A bottle closure is disclosed to include a muzzle fastened to and covered on the bottle neck of a bottle, a cap hinged to the periphery of the muzzle for closing on the muzzle to seal the bottle neck of the bottle, the cap having an operating structure for gripping by the user's hand to turn the cap relative to the muzzle between a close position and an open position, and a seal tearably connected to the muzzle to seal the operating structure of the cap.
Fig. 9

(prior art)
BOTTLE CLOSURE

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to a bottle closure for closing the bottle neck of a bottle and more particularly, to such a bottle closure, which will not be opened accidentally when fastened to the bottle neck of a bottle.

[0003] 2. Description of the Related Art

[0004] Various liquid products, for example, shampoo, face lotion, liquid cosmetics, etc. are sold in bottle. A bottle for this purpose, as shown in FIG. 9, comprises a bottle body 90, and a bottle closure formed of a muzzle 91 and a cap 93 and fastened to the bottleneck of the bottle body 90. The muzzle 91 has a spout 92 at the top. The cap 93 is hinged to the periphery of the muzzle 91, having a plug 94 for sealing the spout 92. According to this design, the cap 93 can easily be opened from the muzzle 91. When the compressible bottle body 90 is pressed or when the bottle falls to the ground, the cap 93 may be opened accidentally, thereby resulting in a contamination. Further, consumers may try to open bottled liquid products in a show rack to smell the liquid content or to pour a small amount of the liquid content for test. Once a bottle liquid product is opened before sale, no body would like to buy it.

SUMMARY OF THE INVENTION

[0005] The present invention has been accomplished under the circumstances in view. It is one object of the present invention to provide a bottle closure, which prohibits people from opening the bottled product freely before sale, maintaining the quality of the bottled product and preventing contamination. It is another object of the present invention to provide a bottle closure, which enables the consumer to determine the intact of the bottled product from the outer appearance. To achieve these and other objects of the present invention, the bottle closure comprises a muzzle connectable to the bottle neck of a bottle; a cap hinged to the periphery of the muzzle for closing on the muzzle to seal the bottle neck of the bottle to which the muzzle is fastened, the cap comprising an operating structure for gripping by the user's hand to turn the cap relative to the muzzle between a close position and an open position; and a seal tearably connected to the muzzle to seal the operating structure of the cap.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] FIG. 1 is an elevational view of a bottle closure according to the present invention.

[0007] FIG. 2 is another elevational view of the bottle closure according to the present invention.

[0008] FIG. 3 is still another elevational view of the bottle closure according to the present invention.

[0009] FIG. 4 is a sectional elevation of the bottle closure according to the present invention.

[0010] FIG. 5 illustrates the seal separated from the muzzle of the bottle closure according to the present invention.

[0011] FIG. 6 is a schematic sectional view of the present invention after removal of the seal.

[0012] FIG. 7 is an elevational view showing the cap opened from the muzzle after removal of the seal according to the present invention.

[0013] FIG. 8 is a sectional view showing the cap opened from the muzzle after removal of the seal according to the present invention.

[0014] FIG. 9 is an opened view of a bottle closure according to the prior art.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0015] Referring to FIGS. 1–4, a bottle closure in accordance with the present invention is shown comprising a muzzle 10, a cap 20, and a seal 30.

[0016] The muzzle 10 comprises an inner shell 11, a bottom open chamber 111 defined within the inner shell 11 and adapted to receive the bottle neck 101 of a bottle 100, an engagement portion 112 formed integral with the inner shell 11 within the bottom open chamber 111 and adapted to secure the inner shell 11 to the bottle neck 101 of the bottle 100, an outer shell 12 joined to and covered over the inner shell 11, a flat circular top protrusion 14 raised from the top side of the outer shell 12, a top spout 13 vertically disposed at the center of the flat circular top protrusion 14 in fluid communication with the bottom open chamber 111, two bevels 151 formed in the vertical peripheral wall of the flat circular top protrusion 14, and a recessed portion 15 formed in the vertical peripheral wall of the flat circular top protrusion 14 and connected between the two bevels 151. The top spout 13 is preferably made having an inner diameter gradually increased from the inside of the muzzle 10 toward the outside so that fluid can conveniently be poured out of the bottle 100 through the top spout 13. The engagement portion 112 can be an inner/outer thread or annular protrusion subject to the structure design of the bottleneck 101 of the bottle 100.

[0017] The cap 20 comprises a hinge 21 connected to the peripheral wall of the outer shell 12 of the muzzle 10, a cylindrical plug 22 perpendicularly downwardly extended from the center of the bottom wall for plugging into the top spout 13 to seal the passage, a vertical peripheral wall 23 fitting over the flat circular top protrusion 14 of the muzzle 10, and an operating structure 24 for operation by the user to open the cap 20 from the muzzle 10. The operating structure 24 comprises two bevels 244 formed in the vertical peripheral wall 23 of the cap 20, a recessed portion 241 formed in the vertical peripheral wall 23 of the cap 20 and connected between the two bevels 244, a retaining block 242 protruded from the recessed portion 241 and a pull 243 formed integral with the peripheral wall 23 at the top side of the recessed portion 241.

[0018] The seal 30 fits the recessed portion 15 of the muzzle 10 and the recessed portion 241 of the cap 20, comprising a seal body 32, a finger strip 31 extended from one end of the seal body 32, two bevels 311 and 321 respectively formed in the distal end of the seal body 32 and the distal end of the finger strip 31 corresponding to the bevels 151 of the muzzle 10 and the bevels 244 of the cap 20, a retaining notch 322 formed in the seal body 32 and adapted to receive the retaining block 242 of the cap 20, and a thin serrated (or perforated) connecting portion 323 connected between the seal body 32 and the periphery of the muzzle 10.
[0019] Referring to FIGS. 1–3 again, the seal 30 is connected to the muzzle 10 by the connecting portion 323 corresponding to the recessed portion 15 of the muzzle 10, and a gap 15A is left between the seal 30 and the recessed portion 15 of the muzzle 10.

[0020] After installation of the bottle closure the bottle neck of a bottle 100, the cap 10 is closed on the muzzle 10 to insert the operating structure 24 into the gap 15A between the seal 30 and the recessed portion 15 of the muzzle 10 and to further engage the retaining block 242 of the cap 20 into the retaining notch 322 of the seal body 32 of the seal 30, and therefore cap 20 is locked to the muzzle 10 (see FIG. 4). When wishing to open the bottle 100, pull the finger strip 311 to break the serrated (or perforated) connecting portion 323 and to further remove the seal 30 from the muzzle 10. After removal of the seal 30 from the muzzle 10, the operating structure 23 is exposed to the outside (see FIG. 5), and the user can pull the pull 243 to open the cap 20 from the muzzle 10 (see FIGS. 6–8) and then pour the contained matter out of the bottle 100.

[0021] A prototype of bottle closure has been constructed with the features of FIGS. 1–8. The piezo-transformer carrier functions smoothly to provide all of the features discussed earlier.

[0022] Although a particular embodiment of the invention has been described in detail for purposes of illustration, various modifications and enhancements may be made without departing from the spirit and scope of the invention. For example, the seal body can be made having a retaining block, and the cap can be made having a retaining notch for receiving the retaining block of the seal body; the seal can be made having one end fixedly connected to the muzzle and a bottom side tearably connected to the muzzle. Accordingly, the invention is not to be limited except as by the appended claims.

What the invention claimed is:
1. A bottle comprising:
   a muzzle connectable to the bottle neck of a bottle;
   a cap hinged to the periphery of said muzzle for closing on said muzzle to seal the bottle neck of the bottle to which said muzzle is fastened, said cap comprising an operating structure for gripping by the user’s hand to turn said cap relative to said muzzle between a close position and an open position; and
   a seal tearably connected to said muzzle to seal said operating structure of said cap.
2. The bottle closure as claimed in claim 1, wherein said muzzle has a spout at a top side thereof.
3. The bottle closure as claimed in claim 2, wherein said cap comprises a downwardly suspended bottom plug adapted to seal said spout of said muzzle.
4. The bottle closure as claimed in claim 1, wherein said muzzle comprises a flat circular top projection, and a recessed portion formed in the periphery of said flat circular top projection.
5. The bottle closure as claimed in claim 4, wherein said cap comprises a vertical peripheral wall fitting over the periphery of said flat circular top projection of said muzzle.
6. The bottle closure as claimed in claim 1, wherein said operating structure of said cap comprises a recessed portion adapted to receive said seal.
7. The bottle closure as claimed in claim 6, wherein said seal has a bevel at one end thereof corresponding to one end of the recessed portion of said operating structure.
8. The bottle closure as claimed in claim 6, wherein said operating structure of said cap comprises a retaining block protruded from the recessed portion thereof for engaging said seal.
9. The bottle closure as claimed in claim 8, wherein said seal comprises a retaining notch adapted to receive the retaining block of said operating structure of said cap.
10. The bottle closure as claimed in claim 6, wherein said operating structure of said cap comprises two bevels at two ends of the recessed portion thereof.
11. The bottle closure as claimed in claim 1, wherein said seal comprises a seal body tearably connected to the periphery of said muzzle, and a finger strip extended from one end of said seal body.
12. The bottle closure as claimed in claim 1, wherein said seal comprises a thin connecting portion tearably connected to the periphery of said muzzle.
13. The bottle closure as claimed in claim 12, wherein said thin connecting portion is serrated.
14. The bottle closure as claimed in claim 12, wherein said thin connecting portion is perforated.

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