said cap, said sealing band having a lower rim being connected to said cap through a weakening line and having a tongue, said tongue being of substantially narrower width than said sealing band and being defined at its upper edge by a cut along said weakening line and at the opposite edge by a longitudinal slit in said sealing band, said slit extending through a relatively short length of said sealing band and being connected in series with a weakening line extension, said extension being of relatively short length and being spaced from the lower rim of said sealing band so as to be intersected at its opposite end by a transverse slit extending up from the lower edge of said sealing band to an upper end coincident with said opposite end of said extension and a portion of said sealing band longitudinally adjacent to said tongue, said portion being included in said flanged-in edge.

2. The sealing cap of claim 1 wherein said sealing band is provided with an additional number of transverse slits extending from the lower edge of said sealing band a partial distance toward the upper edge of said sealing band, said additional transverse slits being spaced from each other along the length of said sealing band.

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