PLASTIC CONTAINER ELEMENTS

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ABSTRACT

A plastic container including an outer container element having a geometrical center and an inner container element mounted within the outer container element, the outer container element and the inner container element, when mounted in the outer container element, together having a center of gravity which is lower than a geometrical center of the outer container element.
PLASTIC CONTAINER ELEMENTS

FIELD OF THE INVENTION

[0001] The present invention relates to containers and more particularly to plastic containers having a center of gravity which is lower than the geometrical center of the container.

BACKGROUND OF THE INVENTION

[0002] The following publications are believed to represent the current state of the art:

[0003] U.S. Pat. Nos. 6,243,936; 4,830,251; 4,460,090; 5,219,005 and 5,894,914.

SUMMARY OF THE INVENTION

[0004] The present invention seeks to provide improved containers having a center of gravity which is lower than the geometrical center of the container.

[0005] There is thus provided in accordance with a preferred embodiment of the present invention a plastic container including an outer container element having a geometrical center and an inner container element mounted within the outer container element, the outer container element and the inner container element, when mounted in the outer container element, together having a center of gravity which is lower than a geometrical center of the outer container element.

[0006] In accordance with a preferred embodiment of the present invention the outer container element includes an outer container element body and an outer container element neck portion, the outer container element neck portion being operative to engage the inner container element. Preferably, the outer container element body is integrally formed with the outer container element neck portion.

[0007] In accordance with another preferred embodiment of the present invention the outer container element neck portion includes an inner facing wall surface, and an inner facing flange defining a shoulder. Preferably, the outer container element body includes a base surface having a curved portion.

[0008] In accordance with yet another preferred embodiment of the present invention the inner container element includes an inner container element body having an outer facing surface and an inner container element stem portion, the inner container element body and the inner container element stem portion being integrally formed. Preferably, the inner container element body includes at least one resilient snap element formed on the outer facing surface of the inner container element body and being operative to engage the outer container element.

[0009] In accordance with still another preferred embodiment of the present invention the outer container element includes an inner facing wall surface and an inner facing flange defining a shoulder and the at least one resilient snap element is operative to engage the shoulder, thereby retaining the inner container element in a desired position inside the outer container element. Preferably, the at least one resilient snap element includes a plurality of resilient snap elements formed equidistantly about the outer facing surface of the inner container element body.

[0010] In accordance with a further preferred embodiment of the present invention the inner container element stem portion includes a generally cylindrical portion having a plurality of outwardly extending ribs extending therefrom, the ribs being equidistantly distributed about the cylindrical portion and a base portion having a convex base surface. Preferably, the outer container element body includes a base surface having a curved portion, and the convex base surface of the inner container element stem portion engages a curved portion of the base surface of the outer container element. Additionally or alternatively, the cylindrical portion has a bore formed therethrough.

[0011] In accordance with yet another preferred embodiment of the present invention the inner container element body includes a plurality of notches distributed equidistantly about the outer facing surface and a plurality of longitudinal grooves. Preferably, the plurality of longitudinal grooves extend from the plurality of notches, the plurality of grooves being equidistantly distributed about the outer facing surface.

[0012] In accordance with a still further preferred embodiment of the present invention the inner container element stem portion includes a generally cylindrical portion having a bore defined therein and defining a base surface. Preferably, the outer container element body includes a base surface having a curved portion, and the base surface of the inner container element stem portion engages the curved portion of the base surface of the outer container element.

[0013] There is also provided in accordance with another preferred embodiment of the present invention a plastic container including an outer container element including a neck portion including a flange and an inner container element including at least one resilient snap element and being mounted within the outer container element, the at least one resilient snap element engaging the flange when the inner container element is mounted in the outer container element, thereby ensuring that the inner container element is centered with respect to the outer container element.

[0014] In accordance with a preferred embodiment of the present invention the outer container element has a geometrical center and the outer container element and the inner container element, when mounted in the outer container element, together have a center of gravity which is lower than a geometrical center of the outer container element. Preferably, the outer container element body includes a base surface having a curved portion. Additionally or alternatively, the inner container element includes an inner container element body having an outer facing surface and an inner container element stem portion, the inner container element body and the inner container element stem portion being integrally formed.

[0015] In accordance with another preferred embodiment of the present invention the at least one resilient snap element includes a plurality of resilient snap elements formed equidistantly about the outer facing surface of the inner container element body. Preferably, the inner container element stem portion includes a generally cylindrical portion having a plurality of outwardly extending ribs extending therefrom, the ribs being equidistantly distributed about the cylindrical portion and a base portion having a convex base surface. Additionally or alternatively, the outer container element body includes a base surface having a curved portion, and the convex base surface of the inner container element stem portion engages a curved portion of the base surface of the outer container element.

[0016] In accordance with yet another preferred embodiment of the present invention the cylindrical portion has a bore formed therethrough. Preferably, the inner container element body includes a plurality of notches distributed equidistantly about the outer facing surface and a plurality of
longitudinal grooves. Additionally or alternatively, the plurality of longitudinal grooves extend from the plurality of notches, the plurality of grooves being equidistantly distributed about the outer facing surface.

[0017] In accordance with a further preferred embodiment of the present invention the inner container element stem portion includes a generally cylindrical portion having a bore defined therein and defining a base surface. Preferably, the outer container element body includes a base surface having a curved portion, and the base surface of the inner container element stem portion engages the curved portion of the base surface of the outer container element.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] The present invention will be understood and appreciated more fully from the following detailed description, taken in conjunction with the drawings in which:

[0019] FIGS. 1A and 1B are, respectively, a simplified pictorial illustration of an outer container element, constructed and operable in accordance with a preferred embodiment of the present invention, and a simplified sectional illustration thereof, the sectional illustration being taken along section lines 1B-1B in FIG. 1A;

[0020] FIGS. 2A and 2B are, respectively, a simplified pictorial illustration of an inner container element, constructed and operative in accordance with a preferred embodiment of the present invention, and a simplified sectional illustration thereof, the sectional illustration being taken along section lines 2B-2B in FIG. 2A;

[0021] FIGS. 3A and 3B are, respectively, a simplified pictorial illustration of an assembled container, formed of the outer container element of FIGS. 1A and 1B and the inner container element of FIGS. 2A and 2B, and a simplified sectional illustration thereof, the sectional illustration being taken along section lines 3B-3B in FIG. 3A;

[0022] FIGS. 4A and 4B are, respectively, a simplified pictorial illustration of an outer container element, constructed and operative in accordance with another preferred embodiment of the present invention, and a simplified sectional illustration thereof, the sectional illustration being taken along section lines 4B-4B in FIG. 4A;

[0023] FIGS. 5A and 5B are, respectively, a simplified pictorial illustration of an inner container element, constructed and operative in accordance with another preferred embodiment of the present invention, and a simplified sectional illustration thereof, the sectional illustration being taken along section lines 5B-5B in FIG. 5A;

[0024] FIGS. 6A and 6B are, respectively, a simplified pictorial illustration of an assembled container, formed of the outer container element of FIGS. 4A and 4B and the inner container element of FIGS. 5A and 5B, and a simplified sectional illustration thereof, the sectional illustration being taken along section lines 6B-6B in FIG. 6A;

[0025] FIGS. 7A and 7B are, respectively, a simplified pictorial illustration of an outer container element, constructed and operative in accordance with yet another preferred embodiment of the present invention, and a simplified sectional illustration thereof, the sectional illustration being taken along section lines 7B-7B in FIG. 7A;

[0026] FIGS. 8A and 8B are, respectively, a simplified pictorial illustration of an inner container element, constructed and operative in accordance with yet another preferred embodiment of the present invention, and a simplified sectional illustration thereof, the sectional illustration being taken along section lines 8B-8B in FIG. 8A;

[0027] FIGS. 9A and 9B are, respectively, a simplified pictorial illustration of an assembled container, formed of the outer container element of FIGS. 7A and 7B and the inner container element of FIGS. 8A and 8B, and a simplified sectional illustration thereof, the sectional illustration being taken along section lines IXB-IXB in FIG. 9A;

[0028] FIGS. 10A and 10B are, respectively, a simplified pictorial illustration of an outer container element, constructed and operative in accordance with a further preferred embodiment of the present invention, and a simplified sectional illustration thereof, the sectional illustration being taken along section lines XB-XB in FIG. 10A;

[0029] FIGS. 11A and 11B are, respectively, a simplified pictorial illustration of an inner container element, constructed and operative in accordance with a further preferred embodiment of the present invention, and a simplified sectional illustration thereof, the sectional illustration being taken along section lines XIIB-XIIB in FIG. 11A;

[0030] FIGS. 12A and 12B are, respectively, a simplified pictorial illustration of an assembled container, formed of the outer container element of FIGS. 10A and 10B and the inner container element of FIGS. 11A and 11B, and a simplified sectional illustration thereof, the sectional illustration being taken along section lines XIIB-XIIB in FIG. 12A.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0031] Reference is now made to FIGS. 1A and 1B, which are, respectively, a simplified pictorial illustration of an outer container element 10, constructed and operative in accordance with a preferred embodiment of the present invention, and a simplified sectional illustration thereof.

[0032] As seen in FIGS. 1A and 1B, the outer container element 10 comprises a generally cylindrical outer container element body 12 which is integrally formed as one piece with an outer container element neck portion 14. Outer container element neck portion 14 has a generally cylindrical outer facing wall surface 16 and a generally cylindrical inner facing wall surface 18. A plurality of typically mutually spaced threading protrusions 20 are preferably formed on outer facing wall surface 16. The outer container element neck portion 14 and the outer container element body 12 are preferably formed by injection molding polyolefin, although any other suitable technique or material may alternatively be employed. It is appreciated that the outer container element body 12 may be of any suitable shape and size and that the threading protrusions 20 may also be of any suitable shape, size and arrangement.

[0033] Formed on the outer facing wall surface 16 is an outer facing flange 22, operative to engage a sealing lid (not shown) which may be threaded onto threading protrusions 20. The outer container element neck portion 14 additionally includes, at a top part thereof, an inner facing flange 24, defining a top surface 25 and also defining, together with inner facing wall surface 18, a shoulder 26.

[0034] As seen in FIG. 1B, a bottom surface 28 of outer container element body 12 is preferably not planar, and includes a central, curved portion 30, surrounded by a generally planar annular portion 32. It is appreciated that the bottom surface 28 may be of any suitable shape or configuration.

[0035] Reference is now made to FIGS. 2A and 2B, which are, respectively, a simplified pictorial illustration of an inner
container element 50, constructed and operative in accordance with a preferred embodiment of the present invention, and a simplified sectional illustration thereof.

[0036] As seen in FIGS. 2A and 2B, the inner container element 50 comprises a generally cylindrical inner container element body 52 which is integrally formed as one piece with a container element stem portion 54. The container element stem portion 54 and the inner container element body 52 are preferably formed by injection molding polyolefin, although any other suitable technique or material may alternatively be employed.

[0037] The inner container element body 52 has a generally cylindrical outer facing surface 56, a generally cylindrical inner facing surface 58, and terminates, at a bottom portion thereof, in a generally planar base surface 60. At a top portion thereof, the inner container element body terminates in an annular top surface 61.

[0038] As seen with particular clarity in FIG. 2B, the outer facing surface 56 includes, at a top portion thereof, a plurality of resilient snap elements 62, which are arranged equidistantly about the outer facing surface 56. Each of the snap elements 62 is connected to the outer facing surface 56 at a base point 64, and extends to a resilient portion 66. It is appreciated that the snap elements 62 terminate slightly lower than top surface 61.

[0039] The container element stem portion 54 includes a generally cylindrical portion 68, having four outwardly extending ribs 70 distributed equidistantly therearound. The generally cylindrical portion terminates in a generally circular base portion 72, having a generally planar top surface 74 and a slightly convex bottom surface 76.

[0040] Reference is now made to FIGS. 3A and 3B, which are, respectively, a simplified pictorial illustration of an assembled container 80, formed of the outer container element 10 of FIGS. 1A and 1B and the inner container element 50 of FIGS. 2A and 2B, and a simplified sectional illustration thereof.

[0041] As seen in FIGS. 3A and 3B, the inner container element 50 is located within the outer container element 10, such that convex bottom surface 76 of inner container element 50 engages curved portion 30 of bottom surface 28 of outer container element 10.

[0042] As seen with particular clarity in the enlarged portion of FIG. 3B, resilient portions 66 engage inner facing wall surface 18 and shoulder 26 of outer container element neck portion 14 in snap-fit engagement. As seen, a top most section of outer facing surface 56 engages flange 24, such that top surface 61 of inner container element body 52 is flush with top surface 25 of flange 24, thus enabling sealing of the inner container element 50 and the outer container element 10 with a single, standard, sealing element (not shown) engaging coplanar surfaces 25 and 61.

[0043] It is appreciated that during assembly of the assembled container element 80, the resilient snap elements 62 are pushed inwardly toward outer cylindrical surface 56 of inner container element body 52 by flange 24 of outer container element neck portion 14. Once the resilient snap elements 62 are below the flange 24, they snap outwardly and engage inner facing wall surface 18 and shoulder 26, thereby preventing disengagement of the inner container element 50 from the outer container element 10 and ensuring that the inner container element 50 will be centered within the outer container element 10.

[0044] It is a particular feature of the present invention that the center of gravity of the assembled container 80, indicated by C1 in FIG. 3B, is lower than the geometrical center of the assembled container 80, indicated by C2 in FIG. 3B, thereby making the assembled container 80 more stable than a container whose center of gravity and geometrical center are merged.

[0045] It is appreciated that the gaps between the snap elements 62 of inner container element 50 allow for release of air caught between the outer container element body 12 and the inner container element body 52 during assembly of assembled container 80.

[0046] Reference is now made to FIGS. 4A and 4B, which are, respectively, a simplified pictorial illustration of an outer container element 110, constructed and operative in accordance with another preferred embodiment of the present invention, and a simplified sectional illustration thereof.

[0047] As seen in FIGS. 4A and 4B, the outer container element 110 comprises a generally cylindrical outer container element body 112 which is integrally formed as one piece with a outer container element neck portion 114. Outer container element neck portion 114 has a generally cylindrical outer facing wall surface 116 and a generally cylindrical inner facing wall surface 118. A plurality of mutually spaced threading protrusions 120 are preferably formed on outer facing wall surface 116. The outer container element neck portion 114 and the outer container element body 112 are preferably formed by injection molding polyolefin, although any other suitable technique or material may alternatively be employed. It is appreciated that the outer container element body 112 may be of any suitable shape and size and that the threading protrusions 120 may also be of any suitable shape, size and arrangement.

[0048] Formed on the outer facing wall surface 116 is an outer facing flange 122, operative to engage a sealing lid (not shown) which may be threaded onto threading protrusions 120. The outer container element neck portion 114 additionally includes, at a top part thereof, an inner facing flange 124, defining a top surface 125 and also defining, together with inner facing wall surface 118, a shoulder 126.

[0049] As seen in FIG. 4B, a bottom surface 128 of outer container element body 112 is preferably not planar, and includes a central, curved portion 130, surrounded by a generally planar annular portion 132. It is appreciated that the bottom surface 128 may be of any suitable shape or configuration.

[0050] Reference is now made to FIGS. 5A and 5B, which are, respectively, a simplified pictorial illustration of an inner container element 150, constructed and operative in accordance with another preferred embodiment of the present invention, and a simplified sectional illustration thereof.

[0051] As seen in FIGS. 5A and 5B, the inner container element 150 comprises a generally cylindrical inner container element body 152 which is integrally formed as one piece with a container element stem portion 154. The container element stem portion 154 and the inner container element body 152 are preferably formed by injection molding polyolefin, although any other suitable technique or material may alternatively be employed.

[0052] The inner container element body 152 has a generally cylindrical outer facing surface 156, a generally cylindrical inner facing surface 158, and terminates, at a bottom portion thereof, in a generally planar base surface 160. At a
top portion thereof, the inner container element body terminates in an annular top surface 161.

[0053] As seen with particular clarity in FIG. 5B, the outer facing surface 156 includes, at a top portion thereof, an annular resilient snap element 162 connected to the outer facing surface 156 at a base point 164, and extends to a resilient portion 166.

[0054] The container element stem portion 154 includes a generally cylindrical portion 168, having a bore 169 formed therein, and four outwardly extending ribs 170 distributed equidistantly therearound. The generally cylindrical portion terminates in a generally circular base portion 172, having a generally planar top surface 174 and a slightly convex bottom surface 176.

[0055] Reference is now made to FIGS. 6A and 6B, which are, respectively, a simplified pictorial illustration of an assembled container 180, formed of the outer container element 110 of FIGS. 4A and 4B and the inner container element 150 of FIGS. 5A and 5B, and a simplified sectional illustration thereof.

[0056] As seen in FIGS. 6A and 6B, the inner container element 150 is located within the outer container element 110, such that convex bottom surface 176 of inner container element 150 engages curved portion 130 of bottom surface 128 of outer container element 110.

[0057] As seen with particular clarity in the enlarged portion of FIG. 6B, resilient portions 166 engage inner facing wall surface 118 and shoulder 126 of outer container element neck portion 114 in snap-in engagement.

[0058] It is appreciated that during assembly of the assembled container 180, the resilient snap element 162 is pushed inwardly toward outer cylindrical surface 156 of inner container element body 152 by flange 124 of outer container element neck portion 114. Once the resilient snap element 162 is below the flange 124, it snaps outwardly and engages inner facing wall surface 118 and shoulder 126, thereby preventing disengagement of the inner container element 150 from the outer container element 110 and ensuring that the inner container element 150 will be centered within the outer container element 110.

[0059] It is a particular feature of the present invention that the center of gravity of the assembled container 180, indicated by C11 in FIG. 6B, is lower than the geometrical center of the assembled container 180, indicated by C12 in FIG. 6B, thereby making the assembled container 180 more stable than a container whose center of gravity and geometrical center are merged.

[0060] It is appreciated that the bore 169 of stem portion 154 allows for release of air from the outer container element 110 during insertion of the inner container element 150 thereinto.

[0061] Reference is now made to FIGS. 7A and 7B, which are, respectively, a simplified pictorial illustration of an outer container element 210, constructed and operative in accordance with yet another preferred embodiment of the present invention, and a simplified sectional illustration thereof.

[0062] As seen in FIGS. 7A and 7B, the outer container element 210 comprises a generally cylindrical outer container element body 212 which is integrally formed as one piece with a outer container element neck portion 214. Outer container element neck portion 214 has a generally cylindrical outer facing wall surface 216 and a generally cylindrical inner facing wall surface 218. A plurality of typically mutually spaced threading protrusions 220 are preferably formed on outer facing wall surface 216. The outer container element neck portion 214 and the outer container element body 212 are preferably formed by injection molding polyolefin, although any other suitable technique or material may alternatively be employed. It is appreciated that the outer container element body 212 may be of any suitable shape and size and that the threading protrusions 220 may also be of any suitable shape, size and arrangement.

[0063] Formed on the outer facing wall surface 216 is an outer facing flange 222, operative to engage a sealing lid (not shown) which may be threaded onto threading protrusions 220. The outer container element neck portion 214 additionally includes, at a top part thereof, an inner facing flange 224, defining a top surface 225 and also defining, together with inner facing wall surface 218, a shoulder 226.

[0064] As seen in FIG. 7B, a bottom surface 228 of outer container element body 212 is preferably not planar, and includes a central, curved portion 230, surrounded by a generally planar annular portion 232. It is appreciated that the bottom surface 228 may be of any suitable shape or configuration.

[0065] Reference is now made to FIGS. 8A and 8B, which are, respectively, a simplified pictorial illustration of an inner container element 250, constructed and operative in accordance with a preferred embodiment of the present invention, and a simplified sectional illustration thereof.

[0066] As seen in FIGS. 8A and 8B, the inner container element 250 comprises a generally cylindrical inner container element body 252 which is integrally formed as one piece with a container element stem portion 254. The container element stem portion 254 and the inner container element body 252 are preferably formed by injection molding polyolefin, although any other suitable technique or material may alternatively be employed.

[0067] The inner container element body 252 has a generally cylindrical outer facing surface 256, a generally cylindrical inner facing surface 258, and terminates, at a bottom portion thereof, in a generally planar base surface 260. At a top portion thereof, the inner container element body 252 terminates in an annular top surface 261.

[0068] As seen in FIGS. 8A and 8B, the inner container element body 252 preferably includes a plurality of longitudinal notches 262, distributed along a top portion of the inner container element body 252. Typically, four longitudinal notches 262 are provided, and are arranged equidistantly around the inner container element body 252. Typically, a plurality of longitudinal grooves 264, which do not extend through the entire width of the material of the inner container element body, extend towards base surface 260 from the longitudinal notches 262, and are arranged equidistantly from each other around the inner container element body 252.

[0069] The container element stem portion 254 has a generally cylindrical outer facing surface 266, a generally cylindrical inner facing surface 268, and terminates, at a top portion thereof, in the generally planar base surface 260, thereby defining a bore 270 therein. At a bottom portion thereof, the container element stem portion 254 terminates in an annular surface 272.

[0070] Reference is now made to FIGS. 9A and 9B, which are, respectively, a simplified pictorial illustration of an assembled container 280, formed of the outer container element 210 of FIGS. 7A and 7B and the inner container element 250 of FIGS. 8A and 8B, and a simplified sectional illustration thereof.
As seen in FIGS. 9A and 9B, the inner container element 250 is located within the outer container element 210, such that annular surface 272 engages curved portion 230 of bottom surface 228 of outer container element 210.

As seen with particular clarity in the enlarged portion of FIG. 9B, the outer surface 256 of inner container element 250 engages inner surface 218 of outer container element neck portion 214 of the outer container element 210, and top surface 261 engages shoulder 222 of flange 224 of outer container element neck portion 214.

It is appreciated that during assembly of the assembled container element 280, the inner container element body 252 is pushed inwardly by flange 224 of outer container element neck portion 214, resulting in shrinking of the size of longitudinal notches 262. Once the top surface 261 of inner container element body 252 is below the flange 224, the notches 262 return to their original size, thereby causing engagement between outer facing wall surface 256 of the inner container element body 252 and inner facing wall surface 218 and shoulder 222, thereby preventing disengagement of the inner container element 250 from the outer container element 210, and ensuring that the inner container element 250 will be centered within the outer container element 210.

It is a particular feature of the present invention that the center of gravity of the assembled container 280, indicated by C21 in FIG. 9B, is lower than the geometrical center of the assembled container 280, indicated by C22 in FIG. 9B, thereby making the assembled container 280 more stable than a container whose center of gravity and geometrical center are merged.

It is appreciated that the grooves 264 and notches 262 of inner container element body 252 allow for release of air from the outer container element 210 during insertion of the inner container element 250 thereof.

Reference is now made to FIGS. 10A and 10B, which are, respectively, a simplified pictorial illustration of an outer container element 310, constructed and operative in accordance with a preferred embodiment of the present invention, and a simplified sectional illustration thereof.

As seen in FIGS. 10A and 10B, the outer container element 310 comprises a generally cylindrical outer container element body 312 which is integrally formed as one piece with an outer container element neck portion 314. Outer container element neck portion 314 has a generally cylindrical outer facing wall surface 316 and a generally cylindrical inner facing wall surface 318. A plurality of typically mutually spaced threading protrusions 320 are preferably formed on outer facing wall surface 316. The outer container element neck portion 314 and the outer container element body 312 are preferably formed by injection molding polyolefin, although any other suitable technique or material may alternatively be employed. It is appreciated that the outer container element body 312 may be of any suitable shape and size and that the threading protrusions 320 may also be of any suitable shape, size and arrangement.

Formed on the outer facing wall surface 316 is an outer facing flange 322, operative to engage a sealing lid (not shown) which may be threaded onto threading protrusions 320. The outer container element neck portion 314 additionally includes, at a top part thereof, an inner facing flange 324, defining a top surface 325 and also defining, together with inner facing wall surface 318, a shoulder 326.

As seen in FIG. 10B, a bottom surface 328 of outer container element body 312 is preferably not planar, and includes a central, curved portion 330, surrounded by a generally planar annular portion 332. It is appreciated that the bottom surface 328 may be of any suitable shape or configuration.

Reference is now made to FIGS. 11A and 11B, which are, respectively, a simplified pictorial illustration of an inner container element 350, constructed and operative in accordance with a preferred embodiment of the present invention, and a simplified sectional illustration thereof.

As seen in FIGS. 11A and 11B, the inner container element 350 comprises a generally cylindrical inner container element body 352 which is integrally formed as one piece with a container element stem portion 354. The container element stem portion 354 and the inner container element body 352 are preferably formed by injection molding polyolefin, although any other suitable technique or material may alternatively be employed.

The inner container element body 352 has a generally cylindrical outer facing surface 356, a generally cylindrical inner facing surface 358, and terminates, at a bottom portion thereof, in a generally planar base surface 360. At a top portion thereof, the inner container element includes an outer facing flange 362, including a top surface 364, a bottom surface 366 and an outer facing surface 368.

The container element stem portion 354 includes a generally cylindrical portion 369, having four outwardly extending ribs 370 distributed equidistantly therearound. The generally cylindrical portion terminates in a generally circular base portion 372, having a generally planar top surface 374 and a slightly convex bottom surface 376.

Reference is now made to FIGS. 12A and 12B, which are, respectively, a simplified pictorial illustration of an assembled container 380, formed of the outer container element 310 of FIGS. 10A and 10B and the inner container element 350 of FIGS. 11A and 11B, and a simplified sectional illustration thereof.

As seen in FIGS. 12A and 12B, the inner container element 350 is located within the outer container element 310, such that convex bottom surface 376 of inner container element 350 engages curved portion 330 of bottom surface 328 of outer container element 310.

As seen with particular clarity in the enlarged portion of FIG. 12B, inner facing flange 324 of outer container element engages outer facing surface 356 of inner container element 350. Additionally, bottom surface 366 of flange 362 of inner container element 350 engages surface 25 of outer container element 310, such that outer facing surface 368 of inner container element 350 is generally flush with outer surface 316 of outer container element 310, thus enabling sealing of the inner container element 350 and the outer container element 310 with a single, standard, sealing element (not shown) engaging top surface 364.

It is a particular feature of the present invention that the center of gravity of the assembled container 380, indicated by C31 in FIG. 12B, is lower than the geometrical center of the assembled container 380, indicated by C32 in FIG. 12B, thereby making the assembled container 380 more stable than a container whose center of gravity and geometrical center are merged.

It will be appreciated by persons skilled in the art that the present invention is not limited by what has been particularly shown and described hereinafore. Rather the
Scope of the present invention includes both combinations and sub-combinations of various features described and shown herein and modifications and variations thereof which are not known in the prior art.

1. A plastic container comprising:
   an outer container element having a geometrical center; and
   an inner container element mounted within said outer container element,
   said outer container element and said inner container element, when mounted in said outer container element, together having a center of gravity which is lower than a geometrical center of said outer container element.

2. A plastic container according to claim 1 and wherein said outer container element comprises an outer container element body and an outer container element neck portion, said outer container element neck portion being operative to engage said inner container element.

3. A plastic container according to claim 2 and wherein said outer container element body is integrally formed with said outer container element neck portion.

4. A plastic container according to claim 2 and wherein said outer container element neck portion comprises an inner facing wall surface, and an inner facing flange defining a shoulder.

5. A plastic container according to claim 2 and wherein said outer container element body includes a base surface having a curved portion.

6. A plastic container according to claim 1 and wherein said inner container element comprises an inner container element body having an outer facing surface and an inner container element stem portion, said inner container element body and said inner container element stem portion being integrally formed.

7. A plastic container element according to claim 6 and wherein said inner container element body comprises at least one resilient snap element formed on said outer facing surface of said inner container element body and being operative to engage said outer container element.

8. A plastic container according to claim 7 and wherein said outer container element comprises an inner facing wall surface and an inner facing flange defining a shoulder and said at least one resilient snap element is operative to engage said shoulder, thereby retaining said inner container element in a desired position inside said outer container element.

9. A plastic container according to claim 7 and wherein said at least one resilient snap element comprises a plurality of resilient snap elements formed equidistantly about said outer facing surface of said inner container element body.

10. A plastic container according to claim 6 and wherein said inner container element stem portion comprises:
    a generally cylindrical portion having a plurality of outwardly extending ribs extending therefrom, said ribs being equidistantly distributed about said cylindrical portion; and
    a base portion having a convex base surface.

11. A plastic container according to claim 10 and wherein said outer container element body includes a base surface having a curved portion, and said convex base surface of said inner container element stem portion engages a curved portion of said base surface of said outer container element.

12. A plastic container according to claim 10 and wherein said cylindrical portion has a bore formed therethrough.

13. A plastic container according to claim 6 and wherein said inner container element body comprises a plurality of notches distributed equidistantly about said outer facing surface and a plurality of longitudinal grooves.

14. A plastic container according to claim 13 and wherein said plurality of longitudinal grooves extend from said plurality of notches, said plurality of grooves being equidistantly distributed about said outer facing surface.

15. A plastic container according to claim 6 and wherein said inner container element stem portion comprises a generally cylindrical portion having a bore defined therein and defining a base surface.

16. A plastic container according to claim 15 and wherein said outer container element body includes a base surface having a curved portion, and said base surface of said inner container element stem portion engages said curved portion of said base surface of said outer container element.

17. A plastic container comprising:
   an outer container element including a neck portion comprising a flange; and
   an inner container element including at least one resilient snap element and being mounted within said outer container element.

18. A plastic container according to claim 17 and wherein said outer container element has a geometrical center and said outer container element and said inner container element, when mounted in said outer container element, together have a center of gravity which is lower than a geometrical center of said outer container element.

19. A plastic container according to claim 17 and wherein said outer container element includes a base surface having a curved portion.

20. A plastic container according to claim 17 and wherein said inner container element comprises an inner container element body having an outer facing surface and an inner container element stem portion, said inner container element body and said inner container element stem portion being integrally formed.

21. A plastic container according to claim 17 and wherein said at least one resilient snap element comprises a plurality of resilient snap elements formed equidistantly about said outer facing surface of said inner container element body.

22. A plastic container according to claim 20 and wherein said inner container element stem portion comprises:
    a generally cylindrical portion having a plurality of outwardly extending ribs extending therefrom, said ribs being equidistantly distributed about said cylindrical portion; and
    a base portion having a convex base surface.

23. A plastic container according to claim 22 and wherein said outer container element body includes a base surface having a curved portion, and said convex base surface of said inner container element stem portion engages a curved portion of said base surface of said outer container element.
24. A plastic container according to claim 22 and wherein said cylindrical portion has a bore formed therethrough.

25. A plastic container according to claim 20 and wherein said inner container element body comprises a plurality of notches distributed equidistantly about said outer facing surface and a plurality of longitudinal grooves.

26. A plastic container according to claim 25 and wherein said plurality of longitudinal grooves extend from said plurality of notches, said plurality of grooves being equidistantly distributed about said outer facing surface.

27. A plastic container according to claim 20 and wherein said inner container element stem portion comprises a generally cylindrical portion having a bore defined therein and defining a base surface.

28. A plastic container according to claim 27 and wherein said outer container element body includes a base surface having a curved portion, and said base surface of said inner container element stem portion engages said curved portion of said base surface of said outer container element.

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