



(11) **EP 3 294 646 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
27.02.2019 Bulletin 2019/09

(21) Application number: **16734026.4**

(22) Date of filing: **09.05.2016**

(51) Int Cl.:
B65D 85/804 (2006.01)

(86) International application number:
PCT/IB2016/052638

(87) International publication number:
WO 2016/181287 (17.11.2016 Gazette 2016/46)

(54) **DISPOSABLE CAPSULE FOR MACHINES FOR PREPARING INFUSED BEVERAGES**
EINWEGKAPSEL FÜR MASCHINEN ZUR HERSTELLUNG VON BRÜHGETRÄNKEN
CAPSULE JETABLE POUR MACHINES DE PRÉPARATION DE BOISSONS INFUSÉES

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

(30) Priority: **11.05.2015 IT MI20150654**

(43) Date of publication of application:
21.03.2018 Bulletin 2018/12

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EP 3 294 646 B1

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Description

Field of the invention

[0001] The present invention generally relates to the preparation of infused beverages, such as coffee, tea, herbal teas and the like, starting from disposable capsules, and in particular to a disposable, single-dose or multi-dose capsule for machines for preparing infused beverages.

Background

[0002] The disposable capsules used in machines for the dispensing of infused beverages contain a granular or particulate product such as e.g. coffee. It is known that a beverage is obtained through an "infusion" process that consists in making an infusion liquid to cross the capsule with the granular product. The infusion liquid, typically water, is supplied under pressure and at high temperature. The infusion liquid that exits the capsule enriched by the aroma of the granular product is the desired beverage, which is suitably channeled within a dispensing machine and served from a dispensing head e.g. into a cup.

[0003] Known disposable capsules comprise a cup-shaped, hollow body whose open top is provided with a flange on which a lid generally formed by a gas-impermeable film is applied. This film seals the cavity of the cup-shaped body so as to allow to preserve the granular or particulate product contained therein over time.

[0004] During the infusion process the capsule is fitted into an infusion chamber and subsequently perforated with special perforators both at the bottom of the cup-shaped body and at the top sealed by the gas-impermeable film. The holes thus obtained allow a flow of liquid to pass through the capsule from one of its ends to the opposite end. Depending on the type of dispensing machine, the liquid may proceed from the bottom of the cup-shaped body towards the top or in the opposite direction.

[0005] A typical technical problem of known capsules is to maximize infusion of the beverage, which particularly depends on the uniformity of the flow of infusion liquid through the cup-shaped body. The way a beverage is infused also has an influence on its aroma, and thus on the reproducibility of its organoleptic qualities.

[0006] This problem is particularly felt when dealing with capsules which are opened under the effect of the pressure of the infusion liquid, wherein it is not possible to ensure the formation of uniform apertures at the desired positions. Apertures of a large size may in fact cause flow of the granular product together with a beverage, whereas apertures of a small size may impede the flow of the infusion liquid thus penalizing the beverage infusion process.

[0007] A solution to these technical problems is provided by the European patent EP 1344722 B2, which describes a disposable capsule comprising distribution

elements for the infusion liquid and/or collection elements for the infused beverage, these elements being provided with a plurality of axial holes and a plurality of protruding members, and being arranged at one or both ends of the capsule in the axial direction. The distribution and collection elements are respectively arranged between the film sealing the top of the capsule and the measured dose of granular product contained therein, as well as between the latter and the bottom of the cup-shaped body.

[0008] The distribution and collection elements for the infusion liquid prevent loss of coffee powder independently of the number and size of the holes formed on the top and on the bottom of the capsule by the machine that receives it. The distribution and collection elements also allow to channel both the infusion liquid and the infused beverage thanks to the presence of protruding members that define channel-like paths.

[0009] The distribution elements for the infusion liquid and the collection elements for the infused beverage allow to maximize infusion of a beverage and to solve the problems related to the size of the inlet and outlet apertures formed in a capsule for the infusion liquid. However, they are additional components that affect the total cost of a capsule from the point of view of manufacturing and assembly.

[0010] Moreover, in order to accommodate the distribution and collection elements the body of a disposable capsule must have suitable seats. This makes the design of a capsule body complex and has an impact on its manufacturing equipment, as well as on the assembly and packaging equipment of the finished capsules.

[0011] US 2013/0105340 A1 discloses a capsule for soluble beverage products provided internally with a movable insert which has a cup-shaped top portion. A plurality of radially extending through-openings are formed in a lateral wall of the cup-shaped top portion. The insert comprises a rod-shaped portion which extends axially from the cup-shaped portion and abuts a base of the capsule body where a frangible portion is formed. During use, the movable insert is pushed downwards and the rod-shaped portion pierces the frangible portion of the base of the capsule body, thus allowing to dispense an infused beverage therefrom.

[0012] US 2014/0053735 A1 discloses a filter capsule for infusing beverage products, wherein a capsule body comprises a hollow column molded in one piece thereof and extending from a base of the capsule body to a top cover sealing it. The hollow column has radial apertures at the end facing the top cover. The base of the capsule body from which the hollow column extends is disk-shaped and comprises a plurality of discharge openings formed in an axial direction, as well as ribs facing a sealing film fixed underneath the base outside the capsule body. The ribs allow to break the sealing film upon relative motion of the hollow column inside the capsule body.

[0013] US 2004/0115317 A1 discloses a disposable capsule according to the preamble of the independent claim 1.

Summary of the invention

[0014] The technical problem underlying and solved by the present invention is to provide a disposable capsule for dispensing machines of infused beverages that allows to overcome the drawbacks mentioned above with reference to prior art.

[0015] This problem is solved by a disposable capsule according to claim 1. Preferred features of the present invention are object of the dependent claims.

[0016] The capsule according to the invention is provided with an insert stretching out axially from its open top to its base or bottom. At the top end of the capsule the insert comprises a cup-shaped portion having a plurality of radial openings.

[0017] At the opposite end, i.e. at the base or bottom of the capsule, the insert comprises a disk-shaped portion whose peripheral edge rests on the bottom of the capsule. In the disk-shaped portion a plurality of through openings are formed in the axial direction. The disk-shaped portion is configured so as to define with the bottom of the capsule a cavity that serves as a collector for an infused beverage.

[0018] The cup-shaped portion and the disk-shaped portion are interconnected by a rod-shaped portion and forming a single body therewith.

[0019] During the infusion of the beverage, the infusion liquid is received in the cup-shaped portion, it flows out through its radial openings, thus homogeneously and uniformly reaching the granular product contained in the capsule that surrounds the rod-shaped portion of the insert.

[0020] The main advantage offered by the invention is to allow the manufacturing of a single component that serves both as a distributor element for the infusion liquid and as a collector element for the infused beverage. Such distributor-collector element may be fitted into the hollow body of a disposable capsule simply and quickly, because it only abuts the bottom of the capsule.

[0021] Compared to single-use capsules comprising a separate distribution element for the infusion liquid and collection element for the infused beverage, the provision of a single multipurpose insert also provides the advantage of simplifying the manufacturing and assembly equipment of the components of the capsule as a whole.

[0022] Consequently, the manufacturing and assembly times, as well as the overall costs of the capsule assembly are reduced.

[0023] According to an embodiment of the invention, the cup-shaped portion of the insert comprises a flange which, in an assembled configuration of the capsule, is aligned with the top of the capsule body. The flange is tightly fixed to a lid of the disposable capsule, so that the cup-shaped portion defines with the lid a chamber adapted to receive an infusion liquid through a perforator-injector member of a machine for dispensing infused beverages.

[0024] According to a variant of the invention, the

flange of the cup-shaped portion of the insert is radially extended up to the peripheral wall of the capsule body, where it sealingly engages a circumferential groove formed therein. In this case a direct connection between the flange portion of the cup-shaped portion and the lid is not necessary, because the chamber intended to receive the infusion liquid is defined by the cup-shaped portion, the flange of the insert, the portion of the peripheral wall of the capsule body arranged between the flange and the lid and by the lid itself.

[0025] Both variants of the invention allow to collect the infusion liquid supplied by an injector member of a machine for the preparation of infused beverages in order to optimize distribution of the infusion liquid towards the granular product contained in a capsule.

[0026] According to an embodiment of the invention, the edges of the radial openings formed in the cup-shaped portion of the insert may advantageously be tapered, thus allowing to create directional effects of the respective streams of infusion liquid towards the granular product.

[0027] Further advantages, features and implementation modes of the present invention will become clear from the following detailed description of embodiments thereof, which are disclosed as non-limiting examples.

Brief description of the drawings

[0028] Reference will be made to the figures of the attached drawings, wherein:

- figure 1 shows a longitudinal, sectional view of a capsule according to the invention;
- figure 1a shows a detail of figure 1;
- figure 2 is a perspective view showing an insert of the capsule of figure 1;
- figure 3 is a longitudinal, sectional view of a capsule according to an alternative embodiment of the invention;
- figure 4 is an exploded view showing the components of the capsule of figure 3;
- figures 5 and 6 are exploded, perspective views showing and insert of the capsule of figure 3 as a whole and partially cut away, respectively;
- figures 7 and 8 are perspective views showing a collector portion of the capsule of figure 3 as a whole and partially cut away, respectively.

Detailed description of preferred embodiments

[0029] Referring to figures 1 and 2, a disposable capsule according to the invention is generally indicated by reference numeral 100.

[0030] The capsule 100 comprises a hollow, cup-shaped body 110 adapted to receive a measured dose of a product in granular or particulate form (not shown), for example coffee.

[0031] The hollow body 110 includes a base or bottom

111, a peripheral wall 112 and an open top 113 along the peripheral edge of which a flange 114 is formed. The top 113 of the capsule is closed by a lid 120 sealed on the flange 114 of the hollow body 110, for example by a film made of a poly laminate material, which serves to seal the cavity of the body 110 so as to allow to store over time the granular or particulate product contained therein over time.

[0032] According to the invention, the capsule 100 further comprises an insert 200 housed in the cavity of the body 110.

[0033] The insert 200 stretches out axially from the base 111 to the top 113 of the body 110.

[0034] With particular reference to figure 2, the insert 200 comprises a cup-shaped portion 210 arranged close to or at the top 113, a disc-shaped portion 220 positioned close to or at the base 111 of the body 110 and a rod-shaped portion 230 connecting the cup-shaped portion 210 to the disk-shaped portion 220.

[0035] As shown in figures 1a and 2, the cup-shaped portion 210 comprises a plurality of radial through openings 211 formed in its peripheral wall and a flange 212 connected to its top edge. The disk-shaped portion 220 includes a plurality of through openings 221 formed in the axial direction.

[0036] The diameter of the rod-shaped portion 230 may advantageously be differentiated according to the type of the capsule wherein the insert 200 is intended to be fitted, as well as to the type and the expected amount of granular product.

[0037] In the embodiment of the invention shown in figures 1 and 2, the insert 200 is configured such that the flange 212 of the cup-shaped portion 210 is aligned with the top 113 of the body 110 of the capsule 100. Furthermore, in an assembled configuration of the capsule 100, the flange 212 is sealed to the lid 120, so that the cup-shaped portion 210 defines with the latter a chamber 213 adapted to receive an infusion liquid through a perforator-injector member of a machine for dispensing infused beverages (not shown).

[0038] Still with reference to figures 1, 1a and 2, the disk-shaped portion 220 may e.g. have a frusto-conical shape adapted to define with the substantially flat base 111 of the body 110 of the capsule 100 a cavity 222 suitable to collect an infused beverage.

[0039] Alternatively, the disk-shaped portion may be flat and define the cavity 222 by way of spacers, for example ribs, formed on the basis 111 of the body 110 of the capsule 100.

[0040] During an infusion step of a beverage, the infusion liquid fills the chamber 213 and flows therefrom through the radial through openings 211 of the cup-shaped portion 210, thus reaching the granular product contained in the capsule 100, which is arranged about the rod-shaped portion 230 of the insert 200. The infusion liquid wets the granular product in a homogeneous and uniform way so as to allow the infusion of the beverage.

[0041] The through openings 211 may advantageously

comprise one or more tapered portions of the respective peripheral edges, which allows to generate directional effects of the respective streams of infusion liquid towards the granular product contained in the body 110 of the capsule 100.

[0042] As shown for example in the detailed view of figure 1a, each through opening 211 has the shape of a rectangle whose base side is tapered and has a surface inclined from the bottom of the cup-shaped portion 210 toward the top 113 of the body 110 of the capsule 100. This configuration allows to direct the streams of infusion liquid flowing from the chamber 213 towards the top 113 of the body 110 of the capsule 100 so as to obtain an "rain-like" infusion effect of the granular product.

[0043] It will be appreciated that depending on the type of granular product and the recipe of preparation of an infused beverage, different configurations of the tapered portions of the through apertures 211 may be conceived, e.g. in order to generate turbulence within the body of the capsule and to obtain a mixing effect between the granular product and the infusion liquid, or in order to accelerate the flow of infusion liquid and generate a deeper penetration effect into the granular product.

[0044] The infused beverage extracted from the granular product is collected onto the bottom of the body 110 of the capsule 100 in the cavity 222 defined between its base 111 and the disk-shaped portion 220 of the insert 200, and flows out from the base 111 through one or more openings e.g. formed by way of perforating elements upon introduction of the capsule into the infusion assembly of a machine for the preparation of infused beverages (not shown), or being integrally formed in the capsule body and suitably sealed by removable or pierceable barrier films.

[0045] On the surface of the disk-shaped portion 220 intended to face the base 111 of the body 110 of the capsule 100 a filter element may advantageously be fixed (not shown), the filter element being adapted to prevent loss of granular product particles from the through openings 221. These particles might in fact come out from the capsule together with the infused beverage, thus penalizing its quality.

[0046] Now referring to figures 3 to 6, according to a variant of the invention the cup-shaped portion 210 of the distributor-collector insert 200 is radially extended up to the peripheral wall 112 of the body 110 of the capsule 100, where its flange 212 sealingly engages a circumferential groove 115 formed therein.

[0047] In this case the chamber 213 intended to receive the infusion fluid is defined by the cup-shaped portion 210 and the flange 212 of the insert 200 together with the portion of the peripheral wall 112 of the body 110 of the capsule 100 comprised between the flange 212 and the lid 120.

[0048] As in the embodiment shown in figures 1 and 2, also in this embodiment of the invention the radial openings 211 of the cup-shaped portion may advantageously comprise one or more tapered portions of the

respective peripheral edges, which allow to create directional effects of the respective flows of infusion liquid towards the granular product contained in the body 110 of the capsule 100.

[0049] Similarly to the embodiment shown in figures 1 and 2, the disk-shaped portion 220 has a frusto-conical shape which rests on the periphery of the base 111, also having a frusto-conical shape, of the body 110 of the capsule 100, thus defining the cavity 222.

[0050] A barrier film 300, such as a multilayer comprising a layer of aluminum, may be arranged at the periphery of the base 111 so as to seal the inner cavity of the body 110 of the capsule 100 in order to preserve the granular product contained therein over time.

[0051] In order to allow delivery of an infused beverage from the capsule base it is therefore necessary to pierce the barrier film 300 and for this purpose the disk-shaped portion 220 comprises one or more sharpened members 223, e.g. having a pyramid shape, which protrude from its surface facing the base 111 of the body 110 of the capsule 100. The sharpened members 223 preferably stretch out up to the barrier film 300.

[0052] As shown in figures 3, 4 and 5, the rod-shaped element 230 of the insert 200 may be disassembled in an axial direction and comprises a first portion 231 associated with the cup-shaped portion 210 and a second portion 232 associated with the disk-shaped portion 220, the first and second portions being telescopically fitted into one another and having respective cylindrical matching shapes. The first and the second portions 231, 232 of the rod-shaped element 230 may be respectively connected to the cup-shaped portion 210 and the disk-shaped portion 220, or, more advantageously, integrally formed therewith as in the illustrated embodiment.

[0053] This structure of the insert 200 allows to simplify filling of the capsule cavity with the granular product. In an assembled configuration of the capsule 100, in fact, the top opening 113 is closed by the cup-shaped portion 210.

[0054] The structure of the insert 200 also allows to use the infusion liquid as a thrust means to press the sharpened members 223 against the film 300 during an infusion step and to form therein a plurality of passages for the delivery of an infused beverage, as it will be described in detail hereinafter.

[0055] Still with reference to figures 3 to 5, the first portion 231 includes a through opening 231a formed on the bottom, while the second portion 232 is provided with a base 232a formed by a wall arranged at an intermediate height between its free end and the disc-shaped portion 220.

[0056] In the illustrated embodiment, for example, the first portion 231 is telescopically fitted in the second portion 232. As shown, in an assembled configuration the first portion 231 abuts a shoulder 232b that is axially spaced from the base 232a of the second portion 232, which serves as a stop member for the first portion 231.

[0057] It will be appreciated that the second portion

232 may alternatively be telescopically fitted into the first portion 231 and that in this case, in an assembled configuration, the second portion 232 may abut a shoulder formed by one or more radial projections formed in the first portion 231. However the latter configuration is less preferred than the first configuration disclosed above, because it has a higher structural complexity.

[0058] During an infusion step the infusion liquid supplied under pressure into the capsule 100 is received into the cup-shaped portion 210 of the insert 200, then flows through the first portion 231 and reaches the base 232a of the second portion 232 thus exerting a pressure thereon. Urged by the pressure of the infusion liquid, the second portion 232 of the rod-shaped element 230 is thus telescopically displaced relative to the first portion 231 and moved axially towards the capsule base, whereby the disk-shaped portion 220 pressed by the second portion 232 is deformed toward the base 111 of the body 110 of the capsule 100, thus piercing the barrier film 300 by way of its sharpened members 223. The deformation of the disk-shaped portion 220 occurs in the elastic field thanks to its frusto-conical shape.

[0059] The infusion liquid simultaneously flows out from the cup-shaped portion 210 through the radial openings 211 formed therein, thus obtaining a beverage from the granular product; the beverage is collected in the cavity 222 and flows out from the capsule 100 through the openings formed in the barrier film 300.

[0060] It will be appreciated that the provision of a rod-shaped portion 230 that may be disassembled in the axial direction and that is configured as disclosed above is not a peculiarity of the embodiment shown in figures from 3 to 6. This feature in fact may also be combined with the embodiment shown in figures 1 and 2, wherein the cup-shaped portion 210 of the insert 200 is sealed to the lid 120 of the capsule 100.

[0061] In the space between barrier film 300 and the bottom of the capsule 100 a collector element 400 is preferably arranged.

[0062] With particular reference to figures 7 and 8, the collector element 400 has a flat e.g. disk-shaped shape and comprises a plurality of protruding members 410 that face the barrier film 300 and serve as contrast elements for the sharpened members 223 of the disk-shaped portion 220 to limit its movement in the axial direction. The protruding members 410 also define at the same time with the barrier film 300 a plurality of collecting channels for the infused beverage.

[0063] The collector element 400 further comprises a plurality of through openings 411 formed in the axial direction for the drainage of the infused beverage flowing out from the capsule, and also an appendix 412 having a tubular hollow shape, which extends towards the base 111 of the cup-shaped body 110 and engages an outlet opening 116 which may be optionally sealed by a pierceable film or by a removable lid (not shown). The through openings 411 and the appendix 412 allow to channel and guide the infused beverage out from the capsule 100.

[0064] According to a further embodiment of the invention, the collector element 400 may be integrally formed in the base 111 of the body 110 of the capsule 100, for example by way of an injection molding process.

[0065] The present invention has hereto been disclosed with reference to preferred embodiments thereof. It will be appreciated that there may be other embodiments relating to the same inventive idea, as defined by the scope of protection of the claims set out below.

Claims

1. A disposable capsule (100) for machines for preparing infused beverages, said capsule (100) comprising:

- i) a cup-shaped hollow body (110) adapted to receive a measured dose of a granulate or particulate product;
- ii) a lid (120) sealed on a flange (114) of said body (110);
- iii) a distributor-collector insert (200),

wherein said insert (200) stretches out axially from a base (111) to a top (113) of said body (110) and comprises a portion (210) arranged close to said top (113), a disk-shaped portion (220) arranged close to said base (111) and a rod-shaped portion (230) which connects said portion (210) close to the top (113) to said disk-shaped portion (220) close to the base (111),

and wherein the portion (210) close to the top (113) comprises a plurality of through openings (211) formed in a radial direction and the disk-shaped portion (220) close to the base (111) comprises a plurality of through openings (221) formed in the axial direction,

characterized in that

the portion (210) close to the top (113) is a cup-shaped portion and **in that** the disk-shaped portion (220) is arranged at the base (111).

2. A capsule (100) according to claim 1, wherein the cup-shaped portion (210) of the insert (200) further comprises a flange (212) arranged on a top edge thereof, said flange (212) being fixed to said lid (120) and defining with the lid a chamber (213) intended to receive an infusion liquid.

3. A capsule (100) according to claim 1, wherein the cup-shaped portion (210) of the insert (200) further comprises a flange (212) on a top edge thereof, said flange (212) being radially extended up to a peripheral wall (112) of the body (110) of the capsule (100) and sealingly engaging a groove (115) circumferentially formed therein, the cup-shaped portion (210),

the flange (212) and the portion of the peripheral wall (112) arranged between the flange (212) and the lid (120) of the capsule (100) defining with the lid (120) a chamber (213) intended to receive an infusion liquid.

4. A capsule (100) according to any one of claims 1 to 3, wherein the disk-shaped portion (220) of the insert has a frusto-conical shape.

5. A capsule (100) according to any one of claims 1 to 3, wherein the disk-shaped portion (220) of the insert has a flat shape.

6. A capsule (100) according to any one of claims 1 to 5, wherein said insert (200) further comprises a filter element, said filter element being arranged on the surface of the disk-shaped portion (220) facing the base (111) of the body (110) of the capsule (100).

7. A capsule (100) according to any one of claims 1 to 6, wherein the rod-shaped portion (230) of the insert (200) is made up of a first portion (231) associated with the cup-shaped portion (210) and of a second portion (232) associated with the disk-shaped portion (220), said first and second portions (231, 232) being configured to be assembled with each other and being telescopically fitted into one another in an operating configuration of the capsule and having respective cylindrical matching shapes.

8. A capsule (100) according to claim 7, wherein the first portion (231) of the rod-shaped portion (230) comprises a through opening (231a) formed on its bottom, and wherein the second portion of the rod-shaped portion (232) is provided with a base (232a) formed by a wall arranged between its free end and the disk-shaped portion (220), the overall configuration of the rod-shaped element being such that, in use, the first portion (231) abuts the base (232a) of the second portion (232), which thus serves as a stop member for the first portion (231).

9. A capsule (100) according to claim 8, wherein the base (111) of said body (110) has a frusto-conical shape and wherein a barrier film (300) is fixed along the periphery of the base (111), the disk-shaped portion (220) of the insert (200) comprising a plurality of sharpened elements (223) that protrude from the surface facing the base (111) of the body (110).

10. A capsule (100) according to claim 9, further comprising a collector element (400) housed in said frusto-conical base (111), said collector element (400) comprising a plurality of protruding members (410) configured to contact the barrier film (300), a plurality of through openings (411) formed in the axial direction and an appendix (412) having a hollow tubular

shape, said appendix (412) protruding axially towards the frusto-conical base (111) and engaging an outlet opening (116) formed therein.

Patentansprüche

1. Eine Einwegkapsel (100) für Maschinen zur Zubereitung von Aufgussgetränken, wobei die besagte Kapsel (100) umfasst:

- i) einen becherförmigen, Hohlen Körper (110), der dazu ausgelegt ist, eine abgemessene Dosis eines Granulats oder eines partikelförmigen Produktes aufzunehmen;
- ii) einen Deckel (120), der an einem Flansch (114) des besagten Körpers (110) abgedichtet ist;
- iii) einen Verteil- und Sammel-Einsatz (200),

wobei sich der Einsatz (200) axial von einer Grundfläche (111) bis zu einer Oberseite (113) des besagten Körpers (110) ausstreckt und einen Teil (210) nahe der besagten Oberseite umfasst, einen scheibenförmigen Teil (220), der nahe der besagten Grundfläche (111) angeordnet ist, und einen stabförmigen Teil (230), welcher den Teil (210) nahe der Oberseite (113) mit dem scheibenförmigen Teil (220) nahe der Grundfläche (111) verbindet, und wobei der Teil (210) nahe der Oberseite (113) eine Mehrzahl von Durchgangslöchern (211) umfasst, die in einer radialen Richtung geformt sind, und wobei der scheibenförmige Teil (220) nahe der Basis (111) eine Mehrzahl von Durchgangslöchern (221) umfasst, die in der axialen Richtung geformt sind,

dadurch gekennzeichnet, dass

der Teil (210) nahe der Oberseite (113) ein becherförmiger Teil ist und dadurch, dass der scheibenförmige Teil (220) an der Grundfläche (111) angeordnet ist.

2. Eine Kapsel (100) gemäß Anspruch 1, wobei der becherförmige Teil (210) des Einsatzes (200) zusätzlich einen Flansch (212) umfasst, der an einer oberen Kante davon angeordnet ist, wobei der besagte Flansch (212) an dem besagten Deckel (120) befestigt ist und zusammen mit dem Deckel eine Kammer (213) zur Aufnahme der Aufgussflüssigkeit bildet.

3. Eine Kapsel (100) gemäß Anspruch 1, wobei der becherförmige Teil (210) des Einsatzes (200) an seiner Oberkante zusätzlich einen Flansch (212) aufweist, wobei sich der besagte Flansch (212) radial bis zu einer äußeren Umfangswand (112) des Körpers (110) der Kapsel (100) erstreckt und abdichtend in eine Nut (115) eingreift, die darin umlaufend eingeformt ist, wobei der becherförmige Teil (210), der

Flansch (212) und derjenige Teil der Umfangswand (112), der sich zwischen dem Flansch (212) und dem Deckel (120) der Kapsel (100) befindet, zusammen mit dem Deckel (120) eine Kammer (213) zur Aufnahme der Aufgussflüssigkeit bildet.

4. Eine Kapsel (100) gemäß einem der Ansprüche 1 bis 3, wobei der scheibenförmige Teil (220) des Einsatzes eine kegelstumpfförmige Gestalt aufweist.

5. Eine Kapsel (100) gemäß einem der Ansprüche 1 bis 3, wobei der scheibenförmige Teil (220) des Einsatzes eine flache Gestalt aufweist.

6. Eine Kapsel (100) gemäß einem der Ansprüche 1 bis 5, wobei der besagte Einsatz (200) ferner ein Filterelement aufweist, wobei das besagte Filterelement an derjenigen Oberfläche des scheibenförmigen Teils (220) angeordnet ist, welche der Grundfläche des Körpers (110) der Kapsel (100) zugewandt ist.

7. Eine Kapsel (100) gemäß einem der Ansprüche 1 bis 6, wobei der stabförmige Teil (230) des Einsatzes (200) aus einem ersten Teil (231) hergestellt ist, der dem becherförmigen Teil (210) zugeordnet ist, und aus einem zweiten Teil (232), welcher dem scheibenförmigen Teil (220) zugeordnet ist, wobei die besagten ersten und zweiten Teile (231, 232) so ausgelegt sind, dass sie zusammengebaut werden und in einer Betriebskonfiguration der Kapsel teleskopisch ineinander eingepasst sind und entsprechende zylindrische, zueinander passende Formen aufweisen.

8. Eine Kapsel (100) gemäß Anspruch 7, wobei der erste Teil (231) des stabförmigen Teils (230) ein Durchgangsloch (231a) an seiner Unterseite aufweist, und wobei der zweite Teil (232) des stabförmigen Teils mit einer Basis (232a) versehen ist, die von einer Wand gebildet wird, die sich zwischen seinem freien Ende und dem scheibenförmigen Teil (220) befindet, wobei die Gesamtanordnung des stabförmigen Elements so ist, dass beim Gebrauch der erste Teil (231) an der Basis (232a) des zweiten Teils (232) anliegt, welche auf diese Weise als Anschlagenelement für den erste Teil (231) dient.

9. Eine Kapsel (100) gemäß Anspruch 8, wobei die Basis (111) des besagten Körpers (110) eine kegelstumpfförmige Gestalt aufweist, und wobei eine Barrierefolie (300) entlang des Umfangs der Basis (111) befestigt ist, wobei der scheibenförmige Teil (220) des Einsatzes (200) eine Mehrzahl von geschärften Elementen (223) aufweist, welche von der Oberfläche, die der Basis (111) des Körpers (110) zugewandt ist, hervorstehen.

10. Une capsule (100) gemäß Anspruch 9, ferner umfassend ein Sammelement (400), das sich in der kegelmuffförmigen Basis (111) befindet, wobei das besagte Sammelement (400) eine Mehrzahl von hervorstehenden Elementen (410) umfasst, die dazu ausgelegt sind, in Kontakt mit der Barrierefolie (300) zu treten, mehrere Durchgangslöcher (411), die in der axialen Richtung geformt sind, sowie einen Fortsatz (412), der eine hohle, röhrenförmige Gestalt aufweist, wobei der besagte Fortsatz (412) axial in Richtung zu der kegelmuffförmigen Basis (111) und zu einer darin ausgeformten Auslassöffnung (116) hervorsteht.

Revendications

1. Capsule jetable (100) pour machines de préparation de boissons infusées, ladite capsule (100) comprenant :

- i) un corps creux en forme de coupelle (110) adapté pour recevoir une dose mesurée d'un produit granulaire ou particulaire;
- ii) un couvercle (120) scellé sur une bride (114) dudit corps (110) ;
- iii) un insert de distributeur - collecteur (200),

dans laquelle ledit insert (200) s'étire axialement d'une base (111) à un sommet (113) dudit corps (110) et comprend une partie (210) agencée à proximité dudit sommet (113), une partie en forme de disque (220) agencée à proximité de ladite base (111) et une partie en forme de tige (230) qui raccorde ladite partie (210) à proximité du sommet (113) à ladite partie en forme de disque (220) à proximité de la base (111), et dans laquelle la partie (210) à proximité du sommet (113) comprend une pluralité d'ouvertures débouchantes (211) formées dans une direction radiale et la partie en forme de disque (220) à proximité de la base (111) comprend une pluralité d'ouvertures débouchantes (221) formées dans la direction axiale,

caractérisée en ce que :

la partie (210) à proximité du sommet (113) est une partie en forme de coupelle,
et en ce que :
 la partie en forme de disque (220) est agencée au niveau de la base (111).

2. Capsule (100) selon la revendication 1, dans laquelle la partie en forme de coupelle (210) de l'insert (200) comprend en outre une bride (212) agencée sur son bord supérieur, ladite bride (212) étant fixée audit couvercle (120) et définissant avec le couvercle, une chambre (213) prévue pour recevoir un liquide d'in-

fusion.

3. Capsule (100) selon la revendication 1, dans laquelle la partie en forme de coupelle (210) de l'insert (200) comprend en outre une bride (212) sur son bord supérieur, ladite bride (212) étant radialement étendue jusqu'à une paroi périphérique (112) du corps (110) de la capsule (100) et mettant en prise, de manière étanche, une rainure (115) formée de manière circumférentielle à l'intérieur de cette dernière, la partie en forme de coupelle (210), la bride (212) et la partie de la paroi périphérique (112) étant agencées entre la bride (212) et le couvercle (120) de la capsule (100) définissant avec le couvercle (120), une chambre (213) prévue pour recevoir un liquide d'infusion.
4. Capsule (100) selon l'une quelconque des revendications 1 à 3, dans laquelle la partie en forme de disque (220) de l'insert a une forme tronconique.
5. Capsule (100) selon l'une quelconque des revendications 1 à 3, dans laquelle la partie en forme de disque (220) de l'insert a une forme plate.
6. Capsule (100) selon l'une quelconque des revendications 1 à 5, dans laquelle ledit insert (200) comprend en outre un élément de filtre, ledit élément de filtre étant agencé sur la surface de la partie en forme de disque (220) faisant face à la base (111) du corps (110) de la capsule (100).
7. Capsule (100) selon l'une quelconque des revendications 1 à 6, dans laquelle la partie en forme de tige (230) de l'insert (200) est composée d'une première partie (231) associée avec la partie en forme de coupelle (210) et d'une seconde partie (232) associée avec la partie en forme de disque (220), lesdites première et seconde parties (231, 232) étant configurées pour être assemblées entre elles et étant montées, de manière télescopique, l'une dans l'autre dans une configuration de fonctionnement de la capsule et ayant des formes cylindriques respectives correspondantes.
8. Capsule (100) selon la revendication 7, dans laquelle la première partie (231) de la partie en forme de tige (230) comprend une ouverture débouchante (231a) formée sur son fond, et dans laquelle la seconde partie de la partie en forme de tige (232) est prévue avec une base (232a) formée par une paroi agencée entre son extrémité libre et la partie en forme de disque (220), la configuration globale de l'élément en forme de tige étant telle que, à l'usage, la première partie (231) vient en butée contre la base (232a) de la seconde partie (232), qui sert ainsi d'élément de butée pour la première partie (231).
9. Capsule (100) selon la revendication 8, dans laquelle

la base (111) dudit corps (110) a une forme tronconique et dans laquelle un film de barrière (300) est fixé le long de la périphérie de la base (111), la partie en forme de disque (220) de l'insert (200) comprenant une pluralité d'éléments pointus (223) qui font saillie de la surface faisant face à la base (111) du corps (110). 5

10. Capsule (100) selon la revendication 9, comprenant en outre un élément collecteur (400) logé dans ladite base tronconique (111), ledit élément collecteur (400) comprenant une pluralité d'éléments en saillie (410) configurés pour être en contact avec le film de barrière (300), une pluralité d'ouvertures débouchantes (411) formées dans la direction axiale et un appendice (412) ayant une forme tubulaire creuse, ledit appendice (412) faisant axialement saillie vers la base tronconique (111) et mettant en prise une ouverture de sortie (116) formée à l'intérieur de ce dernier. 10
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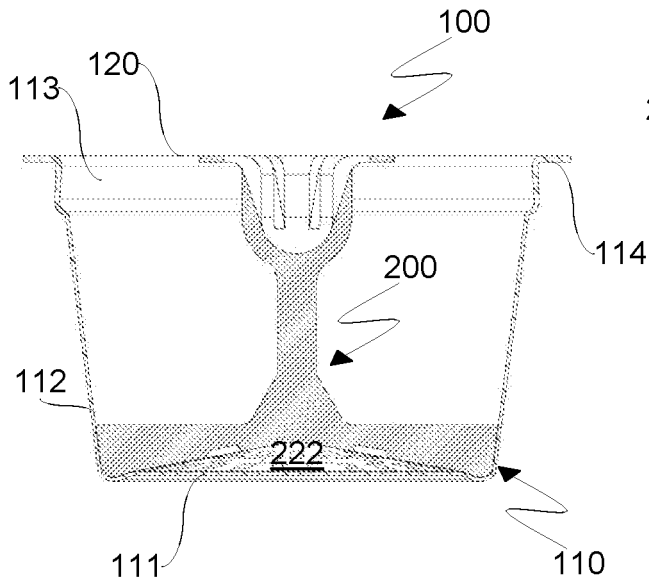


Fig. 1

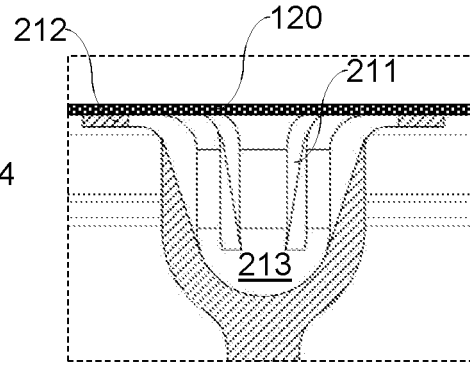


Fig. 1a

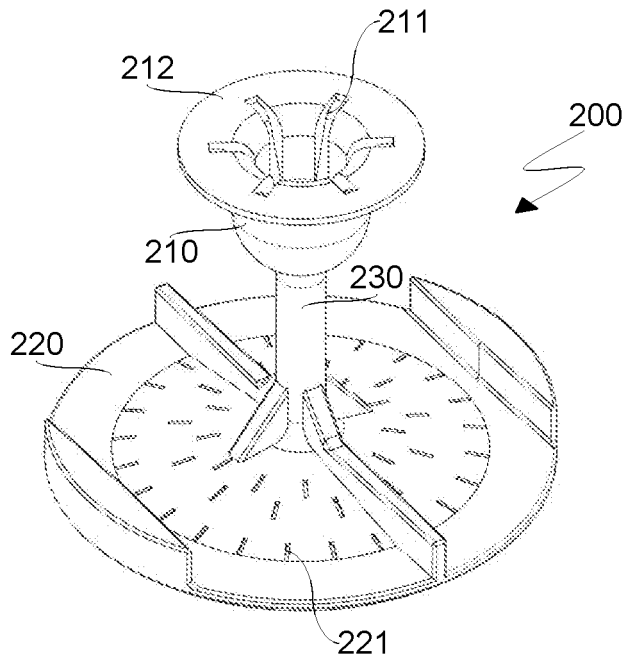


Fig. 2

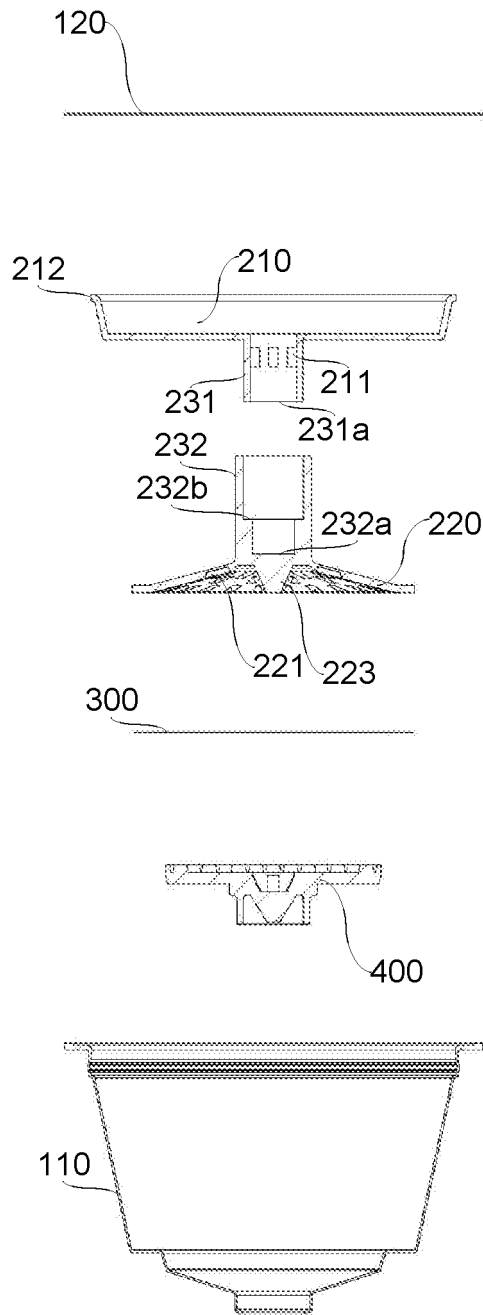


Fig.4

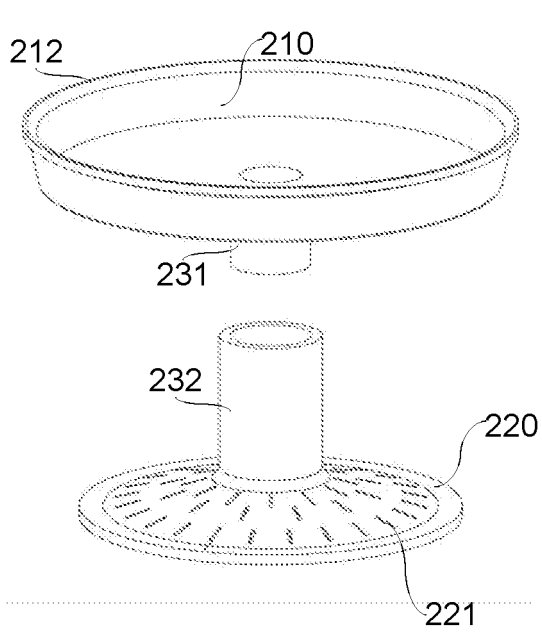


Fig. 5

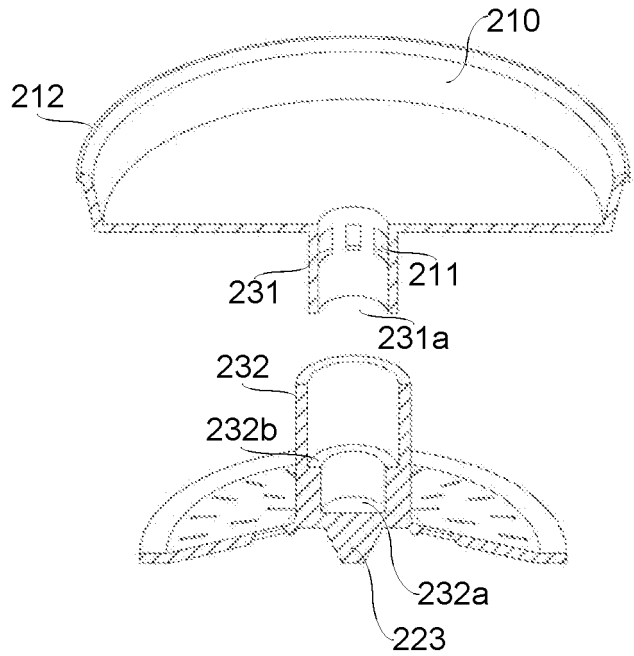


Fig. 6

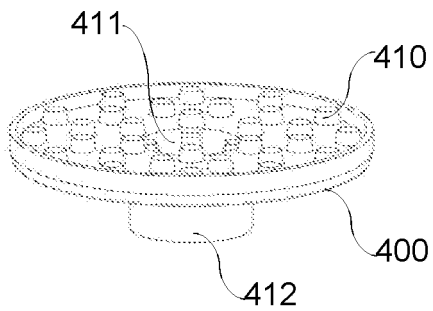


Fig. 7

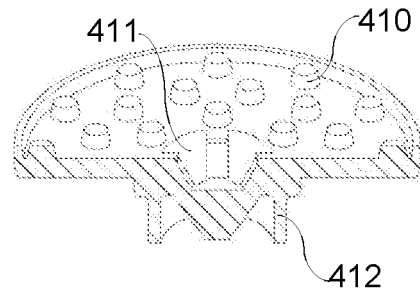


Fig. 8

REFERENCES CITED IN THE DESCRIPTION

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