May 23, 1961 F. O. JENTE 2,985,329

PUSH-BUTTON CAP

Filed Sept. 16, 1960

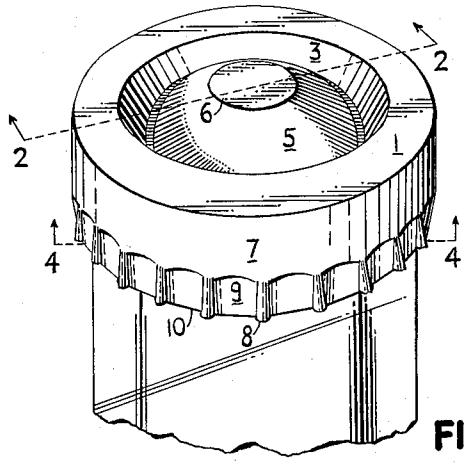


FIG. 1

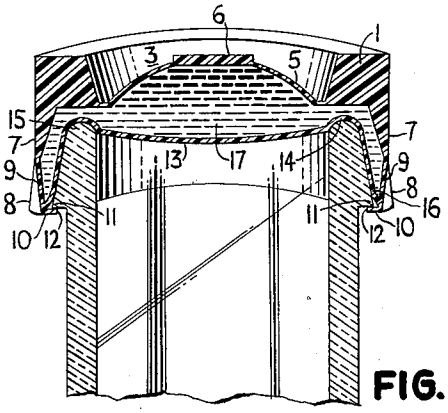


FIG. 2

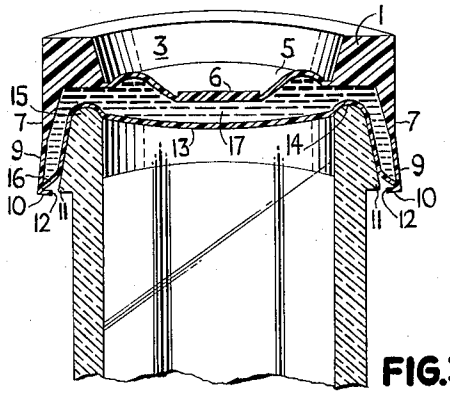


FIG. 3

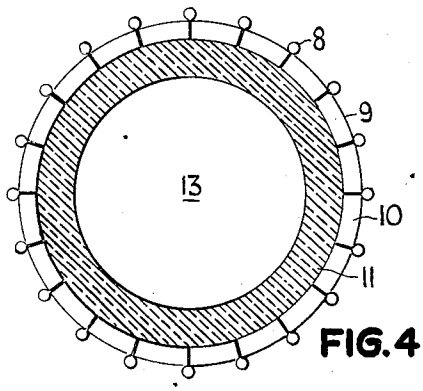


FIG. 4

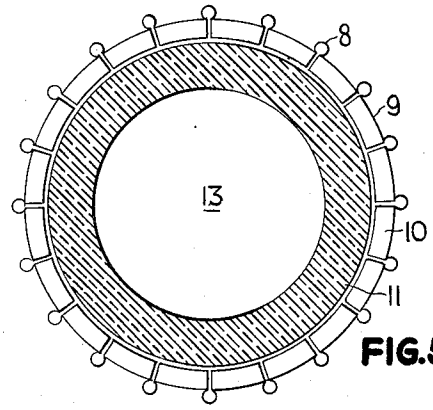


FIG. 5

INVENTOR: Fred O. Jente

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PUSH-BUTTON CAP

Fred O. Jente, 53 Lincoln Ave., Tuckahoe, N.Y.

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1 Claim. (Cl. 215—41)

The object of the present invention is to provide a novel and efficient means for sealing jars, bottles, and similar vessels by employing a cap with a push button in the center of its top which, upon depression, makes it possible to open said vessels effortlessly and instantly without the aid of implements.

A further object of the invention is to provide a resilient cap made entirely of plastic, thus extending its range of application.

Further objects and advantages of the invention will become apparent as the following description proceeds, taken in connection with the accompanying drawings, in which:

Fig. 1 is a top perspective view of the projected invention;

Fig. 2 is a sectional view taken along the dotted line 2—2 in Fig. 1, the cap being in the closed position;

Fig. 3 is the same sectional view as Fig. 2, however, the cap being in the opening position;

Fig. 4 is a bottom sectional view taken from below the dotted line 4—4 of Fig. 1, and showing the cap in the closed position;

Fig. 5 is the same bottom sectional view as Fig. 4, but showing the cap in the opening position.

Referring in more detail to the drawings, reference numeral 1 designates the outer shell's top periphery, being in the configuration of a raised, flat, solid rim, and having a width and thickness of about one-seventh of the diameter of the entire cap. From the base of the frusto-conically inclined center portion 3 of said rim rises a hollow bulbous protuberance 5, the top of which being in the form of a button 6 and level with the top portion of said rim. The outer peripheral portion of said rim projects downward to form an annular sleeve 7, its thickness gradually approaching about one-tenth of that of said rim. The lower third of said sleeve is made up of a crimped portion, which flares outward upon centrifugal pressure. The ridges 8 of said crimped portion are uniformly, vertically, circumferentially spaced about the imaginary vertical axis of said sleeve. Said ridges are interconnected by a plurality of recessed, vertical, flat ribs 9, each having a width of about one-twentieth of the circumference of said sleeve and twice the thickness of said ridges. Each rib 9 ends in a horizontal portion 10 which extends centripetally from the lower end of said crimped portion for a distance equal to half the width of one rib, and it narrows somewhat toward the end. The end portions of said ribs thus form a horizontally disposed ring adjacent to the lower edge of said crimped portion. The free ends 12 of the horizontally disposed portions of said ribs engage an annular flange 11 arranged horizontally around the neck of said vessel.

The inner shell of said plastic push-button cap envelops said vessel's mouth and neck to said annular flange. The top of said inner shell consists of a slightly concaved center portion 13, which is surrounded by a

raised peripheral portion 14, the latter corresponding in size and shape to the convexly arched top portion 15 of the rim of said vessel. Said peripheral portion projects in a downward direction, its lower portion 16 being crimped like the corresponding portion of the outer shell and joined watertight with the latter at the lower edge thereof.

The space between the outer and inner shell is filled with a liquid 17, e.g. distilled water, so as to exert pressure on the top portion 15 of said rim, while the free ends 12 of said ribs are secured below the flange 11 of said vessel. Upon depression of the bulbous protuberance 5, the liquid 17 surges therefrom, slightly raising the peripheral portion 1 of said outer shell; thereby an upwardly directed pull is exerted on the horizontal portion 10 of said flat ribs below said flange. Said liquid subsequently reaches the lower portion of said crimped sleeve and causes it to flare out; thereby the free ends 12 of said ribs are disengaged, and said plastic push-button cap pops up.

While I have illustrated and described what I now regard as the preferred embodiment of my invention, the construction is, of course, subject to modifications without departing from the spirit and the scope of my invention. I, therefore, do no wish to restrict myself to the particular form of construction illustrated and described, but desire to avail myself of all modifications which may fall within the scope of the appended claim.

Having thus described my invention, what I claim is:

In a substantially circular, resilient plastic push-button cap of different sizes to fit various containers, consisting essentially of two concentric shells, the outer shell's top periphery being in the configuration of a flat, raised, solid rim, having a width and thickness of about one seventh of the diameter of said cap, and its base being appreciably above the rim of said container, from the base of the frusto-conically inclined center portion of said rim of said outer shell rising a hollow bulbous protuberance, the top of which being in the form of a button and level with the top of said flat rim, the outer peripheral portion of said flat rim projecting downward to form an annular sleeve, its thickness gradually approaching about one tenth of that of said flat rim, the lower third of said sleeve being crimped in such a manner as to cause said crimped sleeve portion to flare outwardly upon centrifugal pressure, its ridges facing outwardly, being uniformly, vertically, and circumferentially spaced about the imaginary vertical axis of said sleeve and being interconnected by a plurality of recessed, vertical, flat ribs, each having a width of about one twentieth of the circumference of said sleeve and twice the thickness of said ridges, and each being rectangularly bent at the lower edge of said sleeve and extending centripetally and frusto-conically for a distance equal to half the width of one rib to engage a flange arranged horizontally around the neck of said container, the total number of which thus forming a horizontally disposed ring adjacent to the lower edge of said sleeve; the inner shell of said plastic push-button cap enveloping said container's mouth and neck up to its annular flange for engaging the horizontally disposed free ends of said flat ribs of said sleeve, the top of said inner shell having a slightly concaved center portion surrounded by a raised peripheral portion, the latter corresponding in size and shape to the convexly arched top portion of the rim of said container, said peripheral portion projecting vertically in a downward direction, its lower portion being crimped like the corresponding portion of the outer shell and joined watertight with the latter at the lower edge thereof; the space between the outer and inner shell being filled with a liquid, e.g. distilled water, so as to exert pressure on the rim of

said container by allowing said crimped portion of said outer shell to secure the free ends of said flat ribs below said flange of said container, said liquid, upon depression of said bulbous protuberance, surging therefrom, first slightly raising the peripheral portion of said outer shell and thereby exerting an upwardly directed pull on the horizontal portion of said flat ribs below said flange, said liquid subsequently reaching the lower portion of said crimped sleeve and causing it to flare outward,

thereby disengaging the free ends of said flat ribs, said plastic push-button cap thus popping up.

References Cited in the file of this patent

UNITED STATES PATENTS

2,659,509	San Fong	Nov. 17, 1953
2,807,386	Eichenbaum	Sept. 24, 1957
2,820,563	Bronnimann	Jan. 21, 1958