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(54) HINGED LID CLOSURE PROVIDED WITH A TAMPER-EVIDENT ELEMENT FOR A CONTAINER CONTAINING A FREE-FLOWING PRODUCT

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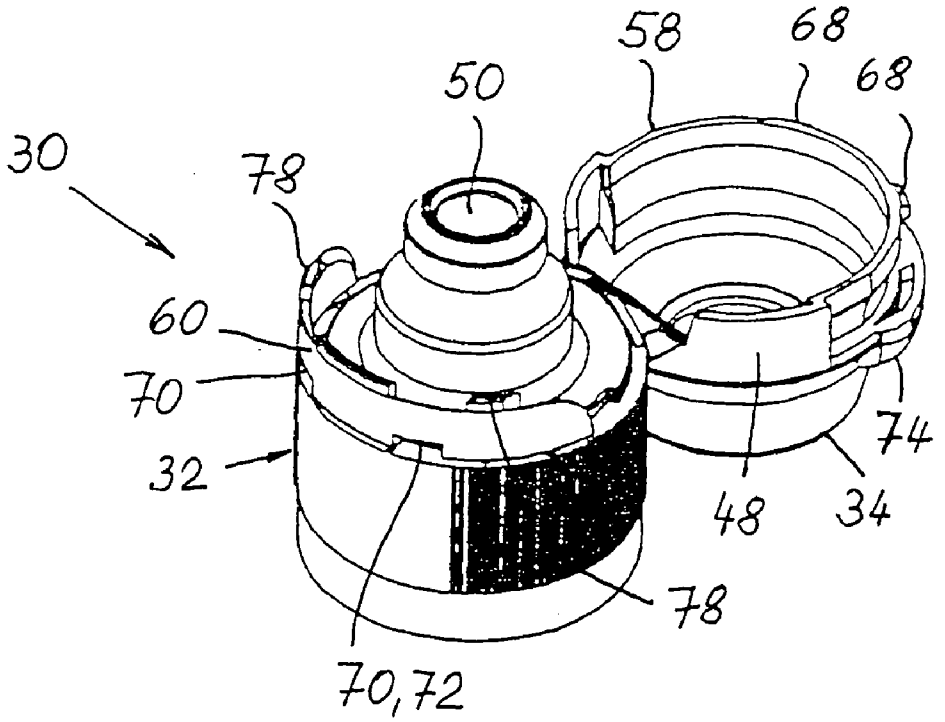
(57) **ABSTRACT**

A swing-lid closure (**30; 100; 200**) for containers, having a closure body (**32; 214**) which, on its top side, has an annular shoulder (**42; 108; 212**) and a through-passage channel (**38**) which opens out in an outlet opening (**50**), having a swing lid (**34; 114; 208**) with a lid shell (**48; 112; 216**) of a hinge (**56**) can be pivoted between a closed position and an open position, having a radial depression (**58; 118; 220**) of the lid shell (**48; 112; 216**), which is provided on the front side of the swing lid (**34; 114; 208**) and extends over part of the circumference of the swing lid (**34; 114; 208**), having a tamperproof securing strip (**60; 104; 204**) which extends in the circumferential direction on the annular shoulder (**42; 108; 212**) of the closure body (**32; 214**) and has its bottom edge fastened on the annular shoulder (**42; 108; 212**) via predetermined breaking points (**64**) and, in the original closed position of the swing lid (**34; 114; 208**), projects up into the depression (**58; 118; 220**) of the lid shell (**48; 112; 216**) in an arcuate manner, and, for the purpose of forming a tear-off opening (**66**), the circumferential length of the depression (**58; 118; 220**) of the lid shell (**48; 112; 216**) is greater, at least in a circumferential direction of the lid shell (**48; 112; 216**), than the circumferential length of the tamperproof securing strip (**60; 104; 204**). In its position which indicates the intact state, the tamperproof securing strip (**60; 104; 204**) is secured by a device (**68; 70; 72; 74; 76; 78; 80; 82; 106; 108; 110; 202; 206; 210**) by means of which the tamperproof securing strip (**60; 104; 204**) is connected in a form-fitting and/or force-fitting manner to the swing lid (**34; 114; 208**). This results in the tamperproof securing strip being better safeguarded against manipulation.



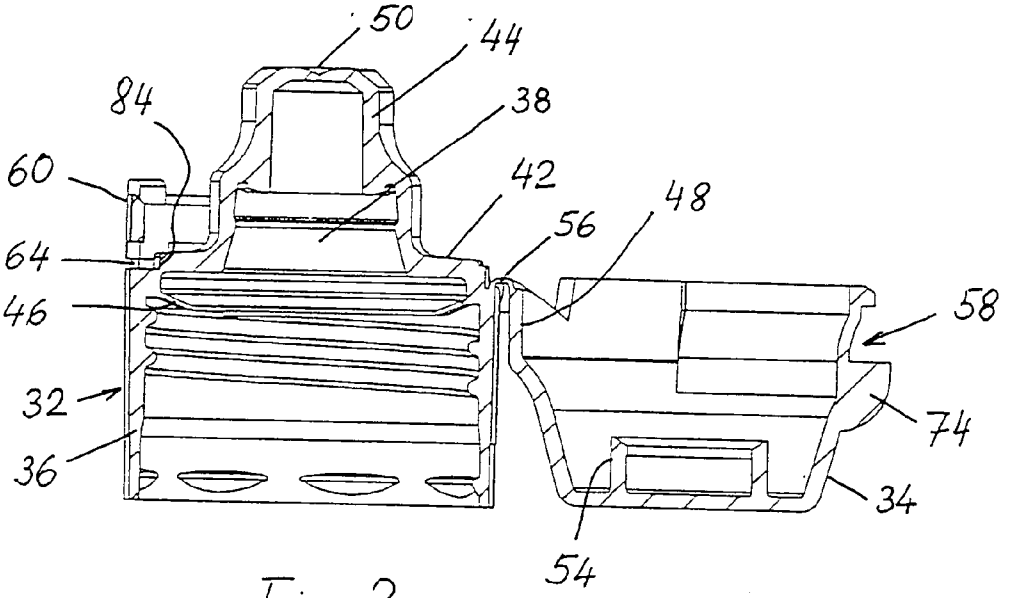


Fig. 2

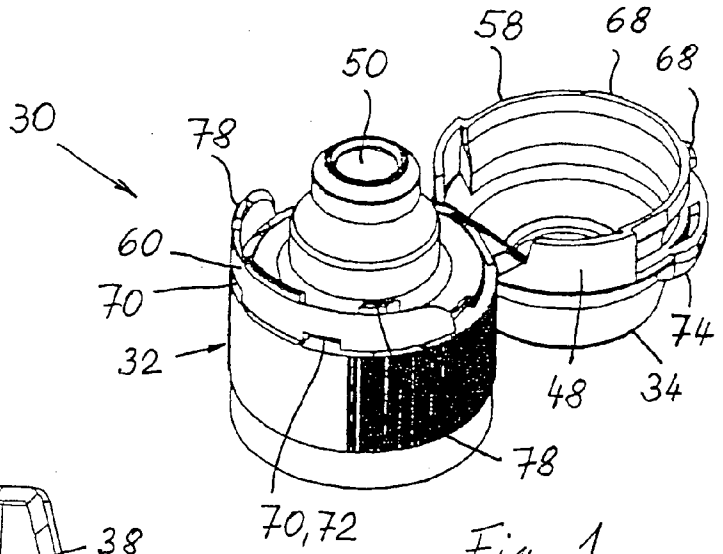
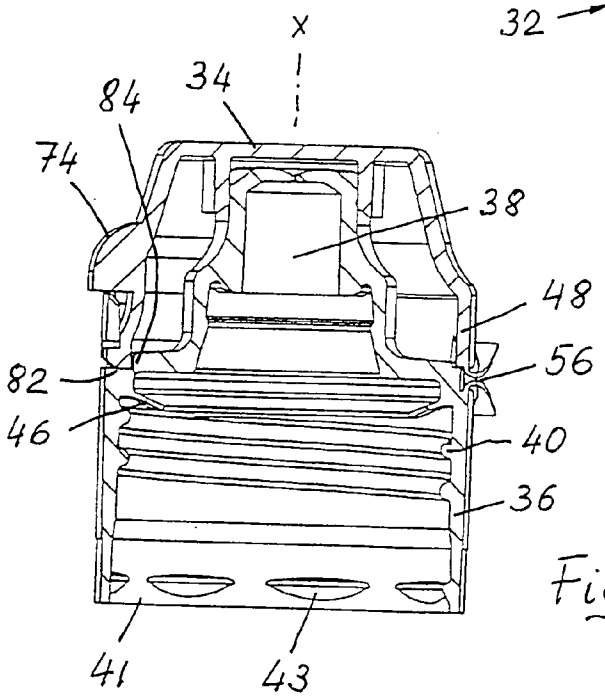


Fig. 1



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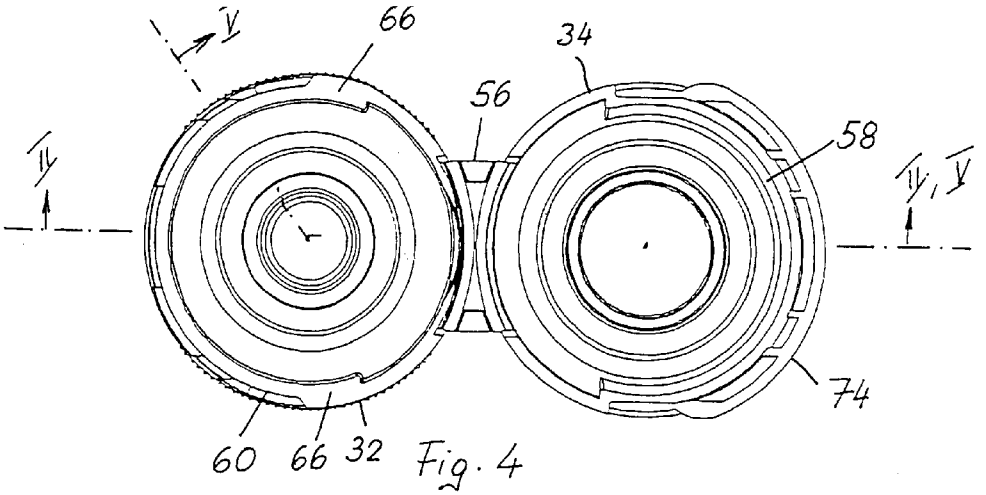

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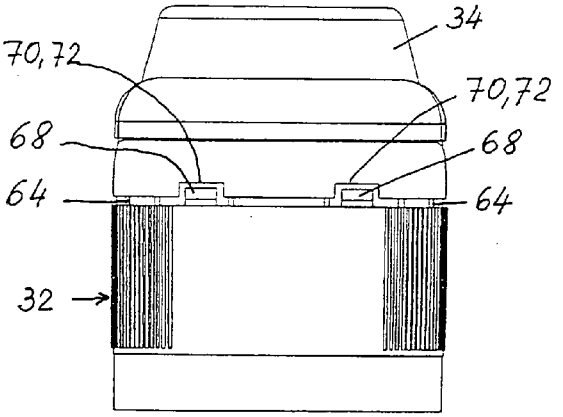

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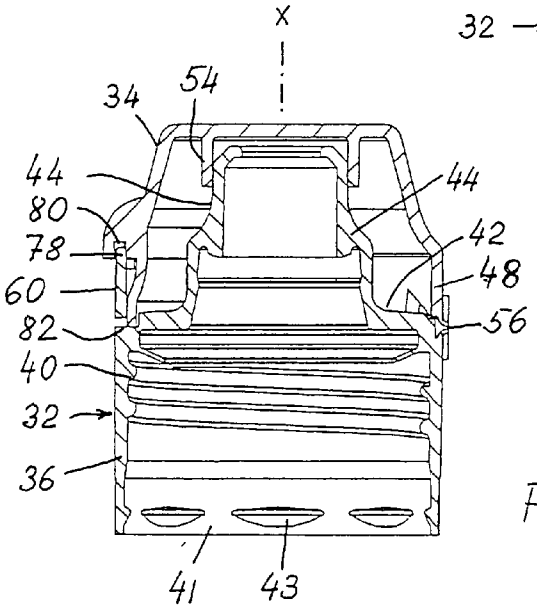

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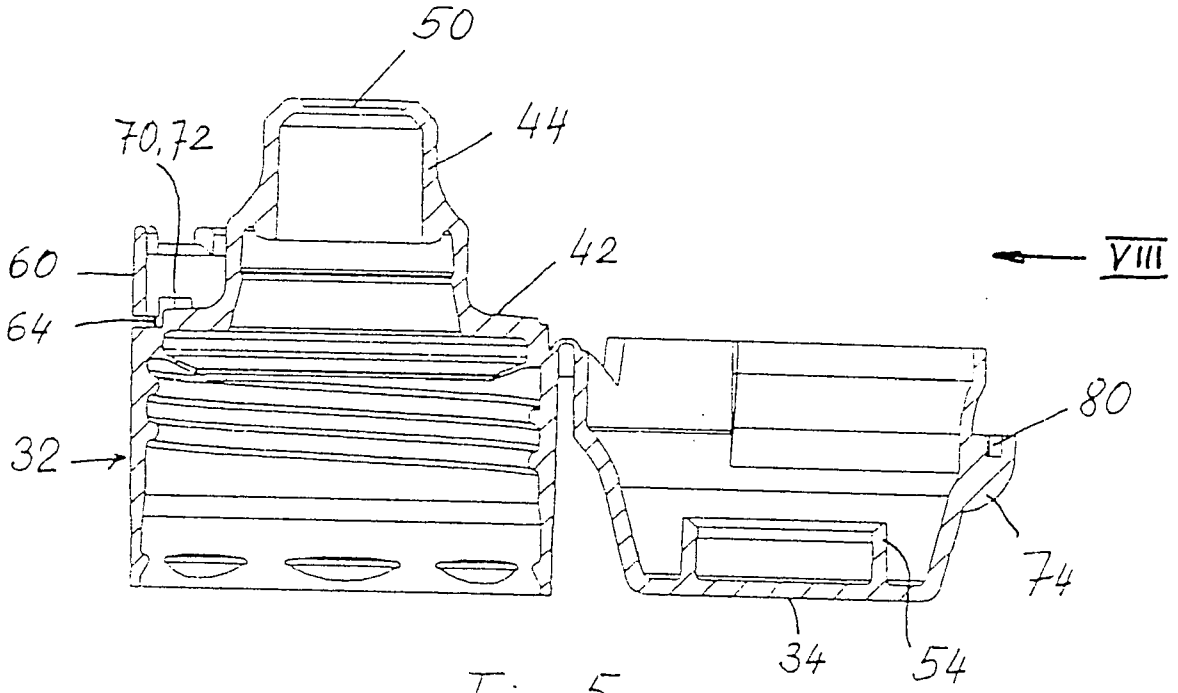

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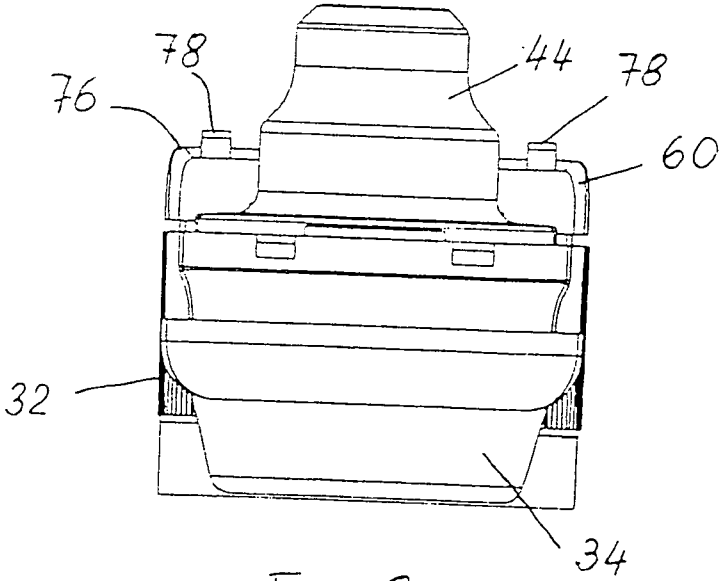

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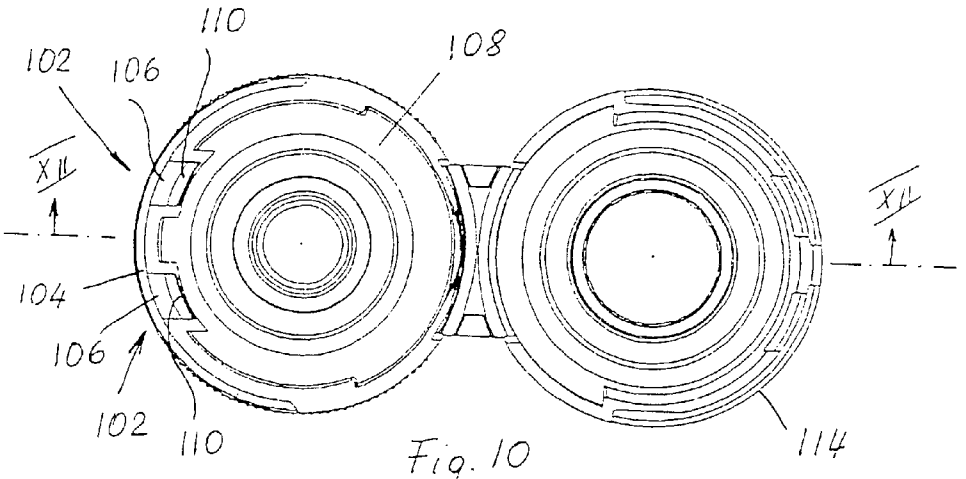
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108
XII
XII
104
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102
110
114

Fig. 10

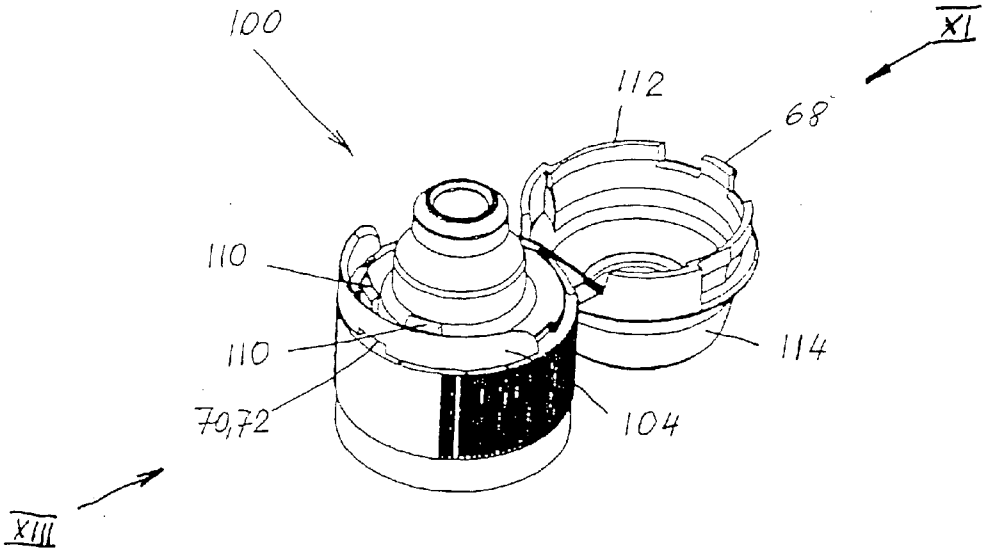
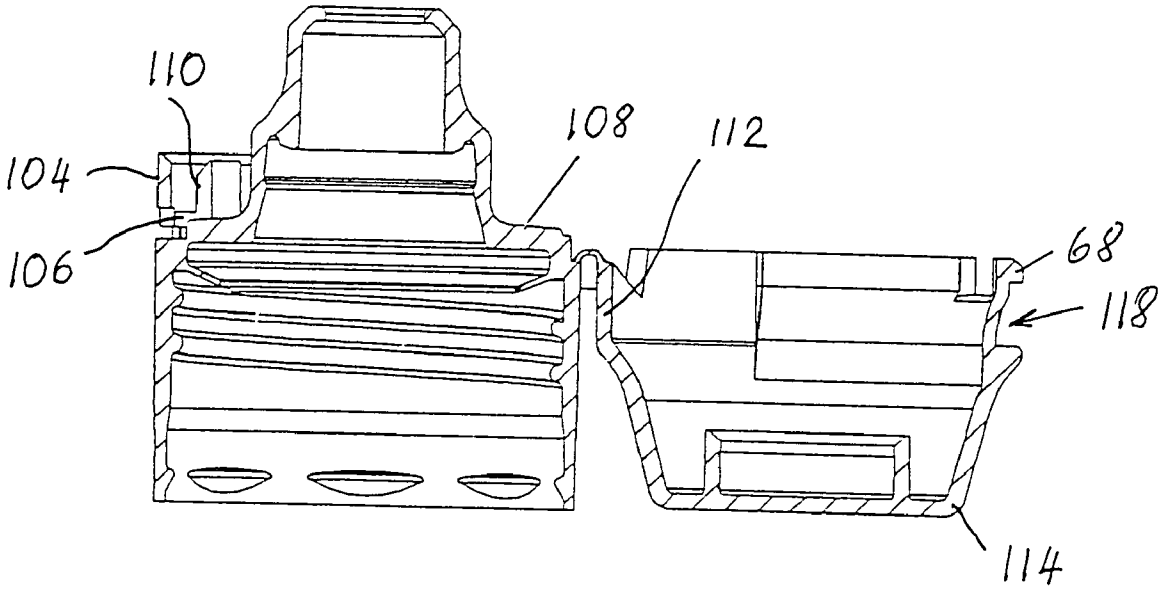

100
XI
112
68
110
110
114
70,72
104
XIII

Fig. 9



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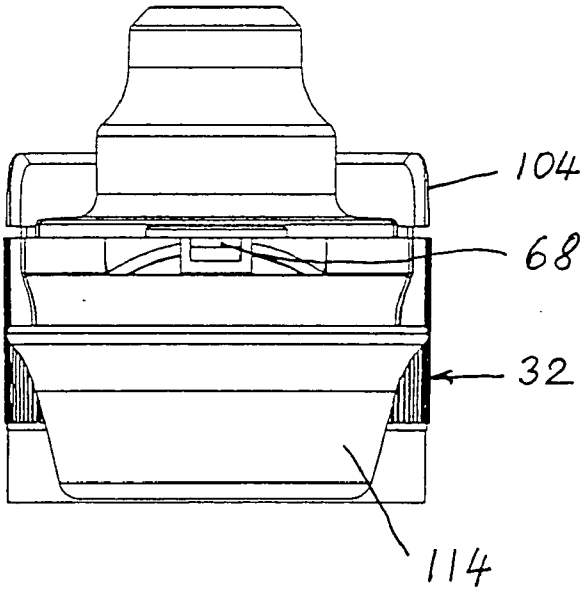

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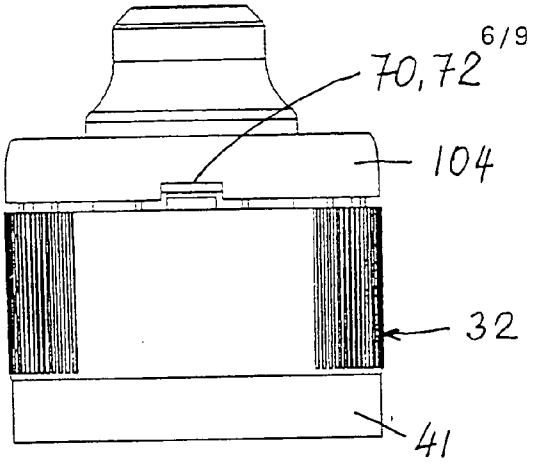

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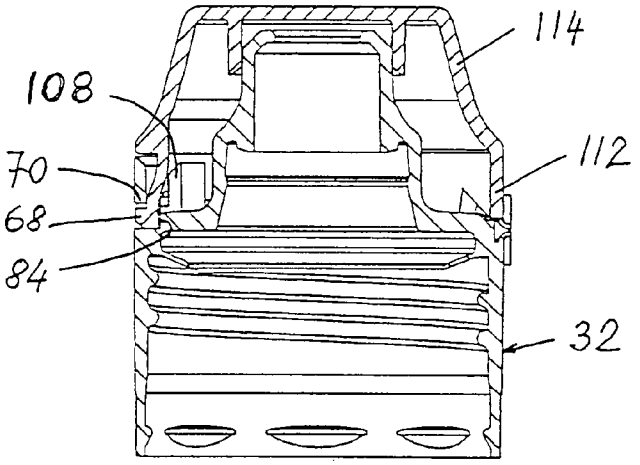

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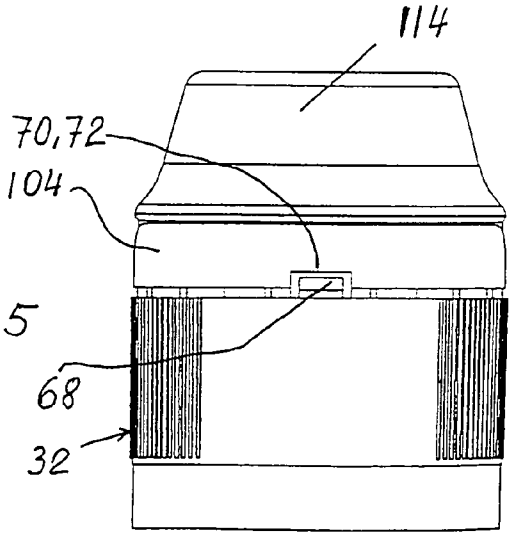

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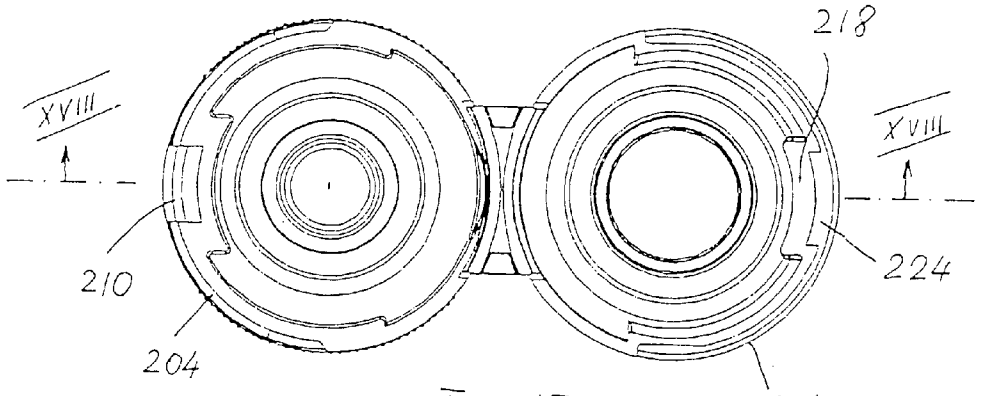
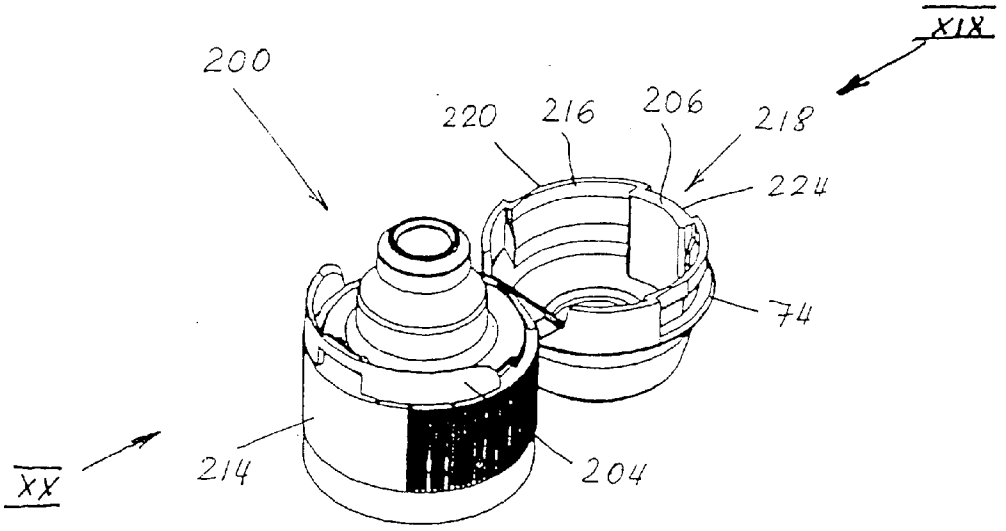

218
XVIII
XVIII
210
224
204
216

Fig. 17


XIX
200
220
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XX
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204

Fig. 16

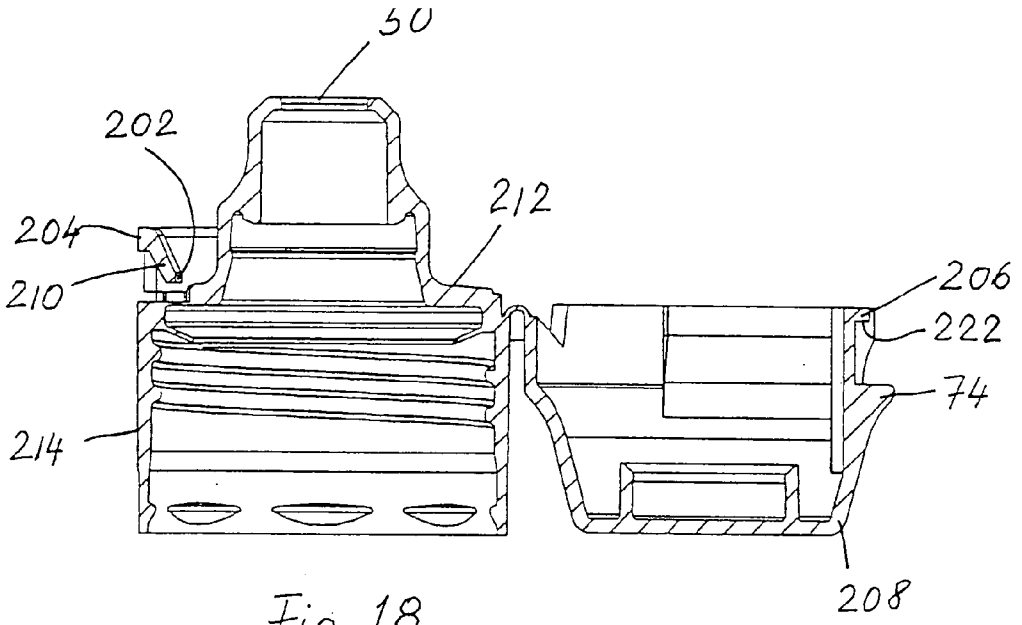
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Fig. 18

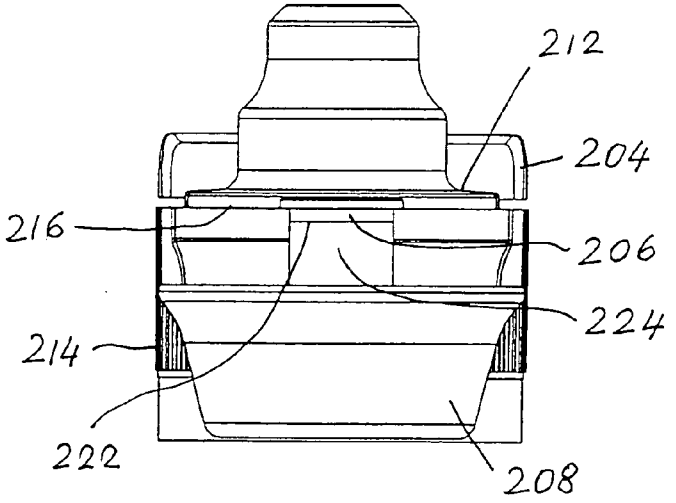
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Fig. 19

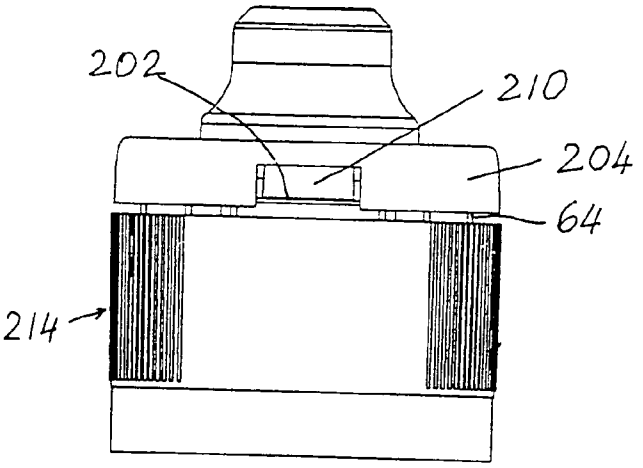

Fig. 20

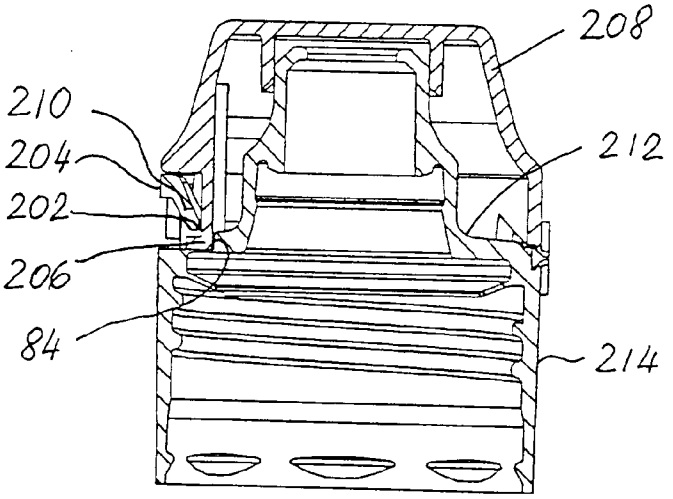

Fig. 21

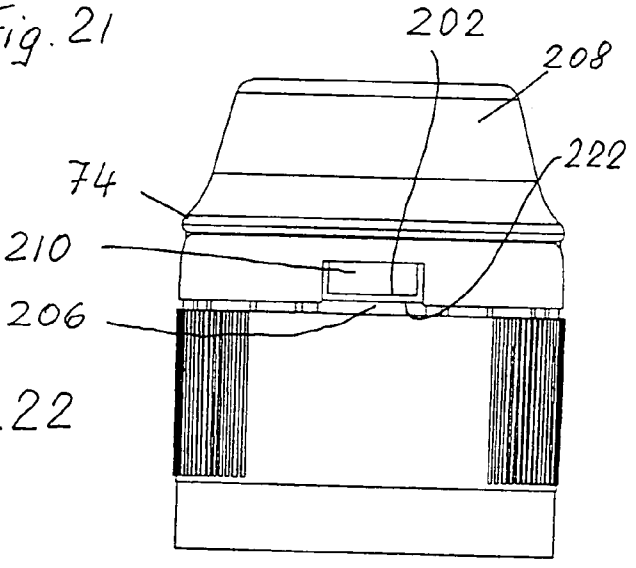

Fig. 22

HINGED LID CLOSURE PROVIDED WITH A TAMPER-EVIDENT ELEMENT FOR A CONTAINER CONTAINING A FREE-FLOWING PRODUCT

[0001] The invention relates to a swing-lid closure for containers containing free-flowing material, comprising

[0002] a closure body which can have its bottom, open end connected to the container via an opening of the latter and, on its top side, has an annular shoulder and a through-passage channel for the free-flowing material, the through-passage channel being connected to the interior of the container and opening out in an outlet opening,

[0003] a swing lid with a lid shell, which is articulated on the periphery of the top side of the closure body by a hinge such that it can be swung between a position in which it partially engages over the closure body and closes the outlet opening and a position in which it exposes the outlet opening,

[0004] a radial depression of the lid shell, which is provided on the front side of the swing lid, the front side being located opposite the hinge, and extends over part of the circumference of the swing lid,

[0005] a tear-off tamperproof securing strip which extends in an arcuate manner in the circumferential direction on an outer periphery of the annular shoulder of the closure body and has its bottom edge fastened on the annular shoulder via predetermined breaking points and, in the original closed position of the swing lid, projects up into the depression of the lid shell in an arcuate manner over part of the circumference of the closure body, the depression of the lid shell having a circumferential length which, at least in a circumferential direction of the lid shell, is dimensioned to be greater than the circumferential length of the tamperproof securing strip, for the purpose of forming a tear-off opening for the tamperproof securing strip.

[0006] Swing-lid closures in front of the abovementioned generic type belong to the prior art and are often used for containers or bottles which are intended for goods for mass consumption, such as free-flowing body-care products, e.g. skin lotion, bath gel or skin oil, or for household and kitchen care products, e.g. furniture polish or cleaning agents for cooking utensils, or for substances used for adding to or seasoning food, e.g. ketchup or soy sauce. Such swing closures with a tamperproof securing means are also used for materials in drug stores and pharmacies, in order to make it obvious that such packs comprising a container and swing closure have been manipulated without authorization. Tamperproof securing means for such swing closures, which constitute mass-produced articles, have to be capable of being produced cost-effectively and, in particular have to ensure a high level of reliability for the tamperproof securing means. It is thus an aim to improve the tamperproof securing means for such swing closures further.

[0007] The object of the invention is thus to improve the extent to which such containers equipped with a tamperproof securing strip are safeguarded against manipulation, to the effect that the tamperproof securing strip cannot be gripped at its top edge, and bent outward around the predetermined breaking points, with or without the aid of a tool-like article, without the predetermined breaking points, which connect the tamperproof securing strip to the closure body, being destroyed.

[0008] The invention achieves this object in that, in its vertical position, which indicates the intact state and in which it is protected in the depression of the swing lid, the tamperproof securing strip is secured by a retaining device and connected in a form-fitting and/or force-fitting manner to the swing lid.

[0009] This considerably improves the extent to which the swing-lid closure is safeguarded against manipulation because it is virtually impossible to open the swing-lid closure without this being obvious, i.e. without destroying the predetermined breaking points which connect the tamperproof securing strip to the closure body and without the tamperproof securing strip being separated off from the closure body as a result.

[0010] According to a first embodiment of the invention, at least one snap-in hook projects radially outward, in relation to the main axis of the swing closure, from the bottom edge of the lid shell, which forms the radially inner rear wall of the depression. The tamperproof securing strip is provided, in the region of its bottom edge, with at least one latching edge for the snap-in hook. Furthermore, at least one locking opening is provided on the underside of the gripping ridge of the swing lid, this at least partially enclosing the top edge of the tamperproof securing strip. In a further configuration of this first embodiment, at least one locking pin projects up from the top edge of the tamperproof securing strip, at least one corresponding locking opening being provided in the underside of the gripping ridge of the swing lid. The tamperproof securing strip is fastened on a radially outer, axially offset, arcuate stepped portion of the annular shoulder of the closure body, the radial width of this corresponding approximately to the sum of the radial widths of the tamperproof securing strip and of the snap-in hook on the lid shell. It is possible for the gripping ridge to extend more or less over a semicircle, and, in the intact position of the swing lid, to cover over at least the top edge of the tamperproof securing strip and to be aligned with the circumferential surface of the same.

[0011] According to a second embodiment, retaining elements are integrally formed on the inside of the tamperproof securing strip, the retaining elements extending radially inward and the swing lid resting thereon, by way of its lid shell in the closed position of the swing lid. It is possible here for the retaining elements to be U-shaped and to engage around the lid shell of the closed swing lid, in which case one of the two U-legs is formed by the tamperproof securing strip, from the bottom edge of which a U-crosspiece extends radially inward as a support for the lid shell and merges into the second U-leg, which extends parallel to the radially inner surface of the tamper proof securing strip. The U-shaped retaining elements are advantageously arranged on both sides of the snap-in hook.

[0012] According to a third embodiment, the at least one latching edge of the tamperproof securing strip with the at least one snap-in hook of the swing lid may be formed by at least one latching tongue which, as an integral constituent part of the tamperproof securing strip, extends radially inward in the direction of the annular shoulder of the closure

body and the free end of which terminates at an axial distance from the annular shoulder. That side of the snap-in hook which is directed toward the latching edge is preferably arranged level with the bottom edge of the lid shell, the height of this bottom edge being reduced by the height of the snap-in hook. It is further advantageous if at least one radially inwardly set-back portion of the lid shell is provided, in the region of the radial depression thereof, with at least one radially outer latching shoulder, which engages beneath the latching edge of the latching tongue of the tamperproof securing strip in the closed position of the swing lid.

[0013] In a further configuration of this third embodiment, it is recommended for the radially set-back portion of the lid shell to be designed as an axis-parallel guide groove for the latching tongue of the tamperproof securing strip and to be offset radially inward to an extent which corresponds approximately to the sum of the radial dimensions of the tamperproof securing strip with its latching tongue and the snap-in hook of the swing lid. It is further advantageous if the bottom edge of the latching shoulder, this bottom edge being directed toward the closure body, is aligned with the bottom edge of the lid shell.

[0014] The invention is described in more detail hereinbelow with reference to the schematic drawing of the exemplary embodiments of the closure. In the drawing:

[0015] **FIG. 1** shows a three-dimensional illustration of a first embodiment of an open swing-lid closure according to the invention;

[0016] **FIG. 2** shows a longitudinal section along section line II-II of the open swing-lid closure in **FIG. 4**;

[0017] **FIG. 3** shows a central longitudinal section of the swing-lid closure in **FIGS. 1 and 2** in the closed state;

[0018] **FIG. 4** shows a plan view of the open swing-lid closure according to **FIG. 1**;

[0019] **FIG. 5** shows a further sectional view of the swing-lid closure in FIGS. **1** to **4** along section line V-V in **FIG. 4**;

[0020] **FIG. 6** shows the swing-lid closure according to **FIG. 5** albeit in the closed state;

[0021] **FIG. 7** shows a front view of the swing-lid closure in FIGS. **1** to **6** in the closed state;

[0022] **FIG. 8** shows a view of the open swing-lid closure in the direction of the arrow VIII in **FIG. 5**;

[0023] **FIG. 9** shows a perspective illustration of a second embodiment of the swing-lid closure according to the invention in the open position;

[0024] **FIG. 10** shows a plan view of the swing-lid closure in **FIG. 9**;

[0025] **FIG. 11** shows a rear view of the open swing-lid closure in the direction of the arrow XI in **FIG. 9**;

[0026] **FIG. 12** shows a central longitudinal section of the swing-lid closure along section line XII-XII in **FIG. 10**;

[0027] **FIG. 13** shows a front view of a closure body in the open state of the swing-lid closure in the direction of the arrow XIII in **FIG. 9**;

[0028] **FIG. 14** shows the swing-lid closure according to **FIG. 12** in the closed state;

[0029] **FIG. 15** shows a front view of the closed swing-lid closure according to FIGS. **9** to **14**;

[0030] **FIG. 16** shows a perspective illustration of a third embodiment of a swing-lid closure;

[0031] **FIG. 17** shows a plan view of the open swing-lid closure in **FIG. 16**;

[0032] **FIG. 18** shows a central longitudinal section along section line XVIII-XVIII in **FIG. 17**;

[0033] **FIG. 19** shows a rear view of the open swing-lid closure according to FIGS. **16** to **18** in the direction of the arrow XIX in **FIG. 16**;

[0034] **FIG. 20** shows a front view of the open swing-lid closure in the direction of the arrow XX in **FIG. 16**;

[0035] **FIG. 21** shows a central longitudinal section of the swing-lid closure in **FIG. 18** in the closed state; and

[0036] **FIG. 22** shows a front view of the closed swing-lid closure in FIGS. **16** to **21**.

[0037] FIGS. **1** to **8** illustrate the first embodiment of the swing-lid closure **30** for bottles or containers which contain free-flowing material, are known per se and are thus not shown. The swing-lid closure **30** comprises a closure body **32** which can have its bottom, open end connected to the container via an opening of the latter and, on its top side, has an annular shoulder **42** and a through-passage channel **38** for the free-flowing material, the through-passage channel being connected to the interior of the container and opening out in an outlet opening **50**.

[0038] Also provided is a swing lid **34** with a lid shell **48**, which is articulated on the periphery of the top side of the closure body **32** by a hinge **56** such that it can be swung between a position in which it partially engages over the closure body **32** and closes the outlet opening **50** and a position in which it exposes the outlet opening **50**. A radial depression **58** of the lid shell **48** is provided on the front side of the swing lid **34**, this front side being located opposite the hinge **56**, and extends over part of the circumference of the swing lid **34**.

[0039] A tamperproof securing strip **60** extends in an arcuate manner in the circumferential direction on an outer periphery of the annular shoulder **42** of the closure body **32** and has its bottom edge fastened on the annular shoulder **42** via predetermined breaking points **64**. In the original closed position of the swing lid **34**, the tamperproof securing strip **60** projects up into the depression **58** of the lid shell **48** in an arcuate manner over part of the circumference of the closure body **32**, the depression **58** of the lid shell **48** having a circumferential length which, at least in a circumferential direction of the lid shell **48**, is dimensioned to be greater than the circumferential length of the tamperproof securing strip **60**, for the purpose of forming a tear-off opening **66** (**FIG. 4**) for the tamperproof securing strip **60**.

[0040] A cap shell **36** of the closure body **32** is provided, on the inside, with fastening means, in the present exemplary embodiment with a thread **40** by way of which the closure body **32** can be screwed on to a corresponding external thread on a container neck enclosing the opening.

Of course, as is known per se, other fastening methods such as clip-in protuberances, welding, or forming the container and closure body integrally are likewise possible. At the bottom end of the cap shell **32**, in a manner known per se, an encircling tamperproof securing strip **41** is fastened, via one or more predetermined breaking points (not shown), with inner protuberances **43**, which engage beneath an annular bead on the neck of the container and secure the tamperproof securing strip **41** if the closure body **32** is unscrewed from the container neck.

[**0041**] The annular shoulder **42** bounds the top end of the cap shell **36** and merges into a tubular outlet nozzle **44** which forms the through-passage channel **38**. The outlet nozzle **44** is tapered conically to a slight extent in the direction of its outer, free end and can thus also be used as a drinking nozzle.

[**0042**] On the underside of the annular shoulder **42**, an encircling sealing lip **46** which is directed obliquely inward toward the container is provided at a radial distance from the inside of the cap shell **36** for the purpose of sealing the closure body **32** in relation to the end surface of the container neck.

[**0043**] The swing lid **34** engages, by way of the lid shell **48** over the top, outer end of the closure body **32**, this end being formed by the outlet nozzle **44**, and is provided with the outlet opening **50** (**FIGS. 1 and 3**), which is arranged coaxially in relation to the through-passage channel **38** of the closure body **32**. The swing lid **34** also engages, by way of a tubular stub **54** which projects down from the underside of a head wall **52**, over the outlet nozzle **44** of the closure body **32** and butts with sealing action, by way of its inner circumferential surface, against the outer circumferential surface of the outlet nozzle **44**.

[**0044**] The swing lid **34** is connected integrally to the closure body **32** by the hinge **56** and is arranged such that it can be pivoted between the closed position, which is shown in **FIGS. 3, 6** and **7** and an open position which is shown in **FIGS. 1, 2, 4, 5** and **8** and in which the outlet opening **50** of the outlet nozzle **44** is exposed.

[**0045**] The tamperproof securing strip **60** projects vertically, i.e. in an axis-parallel manner to the main axis of the swing-lid closure **30**, but in an arcuate manner in the circumferential direction of the same, into the correspondingly shaped depression **58** of the lid shell **48**, such that the outer circumferential surface of the tamperproof securing strip **60** is located within an outer enveloping surface of the swing closure **30** and thus does not make it any more difficult for the swing closure **30** to be either produced or fitted.

[**0046**] According to the invention, in its vertical position, which indicates the intact state and in which it is protected in the depression **58** of the swing lid **34**, the tamperproof securing strip **60** is secured by a device by means of which the tamperproof securing strip **60** is connected in a form-fitting and/or force-fitting manner to the swing lid **34**.

[**0047**] According to the first embodiment, the securing device comprises, inter alia, two snap-in hooks **68** which project radially outward, in relation to the main axis x of the swing-lid closure **30**, from the bottom edge **62** of the lid shell **48**, which forms the inner rear wall of the depression **58**. The tamperproof securing strip **60** is provided, in the region of its bottom edge **62**, with two latching edges **70** for the snap-in hooks **68**, these being formed by rectangular cutouts **72** of the bottom edge of the tamperproof securing strip **60**. Of course, it is also possible to provide just one snap-in hook **68**, or more than two snap-in hooks **68**, on the swing lid **34** and a corresponding number of latching edges **70** on the tamperproof securing strip **60**.

[**0048**] The securing device of this embodiment also includes a top edge **76** of the tamperproof securing strip **60** being anchored in the gripping ridge **74** of the swing lid **34**. For this purpose, preferably two locking pins **78** project up from the top edge **76** of the tamperproof securing strip **60**. Accordingly, for the engagement of the locking pins **78**, two corresponding, pocket-like locking openings **80** are provided in the underside of the gripping ridge **74** of the swing lid **34**. In the original closed position, the two locking pins **78** thus engage in the two locking openings **80**, while the lower-level top edge on either side of the locking openings **80** of the tamperproof securing strip **60** butts directly against the planar underside of the gripping ridge **74** and, by means of the gripping ridge **74** which projects outward beyond the tamperproof securing strip **60** is protected against unauthorized manipulation. This locking of the tamperproof securing strip **60** at its top edge **76** is offset on both sides in relation to the snap-in-hook locking **68**, **70** as can clearly be seen from **FIGS. 1, 4** and **8**. Since the snap-in hook **68** engages beneath the tamperproof securing strip **60** at the latching edge **70**, the top edge **76** and the locking pins **78** are permanently and reliably enclosed in the locking openings **80** of the gripping ridge **74**. Depending on the respective use conditions and on the size of the swing-lid closure, it is thus possible to use at least one locking pin with at least one associated locking opening, that is to say a single locking opening can form an arcuate longitudinal groove for the engagement of the entire top edge, located on the same level, of the tamperproof securing strip **60**.

[**0049**] It can be seen that, in this way, it is also the case that the top edge **76** of the tamperproof securing strip **60** is not accessible with the aid of tool-like equipment and the tamperproof securing strip **60** can only be removed, for the purpose of opening the swing lid **34**, as a result of its predetermined breaking points **64** being destroyed. Consequently, it is virtually impossible to gain unauthorized access to the contents of the container without the destruction or removal of the tamperproof securing strip **60** being obvious.

[**0050**] This stable anchoring of the top edge **76** of the tamperproof securing strip **60** is preferably, and significantly, assisted in that the tamperproof securing strip **60**, as a result of being curved in the circumferential direction, is resistant to being bent outward, but is also fastened on a radially outer, axially offset, arcuate stepped portion **82** of the annular shoulder **42** of the closure body **32**, the radial width of this corresponding approximately to the sum of the radial widths of the tamperproof securing strip **60** and of the snap-in hook **68** on the lid shell **48**. As a result, the snap-in hook **68**, which engages beneath the latching edge **70**, is secured between the approximately axis-parallel circumferential surface **84** in **FIG. 3** of the annular shoulder **42**, this circumferential surface bounding the stepped portion **82** in the radially inward direction, and the inside of the tamperproof securing strip **60**, i.e. it cannot be pushed or moved radially inward in order to be unlocked.

[0051] The gripping ridge **74**, located diametrically opposite the hinge **56** extends more or less over a semicircle, and, in the intact position of the swing lid **34** covers over, as has been described above, at least the top edge **76** of the tamperproof securing strip **60** and, according to **FIG. 3**, projects outward to a large extent, in a protective manner beyond the tamperproof securing strip **60**.

[0052] FIGS. **9** to **15** illustrate the second embodiment of a swing-lid closure **100** according to the invention, in which case, in order to avoid repetition, the same parts are not described anew, and use is made of the designations which were utilized for the first embodiment.

[0053] In the case of the present second embodiment, two retaining elements **102** which are of U-shaped configuration, are provided for a tamperproof securing strip **104**. The upwardly projecting tamperproof securing strip **104** here forms one of two legs of the U-shaped retaining elements **102**. A horizontal crosspiece **106** of the U-profile of the retaining elements **102** extends radially inward from the inside of the tamperproof securing strip **104**, in the region of the bottom edge of the latter and approximately parallel to an annular shoulder **108**, and bears a second leg **110** parallel to, and at a sufficient distance from, the tamperproof securing strip **104**, so that the U-shaped retaining elements **102** each engages around a lid shell **112** of a closed swing lid **114** from the bottom edge thereof, as can clearly be seen from **FIG. 14**. The radially inwardly extending, horizontal U-crosspiece **106**, which is approximately parallel to the annular shoulder **108**, forms the support for the lid shell **112** here. Of course, it is also possible, if appropriate, to provide just a single retaining element **102** of appropriate dimensions.

[0054] According to a variant of this second embodiment, it may be sufficient, in certain circumstances, if only the U-crosspiece **106** of the retaining elements **102** extends radially inward and the leg **106** is omitted, with the result that an L-profile is formed in cross section with the tamperproof securing strip **104**. In this case, the lid shell **112**, in its closed position, rests on the horizontal leg or crosspiece **106** of the L-profile and retains the tamperproof securing strip **104** in its position in which it projects up from the annular shoulder **108** within a depression **118** beneath a gripping ridge **120**.

[0055] FIGS. **16** to **22**, show the third embodiment of a swing-lid closure **200**, in the case of which at least one latching edge **202** of a tamperproof securing strip **204** for at least one snap-in hook **206** of a swing lid **208** is formed by at least one latching tongue **210**. The latching tongue **210** is formed as an integral constituent part of the tamperproof securing strip **204** and extends radially inward, and downward in the direction of an annular shoulder **212** of a closure body **214**, from the top side of the tamperproof securing strip **204**. The free end of the latching tongue **210** terminates at an axial distance from the annular shoulder **212**. That side of the latching edge **202** which is directed towards a swing lid **208** is beveled radially inward in the direction of the annular shoulder **212** of the closure body **214** and that side of the at least one snap-in hook **206** which is directed toward the latching edge **202** are beveled correspondingly. That side of the snap-in hook **206** which is directed toward the latching edge **202** is arranged level with the bottom edge **226** of the lid shell **216**, the height of this bottom edge being reduced by the height of the snap-in hook **206** (**FIG. 22**).

[0056] The snap-in hook **206** is arranged in a radially inwardly set-back U-shaped portion **218** which forms an axial guide groove **224** in the lid shell **216** for the latching tongue **210** is provided, in the region of a radial depression **220**, with at least one radially outer latching shoulder **222**, which engages beneath the latching edge **202** of the latching tongue **210** of the tamperproof securing strip **204** in the closed position of the swing lid **208** (**FIG. 22**). The axis-parallel guide groove **224** for the latching tongue **210** of the tamperproof securing strip **204** is offset radially inward to an extent which corresponds approximately to the sum of the radial dimensions of the tamperproof securing strip **204** with its latching tongue **210** and the snap-in hook **206** of the swing lid **208**. In the closed position, the latching tongue **210** locks the latching hook **206**, with elastic prestressing, on the stepped portion **82** in a force-fitting and form-fitting manner in relation to the outside **84** of the annular shoulder **212**, with the result that, as a result of the gripping ridge **74** engaging over the top edge of the tamperproof securing strip **204**, unauthorized bending out of the tamperproof securing strip **204** without the predetermined breaking points being destroyed is virtually impossible.

LIST OF DESIGNATIONS

[0057] **30** Swing-lid closure

[0058] **32** Closure body

[0059] **34** Swing lid

[0060] **36** Cap shell

[0061] **38** Through-passage channel

[0062] **40** Screw thread

[0063] **42** Annular shoulder

[0064] **44** Outlet nozzle

[0065] **46** Sealing lip

[0066] **48** Lid shell

[0067] **50** Outlet opening

[0068] **52** Head wall

[0069] **54** Tubular stub

[0070] **56** Hinge

[0071] **58** Radial depression

[0072] **60** Tamperproof securing strip

[0073] **62** Bottom edge

[0074] **64** Predetermined breaking points

[0075] **66** Tear-off opening

[0076] **68** Snap-in hooks

[0077] **70** Latching edge

[0078] **72** Locking openings

[0079] **74** Gripping ridge

[0080] **76** Top edge

[0081] **78** Locking pin

[0082] **80** Locking opening

[0083] **82** Stepped portion

[0084] **100** Swing-lid closure

[0085] **102** Closure body

[0086] **104** Tamperproof securing strip

[0087] **106** Crosspiece

[0088] **108** Annular shoulder

[0089] **110** Second leg

[0090] **112** Lid shell

[0091] **114** Swing lid

[0092] **116** Snap-in hook

[0093] **118** Depression

[0094] **120** Gripping ridge

[0095] **200** Swing-lid closure

[0096] **202** Latching edge

[0097] **204** Tamperproof securing strip

[0098] **206** Snap-in hook

[0099] **208** Swing lid

[0100] **210** Latching tongue

[0101] **212** Annular shoulder

[0102] **214** Closure body

[0103] **216** Lid shell

[0104] **218** Portion (lid shell)

[0105] **220** Radial depression

[0106] **222** Latching shoulder

[0107] **224** Guide groove

[0108] **226** Bottom edge (latching tongue)

[0109] **228** Closing nozzle

1. A swing-lid closure (**30**; **100**; **200**) for containers containing free-flowing material, comprising

a closure body (**32**; **214**) which can have its bottom, open end connected to the container via an opening of the latter and, on its top side, has an annular shoulder (**42**; **108**; **212**) and a through-passage channel (**38**) for the free-flowing material, the through-passage channel being connected to the interior of the container and opening out in an outlet opening (**50**),

a swing lid (**34**; **114**; **208**) with a lid shell (**48**; **112**; **216**), which is articulated on the periphery of the top side of the closure body (**32**; **214**) by a hinge (**56**) such that it can be swung between a position in which it partially engages over the closure body (**32**; **214**) and closes the outlet opening (**50**) and a position in which it exposes the outlet opening (**50**),

a radial depression (**58**; **118**; **220**) of the lid shell (**48**; **112**; **216**), which is provided on the front side of the swing lid (**34**; **114**; **208**), the front side being located opposite the hinge (**56**), and extends over part of the circumference of the swing lid (**34**; **114**; **208**),

a tamperproof securing strip (**60**; **104**; **204**) which extends in an arcuate manner in the circumferential direction on an outer periphery of the annular shoulder (**42**; **108**; **212**) of the closure body (**32**; **214**) and has its bottom edge fastened on the annular shoulder (**42**; **108**; **212**) via predetermined breaking points (**64**) and, in the original closed position of the swing lid (**34**; **114**; **208**), projects up into the depression (**58**; **118**; **220**) of the lid shell (**48**; **112**; **216**) in an arcuate manner over part of the circumference of the closure body (**32**; **214**), the depression (**58**; **118**; **220**) of the lid shell (**48**; **112**; **216**) having a circumferential length which, at least in a circumferential direction of the lid shell (**48**; **112**; **216**), is dimensioned to be greater than the circumferential length of the tamperproof securing strip (**60**; **104**; **204**), for the purpose of forming a tear-off opening (**66**) for the tamperproof securing strip (**60**; **104**; **204**),

characterized in that,

in its vertical position, which indicates the intact state and in which it is protected in the depression (**58**; **118**; **220**) of the swing lid (**34**; **114**; **208**), the tamperproof securing strip (**60**;

104; **204**) is secured by a device (**68**, **70**, **72**, **74**, **76**, **78**, **80**, **82**; **106**, **108**, **110**; **202**, **206**, **210**) by means of which the tamperproof securing strip (**60**; **104**; **204**) and the swing lid (**34**; **114**; **208**) are connected to one another in a form-fitting or force-fitting manner.

2. The swing-lid closure as claimed in claim 1, characterized in that at least one snap-in hook (**68**) projects radially outward, in relation to the main axis (x) of the swing-lid closure (**30**), from the bottom edge (**62**) of the lid shell (**48**), which forms the radially inner rear wall of the depression (**58**), and the tamperproof securing strip (**60**) is provided, in the region of its bottom edge (**62**), with at least one latching edge (**70**) for the snap-in hook (**68**).

3. The swing-lid closure as claimed in claim 1, characterized in that at least one locking opening (**80**) is provided on the underside of the gripping ridge (**74**) of the swing-lid (**34**), this at least partially enclosing the top edge of the tamperproof securing strip (**60**).

4. The swing-lid closure as claimed in claim 2, characterized in that at least one locking pin (**78**) projects up from the top edge of the tamperproof securing strip (**60**), and at least one corresponding locking opening (**80**) is provided in the underside of the gripping ridge (**74**) of the swing lid (**34**).

5. The swing-lid closure as claimed in claim 2, characterized in that the tamperproof securing strip (**60**) is fastened on a radially outer, axially offset, arcuate stepped portion (**82**) of the annular shoulder (**42**) of the closure body (**32**), the radial width of this corresponding approximately to the sum of the radial width of the tamperproof securing strip (**60**) and of the snap-in hook (**68**) on the lid shell (**48**).

6. The swing-lid closure as claimed in claim 1, characterized in that the gripping ridge (**74**) extends more or less over a semicircle and, in the intact position of the swing lid (**34**), covers over at least the top edge of the tamperproof securing strip (**60**) and is aligned with the circumferential surface of the same.

7. The swing-lid closure as claimed in claim 1, characterized in that at least one retaining element (**102**) is integrally formed on the inside of the tamperproof securing strip (**104**), the retaining element extending radially inward and the swing lid (**114**) resting thereon by way of its lid shell (**112**) in the closed position of the swing lid (**114**).

8. The swing-lid closure as claimed in claim 7, characterized in that the at least one retaining element **(102)** is U-shaped and engages around the lid shell of the closed swing lid **(114)**, in which case one of the two U-legs is formed by the tamperproof securing strip **(104)**, from the bottom edge of which a U-crosspiece **(106)** extends radially inward as a support for the lid shell **(112)** and merges into the second U-leg **(110)**, which extends parallel to the radially inner surface of the tamperproof securing strip **(104)**.

9. The swing-lid closure as claimed in claim 7, characterized in that the at least one U-shaped retaining element **(102)** is arranged on both sides of the snap-in hook **(116)**.

10. The swing-lid closure as claimed in claim 1, characterized in that the at least one latching edge **(202)** of the tamperproof securing strip **(204)** for the at least one snap-in hook **(206)** of the swing lid **(208)** is formed by at least one latching tongue **(210)** which, as an integral constituent part of the tamperproof securing strip **(204)**, extends radially inward in the direction of the annular shoulder **(212)** of the closure body **(214)** and the free end of which terminates at an axial distance from the annular shoulder **(212)**.

11. The swing-lid closure as claimed in claim 10, characterized in that that side of the at least one latching edge **(202)** which is directed toward the swing lid **(208)** is beveled radially inward in the direction of the annular shoulder **(212)** of the closure body **(214)** and that side of the at least one snap-in hook **(206)** which is directed toward the latching edge **(202)** is beveled correspondingly.

12. The swing-lid closure as claimed in claim 10, characterized in that that side of the at least one snap-in hook **(206)** which is directed toward the latching edge **(202)** is arranged level with the bottom edge of the lid shell **(216)**, the height of this bottom edge being reduced by the height of the snap-in hook **(206)**.

13. The swing-lid closure as claimed in claim 10, characterized in that at least one radially inwardly set-back portion of the lid shell **(216)** is provided, in the region of the radial depression **(220)** thereof, with at least one radially outer latching shoulder **(222)**, which engages beneath the latching edge **(202)** of the latching tongue **(210)** of the tamperproof securing strip **(204)** in the closed position of the swing lid **(208)**.

14. The swing-lid closure as claimed in claim 10, characterized in that the radially set-back portion **(218)** of the lid shell **(216)** is designed as an axis-parallel guide groove **(224)** for the latching tongue **(210)** of the tamperproof securing strip **(204)** and is offset radially inward to an extent which corresponds approximately to the sum of the radial dimensions of the tamperproof securing strip **(204)** with its latching tongue **(210)** and the snap-in hook **(206)** of the swing lid **(208)**.

15. The swing-lid closure as claimed in claim 10, characterized in that the bottom edge of the latching shoulder **(222)**, this bottom edge being directed toward the closure body **(214)**, is aligned with the bottom edge of the lid shell **(216)**.

16. The swing-lid closure as claimed in claim 1, characterized in that a cap shell **(36)** of the closure body **(32)** is provided, on the inside, with fastening means **(40)** by way of which the closure body **(32)** can be fastened on a container neck enclosing the container opening, a radially inner annular shoulder **(42)** bounding the top end of the cap shell **(36)** and merging into a tubular outlet nozzle **(44)** which forms the through-passage channel **(38)**, and in that the inside of the swing lid **(34; 114; 208)** is provided with a coaxial, tubular closing nozzle **(228)** for sealing the outlet opening **(50)** when the swing lid **(34; 114; 208)** is closed.

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