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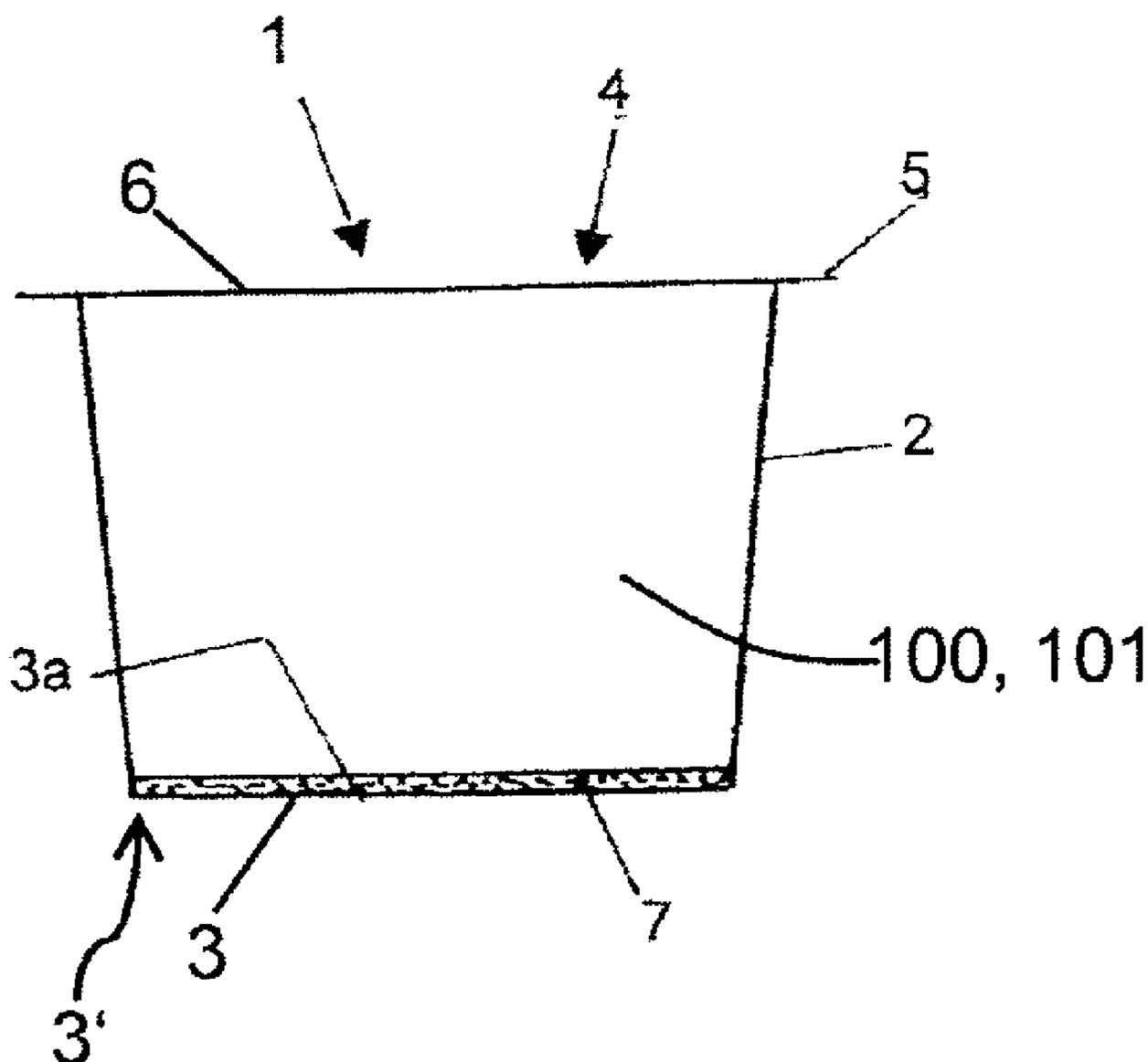
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(72) **Inventeur/Inventor:**
EMPL, GUNTER, DE

(73) **Propriétaire/Owner:**
K-FEE SYSTEM GMBH, DE

(74) **Agent:** FETHERSTONHAUGH & CO.

(54) **Titre : CAPSULE-DOSETTE ET PROCEDE DE FABRICATION D'UNE BOISSON A L'AIDE D'UNE CAPSULE-DOSETTE**
 (54) **Title: PORTION CAPSULE AND METHOD FOR PRODUCING A BEVERAGE BY MEANS OF A PORTION CAPSULE**



(57) **Abrégé/Abstract:**

The invention relates to a portion capsule for producing a beverage, comprising a capsule body (2), which has a capsule bottom (3) and a filling side (4), wherein a cavity (100) for accommodating a powdery or liquid beverage substrate (101) is formed between the capsule bottom (3) and the filling side (4), wherein a filter element (7) is arranged between the beverage substrate (101) and the capsule bottom (3).

Abstract

The invention relates to a portion capsule for producing a beverage, comprising a capsule body (2), which has a capsule bottom (3) and a filling side (4), wherein a cavity (100) for accommodating a powdery or liquid beverage substrate (101) is formed between the capsule bottom (3) and the filling side (4), wherein a filter element (7) is arranged between the beverage substrate (101) and the capsule bottom (3).

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**Portion capsule and method for producing a beverage by
means of a portion capsule**

The present invention relates to a portion capsule for producing a beverage, having a capsule body with a capsule base and a filling side, with a cavity for accommodating a pulverulent or liquid beverage base being formed between the capsule base and the filling side, and with a filter element being arranged between the beverage base and the capsule base.

Portion capsules of this kind are generally known from the prior art. By way of example, documents EP 1792850 B1, EP 1344722 A1 and US 2003/0172813 A1 disclose portion capsules of this generic type for preparing coffee and espresso.

Portion capsules of this kind for producing a beverage are preferably in the form of a truncated cone or cylinder and are produced, for example, from a thermoformed plastic film or using a plastic injection-molding process. Said portion capsules usually have an open filling side with a collar edge onto which a cover film or foil is sealed or adhesively bonded, and a closed capsule base, with a filter element which is supported, for example, against the capsule base being arranged between the beverage base and the capsule base. These filter elements are either injection-molded from a thermoplastic or are thermoformed or stamped from a plastic film.

For the purpose of preparing a coffee beverage, the portion capsule is inserted into a brewing chamber of a preparation appliance. After or during the closing process of the brewing chamber, the capsule is preferably opened on its closed base side by means of an outflow

element and/or an opening means, for example a tapping mandrel which is arranged in the brewing chamber, or the outflow element and/or opening means penetrate/penetrates an opening which is already present in the capsule base. After the brewing chamber is sealed off, the filling side of the portion capsule, which filling side is closed by a closure film or foil, is tapped by means of at least one puncturing means. Preparation liquid, preferably hot water, is then delivered into the portion capsule under pressure. The preparation liquid flows through the beverage base and extracts and/or dissolves the substances, which are required for producing the beverage, from the beverage base. For the purpose of preparing an espresso, for example a brewing water pressure of up to 20 bar acts on the coffee powder for the purpose of extracting the essential oils. Furthermore, this pressure also acts on the filter element which is situated between the coffee powder and the capsule base and in front of the punctured capsule outlet. The ready beverage preferably flows along the outflow element and/or the opening means, out of the brewing chamber, and into a collection element, for example a cup or a mug.

The object of the present invention was therefore to provide a portion capsule having a filter arrangement, which portion capsule is simpler to manufacture in comparison to the prior art.

This object is achieved by a portion capsule for producing a beverage, having a capsule body with a capsule base and a filling side, with a cavity for accommodating a pulverulent or liquid beverage base being formed between the capsule base and the filling side, and with a filter element being arranged between the beverage base and the capsule base, and an outflow element and/or

an opening means projecting through the capsule base into the cavity when the beverage is being produced, with the filter element being rigid at least in sections and being provided on or in the region of the capsule base such that the outflow element and/or the opening means tap/taps the filter element, pierce/pierces the filter element and/or move/moves the filter element relative to the capsule body.

In comparison to the prior art, the portion capsule according to the invention has the advantage that no distance or no large distance has to be provided between the filter element and the capsule base. As a result, the portion capsule can be smaller given the same quantity of beverage base and/or the quantity of beverage base can be increased. The filter element itself can have a simpler geometry. It was very surprising and unexpected that the filter element can be tapped, pierced or moved relative to the capsule body, in particular relative to the capsule base, without the quality of beverage being adversely affected. The beverage production apparatus can be produced with greater tolerances. For example, the opening mandrel can be designed to be longer, as a result of which it is ensured that the capsule is fully opened before the hot water enters the portion capsule.

The present invention relates to a portion capsule. Portion capsules of this kind for producing a beverage are preferably in the form of a truncated cone or cylinder and are produced, for example, from a thermoformed plastic film or using a plastic injection-molding process. Said portion capsules usually have an open filling side with a collar edge onto which a cover film or foil is sealed or adhesively bonded, a side wall region which is generally provided in the form of a cylinder or truncated cone, and a capsule base, with a

filter element which is preferably supported against the capsule base being arranged between the beverage base and the capsule base.

These filter elements are stiff, that is to say either injection-molded from a thermoplastic or thermoformed or stamped from a plastic film, for example, at least in sections. However, the filter element can also be produced from any other desired material which is familiar to a person skilled in the art. Examples include a paper or paper-like material or a natural material. The filter element can have reinforcing ribs and/or channels for guiding the liquid. The filter element can have, in particular in its central region, a recess into which the outflow element and/or the opening means are/is inserted before making contact with the filter element and, in the process, tapping said filter element, piercing said filter element and/or moving said filter element relative to the capsule body. The filter element has at least one region in which the beverage base is retained but through which extraction liquid can flow. An example of this is a region which has a large number of holes of which the cross section is selected such that the particles of beverage base are not allowed to pass through or not allowed to pass through to a significant extent but through which the extraction medium, for example the hot water, flows. The filter element can have a region through which the extraction medium does not flow. This region may be located, for example, above the region into which the outflow element or the opening means enters. This region can also be produced from a different material to the rest of the filter element and/or have a different material thickness. This region can have, for example, a greater degree of elasticity than the rest of the filter element. This region is at least temporarily

plastically or elastically deformed, in particular when it is tapped or pierced. The filter element can be flat.

A cavity can be provided between the filter element and the capsule base, that is to say the filter element can be arranged at a certain distance from the capsule base at least in sections. For example, the filter element can rest on the capsule base only in its edge region and/or be connected to the side wall of the portion capsule only in the edge region.

According to the invention however, the filter element is provided in the portion capsule such that the outflow element and/or an opening means of the preparation appliance make/makes contact with the filter element at least temporarily before or during production of the beverage and, in the process, tap/taps said filter element, pierce/pierces said filter element and/or move/moves said filter element relative to the capsule body.

In order to prepare a coffee beverage, the portion capsule is inserted into a brewing chamber of a preparation appliance. After or during the closing process of the brewing chamber, the capsule is preferably opened on its closed base side by means of an outflow element which is arranged in the brewing chamber and/or by means of an opening means, or the outflow element and/or opening means pass through an opening which is already present in the capsule base. In the process, the outflow element and/or an opening means make/makes contact with the filter element and tap/taps said filter element, pierce/pierces said filter element and/or move/moves said filter element relative to the portion capsule. After the brewing chamber is sealed off, the filling side of the portion capsule, which filling side

is closed by a closure film or foil, is tapped by means of at least one puncturing means. Preparation liquid, preferably hot water, is then delivered into the portion capsule under pressure. The preparation liquid flows through the beverage base and extracts and/or dissolves the substances, which are required for producing the beverage, from the beverage base. For the purpose of preparing an espresso, for example a brewing water pressure of up to 20 bar acts on the coffee powder for the purpose of extracting the essential oils. Furthermore, this pressure also acts on the filter element which is situated between the coffee powder and the capsule base and in front of the punctured capsule outlet. The ready beverage preferably flows along the outflow element and/or the opening means, out of the brewing chamber, and into a collection element, for example a cup or a mug.

The portion capsule is preferably hermetically sealed. This means that the beverage or food product powder, for example coffee powder, soup powder or tea, contained in the portion capsule is sealed off from the environment in a substantially aroma-tight manner before the extraction process. However, the portion capsule does not have to be hermetically sealed, but rather can also be provided in a hermetically sealed package before use, this hermetically sealed package then being manually opened for example.

The filter element is preferably simply inserted into the capsule body and then rests either loosely on the capsule base or is connected to said capsule base and/or to the side wall of the capsule, in particular before the capsule body is filled with the beverage base.

The capsule body is preferably in the form of a truncated cone or cylinder and is, for example, produced from

plastic, a natural material and/or a biologically degradable material comprising a thermoformed plastic film or using a plastic injection-molding process. The capsule body preferably has, on the filling side, a collar edge onto which a cover film or foil is sealed or adhesively bonded. As an alternative, it is feasible for the capsule body and a capsule cover to be connected to one another by means of a mechanical method. The base of the portion capsule is preferably closed and is preferably first perforated in the brewing chamber by means of an outflow element and/or an opening means for producing an outlet opening, said outflow element and/or opening means acting on the portion capsule base from the outside. However, another feasible alternative would be for the base of the portion capsule to already be provided with an outlet opening at the factory, said outlet opening preferably being sealed off by means of a sealing film or foil. The sealing film or foil can then be perforated, for example, by means of the perforation means or can be pulled off from the capsule base by hand. The sealing film or foil is preferably a plastic film which has at least one barrier layer, for example a metal layer, in particular an aluminum layer. The plastic film preferably has a "peel-off layer" on its side facing the capsule in order to be able to remove the plastic film from the capsule base comparatively easily.

The outlet opening is preferably so large that it can receive an outflow element, which may be present, and/or an opening means without contact. The outlet opening is particularly preferably so large that it exhibits no appreciable pressure loss when the ready beverage flows out, in particular that there is no appreciable eddying of the ready beverage which could lead to air being introduced into the beverage and therefore to the formation of foam.

According to a further subject matter or a further embodiment of the present invention, provision is made for the filter element to be arranged in the cavity in the portion capsule and to rest on a side of the capsule base which faces the filling side. The production costs for the portion capsule are advantageously considerably reduced since the filter element is simply inserted only loosely into the portion capsule. The filter element is preferably fixed by the beverage substance which, when the portion capsule is filled, is arranged on the filter element and therefore firmly holds the filter element.

According to a further preferred embodiment of the present invention, provision is made for the edge region to extend at least partially along a side wall region of the capsule body, with the side wall region extending between the filling side and the capsule base.

According to a further preferred embodiment of the present invention, provision is made for the filter element to completely or only partially cover the capsule base. In particular, it is sufficient for the filter element to be arranged solely in the region of the perforation or in the region of an outlet opening in the capsule base.

According to a further preferred embodiment of the present invention, provision is made for the filter element to be attached to the capsule base, with the filter element preferably being attached to the capsule base in a cohesive manner, in particular by sealing. This advantageously prevents the filter element from slipping. This attachment is preferably carried out by means of ultrasonic welding.

According to a further preferred embodiment of the present invention, provision is made for the filter element to be attached to the capsule base in an edge region of the capsule base, and/or for the filter element to be attached to the side wall region in an edge region of the filter element. This advantageously prevents the filter element from slipping and increases the sealing effect between the capsule body and the filter element, but with it further being made possible to lift off the filter element at the same time.

According to a further preferred embodiment of the present invention, provision is made for the capsule base to have a protrusion in a direction opposing the filling side. The protrusion advantageously serves to accommodate the perforation means.

According to a further preferred embodiment of the present invention, provision is made for the capsule base to have a predetermined breaking point which is intended to tear open as a result of mechanical contact with an external perforation means, with the predetermined breaking point preferably having a plurality of lines of weakness which are arranged in a star shape around a central point of the capsule base. The capsule base preferably has a reduced material thickness along the lines of weakness and/or is perforated along the lines of weakness. Perforation of the capsule base is advantageously assisted by implementing the predetermined breaking point. This also has the advantage that a less sharp perforation spike for perforating the capsule base can be used, and therefore the risk of damage to the filter element when the filter element is lifted off by the perforation spike is reduced. In particular, a blunt perforation means is now sufficient for perforating the capsule base.

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According to a further preferred embodiment, the capsule base permanently has an output opening which is preferably sealed off by a film or foil, with the film or foil particularly preferably having a pull-off tab for pulling off the film or foil by hand. Perforation of the capsule base by means of an external perforation means is advantageously unnecessary in this case. Before the portion capsule is inserted into the brewing chamber, the film or foil is simply pulled off the capsule base by means of the pull-off tab and the brewing process can be started. This embodiment has the advantage that the beverage liquid does not flow out of the output opening under high pressure and therefore the formation of foam ("crema"), in particular when producing an americano or tea, is prevented.

A further preferred subject matter of the present invention is a method for producing a beverage using a portion capsule, with the portion capsule being provided with a rigid filter element in a first method step, with an outflow element and/or an opening means penetrating the capsule base in a second method step, and the outflow element and/or the opening means tapping the filter element, piercing the filter element and/or moving the filter element relative to the capsule body in a third method step.

These processes of tapping said filter element, piercing said filter element and/or moving said filter element relative to the capsule body preferably take place when the portion capsule is inserted into the brewing chamber and/or when the brewing chamber is closed.

The statements made in relation to one subject matter of the present invention apply to the other subjects in equal measure, and vice versa.

A further subject matter of the present invention is the use of a portion capsule for producing a beverage, preferably for producing a coffee, cocoa, tea and/or milk beverage.

The statements made in relation to one subject matter of the present invention apply to the other subjects in equal measure, and vice versa.

Exemplary embodiments of the invention are illustrated in the figures and explained in greater detail in the following description. The figures are described merely by way of example and do not restrict the general concept of the invention. The description applies to all subjects of the present invention in equal measure.

Figure 1 shows a longitudinal section through a portion capsule according to a first embodiment of the present invention, which portion capsule is designed for the purpose of preparing an espresso.

Figure 2 shows a longitudinal section through a portion capsule, which is situated in a closed brewing chamber, according to the first embodiment of the present invention.

Figures 3a, 3b show schematic sectional views through a portion capsule according to a second embodiment of the present invention.

Figures 4a, 4b show schematic sectional views through a portion capsule according to a third embodiment of the present invention.

Figures 5a, 5b show schematic sectional views through a portion capsule according to a fourth embodiment of the present invention.

Figures 6a, 6b show schematic sectional views through a portion capsule according to a fifth embodiment of the present invention.

Figures 7a, 7b show schematic top views of a capsule base of a portion capsule according to a sixth embodiment of the present invention.

Figure 8 shows a plan view of a filter element.

In the various figures, identical parts are always provided with the same reference symbols and therefore also will be generally cited or mentioned only once in each case.

Figure 1 illustrates a first embodiment of the portion capsule 1 according to the invention. The portion capsule 1 comprises a capsule body 2 in the form of a truncated cone, having a closed capsule base 3 and having a collar edge 5 which is arranged on the filling side 4 of said capsule body and to which a cover film or foil 6 is welded or adhesively bonded. Therefore, a cavity 100, which is preferably sealed off in an air- and aroma-tight manner, is formed between the capsule base 3 and the cover film or foil 6, said cavity being filled with a pulverulent or granular beverage substance 101. In this

case, the beverage substance 101 comprises, for example, a coffee, cocoa, tea and/or milk powder (or granules). A rigid filter element 7 comprising a plastic material is arranged on the inner side 3a of the closed capsule body base 3, that is to say within the cavity 100. The filter element 7 is situated either loosely on the inner side 3a of the capsule base 3 or is firmly, that is to say preferably cohesively, connected to the inner side 3a of the capsule body base 3. In the second variant, the filter element 7 is attached in a cohesive manner to the capsule base 3, in particular only in an edge region 3' of the capsule base 3. In the present case, the filter element is of at least partially rigid design. The filter element is, for example, a molded, injection-molded, thermoformed and/or stamped part.

Figure 2 illustrates a portion capsule 1 according to the first embodiment, which is illustrated in figure 1, of the present invention, with the portion capsule 1 in figure 2 being arranged in a closed brewing chamber 8. The brewing chamber 8 consists of a first brewing chamber element 9 and a second brewing chamber element 10, with the first brewing chamber element 9 being provided for the purpose of inserting the portion capsule 1 such that it can move in relation to the second brewing chamber element 10, or vice versa. A seal 11 is arranged between the two brewing chamber elements 9, 10. The first brewing chamber element 9 substantially consists of a closing piston 12 with puncturing elements 13a, 13b for opening the cover film or foil 6 of the portion capsule 1, a preparation liquid supply means 14 and the seal 11. The second brewing chamber element 10 substantially consists of a brewing chamber bell 15 which partially surrounds the portion capsule 1 and has an opening mandrel 16 which is arranged on the base of the brewing chamber bell 15 and is provided with discharge grooves 17, and a beverage

discharge means 18. For the purpose of accommodating the portion capsule 1, the brewing chamber 8 is in an open state, not illustrated, in which the first and the second brewing chamber element 9, 10 are spaced apart from one another in order to ensure supply of the portion capsule 1, and in the illustrated closed state, in which a preparation process for producing a beverage using the portion capsule 1 can be carried out. In the closed state, the brewing chamber 8 is sealed off in a pressure-tight manner. When the brewing chamber 8 is moved from the open state to the depicted closed state, the puncturing elements 13a, 13b pierce the cover film or foil 6, so that preparation liquid, in particular hot brewing water, passes through the preparation liquid supply means 14 under pressure into the cavity 100 in the portion capsule 1. Furthermore, when the brewing chamber 8 is closed, the capsule base 3 is perforated by the outflow element, which is in the form of an opening mandrel 16, and/or an opening means, and therefore an output opening 107 is produced in the portion capsule 1, it being possible for the produced beverage liquid to leave the portion capsule 1 in the direction of the beverage discharge means 18 through said output opening. In order to assist delivery of the beverage liquid, the opening mandrel 16 is provided with the discharge grooves 17 on its casing surface. In the illustration, the opening mandrel 16 of the second brewing chamber element pierces the base 3 of the portion capsule 1, which is contained in the brewing chamber 9, 10, and the filter element 7, which is situated above the puncturing point, is slightly raised by the puncturing spike 19 of the opening mandrel 16 and said puncturing spike taps said filter element but said perforation means does not pierce said filter element. The capsule base 3 optionally has, at its central point 106 in which the capsule base 3 is perforated by the opening mandrel 16, a predetermined

breaking point 104, and therefore a comparatively blunt opening mandrel 16 is sufficient for perforating the capsule base 3.

Once the outflow element and/or an opening means penetrate/penetrates the portion capsule, the liquid, for example hot water when coffee is being produced, flows into the capsule 1. In the capsule, this liquid flows through the beverage base 101 and extracts and/or dissolves the substances, which are required to produce the beverage, from the beverage base 101. The flow of the liquid in the beverage base 101 is illustrated by reference symbol 22. The resulting beverage then flows through the filter element 7 which is arranged between the beverage base 101 and the on the capsule base 3, this preventing constituents of the beverage base 101 entering the resulting beverage in particulate form and further entering a collection vessel, for example a cup or pot, via the opening made in the capsule base 3 by the opening mandrel 16 and via the discharge grooves 17 in the opening mandrel 16.

Figures 3a and 3b illustrate schematic sectional views through a portion capsule 1 according to a second embodiment of the present invention, the second embodiment substantially resembling the first embodiment, which is illustrated in figures 1 and 2, with the filter element 7 once again being of rigid design. Figure 3a illustrates the portion capsule 1 in its starting position, while figure 3b illustrates said portion capsule in a state in which it is perforated by the perforation means 16 (the portion capsule 1 is located in a brewing chamber 8, not illustrated further, in figure 3b). When the perforation means 16 penetrates the portion capsule, the filter element 7 is tapped, in its central region 7'' in this case, but said perforation means does not pierce said filter element. At the same time, the

filter element can be moved relative to the capsule body 2 to a certain extent.

Figures 4a and 4b show schematic sectional views through a portion capsule 1 according to a third embodiment of the present invention, with the third embodiment being substantially identical to the second embodiment which is illustrated in figures 3a and 3b. In this case, the filter element 7 is once again of rigid design and is not only tapped by the perforation means 16, but said perforation means pierces said filter element.

Figures 5a and 5b illustrate schematic sectional views through a portion capsule 1 according to a fourth embodiment of the present invention, with the fourth embodiment being substantially identical to the third embodiment, which is illustrated in figures 4a and 4b. If the capsule base 3 is perforated by the perforation means 16 or the perforation means passes through an opening which is already present in the capsule base, the filter element 7 is lifted away from the capsule base 3 by the perforation means 16. The filter element is tapped but preferably not pierced in the process.

Figures 6a and 6b illustrate a view of a capsule base 3 of a portion capsule 1 according to a fifth embodiment of the present invention, said fifth embodiment substantially resembling the first embodiment, which is illustrated in figures 1 and 2, with the portion capsule 1 being illustrated from "the bottom" in figure 8. This view shows the optional predetermined breaking point 104 which comprises three lines 105 of weakness which are arranged in the form of a star and in the radial direction around the central point 106 on the capsule base 3. The capsule base 3 has a reduced material thickness and/or the capsule base 3 is pre-perforated

along the lines 105 of weakness in order to assist perforation in the brewing chamber 8. In order to retain the aroma of the beverage substance 101 for relatively long periods of time even in the case of a pre-perforated capsule base 3, the capsule base 3 is preferably sealed with a film or foil 108, which can be perforated or pulled off by hand, at least in the region of the predetermined breaking point 104. For this purpose, the film or foil 108 sticks, for example, to the outer side of the capsule base 3 and is provided with a pull-off tab 109 which does not stick to the capsule base 3 and at which the film or foil 108 can be pulled off by hand. An exemplary embodiment with lines 105 of weakness in the form of perforations in the capsule base 3 and also with a film or foil 108 is illustrated in figure 8b.

Figure 7 illustrates a sectional view of a portion capsule 1 according to a sixth embodiment of the present invention. The sixth embodiment substantially resembles the first embodiment, which is illustrated in figure 1, with the portion capsules 1 of the sixth embodiment being equipped with a permanent output opening 107 in the capsule base 3, said output opening being sealed by the film or foil 108 in the starting position. Therefore, the portion capsule 1 does not have predetermined breaking points. In this case, the film or foil 108 likewise has the pull-off tab 109 for pulling off the film or foil 108 by hand. The capsule base 3 is not perforated by means of an external perforation means 16. Instead, before the portion capsule 1 is inserted into the brewing chamber 8, the film or foil 108 is simply pulled off from the capsule base 3 by means of the pull-off tab 109 and the brewing process can then be started directly and without perforation of the capsule base 3.

Figure 8 illustrates a filter element 7 which is substantially flat and substantially rigid, that is to say is molded and/or injection-molded from a plastic material or stamped or thermoformed/deep-drawn from a film or foil, for example. This filter element has a filter region 7' which, in the present case, has a large number of recesses of which the cross section is selected such that said filter element allows the extraction liquid to pass through but retains the substrate particles. In its central region 7'', the filter element has a region which does not have any recesses, that is to say through which the extraction liquid does not flow. This region can be produced from a different material, in particular a different plastic material, to the rest of the filter element. As an alternative or in addition, the region can have a different, in particular lower, material thickness than the rest of the filter element. In particular, the central region 7'' has a greater degree of elasticity than the rest of the filter element.

List of reference symbols

1	Portion capsule
2	Capsule body
3	Capsule base
3a	Inner side of the capsule base
3'	Edge region of the capsule base
4	Filling side
5	Collar edge
6	Cover film or foil
7	Filter element
7'	Filter region of the filter element
7''	Central region of the filter element
8	Brewing chamber
9	First brewing chamber element
10	Second brewing chamber element
11	Seal
12	Closing piston
13a	Puncturing element
13b	Puncturing element
14	Preparation liquid supply means
15	Brewing bell
16	Outflow element, opening mandrel, perforation means
17	Outlet grooves
18	Discharge means
19	Puncturing spike
20	Recess
21	Protrusion
22	Preparation liquid flow
23	Brewing bell base
100	Cavity
101	Beverage base
102	Side wall region
104	Predetermined breaking point
105	Lines of weakness

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- 106 Central point
- 107 Output opening
- 108 Film or foil
- 109 Pull-off tab

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CLAIMS:

1. A portion capsule for producing a beverage, having a capsule body with a capsule base and a filling side, with a cavity for accommodating a pulverulent or liquid beverage base
5 being formed between the capsule base and the filling side, and with a filter element being arranged between the beverage base and the capsule base, and at least one outflow element and an opening means projecting through the capsule base into the
10 cavity when the beverage is being produced, wherein the filter element is rigid at least in sections and is provided on or in the region of the capsule base such that the at least one of the outflow element and the opening means at least one of tap/taps the filter element, pierce/pierces the filter element and move/moves the filter element relative to the capsule body.
- 15 2. The portion capsule as claimed in claim 1, wherein the filter element is a molded part or is an injection-molded part.
3. The portion capsule as claimed in claim 1 or 2, wherein the filter element is connected to the capsule base or
20 to a side wall region of the capsule body.
4. The portion capsule as claimed in claim 3, wherein the filter element is connected to the capsule base with a connection that is interlocking, force-fitting and/or cohesive.
- 25 5. The portion capsule as claimed in any one of claims 1, 2 or 4, wherein the filter element is attached to at least one of the capsule base in an edge region of the capsule base and a side wall region in an edge region of the filter element.

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6. The portion capsule as claimed in any one of claims 1 to 5, wherein the filter element is arranged in the cavity and rests on a side of the capsule base which faces the filling side.

5 7. The portion capsule as claimed in any one of claims 1 to 6, wherein the filter element completely covers the capsule base.

8. The portion capsule as claimed in any one of claims 1 to 6, wherein the filter element partially covers the capsule
10 base.

9. The portion capsule as claimed in any one of claims 1 to 7, wherein the capsule base has a predetermined breaking point which is intended to tear open as a result of mechanical contact with an external perforation means.

15 10. The portion capsule as claimed in any one of claims 1 to 9, wherein the capsule base has an output opening which is sealed off by a film or foil.

11. The portion capsule as claimed in claim 10, wherein the film or foil has a pull-off tab for pulling off the film or
20 foil by hand.

12. A method for producing a beverage using a portion capsule as claimed in any one of claims 1 to 11, wherein the portion capsule is provided with a rigid filter element in a first method step, in that at least one of an outflow element
25 and an opening means penetrate/penetrates the capsule base in a second method step, and in that the at least one of the outflow

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element and the opening means at least one of tap/taps the filter element, pierce/pierces the filter element and move/moves the filter element relative to the capsule body in a third method step.

5 13. The method as claimed in claim 12, wherein the at least one of the outflow element and the opening means make/makes contact with the filter element, in the third method step.

10 14. The method as claimed in claim 13 wherein the at least one of the outflow element and the opening means makes contact with the filter element in a central region.

15. The use of a portion capsule as claimed in any one of claims 1 to 11 for producing a beverage comprising at least one of coffee, cocoa, tea and milk beverage.

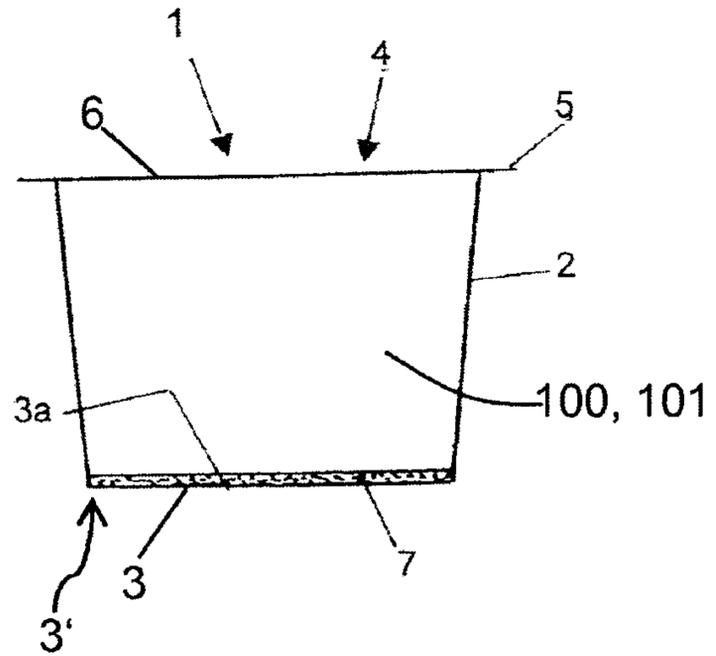


Fig. 1

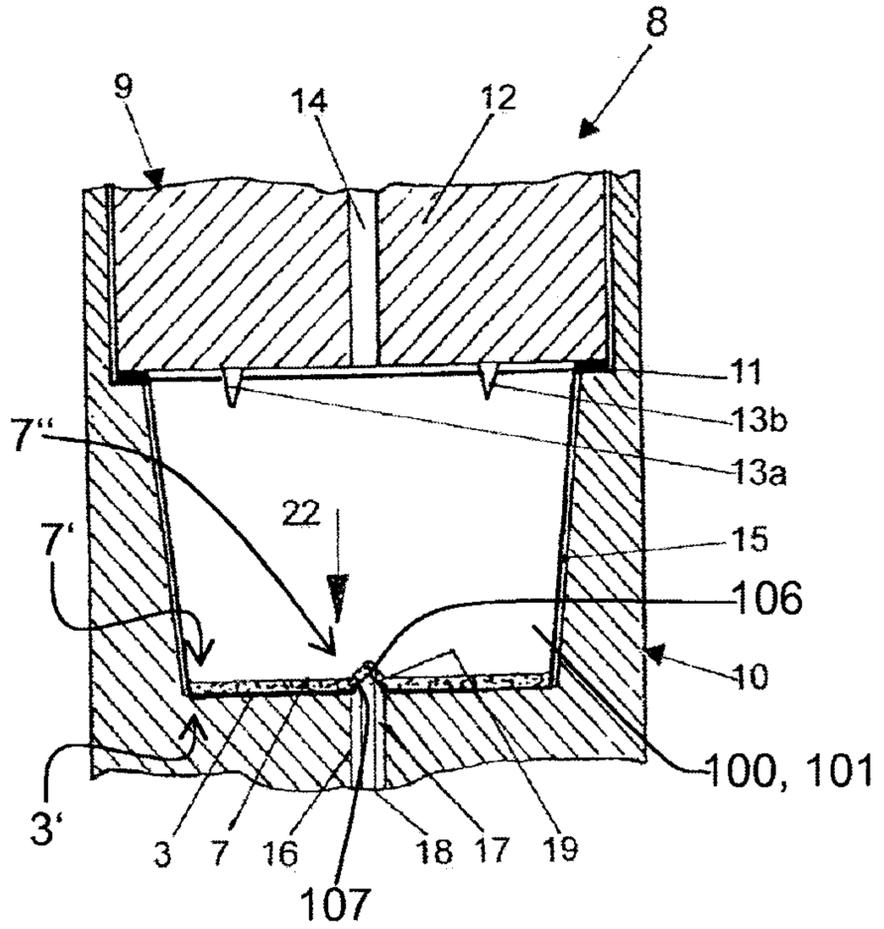


Fig. 2

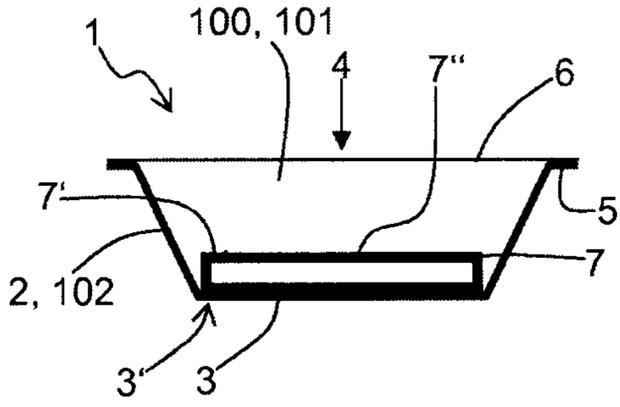


Fig. 3a

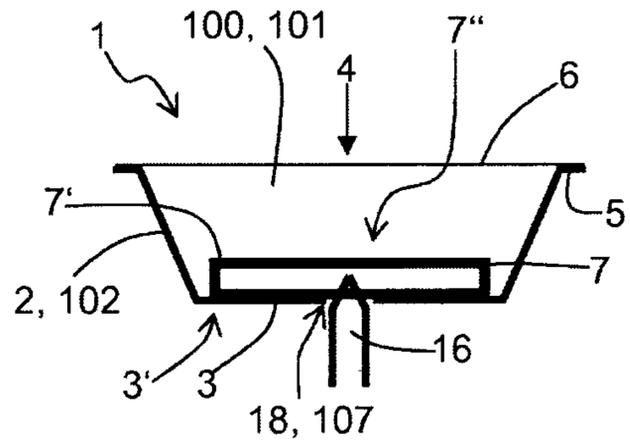


Fig. 3b

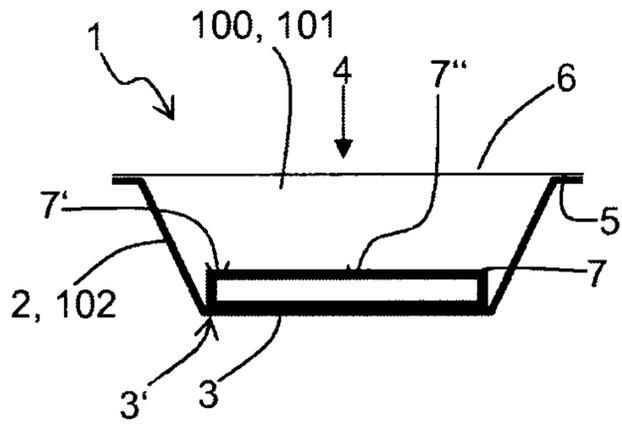


Fig. 4a

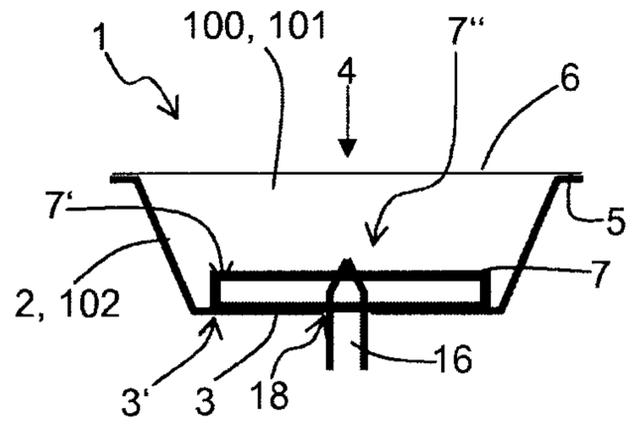


Fig. 4b

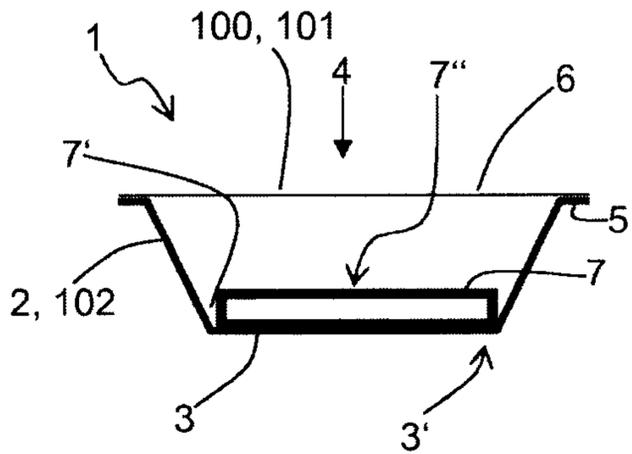


Fig. 5a

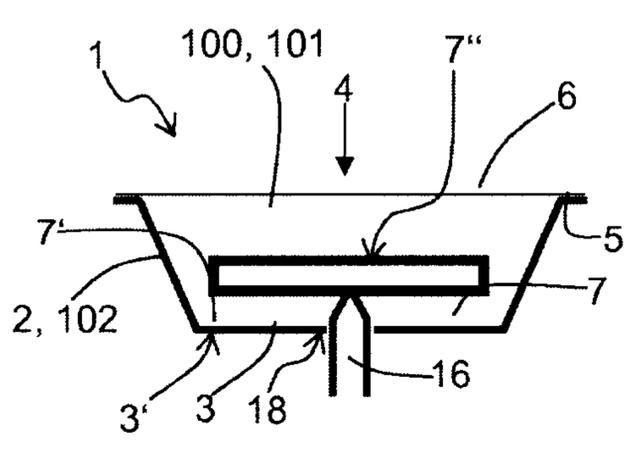


Fig. 5b

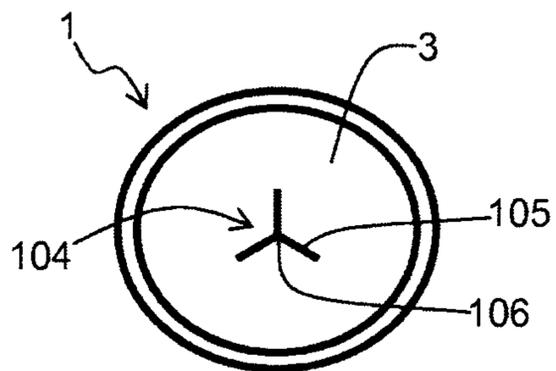


Fig. 6a

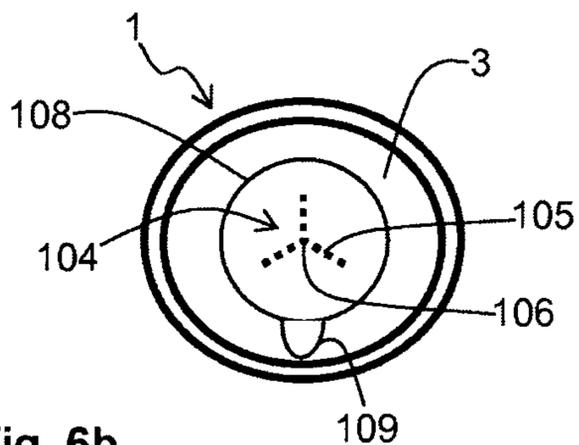


Fig. 6b

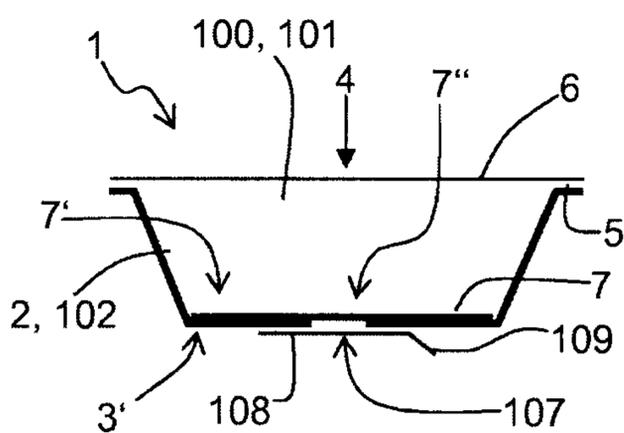


Fig. 7

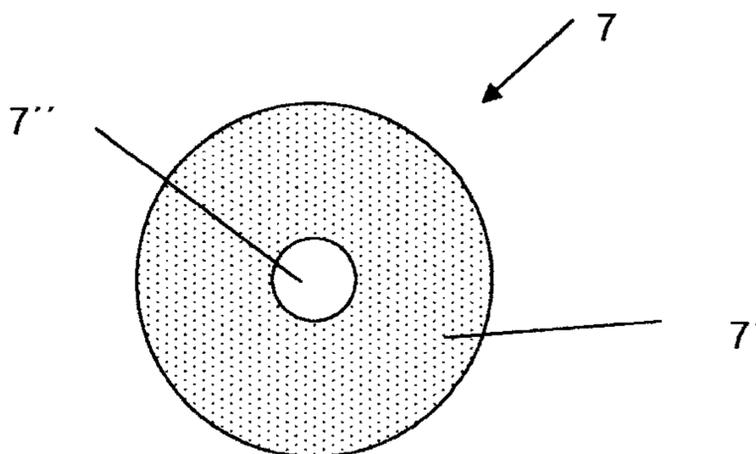


Fig. 8

