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DESCRIPTION

[0001] The present invention relates to the field of plastic one-way degassing valves which are commonly used in packaging. For example plastic one-way degassing valves are used in containers to conserve goods, e.g. roasted coffee.

[0002] One-way degassing valves comprised in a container, e.g. a plastic container, are well known in the field of packaging. In response to a higher pressure inside the container than in the outside environment, the valve opens, thereby releasing said pressure, and closes again after the inside pressure has been reduced. The entry of ambient gasses into the container is prevented. Such valves are for instance used in containers that contain gas-producing substances, e.g. coffee releasing carbon dioxide after roasting, that degrade through contact with air, e.g. by oxidation or moisturizing. Another example is containers where yeast containing food products is packaged, e.g. dough, such as for pizza. These valves are for instance also used in containers, e.g. bags, e.g. 25 litre bags, that are to be stacked on top of each other, in which case the stack is more stable if the air inside the containers is allowed to escape as the stack is built.

[0003] EP-B-2 396 243 is an example of such a one-way degassing valve for degassing a container. The valve comprises an injection moulded plastic valve body with a bottom and peripheral edge extending from said bottom. The peripheral edge is configured to be attached to said container, e.g. by heat-sealing, and said bottom and a peripheral edge delimit a chamber that is open at the top. Said bottom comprises a valve seat on the upper face of said bottom. A central space within said chamber is formed by the space above said valve seat. The plastic valve body has a plurality of valve disk retainers. Each retainer has a base portion extending into said chamber from said bottom and a retaining portion inwards from said base portion. All base portions border said central space so as to surround said valve seat. The retaining portions each extend inwards from said base portion into said central space at a distance from the valve seat so that said plurality of valve disk retainers and valve seat surround a lower central space of said central space.

[0004] Moreover, one or more apertures extend through the bottom and end within said valve seat.

[0005] The valve of EP-B-2 396 243 moreover comprises a valve disk. Said valve disk is provided within and restricted to said lower central space by said valve disk retainers. Said valve disk is moreover adapted to cover said one or more apertures.

[0006] This type of valve is mass produced with a market that already for coffee packaging is many billions of valves per year.

[0007] Fabrication of plastic one-way degassing valve bodies is commonly performed by injection moulding. A central core is typically used that forms at least the lower central space

with the valve seat and the retaining portions of the plurality of valve disk retainers. In order to retain the valve disk, said retaining portion protrudes into the central space, thereby forming a lateral protrusion internal to the chamber. High-speed moulding such small lateral internal protrusions requires a complex central core that is able to release the moulded plastic retainers without damaging said protrusions by moving sections of said central core underneath said protrusions away prior to lifting of the central core. Thus a central core with several very small parts, of which some are movable with respect to others, is needed, for instance internal core lifters or collapsible cores.

[0008] The fabrication of this type of central core involving movable parts is costly. Moreover, said complex central core entails a larger chance of defects during moulding and high mould maintenance costs.

[0009] The present invention aims to provide an improved one-way degassing valve that allows for simpler and therefore more economic manufacture.

[0010] To this end the invention proposes a one-way degassing valve according to claim 1. Preferred embodiments are defined in the dependent claims.

[0011] The inventor has devised a one-way degassing valve of which the manufacture can, as is preferred, be performed with a unitary central core that does not comprise movable parts, at least not for the formation of the retainers. The mould to form said inventive valve bodies may comprise in addition to said unitary central core, which defines at least the shape of the lower central space with the valve seat and the retaining portions of said valve disk retainers, at least a peripheral core that defines at least the side surfaces of said valve disk retainers that are oriented away from said lower central space, and at least a portion of the upper face of the bottom of the valve body away from said valve seat and surrounding said valve disk retainers, e.g. the second outer area, e.g. the second outer area and outermost area.

[0012] In an embodiment, after injection and sufficient solidification of the plastic valve body of the inventive one-way degassing valve, said peripheral core is moved prior to the motion of said unitary central core. After removal of the peripheral core the region around the valve disk retainers outside of the central space is thus empty. On lifting the central core part the inventive flexible valve disk retainers elastically bend outwards in response to the upwards pressure exerted thereon by the unitary central core, said outward elastic bending being such that the retaining portion of said valve disk retainer can be bent to a region outside of the central space. The flexibility of said valve disk retainer thus allows a unitary central core and removes the need for a complex central core involving movable parts.

[0013] The inventive one-way degassing valve may also allow for easy and efficient insertion of the valve disk into the lower central space. It is envisioned that in order to insert the valve disk it is positioned above the lower central space and then lowered, e.g. pushed, down into said lower central space. The outward bending of said flexible valve disk retainers in response to the force exerted by said valve disk yields an aperture sufficient for the disk to be inserted

into said lower central space. This may reduce the need for the disk edge to bend during insertion.

[0014] Flexibility of the valve disk retainers may reside primarily from the design of the base portion, but may also be enhanced by the design, e.g. shape, of the retaining portion. The flexibility of the entire valve disk retainer is such that it allows elastic bending outwards with respect to the central space to such an extent that the retaining portions of said valve disk retainers are outside of the central space.

[0015] In order to achieve said flexibility, the inventive valve disk retainers preferably have, when viewed in side view, a width near the bottom thereof that is smaller than the width of a portion at the top thereof. The inventive valve disk retainer thus is preferably slender near the bottom and comprises a widening at a higher position.

[0016] To further facilitate the outward bending, e.g. upon lifting of the said central core, the retaining portion, viewed in side view, from its bottom upwards preferably gradually widens laterally into said central space. The gradual lateral widening may e.g. yield an upward curved or upward inclined surface. Such a gradual lateral widening converts part of the upward force exerted by the central core body upon lifting into a lateral force, thus leading to outward movement of said valve disk retainers.

[0017] Similarly, to further facilitate the outward bending, e.g. upon insertion of said valve disk, the retaining portion is preferable small at the top and from said top downwards gradually widens laterally into said central space. The gradual lateral widening may e.g. yield a downwards curved or downward inclined surface. Such a gradual lateral widening converts part of the downward force exerted by the valve disk upon insertion into a lateral force, thus leading to outward movement of said valve disk retainers.

[0018] The combination of such a gradual lateral widening from the base upwards and a gradual lateral widening portion from the top downwards may yield a triangular shape of the retaining portion, but may for instance also yield a half-spherical retaining portion.

[0019] In addition, the outward bending of the inventive flexible valve disk retainers may be facilitated by providing within the upper face of the bottom of the valve body an outermost area away from the valve seat, said outermost area being lower in height than the valve seat.

[0020] In preferred embodiments the valve is provided with a filter on or recessed in the lower face of the bottom of the valve body below the valve seat, e.g. said filter being secured by heat-sealing, e.g. ultrasonic sealing, to said valve body. The filter prevents small particles, e.g. from the roasting process, from entering the aperture and sealing or sticking to the sealing layer and thus the filter aids in maintaining the proper functioning of the valve.

[0021] Preferably the filter is secured at least along a periphery thereof of the valve body, preferably said periphery being at a greater diameter than said arrangement of valve disk

retainers, so that an ultrasonic heat sealing apparatus can have one annular tool positioned during the sealing process in the region that is free around the valve disk retainers and engaging on the upper side of the valve body with another tool engaging on the filter on bottom side of the valve body.

[0022] In an embodiment the valve seat is convex.

[0023] In an embodiment the valve disk is substantially circular.

[0024] In an embodiment the base portions of the plurality of valve disk retainers are provided on top of a first outer area of the upper face of the bottom of the valve body, said first outer area adjacent to and surrounding the valve seat and said first outer area elevated with respect to the valve seat. The upper face of the bottom of the valve body further comprises a second outer area adjacent to and surrounding the first outer area, said second outer area being inclined downwards in the outward direction between the first outer area and the outermost area. The valve disk is substantially circular. The valve seat is substantially circular, and said first outer area and second outer area are ring-shaped.

[0025] In an embodiment the peripheral edge is a circular peripheral edge.

[0026] In an embodiment the one-way degassing valve moreover comprises a sealing layer on the valve disk at the side thereof facing the valve seat. Said sealing layer is configured to enhance the seal between said valve disk and said valve seat. Said sealing layer is configured to enhance the seal between said valve disk and said valve seat in the absence of an increased pressure underneath said bottom of the valve body with respect to the chamber and to permit said valve disk to be at least partially lifted above said valve seat in response to an increased pressure underneath said bottom of the valve body with respect to the chamber.

[0027] The standard sealing layer used in one-way degassing valves is an oily substance, e.g. silicon oil, e.g. a food-grade oily substance. This however poses a problem when said valves are used in containers for micro-wave heating of food. During micro-wave heating overpressure and steam is released through the degassing valve. The inventors have observed that the oily substance is carried along by the steam released through said degassing valve, thereby rapidly removing said oily substance and degrading the further operation of the valve. A different sealing layer for one-way degassing valves used in heating, e.g. micro-wave heating, of food is therefore desired.

[0028] The present invention also relates to a method for injection moulding a one-way degassing valve according to the claim 13.

[0029] Moreover, the present invention relates to a method for assembly of a one-way degassing valve according to claim 14.

[0030] The present invention also relates to a container for conserving goods, e.g. roasted

coffee, according to claim 15.

[0031] The invention will now be discussed with reference to the drawings. In the drawings:

Fig. 1 shows a vertical cross-section of a one-way degassing valve according to the invention,

Fig. 2 shows another vertical cross-section of the one-way degassing valve of Figure 1,

Fig. 3 shows a top view of the one-way degassing valve of Figure 1.

Fig. 4 shows a close-up of the valve disk retainer of Figure 1 in side view.

[0032] With reference to the drawings embodiments and optional features of the one-way degassing valve will be described.

[0033] The one-way degassing valve 1 for degassing a container comprises a one piece or monolithically molded plastic valve body 2 and a valve disk 10. As mentioned herein the valve 1 preferably also includes a filter (not shown).

[0034] The plastic valve body comprises a bottom 3 and a peripheral edge 4 extending from said bottom. In the present embodiment the bottom 3 is circular and the peripheral edge 4 is a ring-shaped peripheral edge.

[0035] The peripheral edge 4 is configured to be attached to the container, e.g. by heat sealing, e.g. ultrasonic. In the present embodiment the outward extending side portions 41 of the peripheral edge may be used for such attachment.

[0036] In embodiments the container is a bag or pouch, e.g. a consumer packaging filled with roasted coffee. In these embodiments the valve body may be secured over, e.g. on the inside of the bag or pouch, an opening formed in a flexible wall of the bag or pouch as is known in the art. The container may e.g. also contain a removable or breakable film cover over an opening, with the valve being secured to said film cover. For example the container is embodied for placement in a microwave.

[0037] In the present embodiment, the bottom 3 and peripheral edge 4 have the same exterior as a regular valve body, thus facilitating use of the one-way degassing valve with existing apparatus, e.g. apparatus for connecting the valve to a container.

[0038] The bottom 3 and one or more peripheral edges 4 enclose a chamber 5 that is open at the top. In the present embodiment the chamber 5 is substantially cylindrical.

[0039] The bottom 3 comprises a valve seat 6 on the upper face of said bottom. It is noted that the valve seat 6 merely denotes the area of the upper face of the bottom on which a valve disk can lie and does not necessarily entail certain structural features, such as a recessed portion

within said bottom.

[0040] In the present embodiment the valve seat 6 is a circular valve seat centered in the upper face of the bottom. The valve seat moreover has a convex or dome shape, wherein the inner area of the valve seat lies higher than the outer area thereof.

[0041] The upper face of the bottom of the valve body further comprises an outermost area 12 away from the valve seat. In the present embodiment the outermost area 12 is ring-shaped and borders the peripheral edge 4. The outermost area 12 is lower in height than the valve seat to facilitate the outwards bending of the flexible valve disk retainers.

[0042] The valve seat is surrounded by a first outer area 14 adjacent to the valve seat. In the present embodiment the first outer area 14 is elevated with respect to the valve seat and is ring-shaped. The first outer area 14 is surrounded by a second outer area 15 adjacent to said first outer area 14. The second outer area 15 is inclined downward in the outward direction away from said valve seat so as to connect the higher-lying first outer area 14 to the lower-lying outermost area 12. In the present embodiment the second outer area 15 is ring-shaped.

[0043] The bottom of the valve body moreover comprises one or more apertures 9, in the present embodiment three apertures, through the bottom and ending within the valve seat 6.

[0044] The valve also comprises one or more recessed portions 13, in the present embodiment one recessed portion 13 in the center of the valve seat 6, said recessed parts having lateral dimensions smaller than the valve disk 10. In the present embodiment each of said apertures ends in the recessed part. Use of the recessed areas is advantageous, as these recessed areas facilitate opening of the valve disk by enlarging the area of the valve disk that is exposed to the gas inside the container and thus to an overpressure.

[0045] The space above the valve seat 6 within the chamber 5 is the central space 7. Said space thus extends from the upper face of the bottom 3 to the open top of the chamber.

[0046] The valve seat 6 is bordered by a plurality of valve disk retainers 8, more specifically base portions 81 thereof, so as to surround said valve seat 6. The valve disk retainers 8 are thus placed adjacent to the valve seat 6 and are spread around the perimeter of said valve seat 6. The valve disk retainers 8 are provided upon said first outer area 14.

[0047] Each of said valve disk retainers comprises a base portion 81 that extends into said chamber from the bottom of said valve body and a retaining portion 82 inwards from said base portion. Said retaining portions extend inwards from said base portion into said central space at a distance from the valve seat. Said plurality of valve disk retainers 8 and valve seat 6 surround a lower central space 11 of said central space 7.

[0048] Each valve disk retainer is flexible allowing elastic bending outwards with respect to the central space 7 to such an extent that the retaining portion 82 of said valve disk retainer 8 is

outside of the central space.

[0049] In the present embodiment most of the flexibility is in the base portion 81 of the valve disk retainer 8. However, also the retaining portion 82 may show flexibility, which may contribute to reaching the required elastic outward bending.

[0050] The width of the base portion 81 of said valve disk retainer, viewed in side view, is comparable to the largest width of said retaining portion 82. In the present embodiment the width of the base portion of said valve disk is similar to or even slightly smaller than the largest width of said retaining portion.

[0051] In a view in radial direction of the valve onto a retainer 8, see e.g. the central retainer in figure 2, the present embodiment shows more or less parallel, vertical sides of each retainer 8. In another design one or both of the radial retainer sides may for example be diverging towards the bottom, so broadening, to provide some enhanced sideways stability to the retainer 8 without impairing the mentioned flexing behaviour in view of placement of the valve disk.

[0052] In the present embodiment the retaining portion 82 gradually widens from the top downwards and from the base portion upwards, forming a triangular retaining portion, wherein the largest width is achieved at the height of the triangle corner inside the central space.

[0053] The base portion below the retaining portion may be relatively short with respect to the height of retaining portion. The height of the base portion between the bottom of said valve body and below the retaining portion may be approximately half or less than half of the height of the valve disk retainer. In the present embodiment said proportion of base portion height to height of the valve disk retainer is 0.2 - 0.4.

[0054] In the present embodiment, viewed in side view, the retaining portion comprises a lower portion that from its bottom upwards gradually widens laterally into said central space.

[0055] Again in side view the retaining portion is narrow at the top thereof and comprises a portion below said top that from said top downwards gradually widens laterally into said central space.

[0056] As mentioned, said retaining portion 82 gradually widens from the top of said valve disk retainer downwards and gradually widens from its bottom upwards, thereby forming a triangular retaining portion. In the present embodiment, said triangular shape is an acute-angled triangular shape. More particularly, said triangular shape has an upper side and a lower side, wherein said lower side is shorter than said upper side. The tilt with respect to horizontal of said lower side, e.g. 10° - 30° , is moreover less, than that of the upper side, e.g. 45° - 70° .

[0057] Moreover, in the present embodiment the corners of said valve disk retainer 82, both the corner at the top of the valve disk retainer as well as the triangle corner inside the central

region and the corner between base portion and lower side of said triangular-shaped retaining portion, are rounded.

[0058] In the present embodiments the retaining portion 82 of the valve disk retainer is tapered laterally along the extension direction of the retaining portion.

[0059] The valve also comprises a valve disk 10, said valve disk provided within and restricted to said lower central space 11 by said valve disk retainers 8. Said valve disk 10 is adapted to cover said one or more apertures 9 and to cover any recessed portions 13 of the valve seat 6 around said apertures 9.

[0060] In the present embodiment said valve disk 10 has lateral dimensions only slightly smaller than the valve seat 6, so that there is little space between the outer edge of the valve disk 10 and the base portion 81 of the valve disk retainer 8. Moreover, the thickness of the valve disk 10 is smaller but comparable to the height of the base portion of the valve disk retainer below the retaining portion thereof, so that the valve disk 10 can only move upwards in said lower central space 11 over a distance smaller than its thickness. The valve disk 10 thus fills a substantial portion of said lower central space 11.

[0061] In the present embodiment a recess 16 is provided in the lower face of the bottom of the valve body below said valve seat, into which recess 16 a filter can be introduced. More particularly, said filter is introduced in the broader, lower recess of the two-stepped recess 16. Such filters, which are known in the field of one-way degassing valves, prevent small particles from entering the aperture and sealing to the sealing layer and thus aid in maintaining the proper functioning of the valve.

[0062] Preferably the filter is secured at least along a periphery, e.g. over a peripheral zone, thereof of to the valve body. As illustrated here by the form of the recess 16, and as preferred, this periphery of the filter has a greater diameter than the diameter of the circular array of valve disk retainers 8. This allows, as is preferred, the use of an ultrasonic heat sealing apparatus for securing the filter on the valve body. Herein one annular tool of the ultrasonic apparatus can be positioned during the sealing process in the region that is free around the valve disk retainers 8 and engaging on the upper side of the valve body. The another tool of the ultrasonic heat sealing apparatus can then be made to engage on the filter on bottom side of the valve body, e.g. placed in the recess 16.

[0063] The present embodiment comprises six valve disk retainers 8. Although the one-way degassing valve 1 should comprise a plurality of valve disk retainers 8 in order to retain the valve disk within the lower central space, any plurality is possible, for instance embodiments comprising e.g. three or four valve disk retainers 8.

[0064] It is envisioned that various types of valves will be produced, wherein in all valves the dimensions and shape of the valve seat 6, lower central space 11, valve disk retainers 8 and valve disk 10 are the same, and wherein the dimensions and shape of the outer region, e.g.

the outermost area 12 and peripheral edge 4, are varied. For instance, the outermost area 12 can be larger or smaller, the bottom 3 away from the valve seat may be thicker or thinner and the peripheral edge 4 can be circular or polygonal.

[0065] In the present embodiment said valve disk 10 is a circular disk.

[0066] In the present embodiment said valve disk retainers 8 are formed integrally, e.g. injection molded of suitable plastic material, with the bottom 3 and peripheral edge 4 of said valve body 2.

[0067] Said plastic valve body 2 preferably has a diameter of between 10 - 30 mm, e.g. of about 15 mm, and a thickness of 3 - 15 mm, e.g. of about 6 mm, and said one-way degassing valve may e.g. have a weight of between 0.3 - 2 grams, e.g. 1 gram.

[0068] For instance the plastic valve body 2 comprises polyethylene.

[0069] For instance the valve disk 10 comprises silicon, nitrile rubber or similar types of rubber.

REFERENCES CITED IN THE DESCRIPTION

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Patentkrav

1. Envejsafgasningsventil (1) til afgang af en beholder, f.eks. en beholder til ristet kaffe, hvilken ventil omfatter:

- 5 - et plastventillegeme (2) der omfatter en bund (3) og en perifer kant (4),
som strækker sig fra bunden, hvilken perifer kant er konfigureret til at
blive fastgjort til beholderen, hvilken bund og perifer kant afgrænser et
kammer (5), der er åbent ved den øvre side,
hvilken bund omfatter et ventilsæde (6) på den øvre flade af bunden,
hvor et centralt rum (7) inden i kammeret er dannet af rummet over ven-
10 tilsædet,
hvilket plastventillegeme omfatter et antal ventilskiveholdere (8), hvor
hver holder har en basissektion (81), der strækker sig ind i kammeret fra
bunden, og en fastholdelsessektion (82) der strækker sig indad fra ba-
sissektionen, hvor alle basissektioner grænser op til det centrale rum så-
15 ledes, at de omslutter ventilsædet, og hvor fastholdelsessektionerne hver
strækker sig indad fra basissektionen ind i det centrale rum i en afstand
fra ventilsædet, således at antallet af ventilskiveholdere og ventilsædet
omslutter et nedre centralt rum (11) af det centrale rum,
og hvor en eller flere åbninger (9) strækker sig gennem bunden og en-
20 den inden i ventilsædet, og
- en ventilskive (10), hvilken ventilskive er tilvejebragt inden i og begræn-
set til det nedre centrale rum af ventilskiveholderne, hvilken ventilskive er
indrettet til at dække den ene eller de nævnte flere åbninger,

kendetegnet ved, at

- 25 hver ventilskiveholder (8) er fleksibel, hvilket tillader elastisk bøjning udad i for-
hold til det centrale rum i en sådan udstrækning, at fastholdelsessektionen af
ventilskiveholderen er uden for det centrale rum.

- 2. Ventilen ifølge krav 1, hvor bredden af ventilskiveholderen nær bunden set
30 fra siden er mindre end bredden af en sektionen ved den øvre side deraf.

3. Ventil ifølge et hvilket som helst af de foregående krav, hvor fastholdelses-sektionen set fra siden omfatter en nedre del, der fra bunden opad gradvis udvides lateralt ind i det centrale rum.
- 5 4. Ventil ifølge et hvilket som helst af de foregående krav, hvor fastholdelses-sektionen set fra siden omfatter en øvre side under den øvre side af ventilskiveholderen, der fra oven og ned gradvist udvides lateralt ind i det centrale rum.
- 10 5. Ventil ifølge et hvilket som helst af de foregående krav, hvor bredden af ventils-kivens bundsektion set fra siden i det væsentlige er den samme eller mindre end den største bredde af fastholdelsessektionen.
- 15 6. Ventil ifølge et hvilket som helst af de foregående krav, hvor fastholdelses-sektionen set fra siden har en trekantet form, f.eks. hvor den trekantede form er en spidsvinklet trekantet form, hvilken fortrinsvis trekantede form har en øvre side og en nedre side, hvor den nedre side er kortere end den øvre side, og hvor fortrinsvis hjørnet af trekanten i det centrale område og den øvre side af ventilskiveholderen er afrundede.
- 20 7. Ventil ifølge et hvilket som helst af de foregående krav, hvor ventilen er forsynet med et filter på eller forsænket i den nedre flade af bunden af ventilleget under ventilsædet, f.eks. er filteret sikret ved varmemeforsegling, f.eks. ultralydsforsegling, til ventilleget.
- 25 8. Ventil ifølge et hvilket som helst af de foregående krav, hvor højden af basissektionen mellem bunden af ventilleget og begyndelsen af fastholdelsessektionen er mindre end halvdelen af højden af ventilskiveholderen.
- 30 9. Ventil ifølge et hvilket som helst af de foregående krav, hvor, langs længderetningen af fastholdelsessektionen af ventilskiveholderen, fastholdelsessektionen af ventildiskholderen er tilspidset lateralt.

10. Ventil ifølge et hvilket som helst af de foregående krav, hvor den øvre flade af bunden af ventillegemet omfatter et yderste område (12) væk fra ventilsædet, hvilket ydre område er sænket i højden i forhold til ventilsædet for at lette den udadgående bøjning af de fleksible ventilskiveholdere.

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11. Ventil ifølge et hvilket som helst af de foregående krav, hvor basissektionerne af antallet af ventilskiveholdere er tilvejebragt på den øvre flade af det første ydre område (14) af den øvre flade af bunden af ventillegemet, hvilket første ydre område støder op til og omgiver ventilsædet, og hvilket første ydre område er hævet i forhold til ventilsædet, hvor fortrinsvis den øvre flade af bunden af ventillegemet yderligere omfatter et andet ydre område (15), der støder op til og omgiver det første ydre område, hvilket andet ydre område hælder skråt nedad i den udadgående retning mellem det første ydre område (14) og det yderste område (12).

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12. Ventil ifølge et hvilket som helst af de foregående krav, hvor ventilsædet omfatter en eller flere forsænkede sektioner (13), hvilke forsænkede sektioner har laterale dimensioner, der er mindre end ventilskiven, og hvor hver af den ene eller de nævnte flere åbninger ender i en forsænket del af ventilsædet.

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13. Fremgangsmåde til sprøjtestøbning af en envejsafgasningsventil ifølge et hvilket som helst af de foregående krav 1-12 der omfatter trinnene:

- at tilvejebringe en form til sprøjtestøbning af envejsafgasningsventilen, hvilken form omfatter:

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- en bevægelig ensartet central kerne der danner mindst det nedre centrale rum af ventillegemet med ventilsædet og fastholdelsessektionerne af ventilskiveholderne,

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- en bevægelig perifer kerne der mindst danner sidefladerne på ventilskiveholderne, som er orienteret væk fra det nedre centrale rum, og en sektion af den øvre flade af bunden af ventillegemet, der omgiver ventilsæ-

det og ventilskiveholdere, f.eks. det andet ydre område, f.eks. det andet ydre område og det yderste område,

- at indsprøjte smeltet plast i formen,

5 - at løfte den perifere kerne til en position, der er mindst højere end den øvre side af de støbte ventilskiveholdere, og

10 - efter løftning af den perifere kerne, at løfte den centrale kerne, hvorved de fleksible ventilskiveholdere under løftningen elastisk bøjes udad i forhold til det centrale rum i en sådan grad, at fastholdelsessektionen af hver ventilskiveholder er uden for det centrale rum og frigives fra den centrale kerne.

14. Fremgangsmåde til samling af en envejsafgasningsventil der omfatter trinene:

- at tilvejebringe et ventillegeme ifølge et hvilket som helst af de foregående krav 1 - 12,

15 - at tilvejebringe en ventilskive ifølge et hvilket som helst af de foregående krav 1 - 12,

- at positionere ventilskiven over det nedre centrale område,

20 - at sænke ventilskiven til en position inden for det nedre centrale område, hvorved de fleksible ventilskiveholdere under sænkning elastisk bøjes udad.

15. Beholder til konservering af varer, f.eks. ristet kaffe, f.eks. en beholder med ristet kaffe der er fyldt med ristet kaffe, hvilken beholder omfatter:

- en beholder med en væg,

- en envejsafgasningsventil der er monteret over en åbning i væggen på indersiden af beholderen, hvilken envejsafgasningsventil er udformet ifølge et hvilket som helst af de foregående krav 1 - 12.

DRAWINGS

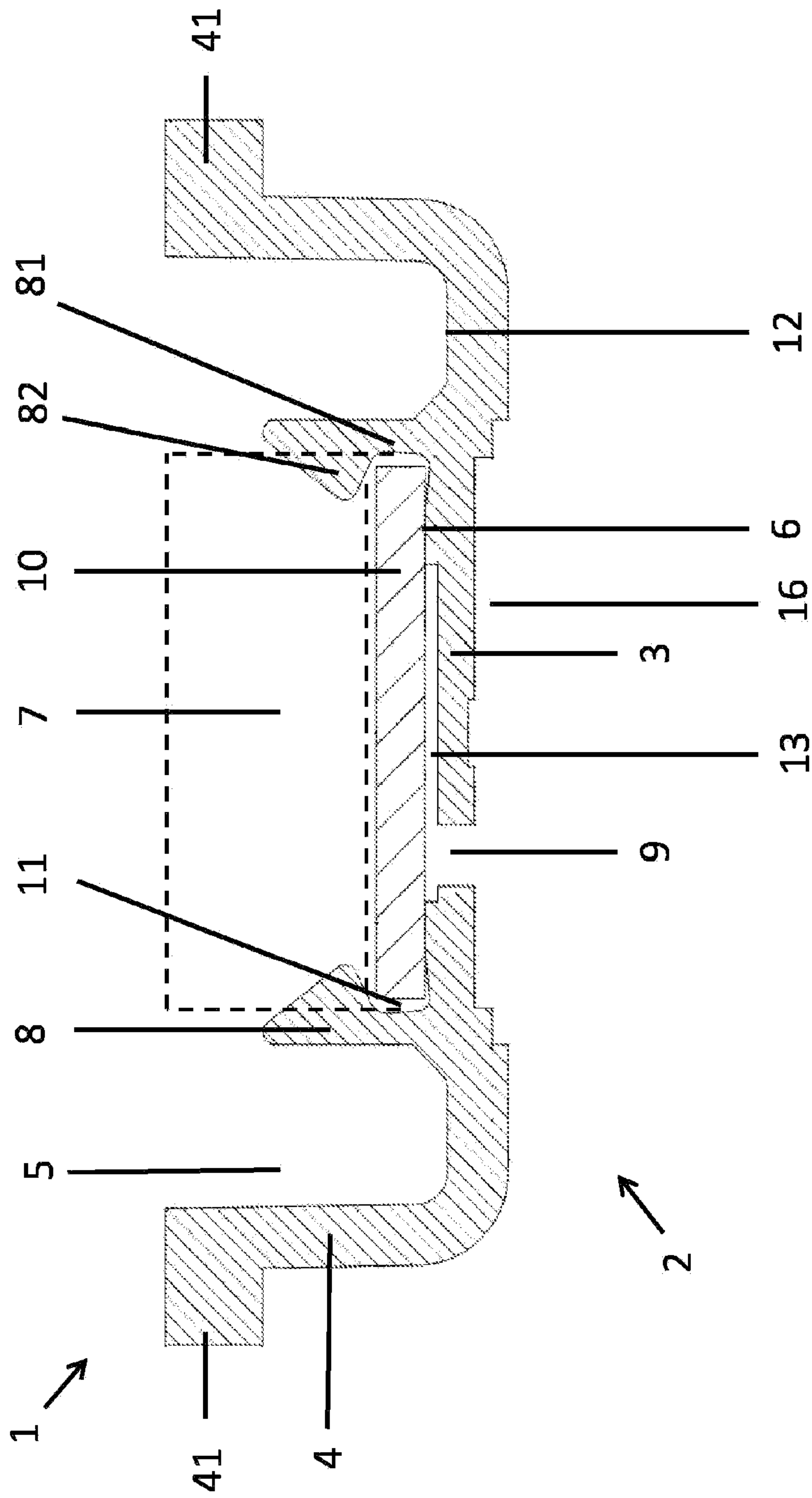


Fig. 1

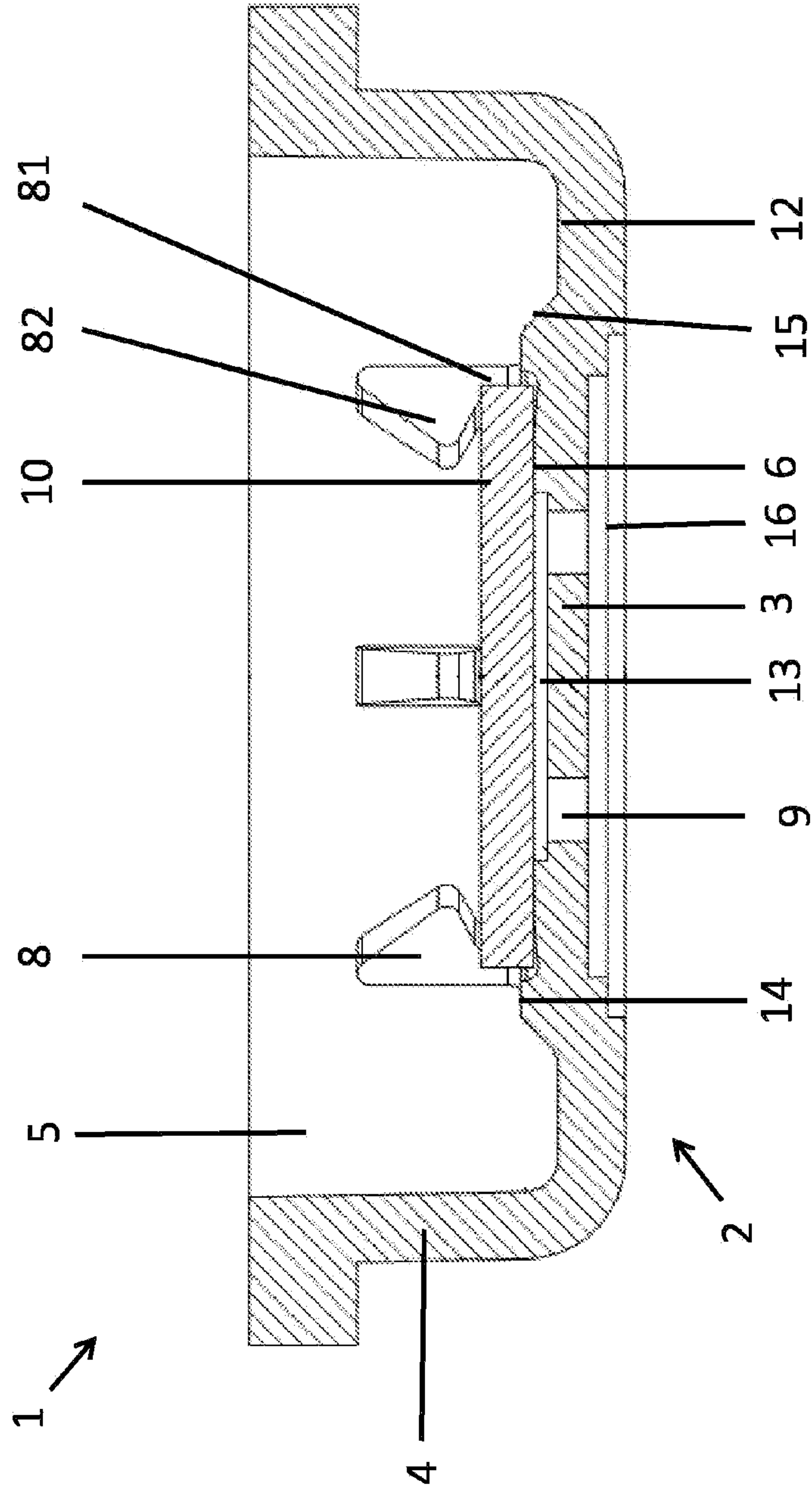


Fig. 2

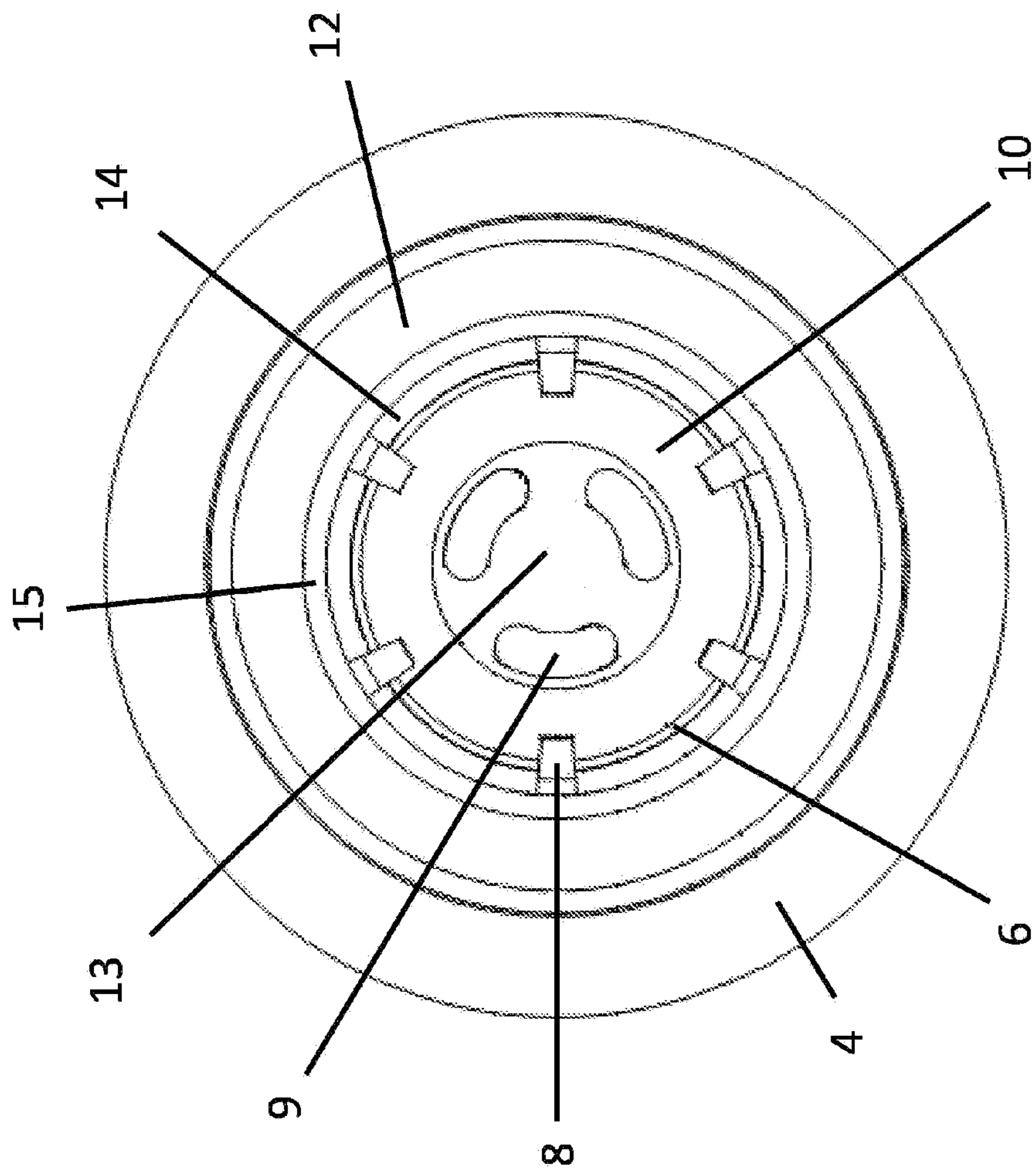


Fig. 3

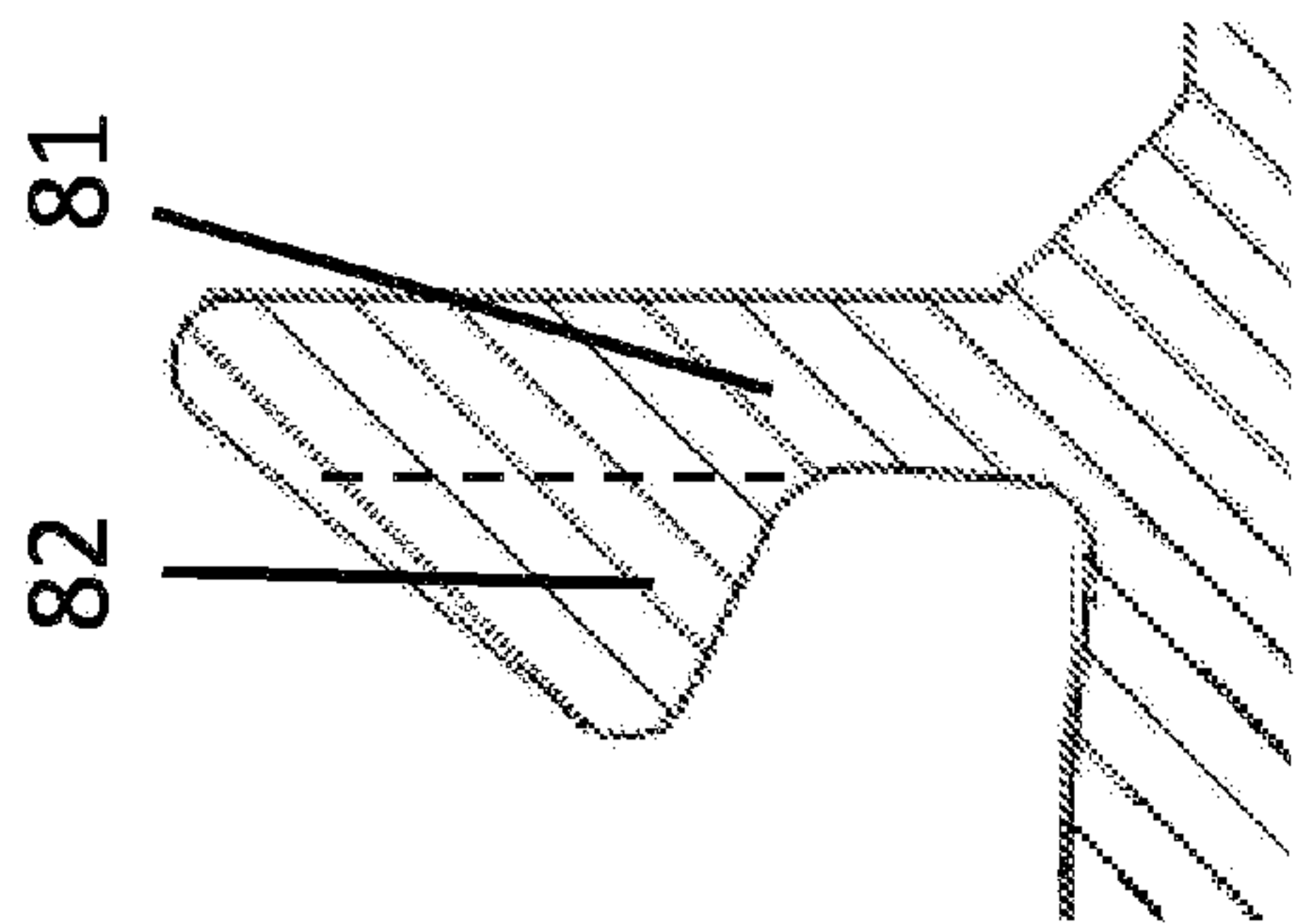


Fig. 4