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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/538,752	08/12/2019	Marc Krüger	1859.029USD3	8143
25215	7590	11/08/2019		
The Dobrusin Law Firm P.C. 29 W. Lawrence Street, Ste. 210 SUITE 210 PONTIAC, MI 48342			EXAMINER BECKER, DREW E	
			ART UNIT 1792	PAPER NUMBER
			NOTIFICATION DATE 11/08/2019	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 16/538,752	Applicant(s) Krüger, Marc	
	Examiner DREW E BECKER	Art Unit 1792	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 8/12/19.
 ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.

4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☒ Claim(s) 9-28 is/are pending in the application.
 5a) Of the above claim(s) ____ is/are withdrawn from consideration.

6) ☐ Claim(s) ____ is/are allowed.

7) ☒ Claim(s) 9-28 is/are rejected.

8) ☐ Claim(s) ____ is/are objected to.

9) ☐ Claim(s) ____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10) ☒ The specification is objected to by the Examiner.

11) ☒ The drawing(s) filed on 8/12/19 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
Certified copies:
 a) ☐ All b) ☐ Some** c) ☒ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
 Paper No(s)/Mail Date 8/12/19

3) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date ____

4) ☐ Other: ____

DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application is being examined under the pre-AIA first to invent provisions.

Claim Objections

1. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 26-27 been renumbered as 27-28. For examination purposes, it will also be assumed that both claims 27-28 should depend from claim 26.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on applications filed in Germany on 2/7/11, 7/22/10, and 9/2/10. It is noted, however, that applicant has not filed a certified translation of these applications as required by 37 CFR 1.55. A translation of said applications has not been made of record in accordance with 37 CFR 1.55. See MPEP §§ 215 and 216.

Specification

3. The disclosure is objected to because of the following informalities: the first sentence of the specification should include the status of the parent applications.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112(a):

(a) IN GENERAL.—The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.

The following is a quotation of the first paragraph of pre-AIA 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 10, 19 are rejected under 35 U.S.C. 112(a) or 35 U.S.C. 112 (pre-AIA), first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claims 10 and 19 recite “the portion capsule is free of a filter”. It is not clear how an infusion capsule would function without some sort of filter device to retain the coffee material.
6. Claims 10, 19 are rejected under 35 U.S.C. 112(a) or 35 U.S.C. 112 (pre-AIA), first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor or a joint inventor, or for pre-AIA the

inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 10 and 19 recite “the portion capsule is free of a filter”. The application does not appear to disclose this concept.

7. The following is a quotation of 35 U.S.C. 112(b):

(b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 9-28 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

9. Claim 9, lines 6-7 both recite “a base element” and “a cavity”. It is not clear if there are two base elements and cavities, or just one.

10. Claim 19, lines 5 and 7 both recite “a cavity”. It is not clear if there are two cavities, or just one.

11. Claim 19 recites the limitation “the barcode reader”. There is insufficient antecedent basis for this limitation in the claim. It is not clear if this is the same element as the “detector”, or not.

12. Claim 20 recites “an amount of water”. It is not clear if this is the same as the “heated water” of parent claim 19, or not.

13. Claim 26, lines 5 and 6 both recite "a cavity". It is not clear if there are two cavities, or just one.
14. Claim 26 recites the limitation "the barcode reader". There is insufficient antecedent basis for this limitation in the claim. It is not clear if this is the same element as the "detector", or not.
15. Claim 26 does not include an unloading step for the first capsule. It is not clear if the apparatus must be capable of holding two capsules simultaneously, or not.
16. Claims 27-28 were misnumbered as claims 26-27, and claim 27 depends from claim 25. It is not clear if claim 27 should depend from claim 26 or not.

Claim Rejections - 35 USC § 103

17. The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. Claims 9-11, 13-15, 17, 19-23, 26-28 rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Schifferle [US 2005/0150391A1] in view of Jarisch et al [US 2013/0064937A1], Sweeney et al [US 2002/0020659A1], Boyd et al [US 2002/0048621A1], and WO 2010/099806A1.

Schifferle teaches a method for making coffee by providing an apparatus a bar code reader and supply of heated water (Figure 1, #28, 3; paragraph 0019), loading a capsule into the apparatus (Figure 1-2, #20), the capsule including a lid sealed to a base element having a cavity

holding coffee powder (Figure 1, #21; paragraph 0016), the capsule having a circumferential flange (Figure 1, #20-21), the barcode located just below the flange on the side of the base element (Figure 1, #27), reading the barcode with the reader (paragraph 0019), controlling the coffee process according to the read barcode (paragraph 0019, 0021), piercing the lid (Figure 2, #13), introducing heated water into the capsule (paragraph 0021-0023), putting holes in the lid (paragraph 0023), controlling a production condition such as water amount (paragraph 0019), a longitudinally extending mandrel with a chamfered or angled distal tip (Figure 1, #13), and a water pump connected to the controller (Figure 1, #2, 7).

Schifferle does not explicitly recite a foil lid, vertical ribs, the barcode located on the flange bottom (claim 9, 19), comparing the barcode with a stored reference (claim 13), activating the machine or water pump if there is a match (claim 14-15, 17), the capsule being filter free (claim 10, 19), and use of a second capsule (claim 26).

It would have been obvious to one of ordinary skill in the art to use the system of Schifferle for a second capsule since the apparatus of Schifferle was not a disposable system to be discarded after a single use, since Schifferle taught using different types of capsules and beverages, since coffee capsules were commonly only used once before being discarded, and since brewing a second serving coffee with a second capsule would have enabled more people to enjoy the coffee of Schifferle.

Sweeney et al teach a method for making coffee by use of a capsule with vertical ribs which extend inwardly (Figure 1 & 5, #20; paragraph 0014), and the capsule closed by a foil lid sealed to a flange top surface (Figure 1-2, #16, 22; paragraph 0055).

It would have been obvious to one of ordinary skill in the art to incorporate the claimed foil lid and vertical ribs into the invention of Schifferle, in view of Sweeney et al, since both are directed to methods of making coffee, since Schifferle already included a capsule and lid, since coffee capsules commonly included vertical ribs and a foil lid as shown by Sweeney et al (Figure 1, #20; paragraph 0055), since Schifferle already taught using elevated pressure during brewing (paragraph 0026), since the vertical ribs were used to reinforce and strengthen the capsule as taught by Sweeney et al (paragraph 0014), and since these changes would have been made during the course of normal experimentation and optimization due to factors such as the type of coffee brewing, the expected pressure, and the materials used for the capsule and lid.

Jarisch et al teach a method for making coffee by reading a code located on the flange bottom (Figure 4, #62, 72) and the capsule sealed by a foil lid (paragraph 0036).

Boyd et al teach a method for making coffee by use of a capsule with a barcode on its flange (Figure 2, #10, 30).

WO 2010/099806A1 teach a method for making coffee by providing a capsule with barcodes on its bottom surface (Figure 1, #2, 4-5), an absence of a filter (Figure 1), a barcode reader below the capsule (Figure 1, #7), the control unit comparing the barcode with pre-stored data (page 9, lines 19-26), and only activating the machine if the barcode is recognized (page 11, lines 1-6; Figure 1, #8-10).

It further would have been obvious to one of ordinary skill in the art to incorporate the claimed barcode on the flange bottom into the invention of Schifferle, in view of Jarisch et al, Boyd et al, and WO 2010/099806A1, since all are directed to methods of making coffee, since Schifferle already included a barcode below the flange in a sheltered area of the capsule (Figure

1, #27), since coffee capsules commonly included a barcode located on the flange surface as shown by Boyd et al (Figure 2, #30), since coffee capsules commonly included a code on the flange bottom as shown by Jarisch et al (Figure 4, #72), since coffee capsules commonly included barcodes on the bottom surface as shown by WO 2010/099806A1 (Figure 1, #4-5), since the flange bottom area of Schifferle was also a sheltered area of the capsule where the barcode would be less likely to be smudged or damaged as compared to the capsule bottom or sidewall, since coffee machines commonly included barcode readers positioned below the capsules as shown by WO 2010/099806A1 (Figure 1, #7), since barcode readers placed below the capsules were also capable of reading the flange bottom areas, and since placing plural barcodes in different locations on the capsule would have further ensured that the capsule of Schifferle could be easily recognized and used for brewing even if one or more of the barcodes became smudged or damaged.

It further would have been obvious to one of ordinary skill in the art to incorporate the claimed activation and comparing steps, and absence of a filter, into the invention of Schifferle, in view of Jarisch et al, Boyd et al, and WO 2010/099806A1, since all are directed to methods of making coffee, since Schifferle already included a water pump connected to the controller and barcode reader (Figure 1, #2, 7, 28) and controlling a production condition such as water amount (paragraph 0019), since coffee capsules often did not include a filter as shown by WO 2010/099806A1, since Schifferle taught using capsules for making espresso, since hot beverages such as instant coffee and hot chocolate commonly did not require a filter, since coffee systems commonly included a controller comparing a barcode with pre-stored data

(page 9, lines 19-26) as shown by WO 2010/099806A1, and since these modifications of Schifferle would have further ensured that the coffee was brewed under acceptable conditions.

19. Claims 12, 24-25 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Schifferle, in view of Jarisch et al, Sweeney et al, Boyd et al, and WO 2010/099806A1, as applied above, and further in view of EP 1849718A1.

Schifferle, Jarisch et al, Sweeney et al, Boyd et al, and WO 2010/099806A1 teach the abovementioned concepts. Schifferle, Jarisch et al, Sweeney et al, Boyd et al, and WO 2010/099806A1 do not explicitly recite the ribs inducing turbulent flow (claim 12, 24). EP 1849718A1 teaches a method for making coffee by use of a capsule with vertical ribs (Figure 8, #50) which provide optimal conveyance of the water through the capsule (paragraph 0019, 0004). It would have been obvious to one of ordinary skill in the art to incorporate the claimed turbulent flow into the invention of Schifferle, in view of Jarisch et al, Sweeney et al, Boyd et al, EP 1849718A1, and WO 2010/099806A1, since all are directed to methods of making coffee, since Schifferle already included a capsule with sidewalls (Figure 1, #20) as well as controlling the water flow velocity and flow rate with the pump and controller (Figure 1, #2, 7), since coffee capsules commonly included vertical ribs which extend inwardly and reinforce the sidewalls (Figure 1 & 5, #20; paragraph 0014), since coffee capsules commonly included vertical ribs to optimize flow conditions within the capsule as shown by EP 1849718A1 (paragraph 0019, 0004; Figure 8, #50), and since turbulent flow within the capsule would better ensure that the water was able to contact all of the coffee material within the capsule of Schifferle and thus provide more effective brewing.

20. Claims 16, 18 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Schifferle, in view of Jarisch et al, Sweeney et al, Boyd et al, and WO 2010/099806A1, as applied above, and further in view of Mahlich.

Schifferle, Jarisch et al, Sweeney et al, Boyd et al, and WO 2010/099806A1 teach the abovementioned concepts. Schifferle, Jarisch et al, Sweeney et al, Boyd et al, and WO 2010/099806A1 do not explicitly recite the barcode reader placed in a media chute (claim 16, 18). Mahlich teaches a method for making coffee by use of a barcode reader below a media chute holding the capsules (Figure 3, #27, 1, 12). It would have been obvious to one of ordinary skill in the art to incorporate the claimed media chute reader into the invention of Schifferle, in view of Jarisch et al, Sweeney et al, Boyd et al, WO 2010/099806A1, and Mahlich, since all are directed to methods of making coffee, since Schifferle already included a barcode reader, since coffee systems commonly included a barcode reader located below a media chute as shown by Mahlich (Figure 3, #27, 1, 12), since this would have enabled the capsule to be automatically scanned and read before placement in the brew chamber of Schifferle and thus provided faster and more accurate brewing without the need for manual reading of the barcode.

Double Patenting

21. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed.

Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on nonstatutory double patenting provided the reference application or patent either is shown to be commonly owned with the examined application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. See MPEP § 717.02 for applications subject to examination under the first inventor to file provisions of the AIA as explained in MPEP § 2159. See MPEP §§ 706.02(l)(1) - 706.02(l)(3) for applications not subject to examination under the first inventor to file provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit www.uspto.gov/patent/patents-forms. The filing date of the application in which the form is filed determines what form (e.g., PTO/SB/25, PTO/SB/26, PTO/AIA/25, or PTO/AIA/26) should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

22. Claims 9-28 (particularly claim 9) are provisionally rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-9 (particularly claim 9) of copending Application No. 16/438,818 in view of Schifferle and Sweeney et al. The '818 application does not claim a bar code reader, vertical ribs, piercing the lid, and controlling the process. Schifferle teaches a method for making coffee by providing an apparatus a bar code reader and supply of heated water (Figure 1, #28, 3; paragraph 0019), loading a capsule into the apparatus (Figure 1-2, #20), the capsule including a lid sealed to a base element having a cavity holding coffee powder (Figure 1, #21; paragraph 0016), the capsule having a circumferential flange (Figure 1, #20-21), the barcode located just below the flange on the side of the base element (Figure 1, #27), reading the barcode with the reader (paragraph 0019), controlling the coffee process according to the read barcode (paragraph 0019, 0021), piercing the lid (Figure 2, #13), introducing heated water into the capsule (paragraph 0021-0023), putting holes in the lid

(paragraph 0023), controlling a production condition such as water amount (paragraph 0019), a longitudinally extending mandrel with a chamfered or angled distal tip (Figure 1, #13), and a water pump connected to the controller (Figure 1, #2, 7). Sweeney et al teach a method for making coffee by use of a capsule with vertical ribs which extend inwardly (Figure 1 & 5, #20; paragraph 0014) and closed by a foil lid sealed to a flange top surface (Figure 1-2, #16, 22; paragraph 0055).

It would have been obvious to one of ordinary skill in the art to incorporate the claimed process steps, reader, and vertical ribs into the invention of '818, in view of Sweeney et al and Schifferle, since all are directed to methods of making coffee, since '818 already claimed sidewall channels (claim 4, 7-8), a flange (claim 2), and a barcode identifier (claim 1), since Schifferle already included a capsule with a barcode identifier and extracting a hot beverage using the above mentioned steps, since coffee capsules commonly included vertical ribs and a foil lid as shown by Sweeney et al (Figure 1, #20; paragraph 0055), since Schifferle already taught using elevated pressure during brewing (paragraph 0026), since the vertical ribs were used to reinforce and strengthen the capsule as taught by Sweeney et al (paragraph 0014), and since these changes would have been made during the course of normal experimentation and optimization due to factors such as the type of coffee brewing, the expected pressure, and the materials used for the capsule and lid.

This is a provisional nonstatutory double patenting rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DREW E BECKER whose telephone number is (571)272-1396.

The examiner can normally be reached on 8am-5pm Monday-Friday.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Erik Kashnikow can be reached on 571-270-3475. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DREW E BECKER/
Primary Examiner, Art Unit 1792



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DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application is being examined under the pre-AIA first to invent provisions.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on applications DE 10 2010 031 988.0, DE 10 2010 044 251.8, and DE 10 2011 010 534.4 filed in Germany on 22 July 2010, 02 September 2010, and 07 February 2011 respectively, the official translations of which were received 23 January 2020.

3. Under 35 U.S.C. 119(a) or (e), the claims in a U.S. application are entitled to the benefit of a foreign priority date or the filing date of a provisional application if the corresponding foreign application or provisional application supports the claims in the manner required by 35 U.S.C. 112(a) or pre-AIA 35 U.S.C. 112, first paragraph.

4. This is to say that current application must be an application for a patent for an invention which is also disclosed in the prior application(s), foreign or domestic. The disclosure of the invention in the parent application and in the later-filed application must be sufficient to comply with the requirements of 35 U.S.C. 112(a) or the first paragraph of pre-AIA 35 U.S.C. 112, except for the best mode requirement. See *Transco Products, Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 32 USPQ2d 1077 (Fed. Cir. 1994)

5. The disclosure of the prior-filed applications, Applications No. DE 10 2010 031 988.0, DE 10 2010 044 251.8, and DE 10 2011 010 534.4, as well as US Applications 15/646980, 15/211823, and 13/744623 fail to provide adequate support or enablement

in the manner provided by 35 U.S.C. 112(a) or pre-AIA 35 U.S.C. 112, first paragraph for one or more claims of this application. Claims 9 – 18 and 26 – 29 are directed to a method of using a “system” for making a coffee beverage. There is no disclosure of a method of using a “system” for making a coffee beverage found in any of applicant’s prior filed applications. Regarding claims 9 and 26 particularly, there is no disclosure of loading a first portion capsule into an apparatus, sealing the top side of the flange and/or the first foil lid against a seal of the apparatus, followed by the loading of a second portion capsule into said apparatus, reading a second barcode therefrom, controlling a second production process based on reading of said second barcode, piercing the second foil lid with the mandrel of the apparatus, sealing the top side of the flange and/or the second foil lid against a seal of the apparatus therefore for claims in the current application are not entitled to the benefit of the claimed priority dates, foreign or domestic and the priority date is the filing date of the application, that is 12 August 2019.

6. This application has been filed as a divisional application. The application repeats a substantial portion of prior Applications No. 15/646980, 15/211823, and 13/744623, filed 11 July 2017, 15 July 2016, and 18 January 2013 respectively but, by way of the claims adds *significant* disclosure not presented in the prior applications. Because this application names the inventor or at least one joint inventor named in the prior application, it should constitute a continuation-in-part of the prior application and not a divisional application. Appropriate correction is required.

Drawings

7. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following feature must be shown or said features cancelled from the claims:

an apparatus adapted to supply heated water;

the introduction of heated water into first and second portion capsules through a water inlet of the apparatus along the central axis of said portions capsules;

sealing the top side of the flange and/or the first foil lid and second foil lid against a seal of the apparatus.

8. Specifically with respect to the claimed placement of a barcode as being located on the “bottom” side of a circumferential flange, applicant’s figure 2 clearly shows the position of the barcode reader (13) when it would read the barcode and where the barcode would be located on the circumferential flange. Applicant’s figure 14 further purports to show the location of the barcode and appears to be a view from the membrane side as also shown in figure 2. Therefore it has been determined that these views show what would be the bottom side of the flange and the location of the barcode thereon. In the event that applicant differs in this interpretation of the claimed barcode location then applicant must show the barcode’s location in the figures or the feature cancelled from the claims.

9. Applicant is cautioned against the addition of new matter when making changes to the drawings.

10. Figures 1, 2, 3, 16, and 17 contain partial views.

11. The different views must be numbered in consecutive Arabic numerals, starting with 1, independent of the numbering of the sheets and, if possible, in the order in which they appear on the drawing sheet(s). Partial views intended to form one complete view, on one or several sheets, must be identified by the same number followed by a capital letter. View numbers must be preceded by the abbreviation "FIG." Where only a single view is used in an application to illustrate the claimed invention, it must not be numbered and the abbreviation "FIG." must not appear (MPEP § 608.02 V.(u)).

12. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "15" has been used to designate both an arrow in figure 2 and grooves in at least figures 19 and 22. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

13. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure

is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

14. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

There is no antecedent basis in the specification for the following limitations recited in claims 9 and 26:

- loading a first portion capsule into an apparatus;
- reading a first barcode with a barcode reader;
- sealing the top side of the flange and/or the first foil lid against a seal of the apparatus;
- forming a first coffee beverage;
- unloading a first or second portion capsule from the apparatus;
- loading a second portion capsule into the apparatus;
- reading a second barcode with a barcode reader;

controlling a second production process of a second coffee beverage;
piercing a second foil lid;
sealing the top side of the flange and/or the second foil lid of the second portion
capsule against a seal of the apparatus;
forming a second coffee beverage;

Claim Objections

15. Claims 9 and 26 are objected to because of the following informalities:
16. Claim 9 contains roman numerals enclosed within parentheses. These roman numerals are not seen to be reference characters. Similarly for claim 26 where the claims contains roman numerals, Arabic numerals, and lower case letters in parentheses which are not reference characters. Only reference characters should be enclosed by parentheses so as to avoid confusion in the claims.
17. Appropriate correction is required.

Claim Rejections - 35 USC § 112

18. **The following is a quotation of the first paragraph of 35 U.S.C. 112(a):**

(a) IN GENERAL.—The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.

The following is a quotation of the first paragraph of pre-AIA 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

19. Claims 9 – 18 and 26 – 29 are rejected under 35 U.S.C. 112(a) or 35 U.S.C. 112 (pre-AIA), first paragraph, as failing to comply with the written description requirement.

The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor or a joint inventor, or for pre-AIA the inventor(s), at the time the application was filed, had possession of the claimed invention.

20. First it is noted that whilst applicant's disclosure infers a portion capsule would be used for making a coffee beverage, no actual method steps for making a coffee beverage are positively recited in the specification.

21. Regarding claims 9 and 26, with respect to sealing the top side of the flange and/or foil lid of a portion capsule applicant discloses only the edge region has a sealing surface. There is no disclosure of sealing the (entire) top side of a flange and/or a first foil lid or a second foil lid against the seal of the apparatus.

22. Regarding claim 9 and 26, there is no disclosure of piercing a second foil lid with the mandrel in a region that is offset from a central axis of a second portion capsule.

23. Regarding claim 26, there is no disclosure of unloading a first portion capsule from the apparatus.

24. These new recitations are therefore seen to constitute an issue of new matter and as such must be deleted from the claims.

25. Claims 9 – 18 are rejected under 35 U.S.C. 112(a) or pre-AIA 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. Claim 9 fails to unload the first portion capsule from the apparatus, which is/are critical or essential to the practice of the invention but not included in the claim(s). See *In re Mayhew*, 527 F.2d 1229, 188

USPQ 356 (CCPA 1976). Unless the first portion capsule is unloaded from the apparatus a second capsule would not be able to be inserted into the apparatus to make a second coffee beverage.

26. Claims 10 – 18 and 27 – 29 are rejected by virtue of their dependence on a rejected base claim.

27. **The following is a quotation of 35 U.S.C. 112(b):**

(b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

28. Claims 9 – 18 and 26 – 29 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

29. Regarding claim 9, it is unclear how many coffee beverages are to be made. In line 18 heated water is introduced into a first portion capsule but no completed coffee beverage is recited as being formed. A second portion capsule is then loaded into the apparatus and a coffee beverage is recited as being formed. As recited this would mean that a single coffee beverage is formed by introducing heated water first into a first portion capsule and then introducing heated water into a second portion capsule however the claim recites the second portion capsule is “to form the second coffee beverage”.

30. Regarding claim 9, it is not clear how a second coffee beverage could be formed without first forming a first coffee beverage which is to say there is no basis for the formation of a second coffee beverage since a first coffee beverage is not recited as having been formed.

31. Regarding claim 9, it is unknown how a second portion capsule could be loaded into the apparatus since the first portion capsule is not recited as being unloaded from the apparatus.

32. Regarding claim 26, there is no antecedent basis in line 13 for the term “the first foil lid”.

33. Regarding claim 26, there is no antecedent basis in line 31 for the term “the second foil lid”.

34. With respect to the recitation of the term “a system” in claims 9 and 26, a single claim which claims both an apparatus and the method steps of using the apparatus is indefinite under 35 U.S.C. 112, second paragraph (MPEP 2173.05(p) II).

35. Such claims may also be rejected under 35 U.S.C. 101 based on the theory that the claim is directed to neither a “process” nor a “machine,” but rather embraces or overlaps two different statutory classes of invention set forth in 35 U.S.C. 101 which is drafted so as to set forth the statutory classes of invention in the alternative only.

36. Claims 9 and 26 are indefinite because the meaning of system is not clear. It is not clear what additional structural limitations the term “system” adds to the product. This rejection can be overcome by deleting the term “system”. For example, the claims could be amended to read “A method of using a portion capsule and an apparatus for making a coffee beverage”.

37. Claims 10 – 18 and 27 – 29 are rejected by virtue of their dependence on a rejected base claim.

38. **The following is a quotation of 35 U.S.C. 112(d):**

(d) REFERENCE IN DEPENDENT FORMS.—Subject to subsection (e), a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

The following is a quotation of pre-AIA 35 U.S.C. 112, fourth paragraph:

Subject to the following paragraph [i.e., the fifth paragraph of pre-AIA 35 U.S.C. 112], a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

39. Claims 11 and 12 are rejected under 35 U.S.C. 112(d) or pre-AIA 35 U.S.C. 112, 4th paragraph, as being of improper dependent form for failing to further limit the subject matter of the claim upon which it depends, or for failing to include all the limitations of the claim upon which it depends.

40. Claim 9 recites that the first foil lid and second foil lid would be pierced with a mandrel which is to say that the first foil lid and the second foil lid are to be provided with holes as recited in claim 11, therefore it is not seen that claim 11 further limits claim 9 from which it depends.

41. Claim 12 is rejected by virtue of its dependence on a rejected base claim.

42. Applicant may cancel the claim(s), amend the claim(s) to place the claim(s) in proper dependent form, rewrite the claim(s) in independent form, or present a sufficient showing that the dependent claim(s) complies with the statutory requirements.

Claim Rejections - 35 USC § 103

43. The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

44. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under pre-AIA 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

45. Claims 9 – 18 and 26 – 29 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Krüger US 2013/0129872.

46. Regarding claims 9 and 26 Krüger discloses a method of using an apparatus and a portion capsule for making a coffee beverage which method comprises providing an apparatus (coffee machine) including a barcode reader (detector 13) and which apparatus is capable of supplying heated (hot) water (paragraph [0061] and [0063]). A first portion capsule would be loaded (inserted) into the apparatus, which first portion capsule includes a first foil lid (membrane, cover foil) sealed to a base element (2) having a cavity within which a powdered coffee material is located (paragraph [0023]). The cavity includes a central portion, and a plurality of ribs (grooves 15) that are (i) radially spaced, (ii) vertically oriented, and (iii) configured to extend toward the central portion of the cavity (paragraph [0083] and fig. 19 and 22). The base element includes a circumferential flange (17) having a top side and a bottom side with a first barcode located on the bottom side (attached to the base element's edge region) (fig. 2).

47. In order to make the coffee beverage the first barcode (identifier) would have to be read with the barcode reader (13) (paragraph [0063]) which would then control a production process of a first coffee beverage based upon the reading of the first barcode (paragraph [0015]). The first foil lid would be pierced with a mandrel (29) of the apparatus in a region that is offset from a central axis of the first portion capsule (fig. 16) which would seal the top side of the flange and/or the first foil lid against a seal (21) of the apparatus and heated water would be introduced into the first portion capsule through a water inlet (28) of the apparatus that is arranged along the central axis of the portion capsule (paragraph [0077]) after which the first portion capsule would have to be unloaded from the apparatus or the apparatus could not be used to make other coffee beverages.

48. With respect to the loading of a second portion capsule into the apparatus and the repetition of the same steps that were performed to make said first beverage to make a second coffee beverage, once it was known to perform the claimed steps to make the first coffee beverage it is not seen that patentability would be predicated on the repetition of the same steps to make a second, third, fourth, or an even an infinite number of said beverages absent strong and compelling evidence that a new and unexpected result would be produced. Stated somewhat differently it would have been obvious to not just the ordinarily skilled artisan but to anyone who knows how to use the apparatus and capsule to make a coffee beverage to use said capsule and apparatus taught by Krüger to make as many of said beverages as they would like. Regarding the second barcode being different from the first barcode to control a second, i.e. different process, obviously different coffee beverages such as espresso, filter coffee, and Café

Americano would require different production processes and different barcodes to control those production processes and the particular coffee beverage one would choose to make would have also been a matter of personal taste.

49. Regarding claim 10, Krüger discloses the base element of the portion capsule would be provided with a beverage raw material and then the base element would be sealed by a membrane. Whilst Krüger discloses that “additionally the cavity could contain one or several built-in elements such as, for example a filter” the phrase “additionally the cavity could contain” makes it obvious that such built-in elements would be optional and the basic design is for the portion capsules, first and/or second to be free of a filter (paragraph [0006]).

50. Claim 11 is rejected for the same reasons given above in the rejection of claim 9.

51. Regarding claim 12, Krüger discloses the introducing steps include inducing turbulent flow (turbulence) of the heated water by the ribs (paragraph [0022]).

52. Regarding claims 13, 14, 15, and 17, Krüger discloses the read barcode (detected identifier) would be compared to a stored reference and the apparatus would be activated, in particular the water- providing pressure pump, if the read barcode matches the stored reference (paragraph [0007]).

53. Regarding claims 16 and 18, Krüger discloses the barcode reader (detection system) would be placed in a media chute of the apparatus (paragraph [0007]).

54. Regarding claim 27, Krüger discloses the production conditions would include pressure, temperature, and/or an amount of the heated water (paragraph [0015]). With respect to the production conditions associated with the first barcode being different from the production conditions associated with the second barcode, the particular coffee

beverage one would choose to make and enjoy would have been a matter of personal taste, which is to say that obviously different coffee beverages such as espresso, filter coffee, and Café Americano would require different production processes and different barcodes to control those production processes.

55. Regarding claim 28, Krüger discloses the mandrel would have a chamfered distal tip (fig. 16).

56. Regarding claim 29, Krüger discloses one or both of the introducing steps would include inducing laminar flow of the heated water by the ribs (paragraph [0022]).

57. Claims 9-11, 13-15, 17, 26 – 29 rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Schifferle US 2005/0150391 in view of Jarisch et al. US 2013/0064937, Sweeney et al. US 2002/0020659, Boyd et al. US 2002/0048621, and Rossi WO 2010/099806.

58. Schifferle discloses a method for making coffee by providing an apparatus a bar code reader and supply of heated water (fig. 1, reference sign 28 and 3 paragraph [0019]), loading a capsule into the apparatus (fig. 1 and 2, reference sign 20), the capsule including a lid sealed to a base element having a cavity holding coffee powder (fig. 1, reference sign 21, paragraph [0016]), the capsule having a circumferential flange (fig. 1, reference signs 20 and 21), the barcode located just below the flange on the side of the base element (fig. 1, reference sign 27), reading the barcode with the reader (paragraph [0019]), controlling the coffee process according to the read barcode (paragraph [0019], [0021]), piercing the lid (Figure 2, reference sign 13), introducing heated water into the capsule along the central axis (paragraph [0021] – [0023], fig. 2), putting holes in the lid (paragraph [0023]), controlling a production condition such as

water amount (paragraph [0019]), a longitudinally extending mandrel with a chamfered or angled distal tip (fig. 1, reference sign 13), and a water pump connected to the controller (fig. 1, reference signs 2 and 7). Schifferle further shows the lid would be sealed against a seal of the apparatus (fig. 2).

59. Schifferle does not explicitly recite a foil lid, vertical ribs, the barcode located on the flange bottom (claim 9), comparing the barcode with a stored reference (claim 13), activating the machine or water pump if there is a match (claims 14, 15 and 17), the capsule being free of a filter (claim 10), and use of a second capsule (claims 9 and 26).

60. Nevertheless it would have been obvious to one of ordinary skill in the art to use the capsule and apparatus of Schifferle for a second capsule since the apparatus of Schifferle was not a disposable apparatus to be discarded after a single use, since Schifferle taught using different types of capsules and beverages, since coffee capsules were commonly only used once before being discarded, and since brewing a second serving coffee with a second capsule would have enabled more people to enjoy the coffee of Schifferle.

61. Sweeney discloses a method for making coffee by use of a capsule with vertical ribs which extend inwardly ('659, fig. 1 and 5, reference sign 20, paragraph [0014]), and the capsule closed by a foil lid sealed to a flange top surface ('659, fig. 1 and 2, reference sign 16 and 22, paragraph [0055]).

62. It would have been obvious to one of ordinary skill in the art to incorporate the claimed foil lid and vertical ribs into the invention of Schifferle, in view of Sweeney, since both are directed to methods of making coffee, since Schifferle has already included a capsule and lid, since coffee capsules commonly included vertical ribs and a foil lid as

shown by Sweeney ('659, fig. 1, reference sign 20; paragraph [0055]), since Schifferle already taught using elevated pressure during brewing ('391, paragraph [0026]), since the vertical ribs were used to reinforce and strengthen the capsule as taught by Sweeney ('659, paragraph [0014]), and since these changes would have been made during the course of normal experimentation and optimization due to factors such as the type of coffee brewing, the expected pressure, and the materials used for the capsule and lid.

63. Jarisch discloses that it was well established to place barcodes (small rectangles 65) on the bottom side of the flange of a portion capsule (fig. 2 and 3), that the location of the barcode would be relevant to the location of the barcode reader and the arrangement of said barcode on the portion capsule provides an improved way to identify the capsule within an apparatus (beverage production machine) to ensure reliable and convenient retrieval of information so as to adjust the working parameters of the apparatus (paragraph [0014]) and therefore one would be motivated to modify Schifferle in view of Sweeney and place the barcode on the flange as taught by Jarisch.

64. With respect to the claimed placement of a barcode as being located on the "bottom" side of a circumferential flange, it is The Office's position that applicant's figure 2 clearly shows the position of the barcode reader (13) when it would read the barcode and where the barcode would be located on the circumferential flange and figure 14 further shows the location of the barcode in a view from the membrane side which is also as also shown in figure 2. Therefore it is seem that these views show what would be the bottom side of the flange and the location of the barcode thereon as determined from applicant's figures and specification.

65. In the event that applicant differs in this interpretation of the claimed barcode location then Jarisch discloses a method for making coffee by reading a code (70) located on the flange bottom ('937, fig. 4, reference signs 62 and 72) and the capsule sealed by a foil lid ('937, paragraph [0036]).

66. Boyd discloses a method for making coffee by use of a capsule with a barcode on its flange ('621, fig. 2, reference signs 10 and 30).

67. Rossi discloses a method for making coffee by providing a capsule with barcodes on its bottom surface ('806, fig. 1, reference signs 2, 4, and 5), an absence of a filter ('806, fig. 1), a barcode reader below the capsule ('806, fig. 1, reference sign 7), the control unit comparing the barcode with pre-stored data ('806, page 9, lines 19-26), and only activating the machine if the barcode is recognized ('806, page 11, lines 1 – 6, fig. 1, reference signs 8 – 10).

68. It further would have been obvious to one of ordinary skill in the art to incorporate the claimed barcode on the flange bottom into the invention of Schifferle, in view of Jarisch, Boyd, and Rossi, since all are directed to methods of making coffee, since Schifferle already included a barcode below the flange in a sheltered area of the capsule ('391, fig. 1, reference sign 27), since coffee capsules commonly included a barcode located on the flange surface as shown by Boyd ('621, fig. 2, reference sign 30), since coffee capsules commonly included a code on the flange bottom as shown by Jarisch ('937, fig. 4, reference sign 72), since coffee capsules commonly included barcodes on the bottom surface as shown by Rossi ('806, fig. 1, reference signs 4 and 5), since the flange bottom area of Schifferle was also a sheltered area of the capsule where the barcode would be less likely to be smudged or damaged as compared to the

capsule bottom or sidewall, since coffee machines commonly included barcode readers positioned below the capsules as shown by Rossi ('806, fig. 1, reference sign 7), since barcode readers placed below the capsules were also capable of reading the flange bottom areas, and since placing plural barcodes in different locations on the capsule would have further ensured that the capsule of Schifferle could be easily recognized and used for brewing even if one or more of the barcodes became smudged or damaged.

69. It further would have been obvious to one of ordinary skill in the art to incorporate the claimed activation and comparing steps, and absence of a filter, into the invention of Schifferle, in view of Jarisch, Boyd, and Rossi, since all are directed to methods of making coffee, since Schifferle already included a water pump connected to the controller and barcode reader ('391, fig. 1, reference signs 2, 7, and 28) and controlling a production condition such as water amount ('391, paragraph [0019]), since coffee capsules often did not include a filter as shown by Rossi, since Schifferle discloses using capsules for making espresso, since hot beverages such as instant coffee and hot chocolate commonly did not require a filter, since coffee apparatuses commonly included a controller comparing a barcode with pre-stored data ('806, page 9, lines 19-26) as shown by Rossi, and since these modifications of Schifferle would have further ensured that the coffee was brewed under acceptable conditions.

70. As set forth above it is seen that Schifferle, in view of Jarisch, Boyd, and Rossi disclose the lid would be pierced by a mandrel. It is further seen that Schifferle, in view of Jarisch, Boyd, and Rossi disclose the lid would be pierced in a region that is offset

from a central axis of the capsule by disclosing that small openings would be need to be provided in the lid in order for the lid to be pervious to liquid ('937, paragraph [0037]).

71. Regarding claim 29, since Schifferle, in view of Jarisch, Boyd, and Rossi have taught the portion capsule as claimed it would be expected that the introducing steps would induce laminar flow of the heated water by the ribs.

72. Claim 12 is rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Schifferle US 2005/0150391 in view of Jarisch et al. US 2013/0064937 in view of Sweeney et al. US 2002/0020659 in view of Boyd et al. US 2002/0048621 in view of Rossi WO 2010/099806 in view of Rubino EP 1 849 718.

73. Schifferle, Jarisch, Sweeney, Boyd, and Rossi disclose the abovementioned concepts. Schifferle, Jarisch, Sweeney, Boyd, and Rossi do not explicitly recite the ribs inducing turbulent flow (claim 12). Rubino discloses a method for making coffee by use of a capsule with vertical ribs ('718, fig. 8, reference sign 50) which provide optimal conveyance of the water through the capsule ('718, paragraph [0019] and [0004]). It would have been obvious to the ordinarily skilled artisan to incorporate the claimed turbulent flow into the invention of Schifferle, in view of Jarisch, Sweeney, Boyd, Rubino, and Rossi, since all are directed to methods of making coffee, since Schifferle already included a capsule with sidewalls ('391, fig. 1, reference sign 20) as well as controlling the water flow velocity and flow rate with the pump and controller ('391, fig. 1, reference signs 2 and 7), since coffee capsules commonly included vertical ribs which extend inwardly and reinforce the sidewalls ('659, fig. 1 and 5, reference sign 20; paragraph [0014]), since coffee capsules commonly included vertical ribs to optimize flow conditions within the capsule as shown by Rubino ('718, paragraph [0019] and

[0004], fig. 8, reference sign 50), and since turbulent flow within the capsule would better ensure that the water was able to contact all of the coffee material within the capsule of Schifferle and thus provide more effective brewing.

74. Claims 16 and 18 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Schifferle US 2005/0150391 in view of Jarisch et al. US 2013/0064937 in view of Sweeney et al. US 2002/0020659 in view of Boyd et al. US 2002/0048621 in view of Rossi WO 2010/099806, and further in view of Mahlich US 2004/0089158.

75. Regarding claims 16 and 18 it is seen that Schifferle, Jarisch, Sweeney, Boyd, and Rossi disclose the barcode reader would be placed within the media chute of the apparatus ('937, fig. 2 and 3). In the event that claims 16 and 18 can be construed as differing from Schifferle, Jarisch, Sweeney, Boyd, and Rossi in reciting the barcode reader would be placed in a media chute Mahlich discloses a method for making coffee by use of a barcode reader below a media chute holding the capsules (fig. '158, 3, reference signs 27, 1, and 12). It would have been obvious to the ordinarily skilled artisan to incorporate the claimed media chute reader into the invention of Schifferle, in view of Jarisch, Sweeney, Boyd, Rossi, and Mahlich, since all are directed to methods of making coffee, since Schifferle already included a barcode reader, since coffee apparatuses commonly included a barcode reader located below a media chute as shown by Mahlich ('158, fig. 3, reference signs 27, 1, and 12), since this would have enabled the capsule to be automatically scanned and read before placement in the brew chamber of Schifferle and thus provided faster and more accurate brewing without the need for manual reading of the barcode.

Response to Arguments

76. Applicant's arguments filed 23 January 2020 have been fully and carefully considered but they are not found persuasive.
77. Applicant urges that Jarisch is not prior art asserting that applicant is entitled to a priority date of 22 July 2010. This urging is not deemed persuasive.
78. The current application must be an application for a patent for an invention which is also disclosed in the prior applications, foreign or domestic. The disclosure of the invention in the parent application and in the later-filed application must be sufficient to comply with the requirements of 35 U.S.C. 112(a) or the first paragraph of pre-AIA 35 U.S.C. 112
79. As set forth above after a careful review of applicant's recently submitted foreign priority document translations applications No. DE 10 2010 031 988.0, DE 10 2010 044 251.8, and DE 10 2011 010 534.4, as well as US Applications 15/646980, 15/211823, and 13/744623 it is seen that the priority documents fail to provide adequate support or enablement in the manner provided by 35 U.S.C. 112(a) or pre-AIA 35 U.S.C. 112, first paragraph for one or more claims of this application due to the significant amount of disclosure presented in the claims but not found in the previous applications to which applicant claims benefit therefore applicant's priority claim is denied.
80. Further, whilst the application repeats a substantial portion of applicant's prior applications No. 15/646980, 15/211823, and 13/744623, by way of the claims the application adds significant disclosure not presented in the prior applications to the extent that this application cannot be seen to constitute a divisional application as filed but should constitute a continuation-in-part of the prior application and not a divisional

application. This is to say that any limitations in the claims not found in the priority documents would only receive benefit of the filing date of the instant application.

Conclusion

81. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHAIM A SMITH whose telephone number is (571)270-7369. The examiner can normally be reached on Monday-Thursday 09:00-18:00.

82. Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to telephone the Examiner.

83. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Erik Kashnikow can be reached on (571) 270-3475. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

84. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <https://ppair-my.uspto.gov/pair/PrivatePair>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/C.S./
Chaim Smith
Examiner, Art Unit 1792
12 April 2020

/ERIK KASHNIKOW/
Supervisory Patent Examiner, Art Unit 1792

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Marc Krüger

Group Art Unit: 1792

Serial No.: 16/538,752

Examiner: Smith, Chaim A.

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Conf. No.: 8143

For: PORTION CAPSULE HAVING AN IDENTIFIER

Attorney Docket No.: 1859.029USD3 (KRU0022-WO-US-T5)

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE AND AMENDMENT

In response to the Office Action mailed April 28, 2020, please amend the above-identified application as follows and consider the following remarks.

Amendments to the Specification

A Substitute Specification is submitted by way of a Marked-Up Copy and a corresponding Clean Copy. No new matter has been added. Applicant requests entry of this Substitute Specification.

Amendments to the Claims

1) – 8) (Cancelled)

9) (Currently Amended) A method of ~~using a system for making a coffee beverage, the method comprising:~~

providing an apparatus including a barcode reader, ~~the apparatus being adapted to supply heated water;~~

~~loading~~ inserting a first portion capsule into the apparatus, the first portion capsule including a first foil lid sealed to a base element having a cavity within which a powdered coffee material is located, the cavity being free of a filter and including a central portion, and a plurality of ribs that are ~~(i)~~ radially spaced, ~~(ii)~~ vertically oriented, and ~~(iii)~~ configured to extend toward the central portion of the cavity, the base element including a circumferential flange having a top side to which the first foil lid is sealed and an opposing bottom side with a first barcode located on the bottom side, the base element of the first portion capsule includes an outside surface having a plurality of vertically oriented grooves;

reading the first barcode with the barcode reader;

controlling a production process of a first coffee beverage based upon the reading of the first barcode;

piercing the first foil lid with a mandrel of the apparatus in a region that is offset from a central axis of the first portion capsule;

sealing the ~~top side of the flange and/or the first foil lid~~ against a seal of the apparatus;

introducing ~~the~~ heated water into the first portion capsule through a water inlet of the apparatus that is arranged along the central axis of the portion capsule to form the first coffee beverage;

unloading the first portion capsule from the apparatus;

~~loading~~ inserting a second portion capsule into the apparatus, the second portion capsule including a second foil lid sealed to a base element having a cavity within which a powdered coffee material is located, the cavity of the second portion capsule being free of a filter and includes ~~including~~ a central portion, and a plurality of ribs that are ~~(i)~~ radially spaced, ~~(ii)~~ vertically oriented, and ~~(iii)~~ configured to extend toward the central portion of the cavity, the base element of the second portion capsule including a circumferential flange having a top side to which the second foil lid is sealed and an opposing bottom side with a second barcode located on the bottom side and being different from the first barcode, the base element of the second portion capsule includes an outside surface having a plurality of vertically oriented grooves;

reading the second barcode with the barcode reader;

controlling a second production process of a second coffee beverage based upon the reading of the second barcode, the second production process being different than the first production process;

piercing the second foil lid with the mandrel of the apparatus in a region that is offset from a central axis of the second portion capsule;

sealing the top side of the flange and/or the second foil lid of the second portion capsule against the seal of the apparatus; and

introducing the heated water into the second portion capsule to form the second coffee beverage.

10) (Cancelled)

11) (Cancelled)

12) (Currently Amended) The method according to ~~claim 11~~claim 9, wherein one or both of the introducing steps include: inducing turbulent flow of the heated water by the ribs.

13) (Previously Presented) The method according to claim 9, wherein the method comprises: comparing the read barcode with a stored reference.

14) (Previously Presented) The method according to claim 13, wherein the method comprises: activating the apparatus if the read barcode matches with the stored reference.

15) (Previously Presented) The method according to claim 14, wherein the method comprises: activating a water-providing-pressure pump of the apparatus if the read barcode matches with the stored reference.

16) (Previously Presented) The method according to claim 15, wherein the barcode reader is placed in a media chute of the apparatus.

17) (Previously Presented) The method according to claim 13, wherein the method comprises activating a water-providing-pressure pump of the apparatus if the read barcode matches with the stored reference.

18) (Previously Presented) The method according to claim 17, wherein the barcode reader is placed in a media chute of the apparatus.

19) (Cancelled)

20) (Cancelled)

21) (Cancelled)

22) (Cancelled)

23) (Cancelled)

24) (Cancelled)

25) (Cancelled)

26) (Currently Amended) A method of ~~using a system for~~ making a coffee beverage, comprising steps of:

providing an apparatus including a barcode reader configured to read a barcode, ~~and being adapted to supply heated water under pressure~~, the apparatus including a mandrel, a water inlet, and a seal;

~~leading inserting~~ a first portion capsule into the apparatus, the first portion capsule ~~being free of a filter and~~ including a first lid that is sealed to a base element having a cavity within which a powdered coffee material is located, the base element has been shaped to define ~~(1)~~ a wall ~~(a)~~ that defines the cavity with a central interior portion, and ~~(b)~~ having a plurality of ribs

that are (i)-radially spaced, (ii)-vertically oriented, and (iii)-configured to extend toward the central interior portion and (2), an outside surface of the wall having a plurality of vertically oriented grooves, the base element having a circumferential flange having a top side to which the first lid is sealed and an opposing bottom side with a first barcode located on the bottom side;

piercing the first ~~first~~ lid with the mandrel in a region that is offset from a central axis of the first portion capsule;

sealing the top side of the flange of the first portion capsule and/or the first lid against the seal of the apparatus;

reading the first barcode with the barcode reader;

controlling production of a first coffee beverage based upon the reading of the first barcode;

introducing ~~the~~ heated water into the first portion capsule via the water inlet that is arranged along the central axis of the first portion capsule according to production conditions associated with the first barcode to form the first coffee beverage;

unloading the first portion capsule from the apparatus;

~~loading~~ inserting a second portion capsule into the apparatus, the second portion capsule being free of a filter and including a second lid sealed to a base element having a cavity within which a powdered coffee material is located, the base element has been shaped to define (i)-a wall (ii)-that defines a cavity with a central interior portion, and (iii)-having a plurality of ribs that are (i)-radially spaced, (ii)-vertically oriented, and (iii)-configured to extend toward the cavity central interior portion, and (2), an outside surface of the wall having a plurality of vertically oriented grooves, the base element has a circumferential flange having a top side to which the second lid is sealed and an opposing bottom side with a second barcode that is located on the bottom side and being different from the first barcode;

piercing the second foil-lid with the mandrel in a region that is offset from a central axis of the second portion capsule;

sealing the top side of the flange of the second portion capsule and/or the second lid against the seal of the apparatus;

reading the second barcode with the barcode reader;

controlling production of a second coffee beverage based upon the reading of the second barcode;

introducing the heated water into the second portion capsule via the water inlet that is arranged along the central axis of the second portion capsule according to production conditions associated with the second barcode to form the second coffee beverage.

27) (Previously Presented) The method according to claim 26, wherein the production conditions associated with the first barcode are different from the production conditions associated with the second barcode, the production conditions include: pressure, temperature and/or an amount of the heated water.

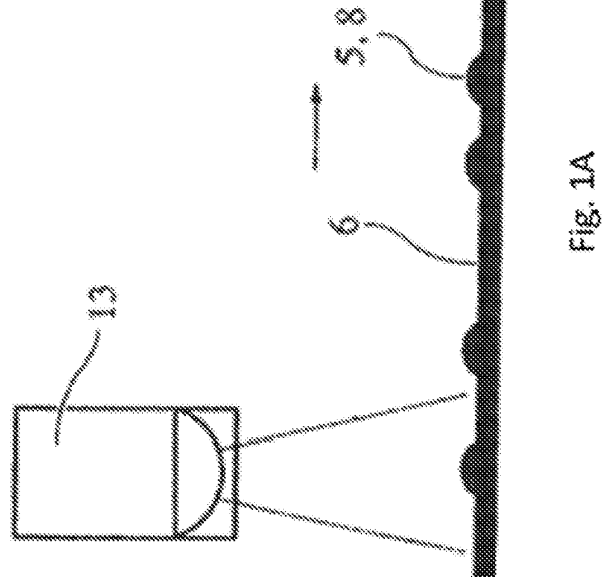
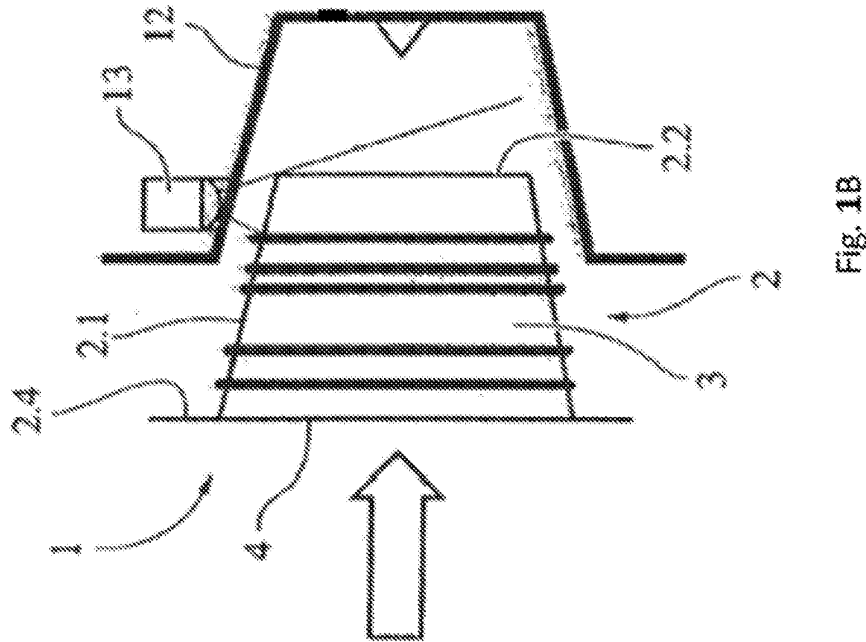
28) (Previously Presented) The method according to claim 26, wherein the mandrel has a chamfered distal tip.

29) (Previously Presented) The method according to claim 9, wherein one or both of the introducing steps include: inducing laminar flow of the heated water by the ribs.

30) (New) The method according to claim 9, wherein the base element of the first portion capsule is made of metal.

31) (New) The method according to claim 30, wherein the base element of the second portion capsule is made of metal.

32) (New) The method according to claim 9, wherein the first foil lid and/or the second foil lid is made of metal.



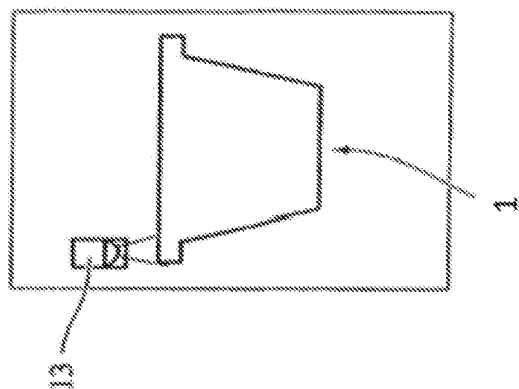


Fig. 2B

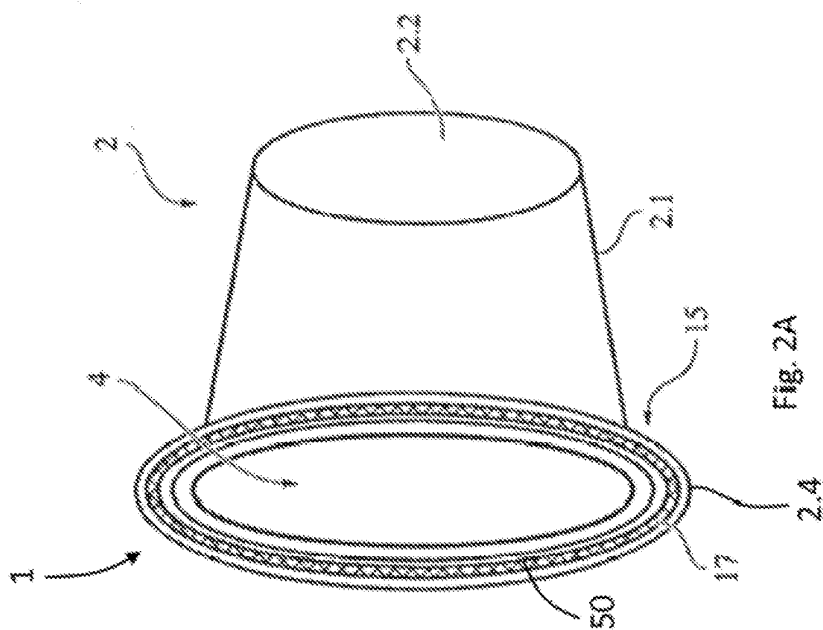


Fig. 2A

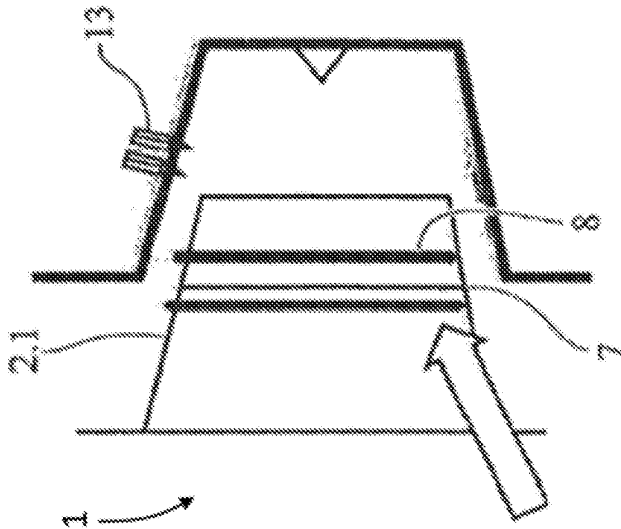


Fig. 3A

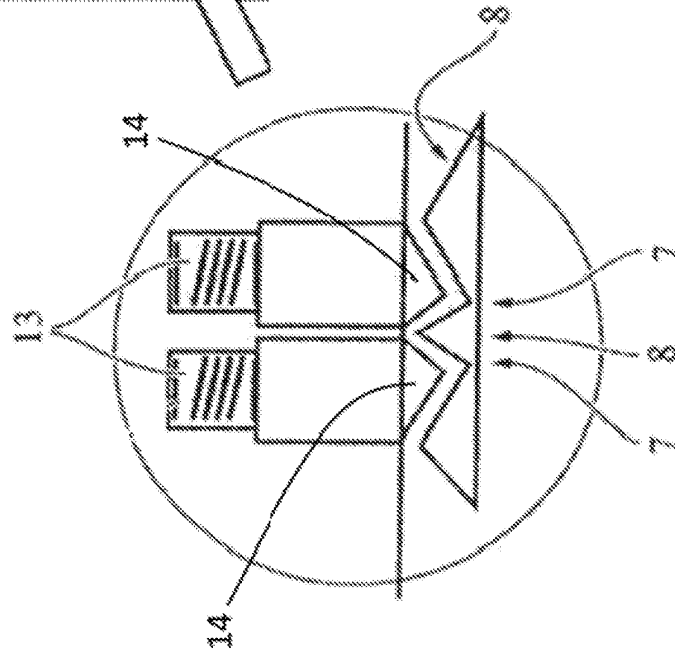


Fig. 3B

Replacement Sheet

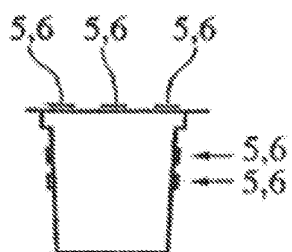


Fig. 4

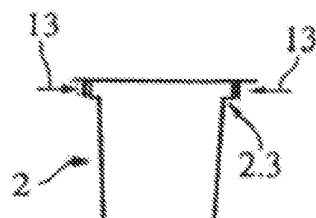


Fig. 6

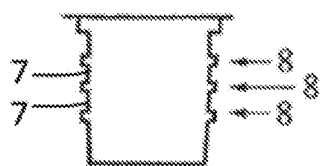


Fig. 5

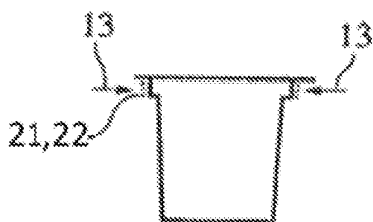


Fig. 7

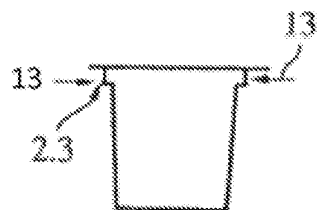


Fig. 8

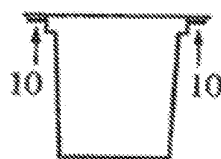


Fig. 9

Replacement Sheet

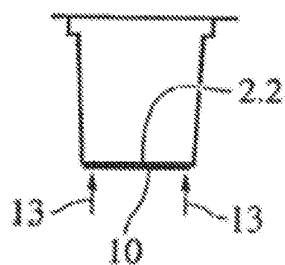


Fig. 10

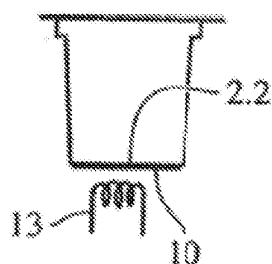


Fig. 11

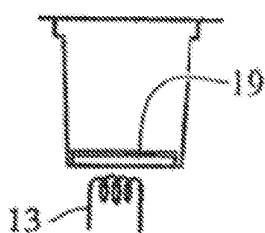


Fig. 12

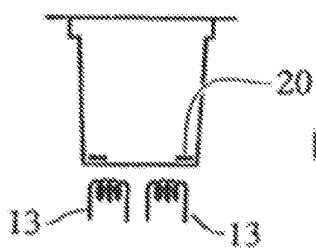


Fig. 13

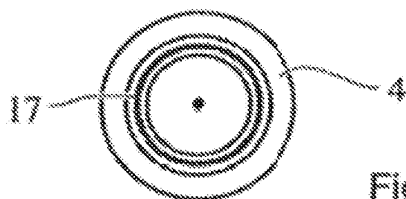
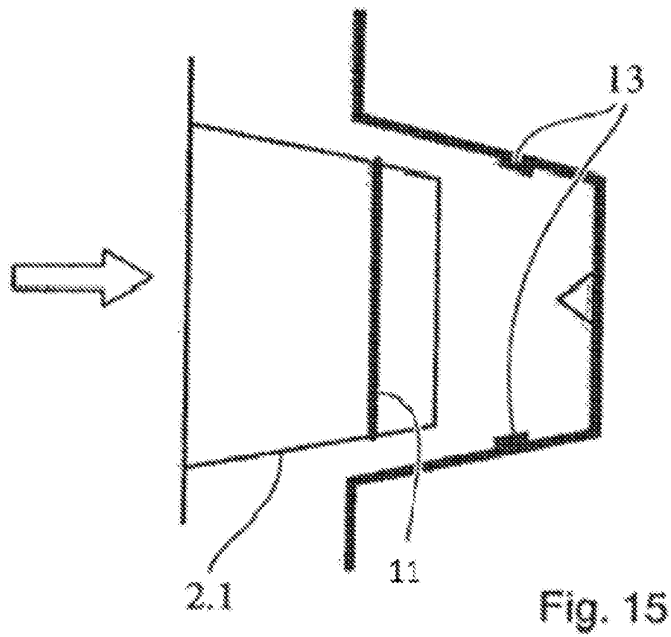


Fig. 14



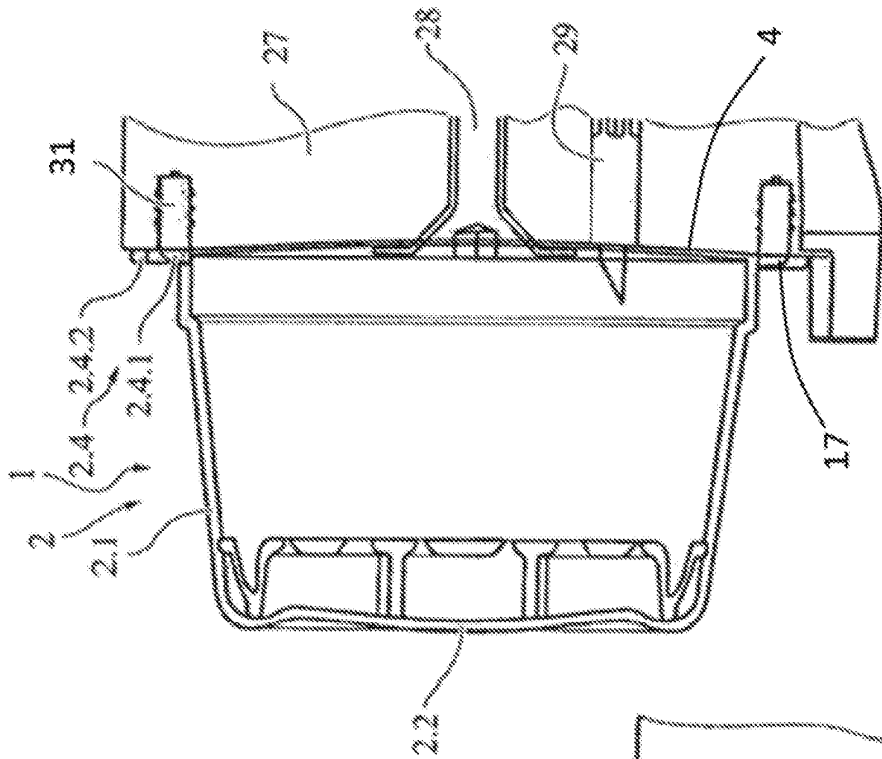


Fig. 16A

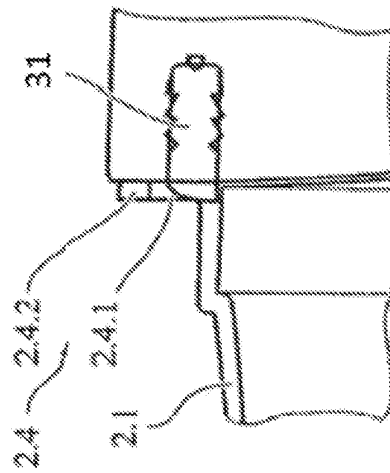
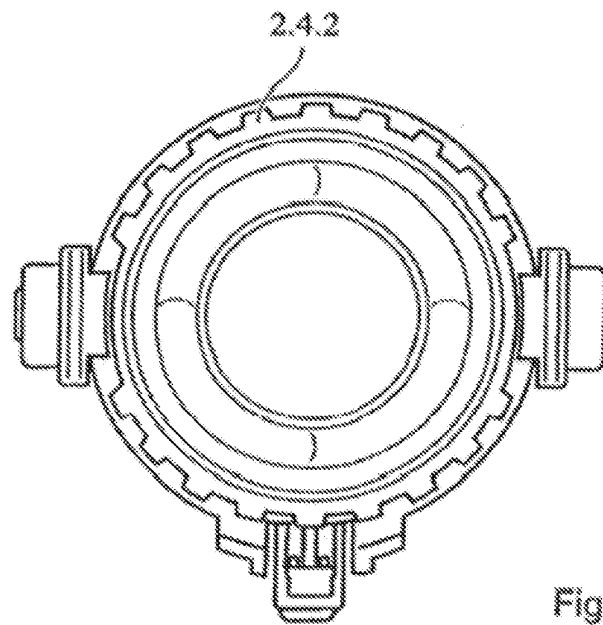
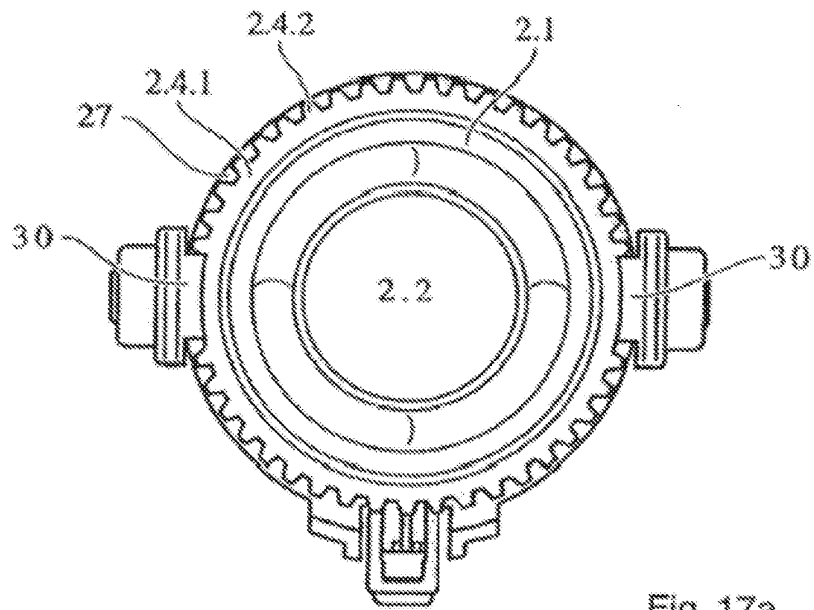
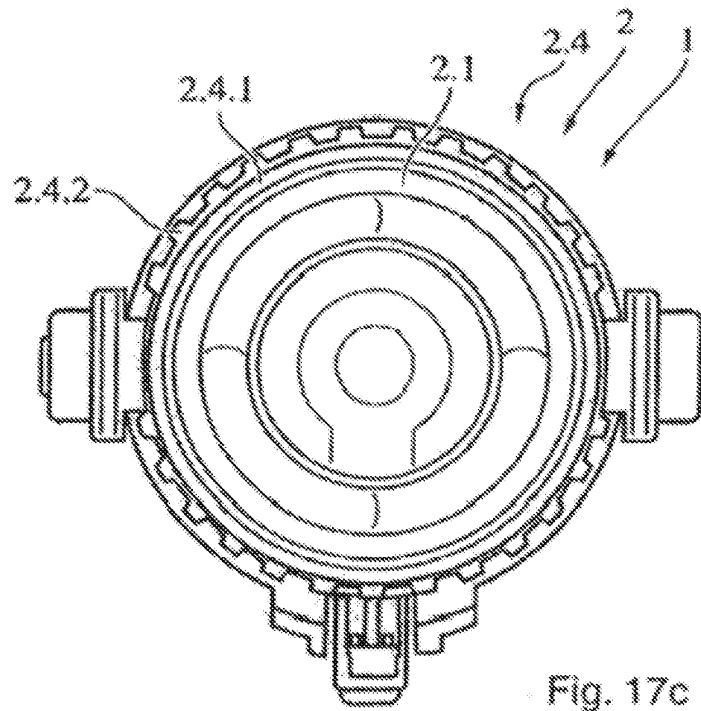


Fig. 16B

Replacement Sheet





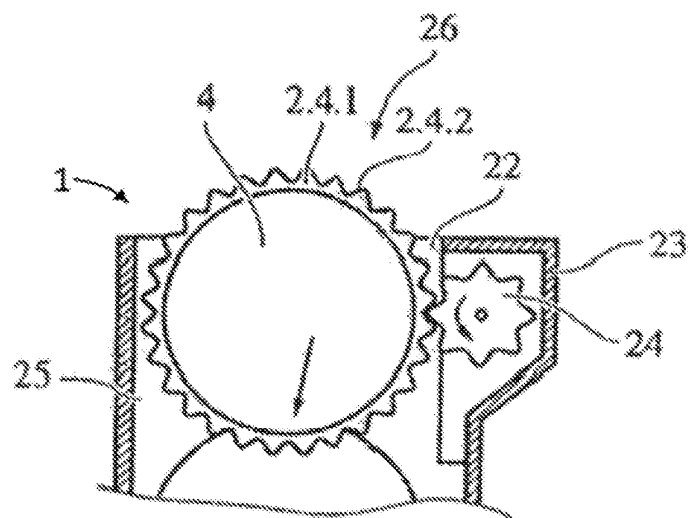


Fig. 18

Replacement Sheet

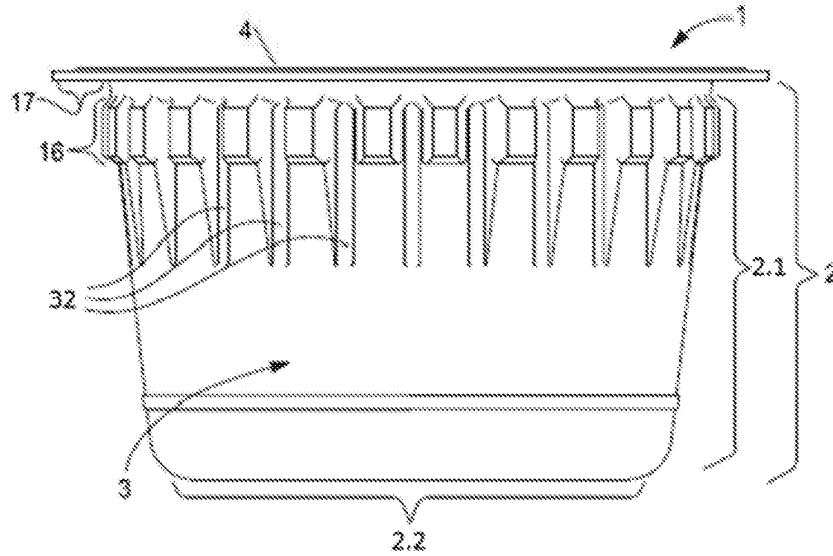


Fig.19

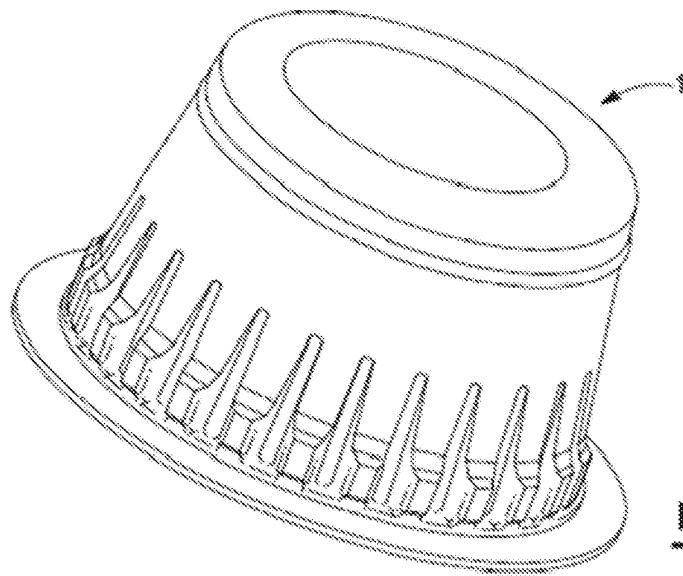


Fig.20

Replacement Sheet

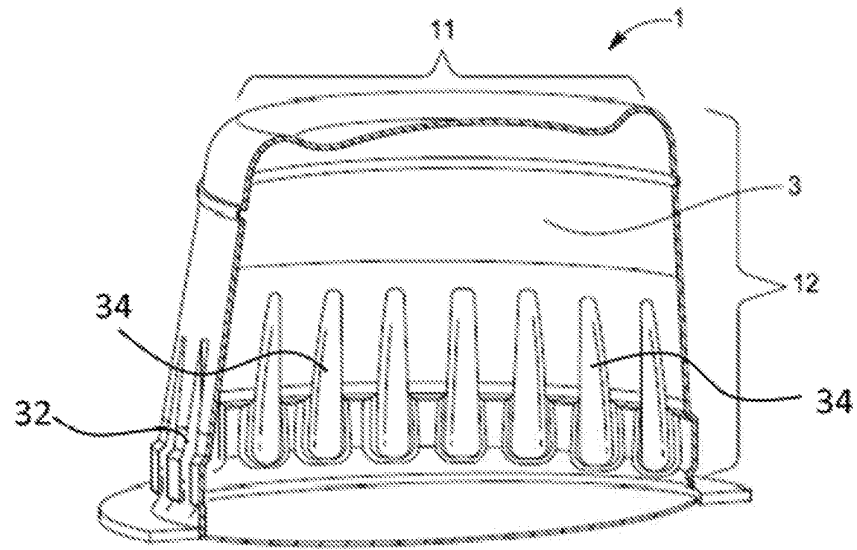


Fig. 21

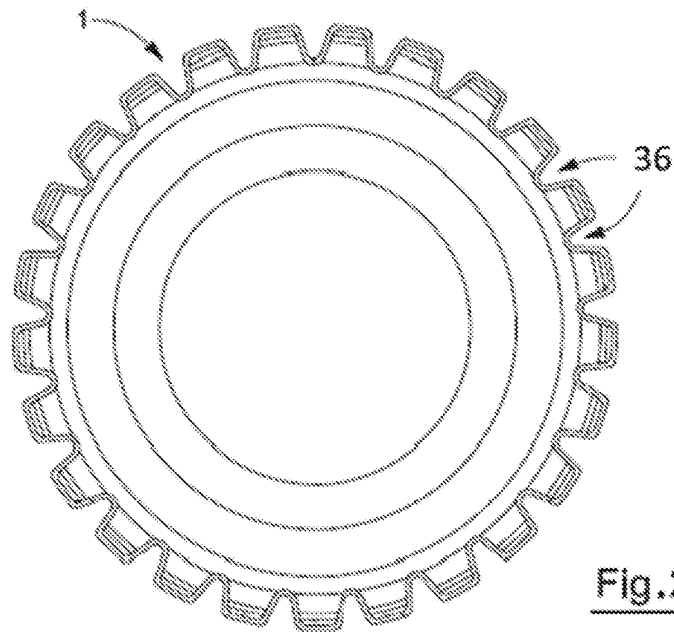


Fig. 22

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PORTION CAPSULE HAVING AN IDENTIFIER

FIELD

[0001] These teachings relate to a portion capsule and method for producing a beverage.

BACKGROUND

[0002] The present invention relates to a portion capsule for producing a beverage, comprising a base element having a cavity in which a beverage raw material is provided and which is closed by a membrane fastened to the base element.

[0003] Such capsules are well known and are being launched onto the market in abundant variety. Since these capsules are often quite similar, it is possible that the manufacturer's capsules are used in a coffee machine designed by another manufacturer, although they are not suited for it. This may result in significant security issues and/or the coffee machine may be damaged.

[0004] The object of the present invention is therefore to provide a portion capsule which only is suitable for a specific coffee machine.

SUMMARY

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[0005] The object is accomplished according to the present invention by a portion capsule for producing a beverage, comprising a base element having a cavity in which a beverage raw material is provided and which is closed by a membrane fastened to the base element, wherein it has an identifier, which allows to individualize the respective portion capsule.

[0006] The present invention relates to a capsule for producing a beverage or foodstuff, comprising a base element having a cavity in which a beverage raw material is provided. Such capsules are, for example made of plastic, natural materials and/or biodegradable materials and substantially have a base element, in particular a deep-drawn base element, i.e. it is substantially designed frustoconically or cylindrically. The beverage raw material is arranged within the portion capsule's cavity and is extracted and/or dissolved in a liquid, in particular water. After the beverage raw material has been filled into the cavity the base element is usually sealed by a membrane. In particular the membrane is localized on the opposite side of the base element's bottom. The membrane can be made of the same or different material as the base element and is substantially attached to the base element using a sealing and/or an adhesive bonding. Additionally the cavity could contain one or several built-in elements, such as, for example a filter, a non-woven, a felt, a shut-off device and/or something similar to those. For the case that a non-woven and a felt are arranged within the cavity, they are interconnected preferably. The non-woven and/or the felt can be made of several layers in such a way that the layers may differ in the kind of its starting material and/or its preparation. Moreover the membrane and/or the bottom can be provided with a plurality of recesses (holes).

[0007] According to the present invention, it is provided that the portion capsule has an

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identifier that allows to individualize the respective portion capsule. In the context of this invention individualizing means that the respective portion capsule can be assigned to a group of capsules that are suitable for the coffee machine preferably. It is not necessary that the coffee machine is able to specify and/or identify the portion capsule. In fact it is much more important that the coffee machine associates the portion capsule with a group of portion capsules, which is suitable for the coffee machine. In particular, individualizing means that those portion capsules that are not appropriate for the coffee machine cannot be inserted into and/or directly fall through the holder, which is designed for the portion capsules in the coffee machine, and/or the coffee machine operates only with the corresponding portion capsules. Preferably a sensor/detection system handles the identifier and compares it with a stored reference substantially. Preferably, the coffee machine, in particular the water-providing- pressure pump, will be activated if the detected identifier matches with the reference. Otherwise the coffee machine will not start operating. Preferably the detection system is placed in the region of the coffee machine's media chute designed for the portion capsules. According to another preferred embodiment of the invention, the detection system may be placed in the region of the brewing chamber. Another possible embodiment of the invention provides that the identifier prevents portion capsules from inserting into the coffee machine. Alternatively or additionally, means, in particular mechanical means, more preferably, one or more gearwheels, may be added to the media chute in order to guarantee that incorrect portion capsule cannot be inserted into the coffee machines by passing the media chute.

[0008] Preferably the identifier is composed of surface areas having different optical properties, for example reflection. These surfaces may be localized on the membrane, the

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side wall and/or the bottom of the portion capsules. Preferably, the portion capsule has at least two areas which differ in their optical properties, for example the reflection characteristics.

[0009] The detection of a recess and/or a bulge is also preferred. Preferably, recess and bulges alternate and/or at least two recesses or bulges are separately placed from each other. Especially it is possible that the recess and/or the bulge form a gearwheel that is attached to the outer border and/or at least partially extends to the wall region of the portion capsule. The recess and/or bulge may be produced by any shaping method, for example by deep drawing, preferably.

[0010] Furthermore, the recess may be realized by removing material. In particular the material's removal can be accomplished by punching or using a laser on condition that this processing does not damage a barrier layer placed in the portion capsule's material, which prevents moisture or aroma from escaping out of the portion capsule and/or water vapor or oxygen enters the capsule. The reading of the identifier, which is encoded in the recess and/or bulge, may be a result from a mechanical and/or optical method, for example. Alternatively or additionally, the identifier can be used to avoid that the portion capsule is inserted into the coffee machine. This applies in particular to the media chute. For example it is possible to design a portion capsule comprising a ring gear that is placed on its circumference and is compatible with another ring gear, which is placed in the media chute. If the media chute's ring gear only revolves for a corresponding ring gear of the portion capsule and its revolving allows the portion capsule to pass, only portion capsules equipped with the proper ring gear will pass the insertion

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lock.

[00011] According to a further subject matter of a preferred development of the present invention, the identifier may be included in the membrane. Preferably, the identifier is a layer or partial layer of the membrane. Such identifiers may be an optically detectable material, for example a fluorescent material. Furthermore, the identifier may be designed with layers made of metal or ferrous metal or stripes made of metal or ferrous metal in or on the membrane, respectively.

[00012] Preferably the identifier is a machine-readable imprint. This is realized with a print in food approved color, preferably. Fluorescent materials like paper or print materials, whose optical properties change under the influence of temperature, are favored also. Preferably the print is a barcode, a logo or a repeat pattern.

[00013] According to a further subject matter of a preferred development of the present invention, the identifier is an electrically conductive section, which can be placed all over the portion capsule, but is localized on the side wall, the edge and/ or the floor preferably. The electrically conductive section, which is inserted into the coffee machine, can become part of an electric circuit and causes therefore a measurable change, which leads to the identification of the respective portion capsule. In a further preferred embodiment, the identifier is a section made of a ferromagnetic material.

[00014] Another construction version favors a RFID chip being the identifier.

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[00015] If the portion capsule is customized according to the invention, portion capsules that are not in line with the coffee machine will be prevented from inserting into the coffee machine. Furthermore it is possible that the identifier allows to identify the portion capsule located in the brewing chamber in such a way that the production process of beverage or food may be controlled, for example by adjusting the temperature, the pressure and/or the amount of water.

[00016] According to a further subject matter of a preferred development of the present invention, the portion capsule's material is weakened in the bottom area caused by a selective material removal, for example by using a laser. The weakening is provided for piercing the portion capsules using a mandrel. This procedure is needed for the beverage's preparation. Since the material is weakened in the section, which is treated with a laser and is supposed to be pierced using the mandrel, the degree of necessary force for piercing the portion capsule is reduced. The mandrel of such coffee machines is usually equipped with a force limitation that limits the force, which is dedicated for pressing the mandrel against the portion capsule's bottom. This preparation avoids that portion capsules having no appropriate weakening can be used in such a coffee machine. Consequently the weakening represents another kind of identifier.

[00017] According to a further subject matter of a preferred development of the present invention, the portion capsule has an edge region, which is preferably attached to the base element. Preferably, the edge is located opposite of the base element's bottom area. After the raw material has been filled in the portion capsule, a membrane can be attached to this edge region, for instance. Moreover the edge can also designed for guiding

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the portion capsule into the chute in order to position the portion capsule in the brewing chamber properly. Simultaneously it is possible to use the surface of the edge for stopping and/or sealing.

[00018] Preferably provision is made for the portion capsule to have means for fit locking, friction locking and/or detection in the edge region. The means for fit locking and/or friction locking may be used to activate a complementary mechanism, which is located in the coffee machine, in order to allow inserting the portion capsule into the coffee machine and/or starting a sensor, like a gearwheel, that transmits a signal to a control unit depending on whether the portion capsule corresponds to the coffee machine or not. Alternatively or additionally, a detector may identify the mean for fit locking, friction locking and/or detection in order to check that the portion capsule is suitable to the respective coffee machine.

[00019] Preferably the means for fit locking, friction locking and/or detection is a gearwheel or a gearwheel' segment, which are located, in particular, in the outer area of the edge region. The teeth of the gearwheel or the gearwheel' segment may be shaped in any commonly used form, which is known, for example, by an expert from gear manufacturing. Preferably it is provided that these teeth are triangular, rectangular, square or wavy.

[00020] Preferably there is a sealing surface, that is arranged on the interior side relative to the gearwheel or the gearwheel' segment.

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[00021] Another and preferred state-of-the-art technology is a portion capsule for producing a beverage, comprising a base element substantially designed frustoconically or cylindrically, having a cavity in which a beverage raw material is provided and which is closed by a membrane fastened to the base element with the base element having a wall region and the base element having a bottom area, which is preferably located opposite to the membrane, with the wall region having several grooves and the grooves which are located between membrane and bottom area covering the wall region along its height at least partially. The grooves may be also located in the edge region, in particular on the outer area of the edge region.

[00022] This portion capsule has the advantage over the portion capsule according to the state-of-the-art technology that, for instance, the grooves reinforce the base element's wall region. On the one side these grooves make the portion capsule more stable towards mechanical forces and prevent the portion capsule from deformation and buckling, in particular. The arrangement of the grooves, which are located at the wall region, additionally improves the performance of the portion capsule while the extraction liquid flows through it in the brewing chamber, since the arrangement of the grooves, in particular those partially expending over the wall region between membrane and bottom area, increase quality and reliability of the extraction process significantly. According to the invention another advantage is that the base element's thickness can be reduced, because the use of grooves improves the physical stability. The production of the portion capsule is therefore much less expensive and more environmentally friendly. On the other side the grooves reduce or avoid the contact between the portion capsule's wall region and the wall of the brewing chamber. As a result ejecting or

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removing the portion capsule from the brewing chamber is made easier. Another advantage of using a plurality of grooves is that the stream of the extraction liquid, which flows along the base element in the cavity, can be optimized by choosing a grooves' structure that is able, for example, to generate on the one hand a better or stronger turbulence in the extraction liquid or on the other hand a more uniform (laminar) flow of the extraction liquid, in the wall region. The control of the liquid may be obtained by the structure of the grooves itself or by using simple means additionally. A stronger turbulence compared to the one known in the state-of-the-art has the advantage that no unintended and casual main streams are formed in the raw materials. Instead the extraction liquid equally flows through the raw material in all of the volume. Thus the extraction process is much more efficient and can be controlled more precisely and reproducibly.

[00023] In particular the raw material may be coffee powder (especially ground roasted coffee), chocolate powder, milk powder, tea or the like. Alternatively, it is conceivable that the raw material is a beverage's extract, such as instant coffee for example.

[00024] In particular, the grooves are recesses and bulges, which are preferably directed along a main extension and are preferably extended along the wall portion or the periphery of the edge region. More preferably, the grooves are formed as webs and/or notches. A gearwheel, for instance, may be obtained by the grooves. Therefore the grooves are part of the base elements' wall, optionally located on the inner side facing to the cavity and/or on the outside facing away from the cavity.

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[00025] According to a preferred embodiment of the present invention, it is provided that the grooves form an identifier that allows individualizing the portion capsule. In the context of this invention individualizing preferably means that the respective portion capsule can be assigned to a group of capsules that are suitable for the respective coffee machine or the machine producing a beverage. It is not necessary that the coffee machine or the device for producing a beverage is able to specify and/or identify the portion capsule. It is more important that the device for producing a beverage, in particular a coffee machine, associates the portion capsule with a group of portion capsules, which is appropriate for the respective device for producing a beverage, in particular a coffee machine. In particular, individualizing means that those portion capsules that are not appropriate for the coffee machine (or the device producing the beverage) cannot be inserted into and/or directly fall through the holder, which is designed for the portion capsules in the coffee machine (or the device producing the beverage), and/or the coffee machine (or the device producing the beverage) operates only with corresponding portion capsules ("proper portion capsule"). In particular, individualizing means that the coffee machine or the device producing the beverage will not operate properly in the intended use, if the used portion capsule is not customized according to the invention. Preferably a sensor/detection system, attached to the coffee machine or the device producing the beverage, records the identifier and substantially compares it with a stored reference. In particular, it is possible that such an identification process is based on a mechanical fitting, especially a fitting of a gearwheel or of a contour comparable with a gearwheel, which is attached to the device producing the beverage or the coffee machine and interacts with the portion capsule. It is preferred that the device for producing the

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beverage or the coffee machine only will operate, if the identifier matches to the reference or the mechanical fittings match with each other. In this case the device for producing the beverage particularly starts to operate, especially activates a pressure or water pump. The mean for detection or mechanical fitting is preferably located in the region of the media chute or in the region of the device for producing the beverage. Alternatively the identifier or the mechanical fitting may avoid that an unsuitable portion capsule is inserted into the device for producing the beverage. A portion capsule, which is designed in accordance with the invention, makes it possible that a portion capsule that is not designed for the device for producing a beverage cannot be inserted into it. Additionally the identifier allows that the device for producing the beverage, especially the coffee machine, may specify the sort of the portion capsule and thereby control the production process of beverage and food by adapting, for example, the pressure, the temperature and/or the amount of water.

[00026] According to a further preferred embodiment of the present invention, it is provided that at least a part of the grooves and at least in a subarea parallel to the main plane of the membrane is gearwheel shaped.

[00027] According to the present invention it is an advantage that it is possible to increase the stability of the portion capsule's wall region, to realize improved turbulences of the extraction liquid and thereby to improve the extraction's process under the same conditions, for example, such as material thickness and the like. Another advantage is that it is easy to generate a mechanical identifier or a mechanical fitting that matches with a fitting tool that belongs to the device for producing a beverage. According

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to the invention it is an further advantage that, for example, a gearwheel, which is attached to the device for producing a beverage and is, for example, located in the region of the media chute or similar, can possibly interacts with the gearwheel's contour of the portion capsule. In this way it is possible to generate a mechanical fitting that allow to individualize the portion capsule as a proper one and/or to specify the sort of portion capsule and/or to rotate the portion capsule about an axis of rotation, that is perpendicular to the membrane's main plane, by using the gearwheel's arrangement. Such an embodiment of the invention makes it possible that the portion capsule is always opened with the device for producing a beverage on the same spot (with respect to its angular position) and therefore the raw material is extracted on the same manner. Moreover the grooves prevent the portion capsule from being inserted into the coffee machine.

[00028] In a preferred version of the invention, it is provided that there is a flange/edge region being averted from the bottom region, for fixing the membrane to the base element, where in the wall region between flange/edge region and bottom region preferably has a border and the grooves are being preferably extended to this border.

[00029] Because of this it is another advantage according to the invention that on the one hand the wall region can be constructed in a stable and reinforced manner and on the other hand the gearwheel shaped contour of the grooves, located at the wall region, is able to absorb a relative high load. With that it is possible that the portion capsule can be rotated easily and without any damaging of the portion capsule within the device for producing a beverage.

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[00030] Preferably the base element's diameter is enlarged in the border's region compared to the wall region, which range from the border to the bottom region.

[00031] This gives rise to the advantageous possibility to stack portion capsule or portion capsules' base elements easily and robustly.

[00032] Moreover it is preferred that at least a part of the grooves are gearwheel shaped and at least a plane, which is at least partially gearwheel shaped, is parallel to the membrane in such a way that the gearwheel shaped contour expands over the borders or the flange/edge region.

[00033] Further preferred versions of the present invention relate to portion capsules that implement one or more of the following characteristics:

- the base element tapers in the direction of the flange in the border's region,
- the grooves directed toward the bottom region expand over the border's region,
- the grooves approximately cover 20% -80%, preferably 40% - 60% of the wall region, which is placed between the border and the bottom region,
- the grooves are constructed in such a way that the wall region is reinforced and/or the grooves causes an extraction liquid's turbulence in the cavity.

[00034] Other preferred versions of the present invention relate to portion capsules that are manufactured in such a way that the ratio of the diameter of that wall region of the base element which adjoins the flange to the diameter of the flange is between 0.85 and 0.89, and in particular substantially 0.87.

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[00035] In a preferred version, the wall region's diameter, which is adjacent to the flange, is 39 millimeters and the flange's diameter is 45 millimeters. Another advantageous version of the invention prefers a base element having a thicker wall region in the border's region compared to the wall region between bottom region and flange. Since the portion capsule's design, which contains grooves in the wall region, improves its stability, it is possible to save material by manufacturing the portion capsule and therefore to reduce cost and energy required for manufacturing the portion capsules.

[00036] According to the invention it is further provided that a filter element is arranged into the cavity. Such a filter element divides the cavity into a first region for accommodating the beverage raw material and into a second region for accommodating a beverage extract. In particular, it is provided that the filter element is made of a non-woven material.

[00037] According to a further subject matter or a preferred development of the present invention the portion capsule according to the invention is intended for the preparation of a hot beverage. In the following the invention is explained based on the Figures 1 - 22. These explanations do not restrict the general idea of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

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[00038] **Figures 1A and 1B** show a portion capsule containing sections that differs optically.

[00039] **Figures 2A, and 2B** show a portion capsule containing a barcode.

[00040] **Figure 3** shows a portion capsule with recesses and bulges.

[00041] **Figure 4** shows a portion capsule containing sections that differs optically.

[00042] **Figure 5** shows a portion capsule with a key function.

[00043] **Figure 6** shows a portion capsule's wall that is electrically conductive.

[00044] **Figure 7** shows a portion capsule's wall containing sections that differs optically.

[00045] **Figure 8** shows an enlarged pot construction of the portion capsule's wall.

[00046] **Figure 9** shows an edge region that is electrically conductive.

[00047] **Figure 10** shows a portion capsule containing a bottom that is electrically conductive.

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[00048] **Figure 11** shows an embodiment containing a layer that can be detected by a metal detector.

[00049] **Figure 12** shows a metallic strainer.

[00050] **Figure 13** shows a portion capsule containing a ferromagnetic section.

[00051] **Figure 14** shows a portion capsule containing a barcode.

[00052] **Figure 15** shows a portion capsule containing a section, which is electrically conductive, in the wall.

[00053] **Figures 16A and 16B** show a portion capsule with a gearwheel placed in the brewing chamber.

[00054] **Figures 17 a-c** show different embodiments of the portion capsule according to Figures 16A and 16B.

[00055] **Figure 18** shows the portion capsule according to the Figures 16 A and 16B and Figures 17 a-c, when the portion capsule is fit locking with a gearwheel.

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[00056] **Figures 19 and 20** show a schematic view of a portion capsule according to an embodiment of the presented invention.

[00057] **Figures 21 and 22** show two sectional views of the portion capsule according to an embodiment of the presented invention.

DETAILED DESCRIPTION

[00058] **Figures 1A and 1B** show a portion capsule 1 comprising a base element 2 that has a wall region 2.1 and a bottom area 2.2. The wall region 2.1 and the bottom area 2.2 define a cavity 3, which may include the raw material and perhaps a built-in element. After filling, the cavity 3 is sealed by a membrane 4, which is preferably attached to the edge region 2.4 of the base element using seal or glue. This portion capsule can be inserted into a brewing chamber 12, with a liquid, in particular water, flowing through it. During this process, the raw material is extracted or dissolved and therefore the beverage is produced. According to the invention the portion capsule has only one identifier that allows to determine whether the respective portion capsule goes with the coffee machine's brewing chamber and the parameters for processing are chosen properly. If it is not the case, significant security issues arise. Inserting the wrong portion capsule, for example, endangers the brewing chamber's tightness. In this case hot water can be discharged under high pressure and therefore compromise the user's safety. Otherwise it is also possible that inserting the wrong portion capsule damages the coffee machine. In this example the identifier is represented by several raised areas 8, which differ in reflection properties from the sections between the raised areas. As shown by the arrows the bulges are passed by a mean for detection 13 (here: an optical detector)

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that is able to differentiate between the unequal sections 5, 6 having different optical properties such as, for example, reflection. Switching between the different sections or the number of bulges represents the identifier. After the identifier has been read out the identifier is compared to a stored reference. If the identifier agrees with the reference, the coffee machine will start operating. Particularly the pump, which is for example responsible for pushing hot water through the brewing chamber, will not start operating, if the identifier does not agree with the reference.

[00059] All the remarks concerning the identifier apply to all the examples.

[00060] **Figures 2A and 2B** show another embodiment of the portion capsule 1 according to the invention. The portion capsule 1 comprises a base element 2 that has a wall region 2.1 and a bottom area 2.2. Here the portion capsule 1 has a barcode 50 placed in the area of the membrane's 4 top surface. This barcode may be printed by material removal or may be generated by a medium that is integrated in the foil and can be detected optically such as a fluorescence agent. Alternatively, metal rings may be part of the foil or attached to the foil. The barcode's section may be made of a ferromagnetic material. As shown by the arrow 15 the barcode 50 alternatively can be attached to the base element's edge region being averted from the membrane 4. Such a barcode is read out by a detector 13 placed, for example, in the media chute. The barcode represents the identifier according to invention.

[00061] **Figures 3A and 3B** show another embodiment of the portion capsule 1 according to the invention. In the present case the identifier comprises recesses and bulges

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7, 8, which result from material removal or reshaping the portion capsule as shown here by the example of the portion capsule's wall 2.1. In the present case, recesses and bulges interact with a means for detection 13, which operates like a key, wherein the coffee machine only start operating, when all elements 14 are placed in the respective recess 7. Therefore, an electric circuit may be changed or especially closed.

[00062] **Figure 4** shows an embodiment of the portion capsule being substantially identical to the embodiment illustrated in Figure 1. As an alternative version of the invention, the figure additionally shows that the unequal sections 5, 6 differing in terms of optical properties can be attached to the cover foil, for example in the form of a barcode.

[00063] **Figure 5** shows an embodiment of the portion capsule being substantially identical to the embodiment illustrated in Figure 3 that includes recesses 7 and bulges 8. Again, the recesses represent the key bit. The coffee machine only will start operating, if the recesses interact with the corresponding bulges and therefore an electric circuit is changed respectively. The placement of such a system is not restricted to the brewing chamber. For instance, the system may be placed in the portion capsule's media chute.

[00064] **Figure 6** shows a version of the invention that includes a base element 2 and an electric material forming a surrounding ring 2.3, which preferably has a raised form. The electrically conductive material is scanned by means for detection 13 having electric sliding contacts, which are placed in the media chute and form electric contacts of an electric circuit, while the portion capsule is inserted.

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[00065] **Figure 7** shows an embodiment of the portion capsule being substantially identical to the embodiment illustrated in Figure 6, in which it is provided that the ring area has reflective 21 or mat 22 sections, for example in form of a covering, and allows a read-out by means for detection 13 for optical detection, which are placed in the media chute and are part of a control current, while the portion capsule is inserted.

[00066] **Figure 8** shows a relative broad and raised ring 2.3 which represents the identifier. The media chute is equipped with a corresponding vacancy that tests whether the portion capsule has the proper identifier. The broad ring is scanned, for example, by means for detection 13 having mechanical sensors, which are placed in the media chute and close the contacts of an electric circuit, while the portions capsule is inserted.

[00067] **Figure 9** shows another embodiment of the portion capsule according to the invention. In the present case an electrically conductive coat 10 is integrated in the edge region's back and is scanned by electric sliding contacts, which are placed in the media chute and form electric contacts of an electric circuit, while the portion capsule is inserted

[00068] **Figure 10** shows another embodiment of the portion capsule according to the invention. In the present case the portion capsule has an electrically conductive coat 10 at the bottom area 2.2 such as a conductive varnish layer or an aluminum foil. The coat is scanned by means for detection 13 having electric sliding contacts, which form electric contacts of an electric circuit, while the portion capsule is inserted.

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[00069] **Figure 11** illustrates a version of the portion capsule having also an electrically conductive coat 10 that is placed on its bottom 2.2 and is identified by a means for detection 13 having a metal sensor, which is placed in the chute and, for example, detects inductively, while the portion capsule is inserted.

[00070] The embodiment of the invention shown in **Figure 12** has a build-in element made of metal (here a strainer 19) that is recognized as identifier by a means for detection 13 having a metal detector.

[00071] The version of the invention shown in **Figure 13** includes a ferromagnetic material 20 placed at the portion capsule' bottom. The identifier is scanned, by means for detection 13 for example, by a magnet, which is placed in the chute, while the portion capsule is inserted. The ferromagnetic material acts as identifier.

[00072] **Figure 14** shows another embodiment which includes a barcode placed in the region of the cover foil. The portion capsule includes a flange 17.

[00073] According to the embodiment shown in **Figure 15** a metallic ring 11 is integrated in the wall region 2.1 and closes means for detection 13 having an electric circuit placed in region of the brewing chamber.

[00074] **Figures 16A and 16B** show another embodiment of the portion capsule 1 according to the invention. The illustrated portion capsule features a base element 2 that is basically conical- shaped in the present case and has a bottom region 2.2 and a wall

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region 2.1. It is provided that the base element contains the raw material and, if necessary, build-in elements like a filter as illustrated here. The expert knows that the build-in element may also include other build-in elements. A flange 17 /edge region 2.4, which is preferably circular and, for example, may be used for sealing a cover foil 4 to it, is attached to the end of the base element, which is placed opposite to the bottom. The flange/edge region has means for fit locking, friction locking and/or detection 2.4.2 in the outer area (outer circumference). As especially shown in the Figures 17a - 17c the means for fit locking, friction locking and/or detection 2.4.2 is, in the present case, a gearwheel that is formed by several recesses/bulges evenly arranged in the edge region. Preferably, it is provided that the edge region has a sealing surface 2.4.1, which sealingly interacts with the seal 31 attached to the brewing chamber 27, on the interior side of the gearwheel. The sealing 31 makes sure that the water coming from a water inlet 28 flows through the portion capsule by passing an opening, which has been made by a mandrel 29, than around it.

[00075] **Figures 17a - 17c** show different embodiments of the means for fit locking, friction locking and/or detection 2.4.2. According to the version shown in Figure 17a, the gearwheel has forty-five teeth. According to the version shown in Figure 17b or 17c, the gearwheel has twenty-two or twenty-nine teeth, respectively. The expert knows that the manufactured teeth can be shaped arbitrarily. All Figures 17a - 17c demonstrate how the portion capsule 1 can be held by a part of the brewing chamber 27 using two holding arms 30. The holding arms interacts with the means for fit locking, friction locking and/or detection 2.4.2. If they are not available, the holding arms will not hold the portion capsule and the portion capsule will not be inserted into the brewing chamber and will fall

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through it into a dropping box instead. The portion capsule has a base element 2, a wall region 2.1, a bottom area 2.2, a sealing surface 2.4.1, and an edge region 2.4.

[00076] **Figure 18** shows the means for fit locking, friction locking and/or detection 2.4.2 along with mean for fit locking 24, which is attached to the coffee machine and is represented by a pinion here. It is provided that the mean for fit locking 24 is placed in the media chute or insertion shaft 26 of an insertion shaft housing 23 having a port for inserting the portion capsule in the coffee machine. The distance between the inner wall 25 of the portion capsule 1 and the mean for fit locking 24 represented by the pinion 24 are designed in such a way that the portion capsule only will pass the port, if the means for fit locking, friction locking and/or detection 2.4.2 is formed complementary to the teeth of the mean for fit locking 24 represented by the pinion. Only in this case the portion capsule rotates the mean for fit locking 24 represented by the pinion 24 while it falls. Both rotating and falling are represented by arrows in the figure. The portion capsule needs the rotation for passing the media chute's port and falling in the intended position afterwards. If the portion capsule has no or wrong mean of fit locking, it will be impossible to place the portion capsule by passing the media chute in the intended position. Additionally or alternatively, it is provided that the mean for fit locking 24 represented by the pinion has a pick-up that detects the rotary movement and transmits it to a control unit. If the rotation at least corresponds a defined rotating element, the control unit will activate, for example, the brewing unit. The expert knows that the portion capsule's border may include means for friction locking that interacts with a mean, for example an edge, and shift it in such a way that the shift is detected and therefore the brewing chamber is activated. The portion capsule 1 has a cover foil 4 and a sealing surface 2.4.1.

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[00077] The expert moreover knows that a sensor, being for example a camera, which detects the form of the means for fit locking, friction locking and/or detection 2.4.2., may be installed in the media chute. In the present case the form and/or the distance between the teeth may be detected. If the proper portion capsule was inserted, a resulting signal could be transmitted to a control unit, which activates the brewing chamber.

[00078] **Figure 19** schematically shows a view of another portion capsule's version according to an embodiment of the present invention. **Figure 20** illustrates the same portion capsule from a different point of view schematically. Figure 19 shows the front view of the portion capsule. Figure 20 shows the portion capsule viewed from an angle below. In all figures the portion capsule is labeled with the reference sign 1. The portion capsule substantially has a frustoconically shaped base element 2, which is formed similar to a pot and encloses a cavity 3. The cavity 3 is sealed by a membrane 4. Since the viewing direction of Figure 19 is essentially parallel to the plane, in which the membrane is located, the membrane is at the upper edge of the portion capsule. In particular, the base element 2 comprises a soft, semi-rigid or rigid plastic material which is deep-drawn, preferably. The membrane comprises a foil made of plastic material or aluminum. Preferably the base element has a circumferential mounting flange 17 in the region of the membrane, with the membrane and the mounting flange 17 being firmly bonded, in particular by welding or gluing. Preferably a filter element, which is not specifically depicted in the figures, is placed within the base element 2. For instance, the filter element is made of thermoplastic resin such as, for example, polypropylene. The filter element could also be made of a non-woven material such as, for example, thermoplastic resin.

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Preferably the filter element divides the cavity 3 in two sections. It is provided that the first section can be filled with a raw material and the second section can be filled with and particularly collect a beverage's extract, which is not shown, during the extractions process. Both sections are not illustrated individually.

[00079] The portion capsule is intended for inserting into a brewing chamber or a device for producing a beverage, which is not shown here. In particular such a device for producing a beverage is a coffee machine. The device for producing a beverage could be also a machine that produces a tea drink, a chocolate drink or any other beverage. Preferably an extraction liquid, which is particularly water or hot water, is brought under high pressure into the brewing chamber of the device for producing a beverage. The extraction liquid interacts with the raw material of the beverage in such a way that an extract of a beverage or a beverage is generated. In particular the filter element is utilized as a strainer for the extract of a beverage.

[00080] According to the invention, the base element 2 has a wall region 2.1 and a bottom area 2.2. The wall region 2.1 basically ranges from the flange 17 to the bottom region 2.2. Several grooves 32 are placed in the wall region. In particular these grooves are keyways that are integrated in the wall region 2.1 and are facing the cavity 3 and range from the flange 17 to the bottom region 2.2 (i.e. they run perpendicular according to Figure 19). According to the invention provision is made for the grooves 32 to be extended vertically across the wall region, i.e. they run straight from the flange 17 to the bottom region 2.2, in which it is not necessary that they are extended over the whole length. The grooves are formed according to the invention in such a way that the wall

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region is reinforced or stiffened due to the grooves 32. Moreover, the plurality of the grooves 32, which are distributed over the wall region 2.1, realize an adhesion between wall region 2.1 and the brewing chamber's wall of the device for producing a beverage after the extraction process. This makes it easier to eject the portion capsule from the brewing chamber automatically. The portion capsule's version represented in Figure 19 comprises a circumferential border 16 that is placed at the wall region 2.1 ranging from the flange 17 to the bottom area 2.2, namely adjacent to the flange 17 facing towards the bottom area 2.2. The border 16 has an enlarged diameter (parallel to the membrane 4) compared to the wall region's ranging from the border 16 to the bottom area 2.2. It is provided that the border's contour 16 is designed in such a manner that the border's diameter tapers towards the flange 17.

[00081] It is provided according to the portion capsule's embodiment, which is represented in Figure 19 and is in accordance with the invention, that the grooves 32 are placed in the border's region in the first part, partially range from the border 16 to the bottom area 2.2 across the wall region 2.1, in the second part and then finally end. All in all the grooves cover, for example, around 50 % of the extension of the wall region 2.1, which ranges from the flange 17 to the bottom area 2.2, wherein one-third of the grooves' extension is placed in the border's region and two-thirds of the grooves' extension is placed in the remaining wall region 2.1 that range from the border 16 to the bottom area 2.2.

[00082] A portion capsule 1 according to the invention is shown as sectional view along the portion capsule's extension regarding its height in **Figure 21**, i.e. the

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section's plane is perpendicular to the membrane's main plane. **Figure 22** also shows a portion capsule according to the invention in a sectional view portraying the sectional plane, which is parallel to the membrane's main plane. It is noticeable that the interior of the portion capsule's cavity is shown in Figure 21. The portion capsule's material or the base element's material is so thin that the implementation of grooves 32 at the exterior shown in Figure 19 leads to corresponding convexities 34 and impressions at the interior. Figure 22 particularly illustrates the gearwheel shaped contour 36 resulting from insertion of grooves in the portion capsule's 1 wall region.

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PORTION CAPSULE HAVING AN IDENTIFIER

~~CROSS-REFERENCE TO RELATED APPLICATIONS~~

~~[0001] This application claims benefit from and is a divisional of U.S. Application No. 15/211,823, filed July 15, 2016, entitled PORTION CAPSULE HAVING AN IDENTIFIER;~~

~~which claims benefit from and is a continuation of U.S. Application No. 13/744,623, filed January 18, 2013, entitled PORTION CAPSULE HAVING AN IDENTIFIER, which claims benefit from International Application No. PCT/EP2011/003677, filed on July 22, 2011, entitled PORTION CAPSULE HAVING AN IDENTIFIER, which applications are hereby incorporated by reference in their entirety.~~

FIELD

~~[0001] These teachings relate to a portion capsule and method for producing a beverage.~~

BACKGROUND

[0002] The present invention relates to a portion capsule for producing a beverage, comprising a base element having a cavity in which a beverage raw material is provided and which is closed by a membrane fastened to the base element.

[0003] Such capsules are well known and are being launched onto the market in abundant variety. Since these capsules are often quite similar, it is possible that the manufacturer's

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capsules are used in a coffee machine designed by another manufacturer, although they are not suited for it. This may result in significant security issues and/or the coffee machine may be damaged.

[0004] The object of the present invention is therefore to provide a portion capsule which only is suitable for a specific coffee machine.

SUMMARY

[0005] The object is accomplished according to the present invention by a portion capsule for producing a beverage, comprising a base element having a cavity in which a beverage raw material is provided and which is closed by a membrane fastened to the base element, wherein it has an identifier, which allows to individualize the respective portion capsule.

[0006] The present invention relates to a capsule for producing a beverage or foodstuff, comprising a base element having a cavity in which a beverage raw material is provided. Such capsules are, for example made of plastic, natural materials and/or biodegradable materials and substantially have a base element, in particular a deep-drawn base element, i.e. it is substantially designed frustoconically or cylindrically. The beverage raw material is arranged within the portion capsule's cavity and is extracted and/or dissolved in a liquid, in particular water. After the beverage raw material has been filled into the cavity the base element is usually sealed by a membrane. In particular the membrane is localized on the opposite side of the base element's bottom. The membrane can be made of the same or different material as the base element and is substantially attached to the base element using a sealing and/or an adhesive bonding. Additionally the cavity could contain one or

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several built-in elements, such as, for example a filter, a non-woven, a felt, a shut-off device and/or something similar to those. For the case that a non-woven and a felt are arranged within the cavity, they are interconnected preferably. The non-woven and/or the felt can be made of several layers in such a way that the layers may differ in the kind of its starting material and/or its preparation. Moreover the membrane and/or the bottom can be provided with a plurality of recesses (holes).

[0007] According to the present invention, it is provided that the portion capsule has an identifier that allows to individualize the respective portion capsule. In the context of this invention individualizing means that the respective portion capsule can be assigned to a group of capsules that are suitable for the coffee machine preferably. It is not necessary that the coffee machine is able to specify and/or identify the portion capsule. In fact it is much more important that the coffee machine associates the portion capsule with a group of portion capsules, which is suitable for the coffee machine. In particular, individualizing means that those portion capsules that are not appropriate for the coffee machine cannot be inserted into and/or directly fall through the holder, which is designed for the portion capsules in the coffee machine, and/or the coffee machine operates only with the corresponding portion capsules. Preferably a sensor/detection system handles the identifier and compares it with a stored reference substantially. Preferably, the coffee machine, in particular the water-providing- pressure pump, will be activated if the detected identifier matches with the reference. Otherwise the coffee machine will not start operating. Preferably the detection system is placed in the region of the coffee machine's media chute designed for the portion capsules. According to another preferred embodiment of the invention, the detection system may be placed in the region of the

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brewing chamber. Another possible embodiment of the invention provides that the identifier prevents portion capsules from inserting into the coffee machine. Alternatively or additionally, means, in particular mechanical means, more preferably, one or more gearwheels, may be added to the media chute in order to guarantee that incorrect portion capsule cannot be inserted into the coffee machines by passing the media chute.

[0008] Preferably the identifier is composed of surface areas having different optical properties, for example reflection. These surfaces may be localized on the membrane, the side wall and/or the bottom of the portion capsules. Preferably, the portion capsule has at least two areas which differ in their optical properties, for example the reflection characteristics.

[0009] The detection of a recess and/or a bulge is also preferred. Preferably, recess and bulges alternate and/or at least two recesses or bulges are separately placed from each other. Especially it is possible that the recess and/or the bulge form a gearwheel that is attached to the outer border and/or at least partially extends to the wall region of the portion capsule. The recess and/or bulge may be produced by any shaping method, for example by deep drawing, preferably.

[00010] Furthermore, the recess may be realized by removing material. In particular the material's ~~remove-removal~~ can be accomplished by punching or using a laser on condition that this processing does not damage a barrier layer placed in the portion capsule's material, which prevents moisture or aroma from escaping out of the portion capsule and/or water vapor or oxygen enters the capsule. The reading of the identifier,

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which is encoded in the recess and/or bulge, may be a result from a mechanical and/or optical method, for example. Alternatively or additionally, the identifier can be used to avoid that the portion capsule is inserted into the coffee machine. This applies in particular to the media chute. For example it is possible to design a portion capsule comprising a ring gear that is placed on its circumference and is compatible with another ring gear, which is placed in the media chute. If the media chute's ring gear only revolves for a corresponding ring gear of the portion capsule and its revolving allows the portion capsule to pass, only portion capsules equipped with the proper ring gear will pass the insertion lock.

[00011] According to a further subject matter of a preferred development of the present invention, the identifier may be included in the membrane. Preferably, the identifier is a layer or partial layer of the membrane. Such identifiers may be an optically detectable material, for example a fluorescent material. Furthermore, the identifier may be designed with layers made of metal or ferrous metal or stripes made of metal or ferrous metal in or on the membrane, respectively.

[00012] Preferably the identifier is a machine-readable imprint. This is realized with a print in food approved color, preferably. Fluorescent materials like paper or print materials, whose optical properties change under the influence of temperature, are favored also. Preferably the print is a barcode, a logo or a support/crest pattern.

[00013] According to a further subject matter of a preferred development of the present invention, the identifier is an electrically conductive section, which can be placed

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all over the portion capsule, but is localized on the side wall, the edge and/ or the floor preferably. The electrically conductive section, which is inserted into the coffee machine, can become part of an electric circuit and causes therefore a measurable change, which leads to the identification of the respective portion capsule. In a further preferred embodiment, the identifier is a section made of a ferromagnetic material.

[00014] Another construction version favors a RFID chip being the identifier.

[00015] If the portion capsule is customized according to the invention, portion capsules that are not in line with the coffee machine will be prevented from inserting into the coffee machine. Furthermore it is possible that the identifier allows to identify the portion capsule located in the brewing chamber in such a way that the production process of beverage or food may be controlled, for example by adjusting the temperature, the pressure and/or the amount of water.

[00016] According to a further subject matter of a preferred development of the present invention, the portion capsule's material is weakened in the bottom area caused by a selective material removal, for example by using a laser. The weakening is provided for piercing the portion capsules using a mandrel. This procedure is needed for the beverage's preparation. Since the material is weakened in the section, which is treated with a laser and is supposed to be pierced using the mandrel, the degree of necessary force for piercing the portion capsule is reduced. The mandrel of such coffee machines is usually equipped with a force limitation that limits the force, which is dedicated for pressing the mandrel against the portion capsule's bottom. This preparation avoids that portion capsules having

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no appropriate weakening can be used in such a coffee machine. Consequently the weakening represents another kind of identifier.

[00017] According to a further subject matter of a preferred development of the present invention, the portion capsule has an edge region, which is preferably attached to the base element. Preferably, the edge is located opposite of the base element's bottom area. After the raw material has been filled in the portion capsule, a membrane can be attached to this edge region, for instance. Moreover the edge can also designed for guiding the portion capsule into the chute in order to position the portion capsule in the brewing chamber properly. Simultaneously it is possible to use the surface of the edge for stopping and/or sealing.

[00018] Preferably provision is made for the portion capsule to have means for fit locking, friction locking and/or detection in the edge region. The means for fit locking and/or friction locking may be used to activate a complementary mechanism, which is located in the coffee machine, in order to allow inserting the portion capsule into the coffee machine and/or starting a sensor, like a gearwheel, that transmits a signal to a control unit depending on whether the portion capsule corresponds to the coffee machine or not. Alternatively or additionally, a detector may identify the mean for fit locking, friction locking and/or detection in order to check that the portion capsule is suitable to the respective coffee machine.

[00019] Preferably the means for fit locking, friction locking and/or detection is a gearwheel or a gearwheel' segment, which are located, in particular, in the outer area of

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the edge region. The teeth of the gearwheel or the gearwheel' segment may be shaped in any commonly used form, which is known, for example, by an expert from gear manufacturing. Preferably it is provided that these teeth are triangular, rectangular, square or wavy.

[00020] Preferably there is a sealing surface, that is arranged on the interior side relative to the gearwheel or the gearwheel' segment.

[00021] Another and preferred state-of-the-art technology is a portion capsule for producing a beverage, comprising a base element substantially designed frustoconically or cylindrically, having a cavity in which a beverage raw material is provided and which is closed by a membrane fastened to the base element with the base element having a wall region and the base element having a bottom area, which is preferably located opposite to the membrane, with the wall region having several grooves and the grooves which are located between membrane and bottom area covering the wall region along its height at least partially. The grooves may be also located in the edge region, in particular on the outer area of the edge region.

[00022] This portion capsule has the advantage over the portion capsule according to the state-of-the-art technology that, for instance, the grooves reinforce the base element's wall region. On the one side these grooves make the portion capsule more stable towards mechanical forces and prevent the portion capsule from deformation and buckling, in particular. The arrangement of the grooves, which are located at the wall region, additionally improves the performance of the portion capsule while the

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extraction liquid flows through it in the brewing chamber, since the arrangement of the grooves, in particular those partially expending over the wall region between membrane and bottom area, increase quality and reliability of the extraction process significantly. According to the invention another advantage is that the base element's thickness can be reduced, because the use of grooves improves the physical stability. The production of the portion capsule is therefore much less expensive and more environmentally friendly. On the other side the grooves reduce or avoid the contact between the portion capsule's wall region and the wall of the brewing chamber. As a result ejecting or removing the portion capsule from the brewing chamber is made easier. Another advantage of using a plurality of grooves is that the stream of the extraction liquid, which flows along the base element in the cavity, can be optimized by choosing a grooves' structure that is able, for example, to generate on the one hand a better or stronger turbulence in the extraction liquid or on the other hand a more uniform (laminar) flow of the extraction liquid, in the wall region. The control of the liquid may be obtained by the structure of the grooves itself or by using simple means additionally. A stronger turbulence compared to the one known in the state-of-the-art has the advantage that no unintended and casual main streams are formed in the raw materials. Instead the extraction liquid equally flows through the raw material in all of the volume. Thus the extraction process is much more efficient and can be controlled more precisely and reproducibly.

[00023] In particular the raw material may be coffee powder (especially ground roasted coffee), chocolate powder, milk powder, tea or the like. Alternatively, it is conceivable that the raw material is a beverage's extract, such as instant coffee for

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example.

[00024] In particular, the grooves are recesses and bulges, which are preferably directed along a main extension and are preferably extended along the wall portion or the periphery of the edge region. More preferably, the grooves are formed as webs and/or notches. A gearwheel, for instance, may be obtained by the grooves. Therefore the grooves are part of the base elements' wall, optionally located on the inner side facing to the cavity and/or on the outside facing away from the cavity.

[00025] According to a preferred embodiment of the present invention, it is provided that the grooves form an identifier that allows individualizing the portion capsule. In the context of this invention individualizing preferably means that the respective portion capsule can be assigned to a group of capsules that are suitable for the respective coffee machine or the machine producing a beverage. It is not necessary that the coffee machine or the device for producing a beverage is able to specify and/or identify the portion capsule. It is more important that the device for producing a beverage, in particular a coffee machine, associates the portion capsule with a group of portion capsules, which is appropriate for the respective device for producing a beverage, in particular a coffee machine. In particular, individualizing means that those portion capsules that are not appropriate for the coffee machine (or the device producing the beverage) cannot be inserted into and/or directly fall through the holder, which is designed for the portion capsules in the coffee machine (or the device producing the beverage), and/or the coffee machine (or the device producing the beverage) operates only with corresponding portion capsules ("proper portion capsule"). In particular, individualizing

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means that the coffee machine or the device producing the beverage will not operate properly in the intended use, if the used portion capsule is not customized according to the invention. Preferably a sensor/detection system, attached to the coffee machine or the device producing the beverage, records the identifier and substantially compares it with a stored reference. In particular, it is possible that such an identification process is based on a mechanical fitting, especially a fitting of a gearwheel or of a contour comparable with a gearwheel, which is attached to the device producing the beverage or the coffee machine and interacts with the portion capsule. It is preferred that the device for producing the beverage or the coffee machine only will operate, if the identifier matches to the reference or the mechanical fittings match with each other. In this case the device for producing the beverage particularly starts to operate, especially activates a pressure or water pump. The mean for detection or mechanical fitting is preferably located in the region of the media chute or in the region of the device for producing the beverage. Alternatively the identifier or the mechanical fitting may avoid that an unsuitable portion capsule is inserted into the device for producing the beverage. A portion capsule, which is designed in accordance with the invention, makes it possible that a portion capsule that is not designed for the device for producing a beverage cannot be inserted into it. Additionally the identifier allows that the device for producing the beverage, especially the coffee machine, may specify the sort of the portion capsule and thereby control the production process of beverage and food by adapting, for example, the pressure, the temperature and/or the amount of water.

[00026] According to a further preferred embodiment of the present invention, it is provided that at least a part of the grooves and at least in a subarea parallel to the main

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plane of the membrane is gearwheel shaped.

[00027] According to the present invention it is an advantage that it is possible to increase the stability of the portion capsule's wall region, to realize improved turbulences of the extraction liquid and thereby to improve the extraction's process under the same conditions, for example, such as material thickness and the like. Another advantage is that it is easy to generate a mechanical identifier or a mechanical fitting that matches with a fitting tool that belongs to the device for producing a beverage. According to the invention it is a further advantage that, for example, a gearwheel, which is attached to the device for producing a beverage and is, for example, located in the region of the media chute or similar, can possibly interact with the gearwheel's contour of the portion capsule. In this way it is possible to generate a mechanical fitting that allow to individualize the portion capsule as a proper one and/or to specify the sort of portion capsule and/or to rotate the portion capsule about an axis of rotation, that is perpendicular to the membrane's main plane, by using the gearwheel's arrangement. Such an embodiment of the invention makes it possible that the portion capsule is always opened with the device for producing a beverage on the same spot (with respect to its angular position) and therefore the raw material is extracted on the same manner. Moreover the grooves prevent the portion capsule from being inserted into the coffee machine.

[00028] In a preferred version of the invention, it is provided that there is a flange/edge region being averted from the bottom region, for fixing the membrane to the base element, where in the wall region between flange/edge region and bottom region preferably has a border and the grooves are being preferably extended to this border.

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[00029] Because of this it is another advantage according to the invention that on the one hand the wall region can be constructed in a stable and reinforced manner and on the other hand the gearwheel shaped contour of the grooves, located at the wall region, is able to absorb a relative high load. With that it is possible that the portion capsule can be rotated easily and without any damaging of the portion capsule within the device for producing a beverage.

[00030] Preferably the base element's diameter is enlarged in the border's region compared to the wall region, which range from the border to the bottom region.

[00031] This gives rise to the advantageous possibility to stack portion capsule or portion capsules' base elements easily and robustly.

[00032] Moreover it is preferred that at least a part of the grooves are gearwheel shaped and at least a plane, which is at least partially gearwheel shaped, is parallel to the membrane in such a way that the gearwheel shaped contour expands over the borders or the flange/edge region.

[00033] Further preferred versions of the present invention relate to portion capsules that implement one or more of the following characteristics:

- the base element tapers in the direction of the flange in the border's region,
- the grooves directed toward the bottom region expand over the border's region,

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- the grooves approximately cover 20% -80%, preferably 40% - 60% of the wall region, which is placed between the border and the bottom region,
- the grooves are constructed in such a way that the wall region is reinforced and/or the grooves causes an extraction liquid's turbulence in the cavity.

[00034] Other preferred versions of the present invention relate to portion capsules that are manufactured in such a way that the ratio of the diameter of that wall region of the base element which adjoins the flange to the diameter of the flange is between 0.85 and 0.89, and in particular substantially 0.87.

[00035] In a preferred version, the wall region's diameter, which is adjacent to the flange, is 39 ~~millimeters~~millimeter—and the flange's diameter is 45 ~~millimeters~~millimeter. Another advantageous version of the invention prefers a base element having a thicker wall region in the border's region compared to the wall region between bottom region and flange. Since the portion capsule's design, which contains grooves in the wall region, ~~improve~~improves its stability, it is possible to save material by manufacturing the portion capsule and therefore to reduce cost and energy required for manufacturing the portion capsules.

[00036] According to the invention it is further provided that a filter element is arranged into the cavity. Such a filter element divides the cavity into a first region for accommodating the beverage raw material and into a second region for accommodating a beverage extract. In particular, it is provided that the filter

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element is made of a non-woven material.

[00037] According to a further subject matter or a preferred development of the present invention the portion capsule according to the invention is intended for the preparation of a hot beverage. In the following the invention is explained based on the Figures 1 - 22. These explanations do not restrict the general idea of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[00038] Figures 1A and 1B show-shows a portion capsule containing sections that differs optically.

[00039] Figures 2A and 2B show-shows a portion capsule containing a barcode.

[00040] Figure 3 shows a portion capsule with recesses and bulges.

[00041] Figure 4 shows a portion capsule containing sections that differs optically.

[00042] Figure 5 shows a portion capsule with a key function.

[00043] Figure 6 shows a portion capsule's wall that is electrically conductive.

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[00044] **Figure 7** shows a portion capsule's wall containing sections that differs optically.

[00045] **Figure 8** shows an enlarged pot construction of the portion capsule's wall.

[00046] **Figure 9** shows an edge region that is electrically conductive.

[00047] **Figure 10** shows a portion capsule containing a bottom that is electrically conductive.

[00048] **Figure 11** shows an embodiment containing a layer that can be detected by a metal detector.

[00049] **Figure 12** shows a metallic strainer.

[00050] **Figure 13** shows a portion capsule containing a ferromagnetic section.

[00051] **Figure 14** shows a portion capsule containing a barcode.

[00052] **Figure 15** shows a portion capsule containing a section, which is electrically conductive, in the wall.

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[00053] **Figures 16A and 16B** ~~show~~ shows a portion capsule with a gearwheel placed in the brewing chamber.

[00054] **Figures 17 a-c** show different embodiments of the portion capsule according to ~~Figure 16~~ Figures 16A and 16B.

[00055] **Figure 18** shows the portion capsule according to the Figures 16 A and 16B and Figures 17 a-c, when the portion capsule is fit locking with a gearwheel.

[00056] **Figures 19 and 20** show a schematic view of a portion capsule according to an embodiment of the presented invention.

[00057] **Figures 21 and 22** show two sectional views of the portion capsule according to an embodiment of the presented invention.

DETAILED DESCRIPTION

[00058] ~~The view illustrated on the right side of Figures 1A and 1B show~~ shows a portion capsule 1 comprising a base element 2 that has a wall region 2.1 and a bottom area 2.2. The wall region 2.1 and the bottom area 2.2 define a cavity 3, which may include the raw material and perhaps a built-in element. After filling, the cavity 3 is sealed by a membrane 4, which is preferably attached to the edge region 2.4 of the base element using seal or glue. This portion capsule can be inserted into a brewing chamber ~~12 shown in Figure 12~~, with a liquid, in particular water, flowing through it. During this

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process, the raw material is extracted or dissolved and therefore the beverage is produced. According to the invention the portion capsule has only one identifier that allows to ~~determinate~~ determine whether the respective portion capsule goes with the coffee machine's brewing chamber and the parameters for processing are chosen properly. If it is not the case, significant security issues arise. Inserting the wrong portion capsule, for example, endangers the brewing chamber's tightness. In this case hot water can be discharged under high pressure and therefore compromise the user's safety. Otherwise it is also possible that inserting the wrong portion capsule damages the coffee machine. In this example the identifier is represented by several raised areas 8, which differ in reflection properties from the sections between the raised areas. As shown by the arrows the bulges are passed by a mean for detection 13 (here: an optical detector) that is able to differentiate between the unequal sections 5, 6 having different optical properties such as, for example, reflection. Switching between the different sections or the number of bulges represents the identifier. After the identifier has been read out the identifier is compared to a stored reference. If the identifier agrees with the reference, the coffee machine will start operating. Particularly the pump, which is for example responsible for pushing hot water through the brewing chamber, will not start operating, if the identifier does not agree with the reference.

[00059] All the remarks concerning the identifier apply to all the examples.

[00060] Figures 2A and 2B show ~~shows~~ another embodiment of the portion capsule 1 according to the invention. The portion capsule 1 comprises a base element 2 that has a wall region 2.1 and a bottom area 2.2. Here the portion capsule 1 has a barcode

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50 placed in the area of the membrane's 4 top surface. This ~~bar-code~~barcode may be printed by material removal or may be generated by a medium that is integrated in the foil and can be detected optically such as a fluorescence agent. Alternatively, metal rings may be part of the foil or attached to the foil. The ~~barcode's bar-code's~~ section may be made of a ferromagnetic material. As shown by the arrow 15 the ~~bar-code~~barcode 50 alternatively can be attached to the base element's edge region being averted from the membrane 4. Such a ~~bar-code~~barcode is read out by a detector 13 placed, for example, in the media chute. The ~~bar-code~~barcode represents the identifier according to invention.

[00061] ~~Figures 3A and 3B show~~ shows another embodiment of the portion capsule 1 according to the invention. In the present case the identifier comprises recesses and bulges 7, 8, which result from material removal or reshaping the portion capsule as shown here by the example of the portion capsule's wall 2.1. In the present case, recesses and bulges interact with a means for detection 13, which operates like a key, wherein the coffee machine only start operating, when all elements 43-14 are placed in the respective recess 7. Therefore, an electric circuit may be changed or especially closed.

[00062] **Figure 4** shows an embodiment of the portion capsule being substantially identical to the embodiment illustrated in Figure 1. As an alternative version of the invention, the figure additionally shows that the unequal sections 5, 6 differing in terms of optical properties can be attached to the cover foil, for example in the form of a ~~bar-code~~barcode.

[00063] **Figure 5** shows an embodiment of the portion capsule being substantially

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identical to the embodiment illustrated in Figure 3 that includes recesses 7 and bulges 8. Again, the recesses represent the key bit. The coffee machine only will start operating, if the recesses interact with the corresponding bulges and therefore an electric circuit is changed respectively. The placement of such a system is not restricted to the brewing chamber. For instance, the system may be placed in the portion capsule's media chute.

[00064] **Figure 6** shows a version of the invention that includes a base element 2 and an electric material forming a surrounding ring 2.3, which preferably has a raised form. The electrically conductive material is scanned by means for detection 13 having electric sliding contacts, which are placed in the media chute and form electric contacts of an electric circuit, while the portion capsule is inserted.

[00065] **Figure 7** shows an embodiment of the portion capsule being substantially identical to the embodiment illustrated in Figure 6, in which it is provided that the ring area has reflective 21 or mat 22 sections, for example in form of a covering, and allows a read-out by means for detection 13 for optical detection, which are placed in the media chute and are part of a control current, while the portion capsule is inserted.

[00066] **Figure 8** shows a relative broad and raised ring 2.3 which represents the identifier. The media chute is equipped with a corresponding vacancy that tests whether the portion capsule has the proper identifier. The broad ring is scanned, for example, by means for detection 13 having mechanical sensors, which are placed in the media chute and close the contacts of an electric circuit, while the portions capsule is inserted.

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[00067] **Figure 9** shows another embodiment of the portion capsule according to the invention. In the present case an electrically conductive coat 10 is integrated in the edge region's back and is scanned by electric sliding contacts, which are placed in the media chute and form electric contacts of an electric circuit, while the portion capsule is inserted.

[00068] **Figure 10** shows another embodiment of the portion capsule according to the invention. In the present case the portion capsule has an electrically conductive coat 10 at the bottom area 2.2 such as a conductive varnish layer or an aluminum foil. The coat is scanned by means for detection 13 having electric sliding contacts, which form electric contacts of an electric circuit, while the portion capsule is inserted.

[00069] **Figure 11** illustrates a version of the portion capsule having also an electrically conductive coat 10 that is placed on its bottom 2.2 and is identified by a means for detection 13 having a metal sensor, which is placed in the chute and, for example, detects inductively, while the portion capsule is inserted.

[00070] The embodiment of the invention shown in **Figure 12** has a build-in element made of metal (here a strainer 19) that is recognized as identifier by a means for detection 13 having a metal detector.

[00071] The version of the invention shown in **Figure 13** includes a ferromagnetic material 20 placed at the portion capsule' bottom. The identifier is scanned, by means for detection 13 for example, by a magnet, which is placed in the chute, while the portion

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capsule is inserted. The ferromagnetic material acts as identifier.

[00072] **Figure 10-14** shows another embodiment which includes a bar-code~~barcode~~ placed in the region of the cover foil. The portion capsule includes a flange 17.

[00073] According to the embodiment shown in **Figure 15** a metallic ring 11 is integrated in the wall region 2.1 and closes means for detection 13 having an electric circuit placed in region of the brewing chamber.

[00074] **Figures 16A and 16B** ~~show~~ shows another embodiment of the portion capsule 1 according to the invention. The illustrated portion capsule features a base element 2 that is basically conical- shaped in the present case and has a bottom region 2.2 and a wall region 2.1. It is provided that the base element contains the raw material and, if necessary, build-in elements like a filter as illustrated here. The expert knows that the build-in element may also include other build-in elements. A flange 17/edge region 2.4, which is preferably circular and, for example, may be used for sealing a cover foil 4 to it, is attached to the end of the base element, which is placed opposite to the bottom. The flange/edge region has means for fit locking, friction locking and/or detection 2.4.2 in the outer area (outer circumference). As especially shown in the Figures 17a - 17c the means for fit locking, friction locking and/or detection ~~mean~~-2.4.2 is, in the present case, a gearwheel that is formed by several recesses/bulges evenly arranged in the edge region. Preferably, it is provided that the edge region has a sealing surface 2.4.1, which sealingly interacts with the ~~sealing-21~~seal 31 attached to the brewing chamber 27, on the interior side of the gearwheel. The sealing ~~21-31~~ makes sure that the water coming from a water

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inlet 28 flows rather through the portion capsule by passing an opening, which has been made by a mandrel 29, than around it.

[00075] **Figures 17a - 17c** show different embodiments of the means for fit locking, friction locking and/or detection mean-2.4.2. According to the version shown in Figure 17a, the gearwheel has forty-five teeth. According to the version shown in Figure 17b or 17c, the gearwheel has twenty-two or twenty-nine teeth, respectively. The expert knows that the manufactured teeth can be shaped arbitrarily. All Figures 17a - 17c demonstrate how the portion capsule 1 can be ~~hold-held~~ by a part of the brewing chamber 27 using two holding arms 30. The holding arms interacts with the means for fit locking, friction locking and/or detection mean-2.4.2. If they are not available, the holding arms will not hold the portion capsule and the portion capsule will not be inserted into the brewing chamber and will fall through it into a dropping box instead. The portion capsule has a base element 2, a wall region 2.1, a bottom area 2.2, a sealing surface 2.4.1, and an edge region 2.4.

[00076] **Figure 18** shows the ~~mean-2.4.2~~ means for fit locking, friction locking and/or detection 2.4.2 along with ~~an~~ mean for fit locking 24, which is attached to the coffee machine and is represented by a pinion here. It is provided that the mean for fit locking 24 is placed in the media chute or insertion shaft 26 of an insertion shaft housing 23 having a port for inserting the portion capsule in the coffee machine. The distance between the inner wall 25 of the portion capsule ~~25-1~~ and the mean for fit locking 24 represented by the pinion-27 24 are designed in such a way that the portion capsule only will pass the port, if the means for fit locking, friction locking and/or detection 2.4.2

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mean for fit locking is formed complementary to the teeth of the mean for fit locking 24 represented by the pinion 27. Only in this case the portion capsule rotates the mean for fit locking 24 represented by the pinion 24 while it falls. Both rotating and falling are represented by arrows in the figure. The portion capsule needs the rotation for passing the media chute's port and falling in the intended position afterwards. If the portion capsule has no or wrong mean of fit locking, it will be impossible to place the portion capsule by passing the media chute in the intended position. Additionally or alternatively, it is provided that the mean for fit locking 24 represented by the pinion 24 has a pick-up that detects the rotary movement and transmits it to a control unit. If the rotation at least corresponds a defined rotating element, the control unit will activate, for example, the brewing unit. The expert knows that the portion capsule's border may include means for friction locking that interacts with a mean, for example an edge, and shift it in such a way that the shift is detected and therefore the brewing chamber is activated. The portion capsule 1 has a cover foil 4 and a sealing surface 2.4.1.

[00077] The expert moreover knows that a sensor, being for example a camera, which detects the form of the ~~mean~~ means for fit locking, friction locking and/or detection 2.4.2., may be installed in the media chute. In the present case the form and/or the distance between the teeth may be detected. If the proper portion capsule was inserted, a resulting signal could be transmitted to a control unit, which activates the brewing chamber.

[00078] **Figure 19** schematically shows a view of another portion capsule's version according to an embodiment of the present invention. **Figure 20** illustrates the same portion capsule from a different point of view schematically. Figure 19 shows the front

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view of the portion capsule. Figure 20 shows the portion capsule viewed from an angle below. In all figures the portion capsule is labeled with the reference sign 1. The portion capsule substantially has a frustoconically shaped base element 2, which is formed similar to a pot and encloses a cavity 3. The cavity 3 is sealed by a membrane 4. Since the viewing direction of ~~Figure 1~~ Figure 19 is essentially parallel to the plane, in which the membrane is located, ~~the figure just adumbrate the membrane is~~ at the upper edge of the portion capsule. In particular, the base element 2 comprises a soft, semi-rigid or rigid plastic material which is deep-drawn, preferably. The membrane comprises a foil made of plastic material or aluminum. Preferably the base element has a circumferential mounting flange 17 in the region of the membrane, with the membrane and the mounting flange 17 being firmly bonded, in particular by welding or gluing. Preferably a filter element, which is not specifically depicted in the figures, is placed within the base element 2. For instance, the filter element is made of thermoplastic resin such as, for example, polypropylene. The filter element could also be made of a non-woven material such as, for example, thermoplastic resin. Preferably the filter element divides the cavity 3 in two sections. It is provided that the first section can be filled with a raw material and the second section can be filled with and particularly collect a beverage's extract, which is not shown, during the extractions process. Both sections are not illustrated individually.

[00079] The portion capsule is intended for inserting into a brewing chamber or a device for producing a beverage, which is not shown here. In particular such a device for producing a beverage is a coffee machine. The device for producing a beverage could be also a machine that produces a tea drink, a chocolate drink or any other beverage. Preferably an extraction liquid, which is particularly water or hot water, is brought under

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high pressure into the brewing chamber of the device for producing a beverage. The extraction liquid interacts with the raw material of the beverage in such a way that an extract of a beverage or a beverage is generated. In particular the filter element is utilized as a strainer for the extract of a beverage.

[00080] According to the invention, the base element 2 has a wall region 12-2.1 and a bottom area 11-2.2. The wall region 12-2.1 basically ranges from the flange 17 to the bottom region 11-2.2. Several grooves 15-32 are placed in the wall region. In particular these grooves are keyways that are integrated in the wall region 12-2.1 and are facing the cavity 3 and range from the flange 17 to the bottom region 11-2.2 (i.e. they run perpendicular according to Figure 19). According to the invention provision is made for the grooves 15-32 to be extended vertically across the wall region, i.e. they run straight from the flange 17 to the bottom region 11-2.2, in which it is not necessary that they are extended over the whole length. The grooves are formed according to the invention in such a way that the wall region is reinforced or stiffened due to the grooves 15-32. Moreover, the plurality of the grooves 15-32, which are distributed over the wall region 12-2.1, realize an adhesion between wall region 12-2.1 and the brewing chamber's wall of the device for producing a beverage after the extraction process. This makes it easier to eject the portion capsule from the brewing chamber automatically. The portion capsule's version represented in Figure 19 comprises a circumferential border 16 that is placed at the wall region 12-2.1 ranging from the flange 17 to the bottom area 11-2.2, namely adjacent to the flange 17 facing towards the bottom area 11-2.2. The border 16 has an enlarged diameter (parallel to the membrane 4) compared to the wall region's ranging from the border 16 to the bottom area 11-2.2. It is provided that the border's contour 16

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is designed in such a manner that the border's diameter tapers towards the flange 7
17.

[00081] It is provided according to the portion capsule's embodiment, which is represented in Figure 19 and is in accordance with the invention, that the grooves 45-32 are placed in the border's region in the first part, partially range from the border 16 to the bottom area 44-2.2 across the wall region 422.1, in the second part and then finally end. All in all the grooves cover, for example, around 50 % of the extension of the wall region 422.1, which ranges from the flange 7-17 to the bottom area 442.2, wherein one-third of the grooves' extension is placed in the border's region and two-thirds of the grooves' extension is placed in the remaining wall region 42.2.1 that range from the border 16 to the bottom area 442.2.

[00082] A portion capsule 1 according to the invention is shown as sectional view along the portion capsule's extension regarding its height in **Figure 21**, i.e. the section's plane is perpendicular to the membrane's main plane. **Figure 22** also shows a portion capsule according to the invention in a sectional view portraying the sectional plane, which is parallel to the membrane's main plane. It is noticeable that the interior of the portion capsule's cavity is shown in Figure 21. The portion capsule's material or the base element's material is so thin that the implementation of grooves 32 at the exterior shown in Figure 19 leads to corresponding convexities 34 and impressions at the interior. Figure 22 particularly illustrates the gearwheel shaped contour 36 resulting from insertion of grooves in the portion capsule's 1 wall region.

Amendments to the Drawings

Replacement Drawings are submitted. No new matter has been added. Applicant requests entry of the Replacement Drawings.

REMARKS

In the Office Action mailed April 28, 2020, the Examiner rejected claims 26-29.

Claim Amendments

By way of the foregoing amendments and the markings to show changes Applicant has amended the claims. No new matter has been added.

The foregoing amendments are taken in the interest of expediting prosecution and there is no intention of surrendering any range of equivalents to which Applicant would otherwise be entitled in view of the prior art.

Further, by the present amendment, it does not follow that the amended claims have become so perfect in their description that no one could devise an equivalent. After amendment, as before, limitations in the ability to describe the present invention in language in the patent claims naturally prevent the Applicant from capturing every nuance of the invention or describing with complete precision the range of its novelty or every possible equivalent. Accordingly, the foregoing amendments are made specifically in the interest of expediting prosecution and there is no intention of surrendering any range of equivalents to which Applicant would otherwise be entitled.

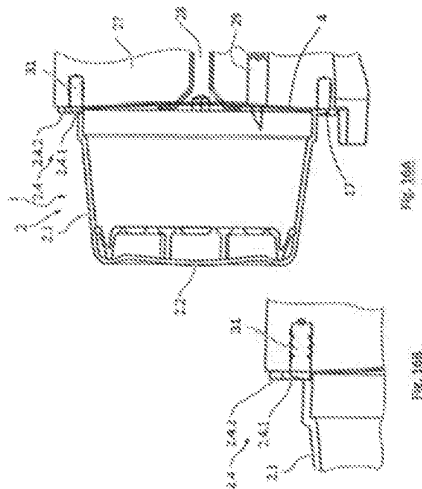
Priority

It is alleged on pages 2-3 of the Office Action that the priority applications fail to provide adequate support or enablement for one or more of the claims. This allegation is respectfully traversed. Applicant submits all claims and amendments are expressly, implicitly, or inherently supported in the originally filed disclosure.

It is alleged on page 3 of the Office Action that there is no disclosure of a method of using a “system” for making a coffee beverage. Applicant respectfully disagrees and submits one having ordinary skill in the art can appreciate that, in addition to disclosing a portion capsule, Applicant’s disclosure also refers to a coffee or beverage apparatus for use with a portion capsule, which coact as a “system” to make a beverage. However, in the interest of expediting prosecution, Applicant has amended the preambles of claims 9 and 26 to remove the term “system.”

It is alleged on page 3 of the Office Action that there is no disclosure of loading portion capsules into the apparatus. Applicant respectfully disagrees and kindly directs the Examiner’s attention to at least the following passage from Applicant’s priority application DE 10 2010 031 988.0 dated July 22, 2010: Page 10, Ins. 6-7 “The identifier is read, for example during the insertion of the capsule.” In the interest of expediting prosecution, the term “loading” in claims 9 and 26 is now replaced with “inserting”, to be consistent with the text of the disclosure. Accordingly, Applicant submits the priority applications describe the claimed invention in sufficient detail and with reasonable clarity that one skilled in the art can reasonably conclude that Applicant had possession of the claimed invention.

It is alleged on page 3 of the Office Action that there is no disclosure of sealing the top side of the flange and/or the foil lid against a seal of the apparatus. Applicant respectfully disagrees and kindly directs the Examiner’s attention to at least the following passage from Applicant’s priority application DE 10 2010 044 251.8: Page 12, Ins. 27-31: “a sealing surface 2.4.1 is provided in the peripheral region 2.4 . . . and interacts with sealing action with a seal 21, which is arranged on the brewing chamber 27”; Page 5, Ins. 24-25: “the periphery can be used as a stop and/or sealing surface”; and Claim 17: “a sealing surface (2.4.1) is provided on the periphery (2.4).” Moreover, referring to Figs. 16A and 16B reproduced below, the top side of the flange 17 or periphery/edge region 2.4 and/or the foil lid 4 is sealed against a seal 31 of the apparatus.



Accordingly, Applicant submits the priority applications describe the claimed invention in sufficient detail and with reasonable clarity that one skilled in the art can reasonably conclude that Applicant had possession of the claimed invention.

It is alleged on page 3 of the Office Action that there is no disclosure of loading a second portion capsule, reading a second barcode, and controlling a second production process based thereon. Applicant respectfully disagrees and kindly directs the Examiner's attention to at least the passage recited at Page 4, lns. 10-15 in Applicant's priority application DE 10 2010 031 988.0 dated July 22, 2010: "Furthermore, the identifier makes it possible for the coffee machine to detect which kind of capsule is located in its brewing chamber and to set the beverage-making or food-making process, i.e., for example the quantity of water, the pressure thereof and/or the temperature thereof, correspondingly" (emphasis added) Applicant submits the phrase "which kind of capsule" in the aforementioned passage contemplates to one having ordinary skill in the art inserting different capsules into the apparatus (i.e., the claimed first and second portion capsules) and the term "correspondingly" contemplates to one having ordinary skill in the art controlling or adjusting the brewing characteristics (water quantity, pressure and/or temperature) depending on

the kind of portion capsule inserted into the apparatus (i.e., depending on the read identifier on the portion capsule). The later method steps disclosed and claimed by Applicant regarding sealing the top side of the flange and/or the foil lid against a seal of the apparatus; piercing the second foil lid with the mandrel; and making the second beverage would then reasonably and correspondingly follow to make a second coffee beverage after the second portion capsule is inserted into the apparatus. Accordingly, Applicant submits one having skill in the art will readily conclude from at least the aforementioned passage an understanding that at the time of application filing, Applicant had in its possession the claimed subject matter.

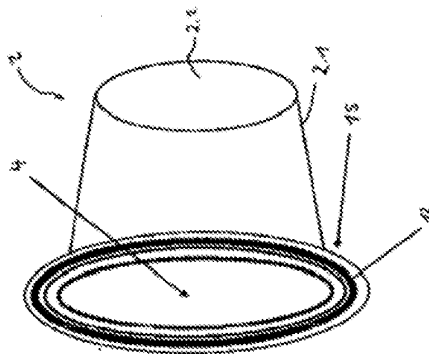
It is alleged on page 3 of the Office Action that there is no disclosure of piercing the foil lid with a mandrel of the apparatus. Applicant respectfully disagrees and kindly directs the Examiner's attention to at least Fig. 16A, B and its corresponding description which describes a piercing spike 29 that forms an opening in the lid 4.

Accordingly, in view of at least the aforementioned remarks, Applicant submits this application is a proper divisional application and not a CIP as alleged on page 3 of the Office Action. Applicant respectfully requests the Examiner acknowledge Applicant's priority claim.

Drawings

It is alleged on page 4 of the Office Action that certain claimed features are not shown in the drawings. This allegation is respectfully traversed. Referring to Figure 16A reproduced above and its corresponding description, a water inlet adapted to supply water is shown at reference numeral 28, which is arranged along a central axis of the portion capsule. Figure 16A also shows that the edge region or flange has a sealing surface 2.4.1, which sealingly interacts with the seal 31 attached to the brewing chamber 27.

It is alleged on page 4 of the Office Action that Applicant does not have support for a barcode being on a bottom side of a circumferential flange. Applicant respectfully disagrees. Referring to page 7 of Applicant's priority application DE 10 2010 031 988.0 dated July 22, 2010 and Fig. 2 from that priority application, reproduced below, Applicant discloses at Ins. 27-29 "as symbolized by the arrow 15, for the barcode to be provided on that side of the peripheral region of the basic element which is directed away from the membrane." The membrane is identified at reference numeral 4 and is attached to the top side of the flange/edge region. Applicant submits one having ordinary skill in the art can understand from the aforementioned description and the below Figure that the arrow 15 points to the barcode being on the bottom side of the peripheral region or flange. Accordingly, Applicant submits the DE 10 2010 031 988.0 priority application dated July 22, 2010 describes the claimed subject matter in sufficient detail and with reasonable clarity that one skilled in the art can reasonably conclude that Applicant had possession of the claimed subject matter.



Applicant includes herewith Replacement Sheets and a Substitute Specification that address the other drawing objections alleged on pages 4-6 of the Office Action.

Specification

The Specification is objected to for allegedly failing to provide antecedent basis for certain claimed features recited on pages 6-7 of the Office Action. These allegations are respectfully traversed.

It is alleged on page 4 of the Office Action that there is no antecedent basis in the specification for loading a portion capsule into the apparatus and reading the barcode with a barcode reader. Applicant respectfully disagrees and kindly directs the Examiner's attention to at least at paragraph [00058] "This portion capsule can be inserted into a brewing chamber 12, with a liquid, in particular water, flowing through it" and "After the identifier has been read out the identifier is compared to a stored reference." Paragraph [00060] further provides antecedent basis for reading the barcode by a detector 13.

It is alleged on page 4 of the Office Action that there is no antecedent basis in the specification for sealing the top side of the flange and/or the foil lid against a seal of the apparatus. Applicant respectfully disagrees and kindly directs the Examiner's attention to at least at paragraph [00074] and Figures 16A,B where it is disclosed that the edge region of the portion capsule has a sealing surface 2.4.1, which sealingly interacts with the seal 31 attached to the brewing chamber 27.

It is alleged on page 4 of the Office Action that there is no antecedent basis in the specification for forming a first coffee beverage. Applicant respectfully disagrees and kindly directs the Examiner's attention to at least at paragraph [00079] "Preferably an extraction liquid, which is particularly water or hot water, is brought under high pressure into the brewing chamber of the device for producing a beverage. The extraction liquid interacts with the raw material of the beverage in such a way that an extract of a beverage or a beverage is generated."

It is alleged on page 4 of the Office Action that there is no antecedent basis in the specification for unloading a first or second portion capsule from the apparatus. Applicant respectfully disagrees and kindly directs the Examiner's attention to at least at paragraph [00022] "As a result, ejecting or removing the portion capsule from the brewing chamber is made easier." Applicant also submits it is within the knowledge of one having ordinary skill that a portion capsule is unloaded from a coffee machine before a second portion capsule is loaded, which the Office Action appears to agree with (See Office Action page 13, "the first portion capsule would have to be unloaded from the apparatus or the apparatus could not be used to make other coffee beverages."

Regarding the method steps associated with the second portion capsule / second coffee beverage, Applicant directs the Examiner's attention to at least the passage recited at Page 4, Ins. 10-15 in the priority application DE 10 2010 031 988.0 dated July 22, 2010: "Furthermore, the identifier makes it possible for the coffee machine to detect which kind of capsule is located in its brewing chamber and to set the beverage-making or food-making process, i.e., for example the quantity of water, the pressure thereof and/or the temperature thereof, correspondingly" and the description at paragraph [00015] of this specification. The phrase "which kind of capsule" in the aforementioned passage contemplates to one having ordinary skill in the art inserting different capsules into the apparatus (i.e., the claimed first portion capsule and then the claimed second portion capsule) and the term "correspondingly" contemplates to one having ordinary skill controlling or adjusting the brewing characteristics (water quantity, pressure and/or temperature) depending on the kind of portion capsule inserted into the apparatus (i.e., depending on the detected identifier). The later method steps regarding sealing the top side of the flange and/or the foil lid of the second portion capsule against a seal of the apparatus; piercing the second foil lid with the mandrel; and making the second beverage would then reasonably and correspondingly follow after the second portion capsule is inserted into the apparatus.

Claim Objections

Claims 9 and 26 are objected to for the reasons alleged on page 7 of the office action. Without conceding the validity of these objections, Applicant submits these objections are moot in view of the currently amended claims.

Claim Rejections 35 USC 112

1. Claims 9-18 and 26-29 are rejected under 35 USC 112(a) or 35 USC 112 (pre-AIA), first paragraph, as allegedly failing to comply with the written description requirement. These rejections are respectfully traversed.

It is alleged on page 8 of the Office Action that no method steps for making a coffee beverage are positively recited in the specification. Applicant respectfully disagrees with this allegation and submits Applicant's disclosure supports method steps for making a coffee beverage. For example, originally-filed claim 9, which is part of the disclosure (See MPEP 2163), recites a method step of "Use of a single-serve capsule according to claim 1 for making a hot beverage." Applicant's specification further includes numerous method steps associated with making the coffee beverage including at least the following: "This portion capsule can be inserted into a brewing chamber 12, with a liquid, in particular water, flowing through it" (See [00058]); "the portion capsule has an identifier that allows to individualize the respective portion capsule" (See [00058]); "a barcode is read out by a detector 13" (See [0060]); "a sensor/detection system handles the identifier and compares it with a stored reference substantially" (See [0007]); "the respective portion capsule can be assigned to a group of capsules that are suitable for the coffee machine" (See [0007]); "the coffee machine, in particular the water-providing- pressure pump, will be activated if the detected identifier matches with the reference. Otherwise the coffee machine will

not start operating” (See [0007]); “the production process of beverage or food may be controlled, for example by adjusting the temperature, the pressure and/or the amount of water” (See [0015] and [0025]); “the raw material is extracted or dissolved and therefore the beverage is produced” (See [00058]); “it is possible to use the surface of the edge for stopping and/or sealing” (See [0017]); “the edge region has a sealing surface 2.4.1, which sealingly interacts with the seal 31 attached to the brewing chamber 27” (See [00074]); “the water coming from a water inlet 28 flows through the portion capsule” (See [00074]); “the stream of the extraction liquid, which flows along the base element in the cavity, can be optimized by choosing a grooves' structure that is able, for example, to generate on the one hand a better or stronger turbulence in the extraction liquid” (See [00022]); “eject the portion capsule from the brewing chamber automatically” (See [00080]). Accordingly, Applicant submits at least the aforementioned recited method steps render the alleged 35 USC 112(a) or 35 USC 112 (pre-AIA), first paragraph rejection improper and Applicant respectfully requests the rejection be withdrawn.

It is alleged on page 8 of the Office Action that there is no disclosure of “sealing the (entire) top side of a flange and/or a first foil lid or a second foil lid against the seal of the apparatus.” This allegation is respectfully traversed. Applicant’s claim requires “sealing the top side of the flange and/or the first foil lid against a seal of the apparatus.” This limitation is supported throughout Applicant’s disclosure, including, at the very least paragraph [00074], which recites in relevant part, “the edge region has a sealing surface 2.4.1, which sealingly interacts with the seal 31 attached to the brewing chamber 27.” Referring to Figs. 16A and 16B reproduced above, the top side of the flange 17 and/or the foil lid 4 is sealed against a seal 31 of the apparatus.

It is alleged on page 8 of the Office Action that there is no disclosure of piercing a second foil lid with a mandrel that is offset from a central axis of the portion capsule. This allegation is respectfully traversed. Applicant discloses at least at paragraph [00075] that an opening in the

foil 4 is made with a mandrel 29. Referring to Fig. 16A reproduced above, the mandrel 29 is offset from a central axis of the portion capsule. Applicant also kindly directs the Examiner's attention to the remarks included above as to where Applicant's disclosure supports the second portion capsule.

It is alleged on page 8 of the Office Action that there is no disclosure of unloading a first portion capsule from the apparatus. This allegation is respectfully traversed. Applicant discloses at least at paragraph [00080] that the portion capsule can be ejected from the brewing chamber.

It is alleged on page 8 of the Office Action that claim 9 fails to unload the first portion capsule from the apparatus. The Office Action goes on to allege on page 9 of the office action that "unless the first portion capsule is unloaded from the apparatus, a second capsule would not be able to be inserted into the apparatus to make a second beverage." Without conceding the validity of this allegation, Claim 9 is amended in the interest of expediting prosecution to include a step of unloading the first portion capsule from the apparatus.

2. Claims 9-18 and 26-29 are rejected under 35 USC 112(b) or 35 USC 112 (pre-AIA), second paragraph, as allegedly being indefinite. These rejections are respectfully traversed. Without conceding the validity of this rejection, and in the interest of expediting prosecution, Applicant has amended the claims in a manner that is believed to overcome and render this rejection moot.

3. Claims 11 and 12 are rejected under 35 USC 112(d) or pre-AIA 35 USC 112, 4th paragraph, as allegedly being of improper dependent form. This rejection is respectfully traversed. Without conceding the validity of this rejection, and in the interest of expediting prosecution, Applicant has amended the claims in a manner that is believed to overcome and render this rejection moot.

Claim Rejections - 35 USC 103

When determining if a claim is obvious, the Patent Office (hereafter “Office”) must make “a searching comparison of the claimed invention – including all its limitations – with the teaching of the prior art.” In re Ochiai, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (emphasis added). If just one claim limitation is not accounted for, then the Office will be unable to maintain its obviousness rejection, or the Office has failed to present a prima facie case of obviousness. To support an obviousness rejection “[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art.” In re Wilson, 424 F.2d 1382, 1385 (CCPA 1970).

1. Claims 9-18 and 26-29 are rejected under 35 USC 103(a) as allegedly being unpatentable over “Kruger” (US 2013/0129872). This rejection is respectfully traversed. In view of the claim amendments and remarks included in this Paper above, Applicant submits the rejection of the pending claims under 35 USC 103(a) as being unpatentable over “Kruger” (US 2013/0129872) is not proper. Applicant respectfully requests the Examiner withdrawal this rejection and allow all pending claims.

2. Claims 9-11, 13-15, 17, 26-29 are rejected under 35 USC 103(a) as allegedly being unpatentable over “Schifferle” (US 2005/0150391) in view of “Jarisch” (US 2013/0064937), “Sweeney” (US 2002/0020659), “Boyd” (US 2002/0048621) and “Rossi” (WO 2010/099806). This rejection is respectfully traversed.

Without conceding the validity of the rejection of these claims, or the appropriateness of the Examiner relying on a combination of Schifferle, Jarisch, Sweeney, Boyd, and Rossi to reject these claims, Applicant submits claims 9 and 26 are allowable for at least their inclusion of the limitation relating to the barcode being located on a bottom side of a circumferential flange, the

bottom side opposing a top side to which the foil lid is attached. Accordingly, Applicant respectfully requests the Examiner withdrawal this rejection and allow all pending claims.

3. Claim 12 is rejected under 35 USC 103(a) as allegedly being unpatentable over “Schifferle” (US 2005/0150391) in view of “Jarisch” (US 2013/0064937), “Sweeney” (US 2002/0020659), “Boyd” (US 2002/0048621) in view of “Rossi” (WO 2010/099806) in view of “Rubino” (EP 1 849 718). This rejection is respectfully traversed.

Without conceding the validity of the rejection of claim 12, or the appropriateness of the Examiner relying on a combination of Schifferle, Jarisch, Sweeney, Boyd, Rossi, and Rubino to reject claim 12, Applicant submits claim 12 is allowable for at least its dependence on claim 9, which is believed to be allowable for at least the reasons mentioned above. Accordingly, Applicant respectfully requests the Examiner withdrawal this rejection and allow claim 12.

4. Claims 16 and 18 are rejected under 35 USC 103(a) as allegedly being unpatentable over “Schifferle” (US 2005/0150391) in view of “Jarisch” (US 2013/0064937), “Sweeney” (US 2002/0020659), “Boyd” (US 2002/0048621) in view of “Rossi” (WO 2010/099806) and further in view of “Mahlich” (US 2004/0089158). This rejection is respectfully traversed.

Without conceding the validity of the rejection of claims 16 and 18, or the appropriateness of the Examiner relying on a combination of Schifferle, Jarisch, Sweeney, Boyd, Rossi, and Mahlich to reject claims 16 and 18, Applicant submits claims 16 and 18 are allowable for at least their dependence on claim 9, which is believed to be allowable for at least the reasons mentioned above. Accordingly, Applicant respectfully requests the Examiner withdrawal this rejection and allow claims 16 and 18.

CONCLUSIONS

In view of Applicant's amendments and remarks, the Examiner's rejections are believed to be rendered moot. Accordingly, Applicant submits that the present application is in condition for allowance and requests that the Examiner pass the case to issue at the earliest convenience. Should the Examiner have any questions or wish to further discuss this application, Applicant requests that the Examiner contact the undersigned at (248) 292-2920.

If for some reason Applicant has not requested a sufficient extension and/or has not paid a sufficient fee for this response and/or for the extension necessary to prevent the abandonment of this application, please consider this as a request for an extension for the required time period and/or authorization to charge our Deposit Account No. 50-1097 for any fee which may be due.

Respectfully submitted,

Date: July 27, 2020

Customer No. 25215

/Paul J. Palinski/

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NOTICE OF ALLOWANCE AND FEE(S) DUE

25215 7590 11/03/2020
The Dobrusin Law Firm P.C.
29 W. Lawrence Street
Suite 210
Pontiac, MI 48342

EXAMINER

SMITH, CHAIM A

ART UNIT

PAPER NUMBER

1792

DATE MAILED: 11/03/2020

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/538,752	08/12/2019	Marc Krüger	1859.029USD3	8143

TITLE OF INVENTION: PORTION CAPSULE HAVING AN IDENTIFIER

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$0.00	\$1200	02/03/2021

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

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Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

25215 7590 11/03/2020
The Dobrusin Law Firm P.C.
29 W. Lawrence Street
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Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/538,752	08/12/2019	Marc Krüger	1859.029USD3	8143

TITLE OF INVENTION: PORTION CAPSULE HAVING AN IDENTIFIER

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$0.00	\$1200	02/03/2021

EXAMINER	ART UNIT	CLASS-SUBCLASS
SMITH, CHAIM A	1792	426-115000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

1 _____

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☐ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☐ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. Change in Entity Status (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

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16/538,752	08/12/2019	Marc Krüger	1859.029USD3	8143
25215	7590	11/03/2020	EXAMINER	
The Dobrusin Law Firm P.C. 29 W. Lawrence Street Suite 210 Pontiac, MI 48342			SMITH, CHAIM A	
			ART UNIT	PAPER NUMBER
			1792	
DATE MAILED: 11/03/2020				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b) (2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 16/538,752	Applicant(s) Krüger, Marc	
	Examiner CHAIM A SMITH	Art Unit 1792	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed 27 July 2020.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are 9,12-18 and 26-32. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
Certified copies:
a) ☐ All b) ☐ Some *c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)	5. ☐ Examiner's Amendment/Comment
2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.	6. ☐ Examiner's Statement of Reasons for Allowance
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.	7. ☐ Other _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.	

/CHAIM A SMITH/ Examiner, Art Unit 1792	/ERIK KASHNIKOW/ Supervisory Patent Examiner, Art Unit 1792
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Issue Classification 	Application/Control No. 16/538,752	Applicant(s)/Patent Under Reexamination Krüger, Marc
	Examiner CHAIM A SMITH	Art Unit 1792

CPC						
Symbol					Type	Version
B65D	/	85	/	8043	F	2013-01-01
A47J	/	31	/	4492	I	2013-01-01
B65D	/	65	/	466	A	2013-01-01
B65D	/	2203	/	06	A	2013-01-01
B65D	/	2203	/	10	A	2013-01-01

CPC Combination Sets						
Symbol			Type	Set	Ranking	Version
	/		/			

/CHAIM A SMITH/ Examiner, Art Unit 1792 (Assistant Examiner)	14 October 2020 (Date)	Total Claims Allowed: 15	
/ERIK KASHNIKOW/ Supervisory Patent Examiner, Art Unit 1792 (Primary Examiner)	23 October 2020 (Date)	O.G. Print Claim(s) 9	O.G. Print Figure 2A

U.S. Patent and Trademark Office

Part of Paper No.: 20201014

Issue Classification 	Application/Control No. 16/538,752	Applicant(s)/Patent Under Reexamination Krüger, Marc
	Examiner CHAIM A SMITH	Art Unit 1792

INTERNATIONAL CLASSIFICATION			
CLAIMED			
B65D		85	
			804
NON-CLAIMED			
			

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS

CROSS REFERENCES(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					

/CHAIM A SMITH/ Examiner, Art Unit 1792 (Assistant Examiner)	14 October 2020 (Date)	Total Claims Allowed: 15	
/ERIK KASHNIKOW/ Supervisory Patent Examiner, Art Unit 1792 (Primary Examiner)	23 October 2020 (Date)	O.G. Print Claim(s) 9	O.G. Print Figure 2A

U.S. Patent and Trademark Office

Part of Paper No.: 20201014

Issue Classification 	Application/Control No. 16/538,752	Applicant(s)/Patent Under Reexamination Krüger, Marc
	Examiner CHAIM A SMITH	Art Unit 1792

☐ Claims renumbered in the same order as presented by applicant
 ☐ CPA
 ☐ T.D.
 ☐ R.1.47

CLAIMS															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1		10		19	15	28								
	2		11		20	9	29								
	3	2	12		21	10	30								
	4	3	13		22	11	31								
	5	4	14		23	12	32								
	6	5	15		24										
	7	6	16		25										
	8	7	17	13	26										
1	9	8	18	14	27										

/CHAIM A SMITH/ Examiner, Art Unit 1792 (Assistant Examiner)	14 October 2020 (Date)	Total Claims Allowed: 15	
/ERIK KASHNIKOW/ Supervisory Patent Examiner, Art Unit 1792 (Primary Examiner)	23 October 2020 (Date)	O.G. Print Claim(s) 9	O.G. Print Figure 2A

U.S. Patent and Trademark Office

Part of Paper No.: 20201014

<i>Index of Claims</i> 	Application/Control No. 16/538,752	Applicant(s)/Patent Under Reexamination Krüger, Marc
	Examiner CHAIM A SMITH	Art Unit 1792

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS										
☐ Claims renumbered in the same order as presented by applicant					☐ CPA		☐ T.D.		☐ R.1.47	
CLAIM		DATE								
Final	Original	11/08/2019	04/12/2020	10/14/2020						
	1	-	-	-						
	2	-	-	-						
	3	-	-	-						
	4	-	-	-						
	5	-	-	-						
	6	-	-	-						
	7	-	-	-						
	8	-	-	-						
1	9	✓	✓	=						
	10	✓	✓	-						
	11	✓	✓	-						
2	12	✓	✓	=						
3	13	✓	✓	=						
4	14	✓	✓	=						
5	15	✓	✓	=						
6	16	✓	✓	=						
7	17	✓	✓	=						
8	18	✓	✓	=						
	19	-	-	-						
	20	-	-	-						
	21	-	-	-						
	22	-	-	-						
	23	-	-	-						
	24	-	-	-						
	25	-	-	-						
13	26	✓	✓	=						
14	27	✓	✓	=						
15	28	✓	✓	=						
9	29	✓	✓	=						
10	30			=						
11	31			=						
12	32			=						