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(54) **NON-REFILLABLE CAP**

NICHT NACHFÜLLBARE KAPPE

BOUCHON ANTI-REMPLISSAGE

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Description

OBJECT OF THE INVENTION

[0001] This invention relates to a sealing system, according to the preamble of claim 1, that prevents subsequent refilling of a vessel.

[0002] More specifically, this invention relates to a cap with an unrefillable pourer for a vessel of bottle type, incorporating systems for regulating at will the pouring flow of the liquid it contains and prevent refilling of the bottle by means of the introduction of a liquid from an external source.

STATE OF THE ART

[0003] Document ES2080646 discloses unrefillable cap corresponding to the features of the preamble of claim 1.

[0004] Various caps are already known with unrefillable pourers which are affixed to the mouths of bottles, in which various parts work together to determine an adequate pouring flow of the liquid contained in a bottle and which act as a safety device to prevent the possible refilling of the bottle.

[0005] Typically an unrefillable cap consists of various assembled parts, each of which is made in a mould from a different plastic material; for example, the unrefillable cap consists of a pouring part, within which a plugging system or automatic valve is moved by gravity, and some guide systems which serve to guide the valve in its movements and, at the same time, to limit the opening situation of the device.

[0006] Consequently, it is necessary to perform several operations to complete assembly of the unrefillable cap, with the entire assembly forming a complex design which is somewhat complicated to assemble, requiring moulds of a high price which increase the overall cost of the unrefillable cap.

[0007] It is therefore necessary to develop a cap with an unrefillable pourer comprised of a reduced number of elements of simple design, in order to make the entire unit easy to assemble and to be of a reduced overall cost.

CHARACTERISATION OF THE INVENTION

[0008] This invention seeks to resolve or reduce one or more of the aforementioned drawbacks by means of an improved cap with an unrefillable pourer comprising a pouring system that includes a first cylindrical body which fits hermetically in the neck of a vessel and a plugging system inserted in the interior of the pouring system; in such a way that the bottom of the pouring system comprises a section with a tapered cross-section in such a way that the union between the tapered section and the first cylindrical body is by means of a two-state hinge-type joining system.

[0009] One purpose of the invention is to develop an unrefillable cap that comprises a reduced number of parts that are built and assembled with relative ease, ensuring that said unrefillable cap can be obtained using a minimum of materials and labour, thus obtaining an unrefillable cap at a reduced price.

[0010] A further purpose of the invention is to prevent subsequent fraudulent refilling of the bottle. This function is based on the vertical movement of the plugging system or throttle valve depending on whether the bottle is in an upright or inclined position.

[0011] Yet another purpose of the present invention is to simplify the manufacturing process through the moulding and assembly of the different parts comprising the unrefillable cap.

[0012] Therefore, this invention makes it possible to simplify and economise the manufacture of the unrefillable cap, improving industrial effectiveness.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] There follows a description of the devices that comprise the invention, for the purposes of example only, with reference to the enclosed schematic drawings, in which:

Figure 1 is a vertical section of a cap with unrefillable pourer as per the invention,

Figure 2 is a partial vertical section of a plugging system as per the invention

Figure 3 is a perspective view of the pouring system as per the invention, and

Figure 4 is a partial vertical section of the system with unrefillable pourer as per the invention.

DESCRIPTION OF THE INVENTION

[0014] Figure 1 illustrates an unrefillable cap comprising a pouring system 12, made using moulds, of a tubular cylindrical section, to fit hermetically in the interior of the neck of a vessel such as a bottle 11, and a plugging system 13, which moves between a closed position, bottle 11 in vertical position supported on its base, preventing liquid being poured into the interior of the bottle and a pouring position, bottle upturned, such that the plugging system 13 is separated from the closing position allowing the contents of the bottle 11 to pass towards the exterior.

[0015] The diameter of the bottom part of the first cylindrical body 12-1 is progressively reduced creating a tapered section 14 truncated cone like a flap tapering progressively towards the central axis of the pourer 12. The central gap allows the liquid to be poured from the interior of the bottle 11 to the exterior thereof.

[0016] Figure 3 shows that the union between the tapered flap 14 truncated cone and the first tubular body 12-1 is performed by means of a joining system like a

two-state hinge or joint. In other words, the tapered flap has a first or initial position as described above and a second, final or seated position when the plug 13 or valve is housed in the interior of the pourer 12. The two positions of the flap 14 are illustrated in Figures 1 and 3.

[0017] At the top of the interior of the pourer 12, i.e. in the end opposite the tapered flap 14 truncated cone, there are various peripheral radial projections 16, namely, struts or ribs which protrude sufficiently from the internal side of the wall of the pourer 12 towards the centre of the pourer for the purposes of union and to support a dome 17 which limits the longitudinal displacement of the plug 13.

[0018] It should be noted that these radial projections 16 allow the contents of the bottle to pass through when the bottle is in the pouring position.

[0019] At the bottom of this dome 17, there is also a second cylindrical body 12-2 concentric or coaxial to the first body 12-1 of the pourer 12; analogously, the second body 12-2 has a cylindrical tubular section of a shorter length than that of the first cylindrical body 12-1, i.e., the second tubular body 12-2 which extends towards the interior of the first tubular body 12-1 of the pourer.

[0020] The second cylindrical body 12-2 has a number of ribs distributed regularly on the inside face of the cylinder which guide the movement of the plug system 13 between the closed or resting position, when the bottle is upright, and the opposite position in which it allows the contents of the bottle 11 to flow out freely when it is upturned.

[0021] Consequently, the plugging system 13 or valve must be housed in the seat formed between the dome 17, the second tubular cylinder 12-2 and the tapered flap 14 truncated cone of the pourer 12. The plug system 13 must therefore be of any shape suitable to be introduced under pressure in said seat formed in the pourer 12 through the gap in the tapered flap 14 truncated cone, such that when the plug system 13 is introduced in the pourer 12, the tapered flap 14 truncated cone is turned over towards the interior of the pourer 12 to the seat or closed position, shown in Figure 3, which prevents liquid being poured into the bottle 11.

[0022] Therefore, once the plugging system 13 has been housed in the interior of the pourer 12, the tapered flap 14 truncated cone is oriented facing up, i.e., towards the dome 17 of the pourer 12, shown in figures 1, 3 and 4, so that when the bottle 11 is in the upright position the plugging system 13 rests at least on the edge of least diameter of the tapered flap 14 truncated cone.

[0023] Once the tapered flap 14 truncated cone has acquired the seat position, there is no possibility of extracting the plugging system 13 without breaking said tapered flap 14 truncated cone.

[0024] Furthermore, as illustrated in Figure 4, the unrefillable cap is completed with an external cap 41, which may be joined from source by means of a tear-off line to the first body 12-1 of the pourer 12, in such a way that the assembled whole is covered by said cap 41.

[0025] It should be noted that the unrefillable cap is made up of various parts of which that or those which comprise the pouring part 12, which must remain attached to the neck of the bottle 11, is/are formed only by two assembled parts, namely, the pourer 12 as such and the plugging system 13.

[0026] The plugging system 13 may take different shapes such as a ball and others, in such a way that when the vessel is in its normal vertical position, said plugging system 13 is supported on its seat and prevents the refilling of the vessel 11 and, when the vessel 11 is inclined, the plugging system 13 is moved out of place allowing the liquid contained in the vessel 11 to flow out.

[0027] With reference again to figure 2, the plugging system 13 can take the form of an inverted U or thimble whose edge is extended by means of a peripheral extension like a ring-shaped hoop 13-1 oriented in the opposite direction to the axis of symmetry of the thimble, i.e., its diameter progressively extends to create a section that is tapered in cross-section. Thus in the resting position of the bottle 11 the plugging system 13 is supported on the seat produced at the base of the pourer 12 establishing the closing position on an inclined plane, shown in Figures 1 and 4, formed by the flap 14 of the pourer 12 which makes it practically impossible to refill the bottle 11.

[0028] With reference again to figure 1, it can be seen that the cap with unrefillable pourer 12 as established here is housed in the neck of the bottle 11 and consists of two parts, a pourer 12 and a plugging system or valve 13. The liquid is poured through the orifices and passages formed between the first cylindrical body 12-1, second cylindrical body 12-2, dome 17 and struts or ribs 16 which support it.

[0029] Turning again to figure 4, it is seen that on the outside of the neck of the bottle 11 there is an outer ring or outer flap physically coupled to the pourer 12 through a flat ring which projects from the outer face of the mentioned pourer 12.

Claims

1. **Unrefillable cap** comprising a pouring system (12) that includes a first cylindrical body (12-1) which fits hermetically in the interior of the neck of a vessel (11), a plugging system (13) that can be inserted in the interior of the pouring system (12); **characterised by** the fact that the bottom of the pouring system (12) comprises a section (14) truncated cone which is tapered in cross-section in such a way that the union between the tapering section (14) truncated cone and the first cylindrical body (12-1) is by means of a two- state hinge-type union system.

2. **Unrefillable cap** as per Claim 1; **characterised by** the fact that the plugging system (13) is in the shape of an inverted U, encircled at its base, by a ring-shaped hoop (13-1) with a tapering section.

3. **Unrefillable cap** as per Claim 2; **characterised by** the fact that the closed position of the plugging system (13) is obtained on an inclined plane defined by the tapering section (14) truncated cone when it is in the seated position on which it supports the plugging system (13) to seal the entrance to the vessel (11).

4. **Unrefillable cap** as per any of the Claims 1 to 3; **characterised by** the fact that the unrefillable cap comprises two assembled pieces: a pouring system (12) and a plugging system (13) which may be housed in the latter.

5. **Unrefillable cap** as per Claim 4; **characterised by** the fact that the outer flap is joined, to a flat substantially horizontal ring which projecting from the body of the pourer (12) adapted for holding and securing the said pourer (12) to the neck of the vessel (11).

6. **System of automatic sealing** which may be fitted hermetically in the interior of the neck of a vessel (11); **characterised by** the fact that it comprises an unrefillable cap as per Claim 4 which can be closed by means of an external sealing system (41), which may be joined from source through a tear-off line to the first body (12-1) of the unrefillable cap.

Patentansprüche

1. Nichtnachfüllbare Kappe mit einem Ausgießsystem (12), das einen im Innern des Halses eines Gefäßes (11) hermetisch sitzenden ersten zylindrischen Körper (12-1) aufweist, und mit einem Stopfensystem (13), das in das Innere des Ausgießsystems **(12) eingesetzt werden kann;**
dadurch gekennzeichnet, daß der Boden des Ausgießsystems (12) einen kegelstumpfförmigen Abschnitt (14) aufweist, dessen Querschnitt sich so verjüngt, daß die Verbindung zwischen dem sich verjüngenden kegelstumpfförmigen Abschnitt (14) und dem ersten zylindrischen Körper (12-1) mittels eines Zweizustand-Scharnierverbindungssystems ist.

2. Nichtnachfüllbare Kappe nach Anspruch 1, **dadurch gekennzeichnet, daß** das Stopfensystem (13) die Form eines umgekehrten U hat, das an seiner Basis von einem ringförmigen Reifen (13-1) mit einem sich verjüngenden Abschnitt umgeben ist.

3. Nichtnachfüllbare Kappe nach Anspruch 2, **dadurch gekennzeichnet, daß** die geschlossene Position des Stopfensystems (13) an einer geneigten Ebene erreicht wird, die durch den sich verjüngenden kegelstumpfförmigen Abschnitt (14) definiert ist, wenn er in der sitzenden Position ist, in welcher er das Stopfensystem (13) hält, um den Eingang zu dem Gefäß (11) zu verschließen.

4. Nichtnachfüllbare Kappe nach einem der Ansprüche 1 bis 3, **dadurch gekennzeichnet, daß** die nichtnachfüllbare Kappe zwei zusammengesetzte Stükke aufweist: ein Ausgießsystem (12) und ein Stopfensystem (13), das in letzterem aufgenommen werden kann.

5. Nichtnachfüllbare Kappe nach Anspruch 4, **dadurch gekennzeichnet, daß** die äußere Klappe mit einem aus dem Körper des Ausgießers (12) vorspringenden ebenen im wesentlichen horizontalen Ring verbunden ist, der angepaßt ist, um den Ausgießer (12) an dem Hals des Gefäßes (11) zu halten und zu sichern.

6. Automatisches Verschlußsystem, das in das Innere des Halses eines Gefäßes (11) hermetisch eingesetzt werden kann, **dadurch gekennzeichnet, daß** es eine nichtnachfüllbare Kappe nach Anspruch 4 aufweist, die mittels eines externen Verschlußsystems (41) geschlossen werden kann, das aus Quelle über eine Abreißlinie mit dem ersten Körper (12-1) der nicht nachfüllbare Kappe verbunden sein kann.

Revendications

1. Bouchon anti-remplissage comportant un système verseur (12) qui comprend un premier corps cylindrique (12-1) qui s'ajuste hermétiquement à l'intérieur du goulot d'un récipient (11), un système de bouchage (13) qui peut être inséré à l'intérieur du système verseur (12), **caractérisé par le fait que** le fond du système verseur (12) comprend une section (14) de tronc de cône qui est conique en coupe d'une manière telle que l'union entre la section conique (14) de tronc de cône et le premier corps cylindrique (12-1) se fait au moyen d'un système d'union du type à charnière à deux états.

2. Bouchon anti-remplissage selon la revendication 1, **caractérisé par le fait que** le système de bouchage (13) est sous la forme d'un U inversé, encerclé à sa base par un rebord de forme annulaire (13-1) avec une section conique.

3. Bouchon anti-remplissage selon la revendication 2, **caractérisé par le fait que** la position fermée du système de bouchage (13) est obtenue sur un plan incliné défini par la section conique (14) de cône tronqué lorsqu'elle est dans la position assise sur laquelle elle supporte le système de bouchage (13) afin d'obturer l'entrée du récipient (11).

4. Bouchon anti-remplissage selon l'une quelconque des revendications 1 â 3, **caractérisé par le fait**

que le bouchon anti-remplissage comprend deux pièces assemblées : un système verseur (12) et un système de bouchage (13) qui peut être logé dans ce dernier.

5. Bouchon anti-remplissage selon la revendication 4, **caractérisé par le fait que** le rebord extérieur est relié à une bague horizontale sensiblement plate qui dépasse du corps du verseur (12) prévue pour retenir et fixer ledit verseur (12) sur le goulot du récipient (11).

6. Système d'obturation automatique qui peut être monté de manière hermétique à l'intérieur du goulot d'un récipient (11), **caractérisé par le fait qu'**il comprend un bouchon anti-remplissage selon la revendication 4 qui peut être fermé au moyen d'un système d'obturation externe (41), qui peut être relié par l'intermédiaire d'une ligne de déchirement au premier corps (12-1) du bouchon anti-remplissage.

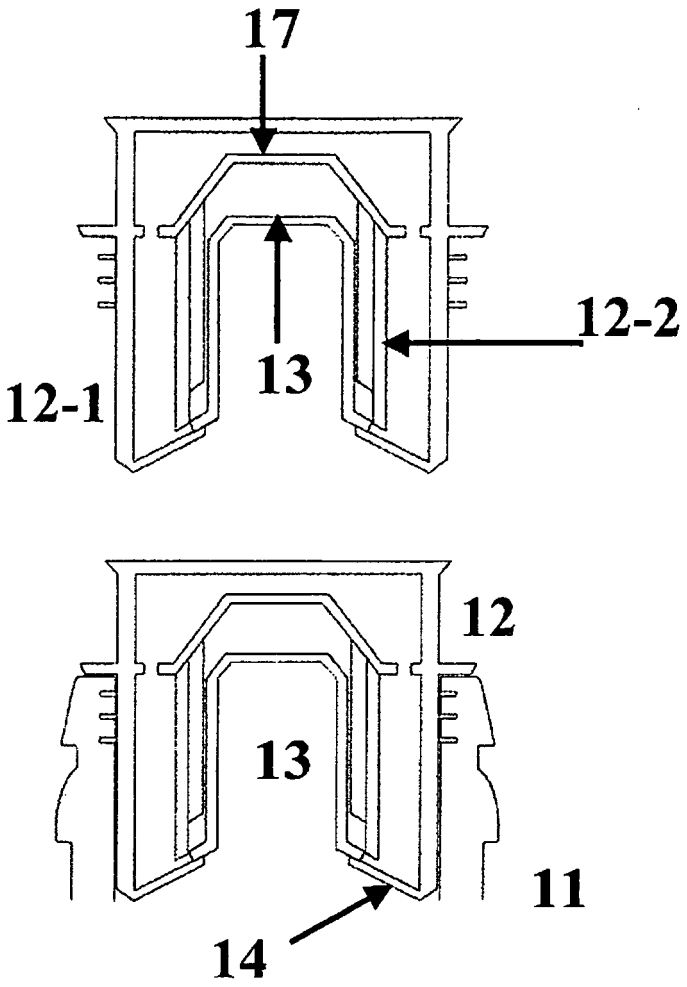

Fig. 1

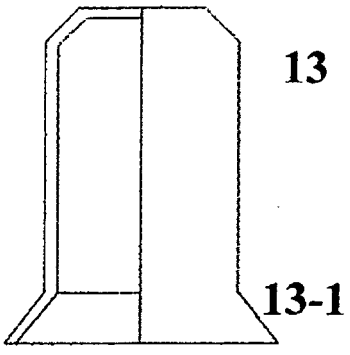

Fig. 2

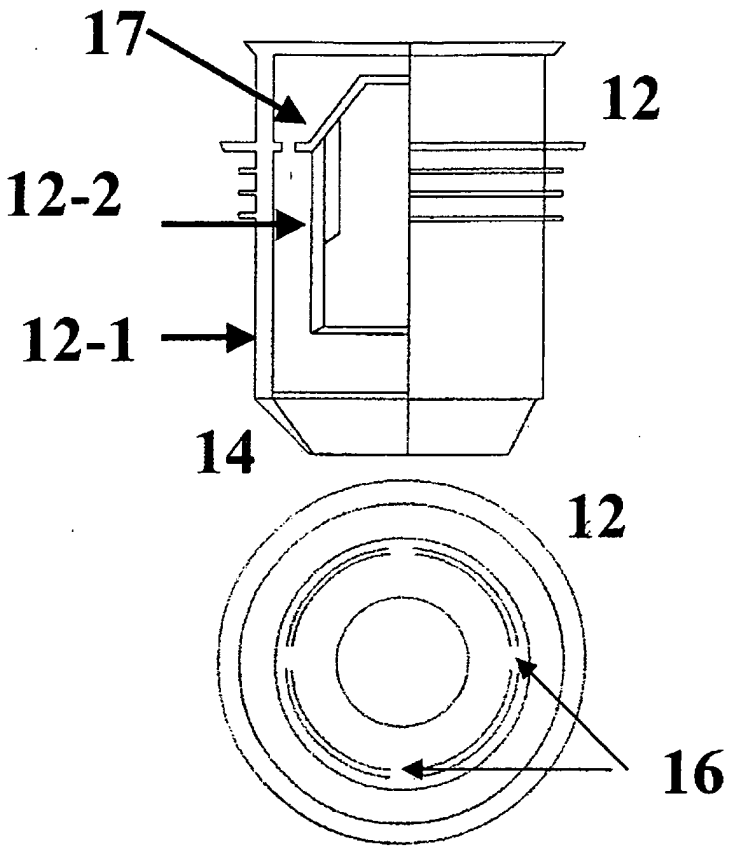

Fig 3

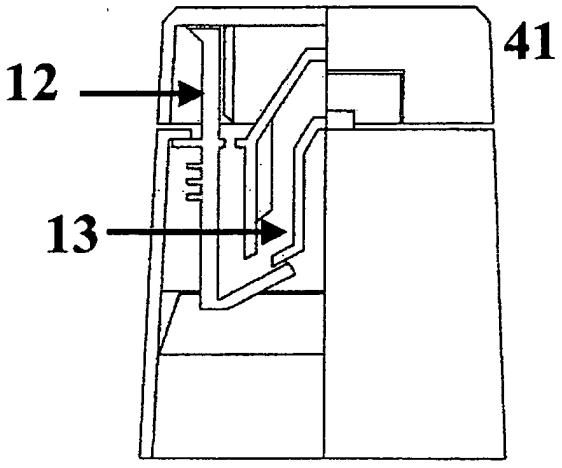

Fig. 4

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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