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(71) Applicant(s)
SIG Combibloc GmbH and Co KG

(72) Inventor(s)
Mario Gabrielli; Christoph Mehler; Matthias Dammers; Michael Nappeney

(74) Agent/Attorney
DAVIES COLLISON CAVE, 1 Little Collins Street, MELBOURNE VIC 3000

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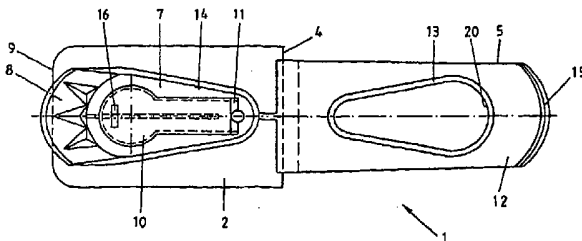


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(71) Anmelder (für alle Bestimmungsstaaten ausser US): PKL VERPACKUNGSSYSTEME GMBH [DE/DE]; Rurstrasse 58, D-52441 Linnich (DE). <i>Sie Combibloc GmbH & Co KG.</i>			
(72) Erfinder; und			
(75) Erfinder/Anmelder (nur für US): GABRIELLI, Mario [DE/DE]; Bromeberg 8, D-47802 Krefeld (DE). MEHLER, Christoph [DE/DE]; Von-der-Helm-Strasse 62, D-41199 Mönchengladbach (DE). <i>Matthias Dammers, Michael Noppene</i>			
(74) Anwalt: COHAUSZ & FLÖRACK; Kanzlerstrasse 8a, D-40472 Düsseldorf (DE).			

(54) Title: POURER

(54) Bezeichnung: AUSGIESSELEMENT



(57) Abstract

The invention relates to a pourer secured to a package, with a basic body (2) having a pouring aperture (7) covering a separable aperture area of the package forming a pouring hole after its separation, with a cover (5) pivoted on the basic body (2) by means of which the pouring aperture (7) can be closed, and with an opening means (10) by which the aperture area can be separated, when the opening means (10) can be pressed into the package by actuating the cover (5) via a component fitted on the cover (5), and where the support (16) is held in a position substantially parallel to the aperture area with the latter unseparated, in which the aperture area of the package can be hygienically separated while retaining simple handling and construction. This is achieved in that the component for operating the opening means (10) takes the form of a support (16), which is automatically raised into the pivoting path of the cover (5) after a securing means has been removed.

POURING ELEMENT

Field of the Invention

The invention relates to a pourer which is attached to a packing, with a base-plate, which has a pouring aperture essentially congruent with a tearable opening surface of the packing
 5 which, once torn open, forms a pouring hole; with a lid, hingedly connected to the base-plate, with which the pouring aperture can be closed.

Background of the Invention

Pourers of this type are used in packings for free-flowing materials, especially for packings for liquids in connection with cold, cold-sterile, hot and aseptic fillings. Such packings are
 10 frequently cuboid flat-gabled packings made from a composite material comprising a carrier layer of paper or cardboard, a bonding agent layer, a barrier layer, in particular made of aluminium, and a plastic layer on both sides.

A known pourer described in the German published application DE 44 09 947 A1 comprises a base-plate able to be glued onto the packing to which part of the lid, being
 15 swivelled anew into the packing with each opening of the pouring element. This is accompanied by the danger of the contents of the packing becoming contaminated with contaminants collecting at the free upper side of the lid.

A further pourer of the type mentioned in the introduction is known from the British patent application GB 2 267 896 A. In this known pourer, the opening-means is designed as a
 20 plate element hingedly connected with the rim of the pourer. With the opening surface untorn, the plate element is arranged in the pouring aperture and rests on the opening surface. During storage of the unopened packing, the lid covers the pouring aperture, so that contamination of the pouring aperture, the opening element and the opening surface is safely avoided. In order to tear open the opening surface it is however necessary for the
 25 opening element to be pushed into the packing, with a finger of the hand applying pressure. The pushing-in of the opening-means taking place in this way by direct skin contact, is accompanied by the danger that contamination adhering to the skin may enter the packing



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or may be lodged in the area of the pouring aperture and thus contaminate the contents of the packing during pouring.

From WO 90/14280 a further pourer is known in which the opening-means can be pushed into the packing by working the lid by way of an element rigidly arranged on the lid. This

- 5 known pourer is disadvantageous in regard to its function and its hygiene. Because the element for pushing in the opening aperture, which is rigidly hinged to the lid, is unprotected during transport and storage, contamination results, in particular due to the complicated geometric shape, so that contamination of the contents of the packing during the opening process cannot be ruled out. While direct contact by a finger of the person
- 10 opening the packing with the content of the packing is avoided, nevertheless, contamination of the contents of the packing cannot be ruled out. In addition, this known pourer has the disadvantage that during the opening process the element rigidly connected to the lid is rotated through almost 180°. This means that the composite part of the packing at the opening surface must also be bent by 180°. This results in restoring forces
- 15 which can lead to separation of the pourer glued onto the packing.

It is the object of the invention to improve the pourer of the type mentioned in the introduction and described in more detail above in such a way that a simple handling and the construction of a hygienically impeccable tearing of the opening surface of the packing is enabled.

20 Summary of the Invention

In accordance with the invention, there is provided a pourer attached to a packing, having:

a base-plate, which has a pouring aperture essentially congruent with a tearable opening surface of the packing which, once torn open, forms a pouring hole;

a lid, hingedly connected to the base-plate, with which the pouring aperture can be closed;

- 25 an opening-means by which the opening surface can be torn; and

an element adapted to move from a stored position, between the opening-means and the lid, when the lid is in a closed condition, and an operative position, when the lid is in an



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open condition, in which the element is arranged to be driven against the opening-means, as a result of the lid being moved back toward the closed condition, to thereby push the opening-means through the opening surface.

Preferably, pourer according to claim 1, characterised in that the opening-means, with the opening surface untorn, is arranged in the pouring aperture and hingedly connected to the base-plate.

Preferably, the element comprises at least one retaining device which, during insertion of the element into the pouring hole opened by the opening-means, automatically hinges to the element and which, once the opening-means is completely pushed into the pouring hole, automatically spreads apart in such a way that its free end is supported at an interior of the packing, and the element and with it the opening-means are retained in a position completely pushed into the packing.

Preferably, the opening-means is provided with a catch element by means of which it can be held in position, completely pushed into the packing.

Preferably, the element is integrally formed with the opening-means.

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Brief Description of the Drawings

Below, the invention is shown in more detail by means of a drawing showing one exemplary embodiment. The following are shown:

Fig. 1 a pourer in the open position, in lateral view;

Fig. 2 the pourer according to Fig. 1, in top view;

Fig. 3 a further pourer in the open position, in lateral view;

Fig. 4 the pourer according to Fig. 3, in top view;

Fig. 5 an element used with the pourer according to Figs. 3 and 4, in frontal view;



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- Fig. 6 a third embodiment of a pourer, in lateral view;
- Fig. 7 an unopened packing provided with a fourth embodiment of a pourer, in a partial longitudinal section;
- Fig. 8 the unopened packing according to Fig. 7 with the pourer open, in a view
5 corresponding to that of Fig. 7;
- Fig. 9 the packing according to Figs. 7, 8 with opened pouring hole but closed pourer in a view corresponding to that of Figs. 8, 9;
- Fig. 10 the packing according to Fig. 9 in a partial sectional view.

Detailed Description



- 10 The pourers 1, 50, 100, 150 shown in the Figs. and made from plastic material all comprise a base-plate 2, 52, 102, 152 with an essentially rectangular base-plate surface. On one of the shorter sides 4, 54, 104, 154 of the base-plate 2, 52, 102, 152, in each instance a lid 5, 55, 105, 155 formed in one piece, is connected. In this, in the connecting zone between the base-plate 2, 52, 102, 152 and the lid 5, 55, 105, 155 there is a film-hinge 6, 56, 106, 156
15 which enables hinging of the lid 5, 55, 105, 155 from the open position shown in Figs. 1, 2,



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6, 8, to a closed position in which the lid 5, 55, 105, 155 rests against the base-plate 2, 52, 102, 152.

A pouring aperture 7, 57, 107, 157 comprising a pouring spout 8, 58, 108, 158 is formed into the base-plate 2, 52, 102, 152. The mouth of the pouring spout 8, 58, 108, 158 is located at the short side 9, 59, 109 of the base-plate 2, 52, 102, 152 opposite the film-hinge 6, 56, 106, 156.

The lid 5, 55, 105, 155, at its lower side 12, 62, 112, 162, facing the pouring aperture 7, 57, 107, 157, comprises a rim 13, 63, 113, 163 whose layout and dimensions are selected in such a way that with the lid 5, 55, 105, 155 closed, it rests flush against the edge 14, 64, 164 of the pouring aperture 7, 57, 107, 157. In addition a catch 15, 65, 115, 165 is formed to the free short side of the lid 5, 55, 105. With the lid 5, 55, 105, 155 closed, the said catch 15, 65, 115, 165 encompasses the pouring spout 8, 58, 108, 158 and in this way prevents any unintentional opening of the pourer 1, 50, 100, 150.

Figs. 1 to 5 show the state of the pourers 1, 50, 105 after the first opening of the lid 5, 55, 105 with the opening surface (not shown) still untorn.

With the pourer 1 shown in Figs. 1, 2 in this state, an opening-means 10, connected in one piece by way of a further film-hinge 11 to the base-plate 2, extends within the pouring aperture 7. In this, the opening-means 10, designed in the way of a pressure plate, comprises a cutting device 18 facing the opening surface (not shown). In the area of the frontal edge of the opening-means 10, facing the pouring spout 8, a bar-shaped support element 16 formed in one piece is connected to the opening-means 10. In this, the connecting zone between the support



element 16 and the opening-means 10 is also shaped in the way of a film-hinge 17.

In the stored condition in which the lid 5 closes the pouring aperture 7 with the pouring spout 8, the support element 16 is hinged in a position resting against the top of the opening-means 10 facing the lid 5. In this position it is essentially aligned parallel to the opening surface (not shown). In this, the forces created by deforming the film-hinge 17 apply a restoring force R, acting around its axis, on the support element 16. This restoring force R results in the support element 16 moving automatically into the raised position shown in Figs. 1, 2, once the lid 5 for opening the pouring aperture 7 has been hinged away. In this position it is aligned almost perpendicularly to the upper side of the opening-means 10.

During subsequent hinging towards a closed position of the lid 5, the free end 19 of the support element 16 reaches into the space delineated by the rim 13 and glides along the lower side 12 of the lid 5 until it comes to rest against the interior side 20 of the rim 13. With continued closing movement of the lid 5, subsequently the opening-means 10, by tearing the opening surface (not shown), is moved into the packing (also not shown), until the lid 5 rests tightly against the base-plate 2. If subsequently the lid 5 is opened again, the opening-means 10, and with it the support element 16, remain in their last-assumed positions, protruding into the packing, whereby the support element 16, due to the elastic forces in the area of the film-hinge 17 springs further into the packing, so that it does not impede pouring of the liquid contained in the packing.

With the pourer 50 shown in Figs. 3, 4, 5, in contrast to the previously described pourer 1 as shown in Figs. 1, 2, the support element 66 is shaped as



a whole in the manner of an arrowhead. With its widened section, it is connected, formed in one piece, to the lower side 62 of the lid 55 in a section of the surface facing the free, short side of the surface, which is delineated by the rim 63. In this, the connecting zone again comprises a film-hinge 67, so that the support element 66 can be hinged into the space delineated by the rim 63.

At the free end of the support element 66, by way of a thickening, an opening-means 60 is formed which comprises a cutting device 70 extending along the length of the lid 55. In the storage-state of the packing, with the opening surface of the packing untorn, in which state the pouring element 50 is closed off by the lid 55, the support element 66 with the opening-means 60 are in a position hinged to the lid 55, between the lid 55 and the opening surface (not shown). As soon as the lid 55 is opened for the first time, the support element 66 and with it the opening-means 60 automatically hinge away from the lower side 62 of the lid 55 until they reach a position, as shown in Figs. 3, 4, where it is positioned at an angle of nearly 90° to the lid 55. Subsequently, the lid 55 is moved again in the direction of its closed position, whereby the opening-means 60 is guided into the pouring aperture 57 of the pourer 55. As soon as the

opening surface (not shown) of the packing is reached, it is torn by the opening-means 60, whereby the arrow-shaped design of the support means 66 and the opening-means 60 ensure the greatest possible widening of the opening surface. After renewed opening of the lid 55, the support means 66 with the opening-means 60 can be hinged to the lower side of the lid 55 and snapped into place in that position, so that during further use, pouring of the contents of the packing, for example a liquid, is not impeded.



For reasons of simplification, the support element is not shown in the exemplary embodiment represented in Fig. 6. Instead, Fig. 6 shows two hinged positions, I and II, of an opening-means 110. The opening-means 110 is shaped as a cover element, with a cutting ridge 114 being formed to its lower side. In hinging position I, in which the pouring aperture of the packing is still unopened, the upper side of the opening-means 110 is aligned almost flush to the upper edge of the pouring aperture 107.

The opening-means 110 is hingedly connected to the base-plate 102 of the pourer 100 by way of a film-hinge 115 in such a way that during hinging movement V it is taken along by the lid 105 and hinged into the packing (not shown) by tearing the pouring aperture (not shown). In its terminal position II hinged into the packing, the opening-means 110 is held by catches 116 formed at the end of the cutting ridge 114 facing the short side 104; with the catches 116 in this state being retained by catching protrusions 117 provided accordingly at the interior edge of the pouring aperture 107.

With the exemplary embodiment shown in Figs. 7 - 10, the pouring aperture 170 of the packing 171, in the unopened storage state, is closed by a perforated section of the composite packing material. At the same time the lid 155 rests against the base-plate 152 and closes off the pouring aperture 157 of the pourer 150.

A bar-shaped support element 173 is connected, by way of a film-hinge 175, to the frontal, free end of the opening-means 174 facing the pouring spout 158. The opening-means 174 is shaped in the manner of a cover element and at its lower side facing the packing 171 is provided with a cutting ridge 177. The opening-means 174 is hingedly connected to the base-plate 152 by way of a further film-hinge 178. The support element 173 comprises laterally-protruding, flexible branches 180, which, in



so that during further use, pouring of the contents of the packing, for example a liquid, is not impeded.

For reasons of simplification, the support element is not shown in the exemplary embodiment represented in Fig. 6. Instead, Fig. 6 shows two hinged positions, I and II, of an opening-means 110. The opening-means 110 is shaped as a lid element, with a cutting ridge 114 being formed to its lower side. In hinging position I, in which the pouring aperture of the packing is still unopened, the upper side of the opening-means 110 is aligned almost flush to the upper edge of the pouring aperture 107.

The opening-means 110 is hingedly connected to the base-plate 102 of the pouring element 100 by way of a film-hinge 115 in such a way that during hinging movement V it hinges into the packing (not shown) by tearing the pouring aperture (not shown). In its terminal position II hinged into the packing, the opening-means 110 is held by catches 116 formed at the end of the cutting ridge 114 facing the short side 104; with the catches 116 in this state being retained by catching protrusions 117 provided accordingly at the interior edge of the pouring aperture 107.

With the exemplary embodiment shown in Figs. 7 - 10, the pouring aperture 170 of the packing 171, in the unopened storage state, is closed by a perforated section of the composite packing material. At the same time the lid 155 rests against the base-plate 152 and closes off the pouring aperture 157 of the pourer 150.

Throughout this specification and the claims which follow, unless the context requires otherwise, the word "comprise", and variations such as "comprises" and "comprising", will be understood to imply the inclusion of a stated integer or step or group of integers or steps but not the exclusion of any other integer or step or group of integers or steps.



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The reference to any prior art in this specification is not, and should not be taken as, an acknowledgment or any form of suggestion that that prior art forms part of the common general knowledge in Australia.

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THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A pourer attached to a packing, having:

a base-plate, which has a pouring aperture essentially congruent with a tearable opening surface of the packing which, once torn open, forms a pouring hole;

- 5 a lid, hingedly connected to the base-plate, with which the pouring aperture can be closed;

an opening-means by which the opening surface can be torn; and

- 10 an element adapted to move from a stored position, between the opening-means and the lid, when the lid is in a closed condition, and an operative position, when the lid is in an open condition, in which the element is arranged to be driven against the opening-means, as a result of the lid being moved back toward the closed condition, to thereby push the opening-means through the opening surface.

- 15 2. A pourer according to claim 1, characterised in that the opening-means, with the opening surface untorn, is arranged in the pouring aperture and hingedly connected to the base-plate.

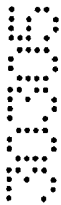
3. A pourer according to claim 2, characterised in that the element is attached to the opening-means and held by the lid when the lid is in the closed condition.

- 20 4. A pourer according to claim 3, characterised in that the element comprises at least one retaining device which, during insertion of the element into the pouring hole opened by the opening-means, automatically hinges to the element and which, once the opening-means is completely pushed into the pouring hole, automatically spreads apart in such a way that its free end is supported at an interior of the packing, and the element and with it the opening-means are retained in a position completely pushed into the packing.



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5. A pourer according to one of claims 2 to 4, characterised in that the opening-means is provided with a catch element by means of which it can be held in position, completely pushed into the packing.
6. A pourer according to one of claims 2 to 5, characterised in that the surface of the lid facing the opening-means comprises a limit stop for the element.
7. A pourer according to claim 6, characterised in that the limit stop is formed by a rim which seals the pouring aperture when the lid is in its closed position.
8. A pourer according to one of the preceding claims, characterised in that the element is integrally formed with the opening-means.
9. A pourer according to claim 1, characterised in that the element is attached to the lid.
10. A pourer according to claim 9, characterised in that the opening-means is formed onto a free end of the support element.
11. A pourer according to claim 9 or 10, characterised in that the support element is integrally formed with the lid.
12. A pourer according to one of claims 9 to 10, characterised in that the element is able to be snapped onto the lid.
13. A pourer according to one of the preceding claims, characterised in that the opening-means is shaped in the manner of an arrowhead.
14. A pourer according to one of the preceding claims, characterised in that the element is bar-shaped.
15. A pourer according to one of the preceding claims, characterised in that the packing is a cuboid flat-gabled packing made from a composite material comprising a carrier layer of paper or cardboard, a bonding agent layer, a barrier layer, in particular made of aluminium, and a plastic layer on both sides.
16. A pourer, substantially as hereinbefore described with reference to the drawings.



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DATED this 5th day of September, 2000

SIG Combibloc GmbH

By **DAVIES COLLISON CAVE**

Patent Attorneys for the applicant

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