PTO/AIA/15 (03-13)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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

UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	1859.029USC11 / KRU0022-WO-US-T12
First Named Inventor	Marc Krüger
Title	PORTION CAPSULE HAVING AN IDENTIFIER
Express Mail Label No.	Via EFS at USPTO.GOV on July 26, 2021

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. ☐ **Fee Transmittal Form** (PTO/SB/17 or equivalent)
2. ☐ **Applicant asserts small entity status.** See 37 CFR 1.27
3. ☐ **Applicant certifies micro entity status.** See 37 CFR 1.29. Applicant must attach form PTO/SB/15A or B or equivalent.
4. ☑ **Specification** [*Total Pages* 25] Both the claims and abstract must start on a new page. *(See MPEP § 608.01(a) for information on the preferred arrangement)*
5. ☑ **Drawing(s)** (35 U.S.C. 113) [*Total Sheets* 12]
6. **Inventor's Oath or Declaration** [*Total Pages* 1] *(including substitute statements under 37 CFR 1.64 and assignments serving as an oath or declaration under 37 CFR 1.63(e))*
   a. ☐ Newly executed (original or copy)
   b. ☑ A copy from a prior application (37 CFR 1.63(d))
7. ☑ **Application Data Sheet** ** See note below.* See 37 CFR 1.76 (PTO/AIA/14 or equivalent)
8. **CD-ROM or CD-R** in duplicate, large table, or Computer Program (*Appendix*)
   ☐ Landscape Table on CD
9. **Nucleotide and/or Amino Acid Sequence Submission** (*if applicable, items a. – c. are required*)
   a. ☐ Computer Readable Form (CRF)
   b. ☐ Specification Sequence Listing on:
      i. ☐ CD-ROM or CD-R (2 copies); or
      ii. ☐ Paper
   c. ☐ Statements verifying identity of above copies

ADDRESS TO:

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

ACCOMPANYING APPLICATION PAPERS

10. ☐ **Assignment Papers** (cover sheet & document(s))
    Name of Assignee _____
11. ☐ **37 CFR 3.73(c) Statement** (*when there is an assignee*) ☑ **Power of Attorney**
12. ☐ **English Translation Document** (*if applicable*)
13. ☐ **Information Disclosure Statement** (PTO/SB/08 or PTO-1449)
    ☐ Copies of citations attached
14. ☐ **Preliminary Amendment**
15. ☐ **Return Receipt Postcard** (*MPEP § 503*) (*Should be specifically itemized*)
16. ☐ **Certified Copy of Priority Document(s)** (*if foreign priority is claimed*)
17. ☐ **Nonpublication Request** Under 35 U.S.C. 122(b)(2)(B)(i). Applicant must attach form PTO/SB/35 or equivalent.
18. ☑ **Other:** USPTO is hereby authorized to charge any additional fees required under 37 C.F.R. Sec. 1.16; 1.17 and 1.21 to Deposit Acct. No. 50-1097

***Note**: (1) Benefit claims under 37 CFR 1.78 and foreign priority claims under 1.55 **must** be included in an Application Data Sheet (ADS).
(2) For applications filed under 35 U.S.C. 111, the application must contain an ADS specifying the applicant if the applicant is an assignee, person to whom the inventor is under an obligation to assign, or person who otherwise shows sufficient proprietary interest in the matter. See 37 CFR 1.46(b).

19. CORRESPONDENCE ADDRESS

☑ The address associated with Customer Number: 25215 **OR** ☐ Correspondence address below

Name					
Address					
City		State		Zip Code	
Country		Telephone		Email	

Signature	/Paul J. Palinski/	Date	July 26, 2021
Name (Print/Type)	Paul J. Palinski	Registration No. (Attorney/Agent)	71080

This collection of information is required by 37 CFR 1.53(b). 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 1.11 and 1.14. This collection is estimated to take 12 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, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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.

Doc Code: TRACK1.REQ
Document Description: TrackOne Request

PTO/AIA/424 (04-14)

CERTIFICATION AND REQUEST FOR PRIORITIZED EXAMINATION UNDER 37 CFR 1.102(e) (Page 1 of 1)

First Named Inventor:	Marc Krüger	Nonprovisional Application Number (if known):	
Title of Invention:	PORTION CAPSULE HAVING AN IDENTIFIER		

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS PRIORITIZED EXAMINATION FOR THE ABOVE-IDENTIFIED APPLICATION.

1. The processing fee set forth in 37 CFR 1.17(i)(1) and the prioritized examination fee set forth in 37 CFR 1.17(c) have been filed with the request. The publication fee requirement is met because that fee, set forth in 37 CFR 1.18(d), is currently $0. The basic filing fee, search fee, and examination fee are filed with the request or have been already been paid. I understand that any required excess claims fees or application size fee must be paid for the application.

2. I understand that the application may not contain, or be amended to contain, more than four independent claims, more than thirty total claims, or any multiple dependent claims, and that any request for an extension of time will cause an outstanding Track I request to be dismissed.

3. The applicable box is checked below:

I. ☑ Original Application (Track One) - Prioritized Examination under § 1.102(e)(1)

i. (a) The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a). This certification and request is being filed with the utility application via EFS-Web.

---OR---

(b) The application is an original nonprovisional plant application filed under 35 U.S.C. 111(a). This certification and request is being filed with the plant application in paper.

ii. An executed inventor's oath or declaration under 37 CFR 1.63 or 37 CFR 1.64 for each inventor, **or** the application data sheet meeting the conditions specified in 37 CFR 1.53(f)(3)(i) is filed with the application.

II. ☐ Request for Continued Examination - Prioritized Examination under § 1.102(e)(2)

i. A request for continued examination has been filed with, or prior to, this form.
ii. If the application is a utility application, this certification and request is being filed via EFS-Web.
iii. The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a), or is a national stage entry under 35 U.S.C. 371.
iv. This certification and request is being filed prior to the mailing of a first Office action responsive to the request for continued examination.
v. No prior request for continued examination has been granted prioritized examination status under 37 CFR 1.102(e)(2).

Signature /Paul J. Palinski/	Date July 26, 2021
Name (Print/Typed) Paul J. Palinski	Practitioner Registration Number 71,080

Note: *This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required.**

☑ *Total of 1 forms are submitted.

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.

Fig. 1B

Fig. 1A

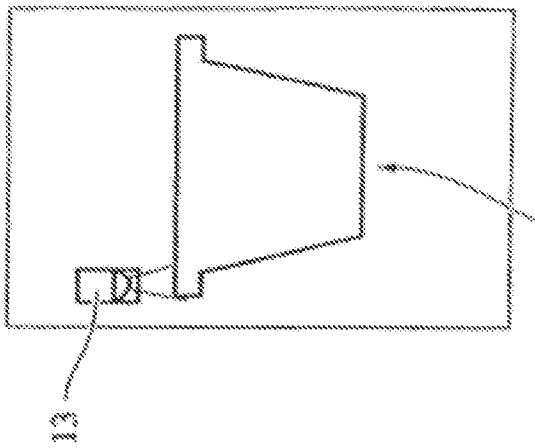


Fig. 2B

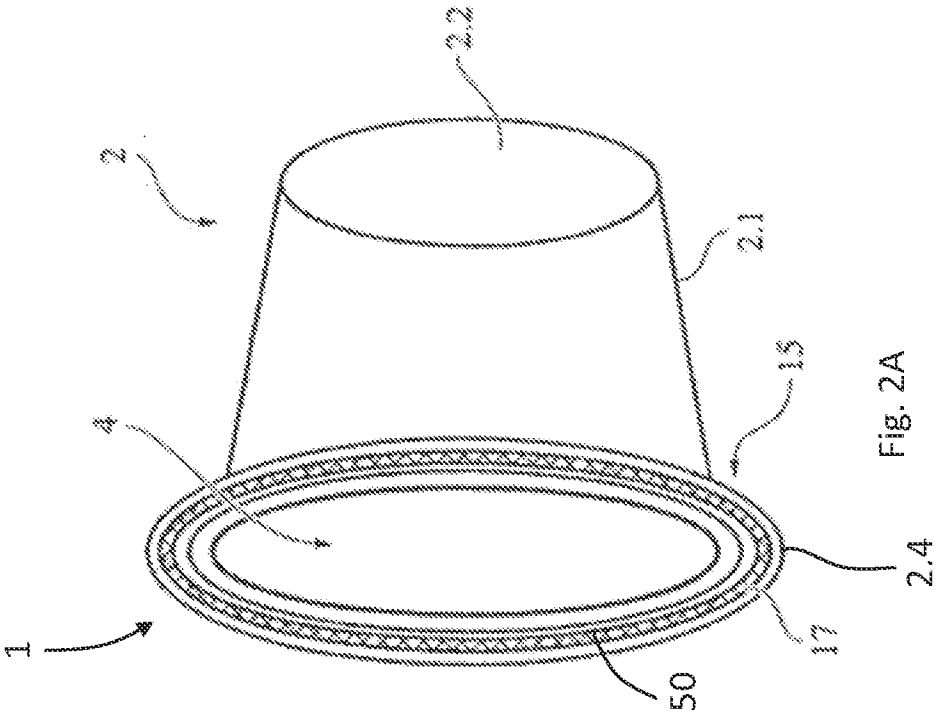


Fig. 2A

Fig. 3A

Fig. 3B

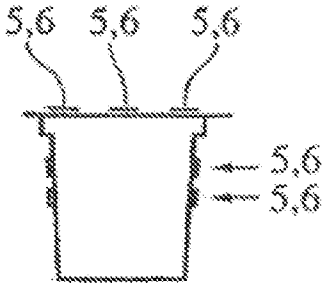


Fig. 4

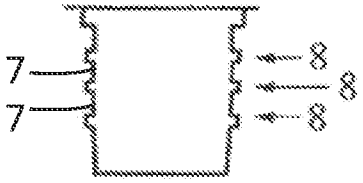


Fig. 5

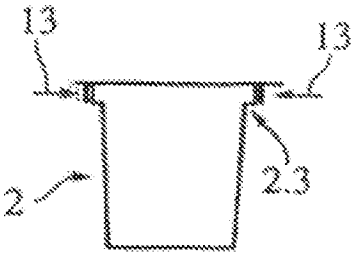


Fig. 6

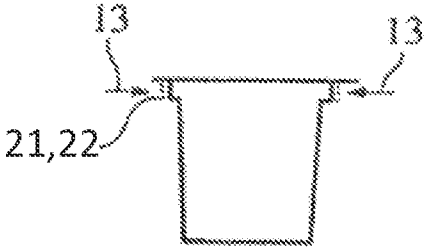


Fig. 7

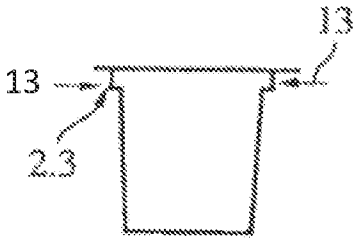


Fig. 8

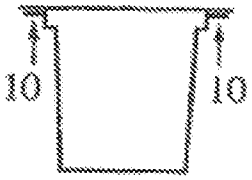


Fig. 9

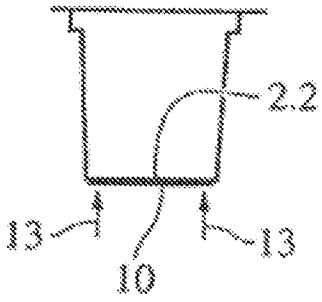


Fig. 10

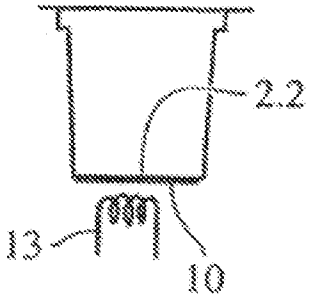


Fig. 11

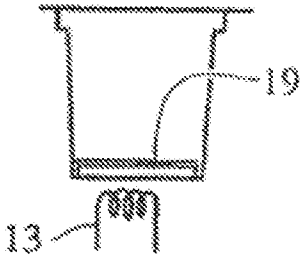


Fig. 12

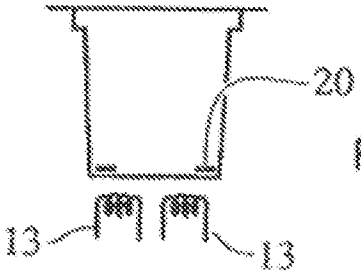


Fig. 13

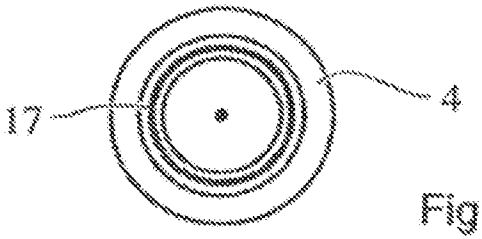


Fig. 14

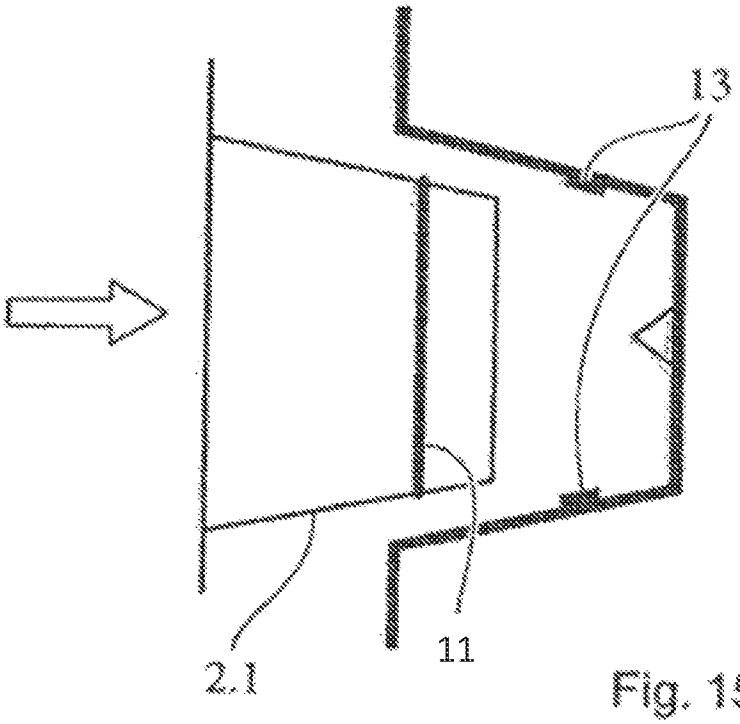


Fig. 15

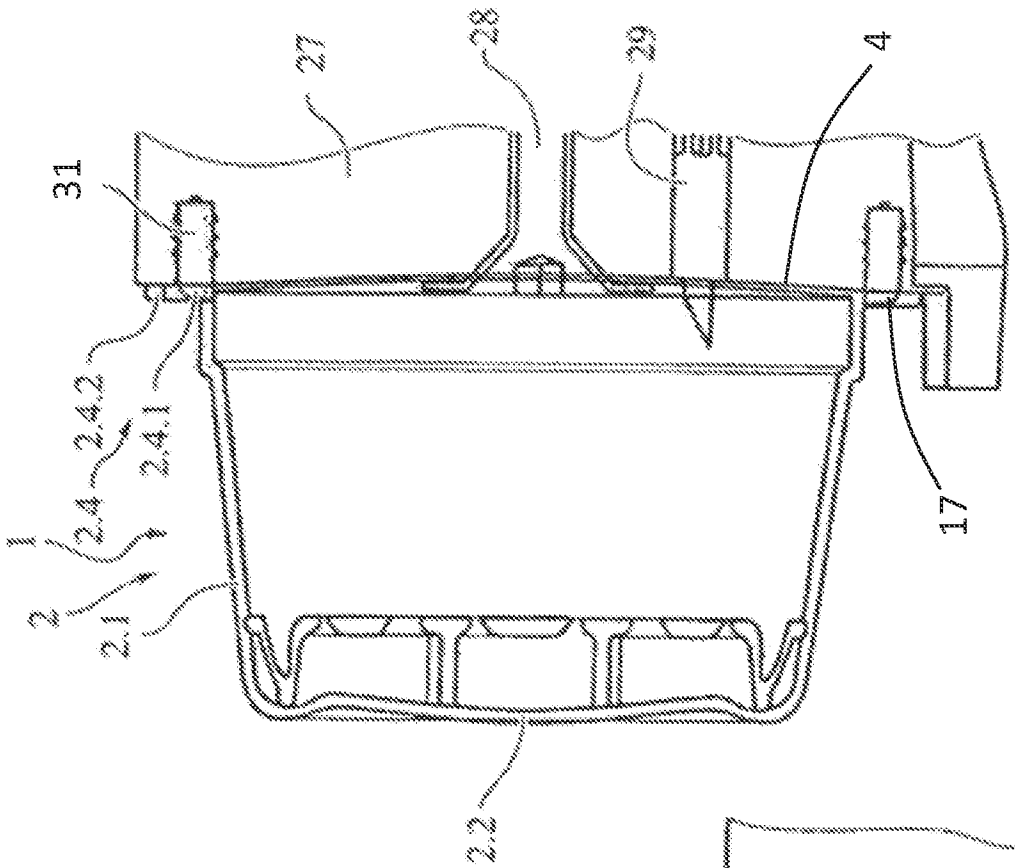


Fig. 16A

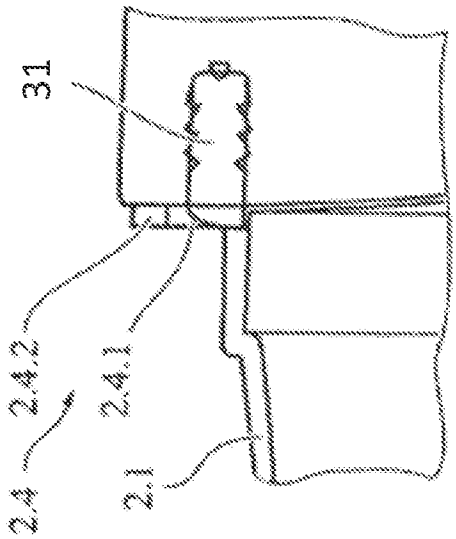


Fig. 16B

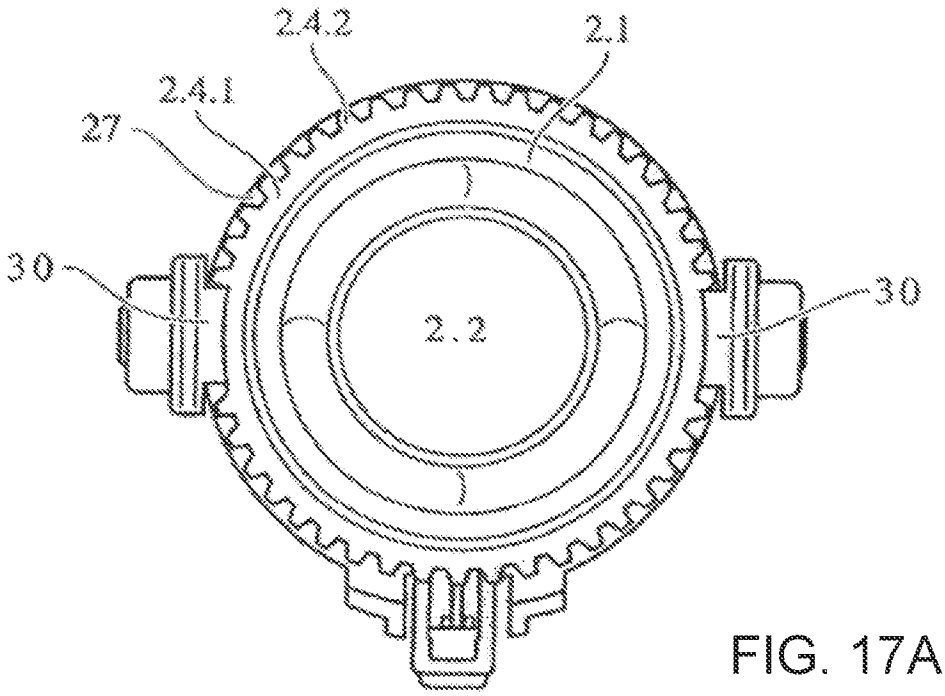


FIG. 17A

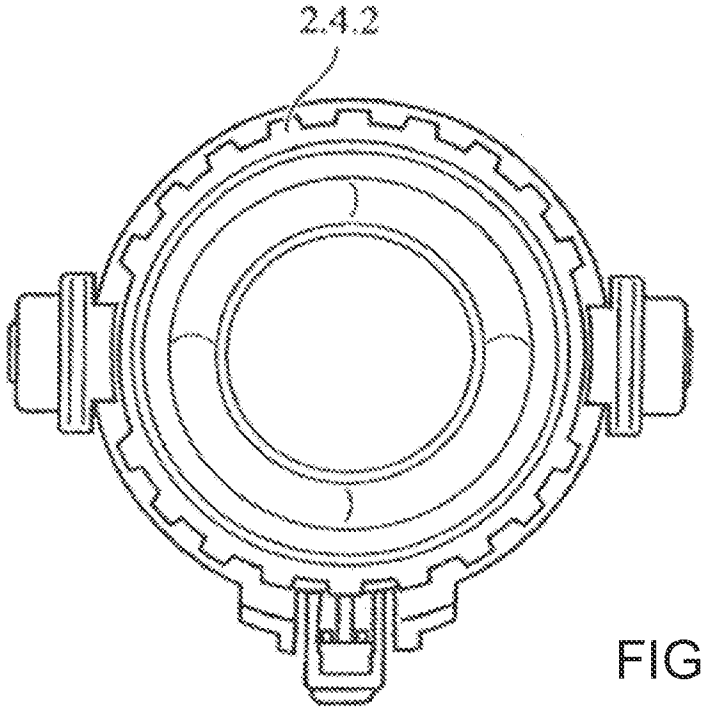


FIG. 17B

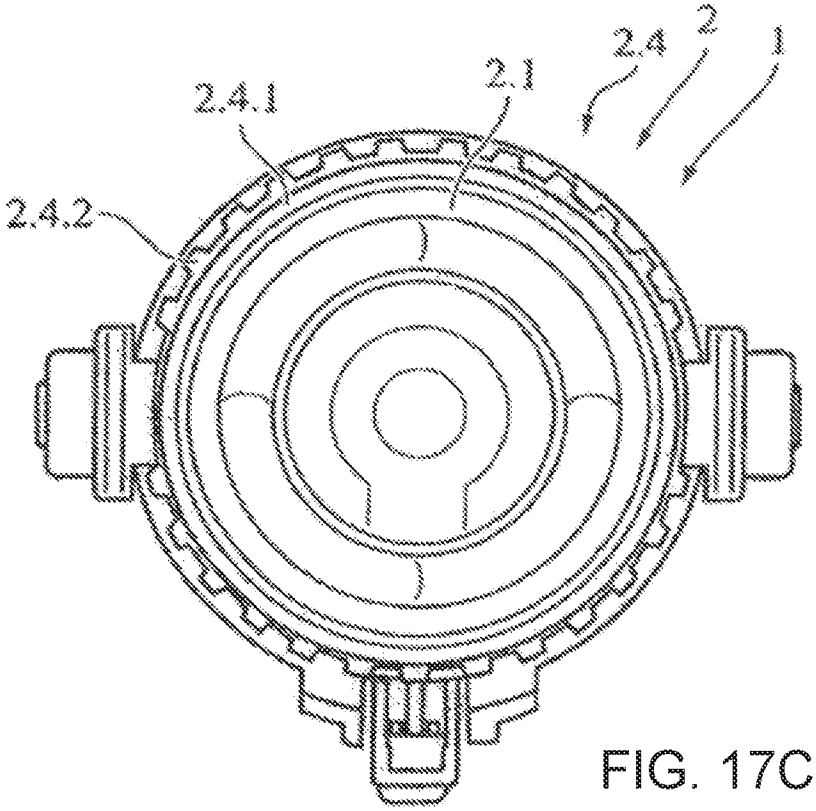


FIG. 17C

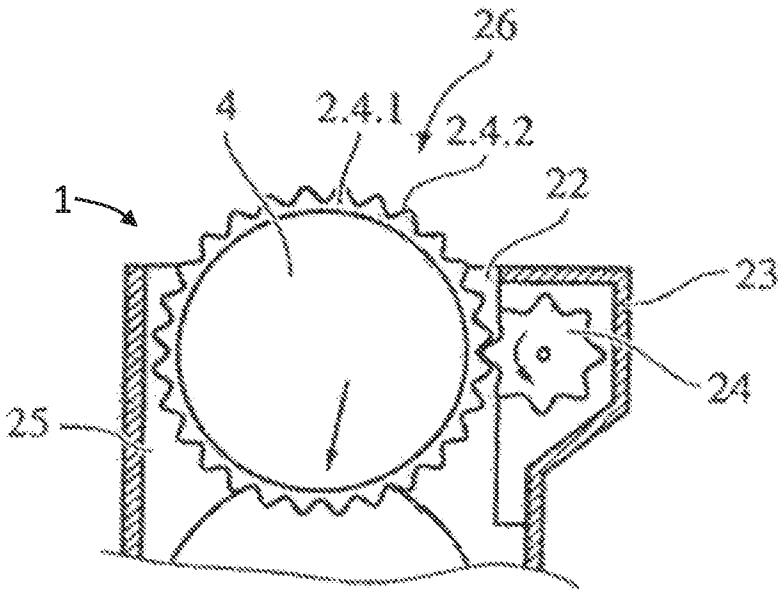


Fig. 18

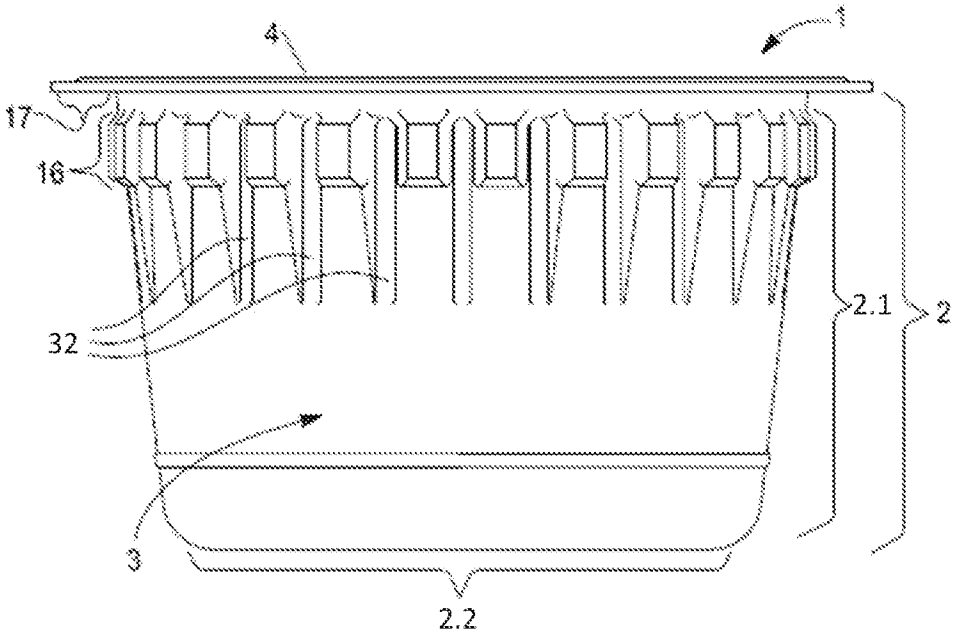


Fig.19

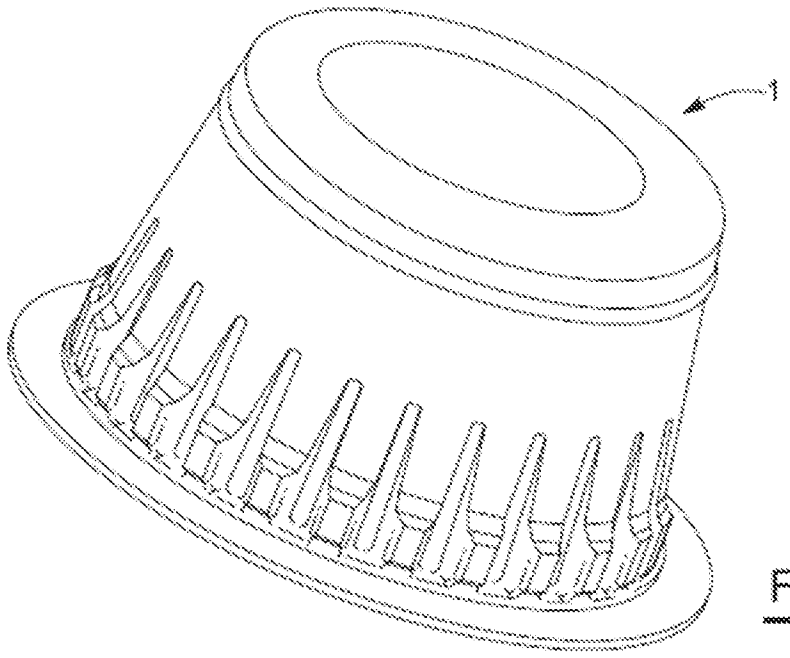


Fig.20

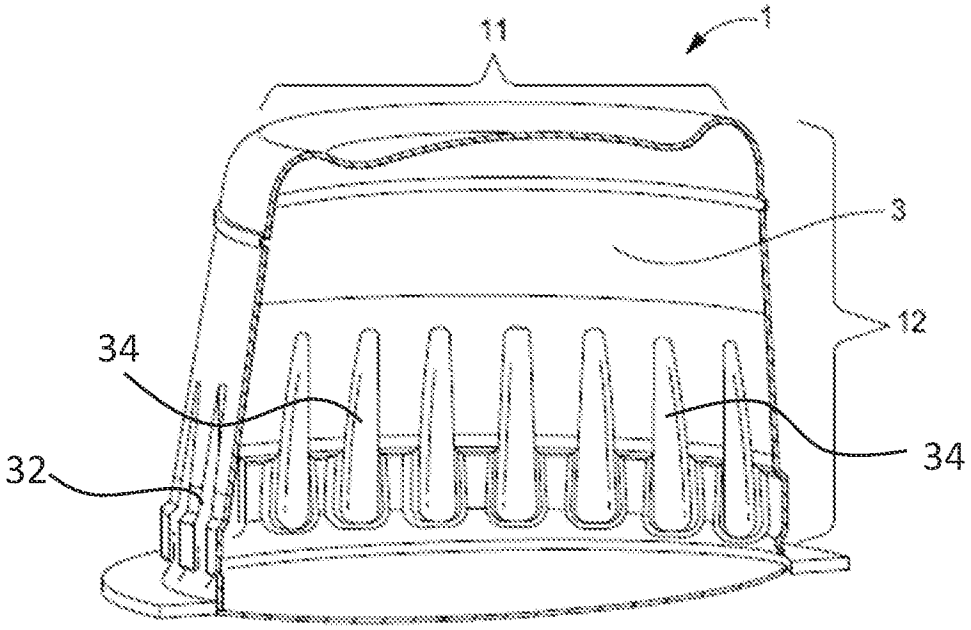


Fig.21

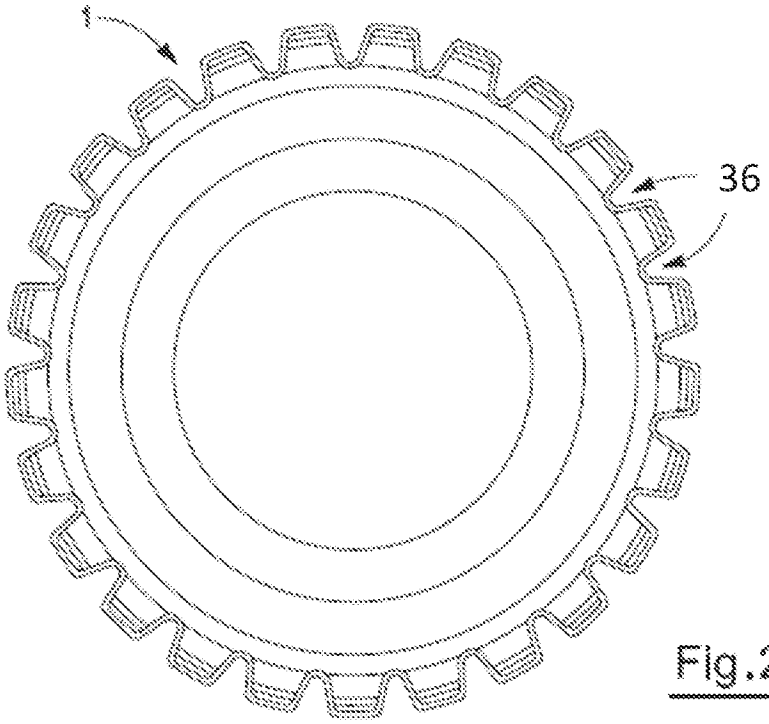


Fig.22

PTO/AIA/01 (06-12)
Approved for use through 01/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	PORTION CAPSULE HAVING AN IDENTIFIER

As the below named inventor, I hereby declare that:

This declaration is directed to:

- [x] The attached application, or
- [ ] United States application or PCT international application number PCT/EP2011/003677 filed on July 22, 2011

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Marc KRÜGER Date (Optional): 17.01.13

Signature: M. Krüger

Note: An application data sheet (PTO/AIA/14 or equivalent), including naming the entire inventive entity, must accompany this form. Use an additional PTO/SB/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. 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 1.11 and 1.14. This collection is estimated to take 1 minute 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, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82B (07-13)
Approved for use through 11/30/2014. OMB 0651-0035
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE
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

POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

☑ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above: 25215

OR

☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter or the boxes above to:

☑ The address associated with the above-mentioned Customer Number

OR

☐ The address associated with Customer Number:

OR

Firm or Individual Name					
Address					
City		State		Zip	
Country					
Telephone		Email			

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

K-fee System GmbH

☐ Inventor or Joint Inventor (title not required below)

☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)

☑ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)

☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature		Date (Optional)	24.08.2016
Name	Mark Krüger		
Title	CEO		

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

☐ Total of forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. 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 1.11 and 1.14. This collection is estimated to take 3 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, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

I, Charles Edward SITCH BA,

Managing Director of RWS Group Ltd UK Translation Division, of Europa House, Chiltern Park, Chiltern Hill, Chalfont St Peter, Buckinghamshire, United Kingdom, declare;

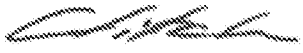
1. That I am a citizen of the United Kingdom of Great Britain and Northern Ireland.

2. That the translator responsible for the attached translation is well acquainted with the German and English languages.

3. That the attached is, to the best of RWS Group Ltd knowledge and belief, a true translation into the English language of the accompanying copy of the specification filed with the application for a patent in Germany on July 22, 2010 under the number DE 10 2010 031 998.0 and the official certificate attached thereto.

4. That I believe that all statements made herein of my own knowledge are true and that all statements made on information and belief are true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the patent application in the United States of America or any patent issuing thereon.

Date: August 14, 2019



C. E. SITCH
Managing Director – UK Translation Division
For and on behalf of RWS Group Ltd

Portion capsule having an identifier

The present invention relates to a portion capsule for making a beverage, having a basic element with a cavity, in which a raw beverage material is provided and which is closed by a membrane, which is fastened on the basic element.

Such portion capsules are common knowledge and are available on the market in a variety of embodiments. Since these capsules are often relatively similar, it may be the case that capsules are used in coffee machines for which they are not suitable. This can give rise to considerable safety-related problems and/or the coffee machine may be damaged.

It has therefore been an object of the present invention to provide a portion capsule which is suitable just for a quite specific coffee machine.

The object is achieved by a portion capsule for making a beverage, having a basic element with a cavity, in which a raw beverage material is provided and which is closed by a membrane, which is fastened on the basic element, in which the portion capsule has an identifier, which makes it possible to individualize the respective portion capsule.

The present invention relates to a portion capsule for making a beverage or food, having a cavity, in which a raw beverage material is provided. Such a portion capsule is produced, for example, from plastics material, a natural substance and/or a biodegradable material, and usually has a basic element, in particular a thermoformed basic element, which is preferably frustoconical or cylindrical. The raw beverage material is introduced into the cavity of the portion capsule and is subjected to extraction and/or dissolved, for example, using a liquid, in particular

water. Following introduction of the raw beverage material, the basic element is preferably closed in particular by a membrane. The membrane is preferably provided opposite the base of the basic element. The membrane may be produced from the same material as the basic element, or from a different material, and is fastened on the basic element preferably by sealing and/or adhesive bonding. Furthermore, one or more insert elements, for example a filter, a liquid distributor, a nonwoven, a barrier sheet or the like may be provided in the cavity.

According to the invention, then, it is provided that this portion capsule has an identifier, which makes it possible to individualize the respective portion capsule. A sensor/detection means provided on the coffee machine senses this identifier and compares it preferably with a stored identifier. The coffee machine, in particular, the pressure pump thereof, which makes the water available, can preferably be operated only when the identifier determined coincides with the reference identifier. Otherwise, the coffee machine cannot be operated. The detection means is preferably provided in the region of the insertion shaft of the portion capsule of the coffee machine. In another preferred embodiment, the detection means is provided in the region of the brewing chamber.

The identifier is preferably constituted by surface-area regions with different optical, for example reflection, properties. These surface areas may be provided on the membrane, the side wall and/or the base of the portion capsule. The portion capsule preferably has at least two regions which differ in their optical properties, for example the reflection properties.

The identifier is further preferably a concavity and/or a convexity. The concavity and/or convexity can be

produced preferably by any forming method, for example by thermoforming. Furthermore, the concavity may be created by material being removed, wherein, in the case of this preferred embodiment of the present invention, it should be ensured that any barrier layer which may be present in the portion-capsule material and, for example, prevents moisture or aroma from escaping from the capsule, and/or steam or oxygen from penetrating into the capsule, is not damaged. The operation of reading the identifier, which is encoded in the concavity and/or convexity, can take place, for example, by a mechanical and/or optical method.

In a further preferred embodiment of the present invention, the identifier is provided in the membrane. The identifier is preferably a layer or sub-layer of the membrane. This kind of identifier may be, for example, an optically detectable material, for example a fluorescent material. Furthermore, the identifier may be in the form of a metal layer or ferro-metallic layer or in the form of metal or ferro-metallic strips in or on the membrane.

The identifier is further preferably a machine-readable print. This print is done preferably using an ink which is permissible in the food sector. Further preferred printing material or printing materials are constituted by fluorescent materials, with optical properties which change under the influence of temperature. The print is preferably a barcode, a logo or a repeat pattern.

In a further preferred embodiment, the identifier is an electrically conductive region which is provided all over the capsule, but preferably in and/or on the side wall, periphery and/or base thereof. This electrically conductive region gives rise to a measurable change in a circuit, however configured, and this change then leads to the respective portion capsule being detected.

In a further preferred embodiment, the identifier is a ferro-magnetic region.

The identifier is further preferably an RFID chip.

The portion capsule according to the invention makes it possible to prevent portion capsules which are not provided for a specific coffee machine to be introduced into the same. 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.

According to a further subject matter of the present invention, a weakening is provided in the base region, by material being removed, for example by means of a laser. This weakening is provided, in particular, in that region of the base of the capsule which is pierced by a spike in order for the beverage to be made. Since the sheet material is weakened in the region of the spike, for example by material being removed by means of a laser, the amount of force which is required in order to pierce the sheet material is smaller. The spike of a corresponding coffee machine may have a force-limiting means, for example in the form of a spring, which limits the force by which the spike can push against the portion-capsule base. This avoids the situation where capsules which do not have a corresponding weakening can be used in a corresponding coffee machine. Consequently, the weakening likewise constitutes an identifier.

The invention will be explained hereinbelow with reference to figures 1-15. These explanations do not

have a limiting effect on the general concept of the invention.

Figure 1 shows a portion capsule with different optical regions.

Figure 2 shows a portion capsule with a barcode.

Figure 3 shows a portion capsule with concavities and convexities.

Figure 4 shows a portion capsule with different optical regions.

Figure 5 shows a capsule body with a key function.

Figure 6 shows an electrically conductive capsule wall.

Figure 7 shows a portion-capsule wall with different optical properties.

Figure 8 shows a widened cup extension of the capsule wall.

Figure 9 shows an electrically conductive peripheral region.

Figure 10 shows a capsule with an electrically conductive capsule base.

Figure 11 shows an embodiment with a layer which can be detected by a metal detector.

Figure 12 shows a metallic screen.

Figure 13 shows a portion capsule with a ferro-magnetic region.

Figure 14 shows a portion capsule with a barcode.

Figure 15 shows a portion capsule with an electrically conductive region in the wall.

Figure 1 shows, in the right-hand illustration, a portion capsule 1, which has a basic element 2 with a wall 2.1 and a base region 2.2. The wall 2.1 and the base 2.2 define a cavity, in which a raw beverage material and, if appropriate, an insert element may be provided. This cavity, once filled, is closed by a membrane, which is connected preferably to the peripheral region 2.4 of the basic element for example by sealing or adhesive bonding. This coffee capsule is introduced into a brewing chamber 12 (illustrated schematically here), in which a liquid, for example water, flows through it. The raw beverage material here undergoes extraction, or is dissolved, to give the desired beverage. According to the invention, this portion capsule, then, has an identifier, which makes it possible to establish whether the respective portion capsule is suitable for the brewing chamber provided in the coffee machine and for the process parameters which have been set. If this is not the case, significant safety-related problems may arise. For example, using an incorrect portion capsule may have an adverse effect on the sealing of the brewing chamber, and therefore for example hot water passes out of the coffee machine under high pressure and can thus prove hazardous to a user. In addition, it is also conceivable for the coffee machine itself to be damaged by the use of an incorrect portion capsule. In the present example, the identifier is constituted by a plurality of raised regions 8, which have different reflection properties to the regions located between them. These convexities 8, as illustrated by the arrows, are guided past a detection means, in this case an optical detection means, which detects the raised regions and/or the

different optical properties, for example radiation-reflection properties, of the different regions 5, 6. The alternation between these different regions and/or the number of convexities 8 constitutes the identifier. Once the identifier has been sensed, it is compared with a reference identifier and, for the case where these are identical, operation of the coffee machine is permitted. For the case where these identifiers do not coincide, in particular operation of the pump which forces, for example, hot water through the brewing chamber is prevented.

What has been said in relation to the identifier applies to all the other examples.

Figure 2 shows a further embodiment of the portion capsule according to the invention. In the present case, this capsule has a barcode in the region of the upper side of the membrane. This barcode can be printed on, by material removal, or can be produced by optically detectable means, for example fluorescent means, which are present in the sheet material. As an alternative, appropriate metal rings may form part of the sheet material or be applied to the sheet material. The regions of the barcode may consist of a ferromagnetic material. As an alternative, it is possible, 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. This barcode is read by a detector 13, for example in an insertion shaft. The barcode constitutes the identifier according to the invention.

Figure 3 shows a further embodiment of the portion capsule according to the invention. In the present case, the identifier comprises concavities or convexities which are introduced into the portion capsule, in this case into the wall 2.1 thereof, by

material being removed or by deformation. These concavities or convexities, in the present case, interact with detection means 13 which function in the manner of a key, wherein, in the present case, the coffee machine can be operated only when all the elements 13 are placed in an appropriate concavity. This means that for example a circuit is altered, in particular closed.

Figure 4 shows essentially the embodiment according to figure 1, wherein this present case also illustrates the alternative of the different optical regions being arranged on the cover sheet, for example in the form of a barcode.

Figure 5 shows an alternative to the embodiment according to figure 3. Here too, the convexities 8 constitute the bits of a key. The coffee machine can be operated only when these convexities interact with corresponding concavities and thus for example a circuit is altered correspondingly. This system can be provided not just in the brewing chamber, but, for example, also in the insertion shaft of the portion capsule.

Figure 6 shows an embodiment in which an electrical material is provided in an encircling ring, which may preferably be elevated. The electrically conductive material is sensed, during the capsule insertion, for example by electrical sliding contacts, which are arranged in an insertion shaft and are electrical contacts of a control circuit.

Figure 7 shows the embodiment according to figure 6, wherein, in the present case, reflective or matte zones, for example in the form of coatings, are provided in the ring region and are read, during the capsule insertion, by optical means, which are arranged

in an insertion shaft and form parts of a control circuit.

Figure 8 shows a comparatively wide raised ring as identifier. The insertion shaft is provided with a corresponding insertion guide, which detects whether the portion capsule has the required identifier. The widened ring is sensed, during the capsule insertion, for example in the mechanical sensors, which are arranged in an insertion shaft and close the electrical contacts of a circuit.

Figure 9 shows a further embodiment of the portion capsule according to the invention. In the present case, the rear side of the peripheral region is provided with an electrically conductive coating and is sensed, during the capsule insertion, by electrical sliding contacts, which are arranged in the insertion shaft and are electrical contacts of a control circuit.

Figure 10 shows a further embodiment of the portion capsule according to the invention, which in the present case is provided with an electrically conductive coating, for example a conductive lacquer coating or an aluminum foil. Sensing takes place, during the capsule insertion, by means of electrical sliding contacts, which are electrical contacts of a control circuit.

In the case of the embodiment according to **figure 11**, the capsule, in this case the base, likewise has an electrically conductive coating, which is detected, during the capsule insertion, of a, for example inductive, metal-detecting sensor arranged in the shaft.

The embodiment according to **figure 12** provides a metallic insert element, in this case a screen 19,

which can likewise be detected, as identifier, by a metal detector.

The embodiment according to **figure 13** provides a ferro-magnetic material, in this case on the capsule base. The identifier is read, for example during the insertion of the capsule, by means of a magnet arranged in the insertion shaft. The ferro-magnetic material serves, in this case, as identifier.

Figure 14 shows yet another embodiment in which a barcode is provided in the region of the cover sheet.

In the case of the embodiment according to **figure 15**, a metallic ring is provided in the wall and closes a circuit provided in the region of the brewing chamber.

List of designations:

1	Portion capsule
2	Basic element
2.1	Wall
2.2	Base region
2.3	Encircling ring
2.4	Peripheral region
3	Cavity
4	Membrane
5	Reflective surface
6	Matte surface
7	Concavity
8	Convexity
9	Print
10	Electrically conductive region
11	Metallic region
12	Brewing chamber
13	Detection means, scanner, sensor
14	Radiation
15	Peripheral region
16	Spring means
17	Barcode
18	Dimension of the portion capsule
19	Insert element, screen
20	Ferro-magnetic region

Patent claims:

1. A portion capsule (1) for making a beverage, having a basic element (2) with a cavity (3), in which a raw beverage material is provided and which is closed by a membrane (4), which is fastened on the basic element, characterized in that it has an identifier (5), which makes it possible to individualize the respective portion capsule.

2. The portion capsule (1) as claimed in claim 1, characterized in that the identifier comprises surface-area regions (5, 6) with different reflection properties.

3. The portion capsule as claimed in either of the preceding patent claims, characterized in that the identifier has a concavity (7) and/or a convexity (8).

4. The portion capsule as claimed in one of the preceding patent claims, characterized in that the identifier is provided in the membrane (4).

5. The portion capsule as claimed in claim 4, characterized in that the identifier is an optically detectable layer in the membrane.

6. The portion capsule as claimed in one of the preceding patent claims, characterized in that the identifier is a machine-readable print (9).

7. The portion capsule as claimed in one of the preceding patent claims, characterized in that the identifier is an electrically conductive region (10).

8. The portion capsule as claimed in one of the preceding patent claims, characterized in that the identifier is a metallic region (11).

9. The portion capsule as claimed in one of the preceding patent claims, characterized in that the identifier is a ferro-magnetic region (12).

10. The portion capsule as claimed in one of the preceding patent claims, characterized in that the identifier is an RFID.

11. The portion capsule as claimed in one of the preceding patent claims, characterized in that the identifier is a barcode (17).

12. The portion capsule as claimed in one of the preceding patent claims, characterized in that it has an insert element (19) with an identifier.

Abstract

The present invention relates to a portion capsule for making a beverage, having a basic element with a cavity, in which a raw beverage material is provided and which is closed by a membrane, which is fastened on the basic element.

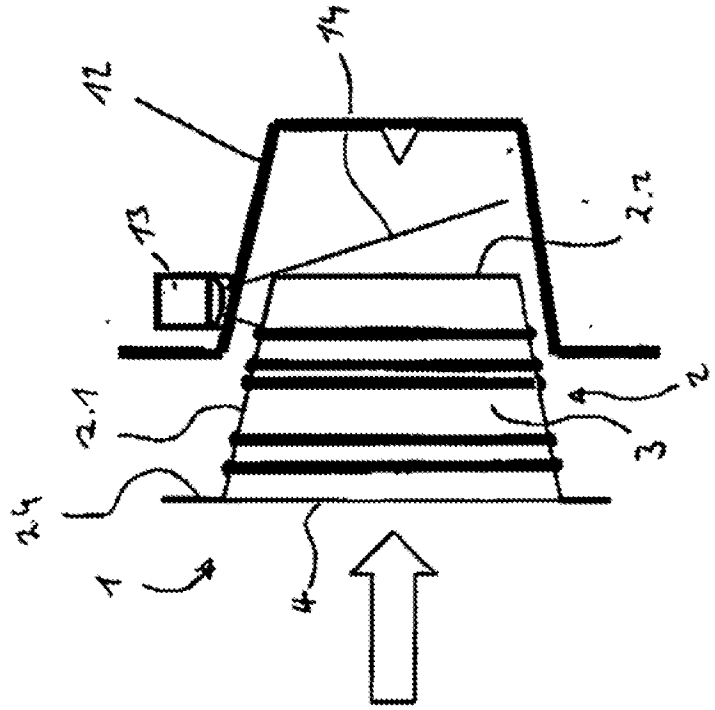
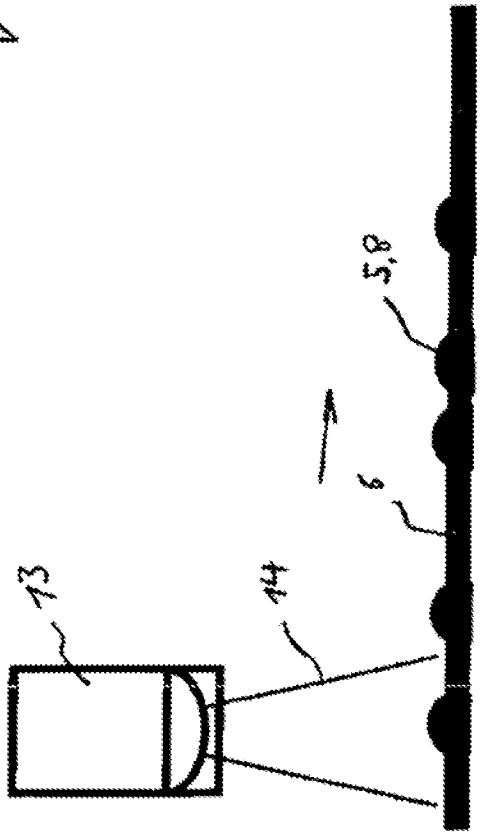


Fig.1



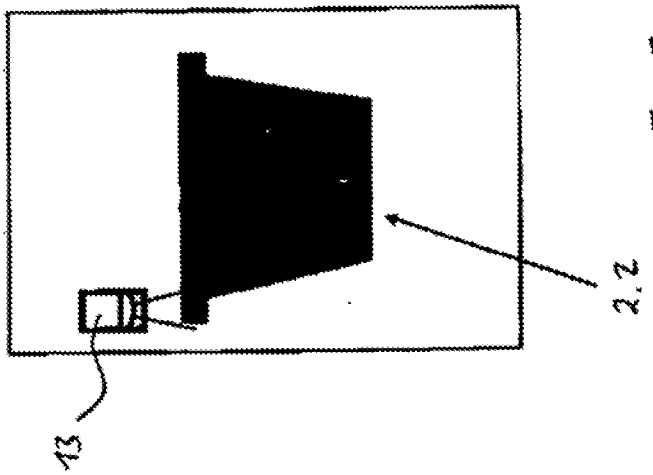


Fig. 2

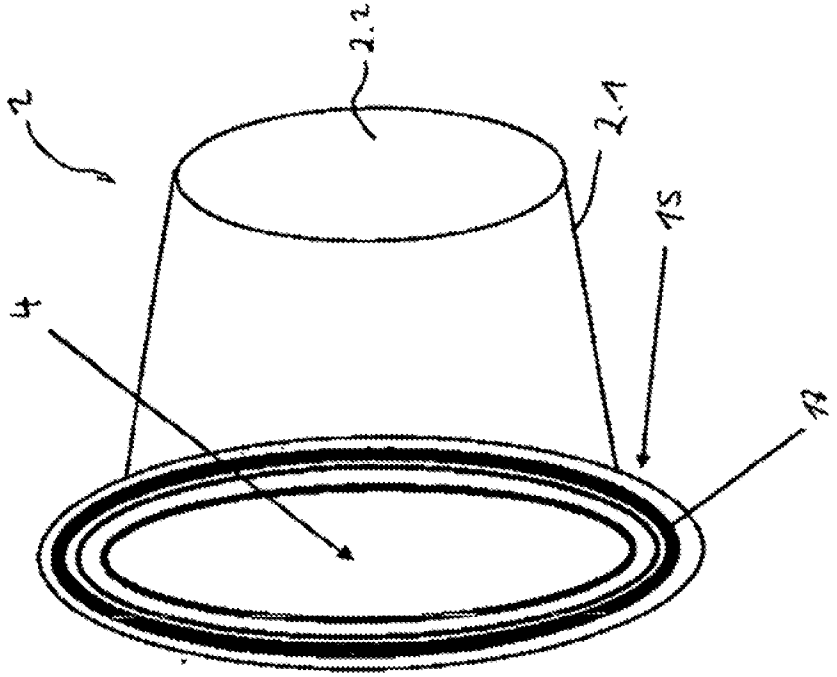
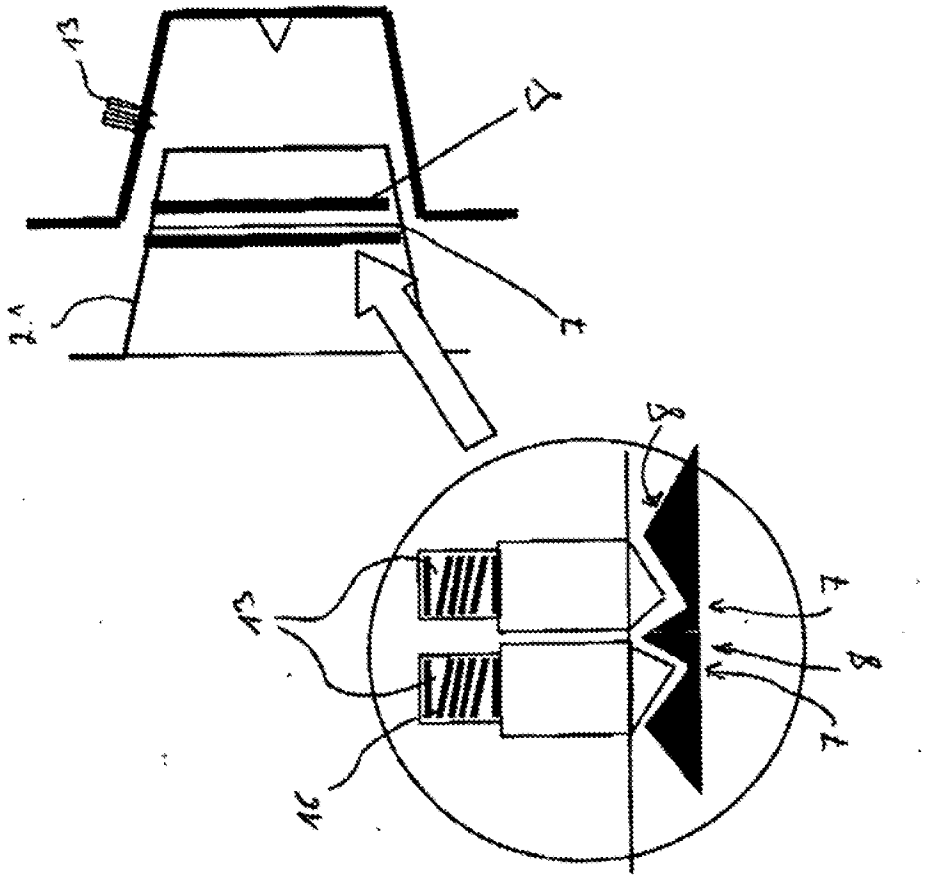


Fig.3



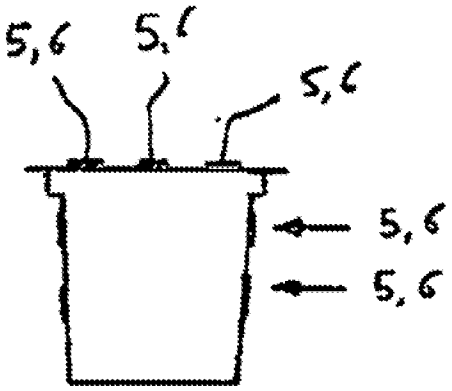


Fig.4

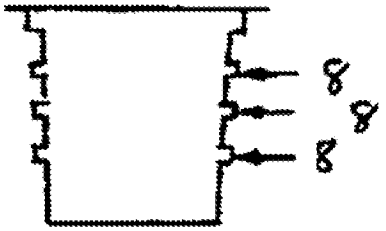


Fig.5

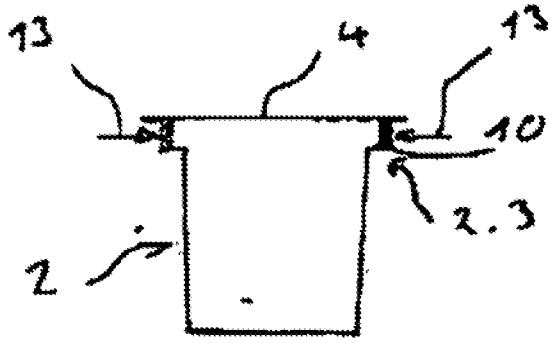


Fig. 6

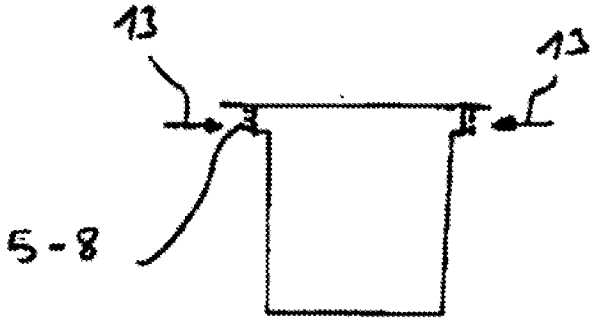


Fig. 7

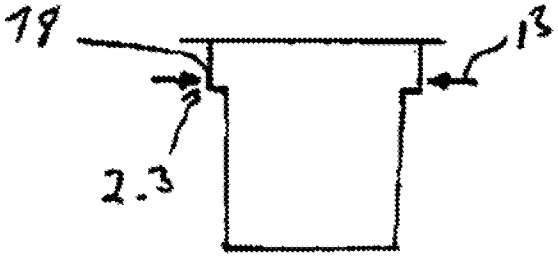


Fig. 8

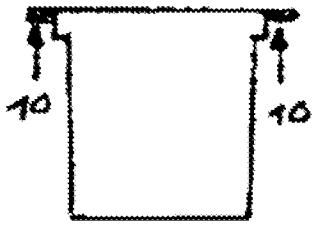


Fig. 9

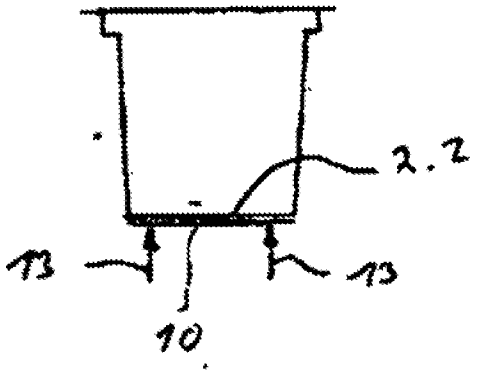


Fig. 10

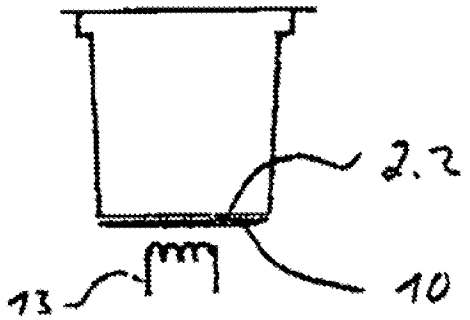


Fig. 11

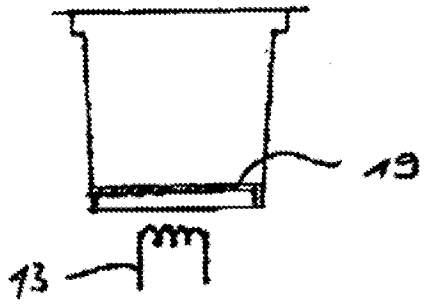


Fig. 12

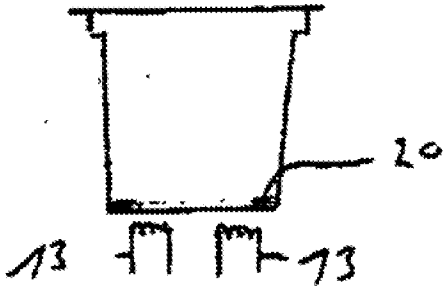


Fig. 13

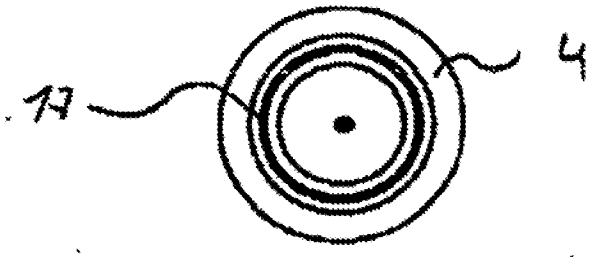
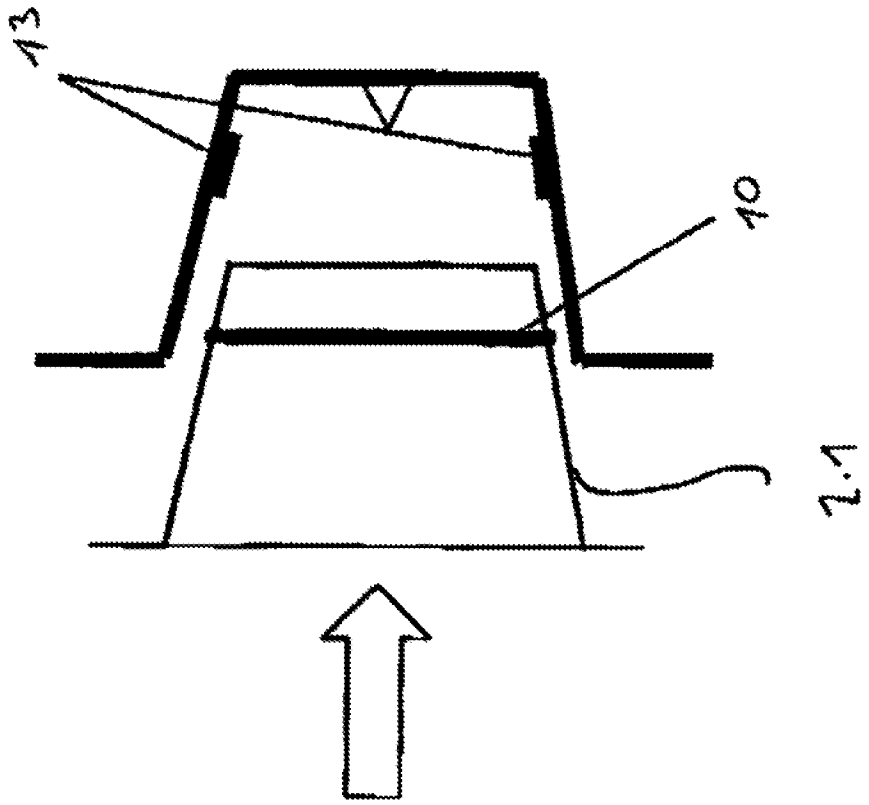


Fig. 14

Fig. 15



UNITED STATES PATENT AND TRADEMARK OFFICE

I, Charles Edward SITCH BA,

Managing Director of RWS Group Ltd UK Translation Division, of Europa House, Chiltern Park, Chiltern Hill, Chalfont St Peter, Buckinghamshire, United Kingdom, declare;

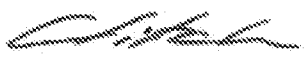
1. That I am a citizen of the United Kingdom of Great Britain and Northern Ireland.

2. That the translator responsible for the attached translation is well acquainted with the German and English languages.

3. That the attached is, to the best of RWS Group Ltd knowledge and belief, a true translation into the English language of the accompanying copy of the specification filed with the application for a patent in Gemany on September 2, 2010 under the number DE 10 2010 044 251.8 and the official certificate attached thereto.

4. That I believe that all statements made herein of my own knowledge are true and that all statements made on information and belief are true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the patent application in the United States of America or any patent issuing thereon.

Date: August 14, 2019



C. E. SITCH
Managing Director – UK Translation Division
For and on behalf of RWS Group Ltd

Portion capsule having an identifier

The present invention relates to a portion capsule for making a beverage, having a basic element with a cavity, in which a raw beverage material is provided and which is closed by a membrane, which is fastened on the basic element.

Such portion capsules are common knowledge and are available on the market in a variety of embodiments. Since these capsules are often relatively similar, it may be the case that capsules are used in coffee machines for which they are not suitable. This can give rise to considerable safety-related problems and/or the coffee machine may be damaged.

It has therefore been an object of the present invention to provide a portion capsule which is suitable just for a quite specific coffee machine.

The object is achieved by a portion capsule for making a beverage, having a basic element with a cavity, in which a raw beverage material is provided and which is closed by a membrane, which is fastened on the basic element, in which the portion capsule has an identifier, which makes it possible to individualize the respective portion capsule.

The present invention relates to a portion capsule for making a beverage or food, having a cavity, in which a raw beverage material is provided. Such a portion capsule is produced, for example, from plastics material, a natural substance and/or a biodegradable material, and usually has a basic element, in particular a thermoformed basic element, which is preferably frustoconical or cylindrical. The raw beverage material is introduced into the cavity of the portion capsule and is subjected to extraction and/or dissolved, for example, using a liquid, in particular

water. Following introduction of the raw beverage material, the basic element is preferably closed in particular by a membrane. The membrane is preferably provided opposite the base of the basic element. The membrane may be produced from the same material as the basic element, or from a different material, and is fastened on the basic element preferably by sealing and/or adhesive bonding. Furthermore, one or more insert elements, for example a filter, a liquid distributor, a nonwoven, a barrier sheet or the like may be provided in the cavity.

According to the invention, then, it is provided that this portion capsule has an identifier, which makes it possible to individualize the respective portion capsule. Individualize, within the context of the invention, preferably means that the respective portion capsule can be assigned to a group which is suitable for the respective coffee machine. It is not necessary for the coffee machine to detect the specific portion capsule; all that is required is for it to detect that the respective portion capsule belongs to a group of portion capsules which is suitable for the respective coffee machine. Individualize means, in particular, that portion capsules which are not suitable for the respective coffee machine cannot be introduced into the same and/or drop out again directly and/or that the coffee machine can be operated only using the correct capsules. A sensor/detection means provided on the coffee machine preferably senses this identifier and compares it preferably with a stored identifier. The coffee machine, in particular, the pressure pump thereof, which makes the water available, can preferably be operated only when the identifier determined coincides with the reference identifier. Otherwise, the coffee machine cannot be operated. The detection means is preferably provided in the region of the portion-capsule-insertion shaft of the coffee

machine. In another preferred embodiment, the detection means is provided in the region of the brewing chamber. As an alternative, the identifier prevents the capsule from being introduced into the coffee machine.

The identifier is preferably constituted by surface-area regions with different optical, for example reflection, properties. These surface areas may be provided on the membrane, the side wall and/or the base of the portion capsule. The portion capsule preferably has at least two regions which differ in their optical properties, for example the reflection properties.

The identifier is further preferably a concavity and/or a convexity. The concavity and/or convexity can be produced preferably by any forming method, for example by thermoforming. Furthermore, the concavity may be created by material being removed, wherein, in the case of this preferred embodiment of the present invention, it should be ensured that any barrier layer which may be present in the portion-capsule material and, for example, prevents moisture or aroma from escaping from the capsule, and/or steam or oxygen from penetrating into the capsule, is not damaged. The operation of reading the identifier, which is encoded in the concavity and/or convexity, can take place, for example, by a mechanical and/or optical method.

In a further preferred embodiment of the present invention, the identifier is provided in the membrane. The identifier is preferably a layer or sub-layer of the membrane. This kind of identifier may be, for example, an optically detectable material, for example a fluorescent material. Furthermore, the identifier may be in the form of a metal layer or ferro-metallic layer or in the form of metal or ferro-metallic strips in or on the membrane.

The identifier is further preferably a machine-readable print. This print is done preferably using an ink which is permissible in the food sector. Further preferred printing material or printing materials are constituted by fluorescent materials, with optical properties which change under the influence of temperature. The print is preferably a barcode, a logo or a repeat pattern.

In a further preferred embodiment, the identifier is an electrically conductive region which is provided all over the capsule, but preferably in and/or on the side wall, periphery and/or base thereof. This electrically conductive region gives rise to a measurable change in a circuit, however configured, and this change then leads to the respective portion capsule being detected.

In a further preferred embodiment, the identifier is a ferro-magnetic region.

The identifier is further preferably via an RFID chip.

The portion capsule according to the invention makes it possible to prevent portion capsules which are not provided for a specific coffee machine to be introduced into the same. 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.

According to a further subject matter of the present invention, a weakening is provided in the base region, by material being removed, for example by means of a laser. This weakening is provided, in particular, in that region of the base of the capsule which is pierced by a spike in order for the beverage to be made. Since the sheet material is weakened in the region of the

spike, for example by material being removed by means of a laser, the amount of force which is required in order to pierce the sheet material is smaller. The spike of a corresponding coffee machine may have a force-limiting means, for example in the form of a spring, which limits the force by which the spike can push against the portion-capsule base. This avoids the situation where capsules which do not have a corresponding weakening can be used in a corresponding coffee machine. Consequently, the weakening likewise constitutes an identifier.

According to a further, or a preferred, subject matter of the present invention, the portion capsule has a peripheral region, which is preferably provided on the basic element. The periphery is preferably provided on that region of the basic element which is located opposite the base. For example a membrane for closing the basic element may be arranged on this peripheral region once the raw material has been introduced into the portion capsule. The periphery, however, may also be used for guiding the capsule in an insertion shaft such that the capsule drops into a brewing chamber in a quite specific position. At the same time, the periphery can be used as a stop and/or sealing surface.

The portion capsule preferably has a form-fitting means, friction-fitting means and/or detection means in the peripheral region, in particular on the outer circumference thereof, at least in certain regions. These form-fitting and/or friction-fitting means can be used to drive for example complementary means which are located in the region of the coffee machine, in order to make it possible for the portion capsule to be introduced into the coffee machine and/or in order to drive a sensor, for example a gearwheel, which transmits a signal to a machine-control means depending on whether the portion capsule is the correct or

incorrect one. As an alternative, or in addition, however, it is also possible for these form-fitting, friction-fitting and/or detection means to be sensed by a detector, in order to establish whether the respective portion capsule is suitable for the respective coffee machine.

The form-fitting means, friction-fitting means and/or detection means is preferably a toothed ring or toothed-ring segment provided, in particular, on the outer circumference of the periphery. The teeth of this toothed ring or toothed-ring segment may be of any desired shape which is familiar to the person skilled in the art - for example from a construction of gearings and gear mechanisms. However, the teeth are preferably triangular, rectangular, square or undulating.

A sealing surface is preferably provided on the inside of the periphery, in respect of the toothed ring or the toothed-ring segment.

The invention will be explained hereinbelow with reference to figures 1-18. These explanations do not have a limiting effect on the general concept of the invention.

Figure 1 shows a portion capsule with different optical regions.

Figure 2 shows a portion capsule with a barcode.

Figure 3 shows a portion capsule with concavities and convexities.

Figure 4 shows a portion capsule with different optical regions.

Figure 5 shows a capsule body with a key function.

Figure 6 shows an electrically conductive capsule wall.

Figure 7 shows a portion-capsule wall with different optical properties.

Figure 8 shows a widened cup extension of the capsule wall.

Figure 9 shows an electrically conductive peripheral region.

Figure 10 shows a capsule with an electrically conductive capsule base.

Figure 11 shows an embodiment with a layer which can be detected by a metal detector.

Figure 12 shows a metallic screen.

Figure 13 shows a portion capsule with a ferro-magnetic region.

Figure 14 shows a portion capsule with a barcode.

Figure 15 shows a portion capsule with an electrically conductive region in the wall.

Figure 16 shows a portion capsule with a toothed ring in the brewing chamber.

Figures 17a-c show different embodiments of the portion capsule according to figure 16.

Figure 18 shows the portion capsule according to figures 16 and 17 in a form fit with a gearwheel.

Figure 1 shows, in the right-hand illustration, a portion capsule 1, which has a basic element 2 with a wall 2.1 and a base region 2.2. The wall 2.1 and the base 2.2 define a cavity, in which a raw beverage material and, if appropriate, an insert element may be provided. This cavity, once filled, is closed by a membrane, which is connected preferably to the peripheral region 2.4 of the basic element for example by sealing or adhesive bonding. This coffee capsule is introduced into a brewing chamber 12 (illustrated schematically here), in which a liquid, for example water, flows through it. The raw beverage material here undergoes extraction, or is dissolved, to give the desired beverage. According to the invention, this portion capsule, then, has an identifier, which makes it possible to establish whether the respective portion capsule is suitable for the brewing chamber provided in the coffee machine and for the process parameters which have been set. If this is not the case, significant safety-related problems may arise. For example, using an incorrect portion capsule may have an adverse effect on the sealing of the brewing chamber, and therefore for example hot water passes out of the coffee machine under high pressure and can thus prove hazardous to a user. In addition, it is also conceivable for the coffee machine itself to be damaged by the use of an incorrect portion capsule. In the present example, the identifier is constituted by a plurality of raised regions 8, which have different reflection properties to the regions located between them. These convexities 8, as illustrated by the arrows, are guided past a detection means, in this case an optical detection means, which detects the raised regions and/or the different optical properties, for example radiation-reflection properties, of the different regions 5, 6. The alternation between these different regions and/or the number of convexities 8 constitutes the identifier. Once the identifier has been sensed, it is compared

with a reference identifier and, for the case where these are identical, operation of the coffee machine is permitted. For the case where these identifiers do not coincide, in particular operation of the pump which forces, for example, hot water through the brewing chamber is prevented.

What has been said in relation to the identifier applies to all the other examples.

Figure 2 shows a further embodiment of the portion capsule according to the invention. In the present case, this capsule has a barcode in the region of the upper side of the membrane. This barcode can be printed on, by material removal, or can be produced by optically detectable means, for example fluorescent means, which are present in the sheet material. As an alternative, appropriate metal rings may form part of the sheet material or be applied to the sheet material. The regions of the barcode may consist of a ferromagnetic material. As an alternative, it is possible, 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. This barcode is read by a detector 13, for example in an insertion shaft. The barcode constitutes the identifier according to the invention.

Figure 3 shows a further embodiment of the portion capsule according to the invention. In the present case, the identifier comprises concavities or convexities which are introduced into the portion capsule, in this case into the wall 2.1 thereof, by material being removed or by deformation. These concavities or convexities, in the present case, interact with detection means 13 which function in the manner of a key, wherein, in the present case, the coffee machine can be operated only when all the

elements 13 are placed in an appropriate concavity. This means that for example a circuit is altered, in particular closed.

Figure 4 shows essentially the embodiment according to figure 1, wherein this present case also illustrates the alternative of the different optical regions being arranged on the cover sheet, for example in the form of a barcode.

Figure 5 shows an alternative to the embodiment according to figure 3. Here too, the convexities 8 constitute the bits of a key. The coffee machine can be operated only when these convexities interact with corresponding concavities and thus for example a circuit is altered correspondingly. This system can be provided not just in the brewing chamber, but, for example, also in the insertion shaft for the portion capsule.

Figure 6 shows an embodiment in which an electrical material is provided in an encircling ring, which may preferably be elevated. The electrically conductive material is sensed, during the capsule insertion, for example by electrical sliding contacts, which are arranged in an insertion shaft and are electrical contacts of a control circuit.

Figure 7 shows the embodiment according to figure 6, wherein, in the present case, reflective or matte zones, for example in the form of coatings, are provided in the ring region and are read, during the capsule insertion, by optical means, which are arranged in an insertion shaft and form parts of a control circuit.

Figure 8 shows a comparatively wide raised ring as identifier. The insertion shaft is provided with a

corresponding insertion guide, which detects whether the portion capsule has the required identifier. The widened ring is sensed, during the capsule insertion, for example by the mechanical sensors, which are arranged in an insertion shaft and close the electrical contacts of a circuit.

Figure 9 shows a further embodiment of the portion capsule according to the invention. In the present case, the rear side of the peripheral region is provided with an electrically conductive coating and is sensed, during the capsule insertion, by electrical sliding contacts, which are arranged in the insertion shaft and are electrical contacts of a control circuit.

Figure 10 shows a further embodiment of the portion capsule according to the invention, which in the present case is provided with an electrically conductive coating, for example a conductive lacquer coating or an aluminum foil. Sensing takes place, during the capsule insertion, by means of electrical sliding contacts, which are electrical contacts of a control circuit.

In the case of the embodiment according to **figure 11**, the capsule, in this case the base, likewise has an electrically conductive coating, which is detected, during the capsule insertion, of a, for example inductive, metal-detecting sensor arranged in the shaft.

The embodiment according to **figure 12** provides a metallic insert element, in this case a screen 19, which can likewise be detected, as identifier, by a metal detector.

The embodiment according to **figure 13** provides a ferromagnetic material, in this case on the capsule base.

The identifier is read, for example during the insertion of the capsule, by means of a magnet arranged in the insertion shaft. The ferro-magnetic material serves, in this case, as identifier.

Figure 14 shows yet another embodiment in which a barcode is provided in the region of the cover sheet.

In the case of the embodiment according to **figure 15**, a metallic ring is provided in the wall and closes a circuit provided in the region of the brewing chamber.

Figure 16 shows a further embodiment of the portion capsule 1 according to the invention. This capsule has a basic element 2, which in the present case is essentially conical and has a wall 2.1 and a base region 2.2. The raw material and, if appropriate, inserts, in this case a filter, are provided in this basic element. An annular peripheral region 2.4, onto which for example a cover sheet is sealed, is arranged at that end of the basic element which is located opposite the base region 2.2. This peripheral region 2.4 has, in its outer region, a form-fitting and/or friction-fitting means and/or a detection means 2.4.2. In the present case, this means 2.4.2, as can be gathered in particular from figures 17a-17c, is a toothed ring 2.4.2. Preferably a sealing surface 2.4.1 is provided in the peripheral region 2.4, on the inside in respect of this toothed ring, and interacts with sealing action with a seal 21, which is arranged on the brewing chamber 27. This seal 21 ensures that water which flows through the water inlet 28 flows into the capsule through an opening in the latter produced by the piercing spike 29, and does not flow around the capsule.

Figures 17a-17c show different embodiments of the means 2.4.2. In the case of the embodiment according to

figure 17a, forty-five teeth are provided on the toothed ring, twenty-two teeth being provided in the case of the embodiment according to figure 17b and twenty-nine teeth being provided in the case of the embodiment according to figure 17c. All the figures 17a-17c show how the portion capsule 1 is retained on a part of the brewing chamber 27 by means of two retaining arms 30. These retaining arms 30 interact with the means 2.4.2. If this means was not present, the retaining arms could not retain the capsule and the capsule, rather than being introduced into the brewing chamber, would drop through into a waste container. Consequently, the retaining arms 30 also act as a guide.

Figure 18 shows the means 2.4.2 interacting with a form-fitting means 24, in this case a pinion, which is provided on the coffee machine. This form-fitting means 24 is provided in the insertion shaft 26, which has an insertion-shaft opening 22, through which the portion capsule is inserted into the coffee machine. The spacing between the inner wall 25 of the capsule and the pinion 24 is dimensioned such that the portion capsule can pass through the insertion shaft only when the form-fitting means 2.4.2 complement the teeth of the pinion 27. Only then is it possible for the portion capsule, as it drops, this movement being illustrated by the arrow, to cause the pinion 24 to rotate, as is likewise illustrated by an arrow. It is only this rotation which allows the portion capsule to pass through the insertion shaft and to drop into the envisaged position. If the portion capsule does not have any form-fitting means 2.4.2, or has the incorrect ones, the capsule cannot be brought into the envisaged position by way of the insertion shaft. In addition, or as an alternative, the pinion 24 may have a sensor provided on it, to sense its rotary movement and pass this on to a control means. If this rotary movement

comprises at least one predetermined rotary segment, the control means releases, for example, the brewing unit. A person skilled in the art is aware that the capsule periphery may also have provided on it friction-fitting means, which interact in a frictionally fitting manner with a means, for example a periphery, and drive the same, wherein this movement, in turn, is sensed and the brewing chamber is thus released.

A person skilled in the art is also aware that for example the insertion shaft may also contain a sensor, for example a camera, which senses the shape of the means 2.4.2. For example it would be possible, in the present case, for the shape of the teeth and/or the spacing between the same to be sensed. This signal, in turn, is passed to a control means, which frees, for example, the brewing chamber if the capsule is the correct one.

List of designations:

1	Portion capsule
2	Basic element
2.1	Wall
2.2	Base region
2.3	Encircling ring
2.4	Peripheral region
2.4.1	Sealing region
2.4.2	Form-fitting means, friction-fitting means and/or detection means
3	Cavity
4	Membrane
5	Reflective surface
6	Matte surface
7	Concavity
8	Convexity
9	Print
10	Electrically conductive region
11	Metallic region
12	Brewing chamber
13	Detection means, scanner, sensor
14	Radiation
15	Peripheral region
16	Spring means
17	Barcode
18	Dimension of the portion capsule
19	Insert element, screen
20	Ferro-magnetic region
21	Seal
22	Insertion-shaft opening
23	Insertion-shaft housing
24	Form-fitting means, pinion
25	Inner wall of insertion shaft
26	Insertion shaft
27	Brewing chamber
28	Water inlet
29	Piercing spike

30 Retaining means

Patent claims:

1. A portion capsule (1) for making a beverage, having a basic element (2) with a cavity (3), in which a raw beverage material is provided and which is closed by a membrane (4), which is fastened on the basic element, characterized in that it has an identifier (5), which makes it possible to individualize the respective portion capsule.

2. The portion capsule (1) as claimed in claim 1, characterized in that the identifier comprises surface-area regions (5, 6) with different reflection properties.

3. The portion capsule (1) as claimed in either of the preceding patent claims, characterized in that the identifier has a concavity (7) and/or a convexity (8).

4. The portion capsule (1) as claimed in one of the preceding patent claims, characterized in that the identifier is provided in the membrane (4).

5. The portion capsule (1) as claimed in claim 4, characterized in that the identifier is an optically detectable layer in the membrane.

6. The portion capsule (1) as claimed in one of the preceding patent claims, characterized in that the identifier is a machine-readable print (9).

7. The portion capsule (1) as claimed in one of the preceding patent claims, characterized in that the identifier is an electrically conductive region (10).

8. The portion capsule (1) as claimed in one of the preceding patent claims, characterized in that the identifier is a metallic region (11).

9. The portion capsule (1) as claimed in one of the preceding patent claims, characterized in that the identifier is a ferro-magnetic region (12).

10. The portion capsule (1) as claimed in one of the preceding patent claims, characterized in that the identifier is an RFID.

11. The portion capsule (1) as claimed in one of the preceding patent claims, characterized in that the identifier is a barcode (17).

12. The portion capsule (1) as claimed in one of the preceding patent claims, characterized in that it has an insert element (19) with an identifier.

13. The portion capsule (1) as claimed in one of the preceding claims or the preamble of patent claim 1, characterized in that it has a peripheral region (2.4), which is preferably provided on the basic element (2).

14. The portion capsule (1) as claimed in claim 13, characterized in that a form-fitting means, friction-fitting means and/or detection means (2.4.2) is provided in the peripheral region, in particular on the outer circumference thereof, at least in certain regions.

15. The portion capsule (1) as claimed in claim 14, characterized in that the form-fitting means, friction-fitting means and/or detection means (2.4.2) is a toothed ring or toothed-ring segment.

16. The portion capsule (1) as claimed in claim 15, characterized in that the teeth of the toothed ring or of the toothed-ring segment are essentially triangular, rectangular, square or undulating.

17. The portion capsule as claimed in one of claims 13-16, characterized in that a sealing surface (2.4.1) is provided on the periphery (2.4).

Abstract

The present invention relates to a portion capsule for making a beverage, having a basic element with a cavity, in which a raw beverage material is provided and which is closed by a membrane, which is fastened on the basic element.

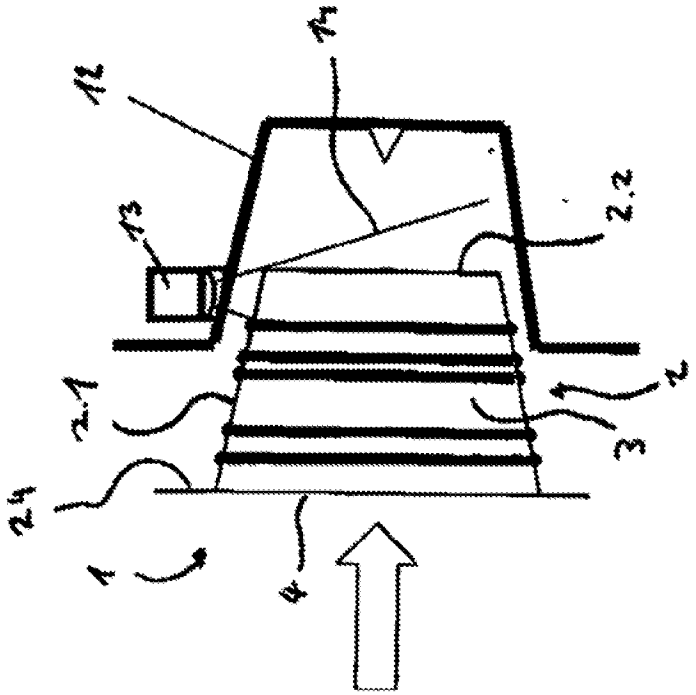
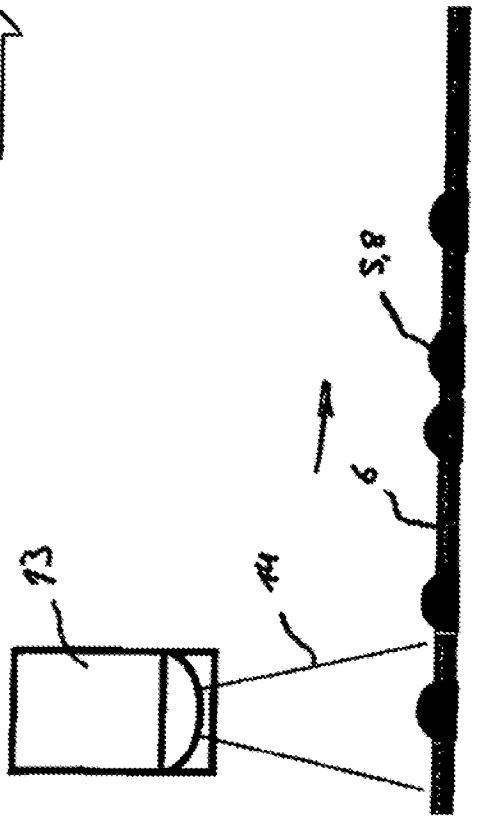


Fig.1



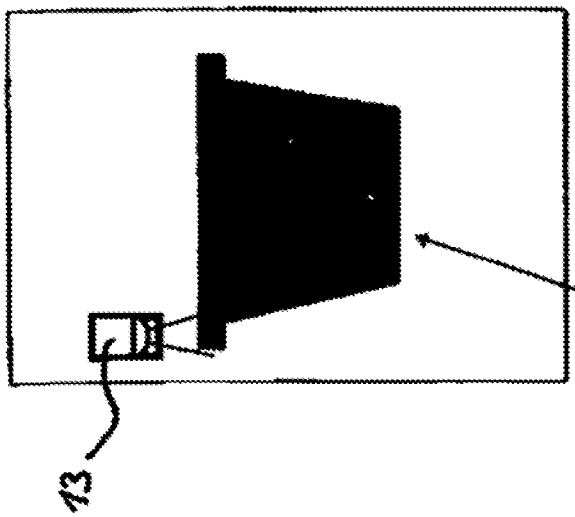


Fig. 2

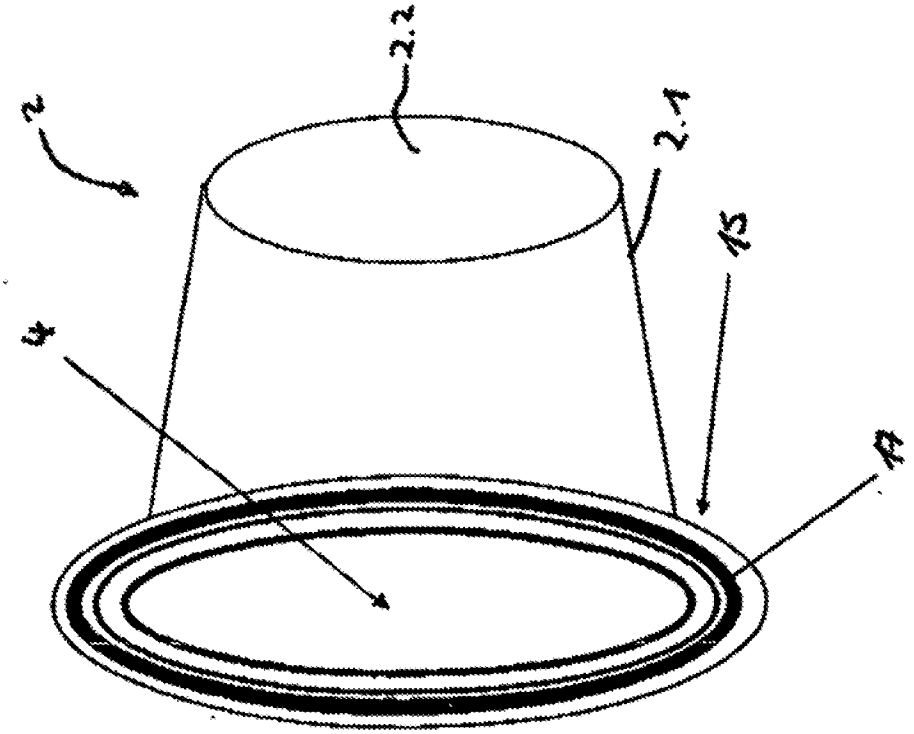
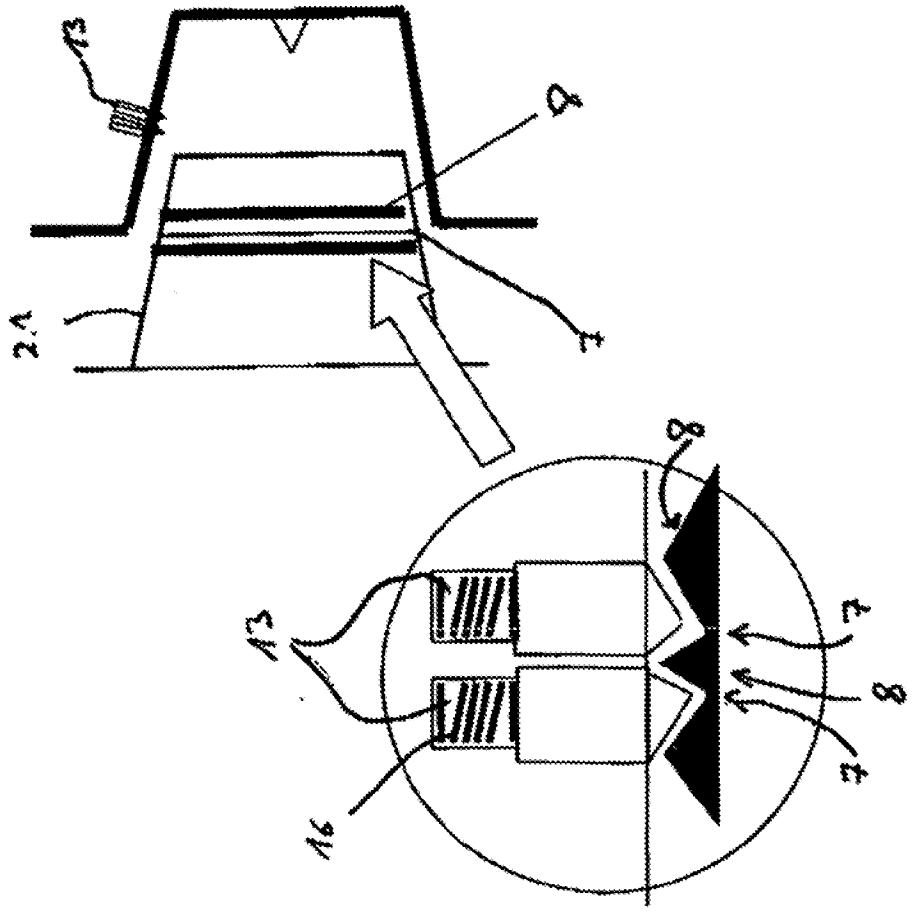


Fig.3



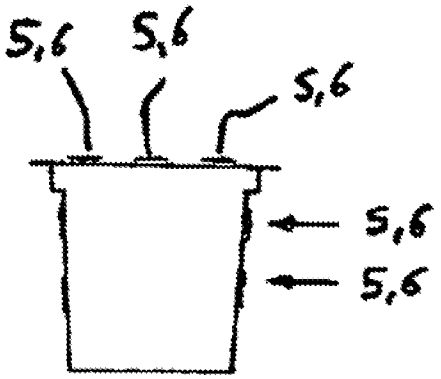


Fig 4

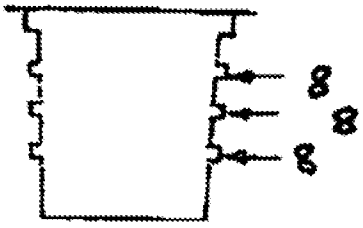


Fig. 5

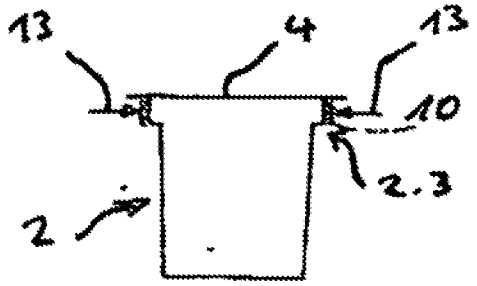


Fig.6

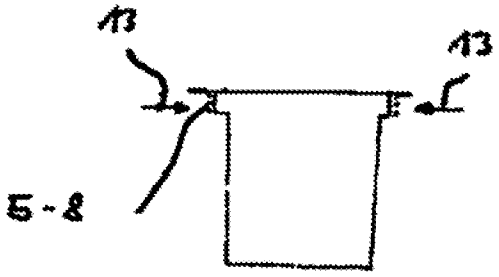


Fig.7

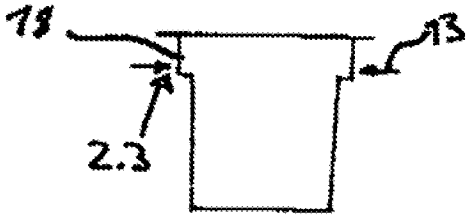


Fig.8

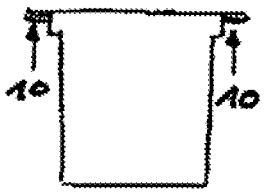


Fig.9

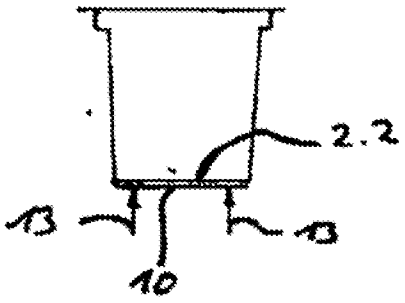


Fig.10

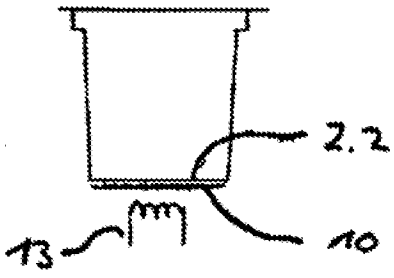


Fig.11

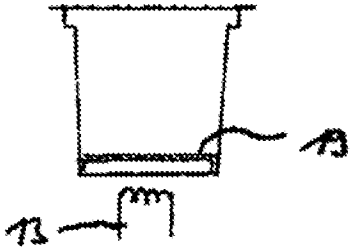


Fig.12

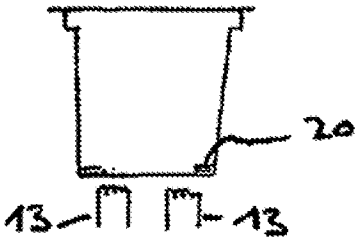


Fig.13

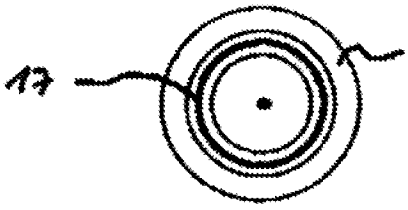
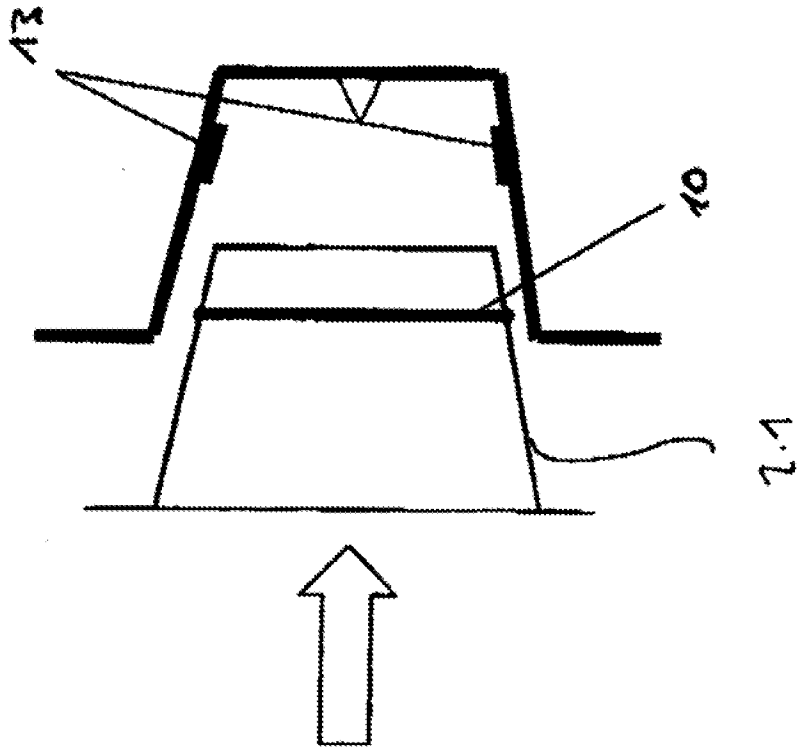
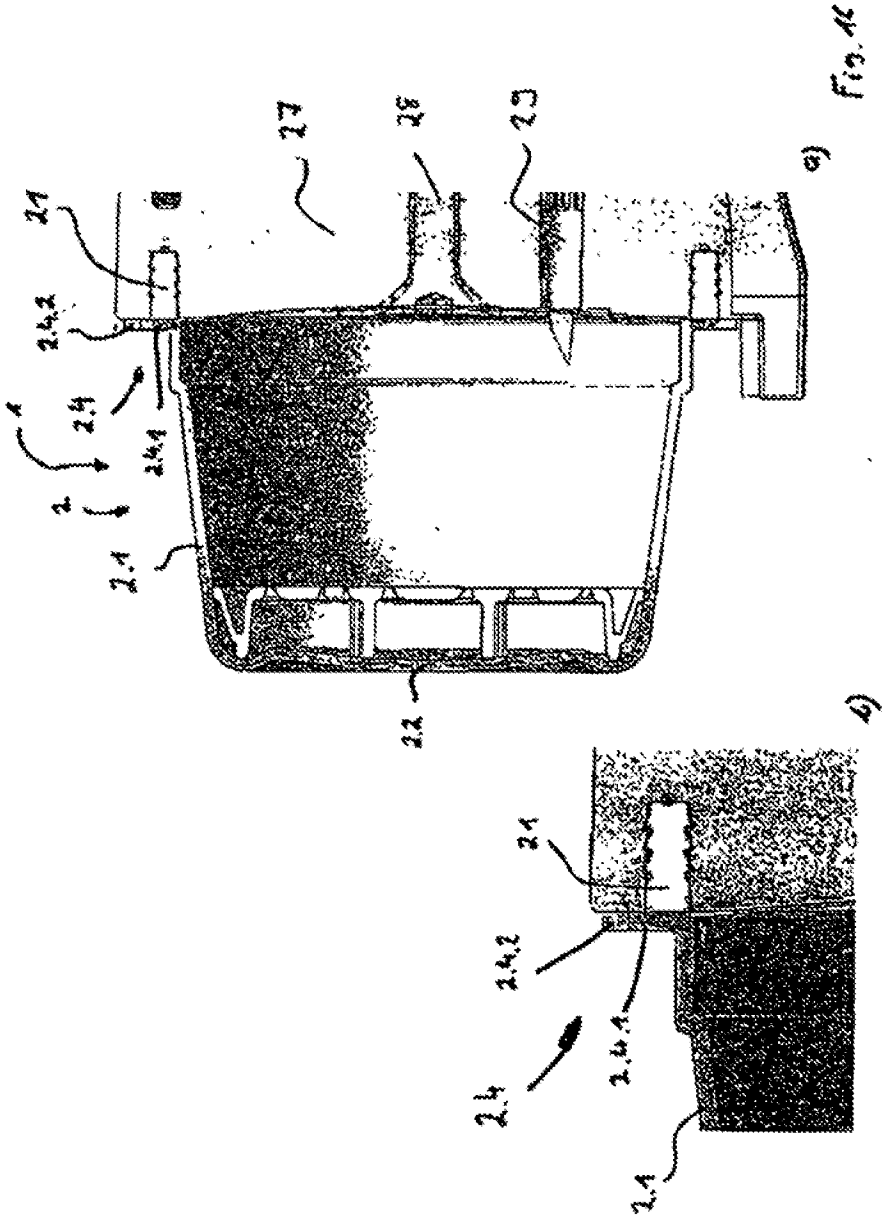


Fig.14

Fig.1S




a)
Fig. 4
17
18
23
21
24.2
24
24.1
1
2
2.1
22
b)
21
24.2
24.1
24
2.1

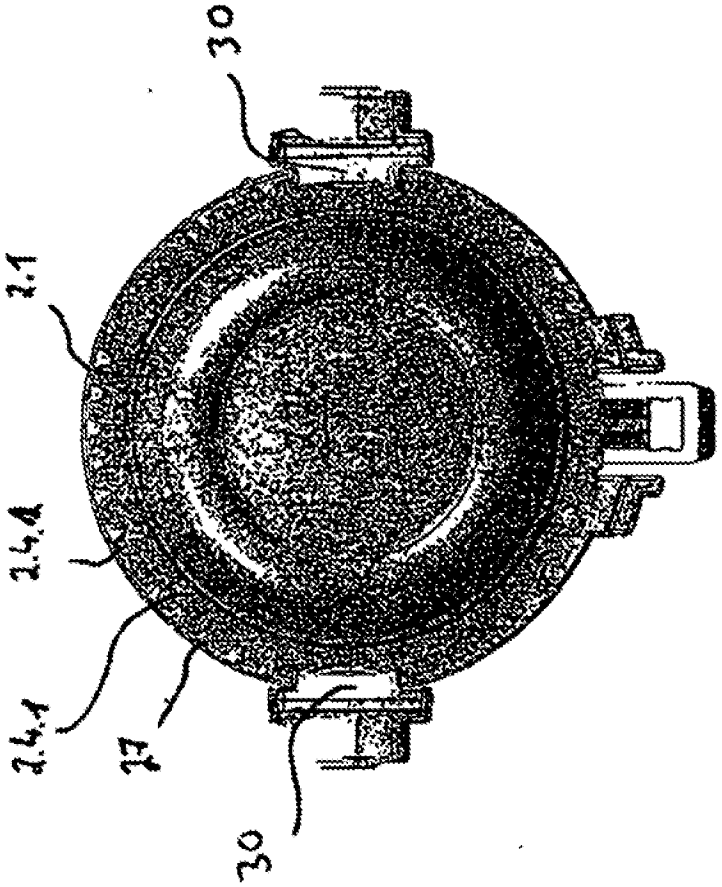


Fig. 13a

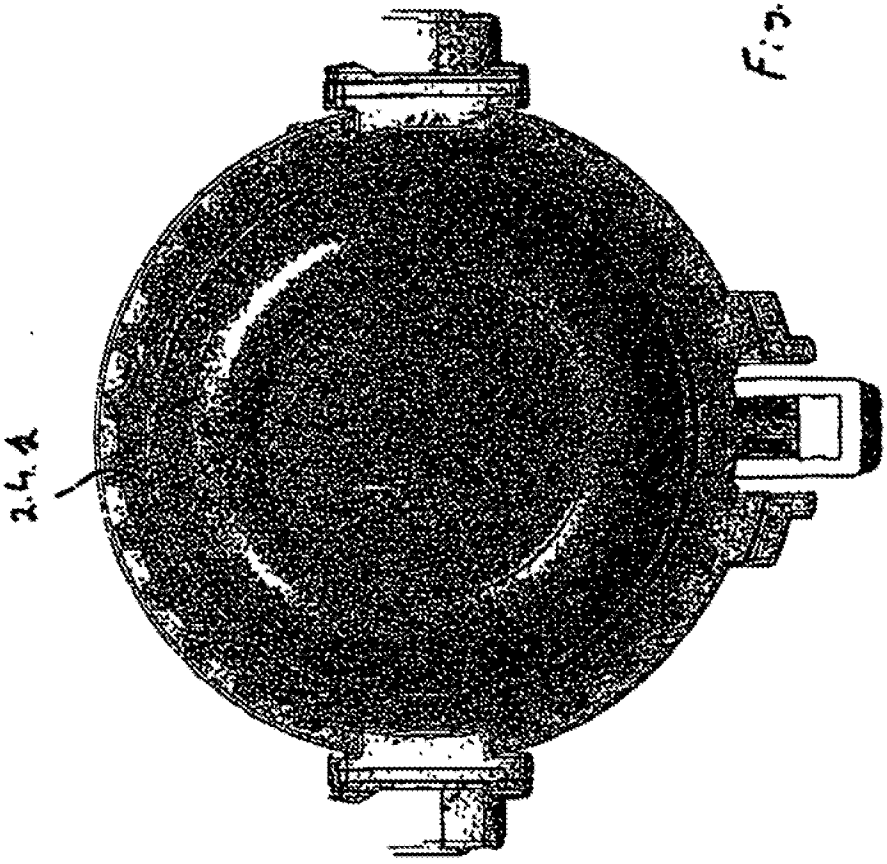


Fig. 17c

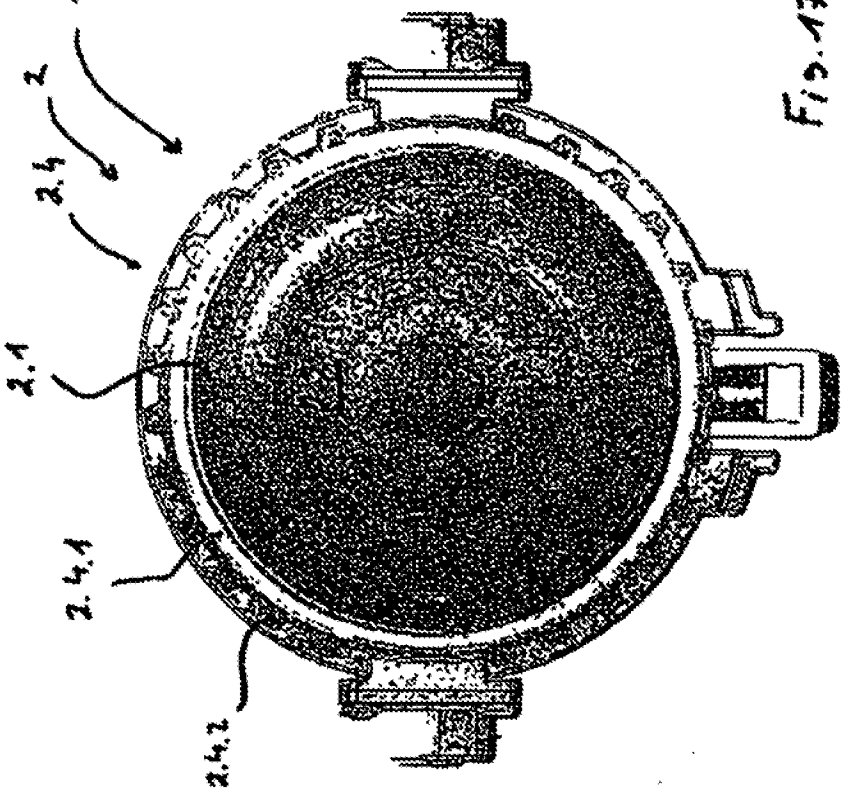


Fig. 17c

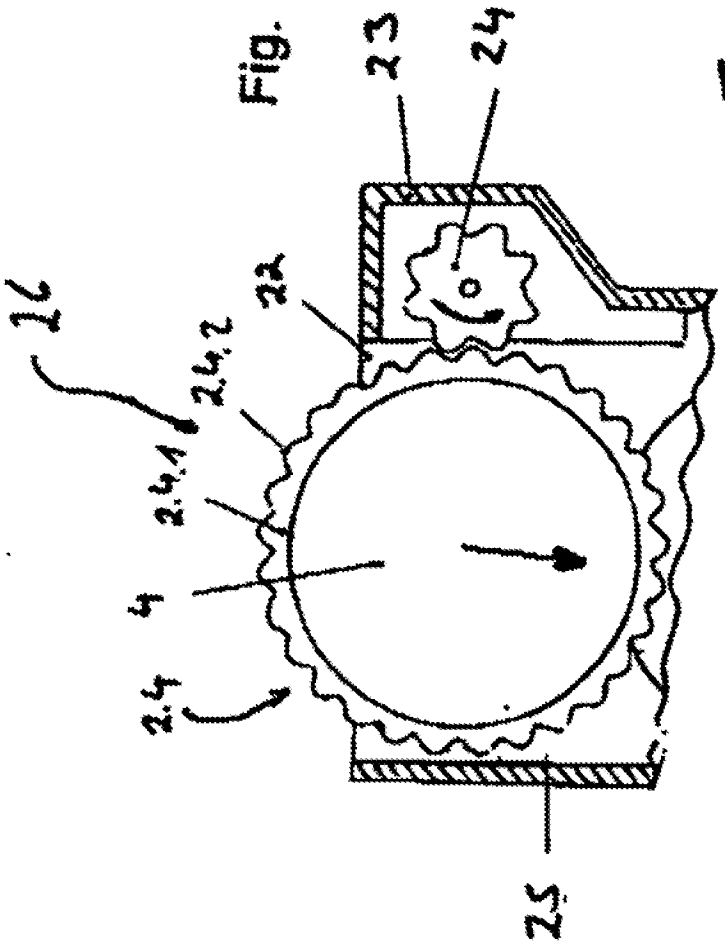


Fig. 19

UNITED STATES PATENT AND TRADEMARK OFFICE

I, Charles Edward SITCH BA,

Managing Director of RWS Group Ltd UK Translation Division, of Europa House, Chiltern Park, Chiltern Hill, Chalfont St Peter, Buckinghamshire, United Kingdom, declare;

1. That I am a citizen of the United Kingdom of Great Britain and Northern Ireland.

2. That the translator responsible for the attached translation is well acquainted with the German and English languages.

3. That the attached is, to the best of RWS Group Ltd knowledge and belief, a true translation into the English language of the accompanying copy of the specification filed with the application for a patent in Germany on February 7, 2011 under the number DE 10 2011 010 534.4 and the official certificate attached thereto.

4. That I believe that all statements made herein of my own knowledge are true and that all statements made on information and belief are true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the patent application in the United States of America or any patent issuing thereon.

Date: August 14, 2019



C. E. SITCH
Managing Director – UK Translation Division
For and on behalf of RWS Group Ltd

Description

Title

Portion capsule and use of a portion capsule

Prior Art

The present invention relates to a portion capsule for making a beverage, having an essentially frustoconical or cylindrical basic element with a cavity for accommodating a raw beverage material, and with a membrane which closes the cavity.

Such portion capsules are generally known. For example, FR 2 556 323 A1 discloses a portion capsule which has a frustoconical or cylindrical basic element and is used for making a beverage, wherein a cavity within the portion capsule is filled with a raw beverage material, in particular a coffee powder, and is closed by means of a membrane. For the purpose of making a coffee beverage, the portion capsule is arranged in a brewing chamber, in which the membrane is perforated and an extraction liquid, in particular hot water, is introduced into the cavity. The extraction liquid flows through the raw beverage material to form a beverage extract, in particular a coffee beverage. It is also the case that a base region of the portion capsule is perforated in the brewing chamber, and therefore the beverage extract can leave the portion capsule and, if appropriate, pass into a vessel, for example a coffee cup.

The disadvantage with this portion capsule is that the portion capsule has a comparatively low level of mechanical stability. The extraction liquid is injected into the brewing chamber under excess pressure during

the extraction operation, and therefore the portion capsule is subjected to a comparatively high pressure during the extraction operation. There is therefore the risk of the portion capsule buckling laterally, in particular in a wall region between the membrane and the base region, and, as a result, of flow through the raw beverage material in the brewing chamber not being uniform and/or of the extraction liquid flowing around the portion capsule laterally within the brewing chamber. The flavor of the beverage which is to be extracted is thus impaired to a considerable extent.

Disclosure of the invention

It is therefore an object of the present invention to provide a portion capsule which does not have the disadvantages of the prior art and, in addition, can be produced in a comparatively straightforward and cost-effective manner.

The object is achieved by a portion capsule for making a beverage, having an essentially frustoconical or cylindrical basic element with a cavity for accommodating a raw beverage material, and with a membrane which closes the cavity, wherein the basic element has a wall region, wherein the basic element also has, on that side of the portion capsule which is directed away from the membrane, a base region, wherein the wall region has a plurality of channels, wherein the channels run between the membrane and the base region over at least part of the vertical extent of the wall region.

In relation to the portion capsule according to the prior art, the portion capsule according to the invention has the advantage that the wall region of the basic element is stiffened by the plurality of

channels. On the one hand, this has the advantage that the portion capsule has a higher mechanical stability, and thus deformation, and in particular lateral buckling, of the portion capsule is prevented. A further advantage of the portion capsule according to the invention is that the arrangement of channels in the wall region of the basic element gives rise to improved behavior when the extraction liquid is flowing through the portion capsule in the brewing chamber, because the arrangement of the channels, in particular the fact that they run between the membrane and the base region over at least part of the vertical extent of the wall region, makes it possible for the quality and reliability of the extraction operation to be increased to a considerable extent. In particular, it is advantageously possible according to the invention for the increase in the mechanical stability by using the plurality of channels to make it possible to reduce the material thickness of the basic element overall. The production of the portion capsule is thus rendered considerably more cost-effective and environmentally friendly. In addition, in the brewing chamber, the plurality of channels reduces, or avoids, adherence of the wall region to the brewing-chamber wall, and this makes it easier for the portion capsule to be ejected or removed from the brewing chamber. A further advantage of the plurality of channels is that, within the cavity, the channel structure in the wall region can optimize the flow of the extraction liquid along the basic-element region, and therefore, by virtue of the shaping of the channel structure, for example better and/or more pronounced turbulence of the extraction liquid in the cavity, or else a more uniform (laminar) flow of the extraction liquid, is achieved and/or can be realized by straightforward means. More pronounced turbulence of the extraction liquid in the cavity, in relation to the prior art, has the

advantage, over the prior art, that, rather than any undesirable and random main liquid streams forming through the bed of the raw beverage material, instead flow takes place through the entire volume of the raw beverage material. The extraction operation thus becomes significantly more efficient and is more precise to control and/or to reproduce. The raw beverage material comprises, in particular, coffee powder (preferably ground roast coffee), chocolate powder, milk powder, tea or the like. As an alternative, it is conceivable for the raw beverage material to comprise a beverage extract, for example instant coffee.

Within the context of the present invention, the channels are, in particular, convexities or concavities which preferably have a linear main direction of extent, which extends along the wall region. The channels are particularly preferably designed as ribs and/or grooves. The channels here are formed optionally on an inner side of the basic element, the inner side being directed toward the cavity, and/or on an outer side of the basic element, the outer side being directed away from the cavity.

According to a preferred embodiment of the present invention, it is provided that the channels realize an identifier, which makes it possible to individualize the portion capsule. Individualize, within the context of the present invention, preferably means that the respective portion capsule can be assigned to a group which is suitable for the respective coffee machine or for the respective appliance which is used to make a beverage. It is not necessary for the coffee machine, or the apparatus for making a beverage using the portion capsule according to the invention, to detect the specific portion capsule; all that is required is

for it to detect that the respective portion capsule belongs to a group of portion capsules which is suitable for the respective apparatus for making the beverage, in particular a coffee machine. Individualize means, in particular, that portion capsules which are not suitable for the respective coffee machine (or the respective apparatus for making the beverage) cannot be introduced into the same and/or drop out again directly and/or that the apparatus for making the beverage, or the coffee machine, can be operated only using portion capsules according to the invention ("the correct capsules"), and that intended and correct operation of the apparatus for making the beverage, or of the coffee machine, is not possible if use is not made of the individualizable portion capsules according to the invention. It is preferably provided according to the invention that a sensor provided on the coffee machine, or the apparatus for making the beverage, or a detection means senses this identifier and compares it with a preferably stored identifier. This identification or comparison operation may be based particularly preferably on the mechanical fit, in particular a fit of a gearwheel or a gearwheel-like contour which is located in the apparatus for making the beverage, or in the coffee machine, and interacts with the portion capsule. The apparatus for making the beverage, or the coffee machine, can preferably be operated only when the identifier determined coincides with the reference identifier or when the mechanical fit coincides. In particular only then is it possible to operate the apparatus for making the beverage, in particular to activate a pressure pump or water pump. Otherwise, the coffee machine, or the apparatus for making the beverage, cannot be operated. The detection means or the element for producing a mechanical fit is preferably provided in the region of the portion-capsule-insertion shaft of the coffee machine, or of

the apparatus for making the beverage. As an alternative, it may also be provided that the identifier or the mechanical fit prevents the incorrect portion capsule from being introduced into the apparatus for making the beverage. The portion capsule according to the invention makes it possible to prevent portion capsules which are not provided for a specific apparatus for making a beverage from being introduced into the same. Furthermore, the identifier makes it possible for the apparatus for making the beverage, in particular the coffee machine, to detect which kind of portion 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.

According to a further preferred embodiment of the present invention, it is provided that at least some of the channels, and at least in a sub-region in a plane parallel to the main plane along which the membrane extends, have a gearwheel-like contour.

This advantageously makes it possible according to the invention, with requirements such as material thickness or the like otherwise being the same, for the wall region of the portion capsule to be more stable, for turbulence of the extraction liquid to be optimized further, and thus for the extraction process to be improved, and also for mechanical identification or a mechanical fit of the portion capsule with a mating element of the apparatus for making a beverage to be realized straightforwardly. In particular, it is thus advantageously possible according to the invention that for example a gearwheel, which is arranged in the apparatus for making a beverage, for example in the region of an introduction shaft or the like, interacts with the gearwheel contour of the portion capsule and a

mechanical fit is thus realized, as a result of which it is detected that the portion capsule is one which is permitted and/or the kind of portion capsule is detected and/or to cause the portion capsule to be rotated, with the aid of the gearwheel arrangement, about an axis of rotation of the portion capsule running essentially perpendicularly to the plane along which the membrane extends. In particular, it is thus advantageously possible according to the invention for the portion capsule to be opened, by the apparatus for making a beverage, always in a defined rotary position and thus for the extraction process always to be realized in the same way.

It is preferably further provided according to the invention that the basic element, directed away from the base region, has a flange for fastening the membrane on the basic element, wherein the wall region, between the base region and the flange, has a shoulder, wherein the channels extend at least over part of the shoulder.

This advantageously also makes it possible according to the invention, on the one hand, for the wall region to be of particularly stable and reinforced design and, on the other hand, for the gearwheel-like contour of the channels in the wall region to be designed such that a comparatively high mechanical load can be absorbed, and therefore rotation of the portion capsule in the apparatus for making a beverage is possible in a straightforward manner and without the portion capsule being damaged.

It is preferably further provided according to the invention that the basic element has a larger diameter in the region of the shoulder than in the wall region between the shoulder and the base region.

This advantageously provides a particularly straightforward and robust way of making it possible to stack the portion capsules or of making it possible to stack the basic elements of the portion capsules.

It is also preferred according to the invention if at least some of the channels, and at least in a sub-region in a plane parallel to the main plane along which the membrane extends, have a gearwheel-like contour such that the gearwheel-like contour extends, at least in part, in the region of the shoulder. This makes it possible, with conditions relating to material selection and/or material stability otherwise being the same, for the wall region of the portion capsule to be provided with a particularly high level of mechanical stability.

Further preferred embodiments of the present invention relate to portion-capsule variants in which one or more of the following features is/are realized:

- the basic element tapers, in the region of the shoulder, in the direction of the flange,
- the channels extend, over the region of the shoulder, in the direction of the base region,
- the channels extend, in the wall region, over approximately 20% to 80%, preferably over approximately 40% to 60%, of the extent between the shoulder and the base region,
- the channels are designed such that the wall region is stiffened by means of the channels and/or that the channels provide for turbulence of an extraction liquid flowing in the cavity.

Further preferred embodiments of the present invention relate to realizing the portion capsule with a ratio

between the diameter of the wall region adjacent to the flange, on the one hand, and the diameter of the flange, on the other hand, between 0.85 and 0.89, in particular essentially 0.87.

Furthermore, it is advantageously provided according to the invention that the diameter of the wall region adjacent to the flange is essentially 39 mm and/or the diameter of the flange is essentially 45 mm. It is also preferably provided according to the invention that the basic element has a greater wall thickness in the region of the shoulder than in the wall region between the base region and the flange. It is thus possible, on account of the improved stability provided by the portion capsule being formed with the channels in the wall region, to reduce considerable materials-related savings and thus costs and the amount of energy required for producing the portion capsule.

It is also preferably provided according to the invention that the cavity contains a filter element, which subdivides the cavity into a first region for accommodating the raw beverage material and into a second region for accommodating a beverage extract, wherein it is particularly preferably provided that the filter element comprises a nonwoven material.

The present invention further relates to the use of a portion capsule according to the invention for making a hot beverage.

Exemplary embodiments of the invention are illustrated in the figures and explained in more detail in the following description. The figures are described merely by way of example and do not have a limiting effect on the general concept of the invention.

Figures 1 and 2 show, schematically, views of one embodiment of a portion capsule according to the present invention.

Figures 3 and 4 show, schematically, two sectional views of the portion capsule according to the invention.

In the various figures, like parts are always provided with the same reference signs, and it is therefore usually also the case that they are each named or mentioned only once.

Figure 1 illustrates, schematically, a view of one embodiment of a portion capsule according to the present invention. Figure 2 illustrates, likewise schematically, a view of such a portion capsule, although a different perspective view has been selected. Figure 1 shows a view of a portion capsule from the front. Figure 2 shows a view of the portion capsule as seen obliquely from beneath. The portion capsule is designated by 1 in all the figures. The portion capsule 1 has an essentially frustoconical basic element 2, which is of cup-like form and encloses a cavity 3. The cavity 3 is closed by a membrane 4. The viewing direction according to figure 1 is essentially parallel to the plane along which the membrane 4 extends, and therefore the membrane 4 is indicated merely at the upper periphery of the portion capsule. The basic element 2 comprises, in particular, a soft, semi-rigid or rigid plastics material, which has preferably been thermoformed. The membrane 4 preferably comprises a thin plastics film or an aluminum foil. The basic element has, in the region of the membrane, a preferably encircling fastening flange 17, wherein the membrane 4 is connected integrally, in particular welded or adhesively bonded, to the fastening flange

17. The basic element 2 preferably contains a filter element, although this is not illustrated specifically in the figures. The filter element is produced, for example, from a thermoplastic material, for example polypropylene. The filter element may also be produced in the form of a nonwoven material, for example from a thermoplastic material. The filter element subdivides the cavity 3 preferably into a first region and into a second region, wherein the first region is provided for accommodating a raw beverage material, and wherein the second region is provided for accommodating, in particular for collecting, a beverage extract (not depicted) during the extraction operation of the portion capsule 1. The first and second regions, however, are not illustrated individually in the figures.

The portion capsule 1 is provided for insertion into a brewing chamber of an apparatus (not shown) for making a beverage. Such an apparatus for making a beverage is, in particular, a coffee machine; however, the apparatus for making a beverage may also be a machine for producing a tea beverage, a chocolate beverage or other kinds of beverage. In a brewing chamber of such an apparatus for making a beverage, the portion capsule is fed an extraction liquid, in particular water or hot water, preferably under high pressure. This extraction liquid interacts with the raw beverage material within the portion capsule so as to form a beverage extract or a beverage. The filter element, during this extraction operation, serves, in particular, as a screen for the beverage extract.

The basic element 2, according to the invention, has a wall region 12 and a base region 11. The wall region 12 extends essentially between the flange 17 and the base region 11. A plurality of channels 15 are introduced

into the wall region 12, these being designed, in particular, as grooves which are introduced into the wall region 12, and in the form of directed toward the cavity 3 and extend essentially longitudinally between the flange 17 and the base region 11 (i.e., essentially in the illustration according to figure 1, run vertically). In particular, it is provided according to the invention that the channels 15 extend vertically along the wall region 12, i.e. rectilinearly from the flange 17 to the base region 11, although it is not imperative for the channels to extend over the entire length. The channels 15 are designed according to the invention such that the wall region 12 is reinforced or stiffened by the plurality of channels 15. Furthermore, the plurality of channels 15, which are distributed in particular over the wall region 12, prevent adherence between the wall region 12 and the wall of the brewing chamber of the apparatus for making a beverage following the extraction operation, and this makes it easier for the portion capsule 1 to be ejected automatically out of the brewing chamber. That embodiment of the portion capsule 1 which is illustrated in figure 1 also has an encircling shoulder 16, which is arranged in the wall region 12 between the flange 17 and the base region 11, to be precise following the flange 17 in the direction of the base region 11. In relation to the rest of the wall region 12, which is located between the shoulder 16 and the base region 11, the shoulder 16 has an enlarged diameter (parallel to the membrane 4). The contour of the shoulder 16 is preferably designed such that the diameter of the shoulder 16 decreases somewhat in the direction of the flange 7.

In the case of that embodiment of the portion capsule 1 according to the invention which is illustrated in figure 1, it is provided that the channels 15, in a

first sub-region of the channel 15, extend in the region of the shoulder 16 and, in a further sub-region of the channel 15, extend from the shoulder 16, in the direction of the base element 11, some way along the rest of the wall region 12, but then end. Overall, for example, the channels 15 extend over approximately 50% of the extent of the wall region between the flange 17 and the base region 11, wherein approximately one third of the extent of the channels 15 runs in the region of the shoulder 16 and the remaining two thirds of the extent of the channels 15 extends over the rest of the wall region 12, between the shoulder 16 and the base region 11.

Figure 3 illustrates, schematically, a sectional view of the portion capsule 1 according to the invention along the vertical extent of the portion capsule, i.e. with a section surface perpendicular to the plane along which the membrane 4 extends. Figure 4, furthermore, illustrates a sectional view of the portion capsule 1 according to the invention with a section plane running parallel to the plane along which the membrane extends. It is evident that figure 3 illustrates the inside of the cavity of the portion capsule 1. The material of the portion capsule 1, or of the basic element 2 of the portion capsule 1, is thin enough for the formation of the channels 15 on the outside, which is illustrated in figure 1, to give rise to corresponding convexities and concavities on the inside. Figure 4 shows, specifically, the formation of the gearwheel-like contour 15', which is achieved by the channels 15 being introduced into the wall region 12 of the portion capsules 1.

Patent claims:

1. A portion capsule (1) for making a beverage, having an essentially frustoconical or cylindrical basic element (2) with a cavity (3) for accommodating a raw beverage material, and with a membrane (4) which closes the cavity (3), characterized in that the basic element (2) has a wall region (12), wherein the basic element (2) also has, on that side of the portion capsule (1) which is directed away from the membrane (4), a base region (11), wherein the wall region (12) has a plurality of channels (15), wherein the channels (15) are provided such that they run between the membrane (4) and the base region (11) over at least part of the vertical extent of the wall region (12).

2. The portion capsule (1) as claimed in claim 1, characterized in that the channels (15) realize an identifier, which makes it possible to individualize the portion capsule (1).

3. The portion capsule (1) as claimed in either of the preceding claims, characterized in that at least some of the channels (15), and at least in a sub-region in a plane parallel to the main plane along which the membrane (4) extends, have a gearwheel-like contour.

4. The portion capsule (1) as claimed in one of the preceding claims, characterized in that the basic element (2), directed away from the base region (11) has a flange (17) for fastening the membrane (4) on the basic element (2), wherein the wall region (12), between the base region (11) and the flange (17), has a shoulder (16), wherein the

channels (15) extend at least over part of the shoulder (16).

5. The portion capsule (1) as claimed in claim 4, characterized in that the basic element (2) has a larger diameter in the region of the shoulder (16) than in the wall region (12) between the shoulder (16) and the base region (11).

6. The portion capsule (1) as claimed in either of claims 4 and 5, characterized in that at least some of the channels (15), and at least in a sub-region in a plane parallel to the main plane along which the membrane (4) extends, have a gearwheel-like contour such that the gearwheel-like contour (15') extends, at least in part, in the region of the shoulder (16).

7. The portion capsule (1) as claimed in one of claims 4 to 6, characterized in that the basic element (2) tapers, in the region of the shoulder (16), in the direction of the flange (17).

8. The portion capsule (1) as claimed in one of claims 4 to 7, characterized in that the channels (15) extend, over the region of the shoulder (16), in the direction of the base region (11).

9. The portion capsule (1) as claimed in one of claims 4 to 8, characterized in that the channels (15) extend, in the wall region (12), over approximately 20% to 80%, preferably over approximately 40% to 60%, of the extent between the shoulder (16) and the base region (11).

10. The portion capsule (1) as claimed in one of claims 4 to 9, characterized in that the channels

(15) are designed such that the wall region (12) is stiffened by means of the channels (15) and/or that the channels (15) provide for turbulence of an extraction liquid flowing in the cavity (3).

11. The portion capsule (1) as claimed in one of claims 4 to 10, characterized in that a ratio between the diameter of the wall region (12) adjacent to the flange (7), on the one hand, and the diameter of the flange (7), on the other hand, is between 0.85 and 0.89, in particular is essentially 0.87.

12. The portion capsule (1) as claimed in one of claims 4 to 11, characterized in that the diameter of the wall region (12) adjacent to the flange (7) is essentially 39 millimeters and/or the diameter of the flange (7) is essentially 45 millimeters.

13. The portion capsule (1) as claimed in one of claims 4 to 12, characterized in that the basic element (2) has a greater wall thickness in the region of the shoulder than in the wall region (12) between the base region (12) and the flange (17).

14. The portion capsule (1) as claimed in one of the preceding claims, characterized in that the cavity (3) contains a filter element, which subdivides the cavity (3) into a first region (8) for accommodating the raw beverage material and into a second region (9) for accommodating a beverage extract.

15. The portion capsule (1) as claimed in claim 14, characterized in that the filter element (5) comprises a nonwoven material.

16. The use of a portion capsule (1) as claimed in one of the preceding claims for making a hot beverage.

Abstract

A portion capsule for making a beverage is proposed, wherein the portion capsule has an essentially frustoconical or cylindrical basic element with a cavity for accommodating a raw beverage material, and with a membrane which closes the cavity, wherein the basic element has a wall region, wherein the basic element also has, on that side of the portion capsule which is directed away from the membrane, a base region, wherein the wall region has a plurality of channels, wherein the channels are provided such that they run between the membrane and the base region over at least part of the vertical extent of the wall region.

(Figure 1)

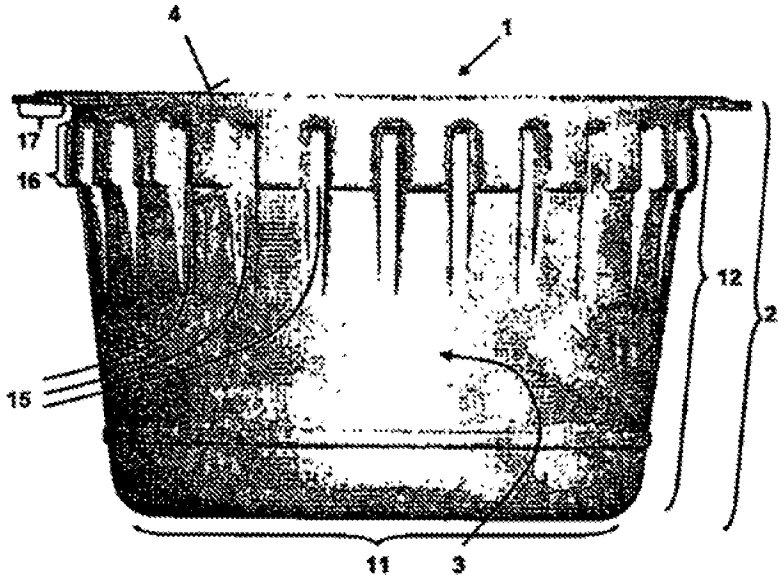


Fig. 1

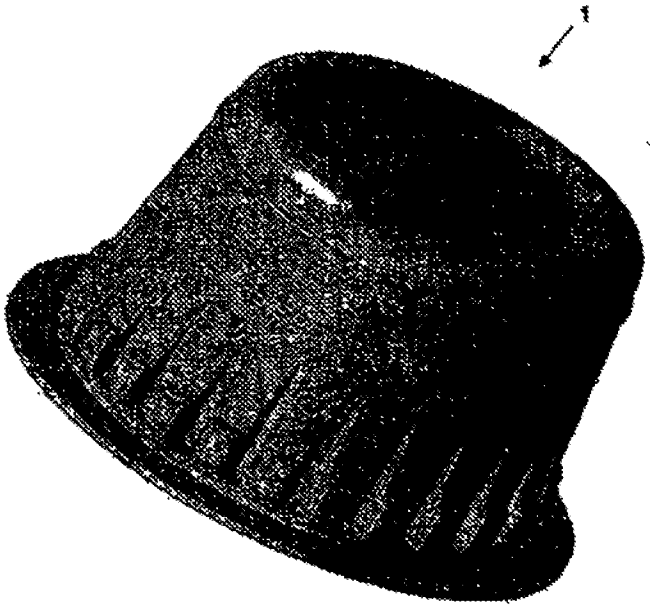


Fig. 2

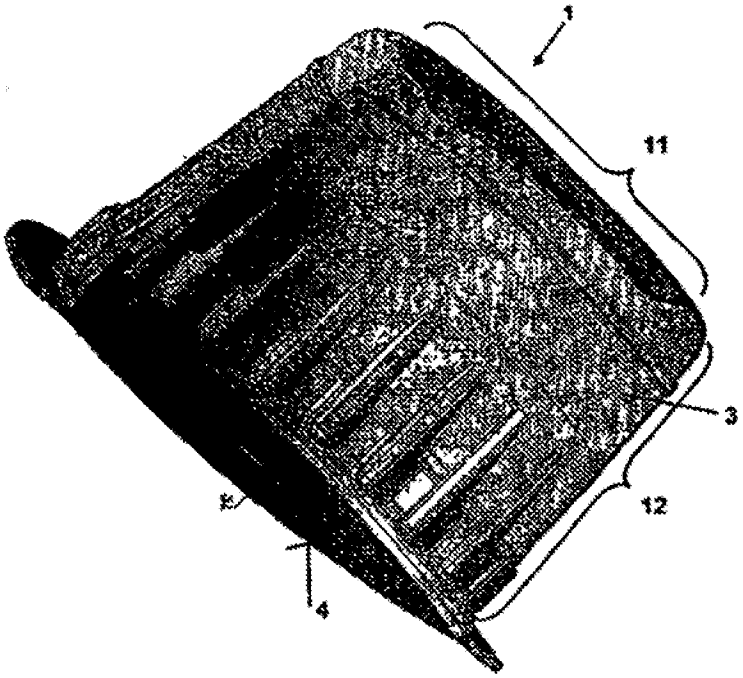


Fig. 3

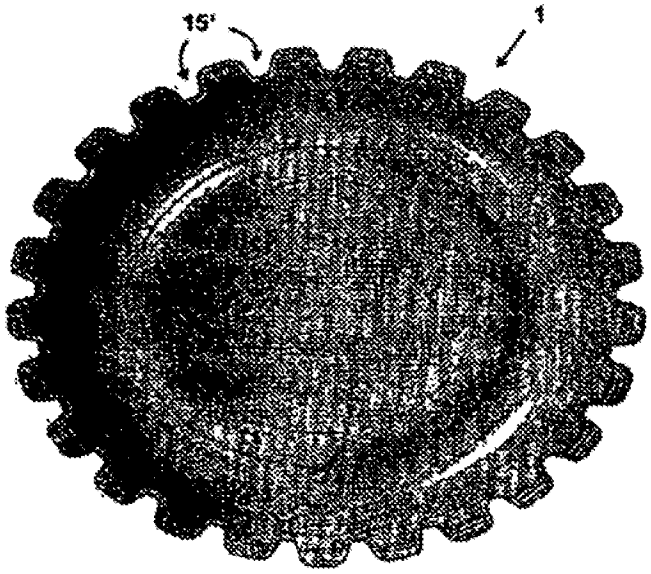


Fig. 4

PORTION CAPSULE HAVING AN IDENTIFIER

FIELD

[0001] These teachings relate to a portion capsule and a method and system 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

[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.

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 95 of 524

Such capsules are, for example made of plastic, natural materials and/or biodegradable materials and substantially have a base element, in particular a deep-drown 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 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

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 96 of 524

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 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

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 97 of 524

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.

[0011] 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.

[0012] 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.

[0013] 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.

[0014] Another construction version favors a RFID chip being the identifier.

[0015] 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

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 98 of 524

pressure and/or the amount of water.

[0016] 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.

[0017] 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.

[0018] 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.

[0019] 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.

[0020] Preferably there is a sealing surface, that is arranged on the interior side relative to the gearwheel or the gearwheel' segment.

[0021] 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.

[0022] 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

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 100 of 524

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.

[0023] 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.

[0024] 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.

[0025] 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 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

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 102 of 524

process of beverage and food by adapting, for example, the pressure, the temperature and/or the amount of water.

[0026] 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.

[0027] 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 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.

[0028] 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.

[0029] 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.

[0030] 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.

[0031] This gives rise to the advantageous possibility to stack portion capsule or portion capsules' base elements easily and robustly.

[0032] 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.

[0033] 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.

[0034] Other preferred versions of the present invention relate to portion capsules

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 104 of 524

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.

[0035] 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.

[0036] 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.

BRIEF DESCRIPTION OF THE DRAWINGS

[0037] 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.

[0038] **Figures 1A and 1B** show a portion capsule containing sections that differ optically.

[0039] **Figures 2A and 2B** show a portion capsule containing a barcode.

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 105 of 524

[0040] **Figures 3A and 3B** show a portion capsule with recesses and bulges.

[0041] **Figure 4** shows a portion capsule containing sections that differ optically.

[0042] **Figure 5** shows a portion capsule with a key function.

[0043] **Figure 6** shows a portion capsule's wall that is electrically conductive.

[0044] **Figure** 7 shows a portion capsule's wall containing sections that differ optically.

[0045] **Figure 8** shows an enlarged pot construction of the portion capsule's wall.

[0046] **Figure 9** shows an edge region that is electrically conductive.

[0047] **Figure 10** shows a portion capsule containing a bottom that is electrically conductive.

[0048] **Figure 11** shows an embodiment containing a layer that can be detected by a metal detector.

[0049] **Figure 12** shows a metallic strainer.

[0050] **Figure 13** shows a portion capsule containing a ferromagnetic section.

[0051] **Figure 14** shows a portion capsule containing a barcode.

[0052] **Figure 15** shows a portion capsule containing a section, which is electrically conductive, in the wall.

[0053] **Figures 16A and 16B** show a portion capsule with a gearwheel placed in the brewing chamber.

[0054] **Figures 17 A - C** show different embodiments of the portion capsule according to Figures 16A and 16B.

[0055] **Figure 18** shows the portion capsule according to the Figures 16A and 16B and Figures 17 A-C, when the portion capsule is fit locking with a gear wheel.

[0056] **Figures 19 and 20** show a schematic view of a portion capsule according to an embodiment of the present invention.

[0057] **Figures 21 and 22** show two sectional views of the portion capsule according to an embodiment of the presented invention.

DETAILED DESCRIPTION

[0058] **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. 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

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 107 of 524

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.

[0059] All the remarks concerning the identifier apply to all the examples.

[0060] **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 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 in Figure 2B, 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.

[0061] **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 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 mean 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.

[0062] 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.

[0063] 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.

[0064] 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.

[0065] 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.

[0066] 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.

[0067] **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.

[0068] **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.

[0069] **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 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.

[0070] The embodiment of the invention shown in **Figure 12** has a built-in element made of metal (here a strainer 19) that is recognized as identifier by a means for detection 13 having a metal detector.

[0071] 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.

[0072] **Figure 14** shows another embodiment which includes a barcode placed in the region of the cover foil. The portion capsule includes a flange 17.

[0073] 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.

[0074] **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 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 seal 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.

[0075] **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 through

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 111 of 524

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.

[0076] **Figure 18** shows the 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 1 and 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 27. Only in this case the portion capsule rotates 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 correspond 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.

[0077] 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.

[0078] **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-drown, 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.

[0079] 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.

[0080] 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 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.

[0081] 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.

[0082] A portion capsule 1 according to the invention is shown as sectional view

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 114 of 524

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.

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 115 of 524

CLAIMS

1) A single-serve capsule for making a beverage, comprising:

a base element with a cavity, in which a raw beverage material is provided, the base element is made of a biodegradable material; a flange extending outwardly from the base element, the flange comprising a top side and an opposing bottom side; and a cover that is fastened to the top side of the flange to close the cavity, the cover is made of a different material than the base element; wherein the single-serve capsule is free of a filter; and wherein the capsule has an identifier, which makes it possible to individualize the respective single-serve capsule, the identifier is provided on the bottom side of the flange.

2) The single-serve capsule according to claim 1, wherein the base element comprises a side wall comprising a concavity.

3) The single-serve capsule according to claim 1, wherein the base element comprises a side wall comprising a concavity.

4) The single-serve capsule according to claim 1, wherein the base element comprises a side wall comprising a concavity and a convexity.

5) The single-serve capsule according to claim 1, wherein the identifier comprises a barcode.

6) The single-serve capsule according to claim 5, wherein the base element comprises a side wall and the identifier is also located on the side wall.

7) The single-serve capsule according to claim 2, the identifier is also located on the side wall.

8) The single-serve capsule according to claim 3, the identifier is also located on the side wall.

9) The single-serve capsule according claim 4, wherein the identifier is also located on the side wall.

10) The single-serve capsule according to claim 9, wherein the identifier comprises a barcode.

11) The single-serve capsule according claim 1, wherein the single-serve capsule comprises a barrier layer to prevent moisture or aroma from escaping out of the single-serve capsule.

12) The single-serve capsule according claim 4, wherein the single-serve capsule comprises a barrier layer.

13) The single-serve capsule according to claim 1, wherein the base element comprises plastic.

14) The single-serve capsule according to claim 9, wherein the base element comprises plastic.

15) The single-serve capsule according to claim 13, wherein the raw beverage material is coffee powder, chocolate powder, milk powder, or tea.

16) The single-serve capsule according to claim 1, wherein the identifier comprises a repeat pattern.

17) A single-serve capsule for making a beverage, comprising:

a base element with a cavity, in which a raw beverage material is provided, the base element is made of a biodegradable material; a flange extending outwardly from the base element, the flange comprising a top side and an opposing bottom side; and a cover that is fastened to the top side of the flange to close the cavity, the cover is made of a different material than the base element; and wherein the capsule has an identifier, which

makes it possible to individualize the respective single-serve capsule, the identifier is provided on the bottom side of the flange, the identifier is also located on the side wall.

18) The single-serve capsule according to claim 17, wherein the single-serve capsule comprises a barrier layer.

19) The single-serve capsule according to claim 18, wherein the identifier comprises a repeat pattern.

20) The single-serve capsule according to claim 19, wherein the raw beverage material is coffee powder, chocolate powder, milk powder, or tea; and the single-serve capsule is free of a filter.

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 118 of 524

PORTION CAPSULE HAVING AN IDENTIFIER

ABSTRACT

A single-serve capsule for making a beverage, including: a base element with a cavity, in which a raw beverage material is provided, the base element is made of a biodegradable material; a flange extending outwardly from the base element, the flange including a top side and an opposing bottom side; and a cover that is fastened to the top side of the flange to close the cavity, the cover is made of a different material than the base element; wherein the single-serve capsule is free of a filter; and wherein the capsule has an identifier, which makes it possible to individualize the respective single-serve capsule, the identifier is provided on the bottom side of the flange.

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 119 of 524

Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	PORTION CAPSULE HAVING AN IDENTIFIER
First Named Inventor/Applicant Name:	Marc Krüger
Filer:	Paul J. Palinski/BECKY BALLARD
Attorney Docket Number:	1859.029USC11

Filed as Large Entity

Filing Fees for Track I Prioritized Examination - Nonprovisional Application under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
UTILITY APPLICATION FILING	1011	1	320	320
UTILITY SEARCH FEE	1111	1	700	700
UTILITY EXAMINATION FEE	1311	1	800	800
REQUEST FOR PRIORITIZED EXAMINATION	1817	1	4200	4200
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**6020**

Electronic Acknowledgement Receipt

EFS ID:	43338771
Application Number:	17385109
International Application Number:	
Confirmation Number:	6609
Title of Invention:	PORTION CAPSULE HAVING AN IDENTIFIER
First Named Inventor/Applicant Name:	Marc Krüger
Customer Number:	25215
Filer:	Paul J. Palinski/BECKY BALLARD
Filer Authorized By:	Paul J. Palinski
Attorney Docket Number:	1859.029USC11
Receipt Date:	26-JUL-2021
Filing Date:	
Time Stamp:	13:56:47
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$6020
RAM confirmation Number	E20217PD57323345
Deposit Account	501097
Authorized User	BECKY BALLARD

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

37 CFR 1.16 (National application filing, search, and examination fees)

37 CFR 1.17 (Patent application and reexamination processing fees)

37 CFR 1.19 (Document supply fees)

37 CFR 1.20 (Post Issuance fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	ApplicationDataSheet_1859_029USC11_KRU0022_WO_US_T12.pdf	1256586 54b2853e6e8c58a9560cfb1f7bd4ffb47e975971	no	9
Warnings:					
Information:					
2	Transmittal of New Application	Transmittal_1859_029USC11_KRU0022_WO_US_T12.pdf	310839 4041861e378e88802e7ee4002c6d9b279dc30799	no	2
Warnings:					
Information:					
3	TrackOne Request	TrackOne_1859_029USC11_KRU0022_WO_US_T12.pdf	114471 dede5d242df71987f3320a1222066eab79a6b7e0	no	2
Warnings:					
Information:					
4	Drawings-only black and white line drawings	Drawings_1859_029USC11_KRU0022_WO_US_T12.pdf	2458741 e86bb565d9231e838908dd9a3e4b7533deb1ed77	no	12
Warnings:					
Information:					
5	Oath or Declaration filed	Oath_Dec_1859_029USC11_KRU0022_WO_US_T12.pdf	117431 ce4b3290e586f4cbb732d481fb854b98c50e1c4c	no	1
Warnings:					
Information:					
6	Power of Attorney	PowerOfAttorney_1859_029USC11_KRU0022_WO_US_T12.pdf	636907 80e4f7e132f170c6ebf38044bfe12f5944e9846b	no	1
Warnings:					
Information:					

7	Interim Copy of the Foreign Priority Document	CertifiedEnglishTranslationOf_DE102010031988_0.pdf	2253563 5fbdb09e747a7f00fb2a0694eedb58296671364f	no	22
Warnings:					
Information:					
8	Interim Copy of the Foreign Priority Document	CertifiedEnglishTranslationOf_DE102010044251_8.pdf	3763385 4ca493419f83c432bcdfe9b6c3ff3d6fe5fd8b6b	no	33
Warnings:					
Information:					
9	Interim Copy of the Foreign Priority Document	CertifiedEnglishTranslationOf_DE102011010534_4.pdf	3169169 3d1d17d593e541a65c744edc04244367376cddcc	no	21
Warnings:					
Information:					
10		ContinuationApplication_1859_029USC11_KRU0022_WO_US_T12.pdf	245171 4d609886dd395c07ce32bfabc770a4000021f031	yes	25
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Specification		1	21	
	Claims		22	24	
	Abstract		25	25	
Warnings:					
Information:					
11	Fee Worksheet (SB06)	fee-info.pdf	46579 c6c5c3034e7a77eeac1080513a7e22c2dc2dbe35	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	14372842		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1859.029USC11
	Application Number	
Title of Invention	PORTION CAPSULE HAVING AN IDENTIFIER	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1 — Remove

Legal Name

Prefix	Given Name	Middle Name	Family Name	Suffix
	Marc		Krüger	

Residence Information (Select One) US Residency ● Non US Residency Active US Military Service

City	Country of Residence [i]
Bergisch Gladbach	DE

Mailing Address of Inventor:

Address 1	Zaunkönigweg 8
Address 2	
City	Bergisch Gladbach
State/Province	
Postal Code	51467
Country [i]	DE

All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the **Add** button. Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence Information of this application.**

Customer Number	25215		
Email Address	patmail@patentco.com	Add Email	Remove Email

Application Information:

Title of the Invention	PORTION CAPSULE HAVING AN IDENTIFIER		
Attorney Docket Number	1859.029USC11	**Small Entity Status Claimed**	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	12	**Suggested Figure for Publication (if any)**	1

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1859.029USC11
	Application Number	
Title of Invention	PORTION CAPSULE HAVING AN IDENTIFIER	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	● Customer Number	US Patent Practitioner	◯ Limited Recognition (37 CFR 11.9)
Customer Number	25215		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.
When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status			Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	17/383951	2021-07-23

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1859.029USC11
	Application Number	
Title of Invention	PORTION CAPSULE HAVING AN IDENTIFIER	

Prior Application Status			Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
17/383951	Continuation of	17/330572	2021-05-26
Prior Application Status			Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
17/330572	Continuation of	17/324182	2021-05-19
Prior Application Status			Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
17/324182	Continuation of	17/108175	2020-12-01
Prior Application Status			Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
17/108175	Continuation of	16/860432	2020-04-28
Prior Application Status			Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/860432	Continuation of	16/438818	2019-06-12
Prior Application Status			Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
16/438818	Continuation of	15/646980	2017-07-11
Prior Application Status			Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/646980	Division of	15/211823	2016-07-15
Prior Application Status			Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
15/211823	Division of	13/744623	2013-01-18
Prior Application Status			Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
13/744623	Continuation of	PCT/EP2011003677	2011-07-22

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1859.029USC11
	Application Number	
Title of Invention	PORTION CAPSULE HAVING AN IDENTIFIER	

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button. Add

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)[i] the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Remove

Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)
10 2011 010 534.4	DE	2011-02-07	

Remove

Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)
10 2010 044 251.8	DE	2010-09-02	

Remove

Application Number	Country[i]	Filing Date (YYYY-MM-DD)	Access Code[i] (if applicable)
10 2010 031 988.0	DE	2010-07-22	

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button. Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1859.029USC11
	Application Number	
Title of Invention	PORTION CAPSULE HAVING AN IDENTIFIER	

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1859.029USC11
	Application Number	
Title of Invention	PORTION CAPSULE HAVING AN IDENTIFIER	

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant 1 — Remove

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

Clear

● Assignee	Legal Representative under 35 U.S.C. 117	Joint Inventor
Person to whom the inventor is obligated to assign.	Person who shows sufficient proprietary interest	

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☒

Organization Name	K-FEE SYSTEM GMBH		
Mailing Address Information For Applicant:			
Address 1	Senefelder Str. 44		
Address 2			
City	Bergisch Gladbach	**State/Province**	
Country	DE	Postal Code	51469
Phone Number		Fax Number	
Email Address			

Additional Applicant Data may be generated within this form by selecting the Add button. Add

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1859.029USC11
	Application Number	
Title of Invention	PORTION CAPSULE HAVING AN IDENTIFIER	

Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

Remove

If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1			
Address 2			
City		**State/Province**	
Country i		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. Add

Signature:

Remove

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). **However, if this Application Data Sheet is submitted with the INITIAL filing of the application and either box A or B is not checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).**

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Paul J. Palinski/			Date (YYYY-MM-DD)	2021-07-26
First Name	Paul J.	Last Name	Palinski	Registration Number	71,080

Additional Signature may be generated within this form by selecting the Add button. Add

PTO/AIA/14 (02-18)
Approved for use through 11/30/2020. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1859.029USC11
	Application Number	
Title of Invention	PORTION CAPSULE HAVING AN IDENTIFIER	

This collection of information is required by 37 CFR 1.76. 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 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet 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, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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 the Freedom of Information Act requires disclosure of these records.

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 CooperationTreaty.

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 inspections 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.

Filed via EFS @ USPTO.gov on July 28, 2021
Practitioner's Docket No. 1859.029USC11 (KRU0022-WO-US-T12)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Marc Krüger	Art Unit: TBA
Application No.: 17/385,109	Examiner: TBA
Filed: July 26, 2021	Conf. No.: 6609

For: PORTION CAPSULE HAVING AN IDENTIFIER

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

INFORMATION DISCLOSURE STATEMENT

Applicant submits this statement in accordance with its duty of disclosure under 37 C.F.R. §§ 1.56, 1.97, and 1.98. The submission made herewith is in no way intended as an admission that the cited items constitute material prior art or otherwise would render the claims unpatentable in any way. The submission also is in no way intended to substitute for the Examiner's own independent investigation.

Form PTO/SB/08a is submitted herewith. Copies of foreign patent documents and non-patent literature have not been provided due to their presence in the parent application to this application (see MPEP 609.02(A)(2)), and Applicant notes that this section requires the Examiner to consider all of the references previously submitted to the USPTO even if not listed in any Information Disclosure Statement filed in this application. Applicant is resubmitting these references on the attached form PTO/SB/08a so that all of the references are listed on the face of the patent. However, to the extent that any references have been inadvertently overlooked, or otherwise are not resubmitted on this form, Applicant respectfully requests consideration of the previously submitted references as is set forth in MPEP 609.02(A)(2) and inclusion of such references on the face of the patent. Applicant respectfully solicits the Examiner's consideration of the cited references and entry thereof into the record of this application.

This Information Disclosure Statement is being submitted prior to the mailing of a first Office Action or Notice of Allowance. No fees are believed to be due; however, if any fee is due with the filing of this paper, please charge the amount to Deposit Account 50-1097.

Date: July 28, 2021

/Paul J. Palinski/

Paul J. Palinski

Reg. No. 71,080
Attorney for Applicant
The Dobrusin Law Firm, P.C.
29 W. Lawrence Street - Suite 210
Pontiac, MI 48342
(248) 292-2920

Customer No. 25215

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 136 of 524

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

U.S. PATENTS					
Examiner Initials*	Cite No.	Patent Number	Kind Code	Issue Date	Name of Patentee or Applicant of cited Document
	1.	2,778,739		01/22/1957	Rodth
	2.	3,183,096		05/11/1965	Hiscock
	3.	3,501,896	A	03/24/1970	Stoeser et al.
	4.	3,631,793		06/23/1969	Bednartz
	5.	3,640,727		02/08/1972	Heusinkveld
	6.	4,136,202		01/23/1979	Favre
	7.	4,389,925		06/28/1983	Piana
	8.	4,534,985		08/13/1985	Gasau
	9.	4,540,595		09/10/1985	Acitelli et al.
	10.	4,644,151	A	05/12/1987	Piet
	11.	4,676,482	A1	11/04/1987	Marvin et al.
	12.	4,742,645		05/10/1988	Johnston
	13.	4,859,337		08/22/1989	Woltermann
	14.	4,860,645	A	08/29/1989	Van Der Lijn et al.
	15.	4,867,993		09/19/1989	Nordskog
	16.	4,976,179		12/11/1990	Lacrouts-Cazenave
	17.	5,012,629		05/07/1991	Rehman et al.
	18.	5,028,769	A	07/02/1991	Claypool et al.
	19.	5,108,768	A	04/28/1992	So
	20.	5,194,553	A	03/16/1993	Freeburne et al.
	21.	5,242,702	A	09/07/1993	Fond
	22.	5,243,164	A	09/07/1993	Erickson et al.
	23.	5,251,758	A	10/12/1993	Kolacek
	24.	5,285,041	A	02/08/1994	Wright
	25.	5,402,707	A	04/04/1995	Fond et al.
	26.	5,460,078	A	10/24/1995	Weller
	27.	5,496,573	A	03/05/1996	Tsuji et al.
	28.	5,501,945	A	03/26/1996	Kanakkanatt
	29.	5,535,765	A	07/16/1996	Takashima
	30.	5,601,716	A	02/11/1997	Heinrich et al.
	31.	5,637,850	A	06/10/1997	Honda
	32.	5,656,311	A	08/12/1997	Fond
	33.	5,656,318	A	08/12/1997	Fond et al.
	34.	5,677,522	A	10/14/1997	Rice et al.
	35.	5,725,261	A	03/10/1998	Rahn
	36.	5,840,189	A	11/24/1998	Sylvan et al.

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 137 of 524

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	37.	5,888,549	A	03/30/1999	Buchholz et al.
	38.	5,895,672	A	04/20/1999	Cooper
	39.	5,897,899	A	04/27/1999	Fond
	40.	5,917,165	A	06/29/1999	Platt et al.
	41.	5,941,055	A	08/24/1999	Coates
	42.	5,948,455	A	09/07/1999	Schaeffer et al
	43.	5,980,743	A	11/09/1999	Bairischer
	44.	5,994,677	A	11/30/1999	Akerlind
	45.	6,153,026	A	11/28/2000	Michotte
	46.	6,199,780	B1	03/13/2001	Görlitz
	47.	6,202,929	A	03/20/2001	Verschuur et al.
	48.	6,213,326	B1	04/10/2001	Denner et al.
	49.	6,299,926	B1	10/09/2001	Balakrishnan et al.
	50.	6,440,256	B1	08/27/2002	Gordon et al.
	51.	6,451,332	B1	09/17/2002	Tanaka et al.
	52.	6,589,577	B2	07/08/2003	Lazaris et al.
	53.	6,598,800	A1	07/29/2003	Schmit et al.
	54.	6,607,762	B2	08/19/2003	Lazaris et al.
	55.	6,627,244	B2	09/30/2003	Omura
	56.	6,645,537	B2	11/11/2003	Sweeney et al.
	57.	6,655,260	B2	12/02/2003	Lazaris
	58.	6,817,538	B2	11/16/2004	Afzali-Ardakani et al.
	59.	6,861,086	B2	03/01/2005	Buckingham et al.
	60.	6,948,420	B2	09/27/2005	Kirschner et al.
	61.	6,994,879	B2	02/07/2006	Cirigliano et al.
	62.	7,408,094	B2	08/05/2008	Little et al.
	63.	7,444,925	B2	02/07/2006	Cirigli
	64.	7,464,518	B2	12/16/2008	Ansinn
	65.	7,543,527	B2	06/09/2009	Schmed
	66.	7,552,672	B2	06/30/2009	Schmed
	67.	7,595,870	B2	09/29/2009	Ringlien
	68.	7,673,558	B2	03/09/2010	Panesar et al.
	69.	7,685,930	B2	03/30/2010	Mandralis et al.
	70.	7,815,953	B2	10/19/2010	Mastropasqua et al.
	71.	7,935,646	B2	05/03/2011	Viazmensky et al.
	72.	7,946,217	B2	05/24/2011	Favre et al.
	73.	7,981,451	B2	07/19/2011	Ozanne
	74.	8,039,029	B2	10/18/2011	Ozanne
	75.	8,039,034	B2	10/18/2011	Ozanne

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 138 of 524

	76.	8,088,423	B2	01/03/2012	Ohresser et al.
	77.	8,101,928	B2	01/24/2012	Hill et al.
	78.	8,114,461	B2	02/14/2012	Perlman et al.
	79.	8,163,318	B2	04/24/2012	Ozanne et al.
	80.	8,168,908	B2	05/01/2012	Heimann
	81.	8,257,766	B2	09/04/2012	Yoakim et al.
	82.	8,276,639	B2	10/02/2012	Binacchi
	83.	8,361,527	B2	01/29/2013	Winkler et al.
	84.	8,474,368	B2	07/02/2013	Kilber et al.
	85.	8,491,948	B2	07/23/2013	Ozanne et al.
	86.	8,491,976	B2	07/23/2013	Sato et al.
	87.	8,505,440	B2	08/13/2013	Kirschner et al.
	88.	8,512,886	B2	08/20/2013	Ozanne
	89.	8,734,881	B2	05/27/2014	Yoakim et al.
	90.	8,747,775	B2	06/10/2014	Sandvick
	91.	8,794,125	B1	08/05/2014	Rivera
	92.	8,906,436	B2	12/09/2014	Nowak
	93.	8,916,220	B2	12/23/2014	Mahlich et al.
	94.	8,956,672	B2	02/17/2015	Yoakim et al.
	95.	9,049,958	B2	06/09/2015	Fischer
	96.	9,072,402	B2	07/07/2015	Ryser
	97.	9,079,705	B2	07/14/2015	Digiuni
	98.	9,150,347	B2	10/06/2015	Scheiber
	99.	9,204,751	B2	12/08/2015	Peterson
	100	9,216,854	B2	12/22/2015	Schreiber
	101	9,227,837	B2	01/05/2016	Reinmuth
	102	9,271,602	B2	03/01/2016	Beaulieu et al.
	103	9,290,317	B2	03/22/2016	Quinn et al.
	104	9,295,278	B2	03/29/2016	Nowak
	105	9,357,791	B2	06/07/2016	Fountain et al.
	106	9,359,126	B2	06/07/2016	Wong et al.
	107	9,359,128	B2	06/07/2016	Mahlich
	108	9,392,902	B2	07/19/2016	Parentes et al.
	109	9,394,101	B2	07/19/2016	Empl
	110	9,409,703	B2	08/09/2016	Krüger et al.
	111	9,409,704	B2	08/09/2016	Digiuni et al.
	112	9,415,931	B2	08/16/2016	Gerbaulet et al.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	113	9,428,328	B2	08/30/2016	Trombetta et al.
	114	9,428,329	B2	08/30/2016	Trombetta et al.
	115	9,434,525	B2	09/06/2016	Fabozzi et al.
	116	9,486,108	B1	11/08/2016	Douglas et al.
	117	9,808,112	B2	11/07/2017	Favero et al.
	118	9,969,564	B2	05/15/2018	Krüger

U.S. PATENT APPLICATION PUBLICATIONS					
Examiner Initials*	Cite No.	Publication Number	Kind Code	Publication Date	Name of Patentee or Applicant of cited Document
	1.	2001/0038204	A1	11/08/2001	Nojima et al
	2.	2001/0047724	A1	12/06/2001	Lazaris
	3.	2001/0048957	A1	12/06/2001	Lazaris et al.
	4.	2001/0181005	A1	08/09/2007	Kirschner et al.
	5.	2002/0020659	A1	02/21/2002	Sweeney
	6.	2002/0048621	A1	04/25/2002	Boyd et al.
	7.	2002/0085164	A1	07/04/2002	Stanford-Clark
	8.	2002/0088807	A1	07/11/2002	Perkovic et al.
	9.	2002/0110626	A1	08/15/2002	Buckingham et al.
	10.	2002/0148356	A1	10/17/2002	Lazaris et al.
	11.	2003/0005826	A1	01/09/2003	Sargent et al.
	12.	2003/0033938	A1	02/20/2003	Halliday et al.
	13.	2003/0039731	A1	02/27/2003	Dalton et al.
	14.	2003/0121979	A1	07/03/2003	Haens et al.
	15.	2003/0172813	A1	09/18/2003	Schifferle
	16.	2003/0222089	A1	12/04/2003	Hale
	17.	2004/0005384	A1	01/08/2004	Cai
	18.	2004/0045443	A1	03/11/2004	Lazaris et al.
	19.	2004/0089158	A1	05/13/2004	Mahlich
	20.	2004/0089602	A1	05/13/2004	Heinrich et al.
	21.	2004/0115310	A1	06/17/2004	Yoakim et al.
	22.	2004/0118295	A1	06/24/2004	Angeles
	23.	2004/0142070	A1	07/22/2004	Haen
	24.	2004/0155113	A1	08/12/2004	Urano et al
	25.	2004/0182250	A1	09/23/2004	Halliday et al.
	26.	2004/0188459	A1	09/30/2004	Halliday et al.
	27.	2005/0016383	A1	01/27/2005	Kirschner et al.
	28.	2005/0045566	A1	03/03/2005	Larkin et al.
	29.	2005/0051478	A1	03/10/2005	Karanikos et al.
	30.	2005/0061478	A1	03/24/2005	Huang
	31.	2005/0150391	A1	07/14/2005	Schifferle

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 140 of 524

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	32.	2005/0160919	A1	07/28/2005	Balkau
	33.	2005/0183581	A1	08/25/2005	Kirschner et al.
	34.	2005/0266122	A1	12/01/2005	Franceschi
	35.	2006/0010744	A1	01/19/2006	Schumacher
	36.	2006/0032427	A1	02/16/2006	Ishii et al.
	37.	2006/0084344	A1	04/20/2006	Bonneh
	38.	2006/0107841	A1	05/25/2006	Schifferle
	39.	2006/0194004	A1	08/31/2006	Niemoller at al.
	40.	2006/0228447	A1	10/12/2006	Ganesan et al.
	41.	2006/0236871	A1	10/26/2006	Ternite et al.
	42.	2007/0144355	A1	06/28/2007	Denisart et al.
	43.	2007/0148290	A1	06/28/2007	Ternite et al.
	44.	2007/0157821	A1	07/12/2007	Panesar et al.
	45.	2007/0181005	A1	08/09/2007	Kirschner et al.
	46.	2007/0181412	A1	08/09/2007	Raunig
	47.	2007/0203587	A1	08/30/2007	Erlandsson et al.
	48.	2007/0257118	A1	11/08/2007	Riley et al.
	49.	2008/0024536	A1	01/31/2008	Hirano et al.
	50.	2008/0026121	A1	01/31/2008	Mastropasqua et al.
	51.	2008/0028946	A1	02/07/2008	Kirschner et al.
	52.	2008/0038441	A1	02/14/2008	Kirschner
	53.	2008/0085356	A1	04/10/2008	Colliver et al.
	54.	2008/0116105	A1	05/22/2008	Statham
	55.	2008/0148948	A1	06/26/2008	Evers et al.
	56.	2008/0187638	A1	08/07/2008	Hansen
	57.	2008/0245236	A1	10/09/2008	Ternite et al.
	58.	2008/0299262	A1	12/04/2008	Reati
	59.	2008/0302251	A1	12/11/2008	Rijskamp et al.
	60.	2009/0004343	A1	01/01/2009	Xiong et al.
	61.	2009/0007793	A1	01/08/2009	Glucksman et al.
	62.	2009/0007796	A1	01/08/2009	Maddalena Ricotti
	63.	2009/0092711	A1	04/09/2009	Ninh et al.
	64.	2009/0126577	A1	05/21/2009	Ternite
	65.	2009/0136626	A1	05/28/2009	Mueller
	66.	2009/0211458	A1	08/27/2009	Denisart et al.
	67.	2009/0211713	A1	08/27/2009	Binacchi
	68.	2009/0223375	A1	09/10/2009	Verbeek
	69.	2009/0249961	A1	10/08/2009	Cheng
	70.	2009/0289121	A1	11/26/2009	Maeda et al.
	71.	2009/0291379	A1	11/26/2009	Masaya Oota, et al.

	72.	2009/0324788	A1	12/31/2009	Roy et al.
	73.	2009/0324791	A1	12/31/2009	Ohresser et al.
	74.	2010/0000667	A1	01/07/2010	Funnell
	75.	2010/0028495	A1	02/04/2010	Novak et al.
	76.	2010/0050880	A1	03/04/2010	Suter et al.
	77.	2010/0051532	A1	03/04/2010	Wawrla et al.
	78.	2010/0054532	A1	03/04/2010	Mitte et al.
	79.	2010/0072272	A1	03/25/2010	Angros
	80.	2010/0078480	A1	04/01/2010	Aker
	81.	2010/0108541	A1	05/06/2010	Roberto
	82.	2010/0132564	A1	06/03/2010	Ozanne et al.
	83.	2010/0147418	A1	06/17/2010	Piana
	84.	2010/0147872	A1	06/17/2010	Saxton et al.
	85.	2010/0181378	A1	07/22/2010	Hayakawa et al.
	86.	2010/0196545	A1	08/05/2010	Buffet et al.
	87.	2010/0239717	A1	09/23/2010	Yoakim et al.
	88.	2010/0239733	A1	09/23/2010	Yoakim et al.
	89.	2010/0239734	A1	09/23/2010	Yoakim,et al.
	90.	2010/0260915	A1	10/14/2010	Young
	91.	2010/0263329	A1	10/21/2010	Nash
	92.	2010/0264640	A1	10/21/2010	Lane et al.
	93.	2010/0288131	A1	11/18/2010	Kilber et al.
	94.	2010/0288133	A1	11/18/2010	Litzka et al.
	95.	2010/0303964	A1	12/02/2010	Beaulieu et al.
	96.	2010/0308061	A1	12/09/2010	Loulourgas
	97.	2011/0005399	A1	01/31/2011	Epars et al.
	98.	2011/0020500	A1	01/27/2011	Eichler et al.
	99.	2011/0033580	A1	02/10/2011	Biesheuvel et al.
	100	2011/0041702	A1	02/24/2011	Yoakim
	101	2011/0064852	A1	03/17/2011	Mann
	102	2011/0076361	A1	03/31/2011	Peterson et al.
	103	2011/0089135	A1	04/21/2011	Simon et al.
	104	2011/0097450	A1	04/28/2011	Krüger
	105	2011/0142996	A1	06/16/2011	Krüger
	106	2011/0189350	A1	08/04/2011	Van Belleghem et al.
	107	2011/0212225	A1	09/01/2011	Mariller
	108	2011/0250333	A1	10/13/2011	Ozanne
	109	2011/0250812	A1	10/13/2011	Pourdeyhimi et al.
	110	2011/0303095	A1	12/15/2011	Fu et al.
	111	2011/0308397	A1	12/22/2011	Sinot et al.
	112	2012/0006685	A1	01/12/2012	Van Engelen

	113	2012/0058226	A1	03/08/2012	Winkler et al.
	114	2012/0060697	A1	03/15/2012	Ozanne
	115	2012/0070542	A1	03/22/2012	Camera et al.
	116	2012/0070543	A1	03/22/2012	Mahlich
	117	2012/0070551	A1	03/22/2012	Mahlich
	118	2012/0097041	A1	04/26/2012	Bucher et al.
	119	2012/0097602	A1	04/26/2012	Tedford
	120	2012/0100264	A1	04/26/2012	Bucher et al.
	121	2012/0121765	A1	05/17/2012	Kamerbeek et al.
	122	2012/0123106	A1	05/17/2012	Joos
	123	2012/0126834	A1	05/24/2012	Kleinhans
	124	2012/0183657	A1	07/19/2012	Marina et al.
	125	2012/0195155	A1	08/02/2012	Gennai et al.
	126	2012/0201933	A1	08/09/2012	Dran et al.
	127	2012/0207893	A1	08/16/2012	Krüger
	128	2012/0207895	A1	08/16/2012	Rivera
	129	2012/0251668	A1	10/04/2012	Wong, et al.
	130	2012/0251672	A1	10/04/2012	Kamerbeek, et al.
	131	2012/0258210	A1	10/11/2012	Wong et al.
	132	2012/0295234	A1	11/22/2012	Rognon et al.
	133	2012/0308688	A1	12/06/2012	Peterson et al.
	134	2013/0055903	A1	03/07/2013	Deuber
	135	2013/0059039	A1	03/07/2013	Trombetta et al.
	136	2013/0064929	A1	03/14/2013	Jarisch et al.
	137	2013/0064937	A1	03/14/2013	Jarisch et al.
	138	2013/0084363	A1	04/04/2013	Krueger et al.
	139	2013/0084376	A1	04/04/2013	Fischer et al.
	140	2013/0101716	A1	04/25/2013	Beaulieu et al.
	141	2013/0122153	A1	05/16/2013	Ferrier et al.
	142	2013/0125762	A1	05/23/2013	Dogan et al.
	143	2013/0129872	A1	05/23/2013	Krueger et al.
	144	2013/0136828	A1	05/30/2013	Anghileri
	145	2013/0149424	A1	06/13/2013	Fischer
	146	2013/0156897	A1	06/20/2013	Goldstein
	147	2013/0206011	A1	08/15/2013	Ozanne et al.
	148	2013/0209618	A1	08/15/2013	Trombetta et al.
	149	2013/0209619	A1	08/15/2013	Mahlich
	150	2013/0209622	A1	08/15/2013	Fountain et al.
	151	2013/0216663	A1	08/22/2013	Dogan et al.
	152	2013/0230627	A1	09/05/2013	Hansen et al.
	153	2013/0243910	A1	09/19/2013	Krueger et al.

	154	2013/0312619	A1	11/28/2013	Spiegel et al.
	155	2013/0327223	A1	12/12/2013	Bartoli et al.
	156	2014/0001563	A1	01/03/2014	Krueger et al.
	157	2014/0004231	A1	01/02/2014	Norton et al.
	158	2014/0017359	A1	01/16/2014	Krueger et al.
	159	2014/0046126	A1	02/13/2014	Gilligan et al.
	160	2014/0127364	A1	05/08/2014	Fu et al.
	161	2014/0141128	A1	05/22/2014	Trombetta et al.
	162	2014/0141129	A1	05/22/2014	Greene
	163	2014/0161936	A1	06/12/2014	Trombetta et al.
	164	2014/0178538	A1	06/26/2014	Husband et al.
	165	2014/0196608	A1	07/17/2014	Amrein et al.
	166	2014/0220191	A1	08/07/2014	Kelly et al.
	167	2014/0224130	A1	08/14/2014	Castellani et al.
	168	2014/0230370	A1	08/21/2014	Bianchi
	169	2014/0263033	A1	09/18/2014	Fu et al.
	170	2014/0272018	A1	09/18/2014	Koller et al.
	171	2014/0287104	A1	09/25/2014	Austin et al.
	172	2014/0287105	A1	09/25/2014	Husband et al.
	173	2014/0346022	A1	11/27/2014	Keller et al.
	174	2014/0348984	A1	11/27/2014	Zeller et al.
	175	2014/0370181	A1	12/18/2014	Young et al.
	176	2015/0010680	A9	01/08/2015	Mahlich
	177	2015/0020481	A1	01/22/2015	Hodler
	178	2015/0029702	A1	01/29/2015	Foley
	179	2015/0056331	A1	02/26/2015	Rivera
	180	2015/0056340	A1	02/26/2015	Trombetta et al.
	181	2015/0056351	A1	02/26/2015	Deuber
	182	2015/0079241	A1	03/19/2015	Mahlich
	183	2015/0119220	A1	04/30/2015	Rea et al.
	184	2015/0128525	A1	05/14/2015	Bartoli et al.
	185	2015/0132441	A1	05/14/2015	Accursi
	186	2015/0157164	A1	06/11/2015	Digiuni
	187	2015/0158665	A1	06/11/2015	Krueger et al.
	188	2015/0158666	A1	06/11/2015	Krüger et al.
	189	2015/0166204	A1	06/18/2015	Rea et al.
	190	2015/0173558	A1	06/25/2015	Cross et al.
	191	2015/0175347	A1	06/25/2015	Empl
	192	2015/0201790	A1	07/23/2015	Smith et al.
	193	2015/0239652	A1	08/27/2015	Trombetta et al.
	194	2015/0246741	A1	09/03/2015	Hansen et al.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	195	2015/0274411	A1	10/01/2015	Krueger
	196	2015/0297021	A1	10/22/2015	Bugnano et al.
	197	2015/0297023	A1	10/22/2015	Hansen et al.
	198	2015/0314954	A1	11/05/2015	Empl
	199	2015/0329282	A1	11/19/2015	Bartoli et al.
	200	2015/0353275	A1	12/10/2015	Accursi
	201	2015/0375926	A1	12/31/2015	Fischer
	202	2016/0001968	A1	01/07/2016	Krüger et al.
	203	2016/0037961	A1	02/11/2016	Digiuni
	204	2016/0045060	A1	02/18/2016	Flick
	205	2016/0058234	A1	03/03/2016	Eppler et al.
	206	2016/0066591	A1	03/10/2016	Halliday et al.
	207	2016/0075506	A1	03/17/2016	Chapman et al.
	208	2016/0194146	A1	07/07/2016	Schelch et al.
	209	2016/0207696	A9	07/21/2016	Trombetta et al.
	210	2016/0242594	A1	08/25/2016	Empl et al.
	211	2016/0251150	A1	09/01/2016	Macchi et al.
	212	2016/0325921	A1	11/10/2016	Empl
	213	2016/0332759	A1	11/17/2016	Trombetta et al.
	214	2016/0340110	A1	11/24/2016	Trombetta et al.
	215	2017/0020329	A1	01/26/2017	Douglas et al.
	216	2017/0027374	A1	02/02/2017	Smith et al.
	217	2019/0359418	A1	11/28/2019	Kruger

FOREIGN PATENT DOCUMENTS							
Examiner Initial*	Cite No.	Foreign Document Number	Country Code	Kind Code	Publication Date	Name of Patentee or Applicant of cited Document	T[5]
	1.	2399283 (also published as US 6,589,577)	CA	C	05/01/2007	Lazaris et al.	
	2.	2399290 (also published as US 6,607,762)	CA	C	01/10/2006	Lazaris et al.	
	3.	2436389 (also published as US 6,861,086)	CA	A1	08/22/2002	Buckingham et al.	
	4.	2531544 (also published as US 7,946,217)	CA	C	05/01/2012	Favre et al.	

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 145 of 524

	5.	2661921 (also published as US 8,512,886)	CA	A1	03/06/2008	Ozanne	
	6.	2662069 (also published as US 8,039,029)	CA	C	01/08/2013	Ozanne	
	7.	2662071 (also published as US 8,491,948)	CA	C	07/05/2011	Ozanne et al.	
	8.	2763746 (also published as US 8,114,461)	CA	A1	03/11/2010	Perlman et al.	
	9.	2784752 (also published as US 9,204,751)	CA	C	06/23/2011	Peterson	
	10.	2785843 (also published as US 2013/0156897)	CA	A1	02/10/2013	Goldstein	
	11.	2788283 (also published as US 9,428,328)	CA	A1	03/01/2013	Trombetta et al.	
	12.	2810237 (also published as US 8,361,527)	CA	A1	03/08/2012	Winkler et al.	
	13.	2832794 (also published as US 2014/0127364)	CA	C	03/22/2016	Fu et al.	
	14.	2833096 (also published as US 2014/0141128)	CA	C	05/31/2016	Fu et al.	
	15.	2866119 (also published as US 2015/0020481	CA	A1	09/19/2013	Hodler	
	16.	2872667 (also published as US 2015/0157164)	CA	A1	11/21/2013	Digiuni et al.	
	17.	2874025 (also published as US 2015/0119220)	CA	A1	12/27/2013	Rea et al.	
	18.	2877090 (also published as US 9,409,704)	CA	A1	01/09/2014	Digiuni et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	19.	2886299 (also published as US 9,969,564)	CA	A1	04/03/2014	Krüger	
	20.	2888658 (also published as US 2014/0161936)	CA	C	06/12/2014	FU et al.	
	21.	2898173 (also published as US 2015/0353275)	CA	A1	08/07/2014	Accursi	
	22.	2901582 (also published as US 2016/0075506)	CA	A1	11/20/2014	Chapman et al.	
	23.	2902231	CA	A1	08/28/2014	Trombetta et al.	
	24.	101646613 (also published as US 2001/0181005)	CN	A	02/10/2010	Kirschner et al.	
	25.	102741136 (also published as US 2011/0064852)	CN	A	10/17/2012	Torsten	
	26.	104334473 (also published as US 2015/0132441)	CN	A	02/04/2015	Accursi	
	27.	1207866	DE	B	12/23/1965	Bentz	X
	28.	1221960	DE	B	07/28/1966	Bentz &Sohn Melitta	X
	29.	3432339	DE	A1	03/13/1986	Gesen et al.	X
	30.	69615001 (also published as US 5,948,455)	DE	T2	03/21/2002	Yoakim et al.	
	31.	102006004329	DE	A1	08/09/2007	Martinez et al.	X
	32.	102010027485	DE	A1	01/19/2012	Krueger	X
	33.	102010034206	DE	A1	02/16/2012	Eppler	X
	34.	102011010534	DE	A1	08/09/2012	Krüger et al.	
	35.	102011115833 (also published as US 9,409,703)	DE	A1	04/18/2013	Krüger et al.	
	36.	102012110446	DE	A1	01/02/2014	Krüger et al.	X
	37.	102014018470	DE	A1	06/16/2016	Heimann et al.	X
	38.	202006003115	DE	U1	05/11/2006	Unknown	X
	39.	202009014945 (also published as US 9,072,402)	DE	U1	09/23/2010	Ryser	

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 147 of 524

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	40.	202010007919 (also published as US 2013/0209619)	DE	U1	11/11/2010	Mahlich	
	41.	0224297 (also published as US 4,860,645)	EP	A1	06/03/1987	Van Der Lijn	
	42.	569230 (also published as US 5,194,553)	EP	A1	11/10/1993	Freeburne et al.	
	43.	1273528	EP	A1	01/08/2003	Yoakim et al.	X
	44.	1722398 (also published as US 8,101,928)	EP	A1	11/15/2006	Downer et al.	
	45.	0244339 (also published as US 4,676,482)	EP	A1	11/04/1987	Reece et al.	
	46.	0455337	EP	A1	11/06/1991	Bentley et al.	
	47.	0468078 (also published as US 5,242,702)	EP	A1	01/29/1992	Fond	
	48.	0468079	EP	A1	01/29/1992	Fond	
	49.	0638486	EP	B1	10/23/1996	Gibbs et al.	
	50.	0656224 (also published as US 5,601,716)	EP	A1	06/07/1995	Heinrich et al.	
	51.	0859467 (also published as US 5,917,165)	EP	A1	08/19/1998	Platt et al.	
	52.	0923865 (also published as US 6,451,332)	EP	A2	06/23/1999	Tanaka et al.	
	53.	1129623	EP	A1	09/05/2001	Diaz	
	54.	1221418 (also published as US 2002/0088807)	EP	A1	07/10/2002	Perkovic et al	
	55.	1344722 (also published as US 7,543,527)	EP	A1	09/17/2003	Schifferle	
	56.	1344724	EP	A1	09/17/2003	Hale	
	57.	1363501 (also published as US 2002/0110626)	EP	A2	11/26/2003	Buckingham	

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 148 of 524

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	58.	1471012	EP	A2	10/27/2004	Tuens	
	59.	1555219 (also published as US 7,552,672)	EP	A1	07/20/2005	Schifferle	
	60.	1559351 (also published as US 2005/0160919)	EP	A2	08/03/2005	Balkau	
	61.	1586534 (also published as US 2008/0148948)	EP	A1	10/19/2005	Evers et al.	
	62.	1710173 (also published as US 2006/0236871)	EP	A1	10/11/2006	Ternite et al.	
	63.	1772398	EP	A1	04/11/2007	Van Belleghem	
	64.	1792850 (also published as US 2007/0148290)	EP	B1	06/06/2007	Ternite et al.	
	65.	1796516 (also published as US 8,109,200)	EP	A2	06/20/2007	Hansen	
	66.	1849718	EP	A1	10/31/2007	Rubino	
	67.	1882431 (also published as US 8,088,423)	EP	B1	04/28/2010	Ohresser et al.	
	68.	1882432 (also published as US 2009/0324791)	EP	B1	01/30/2008	Ohresser et al	
	69.	1892199	EP	A1	02/27/2008	Ternite	X
	70.	1974638 (also published as US 2008/0024536)	EP	A1	10/01/2008	Ternite et al.	
	71.	2012994	EP	B1	07/11/2012	Abegglen et al.	
	72.	2158829 (also published as US 2010/0050880)	EP	A1	03/03/2010	Suter et al.	
	73.	2218653	EP	A1	08/18/2010	Wons UWE	X
	74.	2230195 (also published as US 8,734,881)	EP	A1	09/22/2010	Yoakim et al.	
	75.	2239211 (also published as US 8,257,766)	EP	A1	10/13/2010	Yoakim et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	76.	2284102	EP	A1	02/16/2011	Schulte et al.	
	77.	2287090 (also published as US 2011/0041702)	EP	A1	02/23/2011	Yoakim	
	78.	2364930 (also published as US 8,956,672)	EP	A2	09/14/2011	Yoakim et al.	
	79.	2384133 (also published as US 2011/0250333)	EP	B1	11/09/2011	Ozanne	
	80.	2412645	EP	A1	02/01/2012	Hiridjee	X
	81.	2444339 (also published as US 2013/0216663)	EP	A1	04/25/2012	Dogan, et al.	
	82.	2484505 (also published as US 2012/0195155)	EP	A2	08/08/2012	Gennai et al.	
	83.	2537778	EP	A1	12/26/2012	Pineschi	
	84.	2559636 (also published as US 9,434,525)	EP	A1	02/20/2013	Fabozzi	
	85.	2809006 (also published as US 2014/0346022)	EP	A1	12/03/2014	Keller et al.	
	86.	2957525 (also published as US 2019/0359418)	EP	A1	12/23/2015	Kruger	
	87.	0272922	EP	A2	06/29/1988	Bentley et al.	
	88.	0512468	EP	A1	11/11/1992	Fond	
	89.	1882432	EP	A1	01/30/2008	Ohresser et al.	
	90.	2556323	FR	A1	06/14/1985	Munier Rene	
	91.	2912124	FR	A1	08/08/2008	Blanc et al.	
	92.	2963332 (also published as US 2013/0122153)	FR	A1	02/03/2012	Ferrier et al.	
	93.	1402799	GB	A	08/13/1975	Battelle Memorial Institute	
	94.	2482032 (also published as US 9,357,791)	GB	A	01/18/2012	Fountain et al.	
	95.	2469874	GB	A	11/03/2010	Hansen et al.	
	96.	02289207	JP	A	11/29/1990	Ozasa et al.	abs.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	97.	2001-017094	JP	A	01/23/2001	Toshiyuki et al.	X
	98.	2001-082699	JP	A	03/30/2001	Suzuki et al	
	99.	2001-250161	JP	A	09/14/2001	Takayuki et al.	X
	100.	2002-274000	JP	A	09/25/2002	DAINIPPON PRINTING CO LTD	
	101.	2002-347852	JP	A	12/04/2002	SHOWA DENKO PLASTIC PROD CO	
	102.	2003-235733	JP	A	08/26/2003	Mitsuaki	X
	103.	2003-265320 (also published as US 2003/0172813)	JP	A	09/24/2003	Schifferle	
	104.	2003-522567 (also published as US 2003/0033938)	JP	A	07/29/2003	Halliday et al.	
	105.	2004-097015	JP	A	04/02/2004	Matsuura	X
	106.	2004-533305 (also published as US 2004/0115310)	JP	A	11/04/2004	Unknown	
	107.	2005-199070 (also published as US 2005/0150391)	JP	A	07/28/2005	Schifferle	
	108.	2006-510682 (also published as US 7,408,094)	JP	A	03/30/2006	Little et al.	
	109.	2007-522856 (also published as US 7,673,558)	JP	A	08/16/2007	Panesar et al.	
	110.	2010-500199 (also published as US 2010/0000667)	JP	A	01/07/2010	Funnell	
	111.	2010-507418 (also published as US 2010/0051532)	JP	A	03/11/2010	Wawrla et al.	
	112.	2010-516364 (also published as US 2013/0206011)	JP	A	05/20/2010	Ozanne et al.	
	113.	2010-528635 (also published as US 9,277,837)	JP	A	08/26/2010	Yoakim et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	114.	2013-538609 (also published as US 9,049,958)	JP	A	10/17/2013	Fischer	
	115.	2015-085086	JP	A	05/07/2015	Hirota et al.	X
	116.	H01-233688	JP	A	09/19/1989	TOKYU CAR CORP	
	117.	H0394377	JP	A	04/19/1991	Toshiaki	
	118.	H04176311	JP	A	06/24/1992	Moji et al.	X
	119.	H06510682 (also published as US 5,460,078)	JP	A	12/01/1994	Weller	
	120.	S62-130649	JP	A	06/12/1987	Shiengu et al.	X
	121.	S62-168512	JP	A	07/24/1987	Yoosuto et al.	
	122.	200435370	KR	Y1			
	123.	1020050107747	KR	A	11/15/2005	Halliday et al.	
	124.	596919 (also published as US 2010/0303964)	NZ	A	11/29/2013	Beaulieu et al.	
	125.	01/99047 (also published as US 2003/0121979)	WO	A	12/27/2001	Haens et al.	
	126.	02/28241	WO	A	04/11/2002	Boyd	
	127.	02/078498 (also published as US 2004/0089158)	WO	A1	10/10/2002	Mahlich	
	128.	2004/065258	WO	A2	08/05/2004	Gomez et al.	
	129.	2004/082390 (also published as US 2006/0228447)	WO	A1	09/30/2004	Ganesan et al.	
	130.	2005/044067	WO	A1	05/19/2005	Ruchonnet	
	131.	2005/047111	WO	A1	05/26/2005	Rapparini	
	132.	2005/079638 (also published as US 2007/0157821)	WO	A1	09/01/2005	Panesar	
	133.	2006/121520 (also published as US 2005/0183581)	WO	A2	11/16/2006	Kirschner et al.	
	134.	2007/042414 (also published as US 7,981,451)	WO	A1	04/19/2007	Ozanne	
	135.	2007/042486	WO	A2	04/19/2007	Van Belleghem	
	136.	2007/122144	WO	A1	11/01/2007	Blanc et al.	X

	137.	2008/011913 (also published as US 2008/0026121)	WO	A1	01/31/2008	Mastropasqua et al.	
	138.	2008/132571	WO	A1	11/06/2008	Pineschi	
	139.	2008/090122 (also published as US 2013/0209620)	WO	A2	07/31/2008	Ozanne et al.	
	140.	2008/107645 (also published as US2010/0196545)	WO	A2	09/12/2008	Buffet et al.	
	141.	2008/121489 (also published as US 8,505,440)	WO	A1	10/09/2008	Kirschner et al.	
	142.	2008/126045 (also published as US 2010/0108541)	WO	A1	10/23/2008	Degli	
	143.	2009/084061	WO	A1	07/09/2009	Nani	
	144.	2009/114119 (also published as US 2010/0028495)	WO	A1	09/17/2009	Novak et al.	
	145.	2009/112291	WO	A1	09/17/2009	Eichler et al.	
	146.	2009/115475 (also published as US 2011/0005399)	WO	A1	09/24/2009	Epars et al.	
	147.	2009/130311 (also published as US 2011/0189350)	WO	A1	10/29/2009	Van Belleghem et al.	
	148.	2009/153161	WO	A1	12/23/2009	Ofenhitzer et al.	X
	149.	2010/007633	WO	A1	01/21/2010	Quadrelli	
	150.	2010/013146	WO	A3	04/29/2010`	Cometto	
	151.	2010/026053	WO	A1	03/11/2010	Denisart et al.	
	152.	2010/041179 (also published as US 2011/212225)	WO	A2	04/15/2010	Mariller	
	153.	2010/076761	WO	A1	07/08/2010	Giua et al.	
	154.	2010/076048	WO	A1	07/08/2010	Campiche	
	155.	2010/085824	WO	A1	08/05/2010	Eder et al.	
	156.	2010/118545	WO	A2	10/21/2010	Deuber	X
	157.	2010/137952 (also published as US 2012/0121765)	WO	A1	12/02/2010	Kamerbeek et al.	

	158.	2010/137960 (also published as US 9,359,126)	WO	A1	12/02/2010	Wong et al.	
	159.	2010/138563 (also published as US 2013/0101716)	WO	A1	11/29/2010	Beaulieu et al.	
	160.	2011/000723 (also published as US 2012/0100264)	WO	A2	01/06/2011	Bucher et al.	
	161.	2011/012501 (also published as US 2012/0126834)	WO	A1	02/03/2011	Kleinhans	
	162.	2011/047836	WO	A1	04/28/2011	Rapparini	
	163.	2011/141532	WO	A1	11/17/2011	Jarisch et al.	
	164.	2011/147491 (also published as US 2013/0084376)	WO	A1	12/01/2011	Fischer et al.	
	165.	2011/147553 (also published as US 2013/0149424)	WO	A1	12/01/2011	Fischer	
	166.	2011/147591 (also published as US 2013/0084363)	WO	A1	12/01/2011	Krueger et al.	
	167.	2012/000878 (also published as US 9,392,902)	WO	A2	01/05/2015	Parentes et al.	
	168.	2012/007257 (also published as US 9,290,317)	WO	A1	01/19/2012	Quinn et al.	
	169.	2012/009668 (also published as US 2013/0209622)	WO	A1	01/19/2012	Fountain et al.	
	170.	2012/019902 (also published as US 9,808,112)	WO	A1	02/16/2012	Favero et al.	
	171.	2012/038063 (also published as US 8,916,220)	WO	A1	03/29/2012	Mahlich	
	172.	2012/080928 (also published as US 2013/0327223)	WO	A1	06/21/2012	Bartoli et al.	

	173.	2012/100977 (also published as US 9,415,931)	WO	A1	08/02/2012	Gerbaulet et al.	
	174.	2012/104760	WO	A1	08/09/2012	Bartoli et al.	
	175.	2012/135204 (also published as US 2014/0348984)	WO	A1	10/04/2012	Zeller et al.	
	176.	2012/175985 (also published as US 2014/0287104)	WO	A1	12/27/2012	Peter et al.	
	177.	2013/008012 (also published as US 2014/0220191)	WO	A2	01/17/2013	Kelly et al.	
	178.	2013/032330 (also published as US 2014/0178538)	WO	A1	03/07/2013	Husband et al.	
	179.	2013/043048 (also published as US 2014/0287105)	WO	A1	03/28/2013	Husband et al.	
	180.	2013/136209 (also published as US 2016/0037961)	WO	A1	09/19/2013	Digiuni	
	181.	2013/171663 (also published as US 2015/0128525)	WO	A1	11/21/2013	Bartoli et al.	
	182.	2013/189923 (also published as US 2015/0175347)	WO	A1	12/27/2013	Empl	
	183.	2014/001563 (also published as US 2015/0158666)	WO	A1	01/03/2014	Krueger et al.	
	184.	2014/001564 (also published as US 2015/0158665)	WO	A1	01/03/2014	Krueger et al.	
	185.	2014/006048 (also published as US 2015/0173558)	WO	A2	01/09/2014	Cross et al.	
	186.	2014/090567 (also published as US 20150314954)	WO	A1	06/19/2014	Empl	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	187.	2014/102702 (also published as US 2015/0329282)	WO	A1	07/03/2014	Bartoli et al	
	188.	2014/127863 (also published as US 2015/0375926)	WO	A1	08/28/2014	Fischer	
	189.	2015/028425 (also published as US 2016/0194146)	WO	A2	03/05/2015	Schelch et al.	
	190.	2015/062703 (also published as US 2016/0251150)	WO	A1	05/07/2015	Macchi et al.	
	191.	2015/075584	WO	A1	05/28/2015	Accursi	
	192.	2015/107484	WO	A1	07/23/2015	Rivola et al.	
	193.	2016/077916	WO	A1	05/26/2016	Hanneson et al.	
	194.	98/51396	WO	A1	11/19/1998	Timmermann et al.	X
	195.	99/58035 (also published as US 5,895,672)	WO	A1	11/18/1999	Cooper	
	196.	2004/065258	WO	A2	08/05/2004	Gomez et al.	
	197.	2007/114685	WO	A1	10/11/2007	Verbeek	
	198.	2010/125326	WO	A1	11/04/2010	Hansen et al.	
	199.	2010/125329	WO	A1	11/04/2010	Hansen et al.	

NON-PATENT LITERATURE DOCUMENTS

Examiner Initial*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1.	Rawle, Alan, "Particle Sizing – An Introduction" 2012; Silver Colloids, Edition or volume on Colloidal Silver	
	2.	Decision on Appeal before the Patent Trial and Appeal Board for Appeal No. 2017-007984 dated May 10, 2019.	
	3.	Notice of Opposition regarding EP3023362 filed July 30, 2018.	
	4.	Search Report for CN201180035944 mailed September 25, 2014.	
	5.	First Office Action for Application No. CN201180035944 mailed October 10, 2014.	
	6.	Second Office Action for Application No. CN201180035944 mailed April 21, 2015.	
	7.	Third Office Action for Application No. CN201180035944 mailed November 12, 2015.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	8.	Notification to Grant Patent for Application No. CN201180035944 mailed May 25, 2016.	
	9.	Search Report for CN201610644043 mailed May 11, 2018	
	10.	First Office Action for CN201610644043 mailed May 28, 2018	
	11.	Search Report and Written Opinion for PCT/EP2011/003677 mailed July 22, 2011.	
	12.	Search Report and Written Opinion for Application No. EP 15174333.3 dated November 3, 2015. (EP2952453)	
	13.	Office Action for Application No. EP 15174333.3 dated August 16, 2016. (EP2952453)	
	14.	Search Report and Written Opinion for Application No. EP 15173071.0 dated November 5, 2015. (EP2957525)	
	15.	Office Action for Application No. EP 15173071.0 dated November 5, 2015. (EP2957525)	
	16.	Third party observation for Application No. EP2957525 dated September 30, 2016.	
	17.	Search Report and Written Opinion for Application No. EP 15197332.8 dated April 12, 2016. (EP3023361)	
	18.	First Office Action for Application No. EP 15197332.8 dated January 19, 2017. (EP3023361)	
	19.	Second Office Action for Application No. EP 15197332.8 dated May 24, 2017. (EP3023361)	
	20.	Third Office Action for Application No. EP 15197332.8 dated November 2, 2017. (EP3023361)	
	21.	Search Report and Written Opinion for Application No. EP 15197336.9 dated April 4, 2016 (EP3023362)	
	22.	Search Report and Written Opinion for Application No. EP 15197338.5 dated April 7, 2016 (EP3023363)	
	23.	Search Report for Application No. JP 2013-520009 dated November 25, 2014. (JP5946828)	
	24.	First Office Action for Application No. JP 2013-520009 dated December 10, 2014. (JP5946828)	
	25.	Second Office Action for Application No. JP 2013-520009 dated August 19, 2015. (JP5946828)	
	26.	Decision to Grant for Application No. JP 2013-520009 dated April 28, 2016. (JP5946828)	
	27.	Search Report for Application No. JP 2016-032427 dated November 21, 2016. (JP2016163691)	
	28.	First Office Action for Application No. JP 2016-032427 dated November 28, 2016. (JP2016163691)	
	29.	Second Office Action for Application No. JP 2016-032427 dated June 20, 2017. (JP2016163691)	

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 157 of 524

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	30.	Search Report for Application No. JP 2017-034769 dated November 15, 2017. (JP2017148511)	
	31.	Office Action for Application No. JP 2017-034769 dated January 30, 2018. (JP2017148511)	
	32.	Office Action for Application No. KR 10-2013-7004356 dated April 5, 2018. (KR20137004356)	
	33.	Office Action for Application No. 10-2017-7019956 dated April 10, 2018. (KR20170087528)	
	34.	Opposition Request against European Patent No. EP 3 023 362 dated July 01, 2019.	
	35.	Notice of Opposition for Application No. 19165223.9 dated February 24, 2020.	
	36.	Notice of Opposition for European Patent No. EP3521208 granted February 19, 2020.	
	37.	Opposition against European Patent No. EP3521208; Application No. 19165223.9 granted February 19, 2020.	
	38.	Communication of Notice of Opposition dated January 27, 2020 for Application No. 19165219.7	
	39.	English Translation of JP2003235733	
	40.	Wikipedia definition of "Deep Drawing" http://en.wikipedia.org/wiki/Deep_Drawing	
	41.	Wikipedia definition of "Tiefziehen" http://de.wikipedia.org/wiki/Tiefziehen	
	42.	Wikipedia definition of "Stamping (metalworking)" https://en.wikipedia.org/wiki/Stamping_(metalworking)	
	43.	Wikipedia definition of "Barcode"	
	44.	Regulation (EC) No 1935/2004 of the European Parliament and of the Council of 27 October 2004" Official of the European Union	
	45.	Brief Communication for Opposition Proceedings for Appl. 15197336.9, dated March 19, 2020	
	46.	Oral Letter regarding the opposition Procedure dated March 16, 2020 for EP 3023362	
	47.	Opposition oral letter regarding the opposition procedure dated March 16, 2020 for EP 023362	
	48.	Annex to the Communication Opposition Appln No. 15197336.9; 2020	
	49.	Brief Communication-Opposition Proceedings for Appl. No. 15197336.9 dated January 8, 2020	
	50.	Letter regarding Opposition Procedure for EP Patent No. 3023362 dated December 23, 2019	
	51.	Brief Communication for Appl No 15197336.9 dated October 15, 2019	

	52.	"Information technology – Automatic identification and data capture techniques – EAN/UPC bar code symbol specification" Second Edition: December 15, 2009	
	53.	Letter accompanying subsequently filed items for EP3023362, KRO-44; October 10, 2019.	
	54.	Brief Communication – Opposition Proceedings for Appl No. 15197336.9 dated July 23, 2019	
	55.	Letter accompanying subsequently filed items for EP3023362 1038-CMS-O; July 17, 2019	
	56.	Brief Communication – Opposition proceedings for Appln No. 15197336.9 dated July 12, 2019	
	57.	Opposition Procedure for EP Patent No. EP 3023362 dated July 1, 2019	
	58.	Miscellaneous requests concerning client data EPO – June 12, 2019	
	59.	Letter regarding the Opposition Procedure KRO-44/FWJPL dated March 20, 2019	
	60.	Ralf Jesse, "Barcode" Gutachten zur Frage Begriffle, Bitcode/Binacode; Patents EP 3023362; May 19, 2019	
	61.	"Information technology – Automatic identification and data capture techniques – Bar code verifier conformance specification – Part 1: Linear symbols" May 20, 2019 10:12	
	62.	"Information technology – Automatic identification and data capture techniques – Bar code print quality test Spec Linear Symbols" German Version: EN ISO/IEC 15416:2001: 1998-02	
	63.	Declaration under 27 C.F.R. for Appl No. 13/697,297; August 15, 2016	
	64.	Wikipedia "Binarcode" https://de.wikipedia.org/wiki/Binarcode	
	65.	Rosenbaum, Jessie, "Bar-Code" Theorie Lexikon Software; 2000	
	66.	Potter Mathia, "BARCODE" Euinfuhrung und Andwendungen; 1993	
	67.	Oliver Rosenbaum "Das Barcode-Lexicon" edition advanced: cbhv; 1997	
	68.	Fairley Michael "Codes and Coding Technology" LCGS, FIP3 and FLOM3: A Labels & Labeling Publication 2015	
	69.	Claims – Amended Claims with annotations-2	
	70.	Claims – 2019-05-20 Amended Claims with Annotations	
	71.	Auxiliary request during Opposition procedure – 2019-05-20	
	72.	Letter regarding opposition procedure for EP 3023362 dated March 4, 2019	
	73.	Definition of Barcode by Merriam-Webster https://www.meriam-webster.com/dictionary/barcode	
	74.	Barcode-Wikitionary "Barcode" https://de.wikitionary.org/wiki/Barcode 2018	
	75.	Strichcode – Wikipedia "Strichcode" https://de.wikiepdia.org/wiki/strichcode	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	76.	Reply of the patent proprietor to the notice of opposition 2019-02-11; Appln No. 151973366.9	
	77.	Notice of Opposition against European Patent No. EP 3023362 dated July 30, 2018	
	78.	Notice of Opposition to a European patent, Patent No. EP3023362 dated July 24, 2018.	
	79.	Specification NP-C2.03-02-SP-04-2 Membrane	
	80.	Specification NP-C2.03-01-SP-01-4 empty capsule	
	81.	Marketing brochure “Nespresso Varietäten mit 5 neuen Grand Crus”	
	82.	Photo taken in Nespresso store	
	83.	Marketing brochure "i6 Grands Crus – geschaffen um Ihre Sinne zu ilberraschen "	
	84.	RTS online article	
	85.	Invoice for various Nespresso capsules, dated May 04, 2009	
	86.	Invoice for various Nespresso capsules, dated August 10, 2009	
	87.	Invoice for various Nespresso capsules, dated December 02, 2009	
	88.	Invoice for various Nespresso capsules, dated May 18, 2009	
	89.	Invoice for various Nespresso capsules, dated October 21, 2008	
	90.	Invoice for various Nespresso capsules, dated June 24, 2009	
	91.	Invoice for various Nespresso capsules, dated May 19, 2008	
	92.	Invoice for various Nespresso capsules, dated September 10, 2008	
	93.	Invoice for various Nespresso capsules, dated February 17, 2009	
	94.	Invoice for various Nespresso capsules, dated December 22, 2008	
	95.	User manual for the Tassimo@ brewing machine	
	96.	Web article discussing the T-discs@ cartridges	
	97.	Regulation No. 817.023.21 of the EDI on consumer goods	
	98.	Regulation No.8 17.022.3 1of the EDI on the additives permitted in foodstuffs	
	99.	Regulation of the Swiss Federal Council on Foodstuffs and Consumer Goods	
	100.	"European Printing Ink Association " Guideline on Printing Inks	
	101.	leaflet on printing inks for food packages from the division “Printing Inks" of the Association of the German Paint and Printing Ink Industry	
	102.	EuPIA Exclusion List for Printing Inks and Related Products	
	103.	EuPIA Guideline on Good Manufacturing Practices for the Production of Packaging Inks formulated for use on the non-food contact surfaces of food packaging and articles intended to come into contact with food	
	104.	Commission Regulation (EC) No 2023/2006	

	105.	Council Directive 89/109/EEC relating to materials and articles intended to come into contact with foodstuffs	
	106.	Policy Statement on Packaging Inks applied to the non-food contact surface of Food Packaging of the public health committee of the council of Europe	
	107.	Nestle Guidance Note on Packaging Inks	
	108.	Council Directive on the colouring matters authorised for use in foodstuffs intended for human consumption	
	109.	Council Directive 89/107/EEC on the approximation of the laws of the Member States concerning food additives authorized for use in foodstuffs intended for human consumption	
	110.	European Parliament and Council Directive 94/36/EC on colours for use in foodstuffs	
	111.	Excerpt from the textbook "Plastics Packaging – Properties, Processing, Applications and Regulations" by Selke/Culter/Hernandez	
	112.	"Lexikon Verpackungstechnik" by Bleisch/Goldhahn/Schricker/Vogt;	
	113.	Paper titled "Aromaveranderung von vakuumverpacktem Kaffee bei unterschiedlichen Packstoffen" by Lindner-Steinert/Zou	
	114.	Paper "Die flexible Verpackung von morgen – Anforderungen an die Veredler" by Agulla/Langowski	
	115.	Excerpt from publication "Grundziige der Lebensmitteltechnik" of 2004 by Tscheuschner	
	116.	Excerpt from publication "Produkt-bkobilanz vakuumverpackter Rostkaffee" of 1999 by Diers/Langowski/Pannkoke	
	117.	3rd Party Observations in EP Patent Application No. 19 165 220.5 (3 533 726), dated June 19, 2020.	
	118.	Opposition Against EP Patent No. EP 3 023 362 dated July 13, 2020.	
	119.	Letter dated September 30, 2020 from file of US Application No. 16/517,054 (by SOCIÉTÉ DES PRODUITS NESTLÉ S.A.)	
	120.	Supplemental arguments filed by Societe des Produits Nestle S.A. in the opposition against European Patent No. EP3521209, dated January 07, 2021.	
	121.	Supplemental arguments filed by Societe des Produits Nestle S.A. in the opposition against European Patent No. EP3023362, dated January 07, 2021.	
	122.	Suggestion for Declaration of Interference dated Sept. 30, 2019	
	123.	Petition for Inter Partes Review of U.S. Patent No. 10,870,531 (IPR2021-01223), dated July 12, 2021	
	124.	Petition for Inter Partes Review of U.S. Patent No. 10,858,176 (IPR2021-01221), dated July 12, 2021	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	125.	Petition for Inter Partes Review of U.S. Patent No. 10,858,177 (IPR2021-01222), dated July 12, 2021	
	126.	Declaration of Michael Jobin, Exhibit 1003 from Petition for Inter Partes Review of U.S. Patent No. 10,858,177 (IPR2021-01222), dated July 12, 2021	
	127.	Declaration of Michael Jobin, Exhibit 1003 from Petition for Inter Partes Review of U.S. Patent No. 10,858,176 (IPR2021-01221), dated July 12, 2021	
	128.	Declaration of Michael Jobin, Exhibit 1003 from Petition for Inter Partes Review of U.S. Patent No. 10,870,531 (IPR2021-01223), dated July 12, 2021	

EXAMINER SIGNATURE			
Examiner Signature		Date Considered	
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

Electronic Acknowledgement Receipt

EFS ID:	43365038
Application Number:	17385109
International Application Number:	
Confirmation Number:	6609
Title of Invention:	PORTION CAPSULE HAVING AN IDENTIFIER
First Named Inventor/Applicant Name:	Marc Krüger
Customer Number:	25215
Filer:	Paul J. Palinski/BECKY BALLARD
Filer Authorized By:	Paul J. Palinski
Attorney Docket Number:	1859.029USC11
Receipt Date:	28-JUL-2021
Filing Date:	
Time Stamp:	15:03:20
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	IDS_1859_029USC11_KRU0022_WO_US_T12.pdf	597609 a3eb20ce5219b4f7ec3511e5e66bc047978ea586	no	28

Warnings:

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 163 of 524

Information:	
This is not an USPTO supplied IDS fillable form	
Total Files Size (in bytes):	597609

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Filed via EFS @ USPTO.gov on July 29, 2021
Practitioner's Docket No. 1859.029USC11 (KRU0022-WO-US-T12)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Marc KRÜGER	Art Unit: TBA
Application No.: 17/385,109	Examiner: TBA
Filed: July 26, 2021	Conf. No.: 6609

For: PORTION CAPSULE HAVING AN IDENTIFIER

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

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Applicant submits this statement in accordance with its duty of disclosure under 37 C.F.R. §§ 1.56, 1.97, and 1.98. The submission made herewith is in no way intended as an admission that the cited items constitute material prior art or otherwise would render the claims unpatentable in any way. The submission also is in no way intended to substitute for the Examiner's own independent investigation.

Copies of foreign patent documents and non-patent literature together with a listing on form PTO/SB/08a are submitted herewith. Applicant includes English translations from the European Patent Office and/or Japanese Patent Office websites and are subject to the caveat expressed on the translations. Applicant respectfully solicits the Examiner's consideration of the cited references and entry thereof into the record of this application.

This Information Disclosure Statement is being submitted prior to the mailing of a first Office Action or Notice of Allowance. No fees are believed to be due; however, if any fee is due with the filing of this paper, please charge the amount to Deposit Account 50-1097.

Date: July 29, 2021

/Paul J. Palinski/

Paul J. Palinski

Customer No. 25215

Reg. No. 71,080
Attorney for Applicant
The Dobrusin Law Firm, P.C.
29 W. Lawrence Street - Suite 210
Pontiac, MI 48342
(248) 292-2920

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc KRÜGER
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

FOREIGN PATENT DOCUMENTS							
Examiner Initial*	Cite No.	Foreign Document Number	Country Code	Kind Code	Publication Date	Name of Patentee or Applicant of cited Document	T[5]
	1.	200435370	KR	Y1	01/18/2007	Unknown	X

NON-PATENT LITERATURE DOCUMENTS			
Examiner Initial*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1.	Petition for Inter Partes Review of U.S. Patent No. 10,870,531 (IPR2021-01223), dated July 12, 2021.	
	2.	Petition for Inter Partes Review of U.S. Patent No. 10,858,176 (IPR2021-01221), dated July 12, 2021.	
	3.	Petition for Inter Partes Review of U.S. Patent No. 10,858,177 (IPR2021-01222), dated July 12, 2021.	
	4.	Declaration of Michael Jobin, Exhibit 1003 from Petition for Inter Partes Review of U.S. Patent No. 10,858,177 (IPR2021-01222), dated July 12, 2021.	
	5.	Declaration of Michael Jobin, Exhibit 1003 from Petition for Inter Partes Review of U.S. Patent No. 10,858,176 (IPR2021-01221), dated July 12, 2021.	
	6.	Declaration of Michael Jobin, Exhibit 1003 from Petition for Inter Partes Review of U.S. Patent No. 10,870,531 (IPR2021-01223), dated July 12, 2021.	

EXAMINER SIGNATURE			
Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Espacenet

KR200435370Y1 Apparatus for detecting remaining thread of a sewing machine

Applicants:

Inventors:

Classifications:

IPC ***D05B59/00; D05B59/02;***

CPC **D05B59/02 (KR); G06K7/10821 (KR);**

Priorities: KR20060024428U 2006-09-11

Application: KR200435370Y1 2006-09-11

Publication: KR200435370Y1 2007-01-18

Published as: KR200435370Y1

Apparatus for detecting remaining thread of a sewing machine

Abstract

본 고안에 의한 잔사 감지가 가능한 밑실 공급 장치(100)는 밑실(L)이 감기는 보빈(150)의 플랜지(153, 155) 또는 접시 스프링(160)에 바코드 표시부(170)를 형성하고, 상기 바코드 표시부(170)는 바코드 리더기(180)에 의해 감지되도록 함으로써, 밑실(L)이 소거되어, 상기 바코드 표시부(170)가 노출되면 자연히 바코드 리더기(180)에 의해 감지되도록 하여, 잔사의 양을 용이하게 예감할 수 있으므로 제품의 불량을 방지할 수 있고, 작업 효율의 향상이 가능한 고안에 관한 것이다.밑실 공급 장치, 바코드

Patent Translate
Powered by EPO and Google

Notice

This translation is machine-generated. It cannot be guaranteed that it is intelligible, accurate, complete, reliable or fit for specific purposes. Critical decisions, such as commercially relevant or financial decisions, should not be based on machine-translation output.

CLAIMS KR200435370Y1

1.

The outer kiln 120 is mounted on the drive shaft and rotates,

The inner kiln 130 is accommodated inside the outer kiln 120 and rotates together, and the stud 135 protrudes forward (in the kiln cap direction) from the bottom 133 formed in the drive shaft 110 direction;

A kiln cap 140 formed so that the stud 135 of the inner kiln 130 is inserted and accommodated in the inner kiln 130 to cover the inner kiln 130,

A bobbin 150 having flanges 153 and 155 at both ends of the tubular shaft tube 151 on which the kiln cap 140 is accommodated and rotated and the lower thread L is wound;

In the lower thread supply device 100 comprising a disc spring 160 interposed between the bobbin 150 and the hook cap 140 to press the bobbin 150 in the axial direction to prevent the bobbin 150 from swinging. ;

A barcode display unit 170 which is a thin plate-shaped ring attached to the inner surface 154 of the flange 153 formed at the rear of the bobbin 150 and marked with a circular barcode;

A through hole 149 formed to correspond to the through hole 156 formed in the flange 153 of the bobbin 150 in the front portion 147 opposite to the bobbin 150 in the kiln cap 140;

a through hole 165 formed to correspond to the through hole 156 formed in the flange 153 of the bobbin 150 in the disc spring 160;

Lower thread supply capable of detecting residue, characterized in that it consists of a barcode reader 180 fixed to the sewing machine so as to detect the barcode display unit 170 in front of the through hole 149 of the kiln cap 140 and generate an alarm sound. Device.

2.

The outer kiln 120 is mounted on the drive shaft and rotates,

The inner kiln 130 is accommodated inside the outer kiln 120 and rotates together, and the stud 135 protrudes forward (in the kiln cap direction) from the bottom 133 formed in the drive shaft 110 direction;

A kiln cap 140 formed so that the stud 135 of the inner kiln 130 is inserted and accommodated in the inner kiln 130 to cover the inner kiln 130,

A bobbin 150 having flanges 153 and 155 at both ends of the tubular shaft tube 151 on which the kiln cap 140 is accommodated and rotated and the lower thread L is wound;

In the lower thread supply device 100 comprising a disc spring 160 interposed between the bobbin 150 and the hook cap 140 to press the bobbin 150 in the axial direction to prevent the bobbin 150 from swinging.

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 168 of 524

a barcode display unit 170 attached to the inner surface 163 of the disc spring 160 and formed of a thin plate-shaped ring on which a circular barcode is displayed;

The bottom portion 133 has a through hole 139 formed so that the laser of the barcode reader 180 passes,

A hole-shaped opening 125 formed so that the through hole 139 of the inner kiln 130 is exposed at the rear of the outer kiln 120,

A concavely formed reflector 190 that is attached to the opening 125 with an angle adjusted so as to be opposed to the through hole 139 of the inner kiln 130 to reflect the barcode display unit 170 upward;

A lower thread supply device capable of detecting residue, characterized in that it comprises a barcode reader (180) fixed to a sewing machine so as to irradiate a laser to the reflector (190).

3.

The method of claim 2,

The lower thread supply device capable of detecting residue, characterized in that the barcode display unit 170 is formed on the inner surface 157 of the flange 155 formed in the front of the bobbin 150.

4.

The method according to any one of claims 1 to 3,

The barcode display unit 170 is a lower thread supply device capable of detecting residue, characterized in that it is formed by printing a barcode on the bobbin 150 or the plate spring 160.

Patent Translate
Powered by EPO and Google

Notice

This translation is machine-generated. It cannot be guaranteed that it is intelligible, accurate, complete, reliable or fit for specific purposes. Critical decisions, such as commercially relevant or financial decisions, should not be based on machine-translation output.

DESCRIPTION KR200435370Y1

Lower thread supply device capable of detecting residues {Apparatus for detecting remaining thread of a sewing machine}

[1]

1 is a cross-sectional view showing a lower thread supply device to which the prior art is applied.

[2]

Figure 2 is an exploded perspective view showing a lower thread supply device to which the prior art is applied.

[3]

3 is a cross-sectional view illustrating an example in which a barcode reader is installed in front of a lower thread supply device capable of detecting residues to which the technology of the present invention is applied.

[4]

4 is a perspective view illustrating an example in which a barcode display unit is formed on the bobbin as shown in FIG. 3;

[5]

5 is a perspective view showing an example of a thin plate-shaped ring so that the barcode display unit configured in the lower thread supply device capable of detecting residue to which the technology of the present invention is applied can be attached.

[6]

6 is a cross-sectional view illustrating a lower thread supply device capable of detecting residue to which the technology of the present invention is applied, configured to detect a barcode display unit formed on a plate spring by a reflector.

[7]

7 is a cross-sectional view illustrating a lower thread supply device capable of detecting residue to which the technology of the present invention is applied, configured to detect a barcode display unit formed on a bobbin by a reflector.

[8]

Explanation of symbols used in main parts of the drawing

[9]

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 170 of 524

110: Drive shaft 120: outer kiln

[10]

130: Deep kiln 139, 156, 158: through hole

[11]

140: Gama cap 147: front part

[12]

149, 165: Through hole 150: bobbin

[13]

153, 155: Flange 160: disc spring

[14]

170: Barcode display unit 180: barcode reader

[15]

L: lower thread

[]

The present invention relates to a lower thread supplying device capable of detecting residues, and more particularly, to a lower thread supplying device capable of detecting residues configured to easily detect residues by a barcode reader by forming a barcode display unit on a bobbin or a disc spring. 1 is a cross-sectional view showing a lower thread supply device to which a conventional technique is applied, and FIG. 2 is an exploded perspective view showing a lower thread supply device to which a conventional technique is applied. In general, the lower thread supply device 1 is mounted under the table of the sewing machine and is mounted up and down As a sewing operation by supplying the lower thread (L) to the upper thread supplied by the moving needle, a rotating bobbin (50) is built in, so that the lower thread (L) wound around the bobbin (50) is easy. In order to be discharged to the outside, the configuration, operation examples and problems of the prior art will be described in more detail as follows. The lower thread supply device 1 has an outer kiln 20 mounted on the drive shaft 10 and rotated, and a floor with studs 35 formed in the drive shaft 10 direction while being accommodated inside the outer kiln 20 and rotating together. The inner kiln 30 protrudes from the part 33 to the front (in the direction of the kiln cap) and has a discharge hole 37 through which the lower thread L is discharged, and the stud 35 of the inner kiln 30 is inserted. The kiln cap 40 is accommodated in the kiln 30 to cover the inner kiln 30, and the kiln cap 40 is formed with a discharge hole 43 so that the lower thread L is discharged, and the kiln cap 40 is accommodated and rotates to rotate the lower thread. (L) is interposed between the bobbin 50 and the bobbin 50 and the kiln cap 40 having flanges 53 and 55 at both ends of the tubular shaft tube 51 on which the bobbin 50 is wound in the axial direction. It is composed of a disc spring (60) that prevents the bobbin (50) from swinging by pressing it. The kiln cap 40 is configured in a container shape and a tubular shaft tube 45 protrudes in the axial direction therein, whereby the shaft tube 51 of the bobbin 50 is fitted on the outside of the shaft tube 45 and , the stud 35 is inserted through the inner hole formed in the interior of the shaft tube 45 is configured not to fall out. Looking at the operation example of the prior art according to the above configuration, the outer kiln 20 is rotated by the rotation of the driving shaft 10, the upper thread is hung to form a snare around the outer kiln 20, and the lower thread (L) is a bobbin The sewing operation is performed by being released from the 50 and discharged through the discharge holes 37 and 43 of the inner kiln 30 and the kiln cap 40 and hung up on the snare.

According to the prior art according to the configuration and operation example, the lower thread supply device 1 is built under the table of the sewing machine, and it is impossible to know how much lower thread L is left. Therefore, even a skilled worker does not detect the amount of residue of the lower thread (L), so it is not uncommon for a product to be defective by sewing only the upper thread without the lower thread (L). Therefore, the operator always stops the sewing machine in the sewing operation to detect the residue, and checks the lower thread supply device 1, so there is a problem in that its work efficiency is

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 171 of 524

lowered. Accordingly, in the present invention, in order to solve the above problem, the barcode display part is formed on the flange or the plate spring of the bobbin of the lower thread supply device, and the barcode display part is detected by the barcode reader, so that the lower thread is erased, and the barcode display part is exposed It is naturally detected by a barcode reader, so that the amount of residue can be easily predicted, so product defects can be prevented, and it is not necessary to stop the sewing machine in the middle of work to check the residue every time, improving work efficiency An object of the present invention is to provide a lower thread supply device capable of detecting residual residue.

Hereinafter, with reference to the accompanying drawings, the configuration, operation examples and effects of the present invention for achieving the above object will be described as follows. 3 is a cross-sectional view illustrating an example in which a barcode reader is installed in front of a lower thread supply device capable of detecting residues to which the technology of the present invention is applied, and FIG. 4 shows the bobbin shown in FIG. 3 and a barcode on the bobbin. A perspective view showing an example in which a display part is formed, FIG. 5 is a perspective view showing an example of a bar code display part configured in a lower thread supply device capable of detecting residue to which the technology of the present invention is applied, an example of a thin plate-shaped ring to be attached, FIG. A cross-sectional view showing a lower thread supply device capable of detecting residue to which the technology of the present invention is applied, configured to detect a barcode display unit formed on a plate spring by a reflector, FIG. 7 is a lower thread supply device capable of detecting residue to which the technology of the present invention is applied. It will be described together as a cross-sectional view showing a structure configured to detect the barcode display unit formed on the bobbin by. In general, the lower thread supply device 100 is a device for supplying the lower thread L by being built in under the table of the sewing machine, and is mounted on the drive shaft 110 to rotate the outer kiln 120 and the outer kiln 120 inside. It is accommodated and rotates together, and the stud 135 protrudes from the bottom 133 formed in the drive shaft 10 direction to the front (in the kiln cap direction), and the discharge hole 137 is configured so that the lower thread L is discharged (130) and the stud 135 of the inner kiln 130 are inserted and accommodated in the inner kiln 130 to cover the inner kiln 130, and a discharge hole 143 is formed so that the lower thread L is discharged. The cap 140 and the bobbin 150 and the bobbin 150 having flanges 153 and 155 at both ends of the tubular shaft tube 151 that is accommodated in the cap 140 and rotated and the lower thread L is wound.) and a plate spring 160 interposed between the kiln cap 140 and pressing the bobbin 150 in the axial direction to prevent the bobbin 150 from oscillating. In the present invention, the barcode display unit 170 is formed on the lower thread supply device 100, and the barcode display unit 170 is configured to be detected by the barcode reader 180, so that the lower thread L is erased and the barcode display unit 170) is exposed, it is characterized in that it is configured to be immediately detected by the barcode reader 180 .

To this end, the present invention is configured as follows. As shown in FIG. 3, the barcode display unit 170 is formed on the inner surface (154, the surface in contact with the lower thread) of the flange 153 formed at the rear (the drive shaft side) of the flanges 153 and 155 of the bobbin 150. However, the barcode display unit 170 is formed so that a ring of a thin plate on which a circular barcode is displayed is attached, or a black barcode is printed on the inner surface 154 . In addition, a through hole 158 through which the laser of the barcode reader 180 passes is formed in the flange 155 opposite to the flange 153 . In the front portion 147 and the disk spring 160 facing the bobbin 150 in the kiln cap 140 , a through hole 149 corresponding to the through hole 158 formed in the flange 155 of the bobbin 150 . , 165 , so that the laser irradiated from the barcode reader 180 reaches the barcode display unit 170 . A barcode reader 180 capable of reading the barcode display unit 170 is configured to be fixed to the sewing machine in front of the through hole 149 of the kiln cap 140 . The barcode reader 180 is a conventional one configured to generate an alarm sound after recognizing a barcode, and irradiates a laser to the barcode display unit 170. At this time, the black portion of the barcode display unit 170 absorbs light and emits light. This non-reflected portion is reflected, and the reflected light is detected by a photodiode. The photodiode generates an electrical signal and transmits it to a control unit composed of a logic circuit, and the control unit detects a barcode through the electrical signal, drives a switch, and operates an alarm by the switch. In another embodiment, the barcode display unit 170 is formed on the inner surface 163 of the disc spring 160 (in the direction of the drive shaft), and the barcode reader 180 is formed on both flanges 153 and 155 of the bobbin 150 . Through holes 154 and 157 are formed so that the laser of the laser can pass through to irradiate the barcode display unit 170, and the bottom portion 133 of the inner kiln 130 communicates with the through holes 154 and 157 to irradiate the barcode reader. A through hole 139 through which the laser of 180 passes is formed, and a hole-shaped opening 125 is formed so that the through hole 139 of the inner kiln 130 is exposed at the rear of the outer kiln 120, A reflector 190 is attached to the opening 125 to face the through hole 139 of the inner kiln 130 , and it is reflected through the through holes 139 and 156 of the inner kiln 130 and the bobbin 150 . The angle is adjusted so that the laser irradiated to the barcode display unit 170 is reflected upwardly.

The reflector 190 is provided with a concave reflector 190 to easily reflect the barcode display unit 170 at a distance. By configuring the barcode reader 180 to be fixed to the sewing machine so as to irradiate the laser to the reflection mirror 190, the laser is irradiated to the barcode display unit 170 through the reflection mirror 190, and reflected on the barcode display unit 170 The laser is again reflected by the reflector 190 and absorbed by the barcode reader 180 to generate an alarm sound. As another embodiment, in the configuration in which the reflector 190 is mounted, the barcode display unit 170 is formed on the inner surface (157, the drive shaft side) of the flange 155 formed in the front of the bobbin 150. Of course, the barcode reader 180 can be detected by the reflector 190 , and the through hole 158 may not be [illegible]

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 172 of 524

the bobbin 150 . Looking at the operation example of the present invention by the above configuration, as follows. First, the lower thread (L) is wound around the bobbin 150 of the present invention so that the barcode display unit 170 is not exposed, and then the present invention is mounted on a sewing machine to drive it, and the barcode reader 180 uses a laser to be investigated. Then, the lower thread (L) is consumed as it is drawn out, and thus the barcode display unit 170 is exposed at a certain point in time. At this time, the barcode reader 180 recognizes the barcode display unit 170 and generates an alarm to notify that there is little leftover. According to the present invention according to the above configuration and operation example, since the amount of residue can be easily predicted, product defects can be prevented, and there is no need to stop the sewing machine in the middle of the operation to check the residue every time. There is an advantage that efficiency can be improved.

According to the present invention according to the configuration and operation example, a barcode display unit is formed on a flange or a disk spring of a bobbin of the lower thread supply device, and the barcode display unit is detected by a barcode reader, so that the lower thread is erased, and the barcode display unit When exposed, it is naturally detected by a barcode reader, so the amount of residue can be easily predicted, so product defects can be prevented, and there is no need to stop the sewing machine in the middle of work to check the residue every time. improvement is possible.

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 173 of 524

(19)대한민국특허청(KR)
(12) 등록실용신안공보(Y1)

(51) 。Int. Cl.
D05B 59/02 (2006.01)
D05B 59/00 (2006.01)

(45) 공고일자 2007년01월18일
(11) 등록번호 20-0435370
(24) 등록일자 2007년01월12일

(21) 출원번호 20-2006-0024428
(22) 출원일자 2006년09월11일
심사청구일자 없음

(73) 실용신안권자 이부근
경상남도 김해시 어방동 577-699 화인아파트 202동 1505호

(72) 고안자 이부근
경상남도 김해시 어방동 577-699 화인아파트 202동 1505호

(74) 대리인 최경수

기초적요건 심사관 : 이강영

전체 청구항 수 : 총 4 항

(54)잔사 감지가 가능한 밑실 공급 장치

(57) 요약

본 고안에 의한 잔사 감지가 가능한 밑실 공급 장치(100)는 밑실(L)이 감기는 보빈(150)의 플랜지(153, 155) 또는 접시 스프링(160)에 바코드 표시부(170)를 형성하고, 상기 바코드 표시부(170)는 바코드 리더기(180)에 의해 감지되도록 함으로써, 밑실(L)이 소거되어, 상기 바코드 표시부(170)가 노출되면 자연히 바코드 리더기(180)에 의해 감지되도록 하여, 잔사의 양을 용이하게 예감할 수 있으므로 제품의 불량을 방지할 수 있고, 작업 효율의 향상이 가능한 고안에 관한 것이다.

대표도

도 3

실용신안 등록청구의 범위

청구항 1.

구동축에 장착되어 회전하는 겉가마(120)와,

상기 겉가마(120)의 내측에 수납되어 같이 회전하고 스터드(135)가 구동축(110) 방향에 형성된 바닥부(133)에서 전방(가마캡 방향)으로 돌출되는 속가마(130)와,

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 174 of 524

상기 속가마(130)의 스터드(135)가 삽입되어 속가마(130)의 내부에 수용되어 속가마(130)를 커버하도록 형성된 가마캡(140)과,

상기 가마캡(140) 내부에 수용되어 회전하고 밑실(L)이 감겨지는 관 형상의 축관(151) 양단에 플랜지(153, 155)가 구성된 보빈(150)과,

상기 보빈(150)과 가마캡(140) 사이에 개재되어 보빈(150)을 축방향으로 가압하여 보빈(150)의 요동을 저지하는 접시 스프링(160)으로 구성되는 밑실 공급 장치(100)에 있어서;

상기 보빈(150)의 후방에 형성된 플랜지(153)의 내측면(154)에 부착되며 원형의 바코드가 표시된 얇은 판상의 링인 바코드 표시부(170)와,

상기 가마캡(140)에서 보빈(150)과 대향하는 전방부(147)에 상기 보빈(150)의 플랜지(153)에 형성된 통공(156)과 대응하도록 형성된 관통구(149)와,

상기 접시 스프링(160)에서 상기 보빈(150)의 플랜지(153)에 형성된 통공(156)과 대응하도록 형성된 관통구(165)와,

상기 가마캡(140)의 관통구(149) 전방에 상기 바코드 표시부(170)를 감지하여 경보음을 발생하도록 재봉틀에 고정되는 바코드 리더기(180)로 구성되는 것을 특징으로 하는 잔사 감지가 가능한 밑실 공급 장치.

청구항 2.

구동축에 장착되어 회전하는 겉가마(120)와,

상기 겉가마(120)의 내측에 수납되어 같이 회전하고 스터드(135)가 구동축(110) 방향에 형성된 바닥부(133)에서 전방(가마캡 방향)으로 돌출되는 속가마(130)와,

상기 속가마(130)의 스터드(135)가 삽입되어 속가마(130)의 내부에 수용되어 속가마(130)를 커버하도록 형성된 가마캡(140)과,

상기 가마캡(140) 내부에 수용되어 회전하고 밑실(L)이 감겨지는 관 형상의 축관(151) 양단에 플랜지(153, 155)가 구성된 보빈(150)과,

상기 보빈(150)과 가마캡(140) 사이에 개재되어 보빈(150)을 축방향으로 가압하여 보빈(150)의 요동을 저지하는 접시 스프링(160)으로 구성되는 밑실 공급 장치(100)에 있어서;

상기 접시 스프링(160)의 내측면(163)에 부착되고 원형의 바코드가 표시된 얇은 판상의 링으로 구성되는 바코드 표시부(170)와,

상기 바닥부(133)에는 바코드 리더기(180)의 레이저가 통과되도록 형성된 통공(139)과,

상기 겉가마(120)의 후방에 속가마(130)의 통공(139)이 노출되도록 형성된 홀 형상의 개방부(125)와,

상기 개방부(125)에 속가마(130)의 통공(139)에 대향되어 상기 바코드 표시부(170)를 상부로 반사할 수 있도록 각도가 조정되어 부착되는 오목하게 형성된 반사경(190)과,

상기 반사경(190)에 레이저를 조사할 수 있도록 재봉틀에 고정된 바코드 리더기(180)로 구성되는 것을 특징으로 하는 잔사 감지가 가능한 밑실 공급 장치.

청구항 3.

제 2 항에 있어서,

상기 바코드 표시부(170)가 보빈(150)의 전방에 형성된 플랜지(155) 내측면(157)에 형성되는 것을 특징으로 하는 잔사 감지가 가능한 밑실 공급 장치.

청구항 4.

제 1 항 내지 제 3 항 중 어느 하나의 항에 있어서,

상기 바코드 표시부(170)는 바코드를 보빈(150) 또는 접시 스프링(160)에 인쇄하여 형성된 것을 특징으로 하는 잔사 감지가 가능한 밑실 공급 장치.

명세서

고안의 상세한 설명

고안의 목적

고안이 속하는 기술 및 그 분야의 종래기술

본 고안은 잔사 감지가 가능한 밑실 공급 장치로서 더욱 상세하게는, 보빈 또는 접시 스프링에 바코드 표시부를 형성하여 바코드 리더기에 의해 잔사를 용이하게 감지하도록 구성한 잔사 감지가 가능한 밑실 공급 장치에 관한 것이다.

도 1은 종래의 기술이 적용된 밑실 공급 장치를 도시한 단면도, 도 2는 종래의 기술이 적용된 밑실 공급 장치를 도시한 분해 사시도로서 일반적으로 밑실 공급 장치(1)는 재봉틀의 테이블 하방에 장착되어 상하 운동하는 바늘에 의해 공급되는 윗실에 밑실(L)을 공급하여 재봉 작업이 가능하도록 하는 것으로서, 내부에 회전하는 보빈(50)이 내장되어 있어 상기 보빈(50)에 감겨진 밑실(L)이 용이하게 외부에 배출되도록 하는 데, 보다 상세히 종래 기술의 구성과 작동례 및 문제점을 살펴보면 다음과 같다.

상기 밑실 공급 장치(1)는 구동축(10)에 장착되어 회전하는 겉가마(20)와 상기 겉가마(20)의 내측에 수납되어 같이 회전하고 스터드(35)가 구동축(10) 방향에형성된 바닥부(33)에서 전방(가마캡 방향)으로 돌출되며 밑실(L)이 배출되는 배출공(37)이 구성되는 속가마(30)와 상기 속가마(30)의 스터드(35)가 삽입되어 속가마(30)의 내부에 수용되어 속가마(30)를 커버하며 밑실(L)이 배출되도록 배출공(43)이 형성된 가마캡(40)과 상기 가마캡(40) 내부에 수용되어 회전하며 밑실(L)이 감겨지는 관 형상의 축관(51) 양단에 플랜지(53, 55)가 구성된 보빈(50)과 상기 보빈(50)과 가마캡(40) 사이에 개재되어 보빈(50)을 축방향으로 가압하여 보빈(50)의 요동을 저지하는 접시 스프링(60)으로 구성된다.

상기 가마캡(40)은 용기 형상으로 구성되고 내부에 축방향으로 관형상의 축관(45)이 돌출되어 구성됨으로써, 상기 축관(45)의 외측에 보빈(50)의 축관(51)이 끼워지며, 축관(45)의 내부에 형성된 내측홀을 통해 스터드(35)가 삽입되어 빠지지 않도록 구성된다.

상기 구성에 의한 종래 기술의 작동례를 살펴보면, 구동축(10)의 회전에 의해 겉가마(20)가 회전하여, 윗실을 걸어 겉가마(20)를 휘감는 올가미를 형성하고, 밑실(L)이 보빈(50)으로부터 풀려나와 속가마(30)와 가마캡(40)의 배출공(37, 43)을 통해 배출되어 상기 올가미에 걸어 올려짐으로써 재봉 작업이 이루어진다.

상기 구성과 작동례에 의한 종래 기술에 의하면, 밑실 공급 장치(1)가 재봉틀의 테이블 하방에 내장되어, 밑실(L)이 어느 정도 남았는지 전혀 알 수가 없다. 따라서, 숙련공일지라도 밑실(L)의 잔사량을 감지하지 못함으로써, 밑실(L) 없이 윗실만으로 재봉하여 제품의 불량을 초래하는 예가 비일비재하다. 따라서, 작업자는 늘 잔사를 감지하기 위해 작업 도중에 재봉틀을 정지시키고, 밑실 공급 장치(1)를 확인하게 됨으로써, 작업 능률이 저하되는 문제점이 있었다.

고안이 이루고자 하는 기술적 과제

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 176 of 524

이에 본 고안에서는 상기 문제점을 해결하기 위해, 밑실 공급 장치의 보빈의 플랜지 또는 접시 스프링에 바코드 표시부를 형성하고, 상기 바코드 표시부는 바코드 리더기에 의해 감지되도록 함으로써, 밑실이 소거되어, 상기 바코드 표시부가 노출되면 자연히 바코드 리더기에 의해 감지되도록 하여, 잔사의 양을 용이하게 예감할 수 있으므로 제품의 불량을 방지할 수 있고, 매 번, 잔사를 확인하기 위해 작업 도중에 재봉틀을 정지시킬 필요가 없으므로 작업의 효율 향상이 가능한 잔사 감지가 가능한 밑실 공급 장치를 제공하는 것을 목적으로 한다.

고안의 구성

이하, 첨부되는 도면을 참조하여 상기 목적을 달성하기 위한 본 고안의 구성과 작동례 및 효과를 살펴보면 다음과 같다.

도 3은 본 고안의 기술이 적용된 잔사 감지가 가능한 밑실 공급 장치로서, 밑실 공급 장치 전방에 바코드 리더기가 설치된 예를 도시한 단면도, 도 4는 도 3에서 표현된 보빈을 도시한 것으로서 상기 보빈에 바코드 표시부가 형성된 예를 도시한 사시도, 도 5는 본 고안의 기술이 적용된 잔사 감지가 가능한 밑실 공급 장치에 구성되는 바코드 표시부가 부착이 가능하도록 얇은 판상의 링으로 구성된 예를 도시한 사시도, 도 6은 본 고안의 기술이 적용된 잔사 감지가 가능한 밑실 공급 장치로서 반사경에 의해 접시 스프링에 형성된 바코드 표시부를 감지하도록 구성된 것을 도시한 단면도, 도 7은 본 고안의 기술이 적용된 잔사 감지가 가능한 밑실 공급 장치로서 반사경에 의해 보빈에 형성된 바코드 표시부를 감지하도록 구성된 것을 도시한 단면도로서 함께 설명한다.

일반적으로 밑실 공급 장치(100)는 재봉틀의 테이블 하방에 내장되어 밑실(L)을 공급하는 장치로서, 구동축(110)에 장착되어 회전하는 겉가마(120)와 상기 겉가마(120)의 내측에 수납되어 같이 회전하고 스터드(135)가 구동축(10) 방향에 형성된 바닥부(133)에서 전방(가마캡 방향)으로 돌출되며 밑실(L)이 배출되도록 배출공(137)이 구성되는 속가마(130)와 상기 속가마(130)의 스터드(135)가 삽입되어 속가마(130)의 내부에 수용되어 속가마(130)를 커버하며 밑실(L)이 배출되도록 배출공(143)이 형성된 가마캡(140)과 상기 가마캡(140) 내부에 수용되어 회전하며 밑실(L)이 감겨지는 관 형상의 축관(151) 양단에 플랜지(153, 155)가 구성된 보빈(150)과 상기 보빈(150)과 가마캡(140) 사이에 개재되어 보빈(150)을 축방향으로 가압하여 보빈(150)의 요동을 저지하는 접시 스프링(160)으로 구성된다.

본 고안에서는 상기 밑실 공급 장치(100)에 바코드 표시부(170)를 형성하고, 상기 바코드 표시부(170)를 바코드 리더기(180)에 의해 감지되도록 구성하여 밑실(L)이 소거되면서 상기 바코드 표시부(170)가 노출되면, 바로 바코드 리더기(180)에 의해 감지가 가능하도록 구성한 것을 특징으로 한다.

이를 위하여 본 고안에서는 다음과 같이 구성한다.

도 3에서 보듯이, 보빈(150)의 플랜지(153, 155) 중 후방(구동축 쪽 방향)에 형성된 플랜지(153)의 내측면(154, 밑실과 접하는 면)에 바코드 표시부(170)가 형성되는 데, 상기 바코드 표시부(170)는 원형의 바코드가 표시된 얇은 판상의 링이 부착되도록 구성되거나, 검은색의 바코드가 상기 내측면(154)에 인쇄되도록 하여 형성된다. 그리고, 상기 플랜지(153)에 대향하는 플랜지(155)에는 바코드 리더기(180)의 레이저가 통과하는 통공(158)이 구성된다.

상기 가마캡(140)에서 보빈(150)과 대향하는 전방부(147) 및 접시 스프링(160)에는, 상기 보빈(150)의 플랜지(155)에 형성된 통공(158)과 대응하는 관통구(149, 165)가 형성되도록 하여, 바코드 리더기(180)에서 조사되는 레이저가 상기 바코드 표시부(170)까지 도달되도록 한다.

상기 가마캡(140)의 관통구(149) 전방에는 상기 바코드 표시부(170)를 판독할 수 있는 바코드 리더기(180)가 재봉틀에 고정되도록 구성된다.

상기 바코드 리더기(180)는 바코드를 인지한 후, 경보음이 발생하도록 구성된 통상적인 것으로서, 바코드 표시부(170)에 레이저를 조사하며, 이때, 바코드 표시부(170)에서 검은 부분은 빛을 흡수해서 빛이 반사되지 않고 나머지 부분은 반사하게 되는 데, 상기 반사한 빛은 광다이오드에 감지된다. 상기 광다이오드에서는 전기 신호를 발생하여 논리 회로로 구성된 제어부에 전송하게 되고, 상기 제어부는 상기 전기 신호를 통해 바코드를 감지한 후, 스위치를 구동하게 되고, 상기 스위치에 의해 경보기가 작동되도록 구성된 것이다.

다른 실시예로서 상기 접시 스프링(160)의 내측면(163, 구동축 쪽 방향)에 상기 바코드 표시부(170)가 형성되고, 상기 보빈(150)의 양 플랜지(153, 155)에는 바코드 리더기(180)의 레이저가 통과되어 바코드 표시부(170)를 조사할 수 있도록통공(154, 157)이 형성되고, 상기 속가마(130)의 바닥부(133)에는 상기 통공(154, 157)과 연통되어 바코드 리더기(180)의

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 177 of 524

레이저가 통과되는 통공(139)이 형성되며, 상기 겉가마(120)의 후방에 속가마(130)의 통공(139)이 노출되도록 홀 형상의 개방부(125)가 형성되고, 상기 개방부(125)에는 속가마(130)의 통공(139)에 대향하도록 반사경(190)을 부착하는 데, 상기 속가마(130)와 보빈(150)의 통공(139, 156)을 통해 반사된 바코드 표시부(170)를 조사한 레이저가 상부로 반사되도록 각도가 조정되어 구성된다. 상기 반사경(190)은 먼거리의 바코드 표시부(170)를 용이하게 반사하도록 오목하게 형성된 반사경(190)으로 구비하도록 한다.

상기 반사경(190)에 레이저를 조사할 수 있도록 바코드 리더기(180)가 재봉틀에 고정되도록 구성함으로써, 레이저가 반사경(190)을 통해 바코드 표시부(170)에 조사되고, 바코드 표시부(170)에 반사된 레이저는 다시 반사경(190)에 의해 반사되어 바코드 리더기(180)에 흡수되어 경보음이 발생되도록 구성한다.

또 다른 실시예로서, 상기 반사경(190)이 장착된 구성에서 상기 바코드 표시부(170)가 보빈(150)에서 전방에 형성된 플랜지(155) 내측면(157, 구동축 쪽 방향)에 형성되도록 하여도 상기 반사경(190)에 의해 바코드 리더기(180)가 감지 가능함은 물론이며, 보빈(150)에서 전방에 형성된 플랜지(155)에는 통공(158)이 형성되지 않아도 무방하다.

상기 구성에 의한 본 고안의 작동례를 살펴보면, 다음과 같다.

먼저, 본 고안의 보빈(150)에 밑실(L)을 감아서 상기 바코드 표시부(170)가 노출되지 않도록 한 후, 재봉틀에 본 고안을 장착하여 구동되도록 하고, 상기 바코드 리더기(180)에서는 레이저가 조사되도록 한다. 그러면, 밑실(L)이 상부로 인출되면서 소모되고 따라서, 상기 바코드 표시부(170)가 어느 시점에는 노출된다. 이때, 바코드 리더기(180)는 바코드 표시부(170)를 인식하고 경보음을 발생시켜 잔사가 얼마 남지 않았음을 알리게 된다.

상기 구성과 작동례에 의한 본 고안에 의하면, 잔사의 양을 용이하게 예감할 수 있으므로 제품의 불량을 방지할 수 있고, 매 번, 잔사를 확인하기 위해 작업 도중에 재봉틀을 정지시킬 필요가 없으므로 작업의 효율 향상이 가능한 이점이 있다.

고안의 효과

상기 구성과 작동례에 의한 본 고안에 의하면, 밑실 공급 장치의 보빈의 플랜지 또는 접시 스프링에 바코드 표시부를 형성하고, 상기 바코드 표시부는 바코드 리더기에 의해 감지되도록 함으로써, 밑실이 소거되어, 상기 바코드 표시부가 노출되면 자연히 바코드 리더기에 의해 감지되도록 하여, 잔사의 양을 용이하게 예감할 수 있으므로 제품의 불량을 방지할 수 있고, 매 번, 잔사를 확인하기 위해 작업 도중에 재봉틀을 정지시킬 필요가 없으므로 작업의 효율 향상이 가능한 효과가 있다.

도면의 간단한 설명

도 1은 종래의 기술이 적용된 밑실 공급 장치를 도시한 단면도.

도 2는 종래의 기술이 적용된 밑실 공급 장치를 도시한 분해 사시도.

도 3은 본 고안의 기술이 적용된 잔사 감지가 가능한 밑실 공급 장치로서, 밑실 공급 장치 전방에 바코드 리더기가 설치된 예를 도시한 단면도.

도 4는 도 3에서 표현된 보빈을 도시한 것으로서 상기 보빈에 바코드 표시부가 형성된 예를 도시한 사시도.

도 5는 본 고안의 기술이 적용된 잔사 감지가 가능한 밑실 공급 장치에 구성되는 바코드 표시부가 부착이 가능하도록 얇은 판상의 링으로 구성된 예를 도시한 사시도.

도 6은 본 고안의 기술이 적용된 잔사 감지가 가능한 밑실 공급 장치로서 반사경에 의해 접시 스프링에 형성된 바코드 표시부를 감지하도록 구성된 것을 도시한 단면도.

도 7은 본 고안의 기술이 적용된 잔사 감지가 가능한 밑실 공급 장치로서 반사경에 의해 보빈에 형성된 바코드 표시부를 감지하도록 구성된 것을 도시한 단면도.

도면의 주요 부분에 사용된 부호의 설명

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 178 of 524

110: 구동축 120: 겉가마

130: 속가마 139, 156, 158: 통공

140: 가마캡 147: 전방부

149, 165: 관통구 150: 보빈

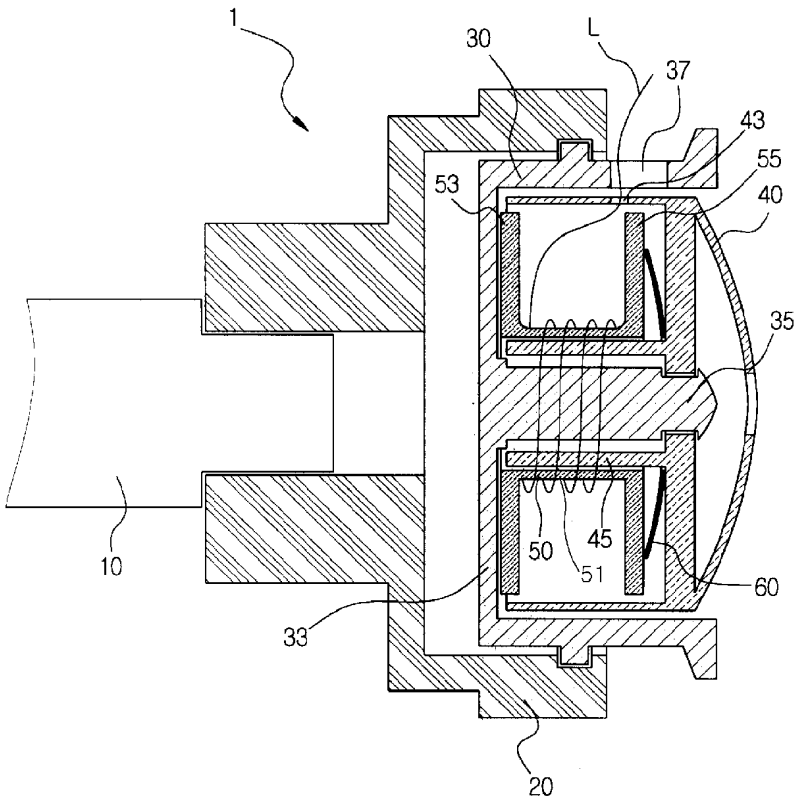
153, 155: 플랜지 160: 접시 스프링

170: 바코드 표시부 180: 바코드 리더기

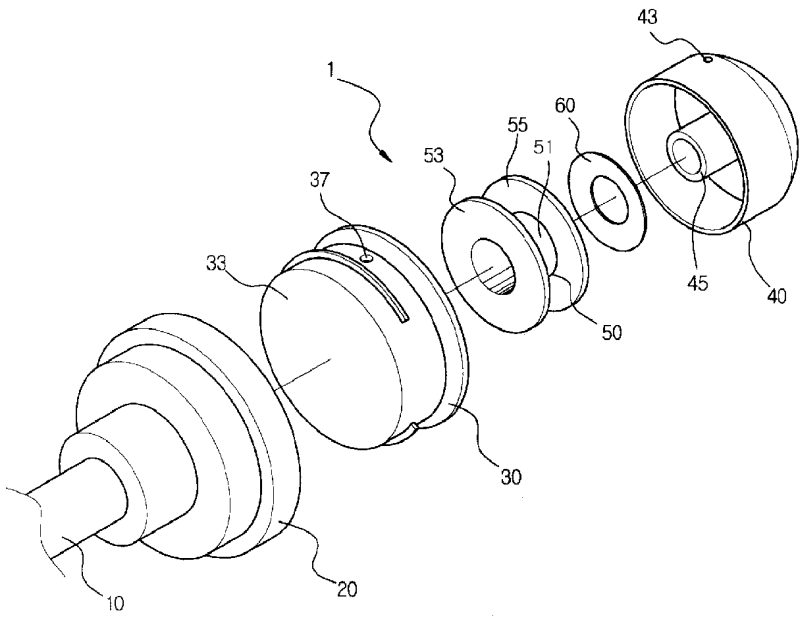
L: 밀실

도면

도면1

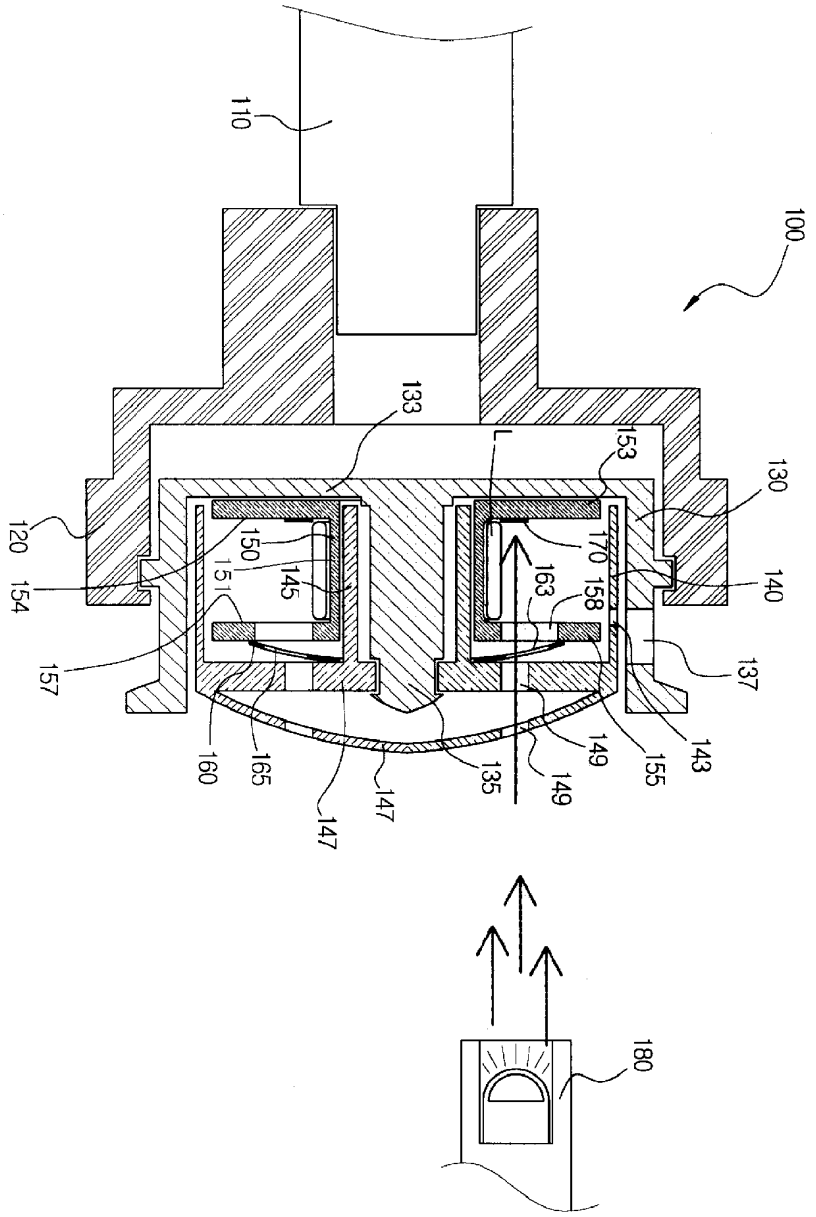


도면2

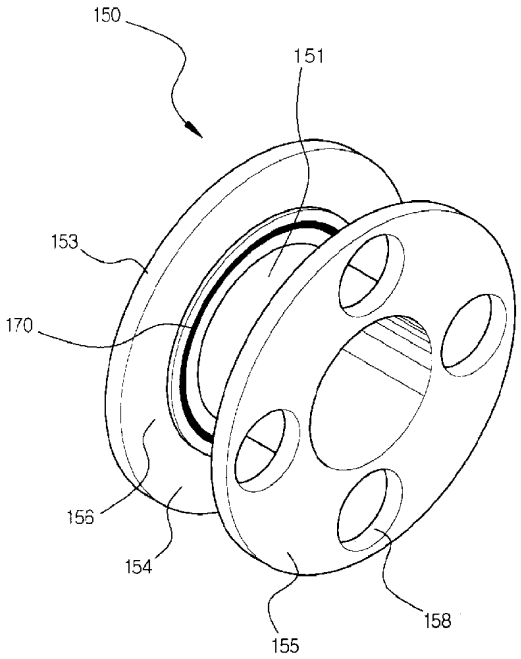


IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 180 of 524

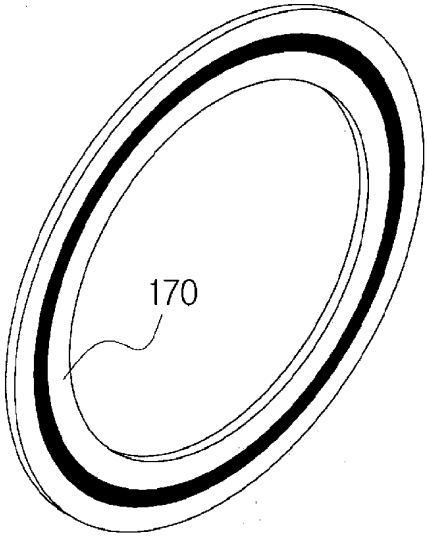
도면3


110
100
133
153
130
120
150
151
145
170
163
158
140
154
157
137
160
165
147
135
149
155
143
180

도면4

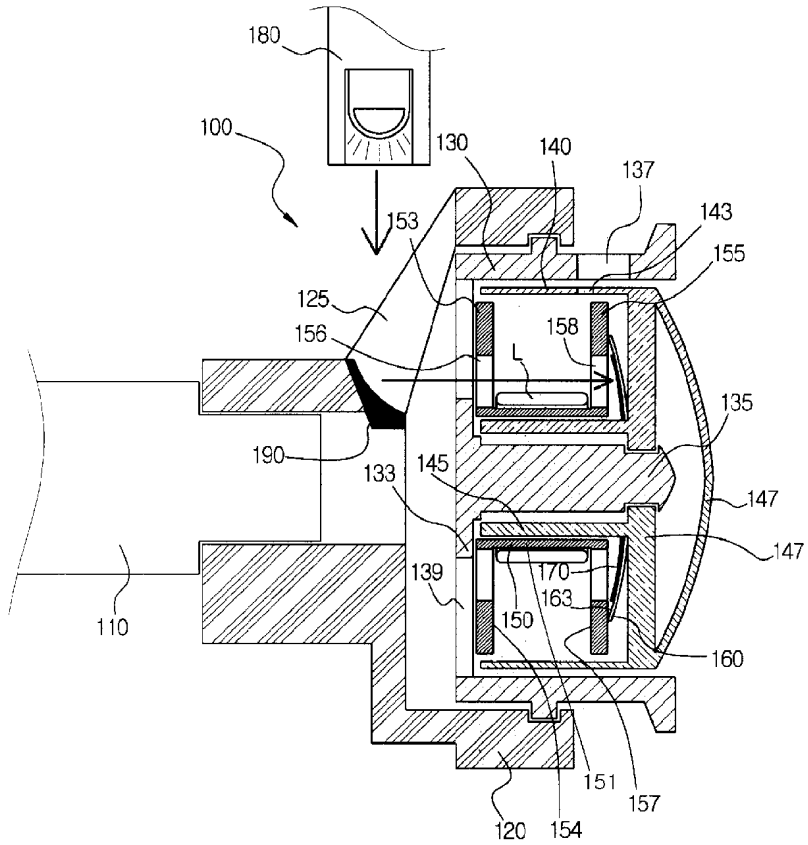


도면5



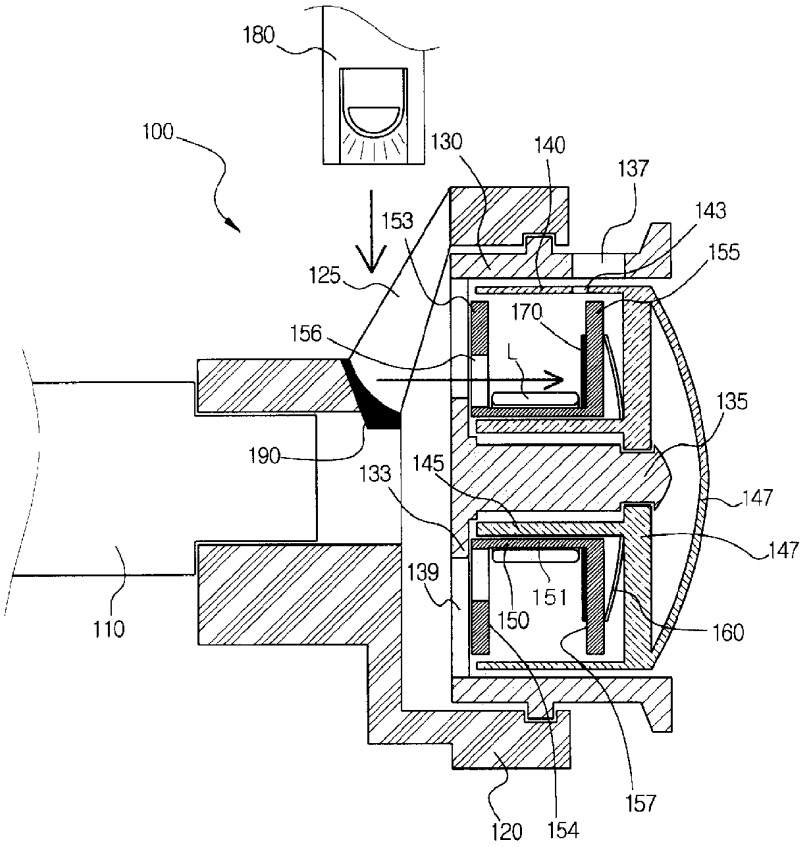
IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 182 of 524

도면6



IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 183 of 524

도면7



IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 184 of 524

Electronic Acknowledgement Receipt

EFS ID:	43374819
Application Number:	17385109
International Application Number:	
Confirmation Number:	6609
Title of Invention:	PORTION CAPSULE HAVING AN IDENTIFIER
First Named Inventor/Applicant Name:	Marc Krüger
Customer Number:	25215
Filer:	Paul J. Palinski/BECKY BALLARD
Filer Authorized By:	Paul J. Palinski
Attorney Docket Number:	1859.029USC11
Receipt Date:	29-JUL-2021
Filing Date:	
Time Stamp:	12:41:02
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	Supplemental_IDS_1859_029USC11.pdf	134276 cb7ae1a0acc026fe991b41d20444dee4341e0417	no	2

Warnings:

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 185 of 524

Information:					
This is not an USPTO supplied IDS fillable form					
2	Foreign Reference	KR200435370Y1.pdf	951633 677d1f1ecf2910f9e2a879983555fa3760e18a2c	no	18
Warnings:					
Information:					
3	Non Patent Literature	1_IPR_PETITION_Patent_10870531.pdf	3053226 f792d9ccf2e49a95160e34616ab2f7c48877eae8	no	107
Warnings:					
Information:					
4	Non Patent Literature	2_IPR_PETITION_Patent_10858176.pdf	3668767 5d8f085de1926b4d61ed6bb25d7f1848551fca39	no	107
Warnings:					
Information:					
5	Non Patent Literature	3_IPR_PETITION_Patent_10858177.pdf	3148953 28c83fff8984d23f1df67cc1f49394e523c2adc9	no	108
Warnings:					
Information:					
6	Non Patent Literature	4_Jobin_Declaration_Patent_10858177.pdf	9288294 ffed0f580bdb54de34ea402081af5aab6e97f5fa	no	315
Warnings:					
Information:					
7	Non Patent Literature	5_Jobin_Declaration_Patent_10858176.pdf	9125112 033c9b7b8768f8969b8b8189dbe0a62d9a3c74de	no	341
Warnings:					
Information:					
8	Non Patent Literature	6_Jobin_Declaration_Patent_10870531.pdf	9441539 5afaaab6ca65e10f371427ac0f915876d21ceaa0	no	321
Warnings:					
Information:					

Total Files Size (in bytes):	38811800

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

United States Patent and Trademark Office

Office of the Chief Financial Officer

Document Code:WFEE

User :C43106

Sale Accounting Date:08/18/2021

Sale Item Reference Number	Effective Date
17385109	07/26/2021

Document Number	Fee Code	Fee Code Description	Amount Paid	Payment Method
I20218HC00130925	1830	PROCESSING FEE, EXCEPT PROV. APPLS.	$140.00	Deposit Account

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
17/385,109	07/26/2021		1820	1859.029USC11	20	2

CONFIRMATION NO. 6609

FILING RECEIPT

25215
The Dobrusin Law Firm P.C.
29 W. Lawrence Street
Suite 210
Pontiac, MI 48342

OC000000127806575

Date Mailed: 08/20/2021

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections provided that the request is grantable.

Inventor(s)

Marc KRÜGER, Bergisch Gladbach, GERMANY;

Applicant(s)

K-FEE SYSTEM GMBH, Bergisch Gladbach, GERMANY;

Power of Attorney: The patent practitioners associated with Customer Number 25215

Domestic Priority data as claimed by applicant

This application is a CON of 17/383,951 07/23/2021
which is a CON of 17/330,572 05/26/2021
which is a CON of 17/324,182 05/19/2021
which is a CON of 17/108,175 12/01/2020
which is a CON of 16/860,432 04/28/2020 PAT 10858177
which is a CON of 16/438,818 06/12/2019 PAT 10994923
which is a CON of 15/646,980 07/11/2017
which is a DIV of 15/211,823 07/15/2016 ABN
which is a DIV of 13/744,623 01/18/2013 ABN
which is a CON of PCT/EP2011/003677 07/22/2011

Foreign Applications (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.)
GERMANY 10 2011 010 534.4 02/07/2011 No Access Code Provided
GERMANY 10 2010 044 251.8 09/02/2010 No Access Code Provided
GERMANY 10 2010 031 988.0 07/22/2010 No Access Code Provided

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 189 of 524

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 08/04/2021

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 17/385,109**

Projected Publication Date: To Be Determined - pending completion of Corrected Papers

Non-Publication Request: No

Early Publication Request: No

Title

PORTION CAPSULE HAVING AN IDENTIFIER

Preliminary Class

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor

community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 192 of 524

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 17/385,109

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	320
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	700
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	800
TOTAL CLAIMS (37 CFR 1.16(i))	20 minus 20 =	*			OR	x 100 =	0.00
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2 minus 3 =	*				x 480 =	0.00
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0.00
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	1820

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
17/385,109	07/26/2021	Marc KRÜGER	1859.029USC11

CONFIRMATION NO. 6609

25215
The Dobrusin Law Firm P.C.
29 W. Lawrence Street
Suite 210
Pontiac, MI 48342

FORMALITIES LETTER

OC000000127806576

Date Mailed: 08/20/2021

NOTICE TO FILE CORRECTED APPLICATION PAPERS

Filing Date Granted

An application number and filing date have been accorded to this application. The application is informal since it does not comply with the regulations for the reason(s) indicated below. Applicant is given **TWO MONTHS** from the date of this Notice within which to correct the informalities indicated below. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

The required item(s) identified below must be timely submitted to avoid abandonment:

- Replacement drawings in compliance with 37 CFR 1.84 and 37 CFR 1.121(d) are required. The drawings submitted are not acceptable because:
  - The drawings must be reasonably free from erasures and must be free from alterations, overwriting, interlineations, folds, and copy marks. See Figure(s) 1A,B,2A,B,3A,B,4 - 15,16A,B,17A,B,C,18.

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

Replies must be received in the USPTO within the set time period or must include a proper Certificate of Mailing or Transmission under 37 CFR 1.8 with a mailing or transmission date within the set time period. For more information and a suggested format, see Form PTO/SB/92 and MPEP 512.

Replies should be mailed to:

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Registered users of EFS-Web may alternatively submit their reply to this notice via EFS-Web, including a copy of this Notice and selecting the document description "Applicant response to Pre-Exam Formalities Notice". https://sportal.uspto.gov/authenticate/AuthenticateUserLocalEPF.html

For more information about EFS-Web please call the USPTO Electronic Business Center at 1-866-217-9197 or visit our website at http://www.uspto.gov/ebc.

If you are not using EFS-Web to submit your reply, you must include a copy of this notice.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/lqchau/

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Marc KRÜGER

Group Art Unit: TBA

Serial No.: 17/385,109

Examiner: TBA

Filed: July 26, 2021

Confirmation No: 6609

For: PORTION CAPSULE HAVING AN IDENTIFIER

Attorney Docket No.: 1859.029USC11 (KRU0022-WO-US-T12)

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

APPLICANT RESPONSE TO PRE-EXAM FORMALITIES NOTICE

In the Notice to File Corrected Application Papers mailed on August 20, 2021, the Office alleges figures 1A,B,2A,B,3A,B,4-15,16A,B,17A,B,C,18 contain deficiencies. Without conceding to the validity of these allegation, and in the interest of expediting examination, Applicant includes herewith ten (10) Replacement Sheets. No new matter has been added. Applicant requests the Replacement Sheets be entered, and the Office prepare this application for examination and allowance.

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: September 14, 2021

/Paul J. Palinski/

Paul J. Palinski, Reg. No. 71,080
The Dobrusin Law Firm, P.C.
29 W. Lawrence St., Suite 210
Pontiac, Michigan 48342
(248) 292-2920

Customer No. 25215

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 196 of 524

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
17/385,109	07/26/2021	Marc KRÜGER	1859.029USC11

CONFIRMATION NO. 6609

25215
The Dobrusin Law Firm P.C.
29 W. Lawrence Street
Suite 210
Pontiac, MI 48342

FORMALITIES LETTER

OC000000127806576

Date Mailed: 08/20/2021

NOTICE TO FILE CORRECTED APPLICATION PAPERS

Filing Date Granted

An application number and filing date have been accorded to this application. The application is informal since it does not comply with the regulations for the reason(s) indicated below. Applicant is given **TWO MONTHS** from the date of this Notice within which to correct the informalities indicated below. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

The required item(s) identified below must be timely submitted to avoid abandonment:

- Replacement drawings in compliance with 37 CFR 1.84 and 37 CFR 1.121(d) are required. The drawings submitted are not acceptable because:
  - The drawings must be reasonably free from erasures and must be free from alterations, overwriting, interlineations, folds, and copy marks. See Figure(s) 1A,B,2A,B,3A,B,4 - 15,16A,B,17A,B,C,18.

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

Replies must be received in the USPTO within the set time period or must include a proper Certificate of Mailing or Transmission under 37 CFR 1.8 with a mailing or transmission date within the set time period. For more information and a suggested format, see Form PTO/SB/92 and MPEP 512.

Replies should be mailed to:

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Registered users of EFS-Web may alternatively submit their reply to this notice via EFS-Web, including a copy of this Notice and selecting the document description "Applicant response to Pre-Exam Formalities Notice". https://sportal.uspto.gov/authenticate/AuthenticateUserLocalEPF.html

For more information about EFS-Web please call the USPTO Electronic Business Center at 1-866-217-9197 or visit our website at http://www.uspto.gov/ebc.

If you are not using EFS-Web to submit your reply, you must include a copy of this notice.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/lqchau/

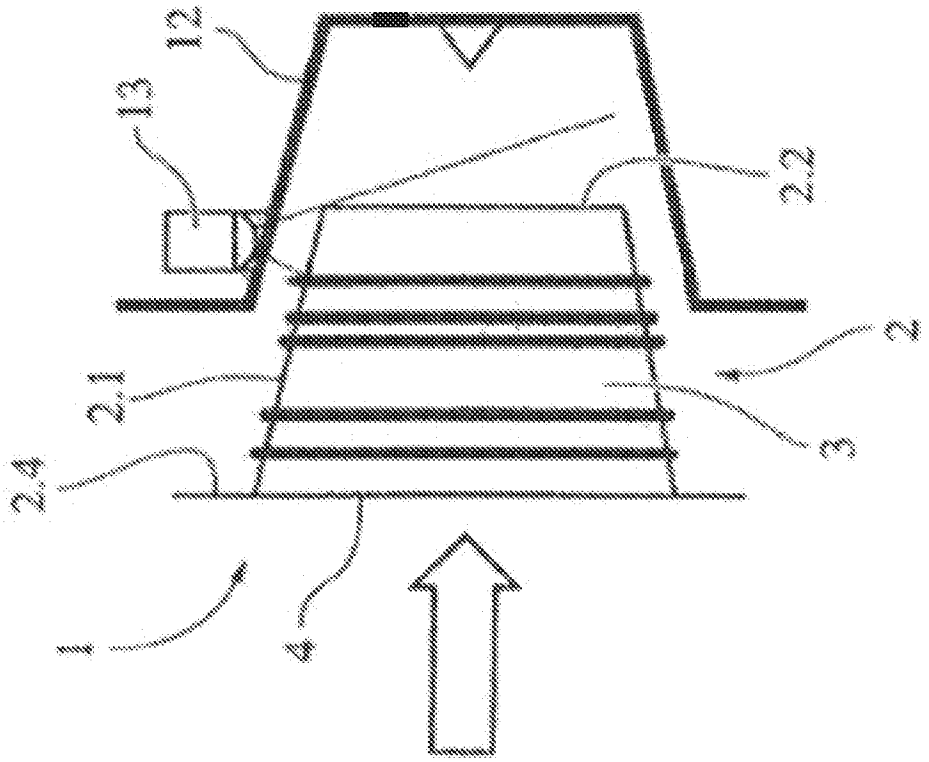


Fig. 1B

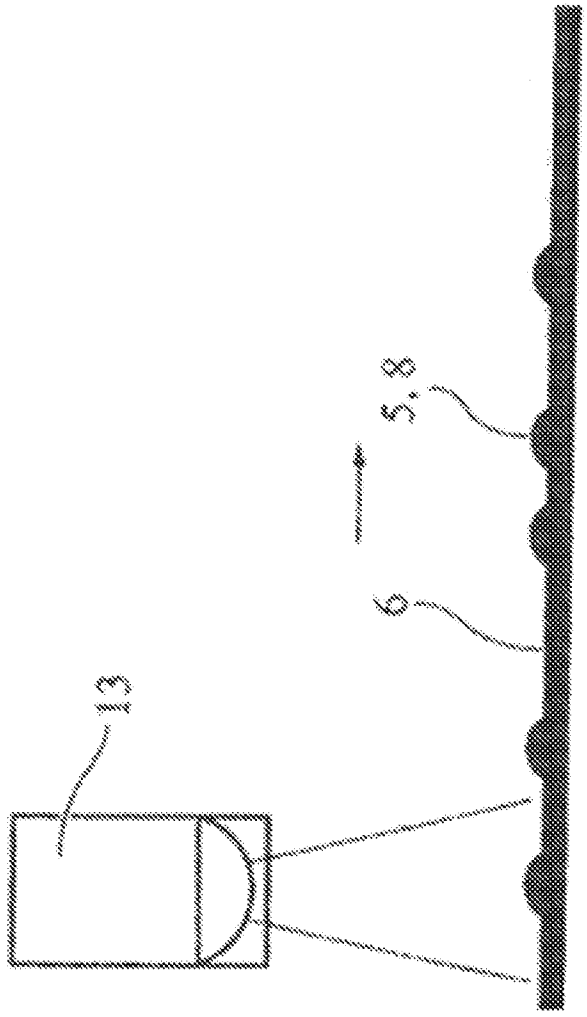


Fig. 1A

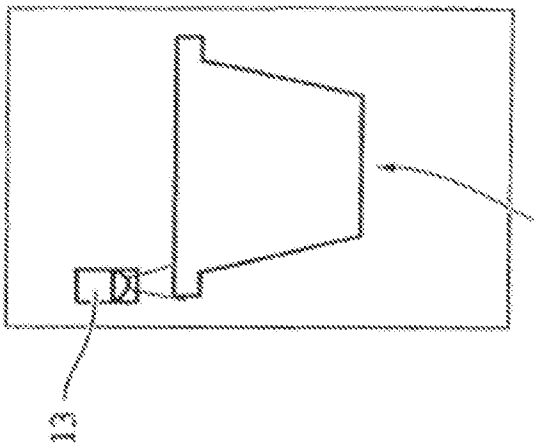


Fig. 2B

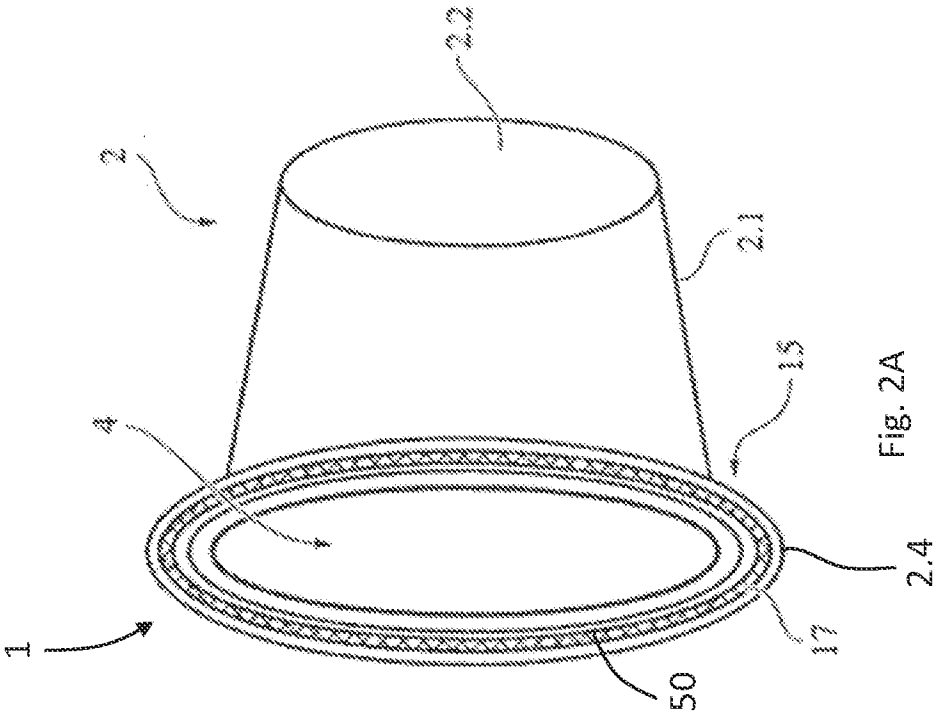


Fig. 2A

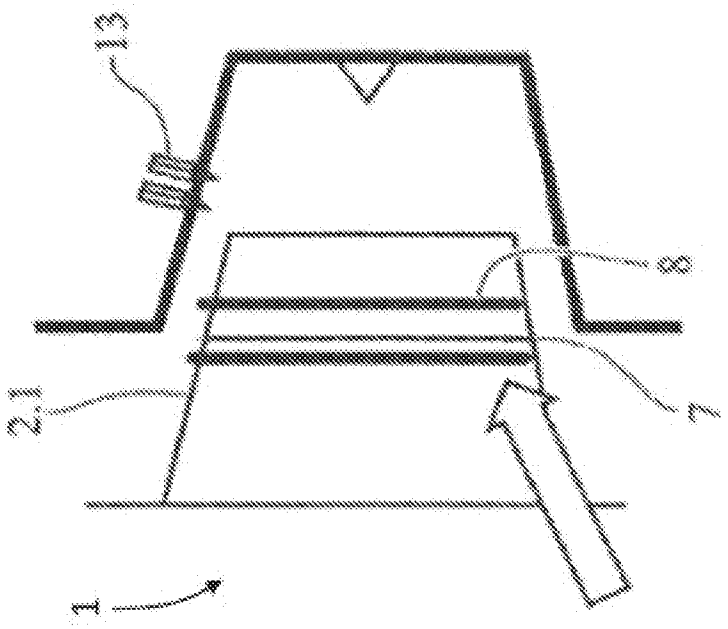


Fig. 3A

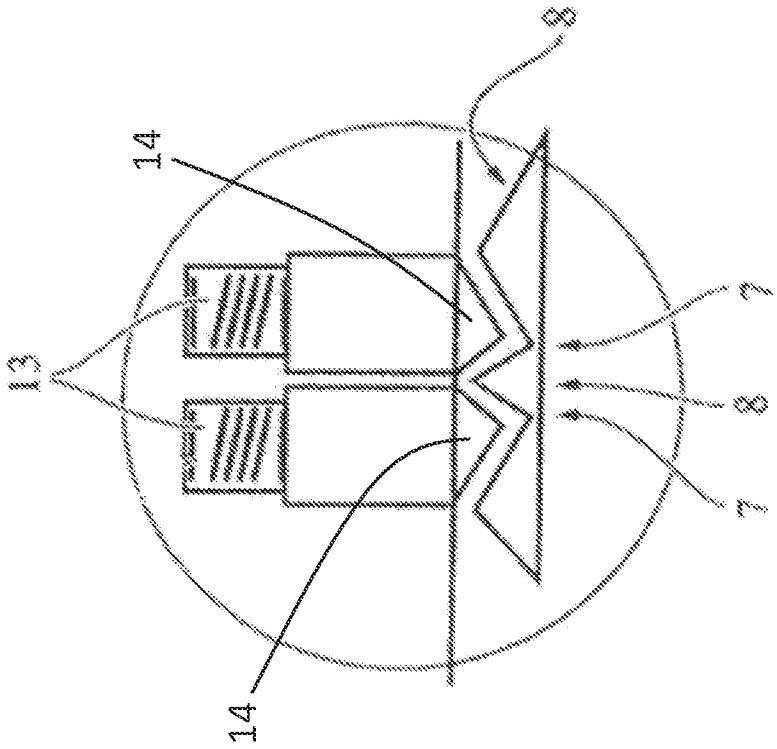


Fig. 3B

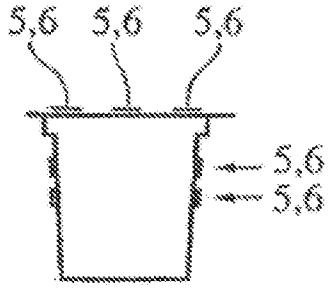


Fig. 4

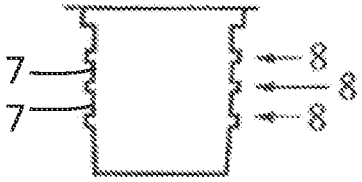


Fig. 5

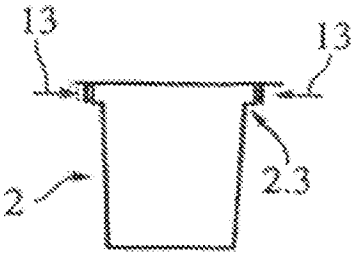


Fig. 6

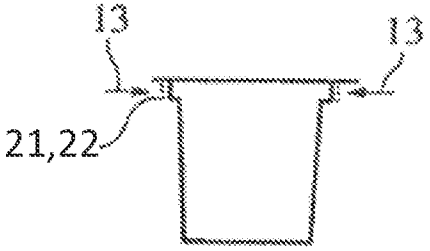


Fig. 7

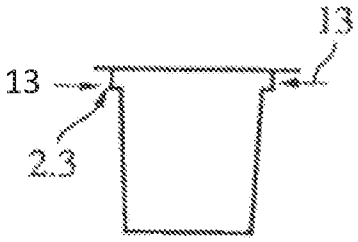


Fig. 8

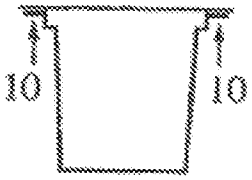


Fig. 9

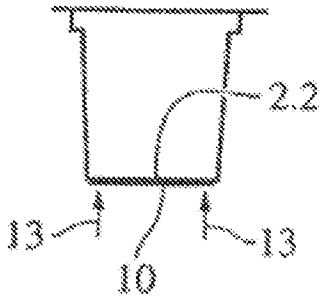


Fig. 10

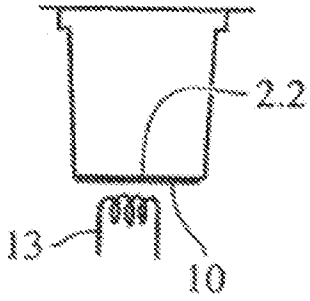


Fig. 11

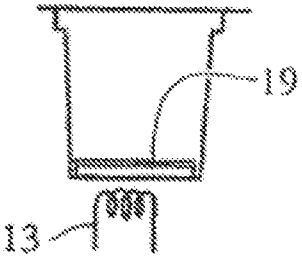


Fig. 12

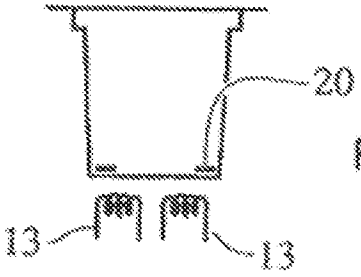


Fig. 13

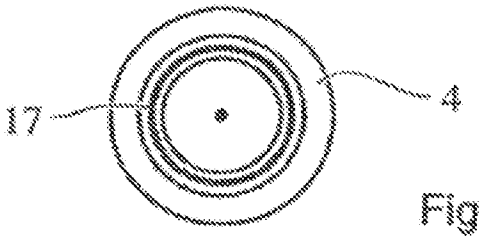


Fig. 14

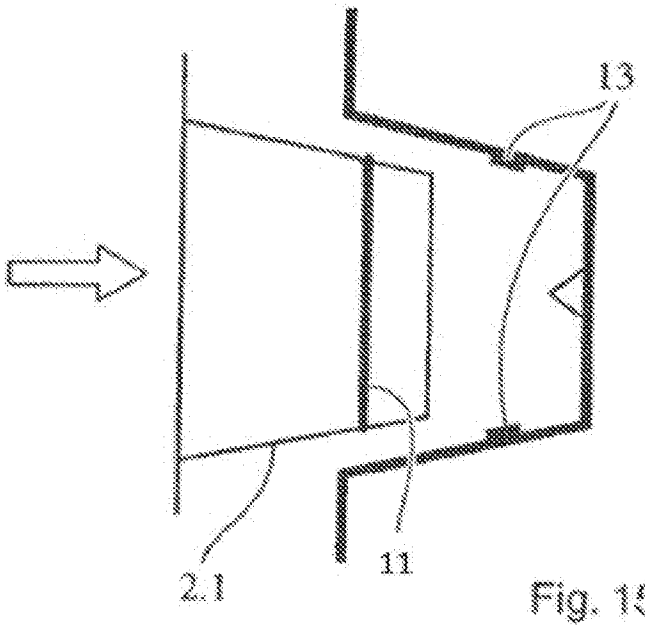


Fig. 15

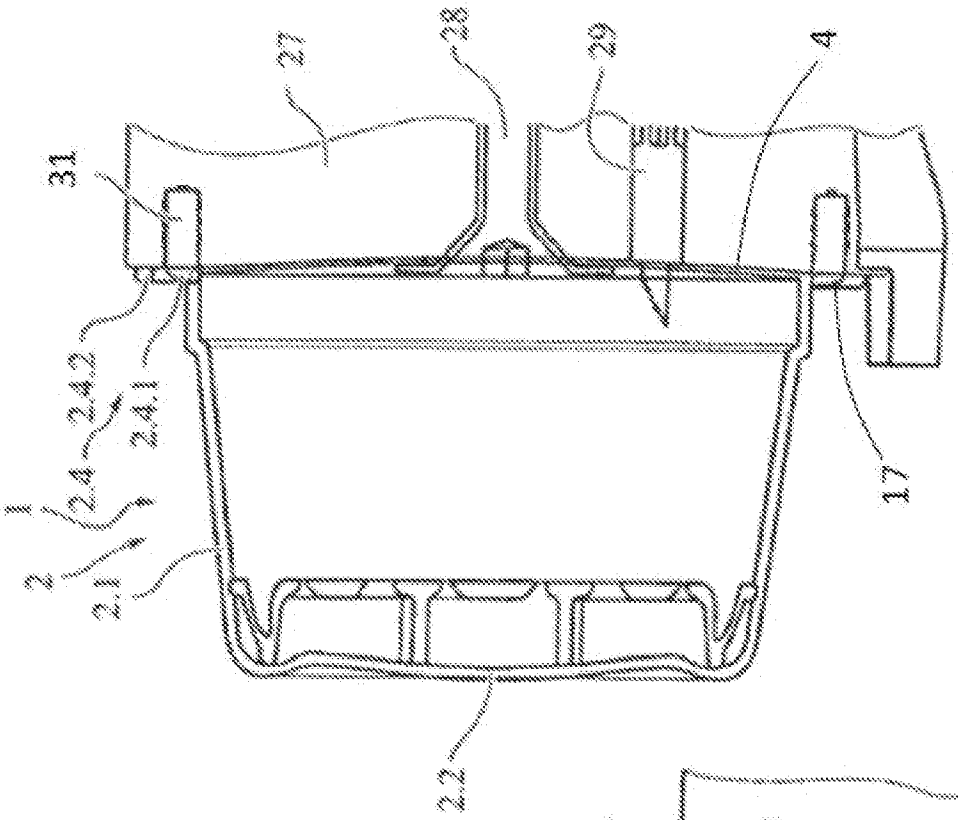


Fig. 16A

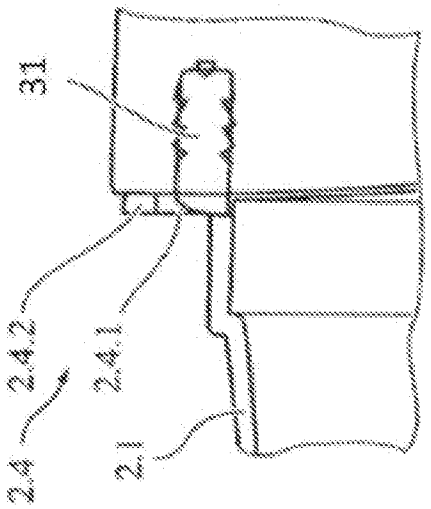


Fig. 16B

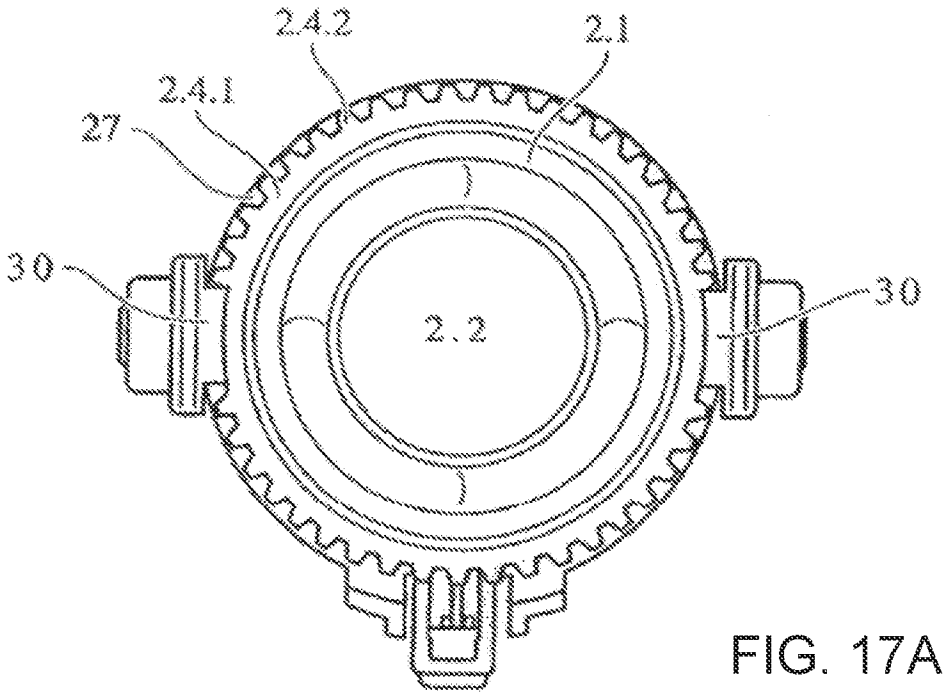


FIG. 17A

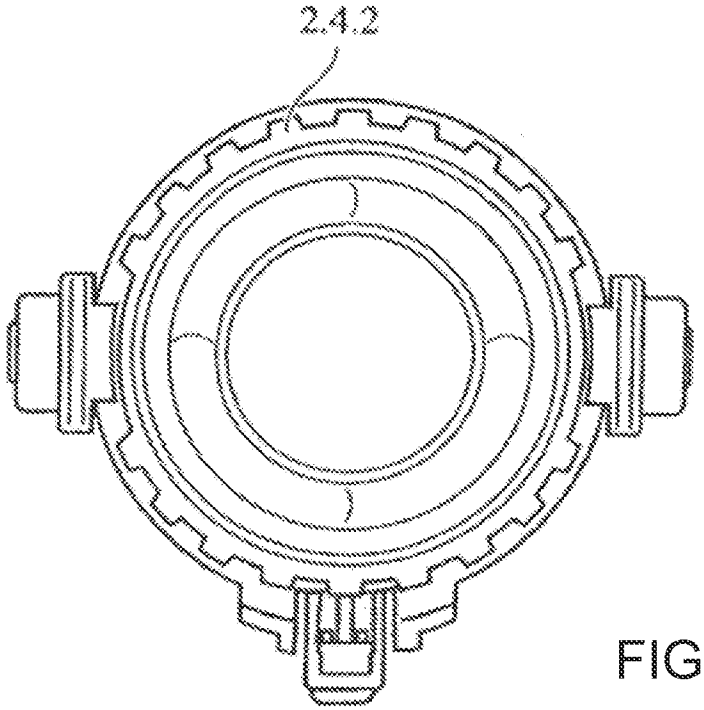


FIG. 17B

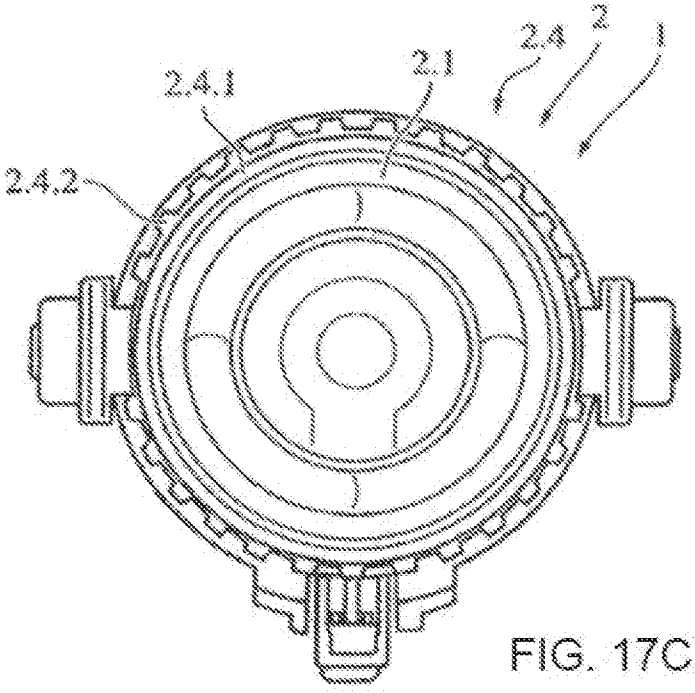


FIG. 17C

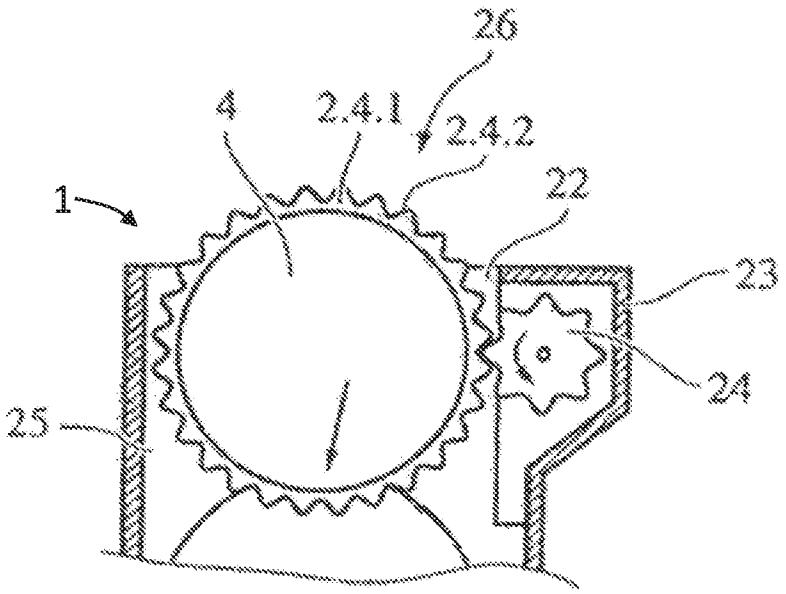


Fig. 18

Electronic Acknowledgement Receipt

EFS ID:	43755949
Application Number:	17385109
International Application Number:	
Confirmation Number:	6609
Title of Invention:	PORTION CAPSULE HAVING AN IDENTIFIER
First Named Inventor/Applicant Name:	Marc KRÜGER
Customer Number:	25215
Filer:	Paul J. Palinski/BECKY BALLARD
Filer Authorized By:	Paul J. Palinski
Attorney Docket Number:	1859.029USC11
Receipt Date:	14-SEP-2021
Filing Date:	26-JUL-2021
Time Stamp:	11:01:45
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Applicant Response to Pre-Exam Formalities Notice	Response_1859_029USC11_KRU022_WO_US_T12.pdf	165296 8fdc356e983ce6adba883691381e079d5ad80b1a	no	3

Warnings:

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 209 of 524

Information:					
2	Drawings-only black and white line drawings	Drawings_1859_029USC11_KRU022_WO_US_T12.pdf	2194367 a23f85bcb6f050a0f33af27e8976ae7e0669d20f	no	10
Warnings:					
Information:					
			Total Files Size (in bytes):	2359663	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
17/385,109	07/26/2021		1820	1859.029US11 (KRU0022-WO	20	2

CONFIRMATION NO. 6609

UPDATED FILING RECEIPT

25215
The Dobrusin Law Firm P.C.
29 W. Lawrence Street
Suite 210
Pontiac, MI 48342

OC000000128437511

Date Mailed: 09/17/2021

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections provided that the request is grantable.

Inventor(s)

Marc KRÜGER, Bergisch Gladbach, GERMANY;

Applicant(s)

K-FEE SYSTEM GMBH, Bergisch Gladbach, GERMANY;

Power of Attorney: The patent practitioners associated with Customer Number 25215

Domestic Priority data as claimed by applicant

This application is a CON of 17/383,951 07/23/2021
which is a CON of 17/330,572 05/26/2021
which is a CON of 17/324,182 05/19/2021
which is a CON of 17/108,175 12/01/2020
which is a CON of 16/860,432 04/28/2020 PAT 10858177
which is a CON of 16/438,818 06/12/2019 PAT 10994923
which is a CON of 15/646,980 07/11/2017
which is a DIV of 15/211,823 07/15/2016 ABN
which is a DIV of 13/744,623 01/18/2013 ABN
which is a CON of PCT/EP2011/003677 07/22/2011

Foreign Applications (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.)
GERMANY 10 2011 010 534.4 02/07/2011 No Access Code Provided
GERMANY 10 2010 044 251.8 09/02/2010 No Access Code Provided
GERMANY 10 2010 031 988.0 07/22/2010 No Access Code Provided

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 08/04/2021

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 17/385,109**

Projected Publication Date: 12/23/2021

Non-Publication Request: No

Early Publication Request: No

Title

PORTION CAPSULE HAVING AN IDENTIFIER

Preliminary Class

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor

community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit http://www.SelectUSA.gov or call +1-202-482-6800.

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 214 of 524

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 17/385,109

APPLICATION AS FILED - PART I

	(Column 1)	(Column 2)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE($)	FEE($)		RATE($)	FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	320
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	700
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	800
TOTAL CLAIMS (37 CFR 1.16(i))	20 minus 20 =	*			OR	x 100 =	0.00
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2 minus 3 =	*				x 480 =	0.00
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						0.00
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							0.00
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	1820

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE($)	ADDITIONAL FEE($)		RATE($)	ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1)		(Column 2)	(Column 3)					
		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE($)	ADDITIONAL FEE($)		RATE($)	ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/385,109	07/26/2021	Marc KRÜGER	1859.029US11 (KRU0022-WO	6609

25215 7590 10/20/2021

The Dobrusin Law Firm P.C.
29 W. Lawrence Street
Suite 210
Pontiac, MI 48342

EXAMINER
CENTRAL, DOCKET

ART UNIT	PAPER NUMBER
OPAP	

NOTIFICATION DATE	DELIVERY MODE
10/20/2021	ELECTRONIC

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

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

dobrusin_PAIR@firsttofile.com
patmail@patentco.com
rmasquelier@patentco.com

Decision Granting Request for Prioritized Examination (Track I)	**Application No.** 17/385,109	**Applicant(s)** KRÜGER, Marc	
	Examiner KIMBERLY A INABINET	**Art Unit** OPET	**AIA (FITF) Status** No

1. THE REQUEST FILED 26 July 2021 IS **GRANTED** .

The above-identified application has met the requirements for prioritized examination

A. ☑ for an original nonprovisional application (Track I).
B. ☐ for an application undergoing continued examination (RCE).

2. **The above-identified application will undergo prioritized examination**. The application will be accorded special status throughout its entire course of prosecution until one of the following occurs:

A. filing a **petition for extension of time** to extend the time period for filing a reply;

B. filing an **amendment to amend the application to contain more than four independent claims, more than thirty total claims** , or a multiple dependent claim;

C. filing a **request for continued examination** ;

D. filing a notice of appeal;

E. filing a request for suspension of action;

F. mailing of a notice of allowance;

G. mailing of a final Office action;

H. completion of examination as defined in 37 CFR 41.102; or

I. abandonment of the application.

Telephone inquiries with regard to this decision should be directed to KIMBERLY INABINET at (571) 272-4618. In his/her absence, calls may be directed to Petition Help Desk at (571) 272-3282.

/KIMBERLY A INABINET/ Paralegal Specialist, OPET	

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Marc Krüger	Art Unit: OPAP
Application No.: 17/385,109	Examiner: Central Docket
Filed: July 26, 2021	Conf. No.: 6609

For: PORTION CAPSULE HAVING AN IDENTIFIER

Docket No: 1859.029USC11 / KRU0022-WO-US-T12

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

PRELIMINARY AMENDMENT

Prior to the examination of the present application, please amend the application as follows. No new matter has been added.

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 218 of 524

Amendments to the Abstract

Please replace the existing Abstract with the following New Abstract. No new matter has been added.

A beverage system for making a beverage that includes a single-serve capsule and a beverage machine. The capsule has a flange and a barcode on a bottom side of the flange. The beverage machine includes: a sensor/detector to read the barcode; a brewing chamber to receive the capsule; and a pump controlled to supply water into the capsule. The machine includes: a mandrel to pierce the cover in a region that is offset from the central axis; a seal that seals against the cover in a region between a peripheral edge of the flange and the region of the cover that is pierced by the mandrel; a pair of holding arms for engaging the capsule; and a dropping box for the capsule to fall into. The pump is controlled to push the water into the capsule only upon a determination that the read barcode agrees with a stored reference.

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 219 of 524

Amendments to the Claims

1) (Currently Amended) A beverage system ~~single-serve capsule~~ for making a beverage, comprising:

a single-serve capsule comprising: a base element with a cavity, in which a raw beverage material is provided~~, the base element is made of a biodegradable material~~; a flange extending outwardly from the base element, the flange comprising a top side and an opposing bottom side; ~~and~~ a cover that is fastened to the top side of the flange to close the cavity; and a barcode ~~, the cover is made of a different material than the base element; wherein the single-serve capsule is free of a filter; and wherein the capsule has an identifier, which makes it possible to individualize the respective single-serve capsule, the identifier is~~ provided on the bottom side of the flange; and

a beverage machine comprising: a sensor/detector configured to read the barcode; a brewing chamber configured to receive the base element of the single- serve capsule and having an end portion that opposes the bottom side of the flange; and a pump controlled to supply water into the single-serve capsule;

wherein the single-serve capsule is free of a filter that is located inside of the cavity, the single-serve capsule also comprises:

i. an upper end portion that has an annular convexity and a lower end portion that has an annular concavity relative to a central axis of the base element; and

ii. a barrier layer to prevent moisture or aroma from escaping out of the single-serve capsule;

wherein the beverage machine also comprises:

i. a mandrel that is configured to pierce the cover in a region that is offset from the central axis of the base element;

ii. a seal that that is configured to seal against the cover in a region between a peripheral edge of the flange and the region of the cover that is pierced by the mandrel;

iii. a pair of holding arms for engaging the single-serve capsule; and

iv. a dropping box for the single-serve capsule to fall into;

wherein the pump is controlled to push the water into the single-serve capsule only upon a determination that the read barcode agrees with a stored reference.

2) – 20) (Cancelled)

21) (New) The beverage system according to claim 1, wherein the pump is controlled to not push water into the single-serve capsule upon a determination that the read barcode does not agree with the stored reference

22) (New) The beverage system according to claim 1, wherein the sensor/detector of the beverage machine is configured to compare the read barcode with the stored reference.

23) (New) The beverage system according to claim 1, wherein the base element comprises a bottom having an indentation.

24) (New) The beverage system according to claim 23, wherein the side wall of the base element includes indentations.

25) (New) The beverage system according to claim 1, wherein the base element is made of a biodegradable material.

26) (New) A beverage system for making a beverage, comprising:

a single-serve capsule comprising: a base element with a cavity, in which a raw beverage material is provided; a flange extending outwardly from the base element, the flange comprising a top side and an opposing bottom side; a cover that is fastened to the top side of the flange to close the cavity; and an identifier provided on the bottom side of the flange, the identifier being a barcode; and

a beverage machine comprising: a sensor/detector, a brewing chamber configured to receive the base element of the single-serve capsule and having an end portion that opposes the bottom side of the flange; and a pump controlled to supply water into the single-serve capsule;

wherein the single-serve capsule is free of a filter that is located inside of the cavity, the single-serve capsule also comprises:

i. an upper end portion that has an annular convexity and a lower end portion that has an annular concavity relative to a central axis of the base element;

ii. a barrier layer to prevent moisture or aroma from escaping out of the

single-serve capsule; and

iii. a side wall having indentations;

wherein the beverage machine also comprises:

i. a mandrel that is configured to pierce the cover in a region that is offset from the central axis of the base element;

ii. a seal that that is configured to seal against the cover in a region between a peripheral edge of the flange and the region of the cover that is pierced by the mandrel;

iii. a pair of holding arms for engaging opposite sides of the single-serve capsule; and

iv. a dropping box for the single-serve capsule to fall into;

wherein the beverage machine, by reading or detecting the identifier with the sensor/detector, is configured to determine if the single-serve capsule belongs to a group of single serve capsules operable for use with the beverage machine, and only if the beverage machine determines that the single-serve capsule belongs to the group of single serve capsules operable for use with the beverage machine is the pump controlled to push the water into the single-serve capsule.

27) (New) The beverage system according to claim 26, wherein the base element comprises a bottom having an indentation.

28) (New) The beverage system according to claim 26, wherein the base element is made of a biodegradable material.

29) (New) The beverage system according to claim 26, wherein the sensor/detector of the beverage machine is configured to rad the barcode and compare the read barcode with a stored reference.

REMARKS

Amendment to the Abstract

A new Abstract is included herewith. No new matter has been added. Entry of the New Abstract is respectfully requested.

Amendment to the Claims

Applicant has amended claim 1, cancelled certain claims, and added new claims. No new matter has been added. Applicant believes that the new set of claims is patentable. 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: October 21, 2021

/Paul Palinski/
Paul J. Palinski, Reg. No. 71,080
Attorney for Applicant
The Dobrusin Law Firm, P.C.
29 W. Lawrence Street - Suite 210
Pontiac, MI 48342
(248) 292-2920

Customer No. 25215

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 225 of 524

Electronic Acknowledgement Receipt

EFS ID:	44091656
Application Number:	17385109
International Application Number:	
Confirmation Number:	6609
Title of Invention:	PORTION CAPSULE HAVING AN IDENTIFIER
First Named Inventor/Applicant Name:	Marc KRÜGER
Customer Number:	25215
Filer:	Paul J. Palinski/BECKY BALLARD
Filer Authorized By:	Paul J. Palinski
Attorney Docket Number:	1859.029US11 (KRU0022-WO
Receipt Date:	21-OCT-2021
Filing Date:	26-JUL-2021
Time Stamp:	16:19:13
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		PreliminaryAmendmnet_1859_029USC11_KRU0022_WO_US_T12.pdf	137719 cf1601daf94c7090e211173e05b25f950c1290f8	yes	8

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Preliminary Amendment	1	1
	Abstract	2	2
	Claims	3	7
	Applicant Arguments/Remarks Made in an Amendment	8	8
Warnings:			
Information:			
	Total Files Size (in bytes):	137719	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

25215 7590 11/10/2021

The Dobrusin Law Firm P.C.
29 W. Lawrence Street
Suite 210
Pontiac, MI 48342

EXAMINER
JENNISON, BRIAN W

ART UNIT	PAPER NUMBER
3761	

DATE MAILED: 11/10/2021

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/385,109	07/26/2021	Marc KRÜGER	1859.029US11 (KRU0022-WO	6609

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	02/10/2022

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.

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 228 of 524

PART B - FEE(S) TRANSMITTAL

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

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
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 11/10/2021

The Dobrusin Law Firm P.C.
29 W. Lawrence Street
Suite 210
Pontiac, MI 48342

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.

Certificate of Mailing or Transmission

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.
17/385,109	07/26/2021	Marc KRÜGER	1859.029US11 (KRU0022-WO	6609

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	02/10/2022

EXAMINER	ART UNIT	CLASS-SUBCLASS
JENNISON, BRIAN W	3761	099-295000

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,
(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.

1 _____
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.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/385,109	07/26/2021	Marc KRÜGER	1859.029US11 (KRU0022-WO	6609

25215 7590 11/10/2021

The Dobrusin Law Firm P.C.
29 W. Lawrence Street
Suite 210
Pontiac, MI 48342

EXAMINER	
JENNISON, BRIAN W	
ART UNIT	PAPER NUMBER
3761	

DATE MAILED: 11/10/2021

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.

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 230 of 524

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, local, or foreign law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 231 of 524

Notice of Allowability	Application No. 17/385,109	Applicant(s) KRÜGER, Marc	
	Examiner BRIAN W JENNISON	Art Unit 3761	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 10/21/2021.
   ☐ 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 1 and 21-29 . 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)
2. ☑ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date 7/28/2021, 7/29/2021.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☑ Other PTO-892.

/BRIAN W JENNISON/
Primary Examiner, Art Unit 3761

Notice of Pre-AIA or AIA Status

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

Allowable Subject Matter

Claims 1, 21-29 are allowed.

The following is an examiner's statement of reasons for allowance: allowance of claims 1 and 21-29 is indicated as none of the cited prior art discloses or suggests the flange comprising a top side and an opposing bottom side; a cover that is fastened to the top side of the flange to close the cavity; and an identifier provided on the bottom side of the flange, the identifier being a barcode, wherein the beverage machine, by reading or detecting the identifier with the sensor/detector, is configured to determine if the single-serve capsule belongs to a group of single serve capsules operable for use with the beverage machine, and only if the beverage machine determines that the single-serve capsule belongs to the group of single serve capsules operable for use with the beverage machine is the pump controlled to push the water into the single-serve capsule.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRIAN W JENNISON whose telephone number is (571)270-5930. The examiner can normally be reached M-Th 9-5.

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, Tu Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of published or unpublished applications may be obtained from Patent Center. Unpublished application information in Patent Center is available to registered users. To file and manage patent submissions in Patent Center, visit: https://patentcenter.uspto.gov. Visit https://www.uspto.gov/patents/apply/patent-center for more information about Patent Center and https://www.uspto.gov/patents/docx for information about filing in DOCX format. For additional questions, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BRIAN W JENNISON/
Primary Examiner, Art Unit 3761

11/2/2021

Notice of References Cited	Application/Control No. 17/385,109	Applicant(s)/Patent Under Reexamination KRÜGER, Marc	
	Examiner BRIAN W JENNISON	Art Unit 3761	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-9320385-B2	04-2016	Spiegel; Akos	A47J31/3676	1/1
*	B	US-8695484-B2	04-2014	Mori; Peter	A47J31/44	99/295
*	C	US-8087347-B2	01-2012	Halliday; Andrew Michael	A47J31/4492	99/295
*	D	US-7856920-B2	12-2010	Schmed; Arthur	A47J31/4492	99/295
*	E	US-7444925-B2	11-2008	Mahlich; Gotthard	A47J31/3623	99/289P
*	F	US-20130129876-A1	05-2013	Ye; Yangsheng	A47J31/407	426/232
*	G	US-20100078480-A1	04-2010	AKER; Wynn L.	G06K19/06009	235/462.08
*	H	US-20020048621-A1	04-2002	Boyd, David D.	A47J31/4492	426/77
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/385,109	KRÜGER, Marc
	Examiner	Art Unit
	BRIAN W JENNISON	3761

✓	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	11/02/2021								
	1	=								
	2	-								
	3	-								
	4	-								
	5	-								
	6	-								
	7	-								
	8	-								
	9	-								
	10	-								
	11	-								
	12	-								
	13	-								
	14	-								
	15	-								
	16	-								
	17	-								
	18	-								
	19	-								
	20	-								
	21	=								
	22	=								
	23	=								
	24	=								
	25	=								
	26	=								
	27	=								
	28	=								
	29	=								

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/385,109	KRÜGER, Marc
	Examiner	Art Unit
	BRIAN W JENNISON	3761

CPC - Searched*		
Symbol	Date	Examiner
A47J: 31/407, 31/4492	11/02/2021	BJ
B65D: 65/466, 85/8043, 2203/06, 2203/10	11/02/2021	BJ

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
Conducted CPC search in EAST of parent case	11/02/2021	BJ
Conducted CPC search in EAST	11/02/2021	BJ
Conducted inventor search in EAST.	11/02/2021	BJ
Evaluated IDS in EAST.	11/02/2021	BJ
Evaluated in InnovationQ	11/02/2021	BJ
Evaluated in Global Dossier parent case	11/02/2021	BJ

/BRIAN W JENNISON/ Primary Examiner, Art Unit 3761	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/385,109	KRÜGER, Marc
	Examiner	Art Unit
	BRIAN W JENNISON	3761

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
A47J	31/407, 31/4492	11/02/2021	BJ
B65D	65/466, 85/8043, 2203/06, 2203/10	11/02/2021	BJ

/BRIAN W JENNISON/
Primary Examiner, Art Unit 3761

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/385,109	KRÜGER, Marc
	Examiner	**Art Unit**
	BRIAN W JENNISON	3761

CPC						
Symbol					**Type**	**Version**
B65D	/	85	/	8043	F	2013-01-01
A47J	/	31	/	4492	I	2013-01-01
A47J	/	31	/	407	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
B65D	/	85	/	8058	A	2020-05-01

CPC Combination Sets							
Symbol					**Type**	**Set**	**Ranking**	**Version**
	/		/					

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	10	
/BRIAN W JENNISON/ Primary Examiner, Art Unit 3761	02 November 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1B

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/385,109	KRÜGER, Marc
	Examiner	**Art Unit**
	BRIAN W JENNISON	3761

INTERNATIONAL CLASSIFICATION					
CLAIMED					
A47J	/	31	/	44	

NON-CLAIMED					
	/		/		

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**

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

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	10	
/BRIAN W JENNISON/ Primary Examiner, Art Unit 3761	02 November 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1B

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	17/385,109	KRÜGER, Marc
	Examiner	**Art Unit**
	BRIAN W JENNISON	3761

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

NONE		**Total Claims Allowed:**	
(Assistant Examiner)	(Date)	10	
/BRIAN W JENNISON/ Primary Examiner, Art Unit 3761	02 November 2021	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1B

Bibliographic Data

Application No: 17/385,109

Foreign Priority claimed: (•) Yes ( ) No

35 USC 119 (a-d) conditions met: [✓] Yes [ ] No [ ] Met After Allowance

Verified and Acknowledged: /BRIAN W JENNISON/ Examiner's Signature | Initials

Title: PORTION CAPSULE HAVING AN IDENTIFIER

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
07/26/2021	099	3761	1859.029US11 (KRU0022-WO
RULE			

APPLICANTS

K-FEE SYSTEM GMBH, Bergisch Gladbach, GERMANY

INVENTORS

Marc KRÜGER, Bergisch Gladbach, GERMANY

CONTINUING DATA

This application is a CON of 17383951 07/23/2021

17383951 is a CON of 17330572 05/26/2021

17330572 is a CON of 17324182 05/19/2021

17324182 is a CON of 17108175 12/01/2020

17108175 is a CON of 16860432 04/28/2020 PAT 10858177

16860432 is a CON of 16438818 06/12/2019 PAT 10994923

16438818 is a CON of 15646980 07/11/2017

15646980 is a DIV of 15211823 07/15/2016ABN

15211823 is a DIV of 13744623 01/18/2013ABN

13744623 is a CON of PCT/EP2011/003677 07/22/2011

FOREIGN APPLICATIONS

GERMANY DE10 2010 031 988.0 07/22/2010

GERMANY DE10 2010 044 251.8 09/02/2010

GERMANY DE10 2011 010 534.4 02/07/2011

IF REQUIRED, FOREIGN LICENSE GRANTED**

08/04/2021

STATE OR COUNTRY

GERMANY

ADDRESS

The Dobrusin Law Firm P.C.
29 W. Lawrence Street
Suite 210
Pontiac, MI 48342
UNITED STATES

FILING FEE RECEIVED

$140

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	2	"20040089158"	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 11:47
S2	1	"20110097450"	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 11:49
S3	7	"20110142996"	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 11:49
S4	2	"20120207893"	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 11:50
S5	23	("20050235834" | "20070144355" | "20080148957" | "20090035438" | "20090114100" | "20090183640" | "20090308258" | "20120210876" | "6079315" | "6182554" | "6644173" | "7097074" | "7216582" | "7231869" | "7469628" | "7569243" | "7592027" | "7607385" | "8109200" | "8272319").PN. OR ("8647691").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 11:51
S6	0	"16860432"	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 12:19
S7	1	"02078498"	DERWENT	OR	OFF	2020/05/18 12:59
S8	2	"20040089158"	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 12:59
S9	38	("20020048621" | "4230266" | "4829889" | "5158793" | "5855161" | "5974950").PN. OR ("7444925").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 14:19
S10	45	("20020048621" | "20040055472" | "20050109214" | "20060174779" | "20080115675" | "20080121111" | "20090173236" | "20090285953" | "20090285966" | "20110061542" | "20110100228" | "20110168029" | "20110274802" | "3793935" | "3975996" | "4429623" | "5638741" | "6431055" | "6779435" | "6805042" | "6843165" | "6990891" | "7081263" | "7093530" |	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 14:44

		"7213505" | "7217908" | "7223427" | "7270050" | "7325479" | "7444925" | "7487712" | "7540232" | "7644650" | "7644653" | "7677158" | "7698992" | "7806043" | "7997187" | "8028616" | "8062682" | "8069775" | "8087347" | "8088423" | "8109200" | "8113107").PN. OR ("9101243").URPN.				
S11	40	("4389925" | "4421014" | "4829889" | "5490447").PN. OR ("5855161").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 14:50
S12	1	"20130084363"	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 14:53
S13	4	"1974638"	DERWENT	OR	OFF	2020/05/18 14:55
S14	1	"20080245236"	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 14:56
S15	6	"2005044067"	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 14:56
S16	3	"2005044067"	DERWENT	OR	OFF	2020/05/18 14:57
S17	2	"20080187638"	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 14:57
S18	7	"1471012"	DERWENT	OR	OFF	2020/05/18 16:46
S19	4	"1849718"	DERWENT	OR	OFF	2020/05/18 16:47
S20	1	"20020048621"	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 16:47
S21	36	"0468079"	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 16:47
S22	0	"0468079"	DERWENT	OR	OFF	2020/05/18 16:48
S23	0	((("Krüger") near3 ("Marc"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 16:49
S24	57	((("Kruger") near3 ("Marc"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 16:49

S25	0	B65D85/08043.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 17:24
S26	2,176	B65D85/8043.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 17:24
S27	1,033	B65D65/466.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 17:25
S28	373	B65D2203/06.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 17:25
S29	1,288	B65D2203/10.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 17:25
S30	545	A47J31/4492.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 17:25
S31	13	("20090007794" | "20090249961" | "5776527" | "7703380" | "8613246" | "8647691" | "8770095" | "8904922").PN. OR ("9351602").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 17:27
S32	16	(US-20120207893-$ or US-20090183640-$ or US-20090308258-$ or US-20040089158-$ or US-20080245236-$ or US-20080187638-$ or US-20020048621-$ or US-20090249961-$).did. or (US-8087347-$ or US-7444925-$ or US-7325479-$ or US-5855161-$ or US-8695484-$ or US-4389925-$ or US-8770095-$).did. or (WO-2005044067-$).did.	US-PGPUB; USPAT; DERWENT	OR	OFF	2020/05/18 18:13
S33	7	S32 and (RFID identif$4)	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 18:13
S34	16	(US-20120207893-$ or US-20090183640-$ or US-20090308258-$ or US-20040089158-$ or US-20080245236-$ or US-20080187638-$ or US-20020048621-$ or US-20090249961-$).did. or (US-8087347-$ or US-7444925-$ or US-7325479-$ or US-5855161-$ or US-8695484-$ or US-4389925-$ or US-8770095-$).did. or (WO-2005044067-$).did.	US-PGPUB; USPAT; DERWENT	OR	OFF	2020/05/18 21:04
S35	4	S34 and (barcode)	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 21:04

S36	7	S34 and (pierc$4)	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 22:00
S37	1	S34 and ribs	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 22:09
S38	2,176	B65D85/8043.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 22:17
S39	1,033	B65D65/466.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 22:17
S40	373	B65D2203/06.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 22:17
S41	1,288	B65D2203/10.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 22:17
S42	545	A47J31/4492.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 22:17
S43	744	(S38 S39 S40 S41 S42) and ribs	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/18 22:17
S51	2,177	B65D85/8043.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/19 11:36
S52	1,035	B65D65/466.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/19 11:36
S53	374	B65D2203/06.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/19 11:36
S54	1,288	B65D2203/10.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/19 11:36
S55	545	A47J31/4492.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/19 11:36
S56	6	(S51 S52 S53 S54 S55) and ((capsule pod) near (rib ribbed ribbing))	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/19 11:36
S57	13	("20020078831" | "20030056661" | "20030217643" | "20100064899" | "20110041702" | "20120258210" | "20130064936" | "20140130678" | "20150050391" | "4136202" | "5242702" |	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/19 11:36

		"5948455" | "8846121").PN. OR ("10159375").URPN.				
S58	35	"4046926"	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/19 11:39
S59	93	"6085942"	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/19 11:41
S60	111	("1438487" | "2705579" | "2898003" | "2956710" | "2962192" | "3083876" | "4493574" | "4611715" | "4921137" | "5395031" | "5411178" | "5529224" | "5839609").PN. OR ("6085942").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/19 11:42
S61	42	"5554400"	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/19 11:42
S62	2	"2007136958"	DERWENT	OR	OFF	2020/05/19 11:43
S63	19	(S60 S61) and (rib ribbed ribbing)	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/19 11:43
S64	925	("10010095" | "1419905" | "1684421" | "20020033393" | "20020033397" | "20020170868" | "20030121924" | "20030166368" | "20030192907" | "20040137202" | "20040226267" | "20040247751" | "20050208186" | "20060062874" | "20060140746" | "20060162292" | "20060191929" | "20060191985" | "20060231599" | "20060237454" | "20060273098" | "20060278559" | "20070017915" | "20070017962" | "20070039970" | "20070152458" | "20070187273" | "20080041752" | "20080054060" | "20080116085" | "20080179204" | "20080223912" | "20080237326" | "20080305209" | "20090084787" | "20090184158" | "20090211941" | "20090250370" | "20090283581" | "20100126895" | "20100155402" | "20100187150" | "20100307933" | "20100310731" | "20100314284" | "20110000802" | "20110132791" | "20110143070" | "20110186461" | "20110294638" | "20120018502" | "20120024940" | "20120048758" | "20120091021" | "20120091149" | "20120125796" | "20120152783" | "20120152784" | "20120199640" |	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/19 11:45

"20120228370" | "20120247995" |
"20120280026" | "20120285977" |
"20120292328" | "20120294988" |
"20130001120" | "20130074401" |
"20130126524" | "20130139700" |
"20130189393" | "20130200100" |
"20130202750" | "20130213855" |
"20130277418" | "20130291612" |
"20130319886" | "20130320006" |
"20130327821" | "20140144974" |
"20140170348" | "20140175025" |
"20140230371" | "20140237897" |
"20140242230" | "20140252008" |
"20140252011" | "20140253718" |
"20140262871" | "20140262895" |
"20140263372" | "20140274552" |
"20140291180" | "20140305935" |
"20140312106").PN. OR ("20140314916" |
"20140339108" | "20140353307" |
"20140356489" | "20150004551" |
"20150014201" | "20150014405" |
"20150020364" | "20150021317" |
"20150024094" | "20150027917" |
"20150028045" | "20150034707" |
"20150034709" | "20150045551" |
"20150056339" | "20150083642" |
"20150096644" | "20150096921" |
"20150096978" | "20150101380" |
"20150108153" | "20150108208" |
"20150113921" | "20150115024" |
"20150122676" | "20150128529" |
"20150136764" | "20150136796" |
"20150144688" | "20150151350" |
"20150166215" | "20150166257" |
"20150191287" | "20150197386" |
"20150203239" | "20150210461" |
"20150225107" | "20150225158" |
"20150257407" | "20150259093" |
"20150259109" | "20150274409" |
"20150283597" | "20150284134" |
"20150284138" | "20150284158" |
"20150284165" | "20150298852" |
"20150298884" | "20150313388" |
"20150314949" | "20150321832" |
"20150329277" | "20150343221" |
"20150360820" | "20150366386" |
"20150367614" | "20150374178" |
"20150375484" | "20150375925" |
"20160001948" | "20160007807" |
"20160009444" | "20160009446" |
"20160010172" | "20160016223" |
"20160016685" | "20160016687" |
"20160023823" | "20160031634" |

"20160038992" | "20160039600" |
"20160067644" | "20160068313" |
"20160075466" | "20160075468" |
"20160083166" | "20160089829" |
"20160090230" | "20160102414" |
"20160106248" | "20160107772" |
"20160114913" | "20160122107" |
"20160130060" | "20160130074" |
"20160137330" | "20160137350" |
"20160145462" | "20160152394" |
"20160152395" | "20160152406").PN. OR
("20160159544" | "20160167828" |
"20160176554" | "20160176570" |
"20160176571" | "20160176617" |
"20160176621" | "20160193647" |
"20160193800" | "20160195118" |
"20160198892" | "20160200485" |
"20160214779" | "20160215801" |
"20160221064" | "20160221708" |
"20160251105" | "20160256910" |
"20160257486" | "20160264331" |
"20160272408" | "20160288947" |
"20160302626" | "20160311578" |
"20160315037" | "20160318217" |
"20160318649" | "20160325471" |
"20160325533" | "20160325872" |
"20160325878" | "20160325879" |
"20160325913" | "20160325919" |
"20160331174" | "20160332795" |
"20160339537" | "20160340073" |
"20160340099" | "20160347497" |
"20160355312" | "20160355320" |
"20160355647" | "20160361750" |
"20160367714" | "20160368701" |
"20170001230" | "20170001786" |
"20170002227" | "20170008207" |
"20170015462" | "20170015480" |
"20170028665" | "20170036846" |
"20170043901" | "20170043911" |
"20170057688" | "20170057721" |
"20170066579" | "20170087810" |
"20170105707" | "20170129653" |
"20170217651" | "20170361972" |
"20170368593" | "20180002095" |
"20180079585" | "20180177208" |
"20180201431" | "3127993" | "3161156" |
"3164478" | "3292840" | "3472368" |
"3741379" | "3983658" | "4221293" |
"4244470" | "4798133" | "4844243" |
"4921137" | "5176272" | "5209345" |
"5287979" | "5360133" | "5411178" |
"5480091" | "5529224" | "5538131" |
"5632377" | "5634569" | "5639017" |

"5685420" | "5728414" | "5775161" |
"5779079" | "5839609" | "5839634" |
"5850964" | "5860590" | "5881721" |
"5906313").PN. OR ("5921681" |
"5941453" | "5955099" | "5992619" |
"6000539" | "6015084" | "6018299" |
"6032502" | "6050402" | "6050438" |
"6065590" | "6065602" | "6079249" |
"6079618" | "6085942" | "6092687" |
"6094884" | "6099872" | "6113961" |
"6179147" | "6182847" | "6196406" |
"6209742" | "6216905" | "6220779" |
"6283221" | "6296120" | "6315123" |
"6352033" | "6357631" | "6367651" |
"6370842" | "6382447" | "6394296" |
"6427908" | "6431436" | "6463776" |
"6467614" | "6474468" | "6484550" |
"6499329" | "6501046" | "6513306" |
"6554181" | "6557700" | "6557731" |
"6683289" | "6685020" | "6688832" |
"6702140" | "6732889" | "6736260" |
"6736287" | "6787205" | "6793094" |
"6808351" | "6877600" | "6887030" |
"6929171" | "6959577" | "6959834" |
"6974612" | "6976577" | "7004897" |
"7007836" | "7017796" | "7044319" |
"7066342" | "7073680" | "7086572" |
"7090317" | "7159760" | "7191931" |
"7208009" | "7211035" | "7225930" |
"7270245" | "7284662" | "7287645" |
"7314482" | "7325686" | "7357272" |
"7370774" | "7383954" | "7389875" |
"7392683" | "7419068" | "7456376" |
"7475777" | "7484641" | "7520959" |
"7527152" | "7549550" | "7552833" |
"7582242" | "7597244" | "7604117" |
"7624673" | "7628296" | "7661564" |
"7699163" | "7748563" | "7757843" |
"7806314" | "7819249" | "7828198" |
"7832075" | "7838846" | "7862318" |
"7870980" | "7871651" | "7874421" |
"7922019" | "7951057" | "7959032" |
"7975989" | "7997436" | "7998047" |
"8003178" | "8038918" | "8042728" |
"8051982" | "8053009" | "8066141" |
"8070052").PN. OR ("8087526" |
"8091703" | "8100320" | "8104319" |
"8127518" | "8158226" | "8172086" |
"8177068" | "8196749" | "8196805" |
"8205787" | "8210538" | "8231001" |
"8235008" | "8261964" | "8272559" |
"8297491" | "8302809" | "8308023" |
"8317028" | "8317671" | "8322183" |

"8328492" | "8336713" | "8348051" |
"8348142" | "8365658" | "8371445" |
"8371449" | "8376214" | "8381929" |
"8387855" | "8393469" | "8408412" |
"8408419" | "8413805" | "8439194" |
"8439198" | "8444046" | "8459088" |
"8459190" | "8469259" | "8480035" |
"8490858" | "8505716" | "8511463" |
"8511467" | "8528807" | "8540094" |
"8540111" | "8550035" | "8550241" |
"8555692" | "8556071" | "8556124" |
"8579184" | "8602292" | "8607974" |
"8631971" | "8644798" | "8646653" |
"8651310" | "8657163" | "8661969" |
"8662333" | "8671730" | "8672184" |
"8714407" | "8720736" | "8720743" |
"8733572" | "8733624" | "8746483" |
"8746540" | "8776415" | "8789403" |
"8794503" | "8800761" | "8807365" |
"8807417" | "8807418" | "8813965" |
"8820201" | "8827145" | "8833235" |
"8844334" | "8851279" | "8851323" |
"8851362" | "8863751" | "8863951" |
"8863952" | "8869979" | "8875878" |
"8875924" | "8875982" | "8887906" |
"8893955" | "8899414" | "8899418" |
"8915365" | "8936149" | "8960527" |
"8966869" | "8967380" | "8998073" |
"9016492" | "9027780" | "9033210" |
"9033211" | "9038847" | "9044082" |
"9051104" | "9051106" | "9061810" |
"9067713" | "9073663" | "9073665" |
"9073680" | "9078533" | "9079239" |
"9085026" | "9090390" | "9096345" |
"9096780").PN. OR ("9114451" |
"9120589" | "9126718" | "9132612" |
"9132936" | "9132974" | "9139346" |
"9162564" | "9169037" | "9169039" |
"9187204" | "9192977" | "9199774" |
"9227750" | "9227751" | "9233515" |
"9238531" | "9248423" | "9265287" |
"9272819" | "9290291" | "9302812" |
"9309023" | "9315310" | "9321553" |
"9327338" | "9327857" | "9327862" |
"9327867" | "9334078" | "9334079" |
"9340347" | "9346234" | "9346582" |
"9352890" | "9359106" | "9371151" |
"9382040" | "9386871" | "9387530" |
"9387968" | "9394093" | "9394094" |
"9394154" | "9403639" | "9409224" |
"9415278" | "9415893" | "9415915" |
"9415928" | "9434124" | "9434520" |
"9452860" | "9452874" | "9463896" |

"9475606" | "9480322" | "9481486" |
"9487320" | "9487324" | "9499296" |
"9499306" | "9501956" | "9505186" |
"9505513" | "9505515" | "9505518" |
"9511411" | "9511894" | "9512524" |
"9517498" | "9533791" | "9540137" |
"9540165" | "9546017" | "9555459" |
"9555948" | "9555955" | "9557209" |
"9567131" | "9580203" | "9592942" |
"9598202" | "9598214" | "9604767" |
"9604768" | "9611065" | "9623473" |
"9623996" | "9630739" | "9637265" |
"9637296" | "9649500" | "9656776" |
"9656789" | "9659426" | "9663282" |
"9666230" | "9682793" | "9688427" |
"9689606" | "9694935" | "9700163" |
"9700929" | "9701444" | "9707615" |
"9708112" | "9714134" | "9718110" |
"9718246" | "9718576" | "9725202" |
"9738413" | "9751283" | "9758275" |
"9771493" | "9775469" | "9790013" |
"9796498" | "9796525" | "9809363" |
"9834328" | "9845173" | "9849501" |
"9861551").PN. OR ("9868582" |
"9868587" | "9873539" | "9873540" |
"9878365" | "9878827" | "9889370" |
"9894886" | "9895737" | "9901222" |
"9901972" | "9919855" | "9938043" |
"9938299" | "9943899" | "9944427" |
"D380381" | "D381263" | "D382795" |
"D382796" | "D385784" | "D388324" |
"D392883" | "D393204" | "D394807" |
"D395599" | "D396633" | "D397610" |
"D398844" | "D398845" | "D398846" |
"D404642" | "D409085" | "D411741" |
"D412843" | "D418410" | "D427902" |
"D431459" | "D431461" | "D433328" |
"D433937" | "D436532" | "D436860" |
"D437220" | "D438103" | "D438461" |
"D440490" | "D445673" | "D446450" |
"D447684" | "D448283" | "D449226" |
"D459988" | "D459989" | "D466405" |
"D469690" | "D472803" | "D475288" |
"D475581" | "D480300" | "D480638" |
"D485470" | "D487563" | "D488375" |
"D488718" | "D493105" | "D500442" |
"D500443" | "D502095" | "D502869" |
"D504286" | "D505081" | "D505861" |
"D506130" | "D506146" | "D506147" |
"D506926" | "D508647" | "D509727" |
"D515915" | "D520357" | "D522857" |
"D524642" | "D524645" | "D528908" |
"D530197" | "D531022" | "D531029" |

"D531894" | "D534420" | "D534421" |
"D534423" | "D536611" | "D536992" |
"D539134" | "D540663" | "D542675" |
"D547176" | "D549571" | "D550077" |
"D550553" | "D552468" | "D552982" |
"D553489" | "D553490" | "D554498" |
"D556569" | "D556571" | "D557601" |
"D561579" | "D562128" | "D562678" |
"D564349" | "D564899" | "D569243" |
"D569269" | "D571228" | "D571654" |
"D571656" | "D572582" | "D573015" |
"D576875" | "D577577" | "D577578" |
"D577579").PN. OR ("D577995" |
"D578387" | "D578388" | "D578877" |
"D579326" | "D579767" | "D580750" |
"D581266" | "D581781" | "D583657" |
"D583658" | "D583659" | "D584964" |
"D585734" | "D585735" | "D586665" |
"D587108" | "D587567" | "D587993" |
"D588932" | "D589340" | "D589341" |
"D589342" | "D589790" | "D589796" |
"D592494" | "D592497" | "D596935" |
"D596954" | "D601010" | "D601011" |
"D601013" | "D601014" | "D601015" |
"D601304" | "D601884" | "D605501" |
"D605530" | "D606392" | "D608192" |
"D609085" | "D609561" | "D611805" |
"D614490" | "D614491" | "D614948" |
"D614950" | "D615395" | "D615401" |
"D615858" | "D615859" | "D616738" |
"D618539" | "D618540" | "D618547" |
"D620790" | "D622588" | "D622617" |
"D623935" | "D624399" | "D624402" |
"D624403" | "D624785" | "D624815" |
"D625180" | "D627221" | "D628062" |
"D628470" | "D628473" | "D628475" |
"D628478" | "D628479" | "D630091" |
"D631337" | "D631338" | "D631371" |
"D632167" | "D632170" | "D632955" |
"D632956" | "D633380" | "D634188" |
"D634616" | "D634617" | "D634618" |
"D635848" | "D636258" | "D637482" |
"D637483" | "D637484" | "D637902" |
"D638701" | "D639156" | "D640129" |
"D640130" | "D640544" | "D640547" |
"D640548" | "D640550" | "D640921" |
"D641233" | "D641616" | "D641642" |
"D643311" | "D643713" | "D645339" |
"D645737" | "D645764" | "D646561" |
"D646564" | "D646969" | "D647792" |
"D649448" | "D651096" | "D652716" |
"D653533" | "D653557" | "D654788" |
"D655154" | "D655201" | "D656008" |

		"D656843" | "D657237" | "D658055" | "D658979").PN. OR ("D660718" | "D689694" | "D724440" | "D755637").PN. OR ("10507970").URPN.				
S65	60	S64 and (rib ribbed ribbing)	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/19 11:52
S66	20	("20010037992" | "20010054597" | "5199588" | "5238129" | "5381910" | "5499730" | "5746339" | "6213326").PN. OR ("7552833").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/19 11:53
S67	14	S66 and (rib ribbed ribbing)	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/19 11:54
S68	90	("3185353" | "4863046" | "5178289" | "5261543" | "5350078" | "5385250" | "5632397" | "5732838" | "5758790" | "5803290" | "D092953" | "D188817" | "D200603" | "D214423" | "D218020" | "D225510" | "D247469" | "D322562" | "D340190" | "D374826" | "D378353" | "D379151" | "D387279" | "D387671" | "D393802" | "D395008" | "D398538").PN. OR ("6213326").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/19 11:54
S69	17	S68 and (rib ribbed ribbing)	US-PGPUB; USPAT; USOCR	OR	OFF	2020/05/19 11:54
S70	210	("0000004" | "0005897" | "0056563" | "20040188459" | "20070144355" | "20090223375" | "20100147872" | "5402707" | "0000000" | "0000001" | "0000002" | "0000005" | "0000006" | "0000008" | "0000015" | "0000017" | "0000020" | "0000201" | "0000326" | "0000350" | "0000361" | "0000363" | "0000451" | "0000501" | "0000530" | "0000560" | "0000615" | "0000907" | "0002001" | "0002010" | "0002011" | "0002012" | "0002013" | "0002014" | "0002015" | "0002778" | "0003266" | "0004881" | "0005941" | "0006871" | "0008081" | "0020060" | "0022919" | "0046441" | "0084776" | "0445014" | "0794621" | "0811446" | "0847468" | "0896672" | "0923706" | "1036589" | "1051426" | "120070542" | "120070551" | "130327223" | "1329461" | "1485200" | "1689665" | "20000324791" | "20010038204" | "20010047724" | "20010181005" | "20020020659" |	US-PGPUB; USPAT	OR	OFF	2020/09/25 12:57

"20020048356" | "20020048621" |
"20020085164" | "20020088807" |
"20020104373" | "20020110626" |
"20030003973" | "20030005826" |
"20030033938" | "20030072813" |
"20030121979" | "20030222089" |
"20040000011" | "20040001551" |
"20040005384" | "20040015310" |
"20040045443" | "20040089158" |
"20040089602" | "20040142070" |
"20040182250" | "20050000005" |
"20050000164" | "20050016383" |
"20050045566" | "20050061478" |
"20050150391" | "20050160919" |
"20050183581" | "20050235571" |
"20050266122" | "20060010744" |
"20060032427" | "20060084344" |
"20060107841" | "20060228447" |
"20060236871" | "20070000018" |
"20070002571" | "20070148290" |
"20070203587" | "20070283640" |
"20080000001" | "20080002612" |
"20080003844" | "20080024536" |
"20080085356" | "20080148948" |
"20080245236" | "20080299262" |
"20080302251" | "20090000021" |
"20090004343" | "20090007793" |
"20090007796" | "20090092711" |
"20090126577" | "20090136626" |
"20090289121" | "20090291379" |
"20090324788" | "20100000001" |
"20100051532" | "20100054532" |
"20100072272" | "20100078480" |
"20100108541" | "20100147418" |
"20100158666" | "20100181378" |
"20100196545" | "20100239717" |
"20100239733" | "20100239734" |
"20100260915" | "20100263329" |
"20100264640" | "20100288131" |
"20100288133" | "20100303964" |
"20100308061" | "20110005399" |
"20110033580" | "20110041702" |
"20110076361" | "20110097450" |
"20110212225" | "20120006685" |
"20120007043" | "20120060697" |
"20120097602" | "20120123106" |
"20120207893" | "20120207895" |
"20120251668" | "20120295234" |
"20120308688" | "20130002060" |
"20130005039" | "20130020619" |
"20130055903" | "20130064929" |
"20130084363" | "20130084376" |
"20130125762" | "20130129872" |

		"20130136828" | "20130149424" | "20130156897" | "20130200622" | "20130209618" | "20130216663" | "20130230627" | "20130243910" | "20130312619" | "2014000" | "20140002871" | "20140022019" | "20140037018" | "20140127364" | "20140196608" | "20140224130" | "20140230370" | "20140346022" | "20150000079" | "20150002744" | "20150010680" | "20150020481" | "20150029702" | "20150128525" | "2015016620 4" | "20150239652" | "20150314954" | "20150329282" | "20150353275" | "20150375926" | "20160001968" | "20160003401" | "20160037961" | "20160045060" | "20160058234" | "20160066501" | "20160075506" | "20160194146" | "20160207696" | "20160242594" | "20160251150" | "20160325921" | "20160332759" | "20170027374" | "20190359418" | "3039153").PN.				
S71	122	("3183096" | "3327428" | "3363588" | "3416183" | "3480989" | "3640727" | "4081880" | "4325204" | "4404770" | "4424605" | "4488387" | "4534985" | "4540595" | "4633614" | "4651469" | "4676482" | "4680828" | "4742645" | "4859337" | "4860645" | "4867993" | "4936049" | "4976179" | "5028769" | "5079872" | "5108768" | "5194553" | "5242702" | "5285041" | "5325765" | "5450693" | "5460078" | "5461829" | "5496573" | "5535765" | "5566505" | "5637850" | "5656311" | "5677522" | "5725261" | "5742979" | "5840189" | "5888549" | "5895672" | "5948455" | "5980743" | "5994677" | "6082499" | "6199780" | "6202929" | "6250016" | "6289643" | "6299926" | "6440256" | "6589577" | "6598800" | "6607762" | "6627244" | "6645537" | "6655260" | "6817538" | "6861086" | "6948420" | "6994879" | "7408094" | "7444925" | "7464518" | "7543527" | "7552672" | "7595870" | "7673558" | "7685930" | "7712258" | "7743557" | "7779578" | "7815953" | "7935646" | "7981451" | "8008946" | "80116105" | "8039029" | "8039034" | "8088423" | "8109200" | "8163318" | "8168908" | "8257766" |	US-PGPUB; USPAT	OR	OFF	2020/09/25 12:57

		"8276639" | "8361527" | "8443549" | "8491948" | "8491976" | "8505440" | "8512886" | "8579006" | "8734881" | "8747775" | "8794125" | "8906436" | "8916220" | "9049958" | "9079705" | "9145730" | "9150347" | "9204751" | "9216854" | "9227837" | "9271602" | "9290317" | "9295278" | "9357791" | "9359126" | "9359128" | "9392902" | "9394101" | "9409703" | "9409704" | "9415931" | "9428328" | "9428329" | "9434525" | "9486108" | "9969564" | "T000014").PN.				
S72	8	("0000004" | "0005897" | "0056563" | "20040188459" | "20070144355" | "20090223375" | "20100147872" | "5402707").PN.	US-PGPUB; USPAT	OR	OFF	2020/09/25 13:10
S73	2,230	B65D85/8043.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/25 14:17
S74	1,076	B65D65/466.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/25 14:17
S75	389	B65D2203/06.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/25 14:17
S76	1,328	B65D2203/10.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/25 14:17
S77	571	A47J31/4492.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/25 14:17
S78	4,872	(S73 S74 S75 S76 S77)	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/25 14:17
S79	1	"20100078480"	US-PGPUB; USPAT; USOCR	OR	OFF	2020/09/25 14:18
S85	2	"20040133473"	US-PGPUB; USPAT; DERWENT	OR	OFF	2020/09/28 12:27
S86	1	"20020048621"	US-PGPUB; USPAT; USOCR	OR	OFF	2021/11/02 10:01
S87	161	("2002/0048621").URPN.	USPAT	OR	OFF	2021/11/02 10:01

S88	419	("0923706" | "1036589" | "1051426" | "1329461" | "1485200" | "1689665" | "20010038204" | "20010047724" | "20010048957" | "20020020659" | "20020048621" | "20020085164" | "20020088807" | "20020104373" | "20020110626" | "20020148356" | "20030005826" | "20030033938" | "20030039731" | "20030121979" | "20030172813" | "20030222089" | "20040005384" | "20040045443" | "20040089158" | "20040089602" | "20040115310" | "20040118295" | "20040142070" | "20040155113" | "20040182250" | "20040188459" | "20050000164" | "20050016383" | "20050045566" | "20050051478" | "20050061478" | "20050150391" | "20050160919" | "20050183581" | "20050235571" | "20050266122" | "20060010744" | "20060010784" | "20060032427" | "20060084344" | "20060107841" | "20060194004" | "20060215978" | "20060228447" | "20060236871" | "20070144355" | "20070148290" | "20070157821" | "20070181005" | "20070181412" | "20070203587" | "20070257118" | "20070283640" | "20080024523" | "20080026121" | "20080028946" | "20080038441" | "20080085356" | "20080116105" | "20080122217" | "20080148948" | "20080187638" | "20080245236" | "20080299262" | "20080302251" | "20090004343" | "20090007793" | "20090007796" | "20090092711" | "20090126577" | "20090136626" | "20090205747" | "20090211458" | "20090211713" | "20090220650" | "20090223375" | "20090249961" | "20090289121" | "20090291379" | "20090324788" | "20090324791" | "20100000667" | "20100007848" | "20100028495" | "20100050880" | "20100051532" | "20100054532" | "20100072272" | "20100078480").PN. OR ("20100108541" | "20100132564" | "20100147418" | "20100147872" | "20100173056" | "20100181378" | "20100196545" | "20100239717" | "20100239733" | "20100239734" | "20100260915" | "20100263329" | "20100264640" |	US-PGPUB; USPAT; USOCR	OR	OFF	2021/11/02 10:06

"20100288131" | "20100288133" |
"20100303964" | "20100308061" |
"20110005399" | "20110008913" |
"20110020500" | "20110033580" |
"20110041702" | "20110064852" |
"20110076361" | "20110089135" |
"20110097450" | "20110142996" |
"20110189350" | "20110212225" |
"20110250333" | "20110250812" |
"20110303095" | "20110308397" |
"20120006685" | "20120024160" |
"20120031794" | "20120058226" |
"20120060697" | "20120070542" |
"20120070543" | "20120070551" |
"20120097041" | "20120097602" |
"20120100264" | "20120121765" |
"20120123106" | "20120126834" |
"20120183657" | "20120195155" |
"20120201933" | "20120207893" |
"20120207895" | "20120251668" |
"20120251672" | "20120258210" |
"20120295234" | "20120308688" |
"20130055903" | "20130059039" |
"20130064929" | "20130064937" |
"20130084363" | "20130084376" |
"20130099597" | "20130101716" |
"20130122153" | "20130125762" |
"20130129872" | "20130136828" |
"20130149424" | "20130156897" |
"20130206011" | "20130209618" |
"20130209619" | "20130209620" |
"20130209622" | "20130216663" |
"20130230627" | "20130243910" |
"20130312619" | "20130327223" |
"20140001563" | "20140004231" |
"20140017359" | "20140046126" |
"20140127364" | "20140141128" |
"20140141129" | "20140161936" |
"20140178538" | "20140196608" |
"20140220191" | "20140224130").PN. OR
("20140230370" | "20140263033" |
"20140272018" | "20140287104" |
"20140287105" | "20140302204" |
"20140346022" | "20140348984" |
"20140370181" | "20150010680" |
"20150020481" | "20150029702" |
"20150056331" | "20150056340" |
"20150056351" | "20150079241" |
"20150119220" | "20150128525" |
"20150132441" | "20150157164" |
"20150158665" | "20150158666" |
"20150166204" | "20150173558" |
"20150175347" | "20150201790" |

"20150239652" | "20150246741" |
"20150274411" | "20150297021" |
"20150297023" | "20150314954" |
"20150329282" | "20150353275" |
"20150375926" | "20160001968" |
"20160037961" | "20160045060" |
"20160058234" | "20160066591" |
"20160075506" | "20160194146" |
"20160207696" | "20160242594" |
"20160251150" | "20160325921" |
"20160332759" | "20160340110" |
"20170020329" | "20170027374" |
"20190359418" | "2732919" | "2778739" |
"2847726" | "3039153" | "3183096" |
"3261129" | "3327428" | "3363588" |
"3416183" | "3473266" | "3480989" |
"3501896" | "3611637" | "3631793" |
"3640727" | "4081880" | "4136202" |
"4325204" | "4389925" | "4404770" |
"4424605" | "4452014" | "4488387" |
"4513535" | "4534985" | "4540595" |
"4633614" | "4644151" | "4651469" |
"4676482" | "4680828" | "4742645" |
"4859337" | "4860645" | "4867993" |
"4881346" | "4936049" | "4976179" |
"5012629" | "5028769" | "5079872" |
"5108768" | "5194553" | "5242702" |
"5243164" | "5251758" | "5285041" |
"5301468" | "5325765" | "5351442" |
"5392986" | "5402707" | "5450693" |
"5460078" | "5461829" | "5496573" |
"5501945").PN. OR ("5535765" |
"5566505" | "5601716" | "5637850" |
"5656311" | "5656318" | "5677522" |
"5725261" | "5742979" | "5840189" |
"5888549" | "5895672" | "5897899" |
"5917165" | "5941055" | "5948455" |
"5980743" | "5994677" | "6082499" |
"6153026" | "6199780" | "6202929" |
"6213326" | "6250016" | "6289643" |
"6299926" | "6440256" | "6451332" |
"6589577" | "6598800" | "6607762" |
"6627244" | "6645537" | "6655260" |
"6817538" | "6861086" | "6871448" |
"6948420" | "6994879" | "7408094" |
"7444925" | "7464518" | "7543527" |
"7552672" | "7595870" | "7673558" |
"7685930" | "7712258" | "7743557" |
"7779578" | "7815953" | "7935646" |
"7946217" | "7981451" | "8039029" |
"8039034" | "8088423" | "8101928" |
"8109200" | "8114461" | "8163318" |
"8168908" | "8257766" | "8276639" |

		"8361527" | "8443549" | "8474368" | "8491948" | "8491976" | "8505440" | "8512886" | "8579006" | "8734881" | "8747775" | "8794125" | "8906436" | "8916220" | "8956672" | "9049958" | "9072402" | "9079705" | "9145730" | "9150347" | "9204751" | "9216854" | "9227837" | "9271602" | "9290317" | "9295278" | "9357791" | "9359126" | "9359128" | "9392902" | "9394101" | "9409703" | "9409704" | "9415931" | "9428328" | "9428329" | "9434525" | "9486108" | "9538876" | "9808112" | "9969564").PN. OR ("10994923").URPN.				
S89	419	("0923706" | "1036589" | "1051426" | "1329461" | "1485200" | "1689665" | "20010038204" | "20010047724" | "20010048957" | "20020020659" | "20020048621" | "20020085164" | "20020088807" | "20020104373" | "20020110626" | "20020148356" | "20030005826" | "20030033938" | "20030039731" | "20030121979" | "20030172813" | "20030222089" | "20040005384" | "20040045443" | "20040089158" | "20040089602" | "20040115310" | "20040118295" | "20040142070" | "20040155113" | "20040182250" | "20040188459" | "20050000164" | "20050016383" | "20050045566" | "20050051478" | "20050061478" | "20050150391" | "20050160919" | "20050183581" | "20050235571" | "20050266122" | "20060010744" | "20060010784" | "20060032427" | "20060084344" | "20060107841" | "20060194004" | "20060215978" | "20060228447" | "20060236871" | "20070144355" | "20070148290" | "20070157821" | "20070181005" | "20070181412" | "20070203587" | "20070257118" | "20070283640" | "20080024523" | "20080026121" | "20080028946" | "20080038441" | "20080085356" | "20080116105" | "20080122217" | "20080148948" | "20080187638" | "20080245236" | "20080299262" | "20080302251" | "20090004343" | "20090007793" | "20090007796" | "20090092711" | "20090126577" | "20090136626" | "20090205747" |	US-PGPUB; USPAT; USOCR	OR	OFF	2021/11/02 10:15

"20090211458" | "20090211713" |
"20090220650" | "20090223375" |
"20090249961" | "20090289121" |
"20090291379" | "20090324788" |
"20090324791" | "20100000667" |
"20100007848" | "20100028495" |
"20100050880" | "20100051532" |
"20100054532" | "20100072272" |
"20100078480").PN. OR ("20100108541" |
"20100132564" | "20100147418" |
"20100147872" | "20100173056" |
"20100181378" | "20100196545" |
"20100239717" | "20100239733" |
"20100239734" | "20100260915" |
"20100263329" | "20100264640" |
"20100288131" | "20100288133" |
"20100303964" | "20100308061" |
"20110005399" | "20110008913" |
"20110020500" | "20110033580" |
"20110041702" | "20110064852" |
"20110076361" | "20110089135" |
"20110097450" | "20110142996" |
"20110189350" | "20110212225" |
"20110250333" | "20110250812" |
"20110303095" | "20110308397" |
"20120006685" | "20120024160" |
"20120031794" | "20120058226" |
"20120060697" | "20120070542" |
"20120070543" | "20120070551" |
"20120097041" | "20120097602" |
"20120100264" | "20120121765" |
"20120123106" | "20120126834" |
"20120183657" | "20120195155" |
"20120201933" | "20120207893" |
"20120207895" | "20120251668" |
"20120251672" | "20120258210" |
"20120295234" | "20120308688" |
"20130055903" | "20130059039" |
"20130064929" | "20130064937" |
"20130084363" | "20130084376" |
"20130099597" | "20130101716" |
"20130122153" | "20130125762" |
"20130129872" | "20130136828" |
"20130149424" | "20130156897" |
"20130206011" | "20130209618" |
"20130209619" | "20130209620" |
"20130209622" | "20130216663" |
"20130230627" | "20130243910" |
"20130312619" | "20130327223" |
"20140001563" | "20140004231" |
"20140017359" | "20140046126" |
"20140127364" | "20140141128" |
"20140141129" | "20140161936" |

"20140178538" | "20140196608" |
"20140220191" | "20140224130").PN. OR
("20140230370" | "20140263033" |
"20140272018" | "20140287104" |
"20140287105" | "20140302204" |
"20140346022" | "20140348984" |
"20140370181" | "20150010680" |
"20150020481" | "20150029702" |
"20150056331" | "20150056340" |
"20150056351" | "20150079241" |
"20150119220" | "20150128525" |
"20150132441" | "20150157164" |
"20150158665" | "20150158666" |
"20150166204" | "20150173558" |
"20150175347" | "20150201790" |
"20150239652" | "20150246741" |
"20150274411" | "20150297021" |
"20150297023" | "20150314954" |
"20150329282" | "20150353275" |
"20150375926" | "20160001968" |
"20160037961" | "20160045060" |
"20160058234" | "20160066591" |
"20160075506" | "20160194146" |
"20160207696" | "20160242594" |
"20160251150" | "20160325921" |
"20160332759" | "20160340110" |
"20170020329" | "20170027374" |
"20190359418" | "2732919" | "2778739" |
"2847726" | "3039153" | "3183096" |
"3261129" | "3327428" | "3363588" |
"3416183" | "3473266" | "3480989" |
"3501896" | "3611637" | "3631793" |
"3640727" | "4081880" | "4136202" |
"4325204" | "4389925" | "4404770" |
"4424605" | "4452014" | "4488387" |
"4513535" | "4534985" | "4540595" |
"4633614" | "4644151" | "4651469" |
"4676482" | "4680828" | "4742645" |
"4859337" | "4860645" | "4867993" |
"4881346" | "4936049" | "4976179" |
"5012629" | "5028769" | "5079872" |
"5108768" | "5194553" | "5242702" |
"5243164" | "5251758" | "5285041" |
"5301468" | "5325765" | "5351442" |
"5392986" | "5402707" | "5450693" |
"5460078" | "5461829" | "5496573" |
"5501945").PN. OR ("5535765" |
"5566505" | "5601716" | "5637850" |
"5656311" | "5656318" | "5677522" |
"5725261" | "5742979" | "5840189" |
"5888549" | "5895672" | "5897899" |
"5917165" | "5941055" | "5948455" |
"5980743" | "5994677" | "6082499" |

		"6153026" | "6199780" | "6202929" | "6213326" | "6250016" | "6289643" | "6299926" | "6440256" | "6451332" | "6589577" | "6598800" | "6607762" | "6627244" | "6645537" | "6655260" | "6817538" | "6861086" | "6871448" | "6948420" | "6994879" | "7408094" | "7444925" | "7464518" | "7543527" | "7552672" | "7595870" | "7673558" | "7685930" | "7712258" | "7743557" | "7779578" | "7815953" | "7935646" | "7946217" | "7981451" | "8039029" | "8039034" | "8088423" | "8101928" | "8109200" | "8114461" | "8163318" | "8168908" | "8257766" | "8276639" | "8361527" | "8443549" | "8474368" | "8491948" | "8491976" | "8505440" | "8512886" | "8579006" | "8734881" | "8747775" | "8794125" | "8906436" | "8916220" | "8956672" | "9049958" | "9072402" | "9079705" | "9145730" | "9150347" | "9204751" | "9216854" | "9227837" | "9271602" | "9290317" | "9295278" | "9357791" | "9359126" | "9359128" | "9392902" | "9394101" | "9409703" | "9409704" | "9415931" | "9428328" | "9428329" | "9434525" | "9486108" | "9538876" | "9808112" | "9969564").PN. OR ("10994923").URPN.				
S90	0	S89 not S88	US-PGPUB; USPAT; USOCR	OR	OFF	2021/11/02 10:16
S91	41	("20020048621" | "20020148356" | "20030072489" | "20030139843" | "20040004128" | "20040089158" | "20040112222" | "20040197444" | "20050150391" | "20060267753" | "20070157821" | "20070175334" | "20080148948" | "20080160153" | "20080173718" | "20080245236" | "20090095165" | "20090205747" | "20090219140" | "20100078480" | "20130017648" | "20130129871" | "20130129876" | "20160242594" | "4858523" | "5072660" | "5080008" | "5603430" | "5700998" | "5742041" | "5974950" | "6089455" | "6203069" | "6527181" | "6802454" | "6862494" | "7258061" | "7444925" | "7607385" | "7673558" | "7857164").PN. OR ("10117539").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/11/02 10:22

S92	8	("20020048621" | "6698333" | "7210401" | "7578230" | "7640845" | "8459179" | "8919240" | "9198533").PN. OR ("10076208").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/11/02 10:28
S93	68	S87 and (identifier barcode)	US-PGPUB; USPAT; USOCR	OR	OFF	2021/11/02 10:45
S94	24	("20020048621" | "20050150391" | "20060000851" | "20080050490" | "20080302251" | "5974950" | "7216582" | "7685930" | "7798055" | "7863546" | "7987767").PN. OR ("8857317").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/11/02 10:48
S95	89	("20020048621" | "20020129712" | "20030145736" | "3404616" | "3537384" | "4583449" | "5325765" | "5440972" | "5598764" | "6142063" | "6240832" | "6655260" | "6740345" | "6763759" | "6829981" | "7021197").PN. OR ("7856920").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/11/02 10:58
S96	9	S95 and (identifier barcode)	US-PGPUB; USPAT; USOCR	OR	OFF	2021/11/02 10:58
S97	108	("10334868" | "10426180" | "10442610" | "1101199" | "1233823" | "1412401" | "1496611" | "1713119" | "20020009017" | "20020048215" | "20040155061" | "20050169101" | "20050174884" | "20050193896" | "20050201198" | "20080067172" | "20080073307" | "20080223741" | "20080279040" | "20090065570" | "20090179042" | "20090293735" | "20100136064" | "20100154645" | "20100163509" | "20100173856" | "20110120316" | "20120024861" | "20120087203" | "20120121768" | "20120171186" | "20130058184" | "20140001207" | "20140335482" | "20140336817" | "20150065587" | "20150135965" | "20150314246" | "20150329282" | "20150367302" | "20160214787" | "20170112326" | "20190053658" | "2021626" | "2110498" | "2851257" | "3061279" | "3134577" | "3240391" | "3323320" | "3738619" | "4160602" | "4193698" | "4195730" | "4315570" | "4324494" | "4357861" | "4408690" | "4502377" | "4547076" | "4703770" | "5150967" | "5328263" | "5439289" | "5634714" | "5766665" | "5863118" | "5863126" | "5865538" | "5957335" |	US-PGPUB; USPAT; USOCR	OR	OFF	2021/11/02 11:04

		"6071006" | "6318889" | "6341887" | "6527027" | "6616323" | "6647863" | "6670171" | "6706300" | "6708735" | "7144150" | "7461970" | "7503687" | "7648049" | "7854104" | "7856920" | "7959348" | "8337074" | "8763515" | "8807823" | "8844426" | "8960999" | "9010992" | "9399547" | "9474417" | "9783361" | "9833109").PN. OR ("11076720").URPN.				
S98	11	S97 and (identifier barcode)	US-PGPUB; USPAT; USOCR	OR	OFF	2021/11/02 11:06
S99	2,456	B65D85/8043.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/11/02 11:08
S100	1,240	B65D65/466.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/11/02 11:08
S101	440	B65D2203/06.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/11/02 11:08
S102	1,457	B65D2203/10.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/11/02 11:08
S103	636	A47J31/4492.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/11/02 11:08
S104	5,425	(S99 S100 S101 S102 S103)	US-PGPUB; USPAT; USOCR	OR	OFF	2021/11/02 11:08
S105	1,744	A47J31/407.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/11/02 11:08
S106	27	B65D85/8058.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/11/02 11:09
S107	0	B65D85/466.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/11/02 11:09
S108	1,240	B65D65/466.cpc.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/11/02 11:10
S109	549	S103 and (identifier barcode code)	US-PGPUB; USPAT; USOCR	OR	OFF	2021/11/02 11:11

S110	199	("20010038204" | "20010047724" | "20010048957" | "20010181005" | "20020020659" | "20020048621" | "20020085164" | "20020088807" | "20020110626" | "20020148356" | "20030003393" | "20030005826" | "20030039731" | "20030121979" | "20030172813" | "20030222089" | "20040005384" | "20040045443" | "20040089158" | "20040089602" | "20040115310" | "20040118295" | "20040142070" | "20040155113" | "20040182250" | "20040188459" | "20050016383" | "20050045566" | "20050051478" | "20050061478" | "20050150391" | "20050160919" | "20050183581" | "20050266122" | "20060010744" | "20060032427" | "20060084344" | "20060107841" | "20060194004" | "20060228447" | "20060236871" | "20070144355" | "20070148290" | "20070157821" | "20070181005" | "20070181412" | "20070203587" | "20070257118" | "20080024536" | "20080026121" | "20080028946" | "20080038441" | "20080085356" | "20080116105" | "20080148948" | "20080187638" | "20080245236" | "20080299262" | "20080302251" | "20090004343" | "20090007793" | "20090007796" | "20090092711" | "20090126577" | "20090136626" | "20090211458" | "20090211713" | "20090223375" | "20090249961" | "20090289121" | "20090291379" | "20090324788" | "20090324791" | "20100000667" | "20100028495" | "20100050880" | "20100051532" | "20100054532" | "20100072272" | "20100078480" | "20100108541" | "20100132564" | "20100147418" | "20100147872" | "20100181378" | "20100196545" | "20100239717" | "20100239733" | "20100239734" | "20100260915" | "20100263329" | "20100264640" | "20100288131" | "20100288133" | "20100303964" | "20100308061" | "20110005399" | "20110020500" | "20110033580" | "20110041702" | "20110064852" | "20110076361" | "20110089135" | "20110097450" | "20110142996" | "20110189350" |	US-PGPUB; USPAT	OR	OFF	2021/11/02 11:56

		"20110212225" | "20110250333" | "20110250812" | "20110303095" | "20110308397" | "20120006685" | "20120058226" | "20120060697" | "20120070542" | "20120070543" | "20120070551" | "20120097041" | "20120097602" | "20120100264" | "20120121765" | "20120123106" | "20120126834" | "20120183657" | "20120195155" | "20120201933" | "20120207893" | "20120207895" | "20120251668" | "20120251672" | "20120258210" | "20120295234" | "20120308688" | "20130055903" | "20130059039" | "20130064929" | "20130064937" | "20130084363" | "20130084376" | "20130101716" | "20130122153" | "20130125762" | "20130129872" | "20130136828" | "20130149424" | "20130156897" | "20130206011" | "20130209618" | "20130209619" | "20130209622" | "20130216663" | "20130230627" | "20130243910" | "20130312619" | "20130327223" | "20140001563" | "20140004231" | "20140017359" | "20140046126" | "20140127364" | "20140141128" | "20140141129" | "20140161936" | "20140178538" | "20140196608" | "20140220191" | "20140224130" | "20140230370" | "20140263033" | "20140272018" | "20140287104" | "20140287105" | "20140346022" | "20140348984" | "20140370181" | "20150010680" | "20150020481" | "20150029702" | "20150056331" | "20150056340" | "20150056351" | "20150079241" | "20150119220" | "20150128525" | "20150132441" | "20150157164" | "20150158665" | "20150158666" | "20150166204" | "20150173558" | "20150175347" | "20150201790" | "20150239652" | "20150246741" | "20150274411" | "20150297021" | "20150297023" | "20150314954" | "20150329282" | "20150353275").PN.				
S111	135	("20150375926" | "20160001968" | "20160037961" | "20160045060" | "20160058234" | "20160066591" | "20160075506" | "20160194146" | "20160207696" | "20160242594" |	US-PGPUB; USPAT	OR	OFF	2021/11/02 11:56

		"20160251150" | "20160325921" | "20160332759" | "20160340110" | "20170020329" | "20170027374" | "20190359418" | "2778739" | "3183096" | "3501896" | "3631793" | "3640727" | "4136202" | "4389925" | "4534985" | "4540595" | "4644151" | "4676482" | "4742645" | "4859337" | "4860645" | "4867993" | "4976179" | "5012629" | "5028769" | "5108768" | "5194553" | "5242702" | "5243164" | "5251758" | "5285041" | "5402707" | "5460078" | "5496573" | "5501945" | "5535765" | "5601716" | "5637850" | "5656311" | "5656318" | "5677522" | "5725261" | "5840189" | "5888549" | "5895672" | "5897899" | "5917165" | "5941055" | "5948455" | "5980743" | "5994677" | "6153026" | "6199780" | "6202929" | "6213326" | "6299926" | "6440256" | "6451332" | "6589577" | "6598800" | "6607762" | "6627244" | "6645537" | "6655260" | "6817538" | "6861086" | "6948420" | "6994879" | "7408094" | "7444925" | "7464518" | "7543527" | "7552672" | "7595870" | "7673558" | "7685930" | "7815953" | "7935646" | "7946217" | "7981451" | "8039029" | "8039034" | "8088423" | "8101928" | "8114461" | "8163318" | "8168908" | "8257766" | "8276639" | "8361527" | "8474368" | "8491948" | "8491976" | "8505440" | "8512886" | "8734881" | "8747775" | "8794125" | "8906436" | "8916220" | "8956672" | "9049958" | "9072402" | "9079705" | "9150347" | "9204751" | "9216854" | "9227837" | "9271602" | "9290317" | "9295278" | "9357791" | "9359126" | "9359128" | "9392902" | "9394101" | "9409703" | "9409704" | "9415931" | "9428328" | "9428329" | "9434525" | "9486108" | "9808112" | "9969564").PN.				
S112	2	S110 not (S88 S89)	US-PGPUB; USPAT; USOCR	OR	OFF	2021/11/02 12:17
S113	0	((("KRÜGER") near3 ("Marc"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/11/02 12:27

S114	79	((("KRUGER") near3 ("Marc"))).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2021/11/02 12:28

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S80	800	B65D85/8043.cpc.	USPAT	OR	OFF	2020/09/25 14:19
S81	396	B65D65/466.cpc.	USPAT	OR	OFF	2020/09/25 14:19
S82	148	B65D2203/06.cpc.	USPAT	OR	OFF	2020/09/25 14:19
S83	509	B65D2203/10.cpc.	USPAT	OR	OFF	2020/09/25 14:19
S84	202	A47J31/4492.cpc.	USPAT	OR	OFF	2020/09/25 14:19
S115	639	A47J31/407.cpc.	USPAT	OR	OFF	2021/11/02 12:50
S116	905	B65D85/8043.cpc.	USPAT	OR	OFF	2021/11/02 13:02
S117	448	B65D65/466.cpc.	USPAT	OR	OFF	2021/11/02 13:02
S118	168	B65D2203/06.cpc.	USPAT	OR	OFF	2021/11/02 13:02
S119	576	B65D2203/10.cpc.	USPAT	OR	OFF	2021/11/02 13:02
S120	233	A47J31/4492.cpc.	USPAT	OR	OFF	2021/11/02 13:02
S121	2,059	S116 S117 S118 S119 S120	USPAT	OR	OFF	2021/11/02 13:02

11/2/2021 5:58:06 PM
C:\Users\bjennison\Documents\EAST\Workspaces\17-385109.wsp

Filed via EFS @ USPTO.gov on July 28, 2021
Practitioner's Docket No. 1859.029USC11 (KRU0022-WO-US-T12)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Marc Krüger	Art Unit: TBA
Application No.: 17/385,109	Examiner: TBA
Filed: July 26, 2021	Conf. No.: 6609

For: PORTION CAPSULE HAVING AN IDENTIFIER

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

INFORMATION DISCLOSURE STATEMENT

Applicant submits this statement in accordance with its duty of disclosure under 37 C.F.R. §§ 1.56, 1.97, and 1.98. The submission made herewith is in no way intended as an admission that the cited items constitute material prior art or otherwise would render the claims unpatentable in any way. The submission also is in no way intended to substitute for the Examiner's own independent investigation.

Form PTO/SB/08a is submitted herewith. Copies of foreign patent documents and non-patent literature have not been provided due to their presence in the parent application to this application (see MPEP 609.02(A)(2)), and Applicant notes that this section requires the Examiner to consider all of the references previously submitted to the USPTO even if not listed in any Information Disclosure Statement filed in this application. Applicant is resubmitting these references on the attached form PTO/SB/08a so that all of the references are listed on the face of the patent. However, to the extent that any references have been inadvertently overlooked, or otherwise are not resubmitted on this form, Applicant respectfully requests consideration of the previously submitted references as is set forth in MPEP 609.02(A)(2) and inclusion of such references on the face of the patent. Applicant respectfully solicits the Examiner's consideration of the cited references and entry thereof into the record of this application.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

This Information Disclosure Statement is being submitted prior to the mailing of a first Office Action or Notice of Allowance. No fees are believed to be due; however, if any fee is due with the filing of this paper, please charge the amount to Deposit Account 50-1097.

Date: July 28, 2021

/Paul J. Palinski/

Paul J. Palinski
Reg. No. 71,080
Attorney for Applicant
The Dobrusin Law Firm, P.C.
29 W. Lawrence Street - Suite 210
Pontiac, MI 48342
(248) 292-2920

Customer No. 25215

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 273 of 524

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	~~TBA~~ 3761
	Examiner Name	~~TBA~~ Brian Jennison
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

U.S. PATENTS					
Examiner Initials*	Cite No.	Patent Number	Kind Code	Issue Date	Name of Patentee or Applicant of cited Document
	1.	2,778,739		01/22/1957	Rodth
	2.	3,183,096		05/11/1965	Hiscock
	3.	3,501,896	A	03/24/1970	Stoeser et al.
	4.	3,631,793		06/23/1969	Bednartz
	5.	3,640,727		02/08/1972	Heusinkveld
	6.	4,136,202		01/23/1979	Favre
	7.	4,389,925		06/28/1983	Piana
	8.	4,534,985		08/13/1985	Gasau
	9.	4,540,595		09/10/1985	Acitelli et al.
	10.	4,644,151	A	05/12/1987	Piet
	11.	4,676,482	A1	11/04/1987	Marvin et al.
	12.	4,742,645		05/10/1988	Johnston
	13.	4,859,337		08/22/1989	Woltermann
	14.	4,860,645	A	08/29/1989	Van Der Lijn et al.
	15.	4,867,993		09/19/1989	Nordskog
	16.	4,976,179		12/11/1990	Lacrouts-Cazenave
	17.	5,012,629		05/07/1991	Rehman et al.
	18.	5,028,769	A	07/02/1991	Claypool et al.
	19.	5,108,768	A	04/28/1992	So
	20.	5,194,553	A	03/16/1993	Freeburne et al.
	21.	5,242,702	A	09/07/1993	Fond
	22.	5,243,164	A	09/07/1993	Erickson et al.
	23.	5,251,758	A	10/12/1993	Kolacek
	24.	5,285,041	A	02/08/1994	Wright
	25.	5,402,707	A	04/04/1995	Fond et al.
	26.	5,460,078	A	10/24/1995	Weller
	27.	5,496,573	A	03/05/1996	Tsuji et al.
	28.	5,501,945	A	03/26/1996	Kanakkanatt
	29.	5,535,765	A	07/16/1996	Takashima
	30.	5,601,716	A	02/11/1997	Heinrich et al.
	31.	5,637,850	A	06/10/1997	Honda
	32.	5,656,311	A	08/12/1997	Fond
	33.	5,656,318	A	08/12/1997	Fond et al.
	34.	5,677,522	A	10/14/1997	Rice et al.
	35.	5,725,261	A	03/10/1998	Rahn
	36.	5,840,189	A	11/24/1998	Sylvan et al.

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 274 of 524

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	37.	5,888,549	A	03/30/1999	Buchholz et al.
	38.	5,895,672	A	04/20/1999	Cooper
	39.	5,897,899	A	04/27/1999	Fond
	40.	5,917,165	A	06/29/1999	Platt et al.
	41.	5,941,055	A	08/24/1999	Coates
	42.	5,948,455	A	09/07/1999	Schaeffer et al
	43.	5,980,743	A	11/09/1999	Bairischer
	44.	5,994,677	A	11/30/1999	Akerlind
	45.	6,153,026	A	11/28/2000	Michotte
	46.	6,199,780	B1	03/13/2001	Görlitz
	47.	6,202,929	A	03/20/2001	Verschuur et al.
	48.	6,213,326	B1	04/10/2001	Denner et al.
	49.	6,299,926	B1	10/09/2001	Balakrishnan et al.
	50.	6,440,256	B1	08/27/2002	Gordon et al.
	51.	6,451,332	B1	09/17/2002	Tanaka et al.
	52.	6,589,577	B2	07/08/2003	Lazaris et al.
	53.	6,598,800	A1	07/29/2003	Schmit et al.
	54.	6,607,762	B2	08/19/2003	Lazaris et al.
	55.	6,627,244	B2	09/30/2003	Omura
	56.	6,645,537	B2	11/11/2003	Sweeney et al.
	57.	6,655,260	B2	12/02/2003	Lazaris
	58.	6,817,538	B2	11/16/2004	Afzali-Ardakani et al.
	59.	6,861,086	B2	03/01/2005	Buckingham et al.
	60.	6,948,420	B2	09/27/2005	Kirschner et al.
	61.	6,994,879	B2	02/07/2006	Cirigliano et al.
	62.	7,408,094	B2	08/05/2008	Little et al.
	63.	7,444,925	B2	02/07/2006	Cirigli
	64.	7,464,518	B2	12/16/2008	Ansinn
	65.	7,543,527	B2	06/09/2009	Schmed
	66.	7,552,672	B2	06/30/2009	Schmed
	67.	7,595,870	B2	09/29/2009	Ringlien
	68.	7,673,558	B2	03/09/2010	Panesar et al.
	69.	7,685,930	B2	03/30/2010	Mandralis et al.
	70.	7,815,953	B2	10/19/2010	Mastropasqua et al.
	71.	7,935,646	B2	05/03/2011	Viazmensky et al.
	72.	7,946,217	B2	05/24/2011	Favre et al.
	73.	7,981,451	B2	07/19/2011	Ozanne
	74.	8,039,029	B2	10/18/2011	Ozanne
	75.	8,039,034	B2	10/18/2011	Ozanne

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 275 of 524

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	76.	8,088,423	B2	01/03/2012	Ohresser et al.
	77.	8,101,928	B2	01/24/2012	Hill et al.
	78.	8,114,461	B2	02/14/2012	Perlman et al.
	79.	8,163,318	B2	04/24/2012	Ozanne et al.
	80.	8,168,908	B2	05/01/2012	Heimann
	81.	8,257,766	B2	09/04/2012	Yoakim et al.
	82.	8,276,639	B2	10/02/2012	Binacchi
	83.	8,361,527	B2	01/29/2013	Winkler et al.
	84.	8,474,368	B2	07/02/2013	Kilber et al.
	85.	8,491,948	B2	07/23/2013	Ozanne et al.
	86.	8,491,976	B2	07/23/2013	Sato et al.
	87.	8,505,440	B2	08/13/2013	Kirschner et al.
	88.	8,512,886	B2	08/20/2013	Ozanne
	89.	8,734,881	B2	05/27/2014	Yoakim et al.
	90.	8,747,775	B2	06/10/2014	Sandvick
	91.	8,794,125	B1	08/05/2014	Rivera
	92.	8,906,436	B2	12/09/2014	Nowak
	93.	8,916,220	B2	12/23/2014	Mahlich et al.
	94.	8,956,672	B2	02/17/2015	Yoakim et al.
	95.	9,049,958	B2	06/09/2015	Fischer
	96.	9,072,402	B2	07/07/2015	Ryser
	97.	9,079,705	B2	07/14/2015	Digiuni
	98.	9,150,347	B2	10/06/2015	Scheiber
	99.	9,204,751	B2	12/08/2015	Peterson
	100	9,216,854	B2	12/22/2015	Schreiber
	101	9,227,837	B2	01/05/2016	Reinmuth
	102	9,271,602	B2	03/01/2016	Beaulieu et al.
	103	9,290,317	B2	03/22/2016	Quinn et al.
	104	9,295,278	B2	03/29/2016	Nowak
	105	9,357,791	B2	06/07/2016	Fountain et al.
	106	9,359,126	B2	06/07/2016	Wong et al.
	107	9,359,128	B2	06/07/2016	Mahlich
	108	9,392,902	B2	07/19/2016	Parentes et al.
	109	9,394,101	B2	07/19/2016	Empl
	110	9,409,703	B2	08/09/2016	Krüger et al.
	111	9,409,704	B2	08/09/2016	Digiuni et al.
	112	9,415,931	B2	08/16/2016	Gerbaulet et al.

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 276 of 524

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	113	9,428,328	B2	08/30/2016	Trombetta et al.
	114	9,428,329	B2	08/30/2016	Trombetta et al.
	115	9,434,525	B2	09/06/2016	Fabozzi et al.
	116	9,486,108	B1	11/08/2016	Douglas et al.
	117	9,808,112	B2	11/07/2017	Favero et al.
	118	9,969,564	B2	05/15/2018	Krüger

U.S. PATENT APPLICATION PUBLICATIONS					
Examiner Initials*	Cite No.	Publication Number	Kind Code	Publication Date	Name of Patentee or Applicant of cited Document
	1.	2001/0038204	A1	11/08/2001	Nojima et al
	2.	2001/0047724	A1	12/06/2001	Lazaris
	3.	2001/0048957	A1	12/06/2001	Lazaris et al.
	4.	2001/0181005	A1	08/09/2007	Kirschner et al.
	5.	2002/0020659	A1	02/21/2002	Sweeney
	6.	2002/0048621	A1	04/25/2002	Boyd et al.
	7.	2002/0085164	A1	07/04/2002	Stanford-Clark
	8.	2002/0088807	A1	07/11/2002	Perkovic et al.
	9.	2002/0110626	A1	08/15/2002	Buckingham et al.
	10.	2002/0148356	A1	10/17/2002	Lazaris et al.
	11.	2003/0005826	A1	01/09/2003	Sargent et al.
	12.	2003/0033938	A1	02/20/2003	Halliday et al.
	13.	2003/0039731	A1	02/27/2003	Dalton et al.
	14.	2003/0121979	A1	07/03/2003	Haens et al.
	15.	2003/0172813	A1	09/18/2003	Schifferle
	16.	2003/0222089	A1	12/04/2003	Hale
	17.	2004/0005384	A1	01/08/2004	Cai
	18.	2004/0045443	A1	03/11/2004	Lazaris et al.
	19.	2004/0089158	A1	05/13/2004	Mahlich
	20.	2004/0089602	A1	05/13/2004	Heinrich et al.
	21.	2004/0115310	A1	06/17/2004	Yoakim et al.
	22.	2004/0118295	A1	06/24/2004	Angeles
	23.	2004/0142070	A1	07/22/2004	Haen
	24.	2004/0155113	A1	08/12/2004	Urano et al
	25.	2004/0182250	A1	09/23/2004	Halliday et al.
	26.	2004/0188459	A1	09/30/2004	Halliday et al.
	27.	2005/0016383	A1	01/27/2005	Kirschner et al.
	28.	2005/0045566	A1	03/03/2005	Larkin et al.
	29.	2005/0051478	A1	03/10/2005	Karanikos et al.
	30.	2005/0061478	A1	03/24/2005	Huang
	31.	2005/0150391	A1	07/14/2005	Schifferle

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 277 of 524

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	32.	2005/0160919	A1	07/28/2005	Balkau
	33.	2005/0183581	A1	08/25/2005	Kirschner et al.
	34.	2005/0266122	A1	12/01/2005	Franceschi
	35.	2006/0010744	A1	01/19/2006	Schumacher
	36.	2006/0032427	A1	02/16/2006	Ishii et al.
	37.	2006/0084344	A1	04/20/2006	Bonneh
	38.	2006/0107841	A1	05/25/2006	Schifferle
	39.	2006/0194004	A1	08/31/2006	Niemoller at al.
	40.	2006/0228447	A1	10/12/2006	Ganesan et al.
	41.	2006/0236871	A1	10/26/2006	Ternite et al.
	42.	2007/0144355	A1	06/28/2007	Denisart et al.
	43.	2007/0148290	A1	06/28/2007	Ternite et al.
	44.	2007/0157821	A1	07/12/2007	Panesar et al.
	45.	2007/0181005	A1	08/09/2007	Kirschner et al.
	46.	2007/0181412	A1	08/09/2007	Raunig
	47.	2007/0203587	A1	08/30/2007	Erlandsson et al.
	48.	2007/0257118	A1	11/08/2007	Riley et al.
	49.	2008/0024536	A1	01/31/2008	Hirano et al.
	50.	2008/0026121	A1	01/31/2008	Mastropasqua et al.
	51.	2008/0028946	A1	02/07/2008	Kirschner et al.
	52.	2008/0038441	A1	02/14/2008	Kirschner
	53.	2008/0085356	A1	04/10/2008	Colliver et al.
	54.	2008/0116105	A1	05/22/2008	Statham
	55.	2008/0148948	A1	06/26/2008	Evers et al.
	56.	2008/0187638	A1	08/07/2008	Hansen
	57.	2008/0245236	A1	10/09/2008	Ternite et al.
	58.	2008/0299262	A1	12/04/2008	Reati
	59.	2008/0302251	A1	12/11/2008	Rijskamp et al.
	60.	2009/0004343	A1	01/01/2009	Xiong et al.
	61.	2009/0007793	A1	01/08/2009	Glucksman et al.
	62.	2009/0007796	A1	01/08/2009	Maddalena Ricotti
	63.	2009/0092711	A1	04/09/2009	Ninh et al.
	64.	2009/0126577	A1	05/21/2009	Ternite
	65.	2009/0136626	A1	05/28/2009	Mueller
	66.	2009/0211458	A1	08/27/2009	Denisart et al.
	67.	2009/0211713	A1	08/27/2009	Binacchi
	68.	2009/0223375	A1	09/10/2009	Verbeek
	69.	2009/0249961	A1	10/08/2009	Cheng
	70.	2009/0289121	A1	11/26/2009	Maeda et al.
	71.	2009/0291379	A1	11/26/2009	Masaya Oota, et al.

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 278 of 524

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	72.	2009/0324788	A1	12/31/2009	Roy et al.
	73.	2009/0324791	A1	12/31/2009	Ohresser et al.
	74.	2010/0000667	A1	01/07/2010	Funnell
	75.	2010/0028495	A1	02/04/2010	Novak et al.
	76.	2010/0050880	A1	03/04/2010	Suter et al.
	77.	2010/0051532	A1	03/04/2010	Wawrla et al.
	78.	2010/0054532	A1	03/04/2010	Mitte et al.
	79.	2010/0072272	A1	03/25/2010	Angros
	80.	2010/0078480	A1	04/01/2010	Aker
	81.	2010/0108541	A1	05/06/2010	Roberto
	82.	2010/0132564	A1	06/03/2010	Ozanne et al.
	83.	2010/0147418	A1	06/17/2010	Piana
	84.	2010/0147872	A1	06/17/2010	Saxton et al.
	85.	2010/0181378	A1	07/22/2010	Hayakawa et al.
	86.	2010/0196545	A1	08/05/2010	Buffet et al.
	87.	2010/0239717	A1	09/23/2010	Yoakim et al.
	88.	2010/0239733	A1	09/23/2010	Yoakim et al.
	89.	2010/0239734	A1	09/23/2010	Yoakim,et al.
	90.	2010/0260915	A1	10/14/2010	Young
	91.	2010/0263329	A1	10/21/2010	Nash
	92.	2010/0264640	A1	10/21/2010	Lane et al.
	93.	2010/0288131	A1	11/18/2010	Kilber et al.
	94.	2010/0288133	A1	11/18/2010	Litzka et al.
	95.	2010/0303964	A1	12/02/2010	Beaulieu et al.
	96.	2010/0308061	A1	12/09/2010	Loulourgas
	97.	2011/0005399	A1	01/31/2011	Epars et al.
	98.	2011/0020500	A1	01/27/2011	Eichler et al.
	99.	2011/0033580	A1	02/10/2011	Biesheuvel et al.
	100	2011/0041702	A1	02/24/2011	Yoakim
	101	2011/0064852	A1	03/17/2011	Mann
	102	2011/0076361	A1	03/31/2011	Peterson et al.
	103	2011/0089135	A1	04/21/2011	Simon et al.
	104	2011/0097450	A1	04/28/2011	Krüger
	105	2011/0142996	A1	06/16/2011	Krüger
	106	2011/0189350	A1	08/04/2011	Van Belleghem et al.
	107	2011/0212225	A1	09/01/2011	Mariller
	108	2011/0250333	A1	10/13/2011	Ozanne
	109	2011/0250812	A1	10/13/2011	Pourdeyhimi et al.
	110	2011/0303095	A1	12/15/2011	Fu et al.
	111	2011/0308397	A1	12/22/2011	Sinot et al.
	112	2012/0006685	A1	01/12/2012	Van Engelen

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 279 of 524

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	113	2012/0058226	A1	03/08/2012	Winkler et al.
	114	2012/0060697	A1	03/15/2012	Ozanne
	115	2012/0070542	A1	03/22/2012	Camera et al.
	116	2012/0070543	A1	03/22/2012	Mahlich
	117	2012/0070551	A1	03/22/2012	Mahlich
	118	2012/0097041	A1	04/26/2012	Bucher et al.
	119	2012/0097602	A1	04/26/2012	Tedford
	120	2012/0100264	A1	04/26/2012	Bucher et al.
	121	2012/0121765	A1	05/17/2012	Kamerbeek et al.
	122	2012/0123106	A1	05/17/2012	Joos
	123	2012/0126834	A1	05/24/2012	Kleinhans
	124	2012/0183657	A1	07/19/2012	Marina et al.
	125	2012/0195155	A1	08/02/2012	Gennai et al.
	126	2012/0201933	A1	08/09/2012	Dran et al.
	127	2012/0207893	A1	08/16/2012	Krüger
	128	2012/0207895	A1	08/16/2012	Rivera
	129	2012/0251668	A1	10/04/2012	Wong, et al.
	130	2012/0251672	A1	10/04/2012	Kamerbeek, et al.
	131	2012/0258210	A1	10/11/2012	Wong et al.
	132	2012/0295234	A1	11/22/2012	Rognon et al.
	133	2012/0308688	A1	12/06/2012	Peterson et al.
	134	2013/0055903	A1	03/07/2013	Deuber
	135	2013/0059039	A1	03/07/2013	Trombetta et al.
	136	2013/0064929	A1	03/14/2013	Jarisch et al.
	137	2013/0064937	A1	03/14/2013	Jarisch et al.
	138	2013/0084363	A1	04/04/2013	Krueger et al.
	139	2013/0084376	A1	04/04/2013	Fischer et al.
	140	2013/0101716	A1	04/25/2013	Beaulieu et al.
	141	2013/0122153	A1	05/16/2013	Ferrier et al.
	142	2013/0125762	A1	05/23/2013	Dogan et al.
	143	2013/0129872	A1	05/23/2013	Krueger et al.
	144	2013/0136828	A1	05/30/2013	Anghileri
	145	2013/0149424	A1	06/13/2013	Fischer
	146	2013/0156897	A1	06/20/2013	Goldstein
	147	2013/0206011	A1	08/15/2013	Ozanne et al.
	148	2013/0209618	A1	08/15/2013	Trombetta et al.
	149	2013/0209619	A1	08/15/2013	Mahlich
	150	2013/0209622	A1	08/15/2013	Fountain et al.
	151	2013/0216663	A1	08/22/2013	Dogan et al.
	152	2013/0230627	A1	09/05/2013	Hansen et al.
	153	2013/0243910	A1	09/19/2013	Krueger et al.

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 280 of 524

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	154	2013/0312619	A1	11/28/2013	Spiegel et al.
	155	2013/0327223	A1	12/12/2013	Bartoli et al.
	156	2014/0001563	A1	01/03/2014	Krueger et al.
	157	2014/0004231	A1	01/02/2014	Norton et al.
	158	2014/0017359	A1	01/16/2014	Krueger et al.
	159	2014/0046126	A1	02/13/2014	Gilligan et al.
	160	2014/0127364	A1	05/08/2014	Fu et al.
	161	2014/0141128	A1	05/22/2014	Trombetta et al.
	162	2014/0141129	A1	05/22/2014	Greene
	163	2014/0161936	A1	06/12/2014	Trombetta et al.
	164	2014/0178538	A1	06/26/2014	Husband et al.
	165	2014/0196608	A1	07/17/2014	Amrein et al.
	166	2014/0220191	A1	08/07/2014	Kelly et al.
	167	2014/0224130	A1	08/14/2014	Castellani et al.
	168	2014/0230370	A1	08/21/2014	Bianchi
	169	2014/0263033	A1	09/18/2014	Fu et al.
	170	2014/0272018	A1	09/18/2014	Koller et al.
	171	2014/0287104	A1	09/25/2014	Austin et al.
	172	2014/0287105	A1	09/25/2014	Husband et al.
	173	2014/0346022	A1	11/27/2014	Keller et al.
	174	2014/0348984	A1	11/27/2014	Zeller et al.
	175	2014/0370181	A1	12/18/2014	Young et al.
	176	2015/0010680	A9	01/08/2015	Mahlich
	177	2015/0020481	A1	01/22/2015	Hodler
	178	2015/0029702	A1	01/29/2015	Foley
	179	2015/0056331	A1	02/26/2015	Rivera
	180	2015/0056340	A1	02/26/2015	Trombetta et al.
	181	2015/0056351	A1	02/26/2015	Deuber
	182	2015/0079241	A1	03/19/2015	Mahlich
	183	2015/0119220	A1	04/30/2015	Rea et al.
	184	2015/0128525	A1	05/14/2015	Bartoli et al.
	185	2015/0132441	A1	05/14/2015	Accursi
	186	2015/0157164	A1	06/11/2015	Digiuni
	187	2015/0158665	A1	06/11/2015	Krueger et al.
	188	2015/0158666	A1	06/11/2015	Krüger et al.
	189	2015/0166204	A1	06/18/2015	Rea et al.
	190	2015/0173558	A1	06/25/2015	Cross et al.
	191	2015/0175347	A1	06/25/2015	Empl
	192	2015/0201790	A1	07/23/2015	Smith et al.
	193	2015/0239652	A1	08/27/2015	Trombetta et al.
	194	2015/0246741	A1	09/03/2015	Hansen et al.

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 281 of 524

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	195	2015/0274411	A1	10/01/2015	Krueger
	196	2015/0297021	A1	10/22/2015	Bugnano et al.
	197	2015/0297023	A1	10/22/2015	Hansen et al.
	198	2015/0314954	A1	11/05/2015	Empl
	199	2015/0329282	A1	11/19/2015	Bartoli et al.
	200	2015/0353275	A1	12/10/2015	Accursi
	201	2015/0375926	A1	12/31/2015	Fischer
	202	2016/0001968	A1	01/07/2016	Krüger et al.
	203	2016/0037961	A1	02/11/2016	Digiuni
	204	2016/0045060	A1	02/18/2016	Flick
	205	2016/0058234	A1	03/03/2016	Eppler et al.
	206	2016/0066591	A1	03/10/2016	Halliday et al.
	207	2016/0075506	A1	03/17/2016	Chapman et al.
	208	2016/0194146	A1	07/07/2016	Schelch et al.
	209	2016/0207696	A9	07/21/2016	Trombetta et al.
	210	2016/0242594	A1	08/25/2016	Empl et al.
	211	2016/0251150	A1	09/01/2016	Macchi et al.
	212	2016/0325921	A1	11/10/2016	Empl
	213	2016/0332759	A1	11/17/2016	Trombetta et al.
	214	2016/0340110	A1	11/24/2016	Trombetta et al.
	215	2017/0020329	A1	01/26/2017	Douglas et al.
	216	2017/0027374	A1	02/02/2017	Smith et al.
	217	2019/0359418	A1	11/28/2019	Kruger

FOREIGN PATENT DOCUMENTS							
Examiner Initial*	Cite No.	Foreign Document Number	Country Code	Kind Code	Publication Date	Name of Patentee or Applicant of cited Document	T[5]
	1.	2399283 (also published as US 6,589,577)	CA	C	05/01/2007	Lazaris et al.	
	2.	2399290 (also published as US 6,607,762)	CA	C	01/10/2006	Lazaris et al.	
	3.	2436389 (also published as US 6,861,086)	CA	A1	08/22/2002	Buckingham et al.	
	4.	2531544 (also published as US 7,946,217)	CA	C	05/01/2012	Favre et al.	

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 282 of 524

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	5.	2661921 (also published as US 8,512,886)	CA	A1	03/06/2008	Ozanne	
	6.	2662069 (also published as US 8,039,029)	CA	C	01/08/2013	Ozanne	
	7.	2662071 (also published as US 8,491,948)	CA	C	07/05/2011	Ozanne et al.	
	8.	2763746 (also published as US 8,114,461)	CA	A1	03/11/2010	Perlman et al.	
	9.	2784752 (also published as US 9,204,751)	CA	C	06/23/2011	Peterson	
	10.	2785843 (also published as US 2013/0156897)	CA	A1	02/10/2013	Goldstein	
	11.	2788283 (also published as US 9,428,328)	CA	A1	03/01/2013	Trombetta et al.	
	12.	2810237 (also published as US 8,361,527)	CA	A1	03/08/2012	Winkler et al.	
	13.	2832794 (also published as US 2014/0127364)	CA	C	03/22/2016	Fu et al.	
	14.	2833096 (also published as US 2014/0141128)	CA	C	05/31/2016	Fu et al.	
	15.	2866119 (also published as US 2015/0020481	CA	A1	09/19/2013	Hodler	
	16.	2872667 (also published as US 2015/0157164)	CA	A1	11/21/2013	Digiuni et al.	
	17.	2874025 (also published as US 2015/0119220)	CA	A1	12/27/2013	Rea et al.	
	18.	2877090 (also published as US 9,409,704)	CA	A1	01/09/2014	Digiuni et al.	

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 283 of 524

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	19.	2886299 (also published as US 9,969,564)	CA	A1	04/03/2014	Krüger	
	20.	2888658 (also published as US 2014/0161936)	CA	C	06/12/2014	FU et al.	
	21.	2898173 (also published as US 2015/0353275)	CA	A1	08/07/2014	Accursi	
	22.	2901582 (also published as US 2016/0075506)	CA	A1	11/20/2014	Chapman et al.	
	23.	2902231	CA	A1	08/28/2014	Trombetta et al.	
	24.	101646613 (also published as US 2001/0181005)	CN	A	02/10/2010	Kirschner et al.	
	25.	102741136 (also published as US 2011/0064852)	CN	A	10/17/2012	Torsten	
	26.	104334473 (also published as US 2015/0132441)	CN	A	02/04/2015	Accursi	
	27.	1207866	DE	B	12/23/1965	Bentz	X
	28.	1221960	DE	B	07/28/1966	Bentz &Sohn Melitta	X
	29.	3432339	DE	A1	03/13/1986	Gesen et al.	X
	30.	69615001 (also published as US 5,948,455)	DE	T2	03/21/2002	Yoakim et al.	
	31.	102006004329	DE	A1	08/09/2007	Martinez et al.	X
	32.	102010027485	DE	A1	01/19/2012	Krueger	X
	33.	102010034206	DE	A1	02/16/2012	Eppler	X
	34.	102011010534	DE	A1	08/09/2012	Krüger et al.	
	35.	102011115833 (also published as US 9,409,703)	DE	A1	04/18/2013	Krüger et al.	
	36.	102012110446	DE	A1	01/02/2014	Krüger et al.	X
	37.	102014018470	DE	A1	06/16/2016	Heimann et al.	X
	38.	202006003115	DE	U1	05/11/2006	Unknown	X
	39.	202009014945 (also published as US 9,072,402)	DE	U1	09/23/2010	Ryser	

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 284 of 524

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	40.	202010007919 (also published as US 2013/0209619)	DE	U1	11/11/2010	Mahlich	
	41.	0224297 (also published as US 4,860,645)	EP	A1	06/03/1987	Van Der Lijn	
	42.	569230 (also published as US 5,194,553)	EP	A1	11/10/1993	Freeburne et al.	
	43.	1273528	EP	A1	01/08/2003	Yoakim et al.	X
	44.	1722398 (also published as US 8,101,928)	EP	A1	11/15/2006	Downer et al.	
	45.	0244339 (also published as US 4,676,482)	EP	A1	11/04/1987	Reece et al.	
	46.	0455337	EP	A1	11/06/1991	Bentley et al.	
	47.	0468078 (also published as US 5,242,702)	EP	A1	01/29/1992	Fond	
	48.	0468079	EP	A1	01/29/1992	Fond	
	49.	0638486	EP	B1	10/23/1996	Gibbs et al.	
	50.	0656224 (also published as US 5,601,716)	EP	A1	06/07/1995	Heinrich et al.	
	51.	0859467 (also published as US 5,917,165)	EP	A1	08/19/1998	Platt et al.	
	52.	0923865 (also published as US 6,451,332)	EP	A2	06/23/1999	Tanaka et al.	
	53.	1129623	EP	A1	09/05/2001	Diaz	
	54.	1221418 (also published as US 2002/0088807)	EP	A1	07/10/2002	Perkovic et al	
	55.	1344722 (also published as US 7,543,527)	EP	A1	09/17/2003	Schifferle	
	56.	1344724	EP	A1	09/17/2003	Hale	
	57.	1363501 (also published as US 2002/0110626)	EP	A2	11/26/2003	Buckingham	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	58.	1471012	EP	A2	10/27/2004	Tuens	
	59.	1555219 (also published as US 7,552,672)	EP	A1	07/20/2005	Schifferle	
	60.	1559351 (also published as US 2005/0160919)	EP	A2	08/03/2005	Balkau	
	61.	1586534 (also published as US 2008/0148948)	EP	A1	10/19/2005	Evers et al.	
	62.	1710173 (also published as US 2006/0236871)	EP	A1	10/11/2006	Ternite et al.	
	63.	1772398	EP	A1	04/11/2007	Van Belleghem	
	64.	1792850 (also published as US 2007/0148290)	EP	B1	06/06/2007	Ternite et al.	
	65.	1796516 (also published as US 8,109,200)	EP	A2	06/20/2007	Hansen	
	66.	1849718	EP	A1	10/31/2007	Rubino	
	67.	1882431 (also published as US 8,088,423)	EP	B1	04/28/2010	Ohresser et al.	
	68.	1882432 (also published as US 2009/0324791)	EP	B1	01/30/2008	Ohresser et al	
	69.	1892199	EP	A1	02/27/2008	Ternite	X
	70.	1974638 (also published as US 2008/0024536)	EP	A1	10/01/2008	Ternite et al.	
	71.	2012994	EP	B1	07/11/2012	Abegglen et al.	
	72.	2158829 (also published as US 2010/0050880)	EP	A1	03/03/2010	Suter et al.	
	73.	2218653	EP	A1	08/18/2010	Wons UWE	X
	74.	2230195 (also published as US 8,734,881)	EP	A1	09/22/2010	Yoakim et al.	
	75.	2239211 (also published as US 8,257,766)	EP	A1	10/13/2010	Yoakim et al.	

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 286 of 524

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	76.	2284102	EP	A1	02/16/2011	Schulte et al.	
	77.	2287090 (also published as US 2011/0041702)	EP	A1	02/23/2011	Yoakim	
	78.	2364930 (also published as US 8,956,672)	EP	A2	09/14/2011	Yoakim et al.	
	79.	2384133 (also published as US 2011/0250333)	EP	B1	11/09/2011	Ozanne	
	80.	2412645	EP	A1	02/01/2012	Hiridjee	X
	81.	2444339 (also published as US 2013/0216663)	EP	A1	04/25/2012	Dogan, et al.	
	82.	2484505 (also published as US 2012/0195155)	EP	A2	08/08/2012	Gennai et al.	
	83.	2537778	EP	A1	12/26/2012	Pineschi	
	84.	2559636 (also published as US 9,434,525)	EP	A1	02/20/2013	Fabozzi	
	85.	2809006 (also published as US 2014/0346022)	EP	A1	12/03/2014	Keller et al.	
	86.	2957525 (also published as US 2019/0359418)	EP	A1	12/23/2015	Kruger	
	87.	0272922	EP	A2	06/29/1988	Bentley et al.	
	88.	0512468	EP	A1	11/11/1992	Fond	
	89.	1882432	EP	A1	01/30/2008	Ohresser et al.	
	90.	2556323	FR	A1	06/14/1985	Munier Rene	
	91.	2912124	FR	A1	08/08/2008	Blanc et al.	
	92.	2963332 (also published as US 2013/0122153)	FR	A1	02/03/2012	Ferrier et al.	
	93.	1402799	GB	A	08/13/1975	Battelle Memorial Institute	
	94.	2482032 (also published as US 9,357,791)	GB	A	01/18/2012	Fountain et al.	
	95.	2469874	GB	A	11/03/2010	Hansen et al.	
	96.	02289207	JP	A	11/29/1990	Ozasa et al.	abs.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	97.	2001-017094	JP	A	01/23/2001	Toshiyuki et al.	X
	98.	2001-082699	JP	A	03/30/2001	Suzuki et al	
	99.	2001-250161	JP	A	09/14/2001	Takayuki et al.	X
	100.	2002-274000	JP	A	09/25/2002	DAINIPPON PRINTING CO LTD	
	101.	2002-347852	JP	A	12/04/2002	SHOWA DENKO PLASTIC PROD CO	
	102.	2003-235733	JP	A	08/26/2003	Mitsuaki	X
	103.	2003-265320 (also published as US 2003/0172813)	JP	A	09/24/2003	Schifferle	
	104.	2003-522567 (also published as US 2003/0033938)	JP	A	07/29/2003	Halliday et al.	
	105.	2004-097015	JP	A	04/02/2004	Matsuura	X
	106.	2004-533305 (also published as US 2004/0115310)	JP	A	11/04/2004	Unknown	
	107.	2005-199070 (also published as US 2005/0150391)	JP	A	07/28/2005	Schifferle	
	108.	2006-510682 (also published as US 7,408,094)	JP	A	03/30/2006	Little et al.	
	109.	2007-522856 (also published as US 7,673,558)	JP	A	08/16/2007	Panesar et al.	
	110.	2010-500199 (also published as US 2010/0000667)	JP	A	01/07/2010	Funnell	
	111.	2010-507418 (also published as US 2010/0051532)	JP	A	03/11/2010	Wawrla et al.	
	112.	2010-516364 (also published as US 2013/0206011)	JP	A	05/20/2010	Ozanne et al.	
	113.	2010-528635 (also published as US 9,277,837)	JP	A	08/26/2010	Yoakim et al.	

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 288 of 524

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	114.	2013-538609 (also published as US 9,049,958)	JP	A	10/17/2013	Fischer	
	115.	2015-085086	JP	A	05/07/2015	Hirota et al.	X
	116.	H01-233688	JP	A	09/19/1989	TOKYU CAR CORP	
	117.	H0394377	JP	A	04/19/1991	Toshiaki	
	118.	H04176311	JP	A	06/24/1992	Moji et al.	X
	119.	H06510682 (also published as US 5,460,078)	JP	A	12/01/1994	Weller	
	120.	S62-130649	JP	A	06/12/1987	Shiengu et al.	X
	121.	S62-168512	JP	A	07/24/1987	Yoosuto et al.	
	122.	200435370	KR	Y1			
	123.	1020050107747	KR	A	11/15/2005	Halliday et al.	
	124.	596919 (also published as US 2010/0303964)	NZ	A	11/29/2013	Beaulieu et al.	
	125.	01/99047 (also published as US 2003/0121979)	WO	A	12/27/2001	Haens et al.	
	126.	02/28241	WO	A	04/11/2002	Boyd	
	127.	02/078498 (also published as US 2004/0089158)	WO	A1	10/10/2002	Mahlich	
	128.	2004/065258	WO	A2	08/05/2004	Gomez et al.	
	129.	2004/082390 (also published as US 2006/0228447)	WO	A1	09/30/2004	Ganesan et al.	
	130.	2005/044067	WO	A1	05/19/2005	Ruchonnet	
	131.	2005/047111	WO	A1	05/26/2005	Rapparini	
	132.	2005/079638 (also published as US 2007/0157821)	WO	A1	09/01/2005	Panesar	
	133.	2006/121520 (also published as US 2005/0183581)	WO	A2	11/16/2006	Kirschner et al.	
	134.	2007/042414 (also published as US 7,981,451)	WO	A1	04/19/2007	Ozanne	
	135.	2007/042486	WO	A2	04/19/2007	Van Belleghem	
	136.	2007/122144	WO	A1	11/01/2007	Blanc et al.	X

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	137.	2008/011913 (also published as US 2008/0026121)	WO	A1	01/31/2008	Mastropasqua et al.	
	138.	2008/132571	WO	A1	11/06/2008	Pineschi	
	139.	2008/090122 (also published as US 2013/0209620)	WO	A2	07/31/2008	Ozanne et al.	
	140.	2008/107645 (also published as US2010/0196545)	WO	A2	09/12/2008	Buffet et al.	
	141.	2008/121489 (also published as US 8,505,440)	WO	A1	10/09/2008	Kirschner et al.	
	142.	2008/126045 (also published as US 2010/0108541)	WO	A1	10/23/2008	Degli	
	143.	2009/084061	WO	A1	07/09/2009	Nani	
	144.	2009/114119 (also published as US 2010/0028495)	WO	A1	09/17/2009	Novak et al.	
	145.	2009/112291	WO	A1	09/17/2009	Eichler et al.	
	146.	2009/115475 (also published as US 2011/0005399)	WO	A1	09/24/2009	Epars et al.	
	147.	2009/130311 (also published as US 2011/0189350)	WO	A1	10/29/2009	Van Belleghem et al.	
	148.	2009/153161	WO	A1	12/23/2009	Ofenhitzer et al.	X
	149.	2010/007633	WO	A1	01/21/2010	Quadrelli	
	150.	2010/013146	WO	A3	04/29/2010`	Cometto	
	151.	2010/026053	WO	A1	03/11/2010	Denisart et al.	
	152.	2010/041179 (also published as US 2011/212225)	WO	A2	04/15/2010	Mariller	
	153.	2010/076761	WO	A1	07/08/2010	Giua et al.	
	154.	2010/076048	WO	A1	07/08/2010	Campiche	
	155.	2010/085824	WO	A1	08/05/2010	Eder et al.	
	156.	2010/118545	WO	A2	10/21/2010	Deuber	X
	157.	2010/137952 (also published as US 2012/0121765)	WO	A1	12/02/2010	Kamerbeek et al.	

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 290 of 524

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	158.	2010/137960 (also published as US 9,359,126)	WO	A1	12/02/2010	Wong et al.	
	159.	2010/138563 (also published as US 2013/0101716)	WO	A1	11/29/2010	Beaulieu et al.	
	160.	2011/000723 (also published as US 2012/0100264)	WO	A2	01/06/2011	Bucher et al.	
	161.	2011/012501 (also published as US 2012/0126834)	WO	A1	02/03/2011	Kleinhans	
	162.	2011/047836	WO	A1	04/28/2011	Rapparini	
	163.	2011/141532	WO	A1	11/17/2011	Jarisch et al.	
	164.	2011/147491 (also published as US 2013/0084376)	WO	A1	12/01/2011	Fischer et al.	
	165.	2011/147553 (also published as US 2013/0149424)	WO	A1	12/01/2011	Fischer	
	166.	2011/147591 (also published as US 2013/0084363)	WO	A1	12/01/2011	Krueger et al.	
	167.	2012/000878 (also published as US 9,392,902)	WO	A2	01/05/2015	Parentes et al.	
	168.	2012/007257 (also published as US 9,290,317)	WO	A1	01/19/2012	Quinn et al.	
	169.	2012/009668 (also published as US 2013/0209622)	WO	A1	01/19/2012	Fountain et al.	
	170.	2012/019902 (also published as US 9,808,112)	WO	A1	02/16/2012	Favero et al.	
	171.	2012/038063 (also published as US 8,916,220)	WO	A1	03/29/2012	Mahlich	
	172.	2012/080928 (also published as US 2013/0327223)	WO	A1	06/21/2012	Bartoli et al.	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	173.	2012/100977 (also published as US 9,415,931)	WO	A1	08/02/2012	Gerbaulet et al.	
	174.	2012/104760	WO	A1	08/09/2012	Bartoli et al.	
	175.	2012/135204 (also published as US 2014/0348984)	WO	A1	10/04/2012	Zeller et al.	
	176.	2012/175985 (also published as US 2014/0287104)	WO	A1	12/27/2012	Peter et al.	
	177.	2013/008012 (also published as US 2014/0220191)	WO	A2	01/17/2013	Kelly et al.	
	178.	2013/032330 (also published as US 2014/0178538)	WO	A1	03/07/2013	Husband et al.	
	179.	2013/043048 (also published as US 2014/0287105)	WO	A1	03/28/2013	Husband et al.	
	180.	2013/136209 (also published as US 2016/0037961)	WO	A1	09/19/2013	Digiuni	
	181.	2013/171663 (also published as US 2015/0128525)	WO	A1	11/21/2013	Bartoli et al.	
	182.	2013/189923 (also published as US 2015/0175347)	WO	A1	12/27/2013	Empl	
	183.	2014/001563 (also published as US 2015/0158666)	WO	A1	01/03/2014	Krueger et al.	
	184.	2014/001564 (also published as US 2015/0158665)	WO	A1	01/03/2014	Krueger et al.	
	185.	2014/006048 (also published as US 2015/0173558)	WO	A2	01/09/2014	Cross et al.	
	186.	2014/090567 (also published as US 20150314954)	WO	A1	06/19/2014	Empl	

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 292 of 524

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	187.	2014/102702 (also published as US 2015/0329282)	WO	A1	07/03/2014	Bartoli et al	
	188.	2014/127863 (also published as US 2015/0375926)	WO	A1	08/28/2014	Fischer	
	189.	2015/028425 (also published as US 2016/0194146)	WO	A2	03/05/2015	Schelch et al.	
	190.	2015/062703 (also published as US 2016/0251150)	WO	A1	05/07/2015	Macchi et al.	
	191.	2015/075584	WO	A1	05/28/2015	Accursi	
	192.	2015/107484	WO	A1	07/23/2015	Rivola et al.	
	193.	2016/077916	WO	A1	05/26/2016	Hanneson et al.	
	194.	98/51396	WO	A1	11/19/1998	Timmermann et al.	X
	195.	99/58035 (also published as US 5,895,672)	WO	A1	11/18/1999	Cooper	
	196.	2004/065258	WO	A2	08/05/2004	Gomez et al.	
	197.	2007/114685	WO	A1	10/11/2007	Verbeek	
	198.	2010/125326	WO	A1	11/04/2010	Hansen et al.	
	199.	2010/125329	WO	A1	11/04/2010	Hansen et al.	

NON-PATENT LITERATURE DOCUMENTS

Examiner Initial*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1.	Rawle, Alan, "Particle Sizing – An Introduction" 2012; Silver Colloids, Edition or volume on Colloidal Silver	
	2.	Decision on Appeal before the Patent Trial and Appeal Board for Appeal No. 2017-007984 dated May 10, 2019.	
	3.	Notice of Opposition regarding EP3023362 filed July 30, 2018.	
	4.	Search Report for CN201180035944 mailed September 25, 2014.	
	5.	First Office Action for Application No. CN201180035944 mailed October 10, 2014.	
	6.	Second Office Action for Application No. CN201180035944 mailed April 21, 2015.	
	7.	Third Office Action for Application No. CN201180035944 mailed November 12, 2015.	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	8.	Notification to Grant Patent for Application No. CN201180035944 mailed May 25, 2016.	
	9.	Search Report for CN201610644043 mailed May 11, 2018	
	10.	First Office Action for CN201610644043 mailed May 28, 2018	
	11.	Search Report and Written Opinion for PCT/EP2011/003677 mailed July 22, 2011.	
	12.	Search Report and Written Opinion for Application No. EP 15174333.3 dated November 3, 2015. (EP2952453)	
	13.	Office Action for Application No. EP 15174333.3 dated August 16, 2016. (EP2952453)	
	14.	Search Report and Written Opinion for Application No. EP 15173071.0 dated November 5, 2015. (EP2957525)	
	15.	Office Action for Application No. EP 15173071.0 dated November 5, 2015. (EP2957525)	
	16.	Third party observation for Application No. EP2957525 dated September 30, 2016.	
	17.	Search Report and Written Opinion for Application No. EP 15197332.8 dated April 12, 2016. (EP3023361)	
	18.	First Office Action for Application No. EP 15197332.8 dated January 19, 2017. (EP3023361)	
	19.	Second Office Action for Application No. EP 15197332.8 dated May 24, 2017. (EP3023361)	
	20.	Third Office Action for Application No. EP 15197332.8 dated November 2, 2017. (EP3023361)	
	21.	Search Report and Written Opinion for Application No. EP 15197336.9 dated April 4, 2016 (EP3023362)	
	22.	Search Report and Written Opinion for Application No. EP 15197338.5 dated April 7, 2016 (EP3023363)	
	23.	Search Report for Application No. JP 2013-520009 dated November 25, 2014. (JP5946828)	
	24.	First Office Action for Application No. JP 2013-520009 dated December 10, 2014. (JP5946828)	
	25.	Second Office Action for Application No. JP 2013-520009 dated August 19, 2015. (JP5946828)	
	26.	Decision to Grant for Application No. JP 2013-520009 dated April 28, 2016. (JP5946828)	
	27.	Search Report for Application No. JP 2016-032427 dated November 21, 2016. (JP2016163691)	
	28.	First Office Action for Application No. JP 2016-032427 dated November 28, 2016. (JP2016163691)	
	29.	Second Office Action for Application No. JP 2016-032427 dated June 20, 2017. (JP2016163691)	

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 294 of 524

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	30.	Search Report for Application No. JP 2017-034769 dated November 15, 2017. (JP2017148511)	
	31.	Office Action for Application No. JP 2017-034769 dated January 30, 2018. (JP2017148511)	
	32.	Office Action for Application No. KR 10-2013-7004356 dated April 5, 2018. (KR20137004356)	
	33.	Office Action for Application No. 10-2017-7019956 dated April 10, 2018. (KR20170087528)	
	34.	Opposition Request against European Patent No. EP 3 023 362 dated July 01, 2019.	
	35.	Notice of Opposition for Application No. 19165223.9 dated February 24, 2020.	
	36.	Notice of Opposition for European Patent No. EP3521208 granted February 19, 2020.	
	37.	Opposition against European Patent No. EP3521208; Application No. 19165223.9 granted February 19, 2020.	
	38.	Communication of Notice of Opposition dated January 27, 2020 for Application No. 19165219.7	
	39.	English Translation of JP2003235733	
	40.	Wikipedia definition of "Deep Drawing" http://en.wikipedia.org/wiki/Deep_Drawing	
	41.	Wikipedia definition of "Tiefziehen" http://de.wikipedia.org/wiki/Tiefziehen	
	42.	Wikipedia definition of "Stamping (metalworking)" https://en.wikipedia.org/wiki/Stamping_(metalworking)	
	43.	Wikipedia definition of "Barcode"	
	44.	Regulation (EC) No 1935/2004 of the European Parliament and of the Council of 27 October 2004" Official of the European Union	
	45.	Brief Communication for Opposition Proceedings for Appl. 15197336.9, dated March 19, 2020	
	46.	Oral Letter regarding the opposition Procedure dated March 16, 2020 for EP 3023362	
	47.	Opposition oral letter regarding the opposition procedure dated March 16, 2020 for EP 023362	
	48.	Annex to the Communication Opposition Appln No. 15197336.9; 2020	
	49.	Brief Communication-Opposition Proceedings for Appl. No. 15197336.9 dated January 8, 2020	
	50.	Letter regarding Opposition Procedure for EP Patent No. 3023362 dated December 23, 2019	
	51.	Brief Communication for Appl No 15197336.9 dated October 15, 2019	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	52.	"Information technology – Automatic identification and data capture techniques – EAN/UPC bar code symbol specification" Second Edition: December 15, 2009	
	53.	Letter accompanying subsequently filed items for EP3023362, KRO-44; October 10, 2019.	
	54.	Brief Communication – Opposition Proceedings for Appl No. 15197336.9 dated July 23, 2019	
	55.	Letter accompanying subsequently filed items for EP3023362 1038-CMS-O; July 17, 2019	
	56.	Brief Communication – Opposition proceedings for Appln No. 15197336.9 dated July 12, 2019	
	57.	Opposition Procedure for EP Patent No. EP 3023362 dated July 1, 2019	
	58.	Miscellaneous requests concerning client data EPO – June 12, 2019	
	59.	Letter regarding the Opposition Procedure KRO-44/FWJPL dated March 20, 2019	
	60.	Ralf Jesse, "Barcode" Gutachten zur Frage Begriffle, Bitcode/Binacode; Patents EP 3023362; May 19, 2019	
	61.	"Information technology – Automatic identification and data capture techniques – Bar code verifier conformance specification – Part 1: Linear symbols" May 20, 2019 10:12	
	62.	"Information technology – Automatic identification and data capture techniques – Bar code print quality test Spec Linear Symbols" German Version: EN ISO/IEC 15416:2001: 1998-02	
	63.	Declaration under 27 C.F.R. for Appl No. 13/697,297; August 15, 2016	
	64.	Wikipedia "Binarcode" https://de.wikipedia.org/wiki/Binarcode	
	65.	Rosenbaum, Jessie, "Bar-Code" Theorie Lexikon Software; 2000	
	66.	Potter Mathia, "BARCODE" Euinfuhrung und Andwendungen; 1993	
	67.	Oliver Rosenbaum "Das Barcode-Lexicon" edition advanced: cbhv; 1997	
	68.	Fairley Michael "Codes and Coding Technology" LCGS, FIP3 and FLOM3: A Labels & Labeling Publication 2015	
	69.	Claims – Amended Claims with annotations-2	
	70.	Claims – 2019-05-20 Amended Claims with Annotations	
	71.	Auxiliary request during Opposition procedure – 2019-05-20	
	72.	Letter regarding opposition procedure for EP 3023362 dated March 4, 2019	
	73.	Definition of Barcode by Merriam-Webster https://www.meriam-webster.com/dictionary/barcode	
	74.	Barcode-Wikitionary "Barcode" https://de.wikitionary.org/wiki/Barcode 2018	
	75.	Strichcode – Wikipedia "Strichcode" https://de.wikiepdia.org/wiki/strichcode	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	76.	Reply of the patent proprietor to the notice of opposition 2019-02-11; Appln No. 151973366.9	
	77.	Notice of Opposition against European Patent No. EP 3023362 dated July 30, 2018	
	78.	Notice of Opposition to a European patent, Patent No. EP3023362 dated July 24, 2018.	
	79.	Specification NP-C2.03-02-SP-04-2 Membrane	
	80.	Specification NP-C2.03-01-SP-01-4 empty capsule	
	81.	Marketing brochure “Nespresso Varietäten mit 5 neuen Grand Crus”	
	82.	Photo taken in Nespresso store	
	83.	Marketing brochure "i6 Grands Crus – geschaffen um Ihre Sinne zu ilberraschen "	
	84.	RTS online article	
	85.	Invoice for various Nespresso capsules, dated May 04, 2009	
	86.	Invoice for various Nespresso capsules, dated August 10, 2009	
	87.	Invoice for various Nespresso capsules, dated December 02, 2009	
	88.	Invoice for various Nespresso capsules, dated May 18, 2009	
	89.	Invoice for various Nespresso capsules, dated October 21, 2008	
	90.	Invoice for various Nespresso capsules, dated June 24, 2009	
	91.	Invoice for various Nespresso capsules, dated May 19, 2008	
	92.	Invoice for various Nespresso capsules, dated September 10, 2008	
	93.	Invoice for various Nespresso capsules, dated February 17, 2009	
	94.	Invoice for various Nespresso capsules, dated December 22, 2008	
	95.	User manual for the Tassimo@ brewing machine	
	96.	Web article discussing the T-discs@ cartridges	
	97.	Regulation No. 817.023.21 of the EDI on consumer goods	
	98.	Regulation No.8 17.022.3 1of the EDI on the additives permitted in foodstuffs	
	99.	Regulation of the Swiss Federal Council on Foodstuffs and Consumer Goods	
	100.	"European Printing Ink Association " Guideline on Printing Inks	
	101.	leaflet on printing inks for food packages from the division “Printing Inks" of the Association of the German Paint and Printing Ink Industry	
	102.	EuPIA Exclusion List for Printing Inks and Related Products	
	103.	EuPIA Guideline on Good Manufacturing Practices for the Production of Packaging Inks formulated for use on the non-food contact surfaces of food packaging and articles intended to come into contact with food	
	104.	Commission Regulation (EC) No 2023/2006	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	105.	Council Directive 89/109/EEC relating to materials and articles intended to come into contact with foodstuffs	
	106.	Policy Statement on Packaging Inks applied to the non-food contact surface of Food Packaging of the public health committee of the council of Europe	
	107.	Nestle Guidance Note on Packaging Inks	
	108.	Council Directive on the colouring matters authorised for use in foodstuffs intended for human consumption	
	109.	Council Directive 89/107/EEC on the approximation of the laws of the Member States concerning food additives authorized for use in foodstuffs intended for human consumption	
	110.	European Parliament and Council Directive 94/36/EC on colours for use in foodstuffs	
	111.	Excerpt from the textbook "Plastics Packaging – Properties, Processing, Applications and Regulations" by Selke/Culter/Hernandez	
	112.	"Lexikon Verpackungstechnik" by Bleisch/Goldhahn/Schricker/Vogt;	
	113.	Paper titled "Aromaveranderung von vakuumverpacktem Kaffee bei unterschiedlichen Packstoffen" by Lindner-Steinert/Zou	
	114.	Paper "Die flexible Verpackung von morgen – Anforderungen an die Veredler" by Agulla/Langowski	
	115.	Excerpt from publication "Grundziige der Lebensmitteltechnik" of 2004 by Tscheuschner	
	116.	Excerpt from publication "Produkt-bkobilanz vakuumverpackter Rostkaffee" of 1999 by Diers/Langowski/Pannkoke	
	117.	3rd Party Observations in EP Patent Application No. 19 165 220.5 (3 533 726), dated June 19, 2020.	
	118.	Opposition Against EP Patent No. EP 3 023 362 dated July 13, 2020.	
	119.	Letter dated September 30, 2020 from file of US Application No. 16/517,054 (by SOCIÉTÉ DES PRODUITS NESTLÉ S.A.)	
	120.	Supplemental arguments filed by Societe des Produits Nestle S.A. in the opposition against European Patent No. EP3521209, dated January 07, 2021.	
	121.	Supplemental arguments filed by Societe des Produits Nestle S.A. in the opposition against European Patent No. EP3023362, dated January 07, 2021.	
	122.	Suggestion for Declaration of Interference dated Sept. 30, 2019	
	123.	Petition for Inter Partes Review of U.S. Patent No. 10,870,531 (IPR2021-01223), dated July 12, 2021	
	124.	Petition for Inter Partes Review of U.S. Patent No. 10,858,176 (IPR2021-01221), dated July 12, 2021	

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 298 of 524

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc Krüger
	Art Unit	TBA
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

	125.	Petition for Inter Partes Review of U.S. Patent No. 10,858,177 (IPR2021-01222), dated July 12, 2021	
	126.	Declaration of Michael Jobin, Exhibit 1003 from Petition for Inter Partes Review of U.S. Patent No. 10,858,177 (IPR2021-01222), dated July 12, 2021	
	127.	Declaration of Michael Jobin, Exhibit 1003 from Petition for Inter Partes Review of U.S. Patent No. 10,858,176 (IPR2021-01221), dated July 12, 2021	
	128.	Declaration of Michael Jobin, Exhibit 1003 from Petition for Inter Partes Review of U.S. Patent No. 10,870,531 (IPR2021-01223), dated July 12, 2021	

EXAMINER SIGNATURE			
Examiner Signature	/BRIAN W JENNISON/	Date Considered	11/02/2021
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

Filed via EFS @ USPTO.gov on July 29, 2021
Practitioner's Docket No. 1859.029USC11 (KRU0022-WO-US-T12)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Marc KRÜGER

Art Unit: TBA

Application No.: 17/385,109

Examiner: TBA

Filed: July 26, 2021

Conf. No.: 6609

For: PORTION CAPSULE HAVING AN IDENTIFIER

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

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Applicant submits this statement in accordance with its duty of disclosure under 37 C.F.R. §§ 1.56, 1.97, and 1.98. The submission made herewith is in no way intended as an admission that the cited items constitute material prior art or otherwise would render the claims unpatentable in any way. The submission also is in no way intended to substitute for the Examiner's own independent investigation.

Copies of foreign patent documents and non-patent literature together with a listing on form PTO/SB/08a are submitted herewith. Applicant includes English translations from the European Patent Office and/or Japanese Patent Office websites and are subject to the caveat expressed on the translations. Applicant respectfully solicits the Examiner's consideration of the cited references and entry thereof into the record of this application.

This Information Disclosure Statement is being submitted prior to the mailing of a first Office Action or Notice of Allowance. No fees are believed to be due; however, if any fee is due with the filing of this paper, please charge the amount to Deposit Account 50-1097.

Date: July 29, 2021

/Paul J. Palinski/

Paul J. Palinski

Customer No. 25215

Reg. No. 71,080
Attorney for Applicant
The Dobrusin Law Firm, P.C.
29 W. Lawrence Street - Suite 210
Pontiac, MI 48342
(248) 292-2920

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc KRÜGER
	Art Unit	~~TBA~~ 3761
	Examiner Name	~~TBA~~ Brian Jennison
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

FOREIGN PATENT DOCUMENTS							
Examiner Initial*	Cite No.	Foreign Document Number	Country Code	Kind Code	Publication Date	Name of Patentee or Applicant of cited Document	T[5]
	1.	200435370	KR	Y1	01/18/2007	Unknown	X

NON-PATENT LITERATURE DOCUMENTS			
Examiner Initial*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1.	Petition for Inter Partes Review of U.S. Patent No. 10,870,531 (IPR2021-01223), dated July 12, 2021.	
	2.	Petition for Inter Partes Review of U.S. Patent No. 10,858,176 (IPR2021-01221), dated July 12, 2021.	
	3.	Petition for Inter Partes Review of U.S. Patent No. 10,858,177 (IPR2021-01222), dated July 12, 2021.	
	4.	Declaration of Michael Jobin, Exhibit 1003 from Petition for Inter Partes Review of U.S. Patent No. 10,858,177 (IPR2021-01222), dated July 12, 2021.	
	5.	Declaration of Michael Jobin, Exhibit 1003 from Petition for Inter Partes Review of U.S. Patent No. 10,858,176 (IPR2021-01221), dated July 12, 2021.	
	6.	Declaration of Michael Jobin, Exhibit 1003 from Petition for Inter Partes Review of U.S. Patent No. 10,870,531 (IPR2021-01223), dated July 12, 2021.	

EXAMINER SIGNATURE			
Examiner Signature	/BRIAN W JENNISON/	Date Considered	11/02/2021

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.W.J/

Filed via EFS @ USPTO.gov on November 12, 2021
Practitioner's Docket No. 1859.029USC11(KRU0022-WO-US-T12)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Marc Krüger	Art Unit: 3761
Application No.: 17/385,109	Examiner: Brian W. Jennison
Filed: July 26, 2021	Conf. No.: 6609

For: PORTION CAPSULE HAVING AN IDENTIFIER

Practitioner's Docket No. 1859.029USC11(KRU0022-WO-US-T12)

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

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT
Under 37 C.F.R. §§ 1.97(e)(2) – Fee Required

Applicant submits this statement in accordance with their duty of disclosure under 37 C.F.R. §§ 1.56, 1.97, and 1.98. The submission made herewith is in no way intended as an admission that the cited items constitute material prior art or otherwise would render the claims unpatentable in any way. The submission also is in no way intended to substitute for the Examiner's own independent investigation.

A copy of the non-patent literature together with a listing on form PTO/SB/08a is submitted herewith. Applicant respectfully solicits the Examiner's consideration of the cited reference and entry thereof into the record of this application.

I, the person signing below, state that no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge, after making reasonable inquiry, no item of information contained in this information disclosure statement was known to any individual designated in § 1.56(c) more than three months prior to the filing of the information disclosure statement. *37 C.F.R. § 1.97(e)(2).*

This Information Disclosure Statement is being submitted prior to the payment of the issue fee. A fee of $260.00 is believed to be due; however, if any additional fee is due with the filing of this paper, please charge the amount to deposit account 50-1097.

Date: November 12, 2021

/Paul J. Palinski/

Paul J. Palinski

Reg. No. 71,080
Attorney for Applicant
The Dobrusin Law Firm, P.C.
29 W. Lawrence Street - Suite 210
Pontiac, MI 48342
(248) 292-2920

Customer No. 25215

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 303 of 524

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/385,109
	Filing Date	July 26, 2021
	First Named Inventor	Marc KRÜGER
	Art Unit	3761
	Examiner Name	Brian W. Jennison
	Attorney Docket Number	1859.029USC11 (KRU0022-WO-US-T12)

NON-PATENT LITERATURE DOCUMENTS			
Examiner Initial*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T^5
	1.	Nespresso's Preliminary Invalidity Contentions from US District Court Central District of California Case No. 2:21-cv-3402 GW(ARGx), dated September 22, 2021.	

EXAMINER SIGNATURE			
Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Electronic Patent Application Fee Transmittal

Application Number:	17385109
Filing Date:	26-Jul-2021
Title of Invention:	PORTION CAPSULE HAVING AN IDENTIFIER
First Named Inventor/Applicant Name:	Marc KRÜGER
Filer:	Paul J. Palinski/BECKY BALLARD
Attorney Docket Number:	1859.029US11 (KRU0022-WO

Filed as Large Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
SUBMISSION- INFORMATION DISCLOSURE STMT	1806	1	260	260
		Total in USD ($)		**260**

Electronic Acknowledgement Receipt

EFS ID:	44267917
Application Number:	17385109
International Application Number:	
Confirmation Number:	6609
Title of Invention:	PORTION CAPSULE HAVING AN IDENTIFIER
First Named Inventor/Applicant Name:	Marc KRÜGER
Customer Number:	25215
Filer:	Paul J. Palinski/BECKY BALLARD
Filer Authorized By:	Paul J. Palinski
Attorney Docket Number:	1859.029US11 (KRU0022-WO
Receipt Date:	12-NOV-2021
Filing Date:	26-JUL-2021
Time Stamp:	13:23:28
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$260
RAM confirmation Number	E2021ABD25254568
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Non Patent Literature	NespressosInvalidityContentions_20210922.pdf	510270 5bfc6dbb3005eddb2f49509bfa3cc5719cde6eee	no	71
Warnings:					
Information:					
2	Information Disclosure Statement (IDS) Form (SB08)	Supplemental_IDS_1859_029USC11.pdf	184916 19b98aadcccd95d230d197529ef8c8e5e61ae9bf	no	3
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
3	Fee Worksheet (SB06)	fee-info.pdf	38262 577d7142cfb6353c6b988b27babb1eb4135e6700	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	733448		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Filed Via EFS @ USPTO. Gov on November 12, 2021
Docket No: 1859.029USC11 / KRU0022-WO-US-T12

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Marc Krüger	Art Unit: 3761
Application No.: 17/385,109	Examiner: JENNISON BRIAN W
Filed: July 26, 2021	Conf. No.: 6609

For: PORTION CAPSULE HAVING AN IDENTIFIER

Docket No: 1859.029USC11 / KRU0022-WO-US-T12

AMENDMENT UNDER 37 CFR 1.312

In response to the Notice of Allowance mailed on November 10, 2021, Applicant wishes to bring to the attention of the Examiner the following amendments to claims 21, 24, 26, and 29. No new matter has been added.

Claim 21 is amended to add an inadvertently omitted period at the end of the sentence.

Claim 24 is amended to provide antecedent basis for the side wall.

Claim 26 is amended to add a hyphen between single and serve.

Claim 29 is amended to correct a spelling error (rad -> read).

Entry of these claim amendments is respectfully requested.

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 309 of 524

Amendments to the Claims

1) (Previously Presented) A beverage system for making a beverage, comprising:

a single-serve capsule comprising: a base element with a cavity, in which a raw beverage material is provided; a flange extending outwardly from the base element, the flange comprising a top side and an opposing bottom side; a cover that is fastened to the top side of the flange to close the cavity; and a barcode provided on the bottom side of the flange; and

a beverage machine comprising: a sensor/detector configured to read the barcode; a brewing chamber configured to receive the base element of the single-serve capsule and having an end portion that opposes the bottom side of the flange; and a pump controlled to supply water into the single-serve capsule;

wherein the single-serve capsule is free of a filter that is located inside of the cavity, the single-serve capsule also comprises:

i. an upper end portion that has an annular convexity and a lower end portion that has an annular concavity relative to a central axis of the base element; and

ii. a barrier layer to prevent moisture or aroma from escaping out of the single-serve capsule;

wherein the beverage machine also comprises:

i. a mandrel that is configured to pierce the cover in a region that is offset from the central axis of the base element;

ii. a seal that that is configured to seal against the cover in a region between a peripheral edge of the flange and the region of the cover that is pierced by the mandrel;

iii. a pair of holding arms for engaging the single-serve capsule; and

iv. a dropping box for the single-serve capsule to fall into;

wherein the pump is controlled to push the water into the single-serve capsule only upon a determination that the read barcode agrees with a stored reference.

2) – 20) (Cancelled)

21) (Currently Amended) The beverage system according to claim 1, wherein the pump is controlled to not push water into the single-serve capsule upon a determination that the read barcode does not agree with the stored reference.

22) (Previously Presented) The beverage system according to claim 1, wherein the sensor/detector of the beverage machine is configured to compare the read barcode with the stored reference.

23) (Previously Presented) The beverage system according to claim 1, wherein the base element comprises a bottom having an indentation.

24) (Currently Amended) The beverage system according to claim 23, wherein ~~the~~ a side wall of the base element includes indentations.

25) (Previously Presented) The beverage system according to claim 1, wherein the base element is made of a biodegradable material.

26) (Currently Amended) A beverage system for making a beverage, comprising:

a single-serve capsule comprising: a base element with a cavity, in which a raw beverage material is provided; a flange extending outwardly from the base element, the flange comprising a top side and an opposing bottom side; a cover that is fastened to the top side of the flange to close the cavity; and an identifier provided on the bottom side of the flange, the identifier being a barcode; and

a beverage machine comprising: a sensor/detector, a brewing chamber configured to receive the base element of the single-serve capsule and having an end portion that opposes the bottom side of the flange; and a pump controlled to supply water into the single-serve capsule;

wherein the single-serve capsule is free of a filter that is located inside of the cavity, the single-serve capsule also comprises:

i. an upper end portion that has an annular convexity and a lower end portion that has an annular concavity relative to a central axis of the base element;

ii. a barrier layer to prevent moisture or aroma from escaping out of the single-serve capsule; and

iii. a side wall having indentations;

wherein the beverage machine also comprises:

i. a mandrel that is configured to pierce the cover in a region that is offset from the central axis of the base element;

ii. a seal that that is configured to seal against the cover in a region between a peripheral edge of the flange and the region of the cover that is pierced by the mandrel;

iii. a pair of holding arms for engaging opposite sides of the single-serve capsule; and

iv. a dropping box for the single-serve capsule to fall into;

wherein the beverage machine, by reading or detecting the identifier with the sensor/detector, is configured to determine if the single-serve capsule belongs to a group of single serve capsules operable for use with the beverage machine, and only if the beverage machine determines that the single-serve capsule belongs to the group of single-serve ~~single serve~~ capsules operable for use with the beverage machine is the pump controlled to push the water into the single-serve capsule.

27) (Previously Presented) The beverage system according to claim 26, wherein the base element comprises a bottom having an indentation.

28) (Previously Presented) The beverage system according to claim 26, wherein the base element is made of a biodegradable material.

29) (Currently Amended) The beverage system according to claim 26, wherein the sensor/detector of the beverage machine is configured to ~~rad~~ read the barcode and compare the read barcode with a stored reference.

REMARKS

By way of the foregoing amendments and the markings to show changes, claims 21, 24, 26, and 29 are amended. No new matter has been added. The claims as allowed are believed to be clear; however, in an abundance of caution, the foregoing claim amendments are submitted to further clarify the claims. These claim amendments do not change the scope of the as allowed claims. The claim amendments are believed to be proper under 37 CFR 1.312.

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.

CONCLUSIONS

In view of these amendments and remarks, Applicant believes this application is prepared for issuance. Applicant respectfully requests that a patent be issued as soon as possible.

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,

Dated: November 12, 2021

/Paul Palinski/

Paul J. Palinski
Registration No. 71, 080
THE DOBRUSIN LAW FIRM PC
29 W. Lawrence Street, Suite 210
Pontiac, MI 48342
(248) 292-2920

Customer No. 25215

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 314 of 524

PART B - FEE(S) TRANSMITTAL

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

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
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 11/10/2021
The Dobrusin Law Firm P.C.
29 W. Lawrence Street
Suite 210
Pontiac, MI 48342

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.

Certificate of Mailing or Transmission

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.

Becky Ballard	(Typed or printed name)
/Becky Ballard/	(Signature)
November 12, 2021	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/385,109	07/26/2021	Marc KRÜGER	1859.029US11 (KRU0022-WO	6609

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	02/10/2022

EXAMINER	ART UNIT	CLASS-SUBCLASS
JENNISON, BRIAN W	3761	099-295000

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,
(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.

1 The Dobrusin Law Firm, P.C.
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: K-FEE SYSTEM GMBH

(B) RESIDENCE: (CITY and STATE OR COUNTRY): Bergisch Gladbach, Germany

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. 50-1097

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.

Authorized Signature /Paul J. Palinski/ Date November 12, 2021

Typed or printed name Paul J. Palinski Registration No. 71,080

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1

Electronic Patent Application Fee Transmittal

Application Number:	17385109
Filing Date:	26-Jul-2021
Title of Invention:	PORTION CAPSULE HAVING AN IDENTIFIER
First Named Inventor/Applicant Name:	Marc KRÜGER
Filer:	Paul J. Palinski/BECKY BALLARD
Attorney Docket Number:	1859.029US11 (KRU0022-WO

Filed as Large Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	1501	1	1200	1200

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**1200**

Electronic Acknowledgement Receipt

EFS ID:	44269322
Application Number:	17385109
International Application Number:	
Confirmation Number:	6609
Title of Invention:	PORTION CAPSULE HAVING AN IDENTIFIER
First Named Inventor/Applicant Name:	Marc KRÜGER
Customer Number:	25215
Filer:	Paul J. Palinski/BECKY BALLARD
Filer Authorized By:	Paul J. Palinski
Attorney Docket Number:	1859.029US11 (KRU0022-WO
Receipt Date:	12-NOV-2021
Filing Date:	26-JUL-2021
Time Stamp:	13:57:20
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	$1200
RAM confirmation Number	E2021ABE01070275
Deposit Account	
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		312Amendment_1859_029USC11.pdf	162772 b5a1c617654be3d01bb8a336a993e42a6a90b919	yes	6
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Amendment after Notice of Allowance (Rule 312)		1	1	
	Claims		2	5	
	Applicant Arguments/Remarks Made in an Amendment		6	6	
Warnings:					
Information:					
2	Issue Fee Payment (PTO-85B)	IssueFee_1859_029USC11.pdf	96272 1867ad41e08972251cfd73013f1db977c09d085b	no	1
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	38150 02b2662aec52814e24d52c547fd51379fe0f6589	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	297194		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Filed via EFS @ USPTO.gov on
Practitioner's Docket No. 1859.029USC11(KRU0022-WO-US-T12)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Marc Krüger	Art Unit: 3761
Application No.: 17/385,109	Examiner: Brian W. Jennison
Filed: July 26, 2021	Conf. No.: 6609

For: PORTION CAPSULE HAVING AN IDENTIFIER

Practitioner's Docket No. 1859.029USC11(KRU0022-WO-US-T12)

SUBMISSION OF AN UNINTENTIONALLY OMITTED ITEM FROM THE SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT FILED ON NOVEMBER 12, 2021

Applicant submitted a supplemental information disclosure statement on November 12, 2021, listing a single NPL document entitled "Nespresso's Preliminary Invalidity Contentions from US District Court Central District of California Case No. 2:21-cv-3402 GW (ARGx), dated September 22, 2021." The aforementioned NPL document refers to claim charts, which were unintentionally omitted without any deceptive intent from the November 12, 2021 filing (See at least pages 2, 4, 8, 9, 13, 24, 28, 37, 41, 55, 66, 67, etc. of the NPL document, which refer to claim charts). The unintentionally omitted claim charts are believed to be part of the originally-filed NPL document by way of incorporation by reference, because the originally-filed NPL document refers to the claim charts as supporting documents.

Accordingly, for sake of completeness of the record, and without admitting these claim charts are material in any way, Applicant is submitting the unintentionally omitted claim charts herewith. Applicant respectfully requests the Examiner consider these unintentionally omitted claim charts together with the NPL document filed on November 12, 2021. This submission of the unintentionally omitted claim charts remains within the three-month window under *37 C.F.R. § 1.97(e)(2)*.

This submission is in no way intended as an admission that the cited items constitute material prior art or otherwise would render the claims unpatentable in any way. The submission also is in no way intended to substitute for the Examiner's own independent investigation.

Date: November 22, 2021

/Paul Palinski/

Paul J. Palinski

Reg. No. 71,080
Attorney for Applicant
The Dobrusin Law Firm, P.C.
29 W. Lawrence Street - Suite 210
Pontiac, MI 48342
(248) 292-2920

Customer No. 25215

UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
17/385,109	**11/22/2021 12:15:38 PM ET**	**1859.029US11 (KRU0022-WO**

Title of Invention

PORTION CAPSULE HAVING AN IDENTIFIER

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6609	FILED BY	BECKY BALLARD
PATENT CENTER #	60411157	FILING DATE	07/26/2021
CUSTOMER #	25215	FIRST NAMED INVENTOR	Marc KRÜGER
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Paul Palinski

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
MiscLetterOmittedItems_1859_029USC11.pdf	2	Transmittal Letter	166 KB
claim charts2-LET..docx	1571	Miscellaneous Incoming Letter	7964 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
MiscLetterOmittedItems_1859_029USC11.pdf	DCBD5BFB7E3FC7689FC824425403B6ABE865906903A4B015FA3D3EAE6195BE0F27E782A5C9FD48BB33AEFDCFF3A8F63E9FB29D4492517CD3460A81472A345C76

claim charts2-LET..docx 6FDABBCAD4EA7A3E91A3C618C8FEEE77C144D5904A36E21E147596AC921E7FC8CA0C6081F3F9AEE6A7C6DB2F85BAD2C97649F7C8366B3C0D4D339CAE53497040

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Exhibit A-1 – Invalidity of U.S. Patent No. 10,858,176 in view of Bentley

INVALIDITY CLAIM CHART
Invalidity of U.S. Patent No. 10,858,176 in view of Bentley

According to its cover page, European Patent No. 0455337 B1 ("Bentley") was published on November 6, 1991. Bentley therefore constitutes prior art to the '176 Patent under pre-AIA 35 U.S.C. § 102(b). Bentley anticipates and/or renders obvious the Asserted Claims of the '176 Patent (at least as Nespresso understands K-fee's application of the Asserted Claims in an effort to show infringement).

To the extent K-fee argues that any element below is not disclosed by Bentley, a person of ordinary skill in the art would have found it obvious to combine the teachings of Bentley with the background knowledge of a person of ordinary skill in the art and/or the additional references, and exemplary teachings, set forth in the charts in Exhibits A-1 to A-9, and in Appendix A.

The chart below provides representative examples of where each element of each claim is found within Bentley. Citations are meant to be exemplary, not exhaustive, and Nespresso reserves the right to identify and discuss additional portions of the reference in support of its contentions and/or to rebut arguments made by K-fee. Citations to figures, drawings, tables, and the like include reference to any accompanying or related text. All internal cross references are meant to incorporate the cross-referenced material as if fully set forth therein.

It is Nespresso's position that K-fee's Infringement Contentions have not established that any accused product or service infringes any valid claim. Thus, Nespresso's statements below should not be treated as an admission, implication, or suggestion that Nespresso agrees with K-fee regarding either the scope, construction, or interpretation of any of the Asserted Claims, or the infringement theories advanced by K-fee in its Infringement Contentions, including whether any Asserted Claim satisfies 35 U.S.C. §§ 101 or 112. In certain cases, Nespresso specified non-limiting examples of where its application of the prior art is based on K-fee's apparent application of the claim element. These statements are not intended to suggest that Nespresso agrees with K-fee's application of any claim term, suggest a proposed construction at this stage of the case, or suggest that construction is needed, as the parties are not required to exchange terms for construction or proposed constructions until a later date.

K-fee has yet to identify any limitation of the Asserted Claims that it contends is not anticipated and/or rendered obvious by Bentley. Nespresso therefore expressly reserves the right to respond to any such contention, including by identifying additional obviousness combinations, if K-fee makes any such contention.

Where Nespresso states that Bentley "discloses" a limitation, that disclosure may be express, implicit, and/or inherent.

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 325 of 524

U.S. Patent No. 10,858,176	Disclosure
[1.pre] A method of making a coffee beverage comprising:	Bentley discloses, either expressly or inherently, a method for making a coffee beverage. *See, e.g.*: Bentley at 1:3-8: The present invention relates to packages containing ingredients for the preparation of beverages and, in particular, to sealed packages which are formed from a substantially air- and water-impermeable material and which contain one or more ingre-dients for the preparation of beverages. Bentley at 1:38-45: There is also described in European Patent Application No. 87311325.2, a method for preparing a beverage which comprises positioning a beverage containing package at a brewing station, introducing water through water introduction means into the package, allowing the water to commingle with the beverage ingredient, and collecting the beverage so-formed through an outlet formed in the package. Bentley at 1:46-55: The beverage packages as described in European Patent Application No. 87311325.2 are primarily intended to be used with a beverage preparation machine which handles the packages automatically or semi-automatically. A machine of this type is described in our European Patent Application No. 89302708.6. The packages may contain roast and ground coffee, leaf tea or one or more powdered bev-erage preparation ingredients such as powdered chocolate, powdered coffee or powdered soup. Bentley at 2:3-15: Accordingly, the present invention provides a method for the preparation of a beverage from a sealed package containing one or more beverage preparation ingredients located in a compartment in the package, which method comprises introducing a liquid medium suitable

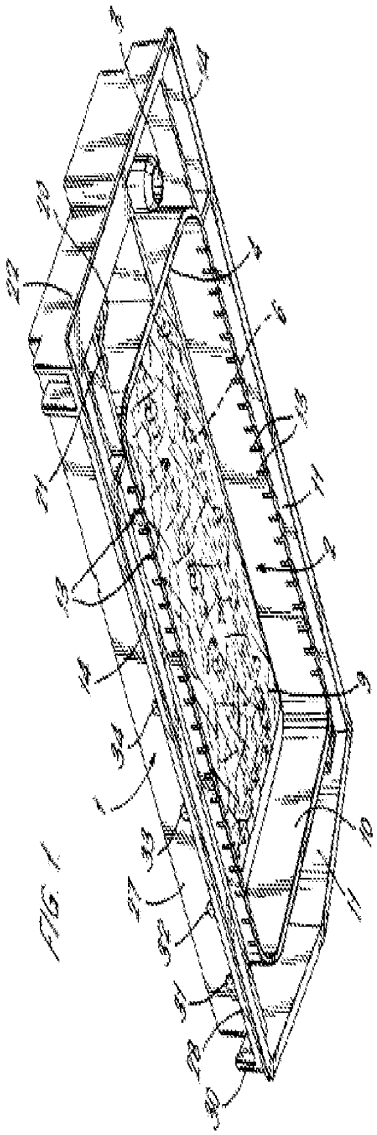
U.S. Patent No. 10,858,176	Disclosure
	for the preparation of the bev-erage under pressure into the package through an inlet formed therein, causing the liquid medium to enter the compartment thereby forming the beverage, and collecting the beverage so formed from an outlet formed in the package, characterised in that the beverage is filtered in an upwardly direction through a filter. *See also* Bentley at Claims 1-3.
[1.a] providing an apparatus including a barcode reader;	Bentley discloses, either expressly or inherently, providing an apparatus including a barcode reader. *See, e.g.*: Bentley at 1:46-55: The beverage packages as described in European Patent Application No. 87311325.2 are primarily intended to be used with a beverage preparation ma-chine which handles the packages automatically or semi-automatically. A machine of this type is described in our European Patent Application No. 89302708.6. The packages may contain roast and ground coffee, leaf tea or one or more powdered bev-erage preparation ingredients such as powdered chocolate, powdered coffee or powdered soup. Bentley at 5:40-54: The packages used in the present invention may be treated by a machine which includes therein one or more sensors which are adapted to sense and identify a recognition means provided on a package inserted into the machine. The sensor may be, for example, a mechanical sensor, an optical sensor, a magnetic sensor, an electrical sensor or an inductive sensor. The machine is preferably adapted so that the package is handled automatically following its insertion into the machine. For example, a machine of the type as described in our European Patent Application No. 89302708.6 can be fitted with an appropriate sensor to sense and identify a recognition means provided on beverage packages intended for use therewith. Bentley at 7:47-8:24:

U.S. Patent No. 10,858,176	Disclosure
	As the package is driven into the beverage preparation machine the flange 28 is sensed as the side edge of the package passes beneath a sensing arm (not shown). The flange 28 has a plurality of upstanding pegs 31,32,33,34 located therein and as the package is driven into the machine by the engagement of the teeth 25 with the tooth of a cam, the sensor senses the presence or absence of upstanding pegs 31,32,33,34. If one or more of pegs 31,32,33,34 is not present the sensing arm will thereby identify a different type of beverage package. The sensing arm operates a switch (not shown) which thereby transmits information concerning the presence or absence of the pegs on the package to the control mechanism for the beverage dispensing machine. The arrangement of pegs 31,32,33,34 on the package thus identifies the type of package to the controller which then selects the appropriate beverage preparation conditions. The presence or absence of three pegs provides scope for the sensing arm to sense up to 8 different types of beverage packages. Thus, if the presence of a peg at a particular location is coded as 1 and the absence of a peg coded as 0, the following code combinations can be achieved. 000 001 010 100 101 110 011 111 The presence of the additional fourth peg formed in flange 28 provides an even larger number of code combinations.
[1.b] inserting a first portion capsule into the apparatus, the first portion	Bentley discloses, either expressly or inherently, inserting a first portion capsule into the apparatus, the first portion capsule including a first foil lid sealed to a base element having a

U.S. Patent No. 10,858,176	Disclosure
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,	cavity within which a powdered coffee material is located, the cavity being free of a filter and including a central portion. *See, e.g.*: Bentley at 1:26-37: In our European Patent Application No. 87311325.2 there is described a package which con-tains at least one beverage preparation ingredient, e.g. roast and ground coffee. In a preferred embodiment the package is formed from a substantially air-and water-impermeable material and comprises a sealed body portion having a compartment contain-ing the beverage ingredient and an outlet channel, the compartment and the outlet channel co-operating in such a manner that, in use, the beverage is filtered, thereby avoiding the necessity for an external filter. Bentley at 2:16-31: The beverage package used in the present invention preferably has a body portion which may be formed, for example, from a moulded plastics material. The inlet and/or outlet of the package may be closed by a plug of a plastics material moulded into the inlet and/or outlet nozzle during the moulding of the body portion. Alternatively, the inlet and/or outlet may be covered by a substantially air- and water-impermeable material, for example aluminium foil or a laminated material, such as a laminate of plastic material/metal foil/plastic material, prior to the opening of the inlet and/or outlet. Specific examples of materials which can be used are aluminium foil having a thickness in the range of from 30 to 60 micrometres coated with a layer of polypropylene or a laminate of polypropylene/aluminium foil/polyester. Bentley at 3:13-17: The beverage preparation ingredients contained in the packages used in the invention are preferably roast and ground coffee, or leaf tea, and according to individual taste, powdered

	Bentley at 4:41-5:34: The packages used in the present invention are preferably provided with a recognition means whereby, in use, the package is identified by the machine into which it is placed for treatment and the identification of the package thereby causes it to be subjected to the correct treatment steps including the introduction of a liquid medium into the package. For the preparation of beverages from beverage preparation ingredients the liquid medium introduced into the package will generally be water or a water/air mixture. The recognition means may comprise one or more surface features formed in the body of the beverage package. For example, the package body may be provided with one or more indents, cut outs, protrusions or holes which can be identified by a mechanical sensor in the beverage preparation machine, the mechanical sensor registering the presence or absence of the indents, cut outs, protrusions or holes. The recognition means may, alternatively, comprise a system which can be sensed by a simple optical device, for example a bar code printed onto the body of the package, a pattern of through holes in the package, a pattern of contrasting tones or colours printed onto the package or packages containing different comestibles being of different colours. The recognition means may also comprise one or more strips of a magnetic material applied to the body of the package which can be read by an appropriate magnetic sensor; one or more shaped or divided areas of metal foil applied to the package body which cause an inductive effect on movement of the package in the machine, which inductive effect can be sensed; or one or more electrically conductive areas formed on the body of the package which can be sensed electrically. As mentioned above, the package used in the present invention contains one or more beverage preparation ingredients, for example, roast and ground coffee or leaf tea and sugar and/or creamer, as desired. One machine which can readily be adapted for the preparation of a beverage from the preferred beverage package of the invention which includes a recognition means is described in our European Patent Application No. 89302708.6. The only modification required to be made to such a beverage preparation machine is to

U.S. Patent No. 10,858,176	Disclosure
	incorporate an appropriate sensor or sensors into it, the sensor or sensors being designed to read the particular coding on the capsule and to send a signal to the controller, which then selects the appropriate beverage preparation cycle. Bentley at 5:40-54: The packages used in the present invention may be treated by a machine which includes therein one or more sensors which are adapted to sense and identify a recognition means provided on a package inserted into the machine. The sensor may be, for example, a mechanical sensor, an optical sensor, a magnetic sensor, an electrical sensor or an inductive sensor. The machine is preferably adapted so that the package is handled automatically following its insertion into the machine. For example, a machine of the type as described in our European Patent Application No. 89302708.6 can be fitted with an appropriate sensor to sense and identify a recognition means provided on beverage packages intended for use therewith. Bentley at 6:10-29: Referring to the drawings a beverage package body is shown at 1. The body may be formed, for example, from a moulded plastics material. The body 1 has a compartment 2 in which the beverage preparation ingredient or ingredients are contained. The package body has an outlet nozzle 3 and an inlet 12 formed therein. The compartment 2 is separated from the area of the body in which the nozzle 3 is formed by means of a wall 4. The top 5 of the package 1 has four longitudinal ribs 6 moulded to the under- side thereof which are shown as a plurality of dotted lines in Figure 2. The four ribs 6 are joined at either end by transverse ribs 7 which are also shown in dotted outline in Figure 2. The ribs 6 and 7 are strengthened at intervals by posts 8 which are also moulded to the underside of the top 5 of package 1. These posts 8 are also shown in dotted outline in Figure 2. A filter material 9 is heat sealed to ribs 6, ribs 7 and posts 8, the filter material 9 extends across a substantial part of the top of compartment 2. Bentley at Fig. 1:

U.S. Patent No. 10,858,176	Disclosure
	
[1.c] and a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central portion of the cavity,	Bentley discloses, either expressly or inherently, a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central portion of the cavity. *See, e.g.*: Bentley at 3:7-12:

U.S. Patent No. 10,858,176	Disclosure
	The filter material may also be coated with a material which is activated by heat and/or pressure so that it can readily be sealed to ribs formed in the under surface of the top of the package, thereby forming one or more passages which communicate with the outlet. Bentley at 6:10-7:15: Referring to the drawings a beverage package body is shown at 1. The body may be formed, for example, from a moulded plastics material. The body 1 has a compartment 2 in which the beverage preparation ingredient or ingredients are contained. The package body has an outlet nozzle 3 and an inlet 12 formed therein. The compartment 2 is separated from the area of the body in which the nozzle 3 is formed by means of a wall 4. The top 5 of the package 1 has four longitudinal ribs 6 moulded to the under- side thereof which are shown as a plurality of dotted lines in Figure 2. The four ribs 6 are joined at either end by transverse ribs 7 which are also shown in dotted outline in Figure 2. The ribs 6 and 7 are strengthened at intervals by posts 8 which are also moulded to the underside of the top 5 of package 1. These posts 8 are also shown in dotted outline in Figure 2. A filter material 9 is heat sealed to ribs 6, ribs 7 and posts 8, the filter material 9 extends across a substantial part of the top of compartment 2. Compartment 2 is separated from the outlet nozzle by a wall 4 and surrounded on its other three sides by a U-shaped wall 10. The wall 10 has a U-shaped channel 11 surrounding it, the channel 11 communicating with inlet 12. The wall 10 has a plurality of small slots 13 formed in the two longitudinal arms thereof. In use of the beverage package as shown in the drawings, the bottom of the package 1 is sealed by means of an aluminium foil or a laminated foil which is heat sealed to the lower edges of walls 4 and 10 and to the lower edge 14 of the package. Water enters the package at a pressure of about 10^5Pa via inlet 12 which is opened by piercing or cutting the material covering the said opening. The water enters the channel 11 surrounding three sides of the compartment 2 containing the beverage ingredients. The water, which is under pressure, is forced through the elongate slots 13 formed in the wall 10 which separates channel 11 from compartment 2. The water mixes with the beverage preparation ingredients con- tamed in

U.S. Patent No. 10,858,176	Disclosure
	compartment 2 and is forced upwardly through the beverage preparation ingredients. The beverage formed by passage of the water through the beverage preparation ingredients passes through filter material 9 into passages 15 which are formed between the ribs 6. The sealing of the filter material 9 onto ribs 6 and 7 prevents any short circuit and all of the beverage has to pass through the filter. The passages 15 are closed at the end remote from the outlet by transverse rib 7. The beverage formed by the passage of water through the beverage preparation ingredients also passes directly through the filter material 9 into areas 16 which communicate with passages 15. The beverage passes along passages 15, commingles with the beverage collected in areas 16 and is then funnelled by means of angled extensions 17 of the middle two ribs 6 over a weir 18 to a beverage collection area 19 and thence into outlet nozzle 3. The beverage is then collected in a cup or other receptacle placed below the outlet nozzle 3. It may be desirable to support the filter material 9 by means of additional support ribs in the passages 15 in order to prevent the filter material from bowing and sealing the passages. Bentley at 7:36:46: The package is also provided, as best shown in Figure 2, with teeth 25 moulded along one side wall of compartment 2. The teeth 25 have recesses 26 formed there between. These teeth 25 are intended to enable the beverage package to be driven through a beverage preparation machine by the engagement of the teeth 25 with the tooth of a cam (not shown). The side wall 27 of the beverage package has a flange 28 extending at right angles thereto. The flange 28 has an upstanding rib 30 at the end thereof near to the leading end 29 of the package.
[1.d] 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,	Bentley discloses, either expressly or inherently, 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. *See, e.g.*: Bentley at 4:41-5:34: The packages used in the present invention are preferably provided with a recognition means whereby, in use, the package is identified by the machine into which it is placed for

U.S. Patent No. 10,858,176	Disclosure
	treatment and the identification of the package thereby causes it to be subjected to the correct treatment steps including the introduction of a liquid medium into the package. For the preparation of beverages from beverage preparation ingredients the liquid medium introduced into the package will generally be water or a water/air mixture. The recognition means may comprise one or more surface features formed in the body of the beverage package. For example, the package body may be provided with one or more indents, cut outs, protrusions or holes which can be identified by a mechanical sensor in the beverage preparation machine, the mechanical sensor registering the presence or absence of the indents, cut outs, protrusions or holes. The recognition means may, alternatively, comprise a system which can be sensed by a simple optical device, for example a bar code printed onto the body of the package, a pattern of through holes in the package, a pattern of contrasting tones or colours printed onto the package or packages containing different comestibles being of different colours. The recognition means may also comprise one or more strips of a magnetic material applied to the body of the package which can be read by an appropriate magnetic sensor; one or more shaped or divided areas of metal foil applied to the package body which cause an inductive effect on movement of the package in the machine, which inductive effect can be sensed; or one or more electrically conductive areas formed on the body of the package which can be sensed electrically. As mentioned above, the package used in the present invention contains one or more beverage preparation ingredients, for example, roast and ground coffee or leaf tea and sugar and/or creamer, as desired. One machine which can readily be adapted for the preparation of a beverage from the preferred beverage package of the invention which includes a recognition means is described in our European Patent Application No. 89302708.6. The only modification required to be made to such a beverage preparation machine is to incorporate an appropriate sensor or sensors into it, the sensor or sensors being designed to read the particular coding on the capsule and to send a signal to the controller, which then selects the appropriate beverage preparation cycle.

U.S. Patent No. 10,858,176	Disclosure
	Bentley at 7:26-35: The beverage package as illustrated in Figures to 5 incorporates the recognition means which is a preferred feature of the invention. The package of the invention 1 containing one or more beverage preparation ingredients has a generally rectangular shape with flat top and bottom surfaces and is thereby suitable for insertion into a beverage preparation machine, for example of the type as described in our European Patent Application No. 89302708.6, longitudinally through a slot. Bentley at 7:47-8:24: As the package is driven into the beverage preparation machine the flange 28 is sensed as the side edge of the package passes beneath a sensing arm (not shown). The flange 28 has a plurality of upstanding pegs 31,32,33,34 located therein and as the package is driven into the machine by the engagement of the teeth 25 with the tooth of a cam, the sensor senses the presence or absence of upstanding pegs 31,32,33,34. If one or more of pegs 31,32,33,34 is not present the sensing arm will thereby identify a different type of beverage package. The sensing arm operates a switch (not shown) which thereby transmits information concerning the presence or absence of the pegs on the package to the control mechanism for the beverage dispensing machine. The arrangement of pegs 31,32,33,34 on the package thus identifies the type of package to the controller which then selects the appropriate beverage preparation conditions. The presence or absence of three pegs provides scope for the sensing arm to sense up to 8 different types of beverage packages. Thus, if the presence of a peg at a particular location is coded as 1 and the absence of a peg coded as 0, the following code combinations can be achieved. 000 001

U.S. Patent No. 10,858,176	Disclosure
	010 100 101 110 011 111 The presence of the additional fourth peg formed in flange 28 provides an even larger number of code combinations.
[1.e] the base element of the first portion capsule includes an outside surface having a plurality of vertically oriented grooves;	Bentley discloses, either expressly or inherently, the base element of the first portion capsule includes an outside surface having a plurality of vertically oriented grooves. *See, e.g.*: Bentley at 3:7-12: The filter material may also be coated with a material which is activated by heat and/or pressure so that it can readily be sealed to ribs formed in the under surface of the top of the package, thereby forming one or more passages which communicate with the outlet. Bentley at 6:10-7:15: Referring to the drawings a beverage package body is shown at 1. The body may be formed, for example, from a moulded plastics material. The body 1 has a compartment 2 in which the beverage preparation ingredient or ingredients are contained. The package body has an outlet nozzle 3 and an inlet 12 formed therein. The compartment 2 is separated from the area of the body in which the nozzle 3 is formed by means of a wall 4. The top 5 of the package 1 has four longitudinal ribs 6 moulded to the under- side thereof which are shown as a plurality of dotted lines in Figure 2. The four ribs 6 are joined at either end by transverse ribs 7 which are also shown in dotted outline in Figure 2. The ribs 6 and 7 are strengthened at intervals by posts 8 which are also moulded to the underside of the top 5 of package 1. These posts 8 are also shown in dotted outline in Figure 2. A filter material 9 is heat sealed to ribs 6, ribs 7 and posts 8, the filter material 9 extends across a substantial part of the top of compartment 2.

U.S. Patent No. 10,858,176	Disclosure
	Compartment 2 is separated from the outlet nozzle by a wall 4 and surrounded on its other three sides by a U-shaped wall 10. The wall 10 has a U-shaped channel 11 surrounding it, the channel 11 communicating with inlet 12. The wall 10 has a plurality of small slots 13 formed in the two longitudinal arms thereof. In use of the beverage package as shown in the drawings, the bottom of the package 1 is sealed by means of an aluminium foil or a laminated foil which is heat sealed to the lower edges of walls 4 and 10 and to the lower edge 14 of the package. Water enters the package at a pressure of about 105Pa via inlet 12 which is opened by piercing or cutting the material covering the said opening. The water enters the channel 11 surrounding three sides of the compartment 2 containing the beverage ingredients. The water, which is under pressure, is forced through the elongate slots 13 formed in the wall 10 which separates channel 11 from compartment 2. The water mixes with the beverage preparation ingredients con- tamed in compartment 2 and is forced upwardly through the beverage preparation ingredients. The beverage formed by passage of the water through the beverage preparation ingredients passes through filter material 9 into passages 15 which are formed between the ribs 6. The sealing of the filter material 9 onto ribs 6 and 7 prevents any short circuit and all of the beverage has to pass through the filter. The passages 15 are closed at the end remote from the outlet by transverse rib 7. The beverage formed by the passage of water through the beverage preparation ingredients also passes directly through the filter material 9 into areas 16 which communicate with passages 15. The beverage passes along passages 15, commingles with the beverage collected in areas 16 and is then funnelled by means of angled extensions 17 of the middle two ribs 6 over a weir 18 to a beverage collection area 19 and thence into outlet nozzle 3. The beverage is then collected in a cup or other receptacle placed below the outlet nozzle 3. It may be desirable to support the filter material 9 by means of additional support ribs in the passages 15 in order to prevent the filter material from bowing and sealing the passages. Bentley at 7:36:46:

U.S. Patent No. 10,858,176	Disclosure
	The package is also provided, as best shown in Figure 2, with teeth 25 moulded along one side wall of compartment 2. The teeth 25 have recesses 26 formed therebetween. These teeth 25 are intended to enable the beverage package to be driven through a beverage preparation machine by the engagement of the teeth 25 with the tooth of a cam (not shown). The side wall 27 of the beverage package has a flange 28 extending at right angles thereto. The flange 28 has an upstanding rib 30 at the end thereof near to the leading end 29 of the package.
[1.f] 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;	Bentley discloses, either expressly or inherently, 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. *See, e.g.*: Bentley at 4:41-5:34: The packages used in the present invention are preferably provided with a recognition means whereby, in use, the package is identified by the machine into which it is placed for treatment and the identification of the package thereby causes it to be subjected to the correct treatment steps including the introduction of a liquid medium into the package. For the preparation of beverages from beverage preparation ingredients the liquid medium introduced into the package will generally be water or a water/air mixture. The recognition means may comprise one or more surface features formed in the body of the beverage package. For example, the package body may be provided with one or more indents, cut outs, protrusions or holes which can be identified by a mechanical sensor in the beverage preparation machine, the mechanical sensor registering the presence or absence of the indents, cut outs, protrusions or holes. The recognition means may, alternatively, comprise a system which can be sensed by a simple optical device, for example a bar code printed onto the body of the package, a pattern of through holes in the package, a pattern of contrasting tones or colours printed onto the package or packages containing different comestibles being of different colours. The recognition means may also comprise one or more strips of a magnetic material applied to the body of the package which can be read by an appropriate magnetic sensor; one or

U.S. Patent No. 10,858,176	Disclosure
	more shaped or divided areas of metal foil applied to the package body which cause an inductive effect on movement of the package in the machine, which inductive effect can be sensed; or one or more electrically conductive areas formed on the body of the package which can be sensed electrically. As mentioned above, the package used in the present invention contains one or more beverage preparation ingredients, for example, roast and ground coffee or leaf tea and sugar and/or creamer, as desired. One machine which can readily be adapted for the preparation of a beverage from the preferred beverage package of the invention which includes a recognition means is described in our European Patent Application No. 89302708.6. The only modification required to be made to such a beverage preparation machine is to incorporate an appropriate sensor or sensors into it, the sensor or sensors being designed to read the particular coding on the capsule and to send a signal to the controller, which then selects the appropriate beverage preparation cycle. *See also* [1.a] and [1.d]
[1.g] 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;	Bentley discloses, either expressly or inherently, 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. *See, e.g.*: Bentley at 2:16-31: The beverage package used in the present invention preferably has a body portion which may be formed, for example, from a moulded plastics material. The inlet and/or outlet of the package may be closed by a plug of a plastics material moulded into the inlet and/or outlet nozzle during the moulding of the body portion. Alternatively, the inlet and/or outlet may be covered by a substantially air- and water-impermeable material, for example aluminium foil or a laminated material, such as a laminate of plastic material/ metal foil/plastic material, prior to the opening of the inlet and/or outlet. Specific examples of materials which can be used are aluminium foil having a thickness in the range of from 30 to 60 micrometres coated with a layer of polypropylene or a laminate of polypropylene/ aluminium foil/polyester.

U.S. Patent No. 10,858,176	Disclosure
	Bentley at 8:25-32: When the beverage preparation machine has selected the appropriate beverage preparation conditions, the water inlet 12 of the package is pierced or cut, the outlet 3 is uncovered in the package and water caused to flow under pressure through the compartment containing the beverage ingredient(s). The chosen beverage then being collected in a cup or receptacle placed below the outlet 3 of the package.
[1.h] sealing the first foil lid against a seal of the apparatus;	Bentley discloses, either expressly or inherently, sealing the first foil lid against a seal of the apparatus. *See, e.g.*: Bentley at 2:16-31: The beverage package used in the present invention preferably has a body portion which may be formed, for example, from a moulded plastics material. The inlet and/or outlet of the package may be closed by a plug of a plastics material moulded into the inlet and/or outlet nozzle during the moulding of the body portion. Alternatively, the inlet and/or outlet may be covered by a substantially air- and water-impermeable material, for example aluminium foil or a laminated material, such as a laminate of plastic material/ metal foil/plastic material, prior to the opening of the inlet and/or outlet. Specific examples of materials which can be used are aluminium foil having a thickness in the range of from 30 to 60 micrometres coated with a layer of polypropylene or a laminate of polypropylene/ aluminium foil/polyester. Bentley at 6:36-57: In use of the beverage package as shown in the drawings, the bottom of the package 1 is sealed by means of an aluminium foil or a laminated foil which is heat sealed to the lower edges of walls 4 and 10 and to the lower edge 14 of the package. Water enters the package at a pressure of about 10^5Pa via inlet 12 which is opened by piercing or cutting the material covering the said opening. The water enters the channel 11 surrounding three sides of the compartment 2 containing the beverage ingredients. The water, which is under pressure, is forced through the elongate slots 13 formed in the wall 10 which separates channel 11 from

U.S. Patent No. 10,858,176	Disclosure
	compartment 2. The water mixes with the beverage preparation ingredients con- tamed in compartment 2 and is forced upwardly through the beverage preparation ingredients. The beverage formed by passage of the water through the beverage preparation ingredients passes through filter material 9 into passages 15 which are formed between the ribs 6. The sealing of the filter material 9 onto ribs 6 and 7 prevents any short circuit and all of the beverage has to pass through the filter.
[1.i] introducing 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;	Bentley discloses, either expressly or inherently, introducing 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. *See, e.g.*: Bentley at 1:38-45: There is also described in European Patent Application No. 87311325.2, a method for preparing a beverage which comprises positioning a beverage containing package at a brewing station, introducing water through water introduction means into the package, allowing the water to commingle with the beverage ingredient, and collecting the beverage so-formed through an outlet formed in the package. Bentley at 2:3-15: Accordingly, the present invention provides a method for the preparation of a beverage from a sealed package containing one or more beverage preparation ingredients located in a compartment in the package, which method comprises introducing a liquid medium suitable for the preparation of the beverage under pressure into the package through an in- let formed therein, causing the liquid medium to enter the compartment thereby forming the beverage, and collecting the beverage so formed from an outlet formed in the package, characterised in that the beverage is filtered in an upwardly direction through a filter. Bentley at 3:41-50: In carrying out the method of the present invention a liquid medium is passed via the inlet of the package into the compartment containing the beverage preparation ingredient(s). The filter is disposed at the top of the compartment containing the beverage preparation

U.S. Patent No. 10,858,176	Disclosure
	ingredient(s) and the liquid medium is thereby caused to flow upwardly through the beverage preparation ingredients. The beverage so formed flows upwardly through the filter into the passage or passages which communicate with the outlet. Bentley at 6:36-7:15: In use of the beverage package as shown in the drawings, the bottom of the package 1 is sealed by means of an aluminium foil or a laminated foil which is heat sealed to the lower edges of walls 4 and 10 and to the lower edge 14 of the package. Water enters the package at a pressure of about 10^5Pa via inlet 12 which is opened by piercing or cutting the material covering the said opening. The water enters the channel 11 surrounding three sides of the compartment 2 containing the beverage ingredients. The water, which is under pressure, is forced through the elongate slots 13 formed in the wall 10 which separates channel 11 from compartment 2. The water mixes with the beverage preparation ingredients con- tamed in compartment 2 and is forced upwardly through the beverage preparation ingredients. The beverage formed by passage of the water through the beverage preparation ingredients passes through filter material 9 into passages 15 which are formed between the ribs 6. The sealing of the filter material 9 onto ribs 6 and 7 prevents any short circuit and all of the beverage has to pass through the filter. The passages 15 are closed at the end remote from the outlet by transverse rib 7. The beverage formed by the passage of water through the beverage preparation ingredients also passes directly through the filter material 9 into areas 16 which communicate with passages 15. The beverage passes along passages 15, commingles with the beverage collected in areas 16 and is then funnelled by means of angled extensions 17 of the middle two ribs 6 over a weir 18 to a beverage collection area 19 and thence into outlet nozzle 3. The beverage is then collected in a cup or other receptacle placed below the outlet nozzle 3. It may be desirable to support the filter material 9 by means of additional support ribs in the passages 15 in order to prevent the filter material from bowing and sealing the passages.
[1.j] unloading the first portion capsule from the apparatus;	Bentley discloses, either expressly or inherently, unloading the first portion capsule from the apparatus. *See, e.g.*: Bentley at 1:21-55:

U.S. Patent No. 10,858,176	Disclosure
	Cartridges containing roast and ground coffee in which hot water flows under gravimetric force through the cartridge are also known. A cartridge of this general type is described in British Patent No. 1397116. In our European Patent Application No. 87311325.2 there is described a package which contains at least one beverage preparation ingredient, e.g. roast and ground coffee. In a preferred embodiment the package is formed from a substantially air and water-impermeable material and comprises a sealed body portion having a compartment containing the beverage ingredient and an outlet channel, the compartment and the outlet channel co-operating in such a manner that, in use, the beverage is filtered, thereby avoiding the necessity for an external filter. There is also described in European Patent Application No. 87311325.2, a method for preparing a beverage which comprises positioning a beverage containing package at a brewing station, introducing water through water introduction means into the package, allowing the water to commingle with the beverage ingredient, and collecting the beverage so-formed through an outlet formed in the package. The beverage packages as described in European Patent Application No. 87311325.2 are primarily intended to be used with a beverage preparation machine which handles the packages automatically or semi-automatically. A machine of this type is described in our European Patent Application No. 89302708.6. The packages may contain roast and ground coffee, leaf tea or one or more powdered beverage preparation ingredients such as powdered chocolate, powdered coffee or powdered soup.
[1.k] 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	Bentley discloses, either expressly or inherently, 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 a central portion and a plurality of ribs that are radially spaced, vertically oriented, and 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 is sealed and an opposing bottom side with

U.S. Patent No. 10,858,176	Disclosure
portion capsule being free of a filter and includes a central portion and a plurality of ribs that are radially spaced, vertically oriented, and 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 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	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. *See, e.g.*: Bentley at 2:36-40: Alternatively, the inlet and/or outlet may be open and the beverage package provided with an outer wrapping or the like. For example, a plurality of packages may be provided with a shrink wrapped outer layer. Bentley at 3:28-40: The package of the present invention, when filled with roast and ground coffee, preferably contains from 2.5 to 10 grams of roast and ground coffee, preferably from 4.5 to 6 grams for the preparation of a single cup. However, packages which are intended to provide multiple servings of coffee will contain an appropriate amount of roast and ground coffee, for example, packages intended to provide say five cups of coffee will contain from 20 to 50 grams of roast and ground coffee, preferably from 25 to 30 grams. The roast and ground coffee is generally compacted when the beverage package is filled in order to aid the distribution and transport of water through the package. Bentley at 5:34-39:

U.S. Patent No. 10,858,176	Disclosure
seal of the apparatus; and introducing the heated water into the second portion capsule to form the second coffee beverage.	The recognition system used on the beverage packages of the present invention enables a single beverage preparation machine to prepare from different beverage packages a great number of different beverages which require different beverage preparation conditions. *See also* [1.b]-[1.i].
2. The method according to claim 1, wherein one or both of the introducing steps include: inducing turbulent flow of the heated water by the ribs.	Bentley discloses, either expressly or inherently, the method according to claim 1, wherein one or both of the introducing steps include: inducing turbulent flow of the heated water by the ribs. *See, e.g.*: Bentley at 4:19-28: The quality of the filtration of beverage preparation ingredients, in particular roast and ground coffee, is known to affect the flavour of the beverage. The brewing and flavour characteristics for roast and ground coffee charge with the roasting and grinding conditions and are effected by the size and shape of the particles. The beverage packages used in the present invention enable efficient filtration to be achieved and thereby give rise to beverages which have little or no turbidity and a good flavour. Bentley at 6:10-7:15: Referring to the drawings a beverage package body is shown at 1. The body may be formed, for example, from a moulded plastics material. The body 1 has a compartment 2 in which the beverage preparation ingredient or ingredients are contained. The package body has an outlet nozzle 3 and an inlet 12 formed therein. The compartment 2 is separated from the area of the body in which the nozzle 3 is formed by means of a wall 4. The top 5 of the package 1 has our longitudinal ribs 6 moulded to the under- side thereof which are shown as a plurality of dotted lines in Figure 2. The four ribs 6 are joined at either end by transverse ribs 7 which are also shown in dotted outline in Figure 2. The ribs 6 and 7 are strengthened at intervals by posts 8 which are also moulded to the underside of the top 5 of package 1. These posts 8 are

U.S. Patent No. 10,858,176	Disclosure
	also shown in dotted outline in Figure 2. A filter material 9 is heat sealed to ribs 6, ribs 7 and posts 8, the filter material 9 extends across a substantial part of the top of compartment 2. Compartment 2 is separated from the outlet nozzle by a wall 4 and surrounded on its other three sides by a U-shaped wall 10. The wall 10 has a U-shaped channel 11 surrounding it, the channel 11 communicating with inlet 12. The wall 10 has a plurality of small slots 13 formed in the two longitudinal arms thereof. In use of the beverage package as shown in the drawings, the bottom of the package 1 is sealed by means of an aluminium foil or a laminated foil which is heat sealed to the lower edges of walls 4 and 10 and to the lower edge 14 of the package. Water enters the package at a pressure of about 10^5Pa via inlet 12 which is opened by piercing or cutting the material covering the said opening. The water enters the channel 11 surrounding three sides of the compartment 2 containing the beverage ingredients. The water, which is under pressure, is forced through the elongate slots 13 formed in the wall 10 which separates channel 11 from compartment 2. The water mixes with the beverage preparation ingredients con- tamed in compartment 2 and is forced upwardly through the beverage preparation ingredients. The beverage formed by passage of the water through the beverage preparation ingredients passes through filter material 9 into passages 15 which are formed between the ribs 6. The sealing of the filter material 9 onto ribs 6 and 7 prevents any short circuit and all of the beverage has to pass through the filter. The passages 15 are closed at the end remote from the outlet by transverse rib 7. The beverage formed by the passage of water through the beverage preparation ingredients also passes directly through the filter material 9 into areas 16 which communicate with passages 15. The beverage passes along passages 15, commingles with the beverage collected in areas 16 and is then funnelled by means of angled extensions 17 of the middle two ribs 6 over a weir 18 to a beverage collection area 19 and thence into outlet nozzle 3. The beverage is then collected in a cup or other receptacle placed below the outlet nozzle 3. It may be desirable to support the filter material 9 by means of additional support ribs in the passages 15 in order to prevent the filter material from bowing and sealing the passages. Bentley at 7:36:46:

U.S. Patent No. 10,858,176	Disclosure
	The package is also provided, as best shown in Figure 2, with teeth 25 moulded along one side wall of compartment 2. The teeth 25 have recesses 26 formed there between. These teeth 25 are intended to enable the beverage package to be driven through a beverage preparation machine by the engagement of the teeth 25 with the tooth of a cam (not shown). The side wall 27 of the beverage package has a flange 28 extending at right angles thereto. The flange 28 has an upstanding rib 30 at the end thereof near to the leading end 29 of the package. *See also* [1].
3. The method according to claim 1, wherein the method comprises: comparing the read barcode with a stored reference.	Bentley discloses, either expressly or inherently, the method according to claim 1, wherein the method comprises: comparing the read barcode with a stored reference. *See, e.g.*: Bentley at 4:41-50: The packages used in the present invention are preferably provided with a recognition means whereby, in use, the package is identified by the machine into which it is placed for treatment and the identification of the package thereby causes it to be subjected to the correct treatment steps including the introduction of a liquid medium into the package. For the preparation of beverages from beverage preparation ingredients the liquid medium introduced into the package will generally be water or a water/air mixture. Bentley at 5:19-54: As mentioned above, the package used in the present invention contains one or more beverage preparation ingredients, for example, roast and ground coffee or leaf tea and sugar and/or creamer, as desired. One machine which can readily be adapted for the preparation of a beverage from the preferred beverage package of the invention which includes a recognition means is described in our European Patent Application No. 89302708.6. The only modification required to be made to such a beverage preparation machine is to

U.S. Patent No. 10,858,176	Disclosure
	incorporate an appropriate sensor or sensors into it, the sensor or sensors being designed to read the particular coding on the capsule and to send a signal to the controller, which then selects the appropriate beverage preparation cycle. The recognition system used on the beverage packages of the present invention enables a single beverage preparation machine to prepare from different beverage packages a great number of different beverages which require different beverage preparation conditions. The packages used in the present invention may be treated by a machine which includes therein one or more sensors which are adapted to sense and identify a recognition means provided on a package inserted into the machine. The sensor may be, for example, a mechanical sensor, an optical sensor, a magnetic sensor, an electrical sensor or an inductive sensor. The machine is preferably adapted so that the package is handled automatically following its insertion into the machine. For example, a machine of the type as described in our European Patent Application No. 89302708.6 can be fitted with an appropriate sensor to sense and identify a recognition means provided on beverage packages intended for use therewith. *See also* [1].
10. The method according to claim 1, wherein the base element of the first portion capsule is made of metal.	Bentley discloses, either expressly or inherently, the method according to claim 1, wherein the base element of the first portion capsule is made of metal. *See, e.g.*: Bentley at 2:16-31: The beverage package used in the present invention preferably has a body portion which may be formed, for example, from a moulded plastics material. The inlet and/or outlet of the package may be closed by a plug of a plastics material moulded into the inlet and/or outlet nozzle during the moulding of the body portion. Alternatively, the inlet and/or outlet may be covered by a substantially air- and water-impermeable material, for example aluminium foil

U.S. Patent No. 10,858,176	Disclosure
	or a laminated material, such as a laminate of plastic material/ metal foil/plastic material, prior to the opening of the inlet and/or outlet. Specific examples of materials which can be used are aluminium foil having a thickness in the range of from 30 to 60 micrometres coated with a layer of polypropylene or a laminate of polypropylene/ aluminium foil/polyester. Bentley at 5:9-18: The recognition means may also comprise one or more strips of a magnetic material applied to the body of the package which can be read by an appropriate magnetic sensor; one or more shaped or divided areas of metal foil applied to the package body which cause an inductive effect on movement of the package in the machine, which inductive effect can be sensed; or one or more electrically conductive areas formed on the body of the package which can be sensed electrically. *See also* [1].
11. The method according to claim 10, wherein the base element of the second portion capsule is made of metal.	Bentley discloses, either expressly or inherently, the method according to claim 10, wherein the base element of the second portion capsule is made of metal. *See, e.g.*: Bentley at 2:16-31: The beverage package used in the present invention preferably has a body portion which may be formed, for example, from a moulded plastics material. The inlet and/or outlet of the package may be closed by a plug of a plastics material moulded into the inlet and/or outlet nozzle during the moulding of the body portion. Alternatively, the inlet and/or outlet may be covered by a substantially air- and water-impermeable material, for example aluminium foil or a laminated material, such as a laminate of plastic material/ metal foil/plastic material, prior to the opening of the inlet and/or outlet. Specific examples of materials which can be used are aluminium foil having a thickness in the range of from 30 to 60 micrometres coated with a layer of polypropylene or a laminate of polypropylene/ aluminium foil/polyester. Bentley at 5:9-18:

U.S. Patent No. 10,858,176	Disclosure
	The recognition means may also comprise one or more strips of a magnetic material applied to the body of the package which can be read by an appropriate magnetic sensor; one or more shaped or divided areas of metal foil applied to the package body which cause an inductive effect on movement of the package in the machine, which inductive effect can be sensed; or one or more electrically conductive areas formed on the body of the package which can be sensed electrically. *See also* [10].
12. The method according to claim 1, wherein the first foil lid and/or the second foil lid is made of metal.	Bentley discloses, either expressly or inherently, the method according to claim 1, wherein the first foil lid and/or the second foil lid is made of metal. *See, e.g.*: Bentley at 2:16-31: The beverage package used in the present invention preferably has a body portion which may be formed, for example, from a moulded plastics material. The inlet and/or outlet of the package may be closed by a plug of a plastics material moulded into the inlet and/or outlet nozzle during the moulding of the body portion. Alternatively, the inlet and/or outlet may be covered by a substantially air- and water-impermeable material, for example aluminium foil or a laminated material, such as a laminate of plastic material/ metal foil/plastic material, prior to the opening of the inlet and/or outlet. Specific examples of materials which can be used are aluminium foil having a thickness in the range of from 30 to 60 micrometres coated with a layer of polypropylene or a laminate of polypropylene/ aluminium foil/polyester. Bentley at 5:9-18: The recognition means may also comprise one or more strips of a magnetic material applied to the body of the package which can be read by an appropriate magnetic sensor; one or more shaped or divided areas of metal foil applied to the package body which cause an inductive effect on movement of the package in the machine, which inductive effect can be

U.S. Patent No. 10,858,176	Disclosure
	sensed; or one or more electrically conductive areas formed on the body of the package which can be sensed electrically. Bentley at 6:36-40: In use of the beverage package as shown in the drawings, the bottom of the package 1 is sealed by means of an aluminium foil or a laminated foil which is heat sealed to the lower edges of walls 4 and 10 and to the lower edge 14 of the package. Water enters the package at a pressure of about 105Pa via inlet 12 which is opened by piercing or cutting the material covering the said opening. *See also* [1].
[13.pre] A method of making a coffee beverage, comprising steps of:	Bentley discloses, either expressly or inherently, a method of making a coffee beverage. *See, e.g.*: *See* [1.pre].
[13.a] providing an apparatus including a barcode reader configured to read a barcode, the apparatus including a mandrel, a water inlet, and a seal;	Bentley discloses, either expressly or inherently, providing an apparatus including a barcode reader configured to read a barcode, the apparatus including a mandrel, a water inlet, and a seal. *See* [1.a], [1.g], [1.i], [1.h].
[13.b] 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 a wall that	Bentley discloses, either expressly or inherently, 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 a wall that defines the cavity with a central interior portion. *See, e.g.*: *See* [1.b].

U.S. Patent No. 10,858,176	Disclosure
defines the cavity with a central interior portion,	
[13.c] having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central interior portion and an outside surface of the wall having plurality of vertically oriented grooves,	Bentley discloses, either expressly or inherently, having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central interior portion and an outside surface of the wall having plurality of vertically oriented grooves. *See, e.g.*: *See* [1.c], [1.e].
[13.d] 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;	Bentley discloses, either expressly or inherently, 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. *See, e.g.*: *See* [1.d].
[13.e] piercing the first lid with the mandrel in a region that is offset from a central axis of the first portion capsule;	Bentley discloses, either expressly or inherently, piercing the first lid with the mandrel in a region that is offset from a central axis of the first portion capsule. *See, e.g.*: *See* [1.g].
[13.f] sealing the top side of the flange of the first portion capsule and/or the first lid against the seal of the apparatus;	Bentley discloses, either expressly or inherently, sealing the top side of the flange of the first portion capsule and/or the first lid against the seal of the apparatus. *See, e.g.*: *See* [1.h].
[13.g] reading the first barcode with the barcode reader; controlling production of a first coffee beverage based upon the reading of the first barcode; introducing heated water into the first portion capsule via the water inlet that is arranged along the central axis of the first portion	Bentley discloses, either expressly or inherently, reading the first barcode with the barcode reader; controlling production of a first coffee beverage based upon the reading of the first barcode; introducing 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. *See, e.g.*: *See* [1.f], [1.i].

U.S. Patent No. 10,858,176	Disclosure
capsule according to production conditions associated with the first barcode to form the first coffee beverage;	
[13.h] unloading the first portion capsule from the apparatus;	Bentley discloses, either expressly or inherently, unloading the first portion capsule from the apparatus. *See, e.g.*: *See* [1.j].
[13.i] inserting 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 a wall that defines a cavity with a central interior portion, and having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the cavity central interior portion, and 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;	Bentley discloses, either expressly or inherently, inserting 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 a wall that defines a cavity with a central interior portion, and having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the cavity central interior portion, and 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 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. *See, e.g.*: *See* [1.k]; [13.a]-[13.g].

U.S. Patent No. 10,858,176	Disclosure
piercing the second 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.	
14. The method according to claim 13, 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.	Bentley discloses, either expressly or inherently, the method according to claim 13, 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. *See, e.g.*: Bentley at 2:36-40: Alternatively, the inlet and/or outlet may be open and the beverage package provided with an outer wrapping or the like. For example, a plurality of packages may be provided with a shrink wrapped outer layer.

U.S. Patent No. 10,858,176	Disclosure
	Bentley at 3:28-40: The package of the present invention, when filled with roast and ground coffee, preferably contains from 2.5 to 10 grams of roast and ground coffee, preferably from 4.5 to 6 grams for the preparation of a single cup. However, packages which are intended to provide multiple servings of coffee will contain an appropriate amount of roast and ground coffee, for example, packages intended to provide say five cups of coffee will contain from 20 to 50 grams of roast and ground coffee, preferably from 25 to 30 grams. The roast and ground coffee is generally compacted when the beverage package is filled in order to aid the distribution and transport of water through the package. Bentley at 5:34-39: The recognition system used on the beverage packages of the present invention enables a single beverage preparation machine to prepare from different beverage packages a great number of different beverages which require different beverage preparation conditions. *See also* [13].

Exhibit A-2 – Invalidity of U.S. Patent No. 10,858,176 in view of Boyd

INVALIDITY CLAIM CHART
Invalidity of U.S. Patent No. 10,858,176 in view of Boyd

According to its cover page, U.S. Patent Pub. US2002/0048621A1 ("Boyd") was published on April 25, 2002. Boyd therefore constitutes prior art to the '176 Patent under pre-AIA 35 U.S.C. § 102(b). Boyd anticipates and/or renders obvious the Asserted Claims of the '176 Patent (at least as Nespresso understands K-fee's application of the Asserted Claims in an effort to show infringement).

To the extent K-fee argues that any element below is not disclosed by Boyd, a person of ordinary skill in the art would have found it obvious to combine the teachings of Boyd with the background knowledge of a person of ordinary skill in the art and/or the additional references, and exemplary teachings, set forth in Exhibits A-1 to A-9 and in Appendix A.

The chart below provides representative examples of where each element of each claim is found within Boyd. Citations are meant to be exemplary, not exhaustive, and Nespresso reserves the right to identify and discuss additional portions of the reference in support of its contentions and/or to rebut arguments made by K-fee. Citations to figures, drawings, tables, and the like include reference to any accompanying or related text. All internal cross references are meant to incorporate the cross-referenced material as if fully set forth therein.

It is Nespresso's position that K-fee's Infringement Contentions have not established that any accused product or service infringes any valid claim. Thus, Nespresso's statements below should not be treated as an admission, implication, or suggestion that Nespresso agrees with K-fee regarding either the scope, construction, or interpretation of any of the Asserted Claims, or the infringement theories advanced by K-fee in its Infringement Contentions, including whether any Asserted Claim satisfies 35 U.S.C. §§ 101 or 112. In certain cases, Nespresso specified non-limiting examples of where its application of the prior art is based on K-fee's apparent application of the claim element. These statements are not intended to suggest that Nespresso agrees with K-fee's application of any claim term, suggest a proposed construction at this stage of the case, or suggest that construction is needed, as the parties are not required to exchange terms for construction or proposed constructions until a later date.

K-fee has yet to identify any limitation of the Asserted Claims that it contends is not anticipated and/or rendered obvious by Boyd. Nespresso therefore expressly reserves the right to respond to any such contention, including by identifying additional obviousness combinations, if K-fee makes any such contention.

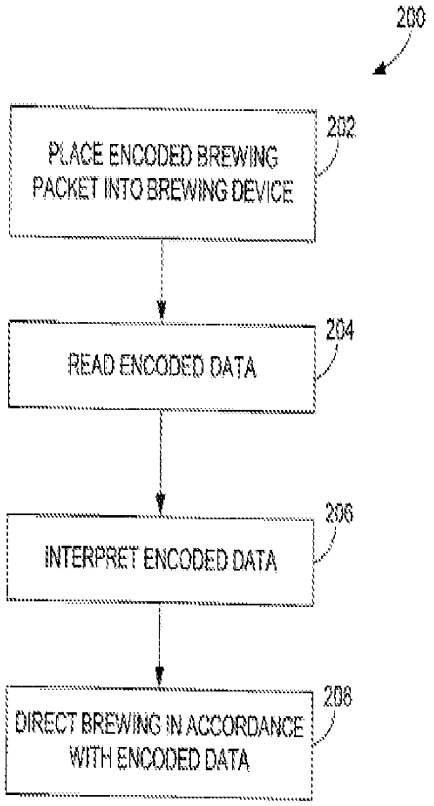
Where Nespresso states that Boyd "discloses" a limitation, that disclosure may be express, implicit, and/or inherent.

IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 357 of 524

U.S. Patent No. 10,858,176	Disclosure
[1.pre] A method of making a coffee beverage comprising:	Boyd discloses, either expressly or inherently, a method for making a coffee beverage. Boyd at Abstract: A brewing packet is provided for use in the preparation of hot or cold beverages. The brewing packet envelops a brewing ingredient chosen according to the tastes of a beverage drinker. The packet includes a machine interpret-able feature that contains encoded data capable of being read by a beverage producing device. Furthermore, the data on the packet is capable of directing the beverage producing device to employ a specific brewing operation suited for the particular brewing packet. This allows for producing the optimal beverage from the brewing ingredient. The packet may be utilized with a variety of brewing ingredients to produce a variety of beverages. Similarly, the packet may be configured to produce single or multiple servings of a beverage. Boyd at [0006]: A brewing packet is provided for use in the preparation of hot or cold beverages. The brewing packet envelops a brewing ingredient chosen according to the tastes of a beverage drinker. The packet includes a machine interpret-able feature that contains encoded data capable of being read by a beverage producing device. Furthermore, the data on the packet may be capable of directing the beverage producing device to employ a specific brewing operation suited for the particular brewing packet. This allows for producing the optimal beverage from the brewing ingredient. The packet may be utilized with a variety of brewing ingredients to produce a variety of beverages. Similarly, the packet may be configured to produce single or multiple servings of a beverage. Boyd at [0019]-[0021]: Although the present invention may be used in virtually any brewing machine, it is described herein for use in the context of machines such as those disclosed in U.S. Pat. No. 5,974,949 to Weber et al. and U.S. Pat. No. 6,035,762 to Ruckstuhl. Those patents disclose machines for brewing espresso using espresso espresso packets in the form of filter capsules which are

	received through a funnel into a brewing chamber where water is passed through the filter capsule to produce an espresso beverage. The subject matter of each of these patents is incorporated herein by this reference. The invention also may be practiced in connection with espresso machines such as those disclosed in U.S. Pat. Nos. 4,253,385, 4,254,694, 4,353,293, 4,429,623, 4,484, 515, 4,555,894 and 4,852,333, all to Illy. These patents disclose various aspects of espresso machines which include brewing chambers configured to receive pre-fabricated espresso packets through which water is passed to produce an espresso drink. The subject matter of each of these patents also is incorporated herein by this reference. While the aforementioned machines generally are described for use in connection with espresso packets which contain a single serving of espresso, it will be appreciated hat the present invention considers application of the relevant principles to machines which employ coffee packets for use in brewing multiple cups, which employ coffee packets of various size and shape, which employ various filter media and which contain coffee of various varieties, roasts, and grinds. Furthermore, the packet and methodology described herein may also produce other types of beverages such as tea, cider, and/or any beverage which is produced by mixing various ingredients. The packet and methodology is not limited to hot beverages and may be used to produce cold beverages. Boyd at [0034]-[0037]: Referring now to FIG. 4, a method of operation for the present invention is illustrated at 200. At 202, a brewing packet encoded with packet-characteristic data is placed into a brewing device. At 204, the packet-characteristic data is read by a sensor. At 206, the packet-characteristic data is interpreted by a processor. Finally, at 208, brewing is directed in accordance with the packet-characteristic data read by the sensor and interpreted by the processor. Because the processor may be employed to effect the aforementioned predefined brewing directives based on the machine interpretable feature associated with each packet. The brewing operation may be made consistent based on consistent machine interpretable features from packet to packet. Similarly, the brewing operation may be altered in

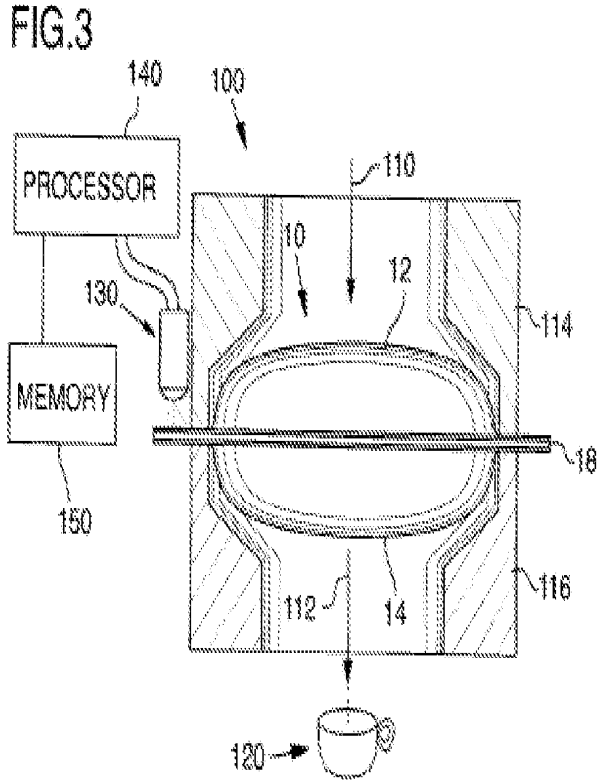
	accordance with desired brewing characteristics each time the packet is replaced. Particular brew characteristics thus may be controlled simply by selection of a packet with the desired encoded brewing directives (whether or not such directives are known to the coffee machine operator). Control of the brewing process thus may be handed off to the brewing professionals who produce the packets, rather than relying on untrained machine operators. This may be done without sacrificing variety in brew operation based on differing characteristics of the packet contents or consumer tastes. For example, a person desiring weaker coffee may purchase packets designated such in order to direct the machine to add water to the brewed coffee beverage in accordance with proper brewing procedure. This avoids problems associated with ill-advised attempts to dilute coffee by decreasing the quantity of coffee used, a change which may result in a corresponding change in bed depth, and thus in an undesirable change in coffee taste. The encoded packets also may be used to track brewing information which may be useful in ensuring satisfaction with the brewed coffee beverage. For example, the packet may include an encoded date for use in tracking freshness of the coffee grounds contained within the packet. Upon determining that the packet is stale, the processor may direct the machine to note such staleness, thus avoiding an unsatisfactory beverage. Similarly, the packet may contain encoded data related to the coffee blend contained within the packet, such data being stored in memory to provide a history of coffee blends. The encoded packet also may contain encoded data defining the source of the packet so as to prohibit use of counterfeit packets, or packets from unauthorized suppliers. Boyd at Fig. 4:

	 FIG. 4 *See also* Boyd at Claims 1-25.
[1.a] providing an apparatus including a barcode reader;	Boyd discloses, either expressly or inherently, providing an apparatus including a barcode reader. *See, e.g.*: Boyd at [0006]: A brewing packet is provided for use in the preparation of hot or cold beverages. The brewing packet envel-ops a brewing ingredient chosen according to the tastes of a beverage drinker. The packet includes a machine interpretable feature that contains encoded data capable of being read by a beverage producing device. Furthermore, the data on the packet may be capable of directing the beverage producing device to employ a specific brewing

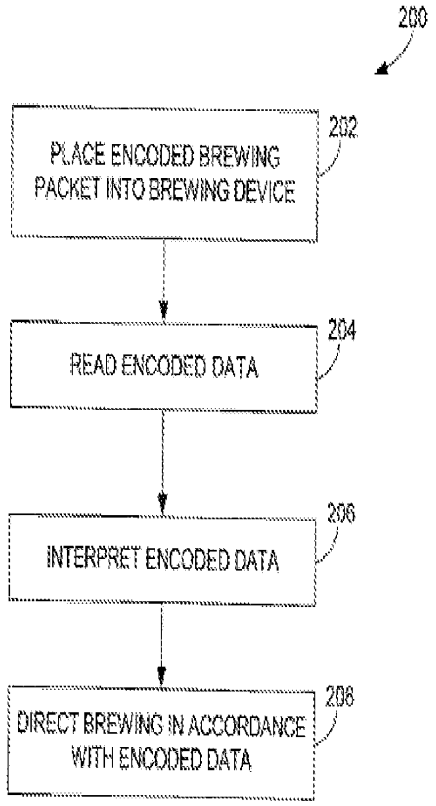
	operation suited for the particular brewing packet. This allows for producing the optimal beverage from the brewing ingredient. The packet may be utilized with a variety of brewing ingredients to produce a variety of beverages. Similarly, the packet may be configured to produce single or multiple servings of a beverage. Boyd at [0019]-[0021]: Although the present invention may be used in virtually any brewing machine, it is described herein for use in the context of machines such as those disclosed in U.S. Pat. No. 5,974,949 to Weber et al. and U.S. Pat. No. 6,035,762 to Ruckstuhl. Those patents disclose machines for brewing espresso using espresso espresso packets in the form of filter capsules which are received through a funnel into a brewing chamber where water is passed through the filter capsule to produce an espresso beverage. The subject matter of each of these patents is incorporated herein by this reference. The invention also may be practiced in connection with espresso machines such as those disclosed in U.S. Pat. Nos. 4,253,385, 4,254,694, 4,353,293, 4,429,623, 4,484, 515, 4,555,894 and 4,852,333, all to Illy. These patents disclose various aspects of espresso machines which include brewing chambers configured to receive pre-fabricated espresso packets through which water is passed to produce an espresso drink. The subject matter of each of these patents also is incorporated herein by this reference. While the aforementioned machines generally are described for use in connection with espresso packets which contain a single serving of espresso, it will be appreciated that the present invention considers application of the relevant principles to machines which employ coffee packets for use in brewing multiple cups, which employ coffee packets of various size and shape, which employ various filter media and which contain coffee of various varieties, roasts, and grinds. Furthermore, the packet and methodology described herein may also produce other types of beverages such as tea, cider, and/or any beverage which is produced by mixing various ingredients. The packet and methodology is not limited to hot beverages and may be used to produce cold beverages. Boyd at [0023]:

	With the foregoing in mind, it will be appreciated that it would be desirable to automatically customize the brew operation based on particular characteristics of the packet, the characteristics of the coffee, and/or the tastes of the user, whether or not the user is aware of what changes in the brew operation will lead to the desired taste. The present invention provides a vehicle for such customization in the form of an encoded packet configured to provide the brewing machine with data useful in directing the brewing operation in accordance with packet or packet content characteristics and/or the user's tastes. Body at [0028]: As shown in FIG. 2, packet 10 includes a machine interpretable feature 30 which directs operation of the coffee machine in accordance with predefined brewing directives. In the first depicted embodiment, the machine interpretable feature is a barcode 31 as depicted in FIG. 2 and 2a. It will be understood that the machine interpretable feature may be any machine readable feature associated with packet 10. Boyd at [0030]: Machine interpretable feature 30, it will be appreciated, is capable of storing a significant amount of data, including specific brewing directives and/or packaging or ingredient characteristics. Examples of the types of brewing directives stored in machine interpretable feature 30 may include, for example, contact time, contact pattern, fluid volume, fluid temperature, fluid pressure, and/or fluid pass-through rate. The above brewing directives are all well known in the coffee brewing industry to affect the taste and quality of the coffee beverage. Examples of ingredient characteristics which may be stored in machine interpretable feature 30 include grind, blend, roast, quantity, bed depth, freshness, and expiration date. These examples are meant to be exemplary, not limiting in scope. Boyd at [0032]-[0034]: Coffee machine 100 includes a sensor 130 designed to read machine interpretable feature 30 of packet 10. Sensor 130 is in turn operatively connected to a processor 140 which controls coffee machine 100. Machine interpretable feature 30 may store data which is read by sensor 130 and passed to processor 140. Processor 140 may then direct the brewing operation in

	accordance with its interpretation of the data derived from machine interpretable feature 30. For example, processor 140 may direct coffee machine 100 to brew using a pre-selected contact time, contact pattern, fluid quantity, fluid temperature, fluid pressure, and/or fluid pass-through rate expressed in machine interpretable feature 30. Alternatively, the processor may itself make determinations of contact time, contact pattern, fluid quantity, fluid temperature, fluid pressure, and/or fluid pass-through rate based on information contained in machine interpretable feature 30. The processor may also, based on information contained in machine interpretable feature 30, direct the coffee machine to add water, milk, cream, sugar, or any suitable condiment to the coffee beverage. As alluded to above, machine interpretable feature 30 need not store data specifically including brewing directives and ingredient characteristics. Instead machine interpretable feature 30 may act as an identifier so that brewing directives and ingredient characteristics may be looked up from data storage 150 within (or external to) coffee machine 100. Sensor 130 thus may read machine interpretable feature 30 and processor 140 may match the machine interpretable feature with predefined brewing operation instructions stored in such memory. Processor 140 may then direct the brewing operation based on brewing operation instructions. In one embodiment, the brewing operation instructions are matched to a machine interpretable feature using a look-up table in which brewing operation instructions correspond in a one-to-one ratio with each known ingredient variety, packet size, packet construction, user preference, etc. It will be appreciated, however, that other arrangements for matching machine interpretable feature 30 with brewing directives similarly may be used. Referring now to FIG. 4, a method of operation for the present invention is illustrated at 200. At 202, a brewing packet encoded with packet-characteristic data is placed into a brewing device. At 204, the packet-characteristic data is read by a sensor. At 206, the packet-characteristic data is interpreted by a processor. Finally, at 208, brewing is directed in accordance with the packet-characteristic data read by the sensor and interpreted by the processor. Boyd at Fig. 3:


FIG.3
140
100
PROCESSOR
110
10
12
130
114
MEMORY
18
150
116
112
14
120

Boyd at Fig. 4:

	 FIG. 4
[1.b] 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,	Boyd discloses, either expressly or inherently, 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. *See, e.g.*: Boyd at [0006]: A brewing packet is provided for use in the preparation of hot or cold beverages. The brewing packet envelops a brewing ingredient chosen according to the tastes of a beverage drinker. The packet includes a machine interpretable feature that contains encoded data capable of being read by a beverage producing device. Furthermore, the data on the packet may be capable of directing the beverage producing device to employ a specific brewing

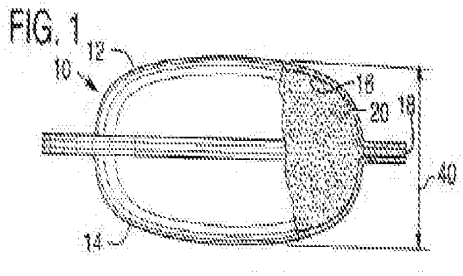
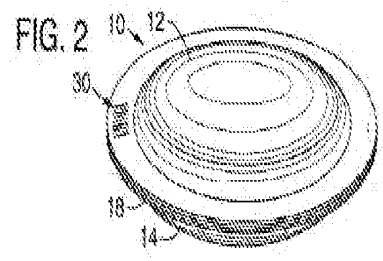
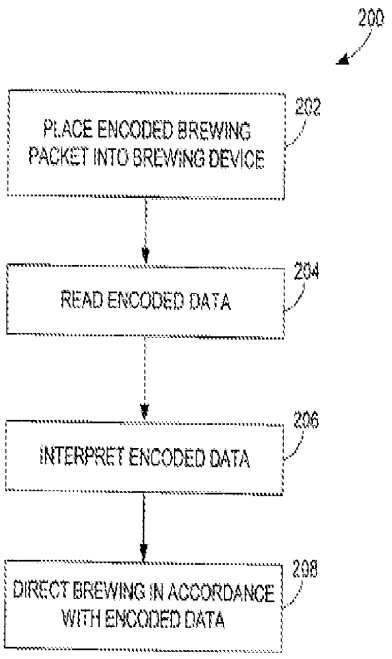
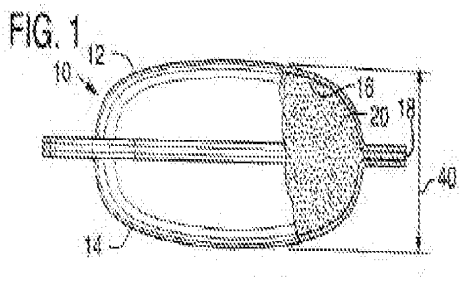
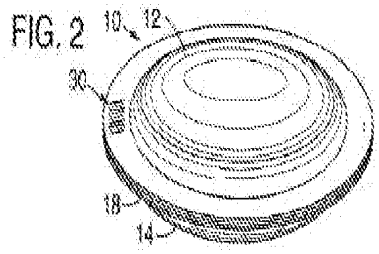
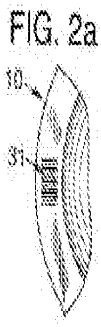
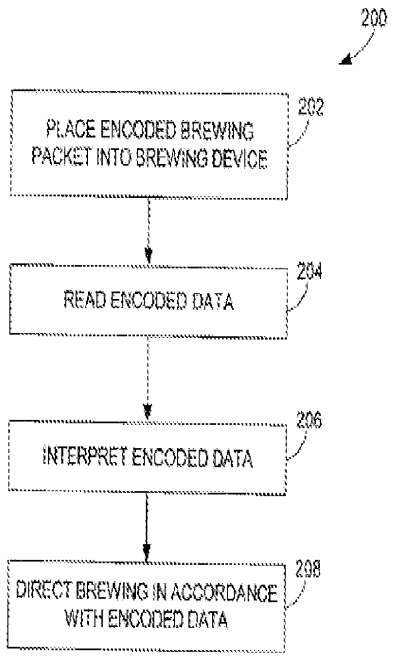
	operation suited for the particular brewing packet. This allows for producing the optimal beverage from the brewing ingredient. The packet may be utilized with a variety of brewing ingredients to produce a variety of beverages. Similarly, the packet may be configured to produce single or multiple servings of a beverage. Boyd at [0028]: As shown in FIG. 2, packet 10 includes a machine interpretable feature 30 which directs operation of the coffee machine in accordance with predefined brewing directives. In the first depicted embodiment, the machine interpretable feature is a barcode 31 as depicted in FIG. 2 and 2a. It will be understood that the machine interpretable feature may be any machine readable feature associated with packet 10. Boyd at [0034]: Referring now to FIG. 4, a method of operation for the present invention is illustrated at 200. At 202, a brewing packet encoded with packet-characteristic data is placed into a brewing device. At 204, the packet-characteristic data is read by a sensor. At 206, the packet-characteristic data is interpreted by a processor. Finally, at 208, brewing is directed in accordance with the packet-characteristic data read by the sensor and interpreted by the processor. Boyd at Fig. 1:  Boyd at Fig. 2:

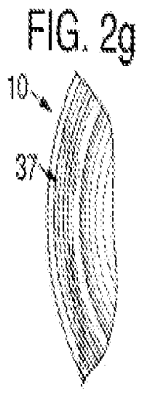
	FIG. 2  Boyd at Fig. 2a: FIG. 2a  Boyd at Fig. 4:

	 FIG. 4 Boyd at Claims 1-25.
[1.c] and a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central portion of the cavity,	
[1.d] 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,	Boyd discloses, either expressly or inherently, 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. *See, e.g.*: Boyd at [0023]: With the foregoing in mind, it will be appreciated that it would be desirable to automatically customize the brew operation based on particular characteristics of the packet, the characteristics of the coffee, and/or the tastes of the user, whether or not the user is aware of

	what changes in the brew operation will lead to the desired taste. The present invention provides a vehicle for such customization in the form of an encoded packet configured to provide the brewing machine with data useful in directing the brewing operation in accordance with packet or packet content characteristics and/or the user's tastes. Boyd at [0028]: As shown in FIG. 2, packet 10 includes a machine interpretable feature 30 which directs operation of the coffee machine in accordance with predefined brewing directives. In the first depicted embodiment, the machine interpretable feature is a barcode 31 as depicted in FIG. 2 and 2a. It will be understood that the machine interpretable feature may be any machine readable feature associated with packet 10. Boyd at [0034]: Referring now to FIG. 4, a method of operation for the present invention is illustrated at 200. At 202, a brewing packet encoded with packet-characteristic data is placed into a brewing device. At 204, the packet-characteristic data is read by a sensor. At 206, the packet-characteristic data is interpreted by a processor. Finally, at 208, brewing is directed in accordance with the packet-characteristic data read by the sensor and interpreted by the processor. Boyd at [0037]: The encoded packets also may be used to track brewing information which may be useful in ensuring satisfaction with the brewed coffee beverage. For example, the packet may include an encoded date for use in tracking freshness of the coffee grounds contained within the packet. Upon determining that the packet is stale, the processor may direct the machine to note such staleness, thus avoiding an unsatisfactory beverage. Similarly, the packet may contain encoded data related to the coffee blend contained within the packet, such data being stored in memory to provide a history of coffee blends. The encoded packet also may contain encoded data defining the source of the packet so as to prohibit use of counterfeit packets, or packets from unauthorized suppliers.

	Boyd at Fig. 1:  Boyd at Fig. 2:  Boyd at Fig. 2a:  Boyd at Fig. 4:

	 FIG. 4 Boyd at Claims 6, 25.
[1.e] the base element of the first portion capsule includes an outside surface having a plurality of vertically oriented grooves;	Boyd at [0015]: FIG. 2 g is a fragmentary view of an alternative embodiment packet, illustrating encoded data in the form of grooves. Boyd at [0029]: Examples of alternative embodiments are depicted in FIGS. 2 b through 2 h. In FIG. 2b the feature is geometric shape 32. The shape may be raised or lowered and may, or may not incorporate color, or some other machine-interpretably characteristic. FIG. 2c shows text string 33. The text string may consist of alpha-numeric characters and may be of various lengths including a single character. FIG. 2d shows glyph 34. The glyph may be any symbolic figure including a symbol used as a trademark. A digital watermark 35 is depicted in FIG. 2e. FIG. 2f shows notches 36. The notches may be localized to a particular area of

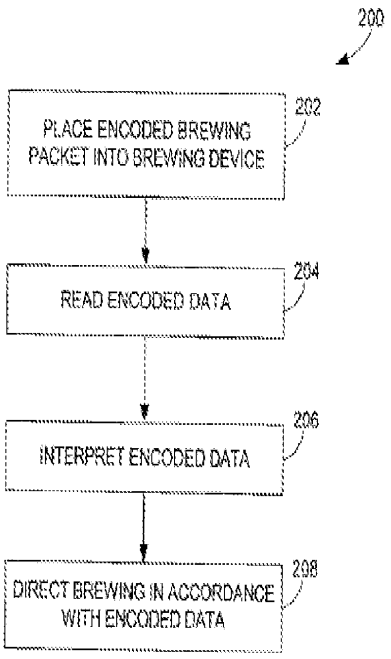
	the packet or may span its entire perimeter in singular or repetitive fashion. Grooves 37 are depicted in FIG. 2g. One or more grooves may be incorporated to create a texture. FIG. 2h shows holes. One or more holes may be used, which holes may be, of various shapes and sizes. The above-noted machine interpretable features; or other machine interpretable features, may similarly may be employed in combination or alone, such features being selected for their ability to store brewing directives and packet and/or ingredient-characteristic data, and for their cost of manufacture, aesthetic appearance, and ability to carry machine interpretal features which are capable of being successfully detected, read, and interpreted. Boyd at Fig. 2g: 
[1.f] 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;	Boyd discloses, 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. *See, e.g.*: Boyd at [0006]: A brewing packet is provided for use in the preparation of hot or cold beverages. The brewing packet envelops a brewing ingredient chosen according to the tastes of a beverage drinker. The packet includes a machine interpretable feature that contains encoded data capable of being read by a beverage producing device. Furthermore, the data on the packet may be capable of directing the beverage producing device to employ a specific brewing operation suited for the particular brewing packet. This allows for producing the optimal beverage from the brewing ingredient. The packet may be utilized with a variety of brewing

	ingredients to produce a variety of beverages. Similarly, the packet may be configured to produce single or multiple servings of a beverage. Boyd at [0019]-[0021]: Although the present invention may be used in virtually any brewing machine, it is described herein for use in the context of machines such as those disclosed in U.S. Pat. No. 5,974,949 to Weber et al. and U.S. Pat. No. 6,035,762 to Ruckstuhl. Those patents disclose machines for brewing espresso using espresso espresso packets in the form of filter capsules which are received through a funnel into a brewing chamber where water is passed through the filter capsule to produce an espresso beverage. The subject matter of each of these patents is incorporated herein by this reference. The invention also may be practiced in connection with espresso machines such as those disclosed in U.S. Pat. Nos. 4,253,385, 4,254,694, 4,353,293, 4,429,623, 4,484, 515, 4,555,894 and 4,852,333, all to Illy. These patents disclose various aspects of espresso machines which include brewing chambers configured to receive pre-fabricated espresso packets through which water is passed to produce an espresso drink. The subject matter of each of these patents also is incorporated herein by this reference. While the aforementioned machines generally are described for use in connection with espresso packets which contain a single serving of espresso, it will be appreciated that the present invention considers application of the relevant principles to machines which employ coffee packets for use in brewing multiple cups, which employ coffee packets of various size and shape, which employ various filter media and which contain coffee of various varieties, roasts, and grinds. Furthermore, the packet and methodology described herein may also produce other types of beverages such as tea, cider, and/or any beverage which is produced by mixing various ingredients. The packet and methodology is not limited to hot beverages and may be used to produce cold beverages. Boyd at [0023]: With the foregoing in mind, it will be appreciated that it would be desirable to automatically customize the brew operation based on particular characteristics of the packet, the

	characteristics of the coffee, and/or the tastes of the user, whether or not the user is aware of what changes in the brew operation will lead to the desired taste. The present invention provides a vehicle for such customization in the form of an encoded packet configured to provide the brewing machine with data useful in directing the brewing operation in accordance with packet or packet content characteristics and/or the user's tastes. Body at [0028]: As shown in FIG. 2, packet 10 includes a machine interpretable feature 30 which directs operation of the coffee machine in accordance with predefined brewing directives. In the first depicted embodiment, the machine interpretable feature is a barcode 31 as depicted in FIG. 2 and 2a. It will be understood that the machine interpretable feature may be any machine readable feature associated with packet 10. Boyd at [0030]: Machine interpretable feature 30, it will be appreciated, is capable of storing a significant amount of data, including specific brewing directives and/or packaging or ingredient characteristics. Examples of the types of brewing directives stored in machine interpretable feature 30 may include, for example, contact time, contact pattern, fluid volume, fluid temperature, fluid pressure, and/or fluid pass-through rate. The above brewing directives are all well known in the coffee brewing industry to affect the taste and quality of the coffee beverage. Examples of ingredient characteristics which may be stored in machine interpretable feature 30 include grind, blend, roast, quantity, bed depth, freshness, and expiration date. These examples are meant to be exemplary, not limiting in scope. Boyd at [0032]-[0037]: Coffee machine 100 includes a sensor 130 designed to read machine interpretable feature 30 of packet 10. Sensor 130 is in turn operatively connected to a processor 140 which controls coffee machine 100. Machine interpretable feature 30 may store data which is read by sensor 130 and passed to processor 140. Processor 140 may then direct the brewing operation in accordance with its interpretation of the data derived from machine interpretable feature 30. For example, processor 140 may direct coffee machine 100 to brew using a pre-selected

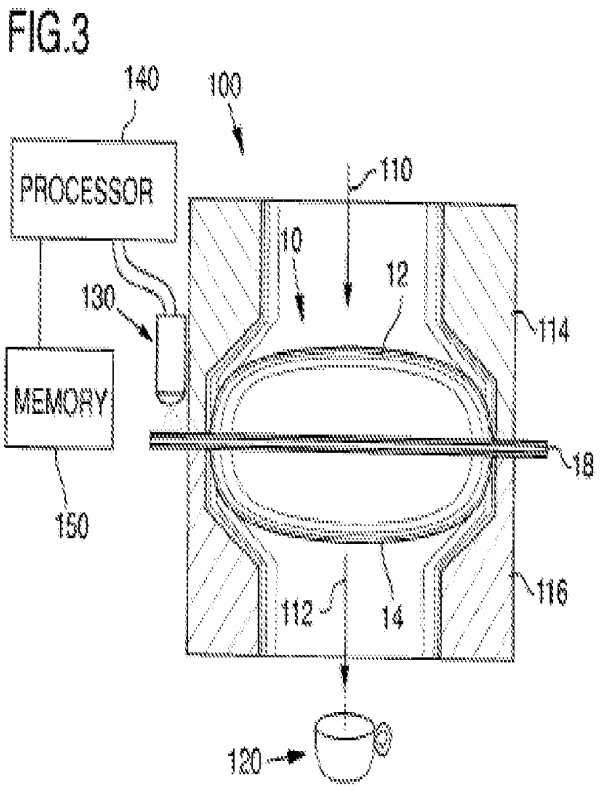
	contact time, contact pattern, fluid quantity, fluid temperature, fluid pressure, and/or fluid pass-through rate expressed in machine interpretable feature 30. Alternatively, the processor may itself make determinations of contact time, contact pattern, fluid quantity, fluid temperature, fluid pressure, and/or fluid pass-through rate based on information contained in machine interpretable feature 30. The processor may also, based on information contained in machine interpretable feature 30, direct the coffee machine to add water, milk, cream, sugar, or any suitable condiment to the coffee beverage. As alluded to above, machine interpretable feature 30 need not store data specifically including brewing directives and ingredient characteristics. Instead machine interpretable feature 30 may act as an identifier so that brewing directives and ingredient characteristics may be looked up from data storage 150 within (or external to) coffee machine 100. Sensor 130 thus may read machine interpretable feature 30 and processor 140 may match the machine interpretable feature with predefined brewing operation instructions stored in such memory. Processor 140 may then direct the brewing operation based on brewing operation instructions. In one embodiment, the brewing operation instructions are matched to a machine interpretable feature using a look-up table in which brewing operation instructions correspond in a one-to-one ratio with each known ingredient variety, packet size, packet construction, user preference, etc. It will be appreciated, however, that other arrangements for matching machine interpretable feature 30 with brewing directives similarly may be used. Referring now to FIG. 4, a method of operation for the present invention is illustrated at 200. At 202, a brewing packet encoded with packet-characteristic data is placed into a brewing device. At 204, the packet-characteristic data is read by a sensor. At 206, the packet-characteristic data is interpreted by a processor. Finally, at 208, brewing is directed in accordance with the packet-characteristic data read by the sensor and interpreted by the processor. Because the processor may be employed to effect the aforementioned predefined brewing directives based on the machine interpretable feature associated with each packet. The brewing operation may be made consistent based on consistent machine interpretable features from packet to packet. Similarly, the brewing operation may be altered in accordance with desired brewing characteristics each time the packet is replaced. Particular

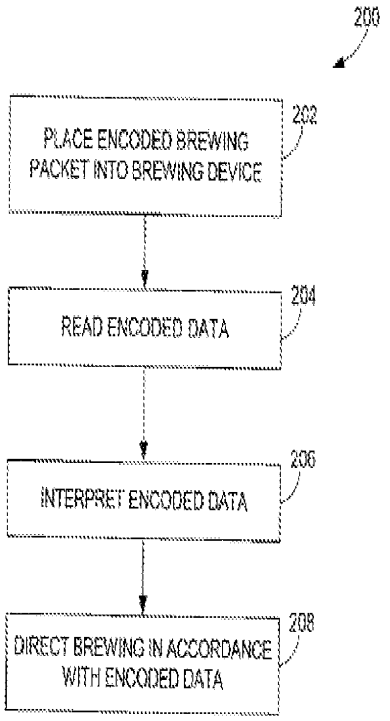
	brew characteristics thus may be controlled simply by selection of a packet with the desired encoded brewing directives (whether or not such directives are known to the coffee machine operator). Control of the brewing process thus may be handed off to the brewing professionals who produce the packets, rather than relying on untrained machine operators. This may be done without sacrificing variety in brew operation based on differing characteristics of the packet contents or consumer tastes. For example, a person desiring weaker coffee may purchase packets designated such in order to direct the machine to add water to the brewed coffee beverage in accordance with proper brewing procedure. This avoids problems associated with ill-advised attempts to dilute coffee by decreasing the quantity of coffee used, a change which may result in a corresponding change in bed depth, and thus in an undesirable change in coffee taste. The encoded packets also may be used to track brewing information which may be useful in ensuring satisfaction with the brewed coffee beverage. For example, the packet may include an encoded date for use in tracking freshness of the coffee grounds contained within the packet. Upon determining that the packet is stale, the processor may direct the machine to note such staleness, thus avoiding an unsatisfactory beverage. Similarly, the packet may contain encoded data related to the coffee blend contained within the packet, such data being stored in memory to provide a history of coffee blends. The encoded packet also may contain encoded data defining the source of the packet so as to prohibit use of counterfeit packets, or packets from unauthorized suppliers. Boyd at Fig. 4:

	 FIG. 4
[1.g] 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;	Boyd discloses, either expressly or inherently, 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. *See, e.g.*: Boyd at [0019]-[0021]: Although the present invention may be used in virtually any brewing machine, it is described herein for use in the context of machines such as those disclosed in U.S. Pat. No. 5,974,949 to Weber et al. and U.S. Pat. No. 6,035,762 to Ruckstuhl. Those patents disclose machines for brewing espresso using espresso espresso packets in the form of filter capsules which are received through a funnel into a brewing chamber where water is passed through the filter capsule to produce an espresso beverage. The subject matter of each of these patents is incorporated herein by this reference.

	The invention also may be practiced in connection with espresso machines such as those disclosed in U.S. Pat. Nos. 4,253,385, 4,254,694, 4,353,293, 4,429,623, 4,484, 515, 4,555,894 and 4,852,333, all to Illy. These patents disclose various aspects of espresso machines which include brewing chambers configured to receive pre-fabricated espresso packets through which water is passed to produce an espresso drink. The subject matter of each of these patents also is incorporated herein by this reference. While the aforementioned machines generally are described for use in connection with espresso packets which contain a single serving of espresso, it will be appreciated that the present invention considers application of the relevant principles to machines which employ coffee packets for use in brewing multiple cups, which employ coffee packets of various size and shape, which employ various filter media and which contain coffee of various varieties, roasts, and grinds. Furthermore, the packet and methodology described herein may also produce other types of beverages such as tea, cider, and/or any beverage which is produced by mixing various ingredients. The packet and methodology is not limited to hot beverages and may be used to produce cold beverages.
[1.h] sealing the first foil lid against a seal of the apparatus;	Boyd discloses, either expressly or inherently, sealing the first foil lid against a seal of the apparatus. Boyd at [0019]-[0021]: Although the present invention may be used in virtually any brewing machine, it is described herein for use in the context of machines such as those disclosed in U.S. Pat. No. 5,974,949 to Weber et al. and U.S. Pat. No. 6,035,762 to Ruckstuhl. Those patents disclose machines for brewing espresso using espresso espresso packets in the form of filter capsules which are received through a funnel into a brewing chamber where water is passed through the filter capsule to produce an espresso beverage. The subject matter of each of these patents is incorporated herein by this reference. The invention also may be practiced in connection with espresso machines such as those disclosed in U.S. Pat. Nos. 4,253,385, 4,254,694, 4,353,293, 4,429,623, 4,484, 515, 4,555,894 and 4,852,333, all to Illy. These patents disclose various aspects of espresso machines which include brewing chambers configured to receive pre-fabricated espresso

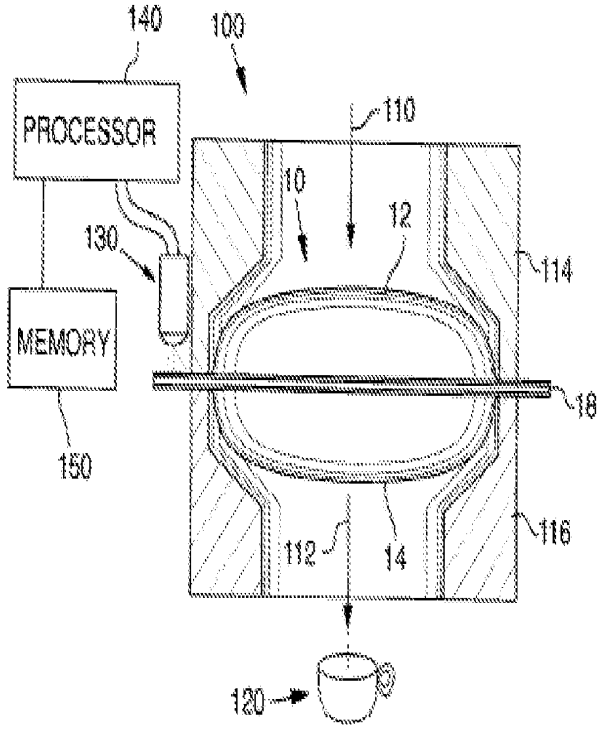
	packets through which water is passed to produce an espresso drink. The subject matter of each of these patents also is incorporated herein by this reference. While the aforementioned machines generally are described for use in connection with espresso packets which contain a single serving of espresso, it will be appreciated that the present invention considers application of the relevant principles to machines which employ coffee packets for use in brewing multiple cups, which employ coffee packets of various size and shape, which employ various filter media and which contain coffee of various varieties, roasts, and grinds. Furthermore, the packet and methodology described herein may also produce other types of beverages such as tea, cider, and/or any beverage which is produced by mixing various ingredients. The packet and methodology is not limited to hot beverages and may be used to produce cold beverages. Boyd at [0027]: As indicated above, opposing filter portions 12 and 14 are secured together about their respective perimeters to form cavity 16. In the depicted embodiment, the filter portions are secured to an orbicular gasket 18. The gasket is deformable to allow for an optimum seal. In an alternative embodiment, the packet may be integrally formed from a continuous filter in which no gasket is required. Although the depicted packet is circular, it will be appreciated that the cavity may take virtually any shape capable of containing coffee grounds. The size and bed depth 40 of the packet is determined by the quantity of coffee grounds, the density of coffee grounds, and the desired coffee beverage taste. Boyd at [0031]: FIG. 3 schematically depicts a coffee machine 100 designed to utilize packet 10. In the depicted embodiment, packet 10 is positioned between input fluid path 110 and output fluid path 112. Gasket 18 helps form a seal between chamber 114, defining the input fluid path, and chamber 116, defining the output fluid path. Gasket 18 also helps secure packet 10 in place. In other embodiments, packet 10 is held in place by gravity, water pressure, friction, adhesion, magnetism, or other suitable mechanisms. As depicted, water passes into packet 10 along input fluid path 110, passing through filter portion 12. The water contacts ground coffee within packet 10, producing a coffee beverage. The coffee beverage then flows

	through packet 10 and out through filter portion 14. Thereafter, the coffee beverage continues along output fluid path 112 and into beverage receptacle 120. In one embodiment, water is stored in a reservoir (not shown) within coffee machine 100 and heated before entering input fluid path 110. Alternatively, water is externally heated before entering input fluid path 110, or not heated at all. Beverage receptacle 120 may be dimensioned to accommodate multiple servings of the brewed coffee beverage, or may be dimensioned to receive a single serving of brewed coffee. Boyd at Fig. 3:  Boyd at Fig. 4:

	 FIG. 4
[1.i] introducing 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;	Boyd discloses, either expressly or inherently, introducing 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. Boyd at [0003]: Automated coffee machines have long been used for brewing coffee, both in large-scale commercial settings and in smaller business and home settings. These machines typically operate on the principle of placing a quantity of ground coffee into a filter, and passing hot water through the ground coffee to produce a coffee beverage. Boyd at [0019]-[0021]: Although the present invention may be used in virtually any brewing machine, it is described herein for use in the context of machines such as those disclosed in U.S. Pat. No. 5,974,949

	to Weber et al. and U.S. Pat. No. 6,035,762 to Ruckstuhl. Those patents disclose machines for brewing espresso using espresso espresso packets in the form of filter capsules which are received through a funnel into a brewing chamber where water is passed through the filter capsule to produce an espresso beverage. The subject matter of each of these patents is incorporated herein by this reference. The invention also may be practiced in connection with espresso machines such as those disclosed in U.S. Pat. Nos. 4,253,385, 4,254,694, 4,353,293, 4,429,623, 4,484, 515, 4,555,894 and 4,852,333, all to Illy. These patents disclose various aspects of espresso machines which include brewing chambers configured to receive pre-fabricated espresso packets through which water is passed to produce an espresso drink. The subject matter of each of these patents also is incorporated herein by this reference. While the aforementioned machines generally are described for use in connection with espresso packets which contain a single serving of espresso, it will be appreciated that the present invention considers application of the relevant principles to machines which employ coffee packets for use in brewing multiple cups, which employ coffee packets of various size and shape, which employ various filter media and which contain coffee of various varieties, roasts, and grinds. Furthermore, the packet and methodology described herein may also produce other types of beverages such as tea, cider, and/or any beverage which is produced by mixing various ingredients. The packet and methodology is not limited to hot beverages and may be used to produce cold beverages. Boyd at [0024]: Focusing now particularly on the invented encoded coffee packet, it will be appreciated that such packet typically takes the form of a coffee-filled packet configured for placement in a fluid path of a coffee machine whereby hot water (or steam) flows through the packet to produce a coffee beverage. An exemplary packet is depicted in FIGS. 1-3, such packet being indicated generally at 10. Boyd at [0031]:

	FIG. 3 schematically depicts a coffee machine 100 designed to utilize packet 10. In the depicted embodiment, packet 10 is positioned between input fluid path 110 and output fluid path 112. Gasket 18 helps form a seal between chamber 114, defining the input fluid path, and chamber 116, defining the output fluid path. Gasket 18 also helps secure packet 10 in place. In other embodiments, packet 10 is held in place by gravity, water pressure, friction, adhesion, magnetism, or other suitable mechanisms. As depicted, water passes into packet 10 along input fluid path 110, passing through filter portion 12. The water contacts ground coffee within packet 10, producing a coffee beverage. The coffee beverage then flows through packet 10 and out through filter portion 14. Thereafter, the coffee beverage continues along output fluid path 112 and into beverage receptacle 120. In one embodiment, water is stored in a reservoir (not shown) within coffee machine 100 and heated before entering input fluid path 110. Alternatively, water is externally heated before entering input fluid path 110, or not heated at all. Beverage receptacle 120 may be dimensioned to accommodate multiple servings of the brewed coffee beverage, or may be dimensioned to receive a single serving of brewed coffee. Boyd at [0036]: For example, a person desiring weaker coffee may purchase packets designated such in order to direct the machine to add water to the brewed coffee beverage in accordance with proper brewing procedure. This avoids problems associated with ill-advised attempts to dilute coffee by decreasing the quantity of coffee used, a change which may result in a corresponding change in bed depth, and thus in an undesirable change in coffee taste. Boyd at Fig. 3:

	FIG.3 
[1.j] unloading the first portion capsule from the apparatus;	Boyd discloses, either expressly or inherently, unloading the first portion capsule from the apparatus. Boyd at [0019]-[0021]: Although the present invention may be used in virtually any brewing machine, it is described herein for use in the context of machines such as those disclosed in U.S. Pat. No. 5,974,949 to Weber et al. and U.S. Pat. No. 6,035,762 to Ruckstuhl. Those patents disclose machines for brewing espresso using espresso espresso packets in the form of filter capsules which are received through a funnel into a brewing chamber where water is passed through the filter capsule to produce an espresso beverage. The subject matter of each of these patents is incorporated herein by this reference. The invention also may be practiced in connection with espresso machines such as those disclosed in U.S. Pat. Nos. 4,253,385, 4,254,694, 4,353,293, 4,429,623, 4,484, 515,

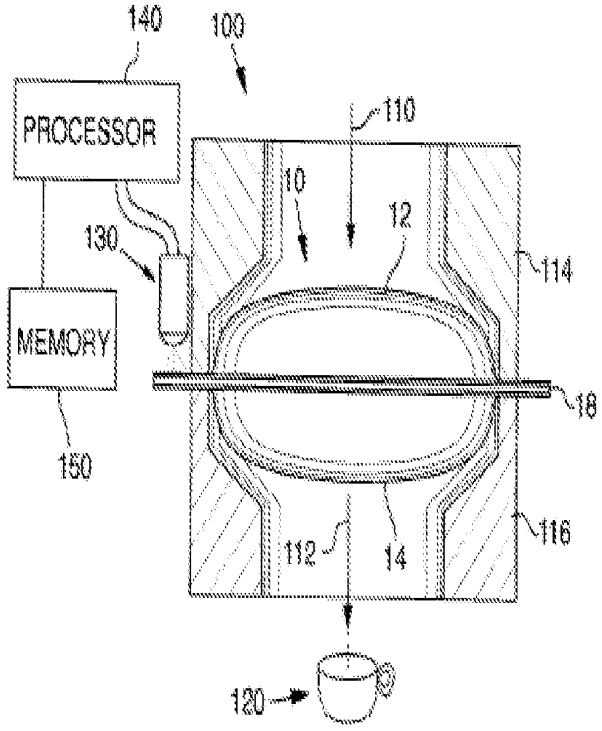
	4,555,894 and 4,852,333, all to Illy. These patents disclose various aspects of espresso machines which include brewing chambers configured to receive pre-fabricated espresso packets through which water is passed to produce an espresso drink. The subject matter of each of these patents also is incorporated herein by this reference. While the aforementioned machines generally are described for use in connection with espresso packets which contain a single serving of espresso, it will be appreciated that the present invention considers application of the relevant principles to machines which employ coffee packets for use in brewing multiple cups, which employ coffee packets of various size and shape, which employ various filter media and which contain coffee of various varieties, roasts, and grinds. Furthermore, the packet and methodology described herein may also produce other types of beverages such as tea, cider, and/or any beverage which is produced by mixing various ingredients. The packet and methodology is not limited to hot beverages and may be used to produce cold beverages.
[1.k] 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 a central portion and a plurality of ribs that are radially spaced, vertically oriented, and 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 is sealed and an opposing bottom side with a second barcode located on the bottom side	Boyd discloses, either expressly or inherently, 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 a central portion and a plurality of ribs that are radially spaced, vertically oriented, and 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 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. *See* [1.b]-[1.i].

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.	Boyd at [0023]: With the foregoing in mind, it will be appreciated that it would be desirable to automatically customize the brew operation based on particular characteristics of the packet, the characteristics of the coffee, and/or the tastes of the user, whether or not the user is aware of what changes in the brew operation will lead to the desired taste. The present invention provides a vehicle for such customization in the form of an encoded packet configured to provide the brewing machine with data useful in directing the brewing operation in accordance with packet or packet content characteristics and/or the user's tastes. Boyd at [0030]: Machine interpretable feature 30, it will be appreciated, is capable of storing a significant amount of data, including specific brewing directives and/or packaging or ingredient characteristics. Examples of the types of brewing directives stored in machine interpretable feature 30 may include, for example, contact time, contact pattern, fluid volume, fluid temperature, fluid pressure, and/or fluid pass-through rate. The above brewing directives are all well known in the coffee brewing industry to affect the taste and quality of the coffee beverage. Examples of ingredient characteristics which may be stored in machine interpretable feature 30 include grind, blend, roast, quantity, bed depth, freshness, and expiration date. These examples are meant to be exemplary, not limiting in scope. Boyd at [0035]-[0037]: Because the processor may be employed to effect the aforementioned predefined brewing directives based on the machine interpretable feature associated with each packet. The brewing operation may be made consistent based on consistent machine interpretable features from packet to packet. Similarly, the brewing operation may be altered in accordance with desired brewing characteristics each time the packet is replaced. Particular brew characteristics thus may be controlled simply by selection of a packet with the desired encoded brewing directives (whether or not such directives are known to the coffee machine operator). Control of the brewing process thus may be handed off to the brewing professionals who produce the packets, rather than relying on untrained machine operators.

	This may be done without sacrificing variety in brew operation based on differing characteristics of the packet contents or consumer tastes. For example, a person desiring weaker coffee may purchase packets designated such in order to direct the machine to add water to the brewed coffee beverage in accordance with proper brewing procedure. This avoids problems associated with ill-advised attempts to dilute coffee by decreasing the quantity of coffee used, a change which may result in a corresponding change in bed depth, and thus in an undesirable change in coffee taste. The encoded packets also may be used to track brewing information which may be useful in ensuring satisfaction with the brewed coffee beverage. For example, the packet may include an encoded date for use in tracking freshness of the coffee grounds contained within the packet. Upon determining that the packet is stale, the processor may direct the machine to note such staleness, thus avoiding an unsatisfactory beverage. Similarly, the packet may contain encoded data related to the coffee blend contained within the packet, such data being stored in memory to provide a history of coffee blends. The encoded packet also may contain encoded data defining the source of the packet so as to prohibit use of counterfeit packets, or packets from unauthorized suppliers.
[redacted]	
2. The method according to claim 1, wherein one or both of the introducing steps include: inducing turbulent flow of the heated water by the ribs.	Boyd discloses, either expressly or inherently, the method according to claim 1, wherein one or both of the introducing steps include: inducing turbulent flow of the heated water by the ribs. Boyd at [0003]: Automated coffee machines have long been used for brewing coffee, both in large-scale commercial settings and in smaller business and home settings. These machines typically operate on the principle of placing a quantity of ground coffee into a filter, and passing hot water through the ground coffee to produce a coffee beverage.

	Boyd at [0019]-[0021]: Although the present invention may be used in virtually any brewing machine, it is described herein for use in the context of machines such as those disclosed in U.S. Pat. No. 5,974,949 to Weber et al. and U.S. Pat. No. 6,035,762 to Ruckstuhl. Those patents disclose machines for brewing espresso using espresso espresso packets in the form of filter capsules which are received through a funnel into a brewing chamber where water is passed through the filter capsule to produce an espresso beverage. The subject matter of each of these patents is incorporated herein by this reference. The invention also may be practiced in connection with espresso machines such as those disclosed in U.S. Pat. Nos. 4,253,385, 4,254,694, 4,353,293, 4,429,623, 4,484, 515, 4,555,894 and 4,852,333, all to Illy. These patents disclose various aspects of espresso machines which include brewing chambers configured to receive pre-fabricated espresso packets through which water is passed to produce an espresso drink. The subject matter of each of these patents also is incorporated herein by this reference. While the aforementioned machines generally are described for use in connection with espresso packets which contain a single serving of espresso, it will be appreciated that the present invention considers application of the relevant principles to machines which employ coffee packets for use in brewing multiple cups, which employ coffee packets of various size and shape, which employ various filter media and which contain coffee of various varieties, roasts, and grinds. Furthermore, the packet and methodology described herein may also produce other types of beverages such as tea, cider, and/or any beverage which is produced by mixing various ingredients. The packet and methodology is not limited to hot beverages and may be used to produce cold beverages. Boyd at [0024]: Focusing now particularly on the invented encoded coffee packet, it will be appreciated that such packet typically takes the form of a coffee-filled packet configured for placement in a fluid path of a coffee machine whereby hot water (or steam) flows through the packet to

	produce a coffee beverage. An exemplary packet is depicted in FIGS. 1-3, such packet being indicated generally at 10. Boyd at [0031]: FIG. 3 schematically depicts a coffee machine 100 designed to utilize packet 10. In the depicted embodiment, packet 10 is positioned between input fluid path 110 and output fluid path 112. Gasket 18 helps form a seal between chamber 114, defining the input fluid path, and chamber 116, defining the output fluid path. Gasket 18 also helps secure packet 10 in place. In other embodiments, packet 10 is held in place by gravity, water pressure, friction, adhesion, magnetism, or other suitable mechanisms. As depicted, water passes into packet 10 along input fluid path 110, passing through filter portion 12. The water contacts ground coffee within packet 10, producing a coffee beverage. The coffee beverage then flows through packet 10 and out through filter portion 14. Thereafter, the coffee beverage continues along output fluid path 112 and into beverage receptacle 120. In one embodiment, water is stored in a reservoir (not shown) within coffee machine 100 and heated before entering input fluid path 110. Alternatively, water is externally heated before entering input fluid path 110, or not heated at all. Beverage receptacle 120 may be dimensioned to accommodate multiple servings of the brewed coffee beverage, or may be dimensioned to receive a single serving of brewed coffee. Boyd at [0036]: For example, a person desiring weaker coffee may purchase packets designated such in order to direct the machine to add water to the brewed coffee beverage in accordance with proper brewing procedure. This avoids problems associated with ill-advised attempts to dilute coffee by decreasing the quantity of coffee used, a change which may result in a corresponding change in bed depth, and thus in an undesirable change in coffee taste. Boyd at Fig. 3:

	FIG.3  *See also* [1].
3. The method according to claim 1, wherein the method comprises: comparing the read barcode with a stored reference.	Boyd discloses, either expressly or inherently, the method according to claim 1, wherein the method comprises: comparing the read barcode with a stored reference. Boyd at [0006]: A brewing packet is provided for use in the preparation of hot or cold beverages. The brewing packet envelops a brewing ingredient chosen according to the tastes of a beverage drinker. The packet includes a machine interpret-able feature that contains encoded data capable of being read by a beverage producing device. Furthermore, the data on the packet may be capable of directing the beverage producing device to employ a specific brewing operation suited for the particular brewing packet. This allows for producing the optimal beverage from the brewing ingredient. The packet may be utilized with a variety of brewing

	ingredients to produce a variety of beverages. Similarly, the packet may be configured to produce single or multiple servings of a beverage. Boyd at [0019]-[0021]: Although the present invention may be used in virtually any brewing machine, it is described herein for use in the context of machines such as those disclosed in U.S. Pat. No. 5,974,949 to Weber et al. and U.S. Pat. No. 6,035,762 to Ruckstuhl. Those patents disclose machines for brewing espresso using espresso espresso packets in the form of filter capsules which are received through a funnel into a brewing chamber where water is passed through the filter capsule to produce an espresso beverage. The subject matter of each of these patents is incorporated herein by this reference. The invention also may be practiced in connection with espresso machines such as those disclosed in U.S. Pat. Nos. 4,253,385, 4,254,694, 4,353,293, 4,429,623, 4,484, 515, 4,555,894 and 4,852,333, all to Illy. These patents disclose various aspects of espresso machines which include brewing chambers configured to receive pre-fabricated espresso packets through which water is passed to produce an espresso drink. The subject matter of each of these patents also is incorporated herein by this reference. While the aforementioned machines generally are described for use in connection with espresso packets which contain a single serving of espresso, it will be appreciated that the present invention considers application of the relevant principles to machines which employ coffee packets for use in brewing multiple cups, which employ coffee packets of various size and shape, which employ various filter media and which contain coffee of various varieties, roasts, and grinds. Furthermore, the packet and methodology described herein may also produce other types of beverages such as tea, cider, and/or any beverage which is produced by mixing various ingredients. The packet and methodology is not limited to hot beverages and may be used to produce cold beverages. Boyd at [0023]: With the foregoing in mind, it will be appreciated that it would be desirable to automatically customize the brew operation based on particular characteristics of the packet, the

	characteristics of the coffee, and/or the tastes of the user, whether or not the user is aware of what changes in the brew operation will lead to the desired taste. The present invention provides a vehicle for such customization in the form of an encoded packet configured to provide the brewing machine with data useful in directing the brewing operation in accordance with packet or packet content characteristics and/or the user's tastes. Body at [0028]: As shown in FIG. 2, packet 10 includes a machine interpretable feature 30 which directs operation of the coffee machine in accordance with predefined brewing directives. In the first depicted embodiment, the machine interpretable feature is a barcode 31 as depicted in FIG. 2 and 2a. It will be understood that the machine interpretable feature may be any machine readable feature associated with packet 10. Boyd at [0030]: Machine interpretable feature 30, it will be appreciated, is capable of storing a significant amount of data, including specific brewing directives and/or packaging or ingredient characteristics. Examples of the types of brewing directives stored in machine interpretable feature 30 may include, for example, contact time, contact pattern, fluid volume, fluid temperature, fluid pressure, and/or fluid pass-through rate. The above brewing directives are all well known in the coffee brewing industry to affect the taste and quality of the coffee beverage. Examples of ingredient characteristics which may be stored in machine interpretable feature 30 include grind, blend, roast, quantity, bed depth, freshness, and expiration date. These examples are meant to be exemplary, not limiting in scope. Boyd at [0032]-[0034]: Coffee machine 100 includes a sensor 130 designed to read machine interpretable feature 30 of packet 10. Sensor 130 is in turn operatively connected to a processor 140 which controls coffee machine 100. Machine interpretable feature 30 may store data which is read by sensor 130 and passed to processor 140. Processor 140 may then direct the brewing operation in accordance with its interpretation of the data derived from machine interpretable feature 30. For example, processor 140 may direct coffee machine 100 to brew using a pre-selected

	contact time, contact pattern, fluid quantity, fluid temperature, fluid pressure, and/or fluid pass-through rate expressed in machine interpretable feature 30. Alternatively, the processor may itself make determinations of contact time, contact pattern, fluid quantity, fluid temperature, fluid pressure, and/or fluid pass-through rate based on information contained in machine interpretable feature 30. The processor may also, based on information contained in machine interpretable feature 30, direct the coffee machine to add water, milk, cream, sugar, or any suitable condiment to the coffee beverage. As alluded to above, machine interpretable feature 30 need not store data specifically including brewing directives and ingredient characteristics. Instead machine interpretable feature 30 may act as an identifier so that brewing directives and ingredient characteristics may be looked up from data storage 150 within (or external to) coffee machine 100. Sensor 130 thus may read machine interpretable feature 30 and processor 140 may match the machine interpretable feature with predefined brewing operation instructions stored in such memory. Processor 140 may then direct the brewing operation based on brewing operation instructions. In one embodiment, the brewing operation instructions are matched to a machine interpretable feature using a look-up table in which brewing operation instructions correspond in a one-to-one ratio with each known ingredient variety, packet size, packet construction, user preference, etc. It will be appreciated, however, that other arrangements for matching machine interpretable feature 30 with brewing directives similarly may be used. Referring now to FIG. 4, a method of operation for the present invention is illustrated at 200. At 202, a brewing packet encoded with packet-characteristic data is placed into a brewing device. At 204, the packet-characteristic data is read by a sensor. At 206, the packet-characteristic data is interpreted by a processor. Finally, at 208, brewing is directed in accordance with the packet-characteristic data read by the sensor and interpreted by the processor. *See also* [1].
[redacted]	

10. The method according to claim 1, wherein the base element of the first portion capsule is made of metal.	Boyd discloses, either expressly or inherently, the method according to claim 1, wherein the base element of the first portion capsule is made of metal. Boyd at [0019]-[0021]: Although the present invention may be used in virtually any brewing machine, it is described herein for use in the context of machines such as those disclosed in U.S. Pat. No. 5,974,949 to Weber et al. and U.S. Pat. No. 6,035,762 to Ruckstuhl. Those patents disclose machines for brewing espresso using espresso espresso packets in the form of filter capsules which are received through a funnel into a brewing chamber where water is passed through the filter capsule to produce an espresso beverage. The subject matter of each of these patents is incorporated herein by this reference. The invention also may be practiced in connection with espresso machines such as those disclosed in U.S. Pat. Nos. 4,253,385, 4,254,694, 4,353,293, 4,429,623, 4,484, 515, 4,555,894 and 4,852,333, all to Illy. These patents disclose various aspects of espresso machines which include brewing chambers configured to receive pre-fabricated espresso packets through which water is passed to produce an espresso drink. The subject matter of each of these patents also is incorporated herein by this reference. While the aforementioned machines generally are described for use in connection with espresso packets which contain a single serving of espresso, it will be appreciated that the present invention considers application of the relevant principles to machines which employ coffee packets for use in brewing multiple cups, which employ coffee packets of various size and shape, which employ various filter media and which contain coffee of various varieties, roasts, and grinds. Furthermore, the packet and methodology described herein may also produce other types of beverages such as tea, cider, and/or any beverage which is produced by mixing various ingredients. The packet and methodology is not limited to hot beverages and may be used to produce cold beverages. *See also* [1].
[redacted]	[redacted]

11. The method according to claim 10, wherein the base element of the second portion capsule is made of metal.	Boyd discloses, either expressly or inherently, the method according to claim 10, wherein the base element of the second portion capsule is made of metal. Boyd at [0019]-[0021]: Although the present invention may be used in virtually any brewing machine, it is described herein for use in the context of machines such as those disclosed in U.S. Pat. No. 5,974,949 to Weber et al. and U.S. Pat. No. 6,035,762 to Ruckstuhl. Those patents disclose machines for brewing espresso using espresso espresso packets in the form of filter capsules which are received through a funnel into a brewing chamber where water is passed through the filter capsule to produce an espresso beverage. The subject matter of each of these patents is incorporated herein by this reference. The invention also may be practiced in connection with espresso machines such as those disclosed in U.S. Pat. Nos. 4,253,385, 4,254,694, 4,353,293, 4,429,623, 4,484, 515, 4,555,894 and 4,852,333, all to Illy. These patents disclose various aspects of espresso machines which include brewing chambers configured to receive pre-fabricated espresso packets through which water is passed to produce an espresso drink. The subject matter of each of these patents also is incorporated herein by this reference. While the aforementioned machines generally are described for use in connection with espresso packets which contain a single serving of espresso, it will be appreciated that the present invention considers application of the relevant principles to machines which employ coffee packets for use in brewing multiple cups, which employ coffee packets of various size and shape, which employ various filter media and which contain coffee of various varieties, roasts, and grinds. Furthermore, the packet and methodology described herein may also produce other types of beverages such as tea, cider, and/or any beverage which is produced by mixing various ingredients. The packet and methodology is not limited to hot beverages and may be used to produce cold beverages. *See also* [1].
[redacted]	

12. The method according to claim 1, wherein the first foil lid and/or the second foil lid is made of metal.	Boyd discloses, either expressly or inherently, the method according to claim 1, wherein the first foil lid and/or the second foil lid is made of metal. Boyd at [0019]-[0021]: Although the present invention may be used in virtually any brewing machine, it is described herein for use in the context of machines such as those disclosed in U.S. Pat. No. 5,974,949 to Weber et al. and U.S. Pat. No. 6,035,762 to Ruckstuhl. Those patents disclose machines for brewing espresso using espresso espresso packets in the form of filter capsules which are received through a funnel into a brewing chamber where water is passed through the filter capsule to produce an espresso beverage. The subject matter of each of these patents is incorporated herein by this reference. The invention also may be practiced in connection with espresso machines such as those disclosed in U.S. Pat. Nos. 4,253,385, 4,254,694, 4,353,293, 4,429,623, 4,484, 515, 4,555,894 and 4,852,333, all to Illy. These patents disclose various aspects of espresso machines which include brewing chambers configured to receive pre-fabricated espresso packets through which water is passed to produce an espresso drink. The subject matter of each of these patents also is incorporated herein by this reference. While the aforementioned machines generally are described for use in connection with espresso packets which contain a single serving of espresso, it will be appreciated that the present invention considers application of the relevant principles to machines which employ coffee packets for use in brewing multiple cups, which employ coffee packets of various size and shape, which employ various filter media and which contain coffee of various varieties, roasts, and grinds. Furthermore, the packet and methodology described herein may also produce other types of beverages such as tea, cider, and/or any beverage which is produced by mixing various ingredients. The packet and methodology is not limited to hot beverages and may be used to produce cold beverages. *See also* [1].
[redacted]	

[13.pre] A method of making a coffee beverage, comprising steps of:	Boyd discloses, either expressly or inherently, a method of making a coffee beverage. *See, e.g.*: *See* [1.pre].
[13.a] providing an apparatus including a barcode reader configured to read a barcode, the apparatus including a mandrel, a water inlet, and a seal;	Boyd discloses, either expressly or inherently, providing an apparatus including a barcode reader configured to read a barcode, the apparatus including a mandrel, a water inlet, and a seal. *See* [1.a], [1.g], [1.i], [1.h].
[13.b] 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 a wall that defines the cavity with a central interior portion,	Boyd discloses, either expressly or inherently, 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 a wall that defines the cavity with a central interior portion. *See, e.g.*: *See* [1.b].
[13.c] having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central interior portion and an outside surface of the wall having plurality of vertically oriented grooves,	Boyd discloses, either expressly or inherently, having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central interior portion and an outside surface of the wall having plurality of vertically oriented grooves. *See, e.g.*: *See* [1.c], [1.e].
[13.d] 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	Boyd discloses, either expressly or inherently, 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. *See, e.g.*:

first barcode located on the bottom side;	*See* [1.d].
[13.e] piercing the first lid with the mandrel in a region that is offset from a central axis of the first portion capsule;	Boyd discloses, either expressly or inherently, piercing the first lid with the mandrel in a region that is offset from a central axis of the first portion capsule. *See, e.g.*: *See* [1.g].
[13.f] sealing the top side of the flange of the first portion capsule and/or the first lid against the seal of the apparatus;	Boyd discloses, either expressly or inherently, sealing the top side of the flange of the first portion capsule and/or the first lid against the seal of the apparatus. *See, e.g.*: *See* [1.h].
[13.g] reading the first barcode with the barcode reader; controlling production of a first coffee beverage based upon the reading of the first barcode; introducing 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;	Boyd discloses, either expressly or inherently, reading the first barcode with the barcode reader; controlling production of a first coffee beverage based upon the reading of the first barcode; introducing 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. *See, e.g.*: *See* [1.f], [1.i].
[13.h] unloading the first portion capsule from the apparatus;	Boyd discloses, either expressly or inherently, unloading the first portion capsule from the apparatus. *See, e.g.*: *See* [1.j].
[13.i] inserting second portion capsule into the apparatus, the second portion capsule being free of	Boyd discloses, either expressly or inherently, inserting 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

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 a wall that defines a cavity with a central interior portion, and having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the cavity central interior portion, and 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 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	base element has been shaped to define a wall that defines a cavity with a central interior portion, and having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the cavity central interior portion, and 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 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. *See, e.g.*: *See* [1.k]; [13.a]-[13.g].

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.	
[redacted]	
14. The method according to claim 13, 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.	Boyd discloses, either expressly or inherently, the method according to claim 13, 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. *See* [1.f] and [1.k]. Boyd at [0023]: With the foregoing in mind, it will be appreciated that it would be desirable to automatically customize the brew operation based on particular characteristics of the packet, the characteristics of the coffee, and/or the tastes of the user, whether or not the user is aware of what changes in the brew operation will lead to the desired taste. The present invention provides a vehicle for such customization in the form of an encoded packet configured to provide the brewing machine with data useful in directing the brewing operation in accordance with packet or packet content characteristics and/or the user's tastes. Boyd at [0030]: Machine interpretable feature 30, it will be appreciated, is capable of storing a significant amount of data, including specific brewing directives and/or packaging or ingredient characteristics. Examples of the types of brewing directives stored in machine interpretable feature 30 may include, for example, contact time, contact pattern, fluid volume, fluid temperature, fluid pressure, and/or fluid pass-through rate. The above brewing directives are all well known in the coffee brewing industry to affect the taste and quality of the coffee beverage. Examples of ingredient characteristics which may be stored in machine

	interpretable feature 30 include grind, blend, roast, quantity, bed depth, freshness, and expiration date. These examples are meant to be exemplary, not limiting in scope. Boyd at [0035]-[0037]: Because the processor may be employed to effect the aforementioned predefined brewing directives based on the machine interpretable feature associated with each packet. The brewing operation may be made consistent based on consistent machine interpretable features from packet to packet. Similarly, the brewing operation may be altered in accordance with desired brewing characteristics each time the packet is replaced. Particular brew characteristics thus may be controlled simply by selection of a packet with the desired encoded brewing directives (whether or not such directives are known to the coffee machine operator). Control of the brewing process thus may be handed off to the brewing professionals who produce the packets, rather than relying on untrained machine operators. This may be done without sacrificing variety in brew operation based on differing characteristics of the packet contents or consumer tastes. For example, a person desiring weaker coffee may purchase packets designated such in order to direct the machine to add water to the brewed coffee beverage in accordance with proper brewing procedure. This avoids problems associated with ill-advised attempts to dilute coffee by decreasing the quantity of coffee used, a change which may result in a corresponding change in bed depth, and thus in an undesirable change in coffee taste. The encoded packets also may be used to track brewing information which may be useful in ensuring satisfaction with the brewed coffee beverage. For example, the packet may include an encoded date for use in tracking freshness of the coffee grounds contained within the packet. Upon determining that the packet is stale, the processor may direct the machine to note such staleness, thus avoiding an unsatisfactory beverage. Similarly, the packet may contain encoded data related to the coffee blend contained within the packet, such data being stored in memory to provide a history of coffee blends. The encoded packet also may contain encoded data defining the source of the packet so as to prohibit use of counterfeit packets, or packets from unauthorized suppliers.

	See also [13].

Exhibit A-3 – Invalidity of U.S. Patent No. 10,858,176 in view of Denisart

INVALIDITY CLAIM CHART
Invalidity of U.S. Patent No. 10,858,176 in view of Denisart

According to its cover page, U.S. Pub. WO2010/026053A1 ("Denisart") was published on March 11, 2010. Denisart therefore constitutes prior art to the '176 Patent under pre-AIA 35 U.S.C. § 102(a). Denisart anticipates and/or renders obvious the Asserted Claims of the '176 Patent (at least as Nespresso understands K-fee's application of the Asserted Claims in an effort to show infringement).

To the extent K-fee argues that any element below is not disclosed by Denisart, a person of ordinary skill in the art would have found it obvious to combine the teachings of Denisart with the background knowledge of a person of ordinary skill in the art and/or the additional references, and exemplary teachings, set forth in the charts in Exhibits A-1 to A-9, and in Appendix A.

The chart below provides representative examples of where each element of each claim is found within Denisart. Citations are meant to be exemplary, not exhaustive, and Nespresso reserves the right to identify and discuss additional portions of the reference in support of its contentions and/or to rebut arguments made by K-fee. Citations to figures, drawings, tables, and the like include reference to any accompanying or related text. All internal cross references are meant to incorporate the cross-referenced material as if fully set forth therein.

It is Nespresso's position that K-fee's Infringement Contentions have not established that any accused product or service infringes any valid claim. Thus, Nespresso's statements below should not be treated as an admission, implication, or suggestion that Nespresso agrees with K-fee regarding either the scope, construction, or interpretation of any of the Asserted Claims, or the infringement theories advanced by K-fee in its Infringement Contentions, including whether any Asserted Claim satisfies 35 U.S.C. §§ 101 or 112. In certain cases, Nespresso specified non-limiting examples of where its application of the prior art is based on K-fee's apparent application of the claim element. These statements are not intended to suggest that Nespresso agrees with K-fee's application of any claim term, suggest a proposed construction at this stage of the case, or suggest that construction is needed, as the parties are not required to exchange terms for construction or proposed constructions until a later date.

K-fee has yet to identify any limitation of the Asserted Claims that it contends is not anticipated and/or rendered obvious by Denisart. Nespresso therefore expressly reserves the right to respond to any such contention, including by identifying additional obviousness combinations, if K-fee makes any such contention.

Where Nespresso states that Denisart "discloses" a limitation, that disclosure may be express, implicit, and/or inherent.

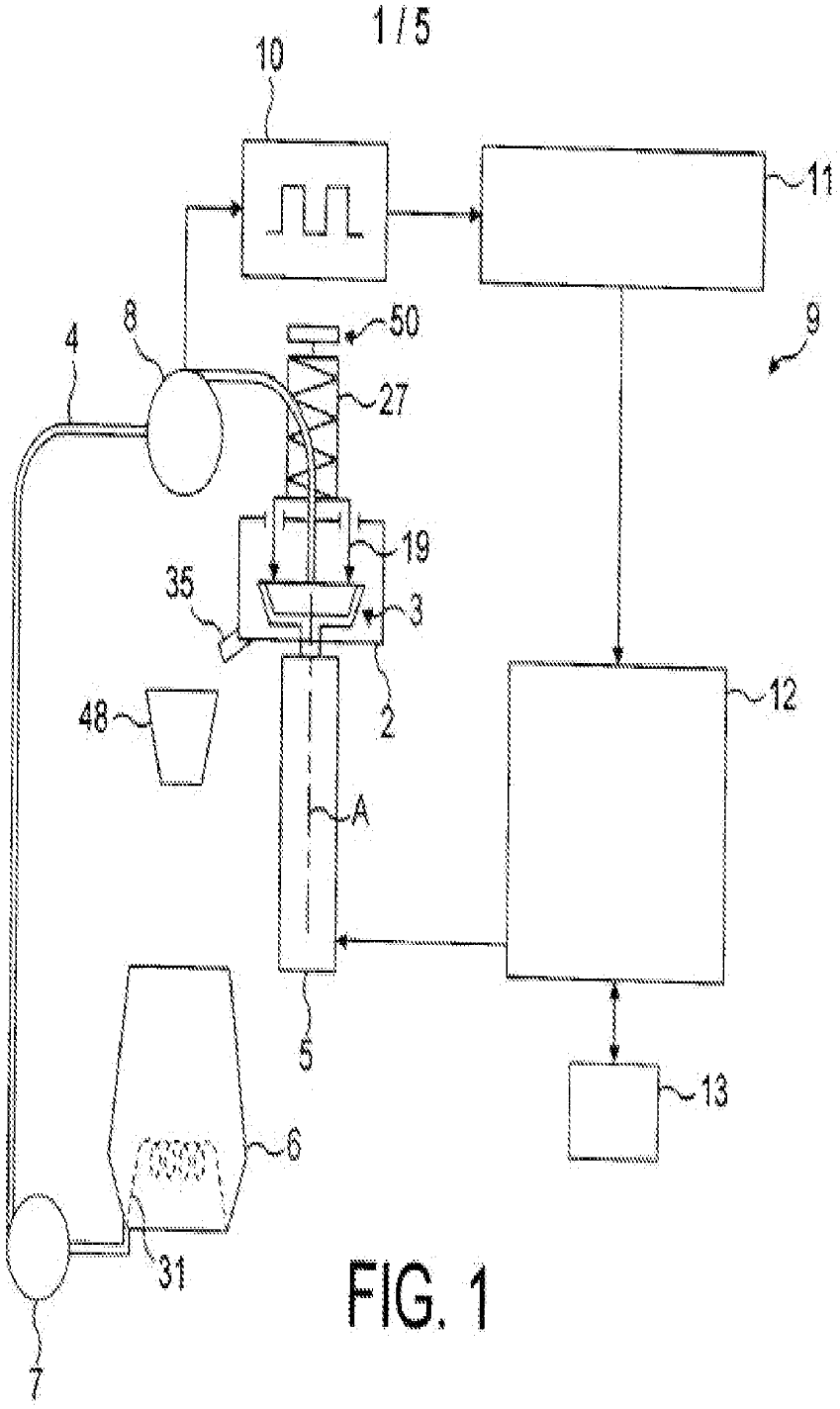
IPR2023-00485
Nespresso USA, Inc. Ex. 1002 Part 1
Page 404 of 524

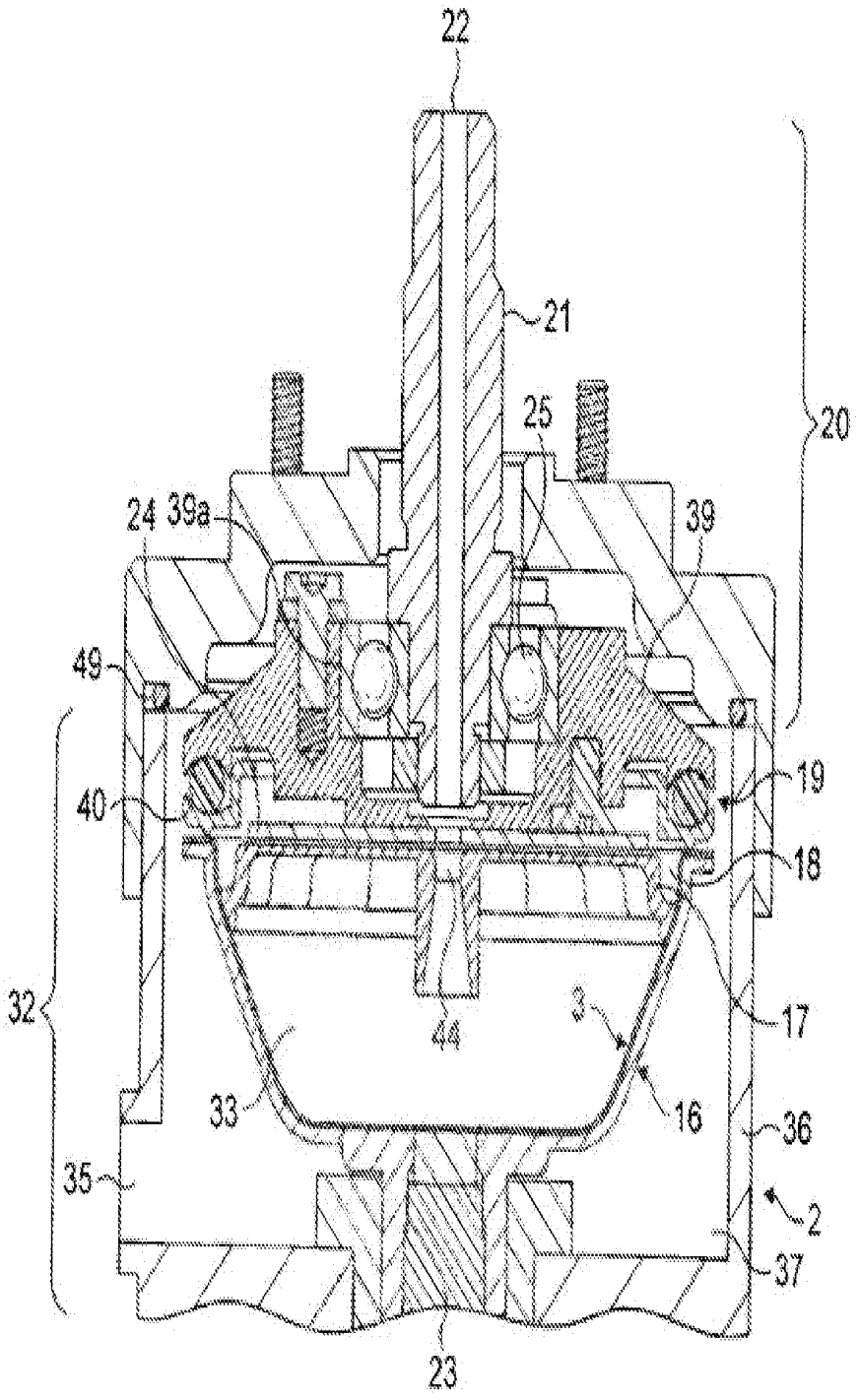
U.S. Patent No. 10,858,176	Disclosure
[1.pre] A method of making a coffee beverage comprising:	Denisart discloses, either expressly or inherently, a method for making a coffee beverage. *See, e.g.*: Denisart at Abstract: The present invention relates to a beverage production device for preparing a liquid comestible from a portioned food substance contained in a sealed capsule (3), comprising a centrifugal unit (2) for receiving the sealed capsule (3), driving means (5) connected to the centrifugal unit (2) for enabling a rotational motion of the centrifugal unit (2), liquid supply means (4,6,7) being connected to the centrifugal unit (2), means (8) for measuring the flow rate or the pressure of the supplied liquid and control means (9) for con trolling the rotational speed of the driving means dependent on the measured flow rate or the measured pressure of the liquid. Denisart at 1:9-15: The present invention relates to a device and a capsule system for preparing a liquid comestible from a food substance contained in a receptacle by passing liquid through the food substance using centrifugal forces. In particular, the invention relates to a device and a method for controlling the flow rate of a liquid during the beverage preparation. Denisart at 3:19-24: Based on the prior art, the present invention aims at providing a device and a method for allowing an efficient control of the strength of a liquid comestible such as a coffee or tea beverage in a centrifugal beverage production device which takes into account the flow attributes through the ingredients. Denisart at 20:29-21:10: In a third aspect, the present invention relates to a method for preparing a liquid comestible from a portioned food substance contained in a capsule or cell by passing liquid through the substance using centrifugal forces, comprising the steps of connecting the capsule or cell to a

U.S. Patent No. 10,858,176	Disclosure
	liquid supply, rotating the capsule or cell about its rotational axis to enable an interaction between the liquid and the portioned ingredients provided within the capsule, controlling the flow rate, or respectively the pressure, of liquid to match a flow rate reference, or respectively a pressure reference, by automatically adjusting the rotational speed of the driving means during the extraction phase of the beverage production depending on the measured flow rate, or respectively the measured pressure, of liquid. *See also* Denisart at Claims 17-19.
[1.a] providing an apparatus including a barcode reader;	Denisart discloses, either expressly or inherently, providing an apparatus including a barcode reader. *See, e.g.*: Denisart at Abstract: The present invention relates to a beverage production device for preparing a liquid comestible from a portioned food substance contained in a sealed capsule (3), comprising a centrifugal unit (2) for receiving the sealed capsule (3), driving means (5) connected to the centrifugal unit (2) for enabling a rotational motion of the centrifugal unit (2), liquid supply means (4,6,7) being connected to the centrifugal unit (2), means (8) for measuring the flow rate or the pressure of the supplied liquid and control means (9) for con trolling the rotational speed of the driving means dependent on the measured flow rate or the measured pressure of the liquid. Denisart at 1:9-15: The present invention relates to a device and a capsule system for preparing a liquid comestible from a food substance contained in a receptacle by passing liquid through the food substance using centrifugal forces. In particular, the invention relates to a device and a method for controlling the flow rate of a liquid during the beverage preparation.

	Denisart at 3:19-24: Based on the prior art, the present invention aims at providing a device and a method for allowing an efficient control of the strength of a liquid comestible such as a coffee or tea beverage in a centrifugal beverage production device which takes into account the flow attributes through the ingredients. Denisart at 4:11-29: In a first aspect, the present invention relates to a beverage production device for preparing a liquid comestible from a portioned food substance contained in a capsule or cell, comprising a centrifugal unit for receiving the capsule or cell, driving means connected to the centrifugal unit for enabling a rotational motion of the capsule or cell in the unit, liquid supply means being connected to the centrifugal unit to supply liquid in the capsule or cell, means for measuring the flow rate, or respectively the pressure, of the liquid, and a control unit for controlling the flow rate of liquid, or respectively the pressure of liquid, to match a flow rate reference, or respectively a pressure reference, in a control loop by automatically adjusting the rotational speed of the driving means during the extraction phase of the beverage production depending on the measured flow rate, or respectively the measured pressure, of the liquid. Denisart at 8:10-19: However, it may as well be possible that the strength and/or volume are set by identification means arranged within the device which interact with the capsule provided to the device. Such identifications means may be a barcode scanner for example which reads a barcode provided on an outside face of the capsule and which enables a detection of the type of capsule and/or the nature of ingredients provided within the capsule in order to apply a predefined extraction profile for the beverage to be prepared. Denisart at 9:21-33: The single-use capsule to be used with the present invention can be closed before use in a gas impervious manner to maintain freshness of the food ingredients housed therein. The capsule preferably contains a protective atmosphere for the ingredients such as inert gas. The capsule

U.S. Patent No. 10,858,176	Disclosure
	can be closed by a membrane which is pierced or peeled off during the beverage preparation process The capsule may comprise coding means such as a barcode for example which is read by the machine. Accordingly, corresponding parameters, such as for example the beverage strength, the beverage volume and/or the beverage crema or foam, can be adjusted by the control means. Denisart at 18:30-19:18: In a second aspect, the present invention relates to a system for producing a beverage from portioned ingredients provided within a capsule, the system comprising a beverage producing device having a centrifugal unit comprising at least two enclosing members for enclosing the capsule by a relative movement of the enclosing members, driving means connected to the centrifugal unit for enabling a rotational motion of the centrifugal unit, a liquid injection assembly designed to interact with the capsule provided to the device and connected to liquid supply means, means for measuring the flow rate, or respectively the pressure, of the liquid, control means for controlling the flow rate, or respectively the pressure, of liquid to match a flow rate reference, or respectively a pressure reference, in a control loop by automatically adjusting the rotational speed of the driving means during the extraction phase of the beverage production depending on the measured flow rate, or respectively the measured pressure, wherein the capsule is designed to be removably inserted into the centrifugal unit of the device.

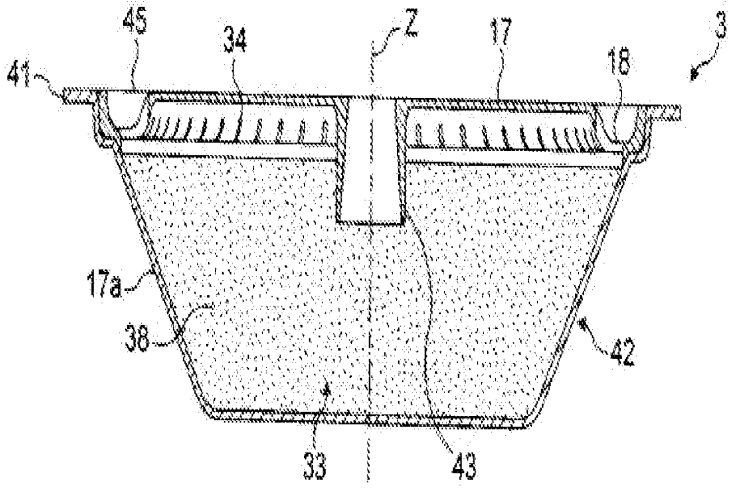
	Denisart at Fig. 1:  FIG. 1

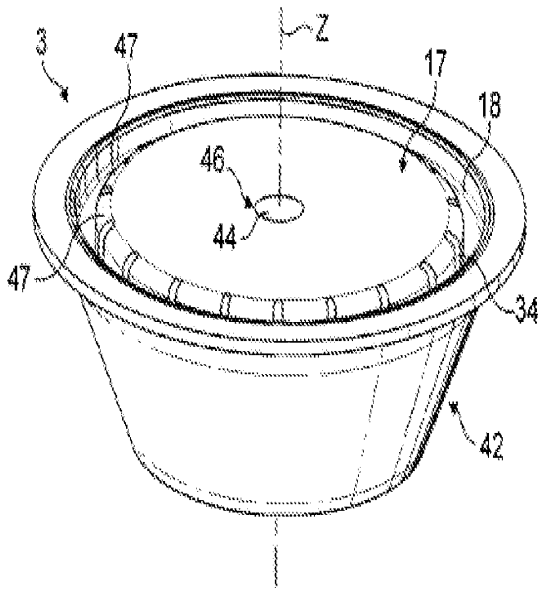
	Denisart at Fig. 3: 

U.S. Patent No. 10,858,176	Disclosure
	See also Denisart at Claims 5-19.
[1.b] 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,	Denisart discloses, either expressly or inherently, 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. *See, e.g.*: Denisart at Abstract: The present invention relates to a beverage production device for preparing a liquid comestible from a portioned food substance contained in a sealed capsule (3), comprising a centrifugal unit (2) for receiving the sealed capsule (3), driving means (5) connected to the centrifugal unit (2) for enabling a rotational motion of the centrifugal unit (2), liquid supply means (4,6,7) being connected to the centrifugal unit (2), means (8) for measuring the flow rate or the pressure of the supplied liquid and control means (9) for con trolling the rotational speed of the driving means dependent on the measured flow rate or the measured pressure of the liquid. Denisart at 4:11-29: In a first aspect, the present invention relates to a beverage production device for preparing a liquid comestible from a portioned food substance contained in a capsule or cell, comprising a centrifugal unit for receiving the capsule or cell, driving means connected to the centrifugal unit for enabling a rotational motion of the capsule or cell in the unit, liquid supply means being connected to the centrifugal unit to supply liquid in the capsule or cell, means for measuring the flow rate, or respectively the pressure, of the liquid, and a control unit for controlling the flow rate of liquid, or respectively the pressure of liquid, to match a flow rate reference, or respectively a pressure reference, in a control loop by automatically adjusting the rotational speed of the driving means during the extraction phase of the beverage production depending on the measured flow rate, or respectively the measured pressure, of the liquid. Denisart at 5:7-12:

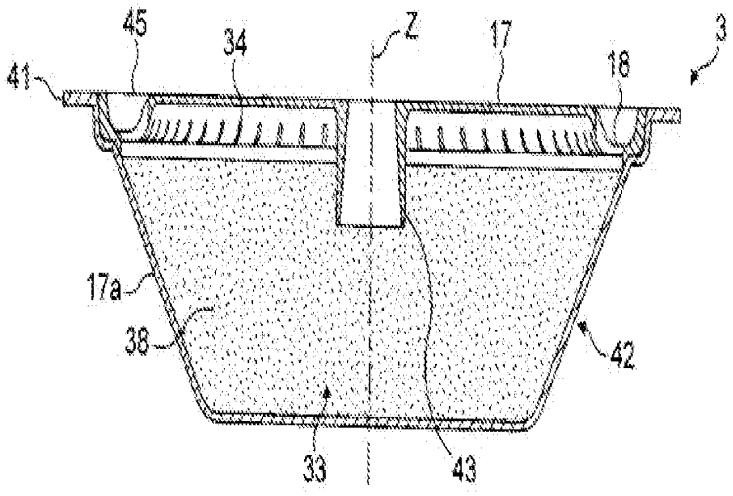
U.S. Patent No. 10,858,176	Disclosure
	In a preferred embodiment, the capsule is removably insertable into the centrifugal unit of the device. The centrifugal unit of the device preferably comprises two enclosing members which are movably arranged relatively to each other and which are designed to enclose the capsule within the device. Denisart at 5:27-31: A second enclosing member of the centrifugal unit is preferably a rotary drum which is of complementary shape to the capsule. Hence, a user may insert the capsule into said rotary drum which is held in the drum a stable manner. Denisart at 9:21-33: The single-use capsule to be used with the present invention can be closed before use in a gas impervious manner to maintain freshness of the food ingredients housed therein. The capsule preferably contains a protective atmosphere for the ingredients such as inert gas. The capsule can be closed by a membrane which is pierced or peeled off during the beverage preparation process. The capsule may comprise coding means such as a barcode for example which is read by the machine. Accordingly, corresponding parameters, such as for example the beverage strength, the beverage volume and/or the beverage crema or foam, can be adjusted by the control means. Denisart at 19:20-30: The capsule to be used with the device according to the present invention is preferably a single-use capsule sealed in a protective atmosphere before use. The capsule can have a rigid dished body and a lid, wherein the lid of the capsule comprises outlet openings arranged at a peripheral portion of the lid. In a possible alternative, the capsule can be capsule permeable to liquid and gas when inserted in the device such as a filter capsule.

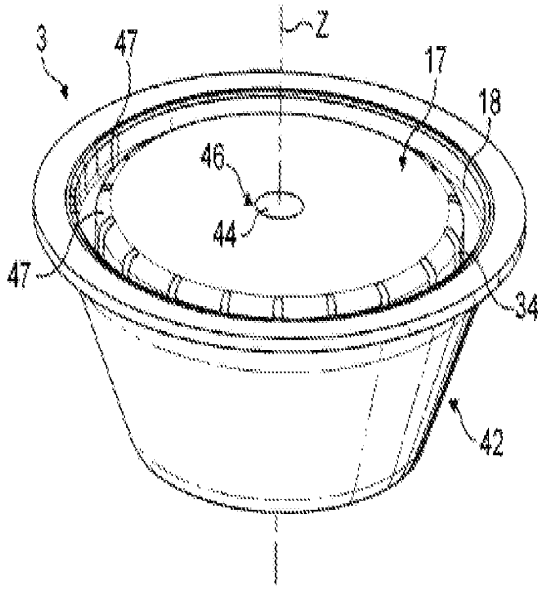
U.S. Patent No. 10,858,176	Disclosure
	The capsule preferably contains ground coffee, soluble coffee, tea, cocoa, milk and combinations thereof. Denisart at 34:8-10: The capsule 3 to be used with the device or the system according to the present invention may be any of the capsules described in PCT/EP08/056310 (WO 2008/148646). Denisart at 34:11-27: The capsule 3 as shown in figure 3 is pre-opened before it is inserted in the device, i.e., a sealing foil arranged at an upper face of the capsule is removed by peeling, or a central hole is perforated in the foil of the capsule when the capsule is inserted in the device. The capsule 3 optionally comprises an inner member forming a lid 17 which is inserted in the dished body of the capsule. The lid 17 and body 42 delimit together an internal enclosure 33 for receiving a portioned food substance. The lid 17 comprises outlet openings 34 (see figure 4) at a peripheral section 47 of the lid 17 for filtering the beverage and maintaining the food (coffee) particles within the capsule 3 during the beverage preparation. Accordingly, only the liquid comestible to be prepared is discharged through the outlet openings 34. Denisart at 39:25-40:14: Figures 5 and 6 relate to a capsule which is preferably used with the device and system according to the present invention. However, it should be understood that the shown embodiment is just an exemplary embodiment and that the capsule according to the invention can take various different embodiments. The capsule 3 comprises a rigid dished body 42 which comprises an annular rim portion 41. The capsule is preferably design as being rotationally symmetric about central axis. Thereby, it should be noted that the capsule may not necessarily have a circular section around axis Z but

U.S. Patent No. 10,858,176	Disclosure
	may take another form such as a square, rectangle or a polygonal form. Thereby, axis Z is preferably aligned to the axis of rotation A when the capsule is inserted in the device. Moreover, the capsule 3 comprises a lid 17 which preferably has the form of a disc of plastic comprising a central portion 46 and a peripheral portion 47. The central portion 46 can be substantially flat and may comprise an inlet port 44 for enabling the fitting or introduction of a water injection member 21 of the beverage production device. Denisart at 40:31-41:7: The upper surface of the capsule 3 may be equipped with a foil 45 which enables sealing of the capsule 3. The foil preferably covers the lid 17 and is welded or adhesively connected onto the peripheral edge 41 of the body of the capsule. The foil can be permanently connected to the edge if the foil is intended to be pierced for forming the inlet and outlets or, alternatively, the connection is peelable. Before the capsule is inserted into the rotary drum 16 of the device, said foil 45 needs to be pierced or removed in order to enable a preparation of the beverage. Denisart at Fig. 5: 

U.S. Patent No. 10,858,176	Disclosure
	Denisart at Fig. 6:  *See also* Denisart at Claims 5-19.
[1.c] and a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central portion of the cavity,	
[1.d] the base element including a circumferential flange having a top side to which the first foil lid is sealed and an opposing bottom	Denisart discloses, either expressly or inherently, 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. *See, e.g.*: Denisart at 8:10-19:

U.S. Patent No. 10,858,176	Disclosure
side with a first barcode located on the bottom side,	However, it may as well be possible that the strength and/or volume are set by identification means arranged within the device which interact with the capsule provided to the device. Such identifications means may be a barcode scanner for example which reads a barcode provided on an outside face of the capsule and which enables a detection of the type of capsule and/or the nature of ingredients provided within the capsule in order to apply a predefined extraction profile for the beverage to be prepared. Denisart at 9:21-33: The single-use capsule to be used with the present invention can be closed before use in a gas impervious manner to maintain freshness of the food ingredients housed therein. The capsule preferably contains a protective atmosphere for the ingredients such as inert gas. The capsule can be closed by a membrane which is pierced or peeled off during the beverage preparation process. The capsule may comprise coding means such as a barcode for example which is read by the machine. Accordingly, corresponding parameters, such as for example the beverage strength, the beverage volume and/or the beverage crema or foam, can be adjusted by the control means. Denisart at 20:6-9: The capsule to be used in the device can be associated to a code containing information relative to one or more of the following parameters: flow rates, beverage volumes, speeds, beverage temperatures, etc. Denisart at 34:8-10: The capsule 3 to be used with the device or the system according to the present invention may be any of the capsules described in PCT/EP08/056310 (WO 2008/148646). Denisart at 38:15-23:

U.S. Patent No. 10,858,176	Disclosure
	The capsule device is opened by moving the two assemblies 20, 32 relatively one another, e.g., by means of a dedicated closing mechanism and separating the two assemblies 20, 32. As a result, a single-use capsule 3 containing a food substance can be inserted in the device, i.e., placed in the cavity of the rotating drum 16. The device is then closed by the assembly 20 being connected back onto the assembly 32 and locked by the closing mechanism. Denisart at 40:31-41:7: The upper surface of the capsule 3 may be equipped with a foil 45 which enables sealing of the capsule 3. The foil preferably covers the lid 17 and is welded or adhesively connected onto the peripheral edge 41 of the body of the capsule. The foil can be permanently connected to the edge if the foil is intended to be pierced for forming the inlet and outlets or, alternatively, the connection is peelable. Before the capsule is inserted into the rotary drum 16 of the device, said foil 45 needs to be pierced or removed in order to enable a preparation of the beverage. Denisart at Fig. 5:  Denisart at Fig. 6:

U.S. Patent No. 10,858,176	Disclosure
	 *See also* Denisart at Claims 5-19.
[1.e] the base element of the first portion capsule includes an outside surface having a plurality of vertically oriented grooves;	
[1.f] 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;	Denisart discloses, either expressly or inherently, 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. *See, e.g.*: Denisart at 3:19-24: Based on the prior art, the present invention aims at providing a device and a method for allowing an efficient control of the strength of a liquid comestible such as a coffee or tea

U.S. Patent No. 10,858,176	Disclosure
	beverage in a centrifugal beverage production device which takes into account the flow attributes through the ingredients. Denisart at 3:31-4:7: In particular, one aspect of the invention, is to ensure that the key quality attributes of the beverage can be controlled properly. In particular, one aspect of the invention is to ensure that the strength or concentration of the beverage is reproducible, i.e., that this characteristic does not fluctuate much for a same desired beverage. Still an aspect of the invention is to ensure the key quality attributes (i.e., concentration, coffee crema level) as well as the volume of the beverage can be produced and selected in a controllable manner depending on the type of beverages desired. Denisart at 4:11-28: In a first aspect, the present invention relates to a beverage production device for preparing a liquid comestible from a portioned food substance contained in a capsule or cell, comprising a centrifugal unit for receiving the capsule or cell, driving means connected to the centrifugal unit for enabling a rotational motion of the capsule or cell in the unit, liquid supply means being connected to the centrifugal unit to supply liquid in the capsule or cell, means for measuring the flow rate, or respectively the pressure, of the liquid, and a control unit for controlling the flow rate of liquid, or respectively the pressure of liquid, to match a flow rate reference, or respectively a pressure reference, in a control loop by automatically adjusting the rotational speed of the driving means during the extraction phase of the beverage production depending on the measured flow rate, or respectively the measured pressure, of the liquid. Denisart at 8:4-8: Moreover, the control unit is configured for controlling the volume of the beverage by receiving data from the flow measuring means and controlling accordingly the volume of liquid supplied by the liquid supply means, in particular, the pump, to the capsule or cell.

U.S. Patent No. 10,858,176	Disclosure
	Denisart at 8:10-19: However, it may as well be possible that the strength and/or volume are set by identification means arranged within the device which interact with the capsule provided to the device. Such identifications means may be a barcode scanner for example which reads a barcode provided on an outside face of the capsule and which enables a detection of the type of capsule and/or the nature of ingredients provided within the capsule in order to apply a predefined extraction profile for the beverage to be prepared. Denisart at 9:21-33: The single-use capsule to be used with the present invention can be closed before use in a gas impervious manner to maintain freshness of the food ingredients housed therein. The capsule preferably contains a protective atmosphere for the ingredients such as inert gas. The capsule can be closed by a membrane which is pierced or peeled off during the beverage preparation process. The capsule may comprise coding means such as a barcode for example which is read by the machine. Accordingly, corresponding parameters, such as for example the beverage strength, the beverage volume and/or the beverage crema or foam, can be adjusted by the control means. Denisart at 17:27-30: According to the described embodiment, it can be possible to control both the beverage strength (for example the coffee concentration in the coffee liquid extract in the cup) and the amount of foam or crema on the beverage. Denisart at 20:6-9: The capsule to be used in the device can be associated to a code containing information relative to one or more of the following parameters: flow rates, beverage volumes, speeds, beverage temperatures, etc.

U.S. Patent No. 10,858,176	Disclosure
	Denisart at 21:12-18: In particular, the flow rate is controlled in relation to a selection of strength of the beverage carried out by the user. Furthermore, the level of crema or foam can also be controlled by adjusting the load on the restriction valve at the exit of the capsule or cell. Denisart at 20:29-21:18: In a third aspect, the present invention relates to a method for preparing a liquid comestible from a portioned food substance contained in a capsule or cell by passing liquid through the substance using centrifugal forces, comprising the steps of connecting the capsule or cell to a liquid supply, rotating the capsule or cell about its rotational axis to enable an interaction between the liquid and the portioned ingredients provided within the capsule, controlling the flow rate, or respectively the pressure, of liquid to match a flow rate reference, or respectively a pressure reference, by automatically adjusting the rotational speed of the driving means during the extraction phase of the beverage production depending on the measured flow rate, or respectively the measured pressure, of liquid. In particular, the flow rate is controlled in relation to a selection of strength of the beverage carried out by the user. Furthermore, the level of crema or foam can also be controlled by adjusting the load on the restriction valve at the exit of the capsule or cell. Denisart at 27:29-28:5: Simultaneously or shortly after, the motor speed is started at a low speed to ensure a pre-wetting of the dry food ingredients, e.g., roast and ground coffee, provided within the centrifugal cell respectively the capsule 3. Preferably, said pre-wetting phase A lasts for a given time ti between 3 and 10 seconds. The prewetting time is preferably a time as determined by a

U.S. Patent No. 10,858,176	Disclosure
	count of impulse data generated by the flow sensing means, which is already stored or storable such as by transfer from a code on the capsule or cell in the memory of the controller 12. *See also* [1.a] and [1.d]
[1.g] 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;	Denisart discloses, either expressly or inherently, 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. *See, e.g.*: Denisart at 5:14-25: One enclosing member is preferably equipped with a liquid injection assembly which enables the provision of liquid to the capsule enclosed within the centrifugal unit of the device. Preferably, the injection assembly is arranged centrically with respect to a rotational axis of the centrifugal unit. The injection assembly preferably comprises a tubular member for providing liquid to a central inlet port of the capsule. In a possible embodiment, the injection assembly comprises a piercing member designed to pierce the inlet port in a face of the capsule. The injection assembly is connected to the liquid supply means of the device. Denisart at 9:21-33: The single-use capsule to be used with the present invention can be closed before use in a gas impervious manner to maintain freshness of the food ingredients housed therein. The capsule preferably contains a protective atmosphere for the ingredients such as inert gas. The capsule can be closed by a membrane which is pierced or peeled off during the beverage preparation process The capsule may comprise coding means such as a barcode for example which is read by the machine. Accordingly, corresponding parameters, such as for example the beverage strength, the beverage volume and/or the beverage crema or foam, can be adjusted by the control means.

	Denisart at 20:11-21: The injection of the liquid provided by the device preferably takes place at an upper face of the capsule which may already have an inlet port and the injection of liquid can be done by connecting an injection member such as a tube to an inlet port of the capsule. In a possible alternative, a foil of the capsule which covers the lid can be pierced by a piercing member connected to the injection member of the device. The output of the beverage to be prepared takes place at a peripheral section of the lid of the capsule which is provided with a plurality of outlet openings. Denisart at 34:8-10: The capsule 3 to be used with the device or the system according to the present invention may be any of the capsules described in PCT/EP08/056310 (WO 2008/148646). Denisart at 40:31-41:7: The upper surface of the capsule 3 may be equipped with a foil 45 which enables sealing of the capsule 3. The foil preferably covers the lid 17 and is welded or adhesively connected onto the peripheral edge 41 of the body of the capsule. The foil can be permanently connected to the edge if the foil is intended to be pierced for forming the inlet and outlets or, alternatively, the connection is peelable. Before the capsule is inserted into the rotary drum 16 of the device, said foil 45 needs to be pierced or removed in order to enable a preparation of the beverage. Denisart at 42:15-43:17: Figs. 7 and 8 provide a variant of the beverage preparation system of the invention in which the load of the valve means is adjustable for enabling a control of the opening pressure in order to control the foam or crema level. For simplifying the present description and avoid repetitions, the same numerical references have been used to refer to similar technical means as in the previous embodiments. The novel aspects of the present embodiment essentially lie in piercing means of the device for piercing inlet/outlets in the capsule and in a different configuration of the flow restriction valve 19 compared to the other embodiments.

U.S. Patent No. 10,858,176	Disclosure
	As illustrated, the water injector 21 extends coaxially in the capsule 3 by a hollow piercing member 51. The piercing member extends below the upper surface of the capsule 3, in the cavity 33. The piercing member is formed as a hollow tube to supply liquid in the capsule at its tip. The piercing member can so be used to pierce a sealing membrane 52 of the capsule which closes the lid in a gastight manner before the capsule is inserted in the device. The capsule rotary engaging member 39 can further comprise outlet piercing members 53 placed in axial alignment with the liquid collector of the capsule when the member 39 is engaged in closure on the capsule. The outlet piercing members 53 serve to pierce the membrane 52 of the capsule to define a plurality of outlets at the periphery of the capsule from which liquid collected in the collector can leave the capsule. The outlet piercing members are introduced in the collecting recess 18 of the capsule which is sized in such a way that the peripheral portion 47 of the lid cannot be perforated. The centrifuged liquid can thus be discharged from the collecting recess 18 via the holes which are formed in the sealing foil 52 by the piercing members.
[1.h] sealing the first foil lid against a seal of the apparatus;	Denisart discloses, either expressly or inherently, sealing the first foil lid against a seal of the apparatus. *See, e.g.*: Denisart at 9:21-33: The single-use capsule to be used with the present invention can be closed before use in a gas impervious manner to maintain freshness of the food ingredients housed therein. The capsule preferably contains a protective atmosphere for the ingredients such as inert gas. The capsule can be closed by a membrane which is pierced or peeled off during the beverage preparation process The capsule may comprise coding means such as a barcode for example which is read by the machine. Accordingly, corresponding parameters, such as for example the beverage strength, the beverage volume and/or the beverage crema or foam, can be adjusted by the control means.

	Denisart at 20:11-21: The injection of the liquid provided by the device preferably takes place at an upper face of the capsule which may already have an inlet port and the injection of liquid can be done by connecting an injection member such as a tube to an inlet port of the capsule. In a possible alternative, a foil of the capsule which covers the lid can be pierced by a piercing member connected to the injection member of the device. The output of the beverage to be prepared takes place at a peripheral section of the lid of the capsule which is provided with a plurality of outlet openings. Denisart at 34:8-10: The capsule 3 to be used with the device or the system according to the present invention may be any of the capsules described in PCT/EP08/056310 (WO 2008/148646). Denisart at 34:8-16: The capsule 3 to be used with the device or the system according to the present invention may be any of the capsules described in PCT/EP08/056310 (WO 2008/148646). The capsule 3 as shown in figure 3 is pre-opened before it is inserted in the device, i.e., a sealing foil arranged at an upper face of the capsule is removed by peeling, or a central hole is perforated in the foil of the capsule when the capsule is inserted in the device. Denisart at 37:6-31: The water injection assembly 20 further comprises a valve system 19 for controlling the flow of liquid that is discharged from the capsule 3 during operation of the device. The valve system 19 can be arranged on the capsule rotary engaging part 39 in the form of an annular engaging portion 40 which is biased under the force of elastic loading means 27. As can be seen in figure 4, the annular engaging portion 40 includes a pressing peripheral pinching edge 26 which applies a closing force on the peripheral rim 41 of the capsule 3 to be able to restrict the flow of liquid under the force of the elastic loading means 27.

U.S. Patent No. 10,858,176	Disclosure
	As can be seen in figure 4, the elastic loading means 27 can be a rubber-elastic ring member which is supported by an upper and a lower annular seat portion 28, 29. Other means such as spring-biased loading means 27 may as well be applied to the device. It should be understood that the load of the elastic loading means 27 is preferably adjustable. Hence, the pressure of the liquid which has to be exerted on the flow restriction valve 19 in order to enable a discharging of liquid from the capsule 3 to the outlet 35 of the device can be adjusted.Denisart at 40:31-41:16: The upper surface of the capsule 3 may be equipped with a foil 45 which enables sealing of the capsule 3. The foil preferably covers the lid 17 and is welded or adhesively connected onto the peripheral edge 41 of the body of the capsule. The foil can be permanently connected to the edge if the foil is intended to be pierced for forming the inlet and outlets or, alternatively, the connection is peelable. Before the capsule is inserted into the rotary drum 16 of the device, said foil 45 needs to be pierced or removed in order to enable a preparation of the beverage. The lid 17 further comprises a peripheral portion 47 including a collecting recess 18. The collecting recess 18 forms a U-shape in transversal section (figure 6) which opens in the direction of the sealing foil 45. The recess is preferably continuously extending at the periphery of the lid 17 although it can be replaced by several discontinuous recessed portions which may be separated by reinforcing elements or walls, for example.
[1.i] introducing 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;	Denisart discloses, either expressly or inherently, introducing 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. *See, e.g.*: Denisart at 5:14-25: One enclosing member is preferably equipped with a liquid injection assembly which enables the provision of liquid to the capsule enclosed within the centrifugal unit of the device. Preferably, the injection assembly is arranged centrically with respect to a rotational axis of the centrifugal unit. The injection assembly preferably comprises a tubular member for providing

U.S. Patent No. 10,858,176	Disclosure
	liquid to a central inlet port of the capsule. In a possible embodiment, the injection assembly comprises a piercing member designed to pierce the inlet port in a face of the capsule. The injection assembly is connected to the liquid supply means of the device. Denisart at 6:7-20: The liquid supply means of the device comprise a reservoir for storing liquid. Preferably, the reservoir is a boiler which comprises heating means in order to heat the liquid therein. However, the liquid supply means may as well comprise a liquid reservoir and an in-line heating element such as a thermoblock or an instant heater placed downstream of the reservoir in the fluid circuit. Moreover, the liquid supply means preferably comprise a pump for providing liquid from the reservoir to the injection assembly and thus, to the centrifugal unit of the device. The pump is preferably connected to the control means of the device. Denisart at 9:1-4: During the extraction phase, a centrifugal cell which is placed within the centrifugal unit acts as a centrifugal pump by drawing liquid such as water from the liquid supply. Accordingly, the rotational speed of the motor Denisart at 10:9-26: The pump of the liquid supply means is set to supply a sufficient quantity of water during the beverage preparation cycle to the centrifugal cell whereas the rotational speed of the centrifugal cell actually regulates the flow rate of the dispensed liquid. The pump is preferably a low pressure pump such as a centrifugal pump or any other suitable low pressure pump. The contact time between the food ingredients and hot water contained in the capsule varies in inverse proportion to the water flow rate which circulates in the liquid supply circuit and thus, through the centrifugal cell. In general, for obtaining a higher concentration or strength of the

U.S. Patent No. 10,858,176	Disclosure
	beverage to be prepared, the water flow rate can be set at a relatively low value, whereas for obtaining a lighter concentration or strength of the beverage, the water flow rate is set at a relatively higher value. Denisart at 13:7-17: The pre-wetting phase of the extraction profile takes place at the beginning of the beverage preparation cycle. Thereby, liquid such as water is supplied to the centrifugal cell, i.e. the capsule, which is maintained static or is rotated at relatively low speed, preferably lower than 200 rpm, most preferably lower than 100 rpm. Accordingly, the pre-wetting phase enables a homogeneous wetting of the dry food ingredients, i.e., ground coffee, housed within the capsule. Hence, the compacting of dry ingredients and a resulting blockage during the beverage preparation cycle can be effectively prevented. Denisart at 23:25-32: The system further comprises liquid supply means which comprise a water reservoir 6 and a fluid circuit 4. The reservoir 6 preferably comprises water heating means 31 for heating the water contained within the reservoir 6. The heating means 31 may be a heating coil. The heating of the water may as well be obtained by a thermoblock in the fluid circuit 4 and placed downstream relatively to the water reservoir 6. Denisart at 27:23-27: At the beginning of the beverage preparation cycle, and after the user's selection, the centrifugal pump 7 is switched on by the controller 12 and thus, hot water is pumped from the reservoir 6 to the centrifugal cell 3 through the flow-metering turbine 8. Denisart at 34:8-10: The capsule 3 to be used with the device or the system according to the present invention may be any of the capsules described in PCT/EP08/056310 (WO 2008/148646).

U.S. Patent No. 10,858,176	Disclosure
	Denisart at 35:28-36:5: In the shown embodiment, the water injector 21 is designed as a simple water inlet of the capsule. However, the water injector 21 may as well be equipped with puncturing means which are designed to puncture or tear a membrane or foil provided at an upper face of the capsule 3. About the water injector 21 is mounted a capsule rotary engaging part 39. The engaging part 39 has a central bore 39a for receiving the water injector 21 and rotational guiding means such as a ball or needle bearing 25 inserted between the engaging part 39 and the injector 21.
[1.j] unloading the first portion capsule from the apparatus;	Denisart discloses, either expressly or inherently, unloading the first portion capsule from the apparatus. Denisart at 7:21-26: In a preferred mode, the control unit is preferably configured for selecting or calculating different preset flow rates corresponding to respectively different beverage (e.g., coffee) strengths. The control unit is preferably connected to a user's interface for a selection of the different beverages by the user. Denisart at 28:26-29:8: The parameters regarding the rotational speed SA, the volume of the provided liquid and the time ti of the pre- wetting phase A are preferably equal for all different kinds of beverages to be prepared. For example, for different types of coffee beverages such as e.g. λristretto' , 'espresso' or λlungo' , Ni or ti may be the same. However, the parameters of the pre-wetting phase A may as well be set different for different kinds of beverages to provide different wetting profiles. After the pre-wetting phase A, the extraction phase B of the beverage preparation cycle takes place. Hence, when the number Ni of counted impulses is reached, the control means 12 accelerate the driving means 5 in a ramp-up phase B' to the extraction phase B to reach a

U.S. Patent No. 10,858,176	Disclosure
	predetermined speed set-point Si respectively S2 for the rotational speed of the driving means 5. Denisart at 29:14-25: The set point Si, S2 is the initial speed value for the extraction phase which can be determined in relation to the selection made at the manual interface. The set point Si, S2 preferably differs for different beverages such as different coffee beverages for example. As can be seen in figure 2, the set point S2 of the lighter beverage 15 relates to a higher rotational speed of the driving means 5 than the set point S i of the comparatively strong beverage 14, as the contact time between water and the food ingredients within the centrifugal cell 3 is proportionally shorter at a higher rotational speed (at set point S2).
[1.k] 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 a central portion and a plurality of ribs that are radially spaced, vertically oriented, and 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 is sealed and an opposing bottom side with a	Denisart discloses, either expressly or inherently, 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 a central portion and a plurality of ribs that are radially spaced, vertically oriented, and 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 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. *See, e.g.*: *See* [1.b]-[1.i].

U.S. Patent No. 10,858,176	Disclosure
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.	Denisart at 28:26-29:8: The parameters regarding the rotational speed SA, the volume of the provided liquid and the time ti of the pre- wetting phase A are preferably equal for all different kinds of beverages to be prepared. For example, for different types of coffee beverages such as e.g. λristretto' , 'espresso' or λlungo' , Ni or ti may be the same. However, the parameters of the pre-wetting phase A may as well be set different for different kinds of beverages to provide different wetting profiles. After the pre-wetting phase A, the extraction phase B of the beverage preparation cycle takes place. Hence, when the number Ni of counted impulses is reached, the control means 12 accelerate the driving means 5 in a ramp-up phase B' to the extraction phase B to reach a predetermined speed set-point Si respectively S2 for the rotational speed of the driving means 5. Denisart at 29:14-25: The set point Si, S2 is the initial speed value for the extraction phase which can be determined in relation to the selection made at the manual interface. The set point Si, S2 preferably differs for different beverages such as different coffee beverages for example. As can be seen in figure 2, the set point S2 of the lighter beverage 15 relates to a higher rotational speed of the driving means 5 than the set point S i of the comparatively strong beverage 14, as the contact time between water and the food ingredients within the centrifugal cell 3 is proportionally shorter at a higher rotational speed (at set point S2).

U.S. Patent No. 10,858,176	Disclosure
2. The method according to claim 1, wherein one or both of the introducing steps include: inducing turbulent flow of the heated water by the ribs.	Denisart discloses, either expressly or inherently, the method according to claim 1, wherein one or both of the introducing steps include: inducing turbulent flow of the heated water by the ribs. *See, e.g.*: Denisart at 5:14-25: One enclosing member is preferably equipped with a liquid injection assembly which enables the provision of liquid to the capsule enclosed within the centrifugal unit of the device. Preferably, the injection assembly is arranged centrically with respect to a rotational axis of the centrifugal unit. The injection assembly preferably comprises a tubular member for providing liquid to a central inlet port of the capsule. In a possible embodiment, the injection assembly comprises a piercing member designed to pierce the inlet port in a face of the capsule. The injection assembly is connected to the liquid supply means of the device. Denisart at 6:7-20: The liquid supply means of the device comprise a reservoir for storing liquid. Preferably, the reservoir is a boiler which comprises heating means in order to heat the liquid therein. However, the liquid supply means may as well comprise a liquid reservoir and an in-line heating element such as a thermoblock or an instant heater placed downstream of the reservoir in the fluid circuit. Moreover, the liquid supply means preferably comprise a pump for providing liquid from the reservoir to the injection assembly and thus, to the centrifugal unit of the device. The pump is preferably connected to the control means of the device. Denisart at 9:1-4: During the extraction phase, a centrifugal cell which is placed within the centrifugal unit acts as a centrifugal pump by drawing liquid such as water from the liquid supply. Accordingly, the rotational speed of the motor

	Denisart at 10:9-26: The pump of the liquid supply means is set to supply a sufficient quantity of water during the beverage preparation cycle to the centrifugal cell whereas the rotational speed of the centrifugal cell actually regulates the flow rate of the dispensed liquid. The pump is preferably a low pressure pump such as a centrifugal pump or any other suitable low pressure pump. The contact time between the food ingredients and hot water contained in the capsule varies in inverse proportion to the water flow rate which circulates in the liquid supply circuit and thus, through the centrifugal cell. In general, for obtaining a higher concentration or strength of the beverage to be prepared, the water flow rate can be set at a relatively low value, whereas for obtaining a lighter concentration or strength of the beverage, the water flow rate is set at a relatively higher value. Denisart at 13:7-17: The pre-wetting phase of the extraction profile takes place at the beginning of the beverage preparation cycle. Thereby, liquid such as water is supplied to the centrifugal cell, i.e. the capsule, which is maintained static or is rotated at relatively low speed, preferably lower than 200 rpm, most preferably lower than 100 rpm. Accordingly, the pre-wetting phase enables a homogeneous wetting of the dry food ingredients, i.e., ground coffee, housed within the capsule. Hence, the compacting of dry ingredients and a resulting blockage during the beverage preparation cycle can be effectively prevented. Denisart at 23:25-32: The system further comprises liquid supply means which comprise a water reservoir 6 and a fluid circuit 4. The reservoir 6 preferably comprises water heating means 31 for heating the water contained within the reservoir 6. The heating means 31 may be a heating coil. The heating of the water may as well be obtained by a thermoblock in the fluid circuit 4 and placed downstream relatively to the water reservoir 6. Denisart at 27:23-27:

U.S. Patent No. 10,858,176	Disclosure
	At the beginning of the beverage preparation cycle, and after the user's selection, the centrifugal pump 7 is switched on by the controller 12 and thus, hot water is pumped from the reservoir 6 to the centrifugal cell 3 through the flow-metering turbine 8. Denisart at 35:28-36:5: In the shown embodiment, the water injector 21 is designed as a simple water inlet of the capsule. However, the water injector 21 may as well be equipped with puncturing means which are designed to puncture or tear a membrane or foil provided at an upper face of the capsule 3. About the water injector 21 is mounted a capsule rotary engaging part 39. The engaging part 39 has a central bore 39a for receiving the water injector 21 and rotational guiding means such as a ball or needle bearing 25 inserted between the engaging part 39 and the injector 21. *See also* [1].
[redacted]	
3. The method according to claim 1, wherein the method comprises: comparing the read barcode with a stored reference.	Denisart discloses, either expressly or inherently, the method according to claim 1, wherein the method comprises: comparing the read barcode with a stored reference. *See, e.g.*: Denisart at 8:10-19: However, it may as well be possible that the strength and/or volume are set by identification means arranged within the device which interact with the capsule provided to the device. Such identifications means may be a barcode scanner for example which reads a barcode provided on an outside face of the capsule and which enables a detection of the type of capsule and/or the nature of ingredients provided within the capsule in order to apply a predefined extraction profile for the beverage to be prepared.

	Denisart at 9:21-33: The single-use capsule to be used with the present invention can be closed before use in a gas impervious manner to maintain freshness of the food ingredients housed therein. The capsule preferably contains a protective atmosphere for the ingredients such as inert gas. The capsule can be closed by a membrane which is pierced or peeled off during the beverage preparation process The capsule may comprise coding means such as a barcode for example which is read by the machine. Accordingly, corresponding parameters, such as for example the beverage strength, the beverage volume and/or the beverage crema or foam, can be adjusted by the control means. Denisart at 12:4-12: When different kinds of beverage are proposed such as coffee, tea, milk, etc., the selection means may also be used to select the kind of beverage to be prepared in such as coffee, tea, herbal tea, soup or hot chocolate for example. Thereby, the selections means may provide information about different liquid comestibles to be prepared for which different extraction profiles are stored. Denisart at 12:33-13:5: Considering in particular, coffee preparation from ground coffee contained in the cell, i.e., a single-use capsule, the extraction profile set by the control means of the device preferably comprises at least a pre-wetting phase, an extraction phase and a dry-spinning phase which differ normally in at least the associated rotational speed of the driving means. Denisart at 15:21-27: The extraction profile and particularly the rotational speed may vary for each kind of beverage to be prepared in order to influence the concentration or strength of the beverage. Accordingly, different extraction profiles may be chosen by means of the manual interface. The predefined extraction profiles are preferably stored in the control means or memory means connected thereto.

U.S. Patent No. 10,858,176	Disclosure
	Denisart at 20:6-9: The capsule to be used in the device can be associated to a code containing information relative to one or more of the following parameters: flow rates, beverage volumes, speeds, beverage temperatures, etc. Denisart at 26:10-22: Moreover, the central controller 12 preferably comprises a memory (not shown) in which certain parameters of the extraction profile can be saved such as rotational speeds of the centrifugal cell, initial extraction speed of the cell, calibration of the flow meter, prewetting time, dry spinning time, acceleration and deceleration speed ramps, etc. In particular, the controller 12 may contain the set points and values of the rotational speed of the driving means 5 at different phases of the beverage preparation cycle. These parameters serve as part of different predetermined beverage preparation profiles in relation to control algorithms for processing the different profiles on demand. Denisart at 27:29-28:5: Simultaneously or shortly after, the motor speed is started at a low speed to ensure a pre-wetting of the dry food ingredients, e.g., roast and ground coffee, provided within the centrifugal cell respectively the capsule 3. Preferably, said pre-wetting phase A lasts for a given time ti between 3 and 10 seconds. The prewetting time is preferably a time as determined by a count of impulse data generated by the flow sensing means, which is already stored or storable such as by transfer from a code on the capsule or cell in the memory of the controller 12. *See also* [1].
10. The method according to claim 1, wherein the base element	Denisart discloses, either expressly or inherently, the method according to claim 1, wherein the base element of the first portion capsule is made of metal. *See, e.g.*:

U.S. Patent No. 10,858,176	Disclosure
of the first portion capsule is made of metal.	Denisart at 34:8-10: The capsule 3 to be used with the device or the system according to the present invention may be any of the capsules described in PCT/EP08/056310 (WO 2008/148646). *See also* [1].
11. The method according to claim 10, wherein the base element of the second portion capsule is made of metal.	Denisart discloses, either expressly or inherently, the method according to claim 10, wherein the base element of the second portion capsule is made of metal. *See, e.g.*: Denisart at 34:8-10: The capsule 3 to be used with the device or the system according to the present invention may be any of the capsules described in PCT/EP08/056310 (WO 2008/148646). *See also* [1].
12. The method according to claim 1, wherein the first foil lid and/or the second foil lid is made of metal.	Denisart discloses, either expressly or inherently, the method according to claim 1, wherein the first foil lid and/or the second foil lid is made of metal. *See, e.g.*: Denisart at 19:20-27: The capsule to be used with the device according to the present invention is preferably a single-use capsule sealed in a protective atmosphere before use. The capsule can have a rigid dished body and a lid, wherein the lid of the capsule comprises outlet openings arranged at a peripheral portion of the lid. In a possible alternative, the capsule can be capsule permeable to liquid and gas when inserted in the device such as a filter capsule.

U.S. Patent No. 10,858,176	Disclosure
	Denisart at 20:11-21: The injection of the liquid provided by the device preferably takes place at an upper face of the capsule which may already have an inlet port and the injection of liquid can be done by connecting an injection member such as a tube to an inlet port of the capsule. In a possible alternative, a foil of the capsule which covers the lid can be pierced by a piercing member connected to the injection member of the device. The output of the beverage to be prepared takes place at a peripheral section of the lid of the capsule which is provided with a plurality of outlet openings. Denisart at 34:8-10: The capsule 3 to be used with the device or the system according to the present invention may be any of the capsules described in PCT/EP08/056310 (WO 2008/148646). *See also* [1].
[13.pre] A method of making a coffee beverage, comprising steps of:	Denisart discloses, either expressly or inherently, a method of making a coffee beverage. *See, e.g.*: *See* [1.pre].
[13.a] providing an apparatus including a barcode reader configured to read a barcode, the apparatus including a mandrel, a water inlet, and a seal;	Denisart discloses, either expressly or inherently, providing an apparatus including a barcode reader configured to read a barcode, the apparatus including a mandrel, a water inlet, and a seal. *See* [1.a], [1.g], [1.i], [1.h].
[13.b] inserting a first portion capsule into the apparatus, the	Denisart discloses, either expressly or inherently, 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

U.S. Patent No. 10,858,176	Disclosure
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 a wall that defines the cavity with a central interior portion,	a base element having a cavity within which a powdered coffee material is located, the base element has been shaped to define a wall that defines the cavity with a central interior portion. *See, e.g.*: *See* [1.b].
[13.c] having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central interior portion and an outside surface of the wall having plurality of vertically oriented grooves,	Denisart discloses, either expressly or inherently, having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central interior portion and an outside surface of the wall having plurality of vertically oriented grooves. *See, e.g.*: *See* [1.c], [1.e].
[13.d] 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;	Denisart discloses, either expressly or inherently, 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. *See, e.g.*: *See* [1.d].
[13.e] piercing the first lid with the mandrel in a region that is offset from a central axis of the first portion capsule;	Denisart discloses, either expressly or inherently, piercing the first lid with the mandrel in a region that is offset from a central axis of the first portion capsule. *See, e.g.*: *See* [1.g].

U.S. Patent No. 10,858,176	Disclosure
[13.f] sealing the top side of the flange of the first portion capsule and/or the first lid against the seal of the apparatus;	Denisart discloses, either expressly or inherently, sealing the top side of the flange of the first portion capsule and/or the first lid against the seal of the apparatus. *See, e.g.*: *See* [1.h].
[13.g] reading the first barcode with the barcode reader; controlling production of a first coffee beverage based upon the reading of the first barcode; introducing 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;	Denisart discloses, either expressly or inherently, reading the first barcode with the barcode reader; controlling production of a first coffee beverage based upon the reading of the first barcode; introducing 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. *See, e.g.*: *See* [1.f], [1.i].
[13.h] unloading the first portion capsule from the apparatus;	Denisart discloses, either expressly or inherently, unloading the first portion capsule from the apparatus. *See, e.g.*: *See* [1.j].
[13.i] inserting 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	Denisart discloses, either expressly or inherently, inserting 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 a wall that defines a cavity with a central interior portion, and having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the cavity central interior portion, and 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

U.S. Patent No. 10,858,176	Disclosure
been shaped to define a wall that defines a cavity with a central interior portion, and having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the cavity central interior portion, and 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 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	that is located on the bottom side and being different from the first barcode; piercing the second 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. *See, e.g.*: *See* [1.k]; [13.a]-[13.g].

U.S. Patent No. 10,858,176	Disclosure
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.	
14. The method according to claim 13, 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.	Denisart discloses, either expressly or inherently, the method according to claim 13, 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. *See, e.g.*: *See* Denisart at 7:21-26: In a preferred mode, the control unit is preferably configured for selecting or calculating different preset flow rates corresponding to respectively different beverage (e.g., coffee) strengths. The control unit is preferably connected to a user's interface for a selection of the different beverages by the user. *See also* [13].

Exhibit A-4 – Invalidity of U.S. Patent No. 10,858,176 in view of Erlandsson

INVALIDITY CLAIM CHART
Invalidity of U.S. Patent No. 10,858,176 in view of Erlandsson

According to its cover page, U.S. Patent Pub. 2007/0203587A1 ("Erlandsson") was published on August 30, 2007. Erlandsson therefore constitutes prior art to the '176 Patent under pre-AIA 35 U.S.C. § 102(b). Erlandsson anticipates and/or renders obvious the Asserted Claims of the '176 Patent (at least as Nespresso understands K-fee's application of the Asserted Claims in an effort to show infringement).

To the extent K-fee argues that any element below is not disclosed by Erlandsson, a person of ordinary skill in the art would have found it obvious to combine the teachings of Erlandsson with the background knowledge of a person of ordinary skill in the art and/or the additional references, and exemplary teachings, set forth in Exhibits A-1 to A-9 and in Appendix A.

The chart below provides representative examples of where each element of each claim is found within Erlandsson. Citations are meant to be exemplary, not exhaustive, and Nespresso reserves the right to identify and discuss additional portions of the reference in support of its contentions and/or to rebut arguments made by K-fee. Citations to figures, drawings, tables, and the like include reference to any accompanying or related text. All internal cross references are meant to incorporate the cross-referenced material as if fully set forth therein.

It is Nespresso's position that K-fee's Infringement Contentions have not established that any accused product or service infringes any valid claim. Thus, Nespresso's statements below should not be treated as an admission, implication, or suggestion that Nespresso agrees with K-fee regarding either the scope, construction, or interpretation of any of the Asserted Claims, or the infringement theories advanced by K-fee in its Infringement Contentions, including whether any Asserted Claim satisfies 35 U.S.C. §§ 101 or 112. In certain cases, Nespresso specified non-limiting examples of where its application of the prior art is based on K-fee's apparent application of the claim element. These statements are not intended to suggest that Nespresso agrees with K-fee's application of any claim term, suggest a proposed construction at this stage of the case, or suggest that construction is needed, as the parties are not required to exchange terms for construction or proposed constructions until a later date.

K-fee has yet to identify any limitation of the Asserted Claims that it contends is not anticipated and/or rendered obvious by Erlandsson. Nespresso therefore expressly reserves the right to respond to any such contention, including by identifying additional obviousness combinations, if K-fee makes any such contention.

Where Nespresso states that Erlandsson "discloses" a limitation, that disclosure may be express, implicit, and/or inherent.

U.S. Patent No. 10,858,176	Disclosure
[1.pre] A method of making a coffee beverage comprising:	Erlandsson discloses, either expressly or inherently, a method for making a coffee beverage. *See, e.g.*: Erlandsson at Abstract: The invention relates to a system (1) for preparing a beverage from a beverage base material (5), comprising an apparatus (2) for preparing a beverage extract from a beverage base material (5) and a liquid and a container (3) for containing the beverage base material (5) during storage, the container (3) comprising an identifier (4) provided with data (A), which apparatus (2) comprises a reader (14) for reading the data (A) in said identifier (4) and a controller (6) for controlling a beverage brewing process in dependence on the data (A) during operation of the apparatus (2). In this manner the brewing process parameters for the beverage extract can be optimized for the specific variety of beverage in a user-friendly manner. Erlandsson at [0006]: To achieve this object, a system according to the invention is characterized in that the container comprises an identifier provided with data, and the apparatus comprises a reader for reading the data in said identifier, and a controller for controlling a preparation process during operation of the apparatus based on the data. When a user wants to prepare a consumable matter, such as a cup of beverage, for example coffee, the container is picked up and placed in the vicinity of the apparatus, to take out the basis material, in this case coffee pad. This basis material is then placed in the apparatus for preparing a consumable matter, for example an apparatus for preparing a beverage. When the container is present at a certain predetermined distance from the apparatus, the reader in the apparatus is able to read the data that are provided in the identifier comprised in the container. Based on this information, the controller in the apparatus controls a preparation during operation of the apparatus, which is based on the data in the identifier. In this manner the parameters of the preparation process can be tailored to their optimum, to obtain an optimum result for the prepared consumable matter.

U.S. Patent No. 10,858,176	Disclosure
	See also Erlandsson at Claims 1-8.
[1.a] providing an apparatus including a barcode reader;	Erlandsson discloses, either expressly or inherently, providing an apparatus including a barcode reader. *See, e.g.*: Erlandsson at [0006]-[0008]: To achieve this object, a system according to the invention is characterized in that the container comprises an identifier provided with data, and the apparatus comprises a reader for reading the data in said identifier, and a controller for controlling a preparation process during operation of the apparatus based on the data. When a user wants to prepare a consumable matter, such as a cup of beverage, for example coffee, the container is picked up and placed in the vicinity of the apparatus, to take out the basis material, in this case coffee pad. This basis material is then placed in the apparatus for preparing a consumable matter, for example an apparatus for preparing a beverage. When the container is present at a certain predetermined distance from the apparatus, the reader in the apparatus is able to read the data that are provided in the identifier comprised in the container. Based on this information, the controller in the apparatus controls a preparation during operation of the apparatus, which is based on the data in the identifier. In this manner the parameters of the preparation process can be tailored to their optimum, to obtain an optimum result for the prepared consumable matter. An embodiment according to the invention is characterized in that the container comprises an identifier provided with data, and the apparatus comprises a reader for reading the data in said identifier and a controller for controlling a beverage brewing process in dependence on the data during operation of the apparatus. When a user wants to prepare a cup of beverage, for example coffee, the container is picked up and placed in the vicinity of the apparatus, and the beverage base material is taken out. This beverage base material is then placed in the apparatus for preparing a beverage. When the container is present at a certain predetermined distance from the apparatus, the reader in the apparatus is able to read the data provided in the identifier comprised in the container. Based on this information, the controller in the apparatus controls a beverage brewing process during operation of the apparatus, which is

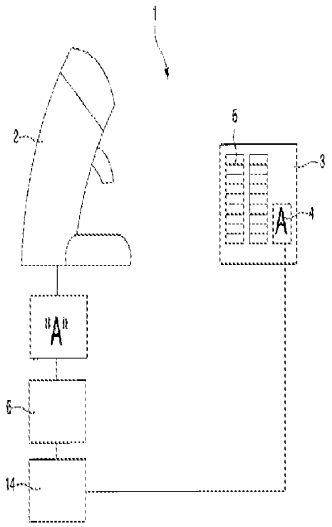
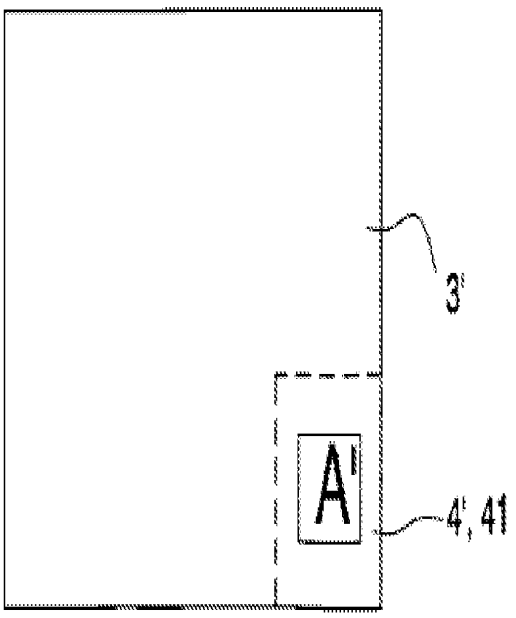
U.S. Patent No. 10,858,176	Disclosure
	based on the data in the identifier. In this manner the parameters of the brewing process can be optimized so as to obtain an optimum beverage result. An embodiment of a system according to the invention is characterized in that the data comprise information identifying the type of beverage base material comprised in the container. In this manner the brewing process parameters can be optimized for the specific type of beverage such as, for example, coffee or hot chocolate. Erlandsson at [0012]: An embodiment of a system according to the invention is characterized in that said controller comprises a processing unit which comprises a plurality of pre-programmed brewing process parameters, from which a selection is made during operation in dependence on the data as read. Various brewing processing parameters for different beverage types are pre-programmed into the processing unit and are assigned different integers. The integer corresponding to the most appropriate program for the beverage base material in the container is present as the data in the identifier and is read as such by the reader when the container is present at a certain predetermined distance from the apparatus. Based on this read integer, the program with appropriate brewing processing parameters is then activated in the apparatus by the controller for preparing a beverage extract. Erlandsson at [0016]: The invention further relates to an apparatus for preparing a beverage extract from beverage base material and a liquid, for use with the system according to the invention, characterized in that said apparatus comprises a reader for reading data in an identifier which is comprised in a container for containing a beverage base material, and a controller for controlling a beverage brewing process in dependence on the data during operation of the apparatus.

	Erlandsson at [0024]: The container 3 comprises an identifier 4 provided with data A, and the apparatus 2 comprises a reader 14 for reading the data A in said identifier. The identifier in this embodiment comprises a radio frequency transponder which can be read by a radio frequency reader comprised in the apparatus. In this embodiment, a radio frequency transponder is placed in every bag, and a radio frequency reader incorporated into the beverage maker. There are several methods of identifying objects using RFID, but the most common one is to store a serial number that identifies a product, and perhaps other information, on a microchip that is attached to an antenna (the chip and the antenna together are called an RFID transponder or an RFID tag). The reader sends out electromagnetic waves that induce a current in the tag's antenna, powering the chip, and enabling transmission of the identification information back to the reader. The reader demodulates the radio waves returned from the RFID tag, then interprets the serial number. In this application, the range of the reader will be limited so that data stored on the tag can be read by bringing the bag into close proximity with the beverage maker, avoiding any conflict with other bags the user may have purchased. Erlandsson at [0026]: It is noted that other known types of identifier technologies, such as bar codes on the container and a bar code reader in or connected to the apparatus, may also be applied. The apparatus 2 further comprises a controller 6 for controlling a beverage brewing process "A" during operation of the apparatus 2 based on the data A. This will be further illustrated with an example. Erlandsson at [0028]: In this embodiment, the controller 6 comprises a processing unit which comprises a plurality of pre-programmed brewing process parameters from which a selection is made during operation dependent on the data as read. The processing unit in the apparatus comprises various pre-programmed brewing processes, which are assigned different integers. The data in the identifier in each container comprise an integer corresponding to the most appropriate

U.S. Patent No. 10,858,176	Disclosure
	brewing process for the specific type of beverage base material comprised in the container. After reading out of the integer by the reader, the correct pre-programmed brewing process is selected by the controller in dependence on that integer, to control the operation of the apparatus. In another embodiment, the data in the identifier itself comprise specific brewing parameters such as a pre-selected fluid quantity, fluid temperature, and fluid pass-through rate, which are read out by the reader and transferred to the control unit 6 to control the beverage brewing process. Erlandsson at [0032]: FIG. 2a is a schematic view of a container 3' for containing a beverage base material during storage, for use with a system according to the invention. Said container 3' comprises an identifier 4' provided with data A', said data A', being readable by a reader in an apparatus for preparing a beverage, and a beverage brewing process during operation of the apparatus being controlled in dependence on the data. In this embodiment, the identifier 4' comprises an element 41 which is detachably connected to the container 3'. The element 41 in this embodiment is connected to the container via a perforated line and can be torn off the container 3'. It is noted that the element 41 may also be detachably connected to the container by means of other known types of connections, the element for example comprising a sticker or a clip which is removably attached to the container. Erlandsson at [0033]: In another embodiment, the identifier comprises a separate element for inclusion in a container for containing the beverage base material during storage, which element is provided with data which can be read by a reader in an apparatus for preparing a beverage, and a beverage brewing process during operation of the apparatus being controlled in dependence on said data.
[1.b] inserting a first portion capsule into the apparatus, the first portion capsule including a first foil lid sealed to a base element having a	Erlandsson discloses, either expressly or inherently, 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. *See, e.g.*:

U.S. Patent No. 10,858,176	Disclosure
cavity within which a powdered coffee material is located, the cavity being free of a filter and including a central portion,	Erlandsson at [0006]: To achieve this object, a system according to the invention is characterized in that the container comprises an identifier provided with data, and the apparatus comprises a reader for reading the data in said identifier, and a controller for controlling a preparation process during operation of the apparatus based on the data. When a user wants to prepare a consumable matter, such as a cup of beverage, for example coffee, the container is picked up and placed in the vicinity of the apparatus, to take out the basis material, in this case coffee pad. This basis material is then placed in the apparatus for preparing a consumable matter, for example an apparatus for preparing a beverage. When the container is present at a certain predetermined distance from the apparatus, the reader in the apparatus is able to read the data that are provided in the identifier comprised in the container. Based on this information, the controller in the apparatus controls a preparation during operation of the apparatus, which is based on the data in the identifier. In this manner the parameters of the preparation process can be tailored to their optimum, to obtain an optimum result for the prepared consumable matter. Erlandsson at [0007]: An embodiment according to the invention is characterized in that the container comprises an identifier provided with data, and the apparatus comprises a reader for reading the data in said identifier and a controller for controlling a beverage brewing process in dependence on the data during operation of the apparatus. When a user wants to prepare a cup of beverage, for example coffee, the container is picked up and placed in the vicinity of the apparatus, and the beverage base material is taken out. This beverage base material is then placed in the apparatus for preparing a beverage. When the container is present at a certain predetermined distance from the apparatus, the reader in the apparatus is able to read the data provided in the identifier comprised in the container. Based on this information, the controller in the apparatus controls a beverage brewing process during operation of the apparatus, which is based on the data in the identifier. In this manner the parameters of the brewing process can be optimized so as to obtain an optimum beverage result.

U.S. Patent No. 10,858,176	Disclosure
	Erlandsson at [0022]: FIGS. 3a, 3b and 3c are perspective views of further embodiments of an identifier according to the invention. Erlandsson at [0023]: FIG. 1 is a schematic view of a system 1 according to the invention, comprising an apparatus 2 in this embodiment an apparatus for preparing a beverage extract from beverage base material 5 and a liquid, and a container 3 for containing the beverage base material 5 during storage. In this embodiment, the beverage base material 5 comprises a plurality of pouches 51 made of filter material and containing ground coffee. One or two pouches, depending on whether one or two cups of beverage are to be prepared, are placed in a holder in the apparatus, to prepare a coffee extract from the ground coffee and water that flows through the pouch during the brewing process in the apparatus. It is noted, however, that the beverage base material 5 may comprise alternative types of beverage base material, with or without an enclosure of filter material such as, for example, loose ground coffee, chocolate milk powder, or tea leaves in a teabag. The container 3 in this embodiment comprises a flexible bag comprising a plurality of coffee pouches, but it is noted that this container may comprise any known type of container such as, for example, tins, canisters, boxes, etc., for containing any type of beverage base material.

U.S. Patent No. 10,858,176	Disclosure
	Erlandsson at Fig. 1:  Fig.1 Erlandsson at Fig. 2a: 

U.S. Patent No. 10,858,176	Disclosure
[1.c] and a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central portion of the cavity,	
[1.d] 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,	Erlandsson discloses, either expressly or inherently, 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. *See, e.g.*: Erlandsson at [0005]-[0008]: It is an object of the invention to provide a system for preparing a consumable matter in which the parameters can be tailored to their optimum for the specific variety of consumable matter, in a user-friendly manner. To achieve this object, a system according to the invention is characterized in that the container comprises an identifier provided with data, and the apparatus comprises a reader for reading the data in said identifier, and a controller for controlling a preparation process during operation of the apparatus based on the data. When a user wants to prepare a consumable matter, such as a cup of beverage, for example coffee, the container is picked up and placed in the vicinity of the apparatus, to take out the basis material, in this case coffee pad. This basis material is then placed in the apparatus for preparing a consumable matter, for example an apparatus for preparing a beverage. When the container is present at a certain predetermined distance from the apparatus, the reader in the apparatus is able to read the data that are provided in the identifier comprised in the container. Based on this information, the controller in the apparatus controls a preparation during operation of the apparatus, which is based on the data in the identifier. In this manner the parameters of the preparation process can be tailored to their optimum, to obtain an optimum result for the prepared consumable matter. An embodiment according to the invention is characterized in that the container comprises an identifier provided with data, and the apparatus comprises a reader for reading the data in said identifier and a controller for controlling a beverage brewing process in dependence on

U.S. Patent No. 10,858,176	Disclosure
	the data during operation of the apparatus. When a user wants to prepare a cup of beverage, for example coffee, the container is picked up and placed in the vicinity of the apparatus, and the beverage base material is taken out. This beverage base material is then placed in the apparatus for preparing a beverage. When the container is present at a certain predetermined distance from the apparatus, the reader in the apparatus is able to read the data provided in the identifier comprised in the container. Based on this information, the controller in the apparatus controls a beverage brewing process during operation of the apparatus, which is based on the data in the identifier. In this manner the parameters of the brewing process can be optimized so as to obtain an optimum beverage result. An embodiment of a system according to the invention is characterized in that the data comprise information identifying the type of beverage base material comprised in the container. In this manner the brewing process parameters can be optimized for the specific type of beverage such as, for example, coffee or hot chocolate. Erlandsson at [0023]-[0026]: FIG. 1 is a schematic view of a system 1 according to the invention, comprising an apparatus 2 in this embodiment an apparatus for preparing a beverage extract from beverage base material 5 and a liquid, and a container 3 for containing the beverage base material 5 during storage. In this embodiment, the beverage base material 5 comprises a plurality of pouches 51 made of filter material and containing ground coffee. One or two pouches, depending on whether one or two cups of beverage are to be prepared, are placed in a holder in the apparatus, to prepare a coffee extract from the ground coffee and water that flows through the pouch during the brewing process in the apparatus. It is noted, however, that the beverage base material 5 may comprise alternative types of beverage base material, with or without an enclosure of filter material such as, for example, loose ground coffee, chocolate milk powder, or tea leaves in a teabag. The container 3 in this embodiment comprises a flexible bag comprising a plurality of coffee pouches, but it is noted that this container may comprise any known type of container such as, for example, tins, canisters, boxes, etc., for containing any type of beverage base material.

U.S. Patent No. 10,858,176	Disclosure
	The container 3 comprises an identifier 4 provided with data A, and the apparatus 2 comprises a reader 14 for reading the data A in said identifier. The identifier in this embodiment comprises a radio frequency transponder which can be read by a radio frequency reader comprised in the apparatus. In this embodiment, a radio frequency transponder is placed in every bag, and a radio frequency reader incorporated into the beverage maker. There are several methods of identifying objects using RFID, but the most common one is to store a serial number that identifies a product, and perhaps other information, on a microchip that is attached to an antenna (the chip and the antenna together are called an RFID transponder or an RFID tag). The reader sends out electromagnetic waves that induce a current in the tag's antenna, powering the chip, and enabling transmission of the identification information back to the reader. The reader demodulates the radio waves returned from the RFID tag, then interprets the serial number. In this application, the range of the reader will be limited so that data stored on the tag can be read by bringing the bag into close proximity with the beverage maker, avoiding any conflict with other bags the user may have purchased. Interpretation of the tag's data will lead to verification of the manufacturer and unique identification of the variety of beverage within the pad, so that the brewing parameters can be optimized for the drink. This optimization can be achieved either by selection of pre-programmed parameters, or by interpretation of the data provided by the RF tag into brewing instructions, increasing brewing versatility and allowing the introduction of new beverage types after manufacture of the beverage maker. If no tag or a tag of some unrecognized format is detected, default brewing parameters will be adopted. It is noted that other known types of identifier technologies, such as bar codes on the container and a bar code reader in or connected to the apparatus, may also be applied. The apparatus 2 further comprises a controller 6 for controlling a beverage brewing process "A" during operation of the apparatus 2 based on the data A. This will be further illustrated with an example.
[1.e] the base element of the first portion capsule includes an outside	

U.S. Patent No. 10,858,176	Disclosure
surface having a plurality of vertically oriented grooves;	
[1.f] 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;	Erlandsson discloses, either expressly or inherently, 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. *See, e.g.*: Erlandsson at [0005]-[0008]: It is an object of the invention to provide a system for preparing a consumable matter in which the parameters can be tailored to their optimum for the specific variety of consumable matter, in a user-friendly manner. To achieve this object, a system according to the invention is characterized in that the container comprises an identifier provided with data, and the apparatus comprises a reader for reading the data in said identifier, and a controller for controlling a preparation process during operation of the apparatus based on the data. When a user wants to prepare a consumable matter, such as a cup of beverage, for example coffee, the container is picked up and placed in the vicinity of the apparatus, to take out the basis material, in this case coffee pad. This basis material is then placed in the apparatus for preparing a consumable matter, for example an apparatus for preparing a beverage. When the container is present at a certain predetermined distance from the apparatus, the reader in the apparatus is able to read the data that are provided in the identifier comprised in the container. Based on this information, the controller in the apparatus controls a preparation during operation of the apparatus, which is based on the data in the identifier. In this manner the parameters of the preparation process can be tailored to their optimum, to obtain an optimum result for the prepared consumable matter. An embodiment according to the invention is characterized in that the container comprises an identifier provided with data, and the apparatus comprises a reader for reading the data in said identifier and a controller for controlling a beverage brewing process in dependence on the data during operation of the apparatus. When a user wants to prepare a cup of beverage, for example coffee, the container is picked up and placed in the vicinity of the apparatus, and

U.S. Patent No. 10,858,176	Disclosure
	the beverage base material is taken out. This beverage base material is then placed in the apparatus for preparing a beverage. When the container is present at a certain predetermined distance from the apparatus, the reader in the apparatus is able to read the data provided in the identifier comprised in the container. Based on this information, the controller in the apparatus controls a beverage brewing process during operation of the apparatus, which is based on the data in the identifier. In this manner the parameters of the brewing process can be optimized so as to obtain an optimum beverage result. An embodiment of a system according to the invention is characterized in that the data comprise information identifying the type of beverage base material comprised in the container. In this manner the brewing process parameters can be optimized for the specific type of beverage such as, for example, coffee or hot chocolate. Erlandsson at [0011]-[0012]: It is advantageous when the identifier comprises an identifier chosen from a group of radio frequency transponders and bar codes, and the reader comprises a reader chosen from a group of radio frequency readers and bar code readers. An embodiment of a system according to the invention is characterized in that said controller comprises a processing unit which comprises a plurality of pre-programmed brewing process parameters, from which a selection is made during operation in dependence on the data as read. Various brewing processing parameters for different beverage types are pre-programmed into the processing unit and are assigned different integers. The integer corresponding to the most appropriate program for the beverage base material in the container is present as the data in the identifier and is read as such by the reader when the container is present at a certain predetermined distance from the apparatus. Based on this read integer, the program with appropriate brewing processing parameters is then activated in the apparatus by the controller for preparing a beverage extract. Erlandsson at [0015]-[0017]:

U.S. Patent No. 10,858,176	Disclosure
	The invention further relates to a container for containing a beverage base material during storage, for use with the system according to the invention, characterized in that said container comprises an identifier provided with data, said data being readable by a reader in an apparatus for preparing a beverage, and a beverage brewing process being controlled in dependence on the data during operation of the apparatus. The invention further relates to an apparatus for preparing a beverage extract from beverage base material and a liquid, for use with the system according to the invention, characterized in that said apparatus comprises a reader for reading data in an identifier which is comprised in a container for containing a beverage base material, and a controller for controlling a beverage brewing process in dependence on the data during operation of the apparatus. The invention further relates to an identifier for use with the system according to the invention, characterized in that said identifier comprises a separate element for inclusion in a container for containing the beverage base material during storage, which element is provided with data which are readable by a reader in an apparatus for preparing a beverage, and a beverage brewing process being controlled in dependence on said data during operation of the apparatus. Erlandsson at [0025]-[0029]: Interpretation of the tag's data will lead to verification of the manufacturer and unique identification of the variety of beverage within the pad, so that the brewing parameters can be optimized for the drink. This optimization can be achieved either by selection of pre-programmed parameters, or by interpretation of the data provided by the RF tag into brewing instructions, increasing brewing versatility and allowing the introduction of new beverage types after manufacture of the beverage maker. If no tag or a tag of some unrecognized format is detected, default brewing parameters will be adopted. It is noted that other known types of identifier technologies, such as bar codes on the container and a bar code reader in or connected to the apparatus, may also be applied. The

U.S. Patent No. 10,858,176	Disclosure
	apparatus 2 further comprises a controller 6 for controlling a beverage brewing process "A" during operation of the apparatus 2 based on the data A. This will be further illustrated with an example. In this embodiment, the data A comprise information identifying the type of beverage base material present in the container, for example, 'regular roast coffee'. A user will pick up the container and bring it into the vicinity of the apparatus for preparing a beverage, in this embodiment coffee extract. When the container is in a certain predetermined area around the apparatus, said area being defined by the chosen identifier and reader, the reader 14 in the apparatus is able to read the type of beverage base material that is contained in the container, in this case `regular roast coffee'. After reading of this data, the controller 6 in the apparatus 2 is ready to initiate a beverage brewing process which is especially designed for this specific type of beverage. The specific beverage brewing process comprises the optimum parameters such as fluid temperature, fluid pressure, and fluid pass-through rate for this specific type of beverage, which ensure an optimal cup of `regular roast coffee' resulting from the beverage brewing process in the apparatus 2. It is noted that the specific brewing process in the apparatus may start after activation of the on/off button of the apparatus by the user, after a certain pre-determined period of time starting from the moment the data are read, or upon detection of a pouch being placed in the holder of the apparatus. In this embodiment, the controller 6 comprises a processing unit which comprises a plurality of pre-programmed brewing process parameters from which a selection is made during operation dependent on the data as read. The processing unit in the apparatus comprises various pre-programmed brewing processes, which are assigned different integers. The data in the identifier in each container comprise an integer corresponding to the most appropriate brewing process for the specific type of beverage base material comprised in the container. After reading out of the integer by the reader, the correct pre-programmed brewing process is selected by the controller in dependence on that integer, to control the operation of the apparatus. In another embodiment, the data in the identifier itself comprise specific brewing parameters such as a pre-selected fluid quantity, fluid temperature, and fluid pass-through rate, which are read out by the reader and transferred to the control unit 6 to control the beverage brewing process.

U.S. Patent No. 10,858,176	Disclosure
	Furthermore, the apparatus may comprise a function to add additives such as milk, sugar, cream, and the like to the beverage extract, which addition can be controlled by reference to the data in the identifier. Erlandsson at [0032]-[0033]: FIG. 2a is a schematic view of a container 3' for containing a beverage base material during storage, for use with a system according to the invention. Said container 3' comprises an identifier 4' provided with data A', said data A' being readable by a reader in an apparatus for preparing a beverage, and a beverage brewing process during operation of the apparatus being controlled in dependence on the data. In this embodiment, the identifier 4' comprises an element 41 which is detachably connected to the container 3'. The element 41 in this embodiment is connected to the container via a perforated line and can be torn off the container 3'. It is noted that the element 41 may also be detachably connected to the container by means of other known types of connections, the element for example comprising a sticker or a clip which is removably attached to the container. In another embodiment, the identifier comprises a separate element for inclusion in a container for containing the beverage base material during storage, which element is provided with data which can be read by a reader in an apparatus for preparing a beverage, and a beverage brewing process during operation of the apparatus being controlled in dependence on said data. Erlandsson at [0035]: Other embodiments of these elements are shown in FIGS. 3a and 3b. FIG. 3a shows a rigid tag 44 with a flange positioned at a variable distance from its free end, which tag is included in the container with the beverage base material. This tag 44 can be inserted into a recess in the body of the beverage making apparatus, where it operates a spring-loaded sliding switch that indicates the length of the tag and thus controls the beverage processing parameters. FIG. 3b shows a rigid tag 45 with a notch positioned a variable distance from an orientation

U.S. Patent No. 10,858,176	Disclosure
	feature at one side of the tag, which is included in the container with the beverage base material. This tag can be inserted into a recess in the beverage making apparatus, where it operates a sliding switch that indicates the position of the notch and thus controls the beverage brewing parameters. Erlandsson at [0037]: It is noted that, in addition to systems for preparing coffee extract from ground coffee and water, the invention is also advantageously applicable to other systems for preparing a beverage extract from beverage base material and a liquid. The beverage base material may comprise, for example, other types of beverage base material such as milk powder, chocolate milk powder, soft drink syrup, tea leaves, dried soup, etc. These materials may be in loose form, or may be enclosed in a filter material or a capsule. The liquid may comprise, for example, other types of liquid such as milk, beer, carbonated water, etc. It is noted that the term beverage brewing process is not limited to the preparation of hot beverage extracts such as coffee, but that the preparation of cold drinks such as soft drinks is also included. The specific brewing parameters that are controlled via the identifier are dependent on the type of beverage extract to be prepared. Erlandsson at [0043]: In this embodiment, a system according to the invention is characterized in that the container, in this embodiment a beer keg, comprises an identifier provided with data, and the apparatus, in this case a beer tapping device, comprises a reader for reading the data in said identifier, and a controller for controlling the preparation during operation of the apparatus based on the data. The identifier comprises for example information as to what kind of temperature the apparatus should cool the beer, before the beer is tapped into a glass, and the correct pressure to be applied in the apparatus. In this manner the parameters to be used in the tapping device for the tapping process can be tailored to their optimum, to obtain an optimum result of the tapped beer. Different types of beer may for example require, among other things, different tapping temperatures and pressures.

U.S. Patent No. 10,858,176	Disclosure
	Erlandsson at [0044]: It is noted furthermore that next to an application with beverage base material and liquid, the invention also relates to other types of applications with consumable matter, such as for example a system for baking bread. In this embodiment, a system according to the invention is characterized in that the container, in this embodiment a container holding bread flour mix, comprises an identifier provided with data, and the apparatus, in this case a bread baking device, comprises a reader for reading the data in said identifier, and a controller for controlling the preparation of a baked bread during operation of the apparatus based on the data. The parameters controlled here may comprise for example baking temperature, duration of baking, rising time of dough, duration of kneading, etc., depending on the type of bread flour mix present in the container. See also [1.a] and [1.d].
[1.g] 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;	
[1.h] sealing the first foil lid against a seal of the apparatus;	
[1.i] introducing 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;	Erlandsson discloses, either expressly or inherently, introducing 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. *See, e.g.*: Erlandsson at [0003]: A system for preparing a consumable matter as described in the opening paragraph is known from EP0904718. The known system comprises an apparatus for preparing a coffee extract from ground coffee and water. The ground coffee is contained in a pouch made of a filter material, which pouch is placed in a holder in the apparatus. During operation hot water passes through the pouch to create a coffee extract which is then transported into a cup. The

U.S. Patent No. 10,858,176	Disclosure
	coffee pouches are sold in a container, in this case a bag, which contains a number of pouches. Numerous varieties of coffee pouches are offered to the consumer, who can select his or her preferred cup of coffee. These varieties may comprise for example coffee with special flavors (vanilla, chocolate etc.), coffee of varying strengths, or coffee without caffeine. Erlandsson at [0023]: FIG. 1 is a schematic view of a system 1 according to the invention, comprising an apparatus 2 in this embodiment an apparatus for preparing a beverage extract from beverage base material 5 and a liquid, and a container 3 for containing the beverage base material 5 during storage. In this embodiment, the beverage base material 5 comprises a plurality of pouches 51 made of filter material and containing ground coffee. One or two pouches, depending on whether one or two cups of beverage are to be prepared, are placed in a holder in the apparatus, to prepare a coffee extract from the ground coffee and water that flows through the pouch during the brewing process in the apparatus. It is noted, however, that the beverage base material 5 may comprise alternative types of beverage base material, with or without an enclosure of filter material such as, for example, loose ground coffee, chocolate milk powder, or tea leaves in a teabag. The container 3 in this embodiment comprises a flexible bag comprising a plurality of coffee pouches, but it is noted that this container may comprise any known type of container such as, for example, tins, canisters, boxes, etc., for containing any type of beverage base material.
[1.j] unloading the first portion capsule from the apparatus;	Erlandsson discloses, either expressly or inherently, unloading the first portion capsule from the apparatus. *See, e.g.*: Erlandsson at [0003]: A system for preparing a consumable matter as described in the opening paragraph is known from EP0904718. The known system comprises an apparatus for preparing a coffee extract from ground coffee and water. The ground coffee is contained in a pouch made of a filter material, which pouch is placed in a holder in the apparatus. During operation hot water passes through the pouch to create a coffee extract which is then transported into a cup. The

U.S. Patent No. 10,858,176	Disclosure
	coffee pouches are sold in a container, in this case a bag, which contains a number of pouches. Numerous varieties of coffee pouches are offered to the consumer, who can select his or her preferred cup of coffee. These varieties may comprise for example coffee with special flavors (vanilla, chocolate etc.), coffee of varying strengths, or coffee without caffeine.
[1.k] 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 a central portion and a plurality of ribs that are radially spaced, vertically oriented, and 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 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	Erlandsson discloses, either expressly or inherently, 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 a central portion and a plurality of ribs that are radially spaced, vertically oriented, and 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 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. *See, e.g.*: *See* [1.b]-[1.i].

U.S. Patent No. 10,858,176	Disclosure
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.	
[redacted]	
2. The method according to claim 1, wherein one or both of the introducing steps include: inducing turbulent flow of the heated water by the ribs.	
[redacted]	
3. The method according to claim 1, wherein the method comprises: comparing the read barcode with a stored reference.	Erlandsson discloses, either expressly or inherently, the method according to claim 1, wherein the method comprises: comparing the read barcode with a stored reference. *See, e.g.*: Erlandsson at [0006]-[0008]:

U.S. Patent No. 10,858,176	Disclosure
	To achieve this object, a system according to the invention is characterized in that the container comprises an identifier provided with data, and the apparatus comprises a reader for reading the data in said identifier, and a controller for controlling a preparation process during operation of the apparatus based on the data. When a user wants to prepare a consumable matter, such as a cup of beverage, for example coffee, the container is picked up and placed in the vicinity of the apparatus, to take out the basis material, in this case coffee pad. This basis material is then placed in the apparatus for preparing a consumable matter, for example an apparatus for preparing a beverage. When the container is present at a certain predetermined distance from the apparatus, the reader in the apparatus is able to read the data that are provided in the identifier comprised in the container. Based on this information, the controller in the apparatus controls a preparation during operation of the apparatus, which is based on the data in the identifier. In this manner the parameters of the preparation process can be tailored to their optimum, to obtain an optimum result for the prepared consumable matter. An embodiment according to the invention is characterized in that the container comprises an identifier provided with data, and the apparatus comprises a reader for reading the data in said identifier and a controller for controlling a beverage brewing process in dependence on the data during operation of the apparatus. When a user wants to prepare a cup of beverage, for example coffee, the container is picked up and placed in the vicinity of the apparatus, and the beverage base material is taken out. This beverage base material is then placed in the apparatus for preparing a beverage. When the container is present at a certain predetermined distance from the apparatus, the reader in the apparatus is able to read the data provided in the identifier comprised in the container. Based on this information, the controller in the apparatus controls a beverage brewing process during operation of the apparatus, which is based on the data in the identifier. In this manner the parameters of the brewing process can be optimized so as to obtain an optimum beverage result. An embodiment of a system according to the invention is characterized in that the data comprise information identifying the type of beverage base material comprised in the

U.S. Patent No. 10,858,176	Disclosure
	container. In this manner the brewing process parameters can be optimized for the specific type of beverage such as, for example, coffee or hot chocolate. Erlandsson at [0011]-[0012]: It is advantageous when the identifier comprises an identifier chosen from a group of radio frequency transponders and bar codes, and the reader comprises a reader chosen from a group of radio frequency readers and bar code readers. An embodiment of a system according to the invention is characterized in that said controller comprises a processing unit which comprises a plurality of pre-programmed brewing process parameters, from which a selection is made during operation in dependence on the data as read. Various brewing processing parameters for different beverage types are pre-programmed into the processing unit and are assigned different integers. The integer corresponding to the most appropriate program for the beverage base material in the container is present as the data in the identifier and is read as such by the reader when the container is present at a certain predetermined distance from the apparatus. Based on this read integer, the program with appropriate brewing processing parameters is then activated in the apparatus by the controller for preparing a beverage extract. Erlandsson at [0015]-[0017]: The invention further relates to a container for containing a beverage base material during storage, for use with the system according to the invention, characterized in that said container comprises an identifier provided with data, said data being readable by a reader in an apparatus for preparing a beverage, and a beverage brewing process being controlled in dependence on the data during operation of the apparatus. The invention further relates to an apparatus for preparing a beverage extract from beverage base material and a liquid, for use with the system according to the invention, characterized in that said apparatus comprises a reader for reading data in an identifier which is comprised

U.S. Patent No. 10,858,176	Disclosure
	in a container for containing a beverage base material, and a controller for controlling a beverage brewing process in dependence on the data during operation of the apparatus. The invention further relates to an identifier for use with the system according to the invention, characterized in that said identifier comprises a separate element for inclusion in a container for containing the beverage base material during storage, which element is provided with data which are readable by a reader in an apparatus for preparing a beverage, and a beverage brewing process being controlled in dependence on said data during operation of the apparatus. Erlandsson at [0025]-[0029]: Interpretation of the tag's data will lead to verification of the manufacturer and unique identification of the variety of beverage within the pad, so that the brewing parameters can be optimized for the drink. This optimization can be achieved either by selection of pre-programmed parameters, or by interpretation of the data provided by the RF tag into brewing instructions, increasing brewing versatility and allowing the introduction of new beverage types after manufacture of the beverage maker. If no tag or a tag of some unrecognized format is detected, default brewing parameters will be adopted. It is noted that other known types of identifier technologies, such as bar codes on the container and a bar code reader in or connected to the apparatus, may also be applied. The apparatus 2 further comprises a controller 6 for controlling a beverage brewing process "A" during operation of the apparatus 2 based on the data A. This will be further illustrated with an example. In this embodiment, the data A comprise information identifying the type of beverage base material present in the container, for example, 'regular roast coffee'. A user will pick up the container and bring it into the vicinity of the apparatus for preparing a beverage, in this embodiment coffee extract. When the container is in a certain predetermined area around the apparatus, said area being defined by the chosen identifier and reader, the reader 14 in the apparatus is able to read the type of beverage base material that is contained in the container, in this case `regular roast coffee'. After reading of this data, the controller 6 in the apparatus

U.S. Patent No. 10,858,176	Disclosure
	2 is ready to initiate a beverage brewing process which is especially designed for this specific type of beverage. The specific beverage brewing process comprises the optimum parameters such as fluid temperature, fluid pressure, and fluid pass-through rate for this specific type of beverage, which ensure an optimal cup of `regular roast coffee' resulting from the beverage brewing process in the apparatus 2. It is noted that the specific brewing process in the apparatus may start after activation of the on/off button of the apparatus by the user, after a certain pre-determined period of time starting from the moment the data are read, or upon detection of a pouch being placed in the holder of the apparatus. In this embodiment, the controller 6 comprises a processing unit which comprises a plurality of pre-programmed brewing process parameters from which a selection is made during operation dependent on the data as read. The processing unit in the apparatus comprises various pre-programmed brewing processes, which are assigned different integers. The data in the identifier in each container comprise an integer corresponding to the most appropriate brewing process for the specific type of beverage base material comprised in the container. After reading out of the integer by the reader, the correct pre-programmed brewing process is selected by the controller in dependence on that integer, to control the operation of the apparatus. In another embodiment, the data in the identifier itself comprise specific brewing parameters such as a pre-selected fluid quantity, fluid temperature, and fluid pass-through rate, which are read out by the reader and transferred to the control unit 6 to control the beverage brewing process. Furthermore, the apparatus may comprise a function to add additives such as milk, sugar, cream, and the like to the beverage extract, which addition can be controlled by reference to the data in the identifier. Erlandsson at [0032]-[0033]: FIG. 2a is a schematic view of a container 3' for containing a beverage base material during storage, for use with a system according to the invention. Said container 3' comprises an identifier 4' provided with data A', said data A' being readable by a reader in an apparatus for preparing a beverage, and a beverage brewing process during operation of the apparatus being controlled in dependence on the data. In this embodiment, the identifier 4' comprises

U.S. Patent No. 10,858,176	Disclosure
	an element 41 which is detachably connected to the container 3'. The element 41 in this embodiment is connected to the container via a perforated line and can be torn off the container 3'. It is noted that the element 41 may also be detachably connected to the container by means of other known types of connections, the element for example comprising a sticker or a clip which is removably attached to the container. In another embodiment, the identifier comprises a separate element for inclusion in a container for containing the beverage base material during storage, which element is provided with data which can be read by a reader in an apparatus for preparing a beverage, and a beverage brewing process during operation of the apparatus being controlled in dependence on said data. Erlandsson at [0035]: Other embodiments of these elements are shown in FIGS. 3a and 3b. FIG. 3a shows a rigid tag 44 with a flange positioned at a variable distance from its free end, which tag is included in the container with the beverage base material. This tag 44 can be inserted into a recess in the body of the beverage making apparatus, where it operates a spring-loaded sliding switch that indicates the length of the tag and thus controls the beverage processing parameters. FIG. 3b shows a rigid tag 45 with a notch positioned a variable distance from an orientation feature at one side of the tag, which is included in the container with the beverage base material. This tag can be inserted into a recess in the beverage making apparatus, where it operates a sliding switch that indicates the position of the notch and thus controls the beverage brewing parameters. Erlandsson at [0037]: It is noted that, in addition to systems for preparing coffee extract from ground coffee and water, the invention is also advantageously applicable to other systems for preparing a beverage extract from beverage base material and a liquid. The beverage base material may comprise, for example, other types of beverage base material such as milk powder, chocolate milk powder, soft drink syrup, tea leaves, dried soup, etc. These materials may be in loose

U.S. Patent No. 10,858,176	Disclosure
	form, or may be enclosed in a filter material or a capsule. The liquid may comprise, for example, other types of liquid such as milk, beer, carbonated water, etc. It is noted that the term beverage brewing process is not limited to the preparation of hot beverage extracts such as coffee, but that the preparation of cold drinks such as soft drinks is also included. The specific brewing parameters that are controlled via the identifier are dependent on the type of beverage extract to be prepared. Erlandsson at [0043]: In this embodiment, a system according to the invention is characterized in that the container, in this embodiment a beer keg, comprises an identifier provided with data, and the apparatus, in this case a beer tapping device, comprises a reader for reading the data in said identifier, and a controller for controlling the preparation during operation of the apparatus based on the data. The identifier comprises for example information as to what kind of temperature the apparatus should cool the beer, before the beer is tapped into a glass, and the correct pressure to be applied in the apparatus. In this manner the parameters to be used in the tapping device for the tapping process can be tailored to their optimum, to obtain an optimum result of the tapped beer. Different types of beer may for example require, among other things, different tapping temperatures and pressures. Erlandsson at [0044]: It is noted furthermore that next to an application with beverage base material and liquid, the invention also relates to other types of applications with consumable matter, such as for example a system for baking bread. In this embodiment, a system according to the invention is characterized in that the container, in this embodiment a container holding bread flour mix, comprises an identifier provided with data, and the apparatus, in this case a bread baking device, comprises a reader for reading the data in said identifier, and a controller for controlling the preparation of a baked bread during operation of the apparatus based on the data. The parameters controlled here may comprise for example baking temperature, duration of baking, rising time of dough, duration of kneading, etc., depending on the type of bread flour mix present in the container.

U.S. Patent No. 10,858,176	Disclosure
	See also [1].
10. The method according to claim 1, wherein the base element of the first portion capsule is made of metal.	Erlandsson discloses, either expressly or inherently, the method according to claim 1, wherein the base element of the first portion capsule is made of metal. *See, e.g.*: Erlandsson at [0003]: A system for preparing a consumable matter as described in the opening paragraph is known from EP0904718. The known system comprises an apparatus for preparing a coffee extract from ground coffee and water. The ground coffee is contained in a pouch made of a filter material, which pouch is placed in a holder in the apparatus. During operation hot water passes through the pouch to create a coffee extract which is then transported into a cup. The coffee pouches are sold in a container, in this case a bag, which contains a number of pouches. Numerous varieties of coffee pouches are offered to the consumer, who can select his or her preferred cup of coffee. These varieties may comprise for example coffee with special flavors (vanilla, chocolate etc.), coffee of varying strengths, or coffee without caffeine. Erlandsson at [0023]: FIG. 1 is a schematic view of a system 1 according to the invention, comprising an apparatus 2 in this embodiment an apparatus for preparing a beverage extract from beverage base material 5 and a liquid, and a container 3 for containing the beverage base material 5 during storage. In this embodiment, the beverage base material 5 comprises a plurality of pouches 51 made of filter material and containing ground coffee. One or two pouches, depending on whether one or two cups of beverage are to be prepared, are placed in a holder in the apparatus, to prepare a coffee extract from the ground coffee and water that flows through the pouch during the brewing process in the apparatus. It is noted, however, that the beverage base material 5 may comprise alternative types of beverage base material, with or without an enclosure of filter material such as, for example, loose ground coffee, chocolate

U.S. Patent No. 10,858,176	Disclosure
	milk powder, or tea leaves in a teabag. The container 3 in this embodiment comprises a flexible bag comprising a plurality of coffee pouches, but it is noted that this container may comprise any known type of container such as, for example, tins, canisters, boxes, etc., for containing any type of beverage base material. *See also* [1].
11. The method according to claim 10, wherein the base element of the second portion capsule is made of metal.	Erlandsson discloses, either expressly or inherently, the method according to claim 10, wherein the base element of the second portion capsule is made of metal. *See, e.g.*: Erlandsson at [0003]: A system for preparing a consumable matter as described in the opening paragraph is known from EP0904718. The known system comprises an apparatus for preparing a coffee extract from ground coffee and water. The ground coffee is contained in a pouch made of a filter material, which pouch is placed in a holder in the apparatus. During operation hot water passes through the pouch to create a coffee extract which is then transported into a cup. The coffee pouches are sold in a container, in this case a bag, which contains a number of pouches. Numerous varieties of coffee pouches are offered to the consumer, who can select his or her preferred cup of coffee. These varieties may comprise for example coffee with special flavors (vanilla, chocolate etc.), coffee of varying strengths, or coffee without caffeine. Erlandsson at [0023]: FIG. 1 is a schematic view of a system 1 according to the invention, comprising an apparatus 2 in this embodiment an apparatus for preparing a beverage extract from beverage base material 5 and a liquid, and a container 3 for containing the beverage base material 5 during storage. In this embodiment, the beverage base material 5 comprises a plurality of pouches 51 made of filter material and containing ground coffee. One or two pouches, depending on whether one or two cups of beverage are to be prepared, are placed in a holder in the

U.S. Patent No. 10,858,176	Disclosure
	apparatus, to prepare a coffee extract from the ground coffee and water that flows through the pouch during the brewing process in the apparatus. It is noted, however, that the beverage base material 5 may comprise alternative types of beverage base material, with or without an enclosure of filter material such as, for example, loose ground coffee, chocolate milk powder, or tea leaves in a teabag. The container 3 in this embodiment comprises a flexible bag comprising a plurality of coffee pouches, but it is noted that this container may comprise any known type of container such as, for example, tins, canisters, boxes, etc., for containing any type of beverage base material. *See also* [10].
12. The method according to claim 1, wherein the first foil lid and/or the second foil lid is made of metal.	
[13.pre] A method of making a coffee beverage, comprising steps of:	Erlandsson discloses, either expressly or inherently, a method of making a coffee beverage. *See, e.g.*: See [1.pre].
[13.a] providing an apparatus including a barcode reader configured to read a barcode, the apparatus including a mandrel, a water inlet, and a seal;	Erlandsson discloses, either expressly or inherently, providing an apparatus including a barcode reader configured to read a barcode, the apparatus including a mandrel, a water inlet, and a seal. See [1.a], [1.g], [1.i], [1.h].
[13.b] 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	Erlandsson discloses, either expressly or inherently, 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 a wall that defines the cavity with a central interior portion. *See, e.g.*:

U.S. Patent No. 10,858,176	Disclosure
material is located, the base element has been shaped to define a wall that defines the cavity with a central interior portion,	See [1.b].
[13.c] having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central interior portion and an outside surface of the wall having plurality of vertically oriented grooves,	Erlandsson discloses, either expressly or inherently, having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central interior portion and an outside surface of the wall having plurality of vertically oriented grooves. *See, e.g.*: See [1.c], [1.e].
[13.d] 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;	Erlandsson discloses, either expressly or inherently, 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. *See, e.g.*: See [1.d].
[13.e] piercing the first lid with the mandrel in a region that is offset from a central axis of the first portion capsule;	Erlandsson discloses, either expressly or inherently, piercing the first lid with the mandrel in a region that is offset from a central axis of the first portion capsule. *See, e.g.*: See [1.g].
[13.f] sealing the top side of the flange of the first portion capsule and/or the first lid against the seal of the apparatus;	Erlandsson discloses, either expressly or inherently, sealing the top side of the flange of the first portion capsule and/or the first lid against the seal of the apparatus. *See, e.g.*: See [1.h].
[13.g] reading the first barcode with the barcode reader; controlling production of a first coffee beverage based upon the reading of the first barcode; introducing heated water	Erlandsson discloses, either expressly or inherently, reading the first barcode with the barcode reader; controlling production of a first coffee beverage based upon the reading of the first barcode; introducing 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. *See, e.g.*:

U.S. Patent No. 10,858,176	Disclosure
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;	See [1.f], [1.i].
[13.h] unloading the first portion capsule from the apparatus;	Erlandsson discloses, either expressly or inherently, unloading the first portion capsule from the apparatus. *See, e.g.*: See [1.j].
[13.i] inserting 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 a wall that defines a cavity with a central interior portion, and having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the cavity central interior portion, and 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	Erlandsson discloses, either expressly or inherently, inserting 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 a wall that defines a cavity with a central interior portion, and having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the cavity central interior portion, and 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 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. *See, e.g.*: See [1.k]; [13.a]-[13.g].

U.S. Patent No. 10,858,176	Disclosure
with a second barcode that is located on the bottom side and being different from the first barcode; piercing the second 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.	
14. The method according to claim 13, wherein the production conditions associated with the first barcode are different from the production conditions associated with the second barcode, the production conditions include:	Erlandsson discloses, either expressly or inherently, the method according to claim 13, 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. *See, e.g.*: See also [13].

U.S. Patent No. 10,858,176	Disclosure
pressure, temperature and/or an amount of the heated water.	

Exhibit A-5 – Invalidity of U.S. Patent No. 10,858,176 in view of Jarisch

INVALIDITY CLAIM CHART
Invalidity of U.S. Patent No. 10,858,176 in view of Jarisch

According to its cover page, U.S. Patent Pub. US2013/0064937A1 ("Jarisch") was published on March 14, 2013 from an application filed on May 12, 2011. Jarisch therefore constitutes prior art under pre-AIA 35 U.S.C. § 102(e) to the '176 Patent's PCT filing date. Jarisch anticipates and/or renders obvious the Asserted Claims of the '176 Patent (at least as Nespresso understands K-fee's application of the Asserted Claims in an effort to show infringement).

To the extent K-fee argues that any element below is not disclosed by Jarisch, a person of ordinary skill in the art would have found it obvious to combine the teachings of Jarisch with the background knowledge of a person of ordinary skill in the art and/or the additional references, and exemplary teachings, set forth in Exhibits A-1 to A-9 and in Appendix A.

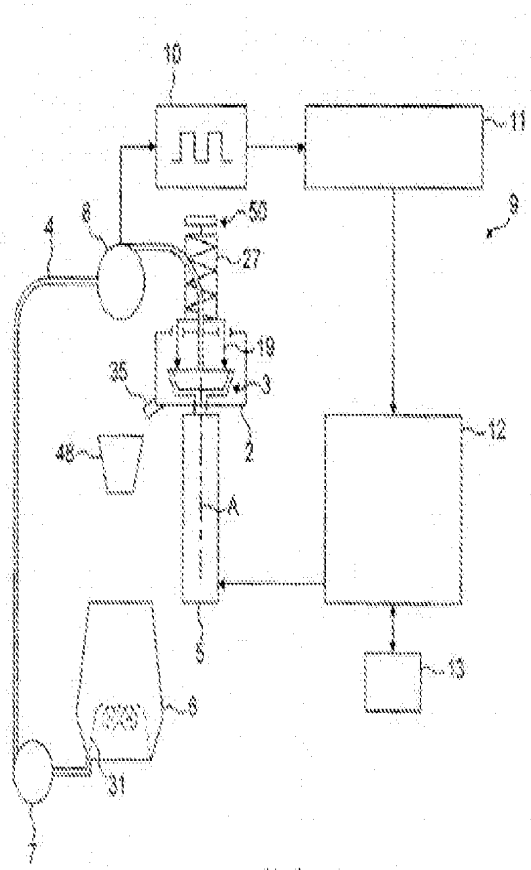
The chart below provides representative examples of where each element of each claim is found within Jarisch. Citations are meant to be exemplary, not exhaustive, and Nespresso reserves the right to identify and discuss additional portions of the reference in support of its contentions and/or to rebut arguments made by K-fee. Citations to figures, drawings, tables, and the like include reference to any accompanying or related text. All internal cross references are meant to incorporate the cross-referenced material as if fully set forth therein.

It is Nespresso's position that K-fee's Infringement Contentions have not established that any accused product or service infringes any valid claim. Thus, Nespresso's statements below should not be treated as an admission, implication, or suggestion that Nespresso agrees with K-fee regarding either the scope, construction, or interpretation of any of the Asserted Claims, or the infringement theories advanced by K-fee in its Infringement Contentions, including whether any Asserted Claim satisfies 35 U.S.C. §§ 101 or 112. In certain cases, Nespresso specified non-limiting examples of where its application of the prior art is based on K-fee's apparent application of the claim element. These statements are not intended to suggest that Nespresso agrees with K-fee's application of any claim term, suggest a proposed construction at this stage of the case, or suggest that construction is needed, as the parties are not required to exchange terms for construction or proposed constructions until a later date.

K-fee has yet to identify any limitation of the Asserted Claims that it contends is not anticipated and/or rendered obvious by Jarisch. Nespresso therefore expressly reserves the right to respond to any such contention, including by identifying additional obviousness combinations, if K-fee makes any such contention.

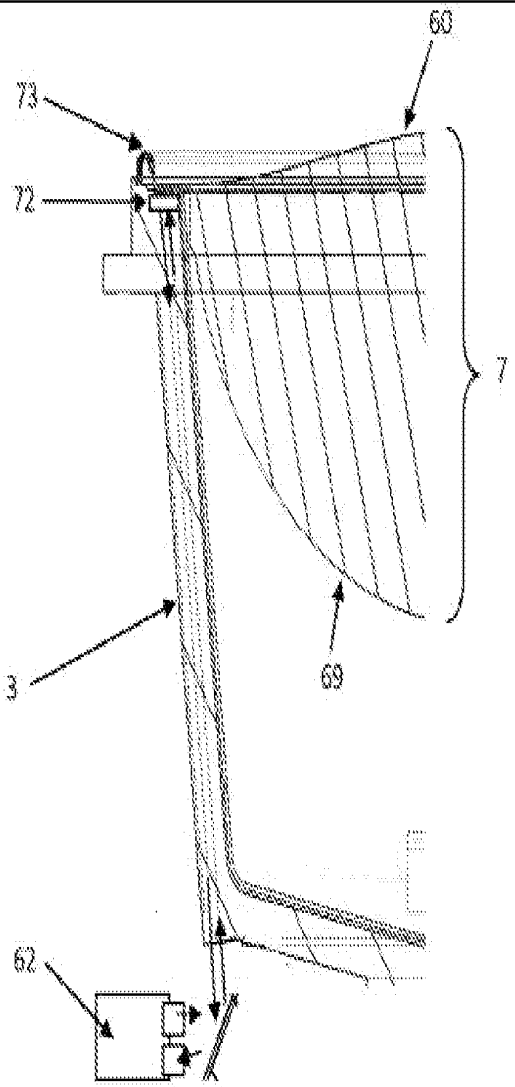
Where Nespresso states that Jarisch "discloses" a limitation, that disclosure may be express, implicit, and/or inherent.

U.S. Patent No. 10,858,176	Disclosure
[1.pre] A method of making a coffee beverage comprising:	Jarisch discloses, either expressly or inherently, a method for making a coffee beverage. *See, e.g.*: Jarisch at Abstract: Capsule for the preparation of a beverage comprising a con-tainer and a beverage ingredient contained therein, wherein the container comprises a code (65) adapted for being iden-tified or read by external reading means (62), wherein the code is arranged on the container to be read while the capsule is rotated around an axis of rotation traversing the capsule. Jarisch at [0014]: The aim of the present invention is to propose an improved way to identify the capsule within a beverage production machine to ensure a more reliable and convenient retrieval or reading of information so as to adjust working parameters of the machine. Jarisch at [0023]: The invention further relates to a system for preparing a beverage from a capsule as aforementioned and further comprising a beverage preparation device; wherein the device comprises capsule holding means for holding the capsule and rotational drive means for driving the holding means and capsule in rotation along said axis of rotation and reading means arranged for reading the code when the capsule is rotated along said axis. Jarisch at [0034]: FIG. 1 illustrates an example of a beverage preparation system 1 as described in WO2010/026053 for which the capsule of the invention can be used. Jarisch at FIG. 1:

U.S. Patent No. 10,858,176	Disclosure
	 Fig. 1
[1.a] providing an apparatus including a barcode reader;	Jarisch discloses, either expressly or inherently, providing an apparatus including a barcode reader. *See, e.g.*: Jarisch at [0023]: The invention further relates to a system for preparing a beverage from a capsule as aforementioned and further comprising a beverage preparation device; wherein the device comprises capsule holding means for holding the capsule and rotational drive means for driving the holding means and capsule in rotation along said axis of rotation and reading means arranged for reading the code when the capsule is rotated along said axis.

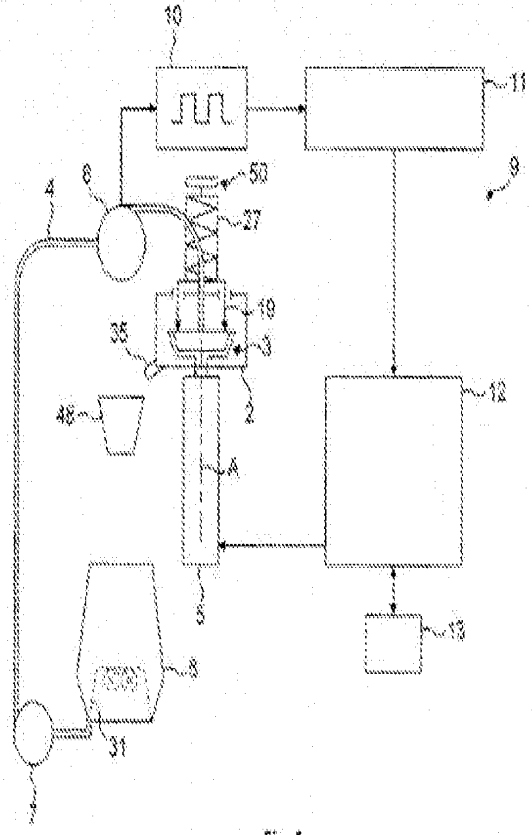
U.S. Patent No. 10,858,176	Disclosure
	Jarisch at [0024]: In particular, the reading means may comprise a light emitter and a light sensor. In an alternative, the reading means comprises an inductive sensor. The optical reading means or inductive sensor may be arranged to detect a code on the rim of the capsule. Jarisch at [0071]-[0073]: The reader may consist of: • A light source with/without focusing optic, and • A light sensor with/without focusing optic. Jarisch at [0082]: In the embodiment of the figure 4, the light source is placed at the bottom of the centrifugal cell 3. This cell is light conductive allowing the beam to reach the bottom side 72 of its rim 73. The reflected light is conducted by the transparent (or light conductive) centrifugal cell 3 to reach the sensor 62. In case that the sensor 62 cannot be aligned with the transparent part of the centrifugal cell 3, a mirror can be placed as illustrated in the figure 4 to deflect the forward and backward beams. *See also* Jarisch at Claims 14-16; FIGs. 2-7.
[1.b] 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	Jarisch discloses, either expressly or inherently, 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. *See, e.g.*: Jarisch at [0021]:

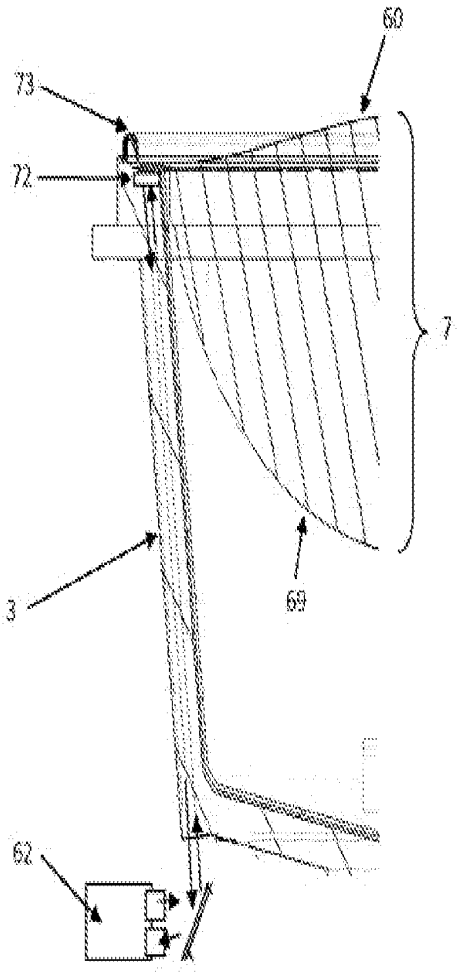
U.S. Patent No. 10,858,176	Disclosure
being free of a filter and including a central portion,	In an embodiment, the container comprises a body and a lid connected to the body and wherein the code is present on the lid of the container. The lid may be a closed foil and/or a filter, for example. Jarisch at [0036]: In the following examples (see FIG. 4), the capsule comprises a cup-shaped body 69 extending by a flange-like rim 73. A lid such as a foil or membrane (liquid-tight or permeable to liquid) 60 is connected to the body, e.g., sealed on the rim. The capsule is filled with beverage ingredient such as ground coffee. *See also* Jarisch at FIG. 4:

U.S. Patent No. 10,858,176	Disclosure
	 Fig. 4
[1.c] and a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central portion of the cavity,	

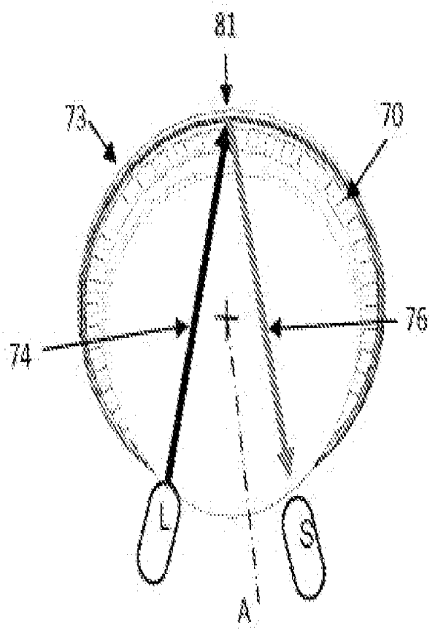
U.S. Patent No. 10,858,176	Disclosure
[1.d] the base element including a circumferential flange having a top side to which the first foil lid is sealed and an opposing bottom side with a first barcode located on the bottom side,	Jarisch discloses, either expressly or inherently, the base element including 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. *See, e.g.*: Jarisch at [0016]-[0017]: More particularly, the capsule has a circumference wherein the code is arranged on the container along an arc-shaped or circular path of the circumference. In a particular mode, the capsule has a circumference wherein the code comprises successive segments which are individually rectilinear but extend substantially along at least a part of the circumference. More particularly, the code is arranged along at least a eighth of the circumference. This configuration provides a reliable reading or retrieval of information as well as an effective portion for information. In order to ensure a reliable reading or retrieval of information, the code is repeated along said circumference. The repetition ensures a higher probability that at least one code is readable but also may potentially reduce the reading time. Preferably, the code is an optical code. The code may be a bit code formed by a series of discrete polygonal (e.g., rectangles or squares) or dot surfaces printed on the container and/or embossed in the container. Jarisch at [0019]: Preferably, the code is printed or embossed to form a pattern which possesses surfaces having different reflective and/or absorbing properties to light. In particular, the pattern possesses first surfaces and second surfaces having different reflective and/or absorbing properties to light. More particularly, the pattern possesses first surfaces inclined mirroring or absorbing properties to light and second surfaces having flat mirroring or flat reflective properties to light. Jarisch at [0022]:

U.S. Patent No. 10,858,176	Disclosure
	In another embodiment, the code is present on the rim of the capsule. In the most preferred embodiment, the code is present on the bottom of the rim of the capsule which is opposed to the lid of the capsule. The bottom of the rim is sufficiently away from the liquid injection and beverage delivery areas so that there is a lower risk for the code to become unreadable such if partly or totally hidden or soiled by beverage residues or otherwise (e.g., coffee particles). As a result, the reading is made more reliable. The reading may also be carried out while the capsule is in place in the beverage production device. Therefore, the preparation of the beverage is simplified and the preparation time can be reduced. Jarisch at [0024]: In particular the reading means may comprise a light emitter and a light sensor. In an alternative, the reading means comprises an inductive sensor. The optical reading means or inductive sensor may be arranged to detect a code on the rim of the capsule. Jarisch at [0063]-[0064]: <u>2) Optical reading on rim bottom side of capsule (figures 4 to 7):</u> The capsule 7 may comprise a code 70 on the bottom side 72 of its rim 73. The bit code is formed of a succession of small rectangular surfaces having light mirroring properties and intermediate surfaces having flat mirroring and/or diffusing properties.

U.S. Patent No. 10,858,176	Disclosure
	Jarisch at FIG. 1:  Fig. 1 Jarisch at FIG. 4:

U.S. Patent No. 10,858,176	Disclosure
	 Jarisch at [0022]: In the most preferred embodiment, the code is present on the bottom of the rim of the capsule which is opposed to the lid of the capsule. The bottom of the rim is sufficiently away from the liquid injection and beverage delivery areas so that there is a lower risk for the code to become unreadable such if partly or totally hidden or soiled by beverage residues or otherwise (e.g., coffee particles). As a result, the reading is made more reliable. The reading may also be carried out while the capsule is in place in the beverage production device. Therefore, the preparation of the beverage is simplified and the preparation time can be reduced.

U.S. Patent No. 10,858,176	Disclosure
	Jarisch at [0042]-[0048]: Onto the capsule foil 60, a plurality of bits forming the code 61 is applied along a circular or arc-shaped path. Preferably, the code is placed on a flat portion of the lid and close to the peripheral edge of the capsule. The code is preferably placed the lid that is supported by the flange-like rim of the capsule or overlaps with the rim. Hence, the code is not distorted due to mechanical constraints and can be read more reliably. The marks may consist of: Mirroring or absorbing surfaces for providing bit 0 and, Diffusing and reflective surfaces for providing bit 1 The binary values 0 and 1 are arbitrary chosen and can be inversed. The code is read by rotating the capsule along a central axis A (FIG. 1). Jarisch at [0070]: The bit code is read by rotating the capsule along its central axis A. Jarisch at [0086]: Therefore, the number of bits and their bit code depend on the number and specific arrangement of mirror surfaces (e.g. rectangles) and diffusing or absorbing surfaces (e.g., zones between the rectangles). The same sequence of bits forming a code can be repeated several times on the circumference of the rim. This repetition provides redundancy and more reliability to the reading. Jarisch at [0099]: The code preferably comprises three sections, the synchronization section, the payload section and the verification section. The synchronization section serves for the

U.S. Patent No. 10,858,176	Disclosure
	synchronization purpose i.e. to inform the sensor when the code begins. Since the speed of the rotation of the capsule can vary, the synchronization is achieved through a known sequence of bits such as 0.1.0.1. Then the payload of the code identifying the capsule can be read. In order to avoid misinterpretation of the code, the payload can be followed by verification bits. These bits can be a checksum on the payload or a similar verification function. Jarisch at FIG. 5:  *See also* Jarisch at Claims 11-14; FIGs. 6-7.
[1.e] the base element of the first portion capsule includes an outside surface having a plurality of vertically oriented grooves;	

U.S. Patent No. 10,858,176	Disclosure
[1.f] 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;	Jarisch discloses, either expressly or inherently, 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. *See, e.g.*: Jarisch at [0022]: In the most preferred embodiment, the code is present on the bottom of the rim of the capsule which is opposed to the lid of the capsule. The bottom of the rim is sufficiently away from the liquid injection and beverage delivery areas so that there is a lower risk for the code to become unreadable such if partly or totally hidden or soiled by beverage residues or otherwise (e.g., coffee particles). As a result, the reading is made more reliable. The reading may also be carried out while the capsule is in place in the beverage production device. Therefore, the preparation of the beverage is simplified and the preparation time can be reduced. *See also* [1.a] and [1.d].
[1.g] 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;	Jarisch discloses, either expressly or inherently, 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. *See, e.g.*: Jarisch at [0021]: In an embodiment, the container comprises a body and a lid connected to the body and wherein the code is present on the lid of the container. The lid may be a closed foil and/or a filter, for example. Jarisch at [0036]: In the following examples (see FIG. 4), the capsule comprises a cup-shaped body 69 extending by a flange-like rim 73. A lid such as a foil or membrane (liquid-tight or

U.S. Patent No. 10,858,176	Disclosure
	permeable to liquid) 60 is connected to the body, e.g., sealed on the rim. The capsule is filled with beverage ingredient such as ground coffee.
[1.h] sealing the first foil lid against a seal of the apparatus;	Jarisch discloses, either expressly or inherently, sealing the first foil lid against a seal of the apparatus. *See, e.g.*: Jarisch at [0021]: In an embodiment, the container comprises a body and a lid connected to the body and wherein the code is present on the lid of the container. The lid may be a closed foil and/or a filter, for example. Jarisch at [0036]: In the following examples (see FIG. 4), the capsule comprises a cup-shaped body 69 extending by a flange-like rim 73. A lid such as a foil or membrane (liquid-tight or permeable to liquid) 60 is connected to the body, e.g., sealed on the rim. The capsule is filled with beverage ingredient such as ground coffee.
[1.i] introducing 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;	Jarisch discloses, either expressly or inherently, introducing 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. *See, e.g.*:
[1.j] unloading the first portion capsule from the apparatus;	Jarisch discloses, either expressly or inherently, unloading the first portion capsule from the apparatus. *See, e.g.*:
[1.k] inserting a second portion capsule into the apparatus, the second portion capsule including a	Jarisch discloses, either expressly or inherently, 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

U.S. Patent No. 10,858,176	Disclosure
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 a central portion and a plurality of ribs that are radially spaced, vertically oriented, and 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 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	portion capsule being free of a filter and includes a central portion and a plurality of ribs that are radially spaced, vertically oriented, and 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 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. *See, e.g.*: *See* [1.b]-[1.i]. Jarisch at [0014]-[0015]: The aim of the present invention is to propose an improved way to identify the capsule within a beverage pro-duction machine to ensure a more reliable and convenient retrieval or reading of information so as to adjust working parameters of the machine. This aim is achieved by a capsule for the preparation of a beverage comprising a container and a beverage ingre-dient contained therein, wherein the container comprises a code adapted for being identified or read by external reading means, wherein the code is arranged on the container to be read while the capsule is rotated around an axis of rotation traversing the capsule.

U.S. Patent No. 10,858,176	Disclosure
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.	
2. The method according to claim 1, wherein one or both of the introducing steps include: inducing turbulent flow of the heated water by the ribs.	Jarisch discloses, either expressly or inherently, the method according to claim 1, wherein one or both of the introducing steps include: inducing turbulent flow of the heated water by the ribs. *See, e.g.*: *See also* [1].
3. The method according to claim 1, wherein the method comprises: comparing the read barcode with a stored reference.	Jarisch discloses, either expressly or inherently, the method according to claim 1, wherein the method comprises: comparing the read barcode with a stored reference. *See, e.g.*: *See also* [1].
10. The method according to claim 1, wherein the base element of the first portion capsule is made of metal.	Jarisch discloses, either expressly or inherently, the method according to claim 1, wherein the base element of the first portion capsule is made of metal. *See, e.g.*: Jarisch at [0007]:

U.S. Patent No. 10,858,176	Disclosure
	Recognition means can comprise one or more strips of a magnetic material applied to the body of the package, which can be read by an appropriate magnetic sensor, one or more shaped or divided areas of metal foil applied to the package body which cause an inductive effect on movement of the package in the machine, which inductive effect can be sensed; or one or more electrically conductive areas formed on the body of the package which can be sensed electrically. Jarisch at [0093]-[0095]: -Printing on the inner surface of a capsule container, using the curl as information support (Aluminum capsule technology) 4 Inductive Code Reading: Another mode consists in sensing a code provided on a metallic surface of the capsule using an inductive sensor. The code is formed by reliefs or recesses in the metallic surface. *See also* [1].
11. The method according to claim 10, wherein the base element of the second portion capsule is made of metal.	Jarisch discloses, either expressly or inherently, the method according to claim 10, wherein the base element of the second portion capsule is made of metal. *See, e.g.*: Jarisch at [0007]: Recognition means can comprise one or more strips of a magnetic material applied to the body of the package, which can be read by an appropriate magnetic sensor, one or more shaped or divided areas of metal foil applied to the package body which cause an inductive effect on movement of the package in the machine, which inductive effect can be sensed; or one or more electrically conductive areas formed on the body of the package which can be sensed electrically.

U.S. Patent No. 10,858,176	Disclosure
	Jarisch at [0093]-[0095]: -Printing on the inner surface of a capsule container, using the curl as information support (Aluminum capsule technology) <u>4 Inductive Code Reading:</u> Another mode consists in sensing a code provided on a metallic surface of the capsule using an inductive sensor. The code is formed by reliefs or recesses in the metallic surface. *See also* [10].
12. The method according to claim 1, wherein the first foil lid and/or the second foil lid is made of metal.	Jarisch discloses, either expressly or inherently, the method according to claim 1, wherein the first foil lid and/or the second foil lid is made of metal. *See, e.g.*: Jarisch at [0021]: In an embodiment, the container comprises a body and a lid connected to the body and wherein the code is present on the lid of the container. The lid may be a closed foil and/or a filter, for example. Jarisch at [0036]: In the following examples (see FIG. 4), the capsule comprises a cup-shaped body 69 extending by a flange-like rim 73. A lid such as a foil or membrane (liquid-tight or permeable to liquid) 60 is connected to the body, e.g., sealed on the rim. The capsule is filled with beverage ingredient such as ground coffee. *See also* [1].

U.S. Patent No. 10,858,176	Disclosure
[13.pre] A method of making a coffee beverage, comprising steps of:	Jarisch discloses, either expressly or inherently, a method of making a coffee beverage. *See, e.g.*: *See* [1.pre].
[13.a] providing an apparatus including a barcode reader configured to read a barcode, the apparatus including a mandrel, a water inlet, and a seal;	Jarisch discloses, either expressly or inherently, providing an apparatus including a barcode reader configured to read a barcode, the apparatus including a mandrel, a water inlet, and a seal. *See* [1.a], [1.g], [1.i], [1.h].
[13.b] 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 a wall that defines the cavity with a central interior portion,	Jarisch discloses, either expressly or inherently, 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 a wall that defines the cavity with a central interior portion. *See, e.g.*: *See* [1.b].
[13.c] having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central interior portion and an outside surface of the wall having plurality of vertically oriented grooves,	Jarisch discloses, either expressly or inherently, having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central interior portion and an outside surface of the wall having plurality of vertically oriented grooves. *See, e.g.*: *See* [1.c], [1.e].

U.S. Patent No. 10,858,176	Disclosure
[13.d] 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;	Jarisch discloses, either expressly or inherently, 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. *See, e.g.*: *See* [1.d].
[13.e] piercing the first lid with the mandrel in a region that is offset from a central axis of the first portion capsule;	Jarisch discloses, either expressly or inherently, piercing the first lid with the mandrel in a region that is offset from a central axis of the first portion capsule. *See, e.g.*: *See* [1.g].
[13.f] sealing the top side of the flange of the first portion capsule and/or the first lid against the seal of the apparatus;	Jarisch discloses, either expressly or inherently, sealing the top side of the flange of the first portion capsule and/or the first lid against the seal of the apparatus. *See, e.g.*: *See* [1.h].
[13.g] reading the first barcode with the barcode reader; controlling production of a first coffee beverage based upon the reading of the first barcode; introducing 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;	Jarisch discloses, either expressly or inherently, reading the first barcode with the barcode reader; controlling production of a first coffee beverage based upon the reading of the first barcode; introducing 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. *See, e.g.*: *See* [1.f], [1.i].

U.S. Patent No. 10,858,176	Disclosure
[13.h] unloading the first portion capsule from the apparatus;	Jarisch discloses, either expressly or inherently, unloading the first portion capsule from the apparatus. *See, e.g.*: *See* [1.j].
[13.i] inserting 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 a wall that defines a cavity with a central interior portion, and having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the cavity central interior portion, and 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 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	Jarisch discloses, either expressly or inherently, inserting 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 a wall that defines a cavity with a central interior portion, and having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the cavity central interior portion, and 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 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. *See, e.g.*: *See* [1.k]; [13.a]-[13.g].

U.S. Patent No. 10,858,176	Disclosure
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.	
14. The method according to claim 13, 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.	Jarisch discloses, either expressly or inherently, the method according to claim 13, 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. *See, e.g.*: Jarisch at [0014]-[0015]: The aim of the present invention is to propose an improved way to identify the capsule within a beverage pro-duction machine to ensure a more reliable and convenient retrieval or reading of information so as to adjust working parameters of the machine. This aim is achieved by a capsule for the preparation of a beverage comprising a container and a beverage ingre-dient contained therein, wherein the container comprises a code adapted for being identified or read by external reading means, wherein the code is arranged

U.S. Patent No. 10,858,176	Disclosure
	on the container to be read while the capsule is rotated around an axis of rotation traversing the capsule. *See also* [13].

INVALIDITY CLAIM CHART
Invalidity of U.S. Patent No. 10,858,176 in view of Panesar

According to its cover page, PCT Pub. WO2005/079638A1 ("Panesar") was published on September 1, 2005. Panesar therefore constitutes prior art to the '176 Patent under pre-AIA 35 U.S.C. § 102(b). Panesar anticipates and/or renders obvious the Asserted Claims of the '176 Patent (at least as Nespresso understands K-fee's application of the Asserted Claims in an effort to show infringement).

To the extent K-fee argues that any element below is not disclosed by Panesar, a person of ordinary skill in the art would have found it obvious to combine the teachings of Panesar with the background knowledge of a person of ordinary skill in the art and/or the additional references, and exemplary teachings, set forth in the charts in Exhibits A-1 to A-9, and in Appendix A.

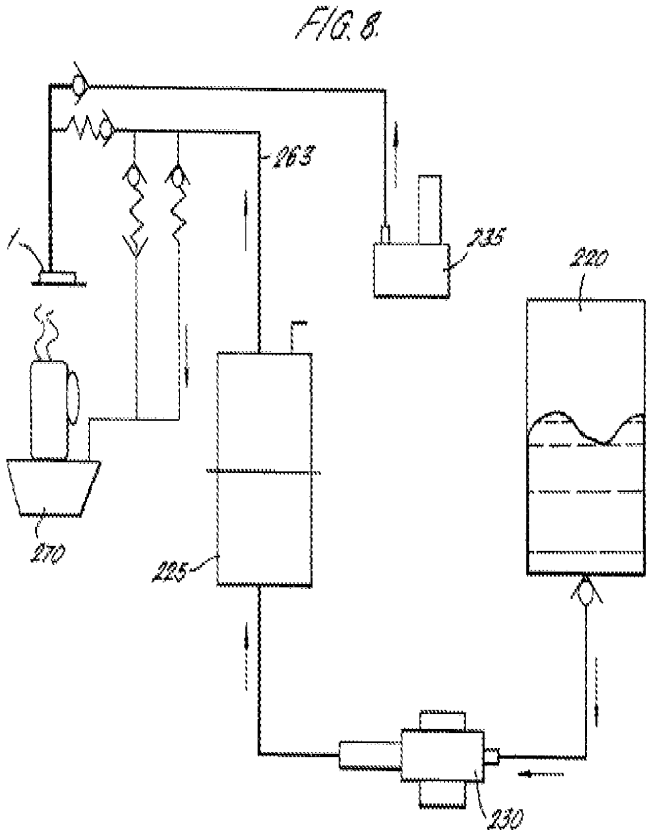
The chart below provides representative examples of where each element of each claim is found within Panesar. Citations are meant to be exemplary, not exhaustive, and Nespresso reserves the right to identify and discuss additional portions of the reference in support of its contentions and/or to rebut arguments made by K-fee. Citations to figures, drawings, tables, and the like include reference to any accompanying or related text. All internal cross references are meant to incorporate the cross-referenced material as if fully set forth therein.

It is Nespresso's position that K-fee's Infringement Contentions have not established that any accused product or service infringes any valid claim. Thus, Nespresso's statements below should not be treated as an admission, implication, or suggestion that Nespresso agrees with K-fee regarding either the scope, construction, or interpretation of any of the Asserted Claims, or the infringement theories advanced by K-fee in its Infringement Contentions, including whether any Asserted Claim satisfies 35 U.S.C. §§ 101 or 112. In certain cases, Nespresso specified non-limiting examples of where its application of the prior art is based on K-fee's apparent application of the claim element. These statements are not intended to suggest that Nespresso agrees with K-fee's application of any claim term, suggest a proposed construction at this stage of the case, or suggest that construction is needed, as the parties are not required to exchange terms for construction or proposed constructions until a later date.

K-fee has yet to identify any limitation of the Asserted Claims that it contends is not anticipated and/or rendered obvious by Panesar. Nespresso therefore expressly reserves the right to respond to any such contention, including by identifying additional obviousness combinations, if K-fee makes any such contention.

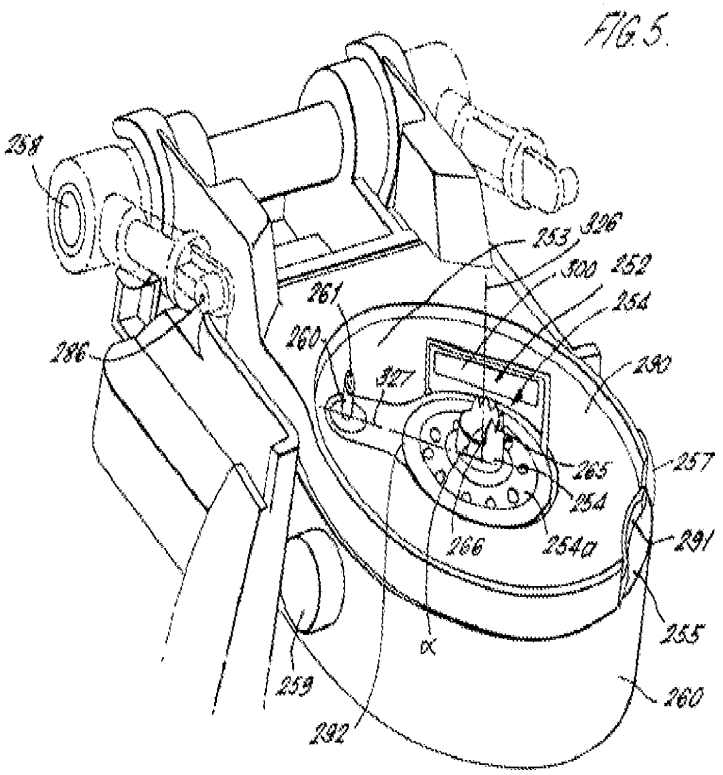
Where Nespresso states that Panesar "discloses" a limitation, that disclosure may be express, implicit, and/or inherent.

U.S. Patent No. 10,858,176	Disclosure
[1.pre] A method of making a coffee beverage comprising:	Panesar discloses, either expressly or inherently, a method for making a coffee beverage. *See, e.g.:* Panesar at p. 1, ll. 4-5: The present invention relates to an insert, a machine and a system for the preparation of beverages. Panesar at p. 1, ll. 20–28: In the domestic market consumers may not wish to use separate machines when preparing beverages from different beverage ingredient containing containers or, indeed, loose beverage ingredients. It is therefore an object of the present 25 invention to provide an insert, a beverage preparation machine and a beverage preparation system which allows consumers to use a variety of containers or loose ingredients in a single beverage preparation machine. Panesar at p. 8, ll. 17–26: <u>Beverage Preparation System</u> A beverage preparation machine 201 of the beverage preparation system of the present invention is shown in Figures la to 9b. The beverage preparation machine 201 generally comprises a housing 210 containing a water tank 220, a water heater 225, a water pump 230, an air compressor 235, a control processor, a user interface 240 and a brew head 250. The brew head 250 in turn generally comprises a holder 251, recognition means 252 and inlet and outlet piercers 253, 254. Panesar at FIG. 8:

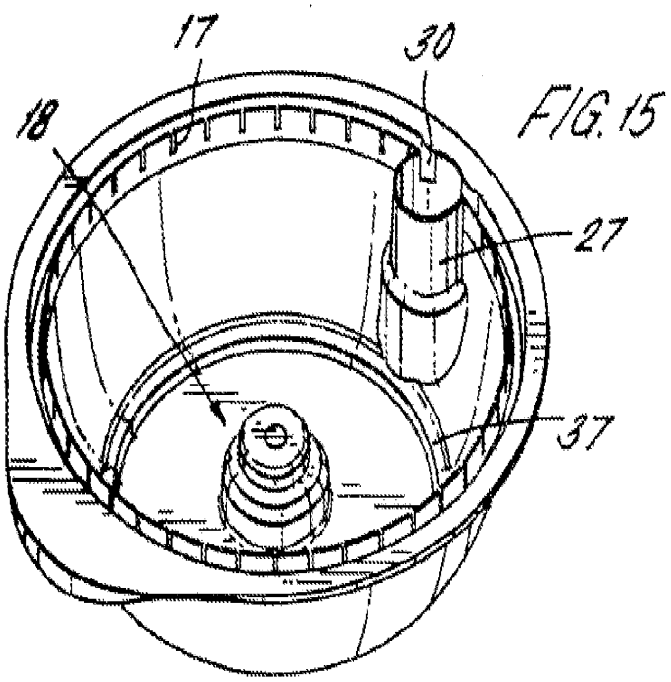
U.S. Patent No. 10,858,176	Disclosure
	 Panesar at p. 9, ll. 8–18: Cartridge for use in the system As shown in Figure 10 to 21, the cartridge 1 generally comprises an outer member 2, an inner member 3 and a laminate 5. The outer member 2, inner member 3 and laminate 5 are assembled to form the cartridge 1 which has an interior 120 for containing one or more beverage ingredients, an inlet 121, an outlet 122 and a beverage flow path linking the inlet 121 to the outlet 122 and which passes through the interior 120. The inlet 121 and outlet 122

U.S. Patent No. 10,858,176	Disclosure
	are initially sealed by the laminate 5 and are opened in use by piercing or cutting of the laminate 5. . Panesar at p. 5, ll. 23–32: The insert of the present invention may contain or be loaded with one or more beverage ingredients suitable for 25 the formation of a beverage product. The beverage product may be, for example, one of coffee, tea, chocolate or a dairy-based beverage including milk. The beverage ingredients may be powdered, ground, leaf-based or liquid. The beverage ingredients may be insoluble or soluble. 30 Examples include roast and ground coffee, leaf tea, powdered chocolate and soup, liquid milk-based beverages, carbonated drinks and concentrated fruit juices. *See also* Panesar at Claims 23–31.
[1.a] providing an apparatus including a barcode reader;	Panesar discloses, either expressly or inherently, providing an apparatus including a barcode reader. *See, e.g.:* Panesar at p. 4, ll. 24–29: The beverage preparation machine may comprise a brew head comprising an upwardly directed inlet for supplying water to the brew head, a downwardly directed outlet for outflow of beverage produced by the machine and a barcode or RFID reader having a window in the brew head through which signals may be transmitted . . . Panesar at p. 5, ll. 7–8: Preferably the barcode reader or RFID reader window is located at or near a periphery of the brew head. Panesar at p. 34, ll. 5–26:

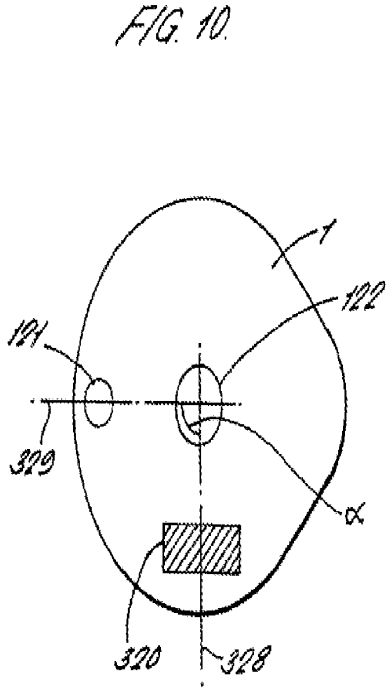
U.S. Patent No. 10,858,176	Disclosure
	The purpose of the recognition means 252 is to allow the machine 201 to recognize the type of beverage cartridge 1 that has been inserted and to adjust one or more operational parameters accordingly. In a typical embodiment, the recognition means 252 comprises an optical barcode reader which reads the printed barcode 320 provided on the laminate 5 of the beverage cartridge 1 as shown in Figure 10 and discussed above. The optical barcode reader comprises one or more LEDs 321 to illuminate the barcode 320, a focusing lens 322 to acquire an image of the barcode, a charge coupled device (CCD) 323 for producing an electrical signal representative of the acquired image and support circuitry for the LEDs and CCD. The space in the lower part for accommodating the barcode reader is limited. A mirror or mirrors 324 may be used to reflect the light from the LEDs 321 to a focusing lens which is not located in the lower part 255. Schematic arrangements are shown in Figures 9a and 9b. The lower part 255 comprises an aperture 326 which is the same size as the barcode 320 on the beverage cartridge 1. The aperture 326 is closed by a window, preferably glass, which can transmit the signals produced by the barcode reader. Panesar at p. 35, ll. 4–6: Alternatively, an RFID reader is provided to read an RFID located on thevcartridge 1. Panesar at Fig. 5:

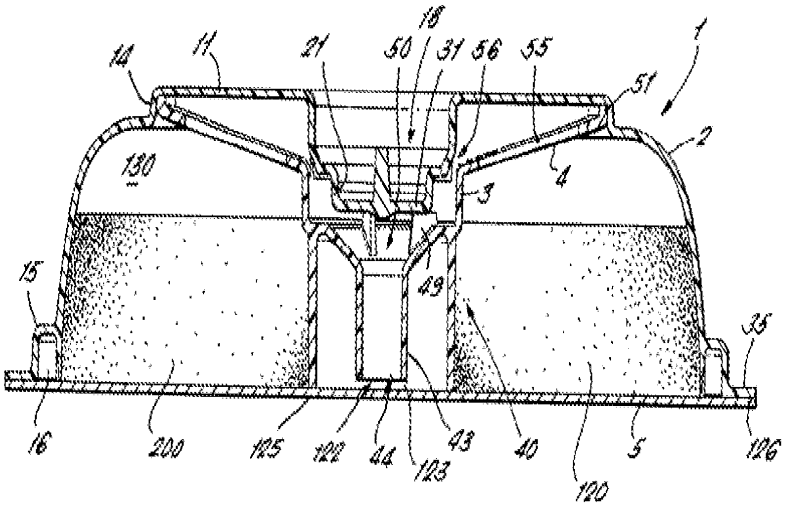
U.S. Patent No. 10,858,176	Disclosure
	 *See also* Panesar at Claims 24, 27, 30.
[1.b] inserting a first portion capsule into the apparatus, the first portion capsule including a first foil lid sealed to a base element having a cavity within which a powdered coffee material is located, the cavity being free of a filter and including a central portion,	Panesar discloses, either expressly or inherently, 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. *See, e.g.*: Panesar at p. 3 at line 22 – p. 4 at line 2: The insert may be a cartridge. The cartridge may be rigid or semi-rigid. The lower surface may be a laminate. In this case, the inlet and outlet of the cartridge may be portions of the lower surface which are opened for transportation, in use, by piercing the lower surface.

U.S. Patent No. 10,858,176	Disclosure
	Alternatively, the insert may define a receptacle for receiving loose beverage ingredients. Alternatively, the insert may define a receptacle for receiving a container of beverage ingredients, wherein the container comprises filtering means. In one aspect, the container is formed at least in part from filter paper or filtering membrane. For example, the container may be a filter bag. Panesar at p. 35, ll. 24–31: To insert the cartridge 1 the holder 251 is opened as described above to expose the cartridge mount 257. The cartridge 1 is then placed on the cartridge mount 257 received within the recess 290 such that the handle 24 of the cartridge is located in the irregularity 291. The optical or magnetic barcode 320 or RFID of the cartridge 1 is oriented directly above the aperture 326 in the cartridge mount 257. Panesar at p. 9, ll. 8–18: Cartridge for use in the system As shown in Figure 10 to 21, the cartridge 1 generally comprises an outer member 2, an inner member 3 and a laminate 5. The outer member 2, inner member 3 and laminate 5 are assembled to form the cartridge 1 which has an interior 120 for containing one or more beverage ingredients, an inlet 121, an outlet 122 and a beverage flow path linking the inlet 121 to the outlet 122 and which passes through the interior 120. The inlet 121 and outlet 122 are initially sealed by the laminate 5 and are opened in use by piercing or cutting of the laminate 5. Panesar at p. 5, ll. 23–32: The insert of the present invention may contain or be loaded with one or more beverage ingredients suitable for 25 the formation of a beverage product. The beverage product may be, for example, one of coffee, tea, chocolate or a dairy-based beverage including milk. The beverage ingredients may be powdered, ground, leaf-based or liquid. The beverage

U.S. Patent No. 10,858,176	Disclosure
	ingredients may be insoluble or soluble. 30 Examples include roast and ground coffee, leaf tea, powdered chocolate and soup, liquid milk-based beverages, carbonated drinks and concentrated fruit juices. Panesar at Fig. 15:  Panesar at p. 16, ll. 28–32: The laminate 5 is then affixed to the outer member 2 by forming a weld 126 around the periphery of the laminate 5 to join the laminate 5 to the lower surface of the outwardly extending flange 35. Panesar at p. 14 at line 21 – p. 15 at line 2: The laminate 5 is formed from two layers, a first layer of aluminium and a second layer of cast polypropylene. The aluminium layer is between 0.02 and 0.07 mm in thickness. . . . In one embodiment the aluminium layer is 0.06 mm and the polypropylene layer is 0.025 mm

U.S. Patent No. 10,858,176	Disclosure
	thick. This laminate is particularly advantageous as it has a high resistance to curling during assembly. As a result the laminate 5 may be pre-cut to the correct size and shape and subsequently transferred to the assembly station on the production line without undergoing distortion. Consequently, the laminate is particularly well suited to welding. Other laminate materials may be used including PET/Aluminium/PP, PE/EVOH/PP, PET/metallised/PP and Aluminium/PP laminates. Panesar at p. 32, ll. 16-19: This movement also ensures that the great majority of the compressive force applied to the cartridge acts through the central region of the cartridge 1 through the load-bearing inner member 3. Panesar at p. 9, ll. 9–22: [T]he cartridge 1 generally comprises an outer membrane 2, an inner member 3 and a laminate 5. . . . Other components may optionally be included in the cartridge 1, such as a filter 4 . . . Panesar at p. 41 at line 30 – p. 42 at line 1: The quantity of beverage ingredients loaded into the brewing volume of the insert 400 may be loose or may be contained in a container such as a flexible filter bag made of filter paper. Panesar at p. 42, ll. 18–23: The insert 400 has been described particularly for use with beverage ingredients contained in containers such as 20 filter bags. As indicated, the beverage ingredients may alternatively be in a loose form. In this case, a separate filter may be provided in the insert 400 to prevent discharge of beverage ingredient residue. *Panesar* at Claim 10.

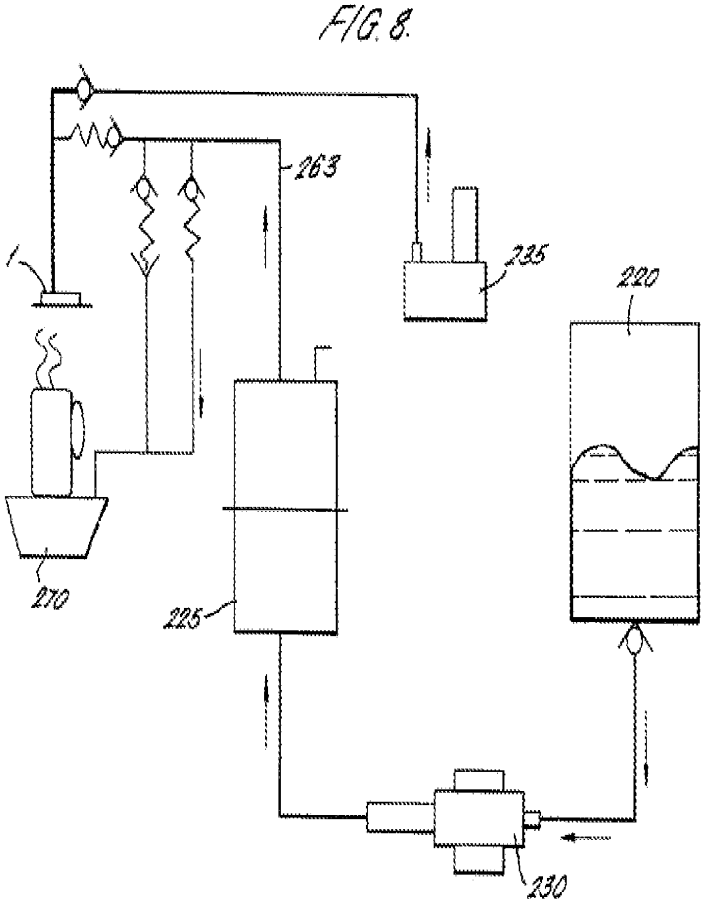
U.S. Patent No. 10,858,176	Disclosure
	Panesar at FIGs. 10 and 21: 

U.S. Patent No. 10,858,176	Disclosure
	FIG. 21. 
[1.c] and a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central portion of the cavity,	*See* [1.h], [1.i].
[1.d] the base element including a circumferential flange having a top side to which the first foil lid is sealed and an opposing bottom side	Panesar discloses, either expressly or inherently, inserting a first portion capsule into the apparatus, the first portion capsule including a first foil lid sealed to a base element having a

U.S. Patent No. 10,858,176	Disclosure
with a first barcode located on the bottom side,	cavity within which a powdered coffee material is located, the cavity being free of a filter and including a central portion. *See, e.g.*: Panesar at p. 12, ll. 1–7: A lower end of the outwardly extending shoulder 33 is provided with an outwardly extending flange 35 which extends perpendicularly to the major axis X. Typically the flange 35 has a width of between 2 and 4 mm. A portion of the flange 35 is enlarged to form a handle 24 by which the outer member 2 may be held. The handle 24 is provided with an upturned rim 25 to improve grip. Panesar at p. 16, ll. 28–32: The laminate 5 is then affixed to the outer member 2 by forming a weld 126 around the periphery of the laminate 5 to join the laminate 5 to the lower surface of the outwardly extending flange 35. *See also* Panesar at FIGs. 10, 15, 21. Panesar at p. 2, ll. 19–28: [T]he lower surface of the insert further comprises a barcode or RFID which, in use, is readable by a barcode or RFID reader of the beverage preparation machine for controlling operation of the beverage preparation machine, wherein the barcode or RFID is located on the lower surface of the insert such that a line joining the outlet of the insert to a centre of the barcode and a line joining the outlet of the insert to the inlet of the insert [are] separated by a minimum angular separation of greater than 70 degrees. Panesar at p. 2 at line 29 – p. 3 at line 12: Advantageously, it has been found that this minimum angular separation of the barcode or RFID from the inlet improves the accuracy of the reading of the barcode or RFID by the recognition means of the machine. Firstly, the separation results in any distortion of the inlet

U.S. Patent No. 10,858,176	Disclosure
	area having a minimal affect [sic] on the region of the barcode or RFID. Secondly, it has been found that there may be a small degree of leakage of fluid from the inlet area during dispensation since dispensation occurs at pressure. This fluid may spread, in particular due to capillary effect between the insert and a brew to partial obfuscation of the resulting in a greater chance head of the machine, leading barcode or RFID by the fluid of the barcode or RFID being misread. With the barcode or RFID separated by an angle of greater than 70 degrees it has been found that this problem does not occur. Panesar at p. 3, ll. 18–20: The barcode or RFID is preferably located at or near a periphery of the lower surface. Panesar at p. 18, ll. 24–31: [T]he cartridge 1 is provided on the laminate with a barcode 320 as shown in Figure 10. The barcode 320 is formed from a plurality of bars of contrasting colour. Preferably the bar are black on a white background to maximise the contrast. The barcode 320 is not required to conform to a published standard but a standard format for barcodes, such as EAN-13, UPC-A, or Interleaf 2 of 5 may be used. Panesar at p. 20, ll. 10–13: Preferably, the barcode 320 is also located near a periphery of the laminate 5 so as to separate the barcode 320 from the outlet 122 so as to avoid distortion of the barcode 320 on piercing of the outlet 122. Panesar at p. 35, ll. 24–31: To insert the cartridge 1 the holder 251 is opened as described above to expose the cartridge mount 257. The cartridge 1 is then placed on the cartridge mount 257 received within the recess 290 such that the handle 24 of the cartridge is located in the irregularity 291. The

U.S. Patent No. 10,858,176	Disclosure
	optical or magnetic barcode 320 or RFID of the cartridge 1 is oriented directly above the aperture 326 in the cartridge mount 257.
[1.e] the base element of the first portion capsule includes an outside surface having a plurality of vertically oriented grooves;	
[1.f] 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;	Panesar discloses, either expressly or inherently, 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. *See, e.g.:* Panesar at p. 23, ll. 23–32: The water pump 230 is operatively connected between the water tank 220 and the water heater 225 as shown schematically in Figure 8 and is controlled by the control processor. The pump provides a maximum flow rate of 900 ml/min of water at a maximum pressure of 2.5 bar. Preferably, in normal use, the pressure will be limited to 2 bar. The flow rate of

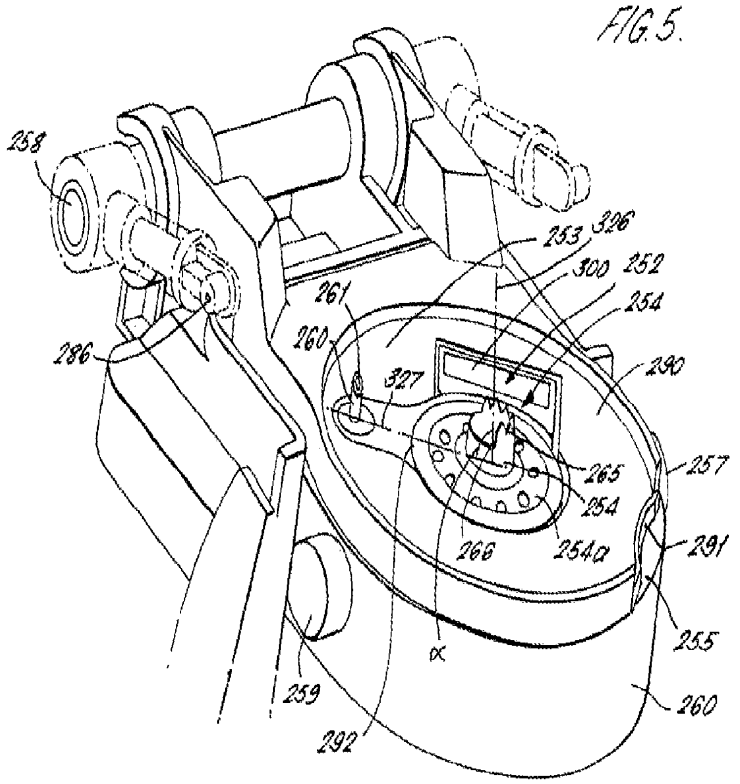
U.S. Patent No. 10,858,176	Disclosure
	water through the machine 201 can be controlled by the control processor to be a percentage of the maximum flow rate of the pump by cycle chopping the electrical supply to the pump. *Panesar* at FIG. 8:  The control processor of the beverage preparation machine 201 comprises a processing module and a memory. The control processor is operatively connected to, and controls operation of, the water heater 225, water pump 230, air compressor 235 and user interface 240.

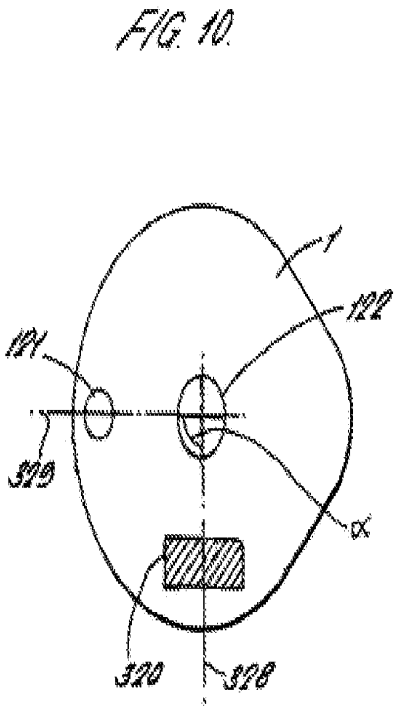
U.S. Patent No. 10,858,176	Disclosure
	The memory of the control processor includes one or more variables for one or more operational parameters for the beverage preparation machine 201. The operational parameters are the temperature of the water passed through the beverage cartridge 1 during the operating stage, the speed of charging the beverage cartridge 1, the presence or otherwise of a soak step, the total dispensed volume of the beverage, the flow rate of the water during the discharge stage, and the flow rate and period of the purge stage. Panesar at p. 25, ll. 8–29: The variables for the operational parameters are stored in the memory. The cartridge 1 comprises a code provided on or in the cartridge 1 representing the operational parameters required for optimal dispensation of the beverage in that cartridge 1 The code is in binary format and comprises a plurality of data bits corresponding to the variables stored in the control processor memory. Panesar at p. 34, ll. 5–12: The purpose of the recognition means 252 is to allow the machine 201 to recognise the type of beverage cartridge 1 that has been inserted and to adjust one or more operational parameters accordingly. In a typical embodiment, the recognition means 252 comprises an optical barcode reader which reads the printed barcode 320 provided on the laminate 5 of the beverage cartridge 1 as shown in Figure 10 and discussed above. Panesar at p. 34, line 28 – p. 35, line 4: The software can recognize whether the read of the barcode contained errors, although the occurrence of these is minimized as described above by specific location of the barcode 320 relative to the inlet. The barcode 320 may be rescanned a number of times before an error message is presented to the consumer. If the machine 201 is unable to read the barcode the consumer is able to use the beverage cartridge 1 to dispense a beverage using a manual mode of operation.

U.S. Patent No. 10,858,176	Disclosure
	Cartridge recognition is performed by the optical recognition means 252 as described above assuming that the outputs from the cartridge sensor and lock sensor are satisfactory. Once the barcode 320 or RFID has been decoded the operational parameters of the machine 201 are adjusted by the control processor. The discharge cycle is then automatically commenced. The discharge cycle has four main stages, not all of which are used for all beverage types: (i) Pre-wet (ii) Pause (iii) Brew/Mixing (iv) Purge Panesar at p. 36, ll. 15–31: In the pre-wet stage the cartridge 1 is charged with water from the water storage tank 220 by means of the water pump 230. The charging with water causes the beverage ingredients 200 in the filtration chamber 130 to be wetted. Panesar at p. 37, ll. 17–24: In the brew/mixing stage water is passed through the cartridge 1 in order to produce the beverage from the beverage ingredients 200. The temperature of the water is determined by the control processor which sends instructions to the water heater 225 to heat the water passing from the water tank 220 to the brew head 250. Water enters the lower part 255 of the holder 251 through the conduit 262 via the inlet valve and the inlet piercer 253 into the inlet chamber 25 126 of the beverage cartridge 1. Panesar at p. 24, ll. 10–14:

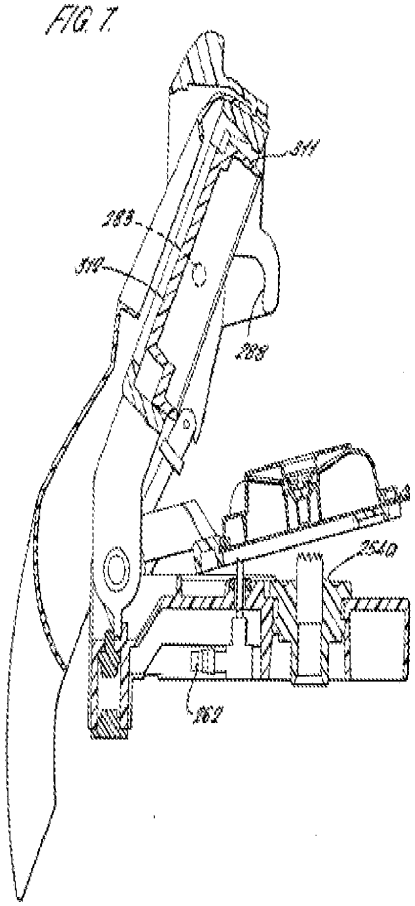
U.S. Patent No. 10,858,176	Disclosure
	The water heater 225 is located in the interior of the housing 210. The heater 225 has a power rating of 1550 W and is able to heat water received from the water pump 230 from a starting temperature of approximately 20 °C to an operating temperature of around 85 °C in under 1 minute.
[1.g] 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;	Panesar discloses, either expressly or inherently, 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. *See, e.g.*: Panesar at p. 3, ll. 22–26: The insert may be a cartridge. . . . The lower surface may be a laminate. In this case, the inlet and outlet of the cartridge may be portions of the lower surface which are opened for transportation, in use, by piercing the lower surface. Panesar at p. 8, ll. 20–26: The beverage preparation machine 201 generally comprises a housing 210 containing a water tank 220, a water heater 225, a water pump 230, an air compressor 235, a control processor, a user interface 240 and a brew head 250. The brew head 250 in turn generally comprises a 25 holder 251, recognition means 252 and inlet and outlet piercers 253, 254. Panesar at p. 9, ll. 9–18: [T]he cartridge 1 generally comprises an outer membrane 2, an inner member 3 and a laminate 5. The outer member 2, inner member 3 and laminate 5 are assembled to form the cartridge 1 which has an interior 120 for containing one or more beverage ingredients, an inlet 121, an outlet 122 and a beverage flow 15 path linking the inlet 121 to the outlet 122 and which passes through the interior 120. The inlet 121 and outlet 122 are initially sealed by the laminate 5 and are opened in use by piercing or cutting of the laminate 5.

U.S. Patent No. 10,858,176	Disclosure
	Panesar at p. 17, ll. 25–29: To use the cartridge 1 it is first inserted into the beverage preparation machine and the inlet 121 and outlet 122 are opened by piercing members of the beverage preparation machine which perforate and fold back the laminate 5. Panesar at p. 29 at line 3 – p. 30 at line 29: The lower part 255 comprises the inlet and outlet piercers 253, 254 and the head 300 of the cartridge recognition means 252. The inlet piercer 253 comprises a hollow needle-like tube 260 having a sharpened end 261 for perforating the laminate 5 of the beverage cartridge 1 in use. The inlet piercer 253 is in fluid communication with a water conduit 262 as shown in Figure 7 which passes through the lower part 255 and is connected to an outlet conduit 263 of the water heater 225. The outlet piercer 254 is similar in type to the outlet piercer described in the applicant's European patents EP 0 389 141 and EP 0 334 572 and comprises an open ended cylinder 264 of circular or D-shaped cross-section having dimensions larger than the discharge spout 43. An arcuate portion 265 of the upper end of the outlet piercer 254 is serrated to pierce and eventually cut the laminate of the beverage cartridge 1. The remainder of the upper end is cut back longitudinally of the cylinder at least to the base of the teeth 266 of the serrated portion to fold or pull the cut laminate 5 away from the outlet aperture before the beverage is dispensed there through. The outlet piercer 254 pierces the laminate 5 externally of the discharge spout 43 and when the cartridge mount 257 is in the closed position, rests in the annulus between the discharge spout 43 and the outer wall 42 of the discharge funnel 40. The outlet piercer 254 folds back the cut laminate 105 into the annulus. Thereby both the outlet piercer 254 and the cut laminate 105 are held out of the way of the discharged beverage. The outlet piercer 254 is surrounded by a ledge 254a which is raised relative to its surroundings by 0.5mm. Advantageously, the outlet piercer 254 is removable from the lower part 255 to enable it to be thoroughly cleaned, for example, in a dishwasher. The removable outlet piercer 254 is received in a recess 267 in the lower part 255 where it is seated. The inlet piercer 253 and/or the outlet piercer 254 may be made of a metal, such as stainless steel, or from a plastics material.

U.S. Patent No. 10,858,176	Disclosure
	Panesar at p. 35 at line 32 – p. 33 at line 3: During closure the inlet and outlet piercers 253, 254 pierce the laminate 5 of the cartridge 1 to form the cartridge inlet 121 and outlet 122. *Panesar* at FIG. 5: 

U.S. Patent No. 10,858,176	Disclosure
	Panesar at FIG. 10: 
[1.h] sealing the first foil lid against a seal of the apparatus;	Panesar discloses, either expressly or inherently, unloading the first portion capsule from the apparatus. *See, e.g.*: Panesar at p. 28 at line 22 – p. 29 at line 2: When the holder 251 is in the closed position, the viewing window 312 bears against the beverage cartridge 1 biasing it against the lower part 256. In one arrangement, the rim 311 of the viewing window contacts and bears against the flange 35 of the beverage cartridge. At the same time the window 312 contacts the closed top 11 of the cartridge 1. In an alternative arrangement, only the viewing window 312 contacts the closed top 11 of the cartridge 1, and there is no bearing contact between the rim 311 and the flange 35. The pressure exerted by the rim 311 on the flange 35 and/or by the window 312 on the closed top 11 ensures a fluid tight seal between the cartridge 1 and the holder 251.

U.S. Patent No. 10,858,176	Disclosure
	Panesar at p. 31 at line 19 – p. 32 at line 8: During this last stage of rotation the cartridge 1 is compressed between the cartridge mount 257 and the viewing window 312. As a result, the viewing window 312 is moved axially relative to the circular body 310 of the upper part 256 against the bias of the wave spring or helical springs. This movement allows for a take up of tolerances in the beverage cartridge 1 and beverage preparation machine and ensures that the amount of compressive force applied to the cartridge is kept within an acceptable range. The clamping force of the mechanism as moderated by the action of the wave spring or helical springs ensures a clamping pressure on the cartridge. For the arrangement where bearing pressure is applied to both the flange 35 and the closed top 11 of the cartridge 1, it has been found that a pressure of between 130 and 280N is required. Preferably the force is approximately 200N. A force less than about 130N does not provide an adequate seal, whilst a force greater than about 280N leads to plastic failure of the components of the cartridge 1. For the arrangement where bearing pressure is applied only to the closed top 11 of the cartridge 1 it has been found that a pressure of between 50N and 280N is required. Panesar at p. 32, ll. 19–30: In the closed position the cartridge 1 may thus be clamped around the flange 35 by means of the rim 311 of the viewing window 312 and is always firmly clamped between the closed top 11 of the cartridge and the outer tube 42 of the inner member 3 by contact with the viewing window 312 and the ledge 254a. These clamping forces help prevent failure of the cartridge 1 during pressurisation and also ensure that the inner member 3 and outer member 2 are fully seated relative to one another and thus that all internal passageways and apertures remain at their intended dimensions even during internal pressurisation. Panesar at p. 36, ll. 5–10: When closed the holder 251 grips the cartridge 1 around the rim 35 between the cartridge mount 257 and the upper part 256 and/or between the window 311 and the top 11 of the

U.S. Patent No. 10,858,176	Disclosure
	cartridge 1 to form a fluid tight seal of sufficient integrity to withstand the pressures developed during the dispense cycle. Panesar at Fig. 7: 

U.S. Patent No. 10,858,176	Disclosure
[1.i] introducing 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;	Panesar discloses, either expressly or inherently, introducing 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. *See, e.g.*: Panesar at p. 17 at line 29 – p. 18 at line 5: An aqueous medium, typically water, under pressure enters the cartridge 1 through the inlet 121 into the inlet chamber 26 at a pressure of between 0.1-2.0 bar. From there the water is directed to flow through the slots 30 and round the manifold 16 and into the filtration chamber 130 of the cartridge 1 through the plurality of slots 17. The water is forced radially inwardly through the filtration chamber 130 and mixes with the beverage ingredients 200 contained therein. Panesar at p. 23, ll. 23–32: The water pump 230 is operatively connected between the water tank 220 and the water heater 225 as shown schematically in Figure 8 and is controlled by the control processor. The pump provides a maximum flow rate of 900 ml/min of water at a maximum pressure of 2.5 bar. Preferably, in normal use, the pressure will be limited to 2 bar. The flow rate of water through the machine 201 can be controlled by the control processor to be a percentage of the maximum flow rate of the pump by cycle chopping the electrical supply to the pump.