PTO/AIA/15 (03-13)
Approved for use through 01/31/2014. OMB 0651-0032
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UTILITY PATENT APPLICATION TRANSMITTAL

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

Attorney Docket No.	1859.029USC10 (KRU0022-WO-US-T11)
First Named Inventor	Marc Krüger
Title	PORTION CAPSULE HAVING AN IDENTIFIER
Express Mail Label No.	Via EFS at USPTO.GOV on July 23, 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 - Track One Request

*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 23, 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.

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:	1859.029USC10
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:	43328599
Application Number:	17383951
International Application Number:	
Confirmation Number:	6871
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:	1859.029USC10
Receipt Date:	23-JUL-2021
Filing Date:	
Time Stamp:	14:27:39
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	E20217ME28434389
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	TrackOne Request	TrackOne_1859_029USC10_KRU0022_WO_US_T11.pdf	114462 71b108924988 5f259a6d2c3dce1c0a9c055bcca7	no	2
Warnings:					
Information:					
2	Power of Attorney	PowerOfAttorney_1859_029USC10_KRU0022_WO_US_T11.pdf	636908 8a114483321654 5c3f5ee5a759ce94abae52b4c2	no	1
Warnings:					
Information:					
3	Oath or Declaration filed	Oath_Dec_1859_029USC10_KRU0022_WO_US_T11.pdf	117432 3bf2aef69e7b989ad45087a5993a37390b7a4cde	no	1
Warnings:					
Information:					
4	Interim Copy of the Foreign Priority Document	CertifiedEnglishTranslationOf_DE102010031988_0.pdf	2253563 5fbdb09e747a7f00fb2a0694eedb58296671364f	no	22
Warnings:					
Information:					
5	Interim Copy of the Foreign Priority Document	CertifiedEnglishTranslationOf_DE102010044251_8.pdf	3763385 4ca493419f83c432bcdfe9b6c3ff3d6fe5fd8b6b	no	33
Warnings:					
Information:					
6	Interim Copy of the Foreign Priority Document	CertifiedEnglishTranslationOf_DE102011010534_4.pdf	3169169 3d1d17d593e541a65c744edc04244367376cddcc	no	21
Warnings:					
Information:					

7		Application_1859_029USC10_KRU0022_WO_US_T11.pdf	239583 6815847cb22a1d83450ee48f1132253133448c4d	yes	25
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Specification		1	21	
	Claims		22	24	
	Abstract		25	25	
Warnings:					
Information:					
8	Drawings-only black and white line drawings	Drawings_1859_029USC10_KRU0022_WO_US_T11.pdf	2458741 e86bb565d9231e838908dd9a3e4b7533deb1ed77	no	12
Warnings:					
Information:					
9	Application Data Sheet	ApplicationDataSheet_1859_029USC10_KRU0022_WO_US_T11.pdf	1256610 cc30dabc6cb84c33de906346dccc5d58c5b32016	no	9
Warnings:					
Information:					
10	Transmittal of New Application	Transmittal_1859_029USC10_KRU0022_WO_US_T11.pdf	310975 c555048ea216a90efbdd61a5e33cbd7445ef367e	no	2
Warnings:					
Information:					
11	Fee Worksheet (SB06)	fee-info.pdf	36939 4eb593c63bc424c246ffbe6710a3eb5267b1c7d0	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	14357767		

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.

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 23, 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.

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

PTO/AIA/82B (07-13)
Approved for use through 11/30/2014. OMB 0651-0031
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE
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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)	21 OCT 2015
Name	Marc Kruger		
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.

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:

☑ 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.

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.

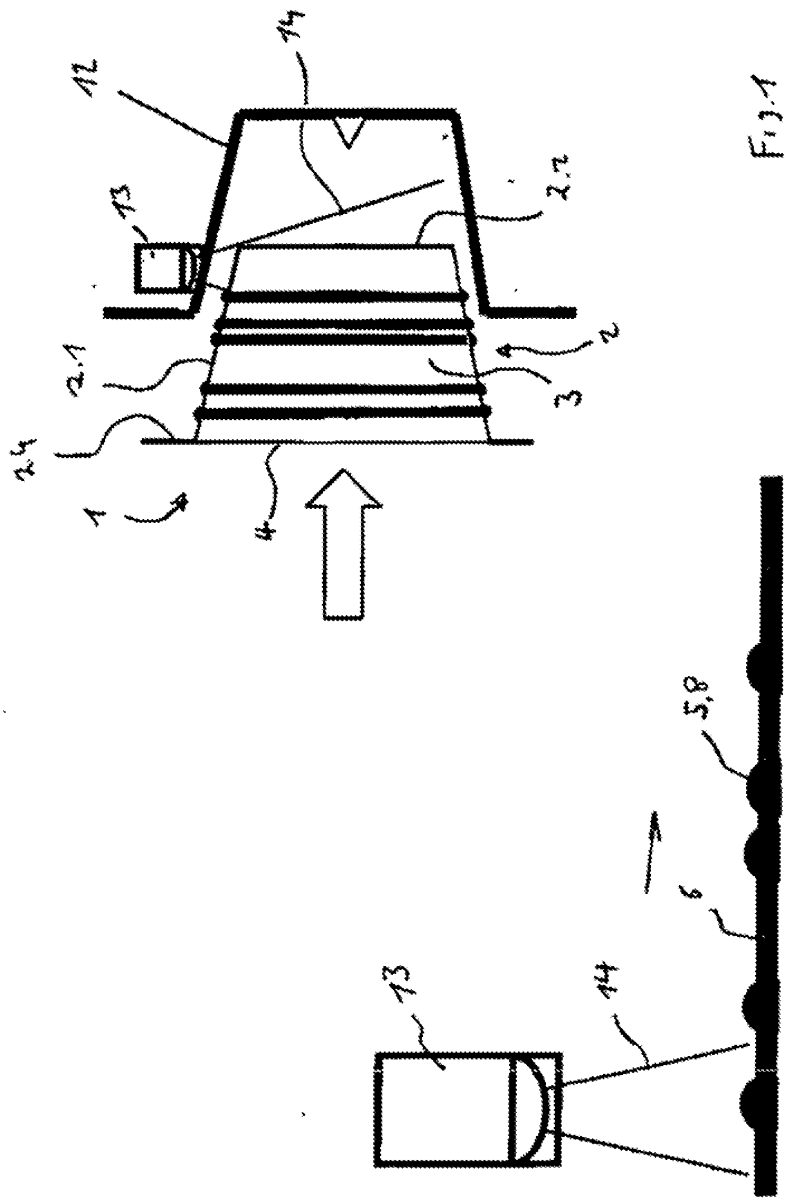


Fig.1

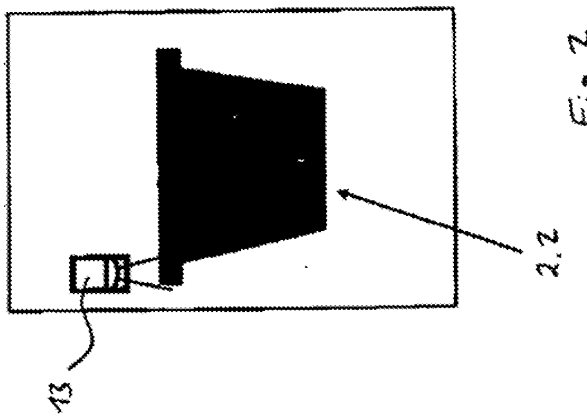


Fig. 2

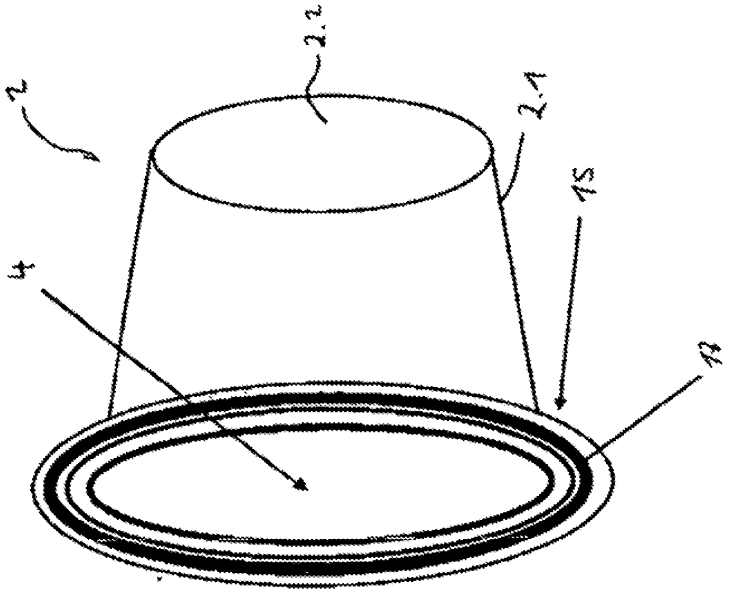
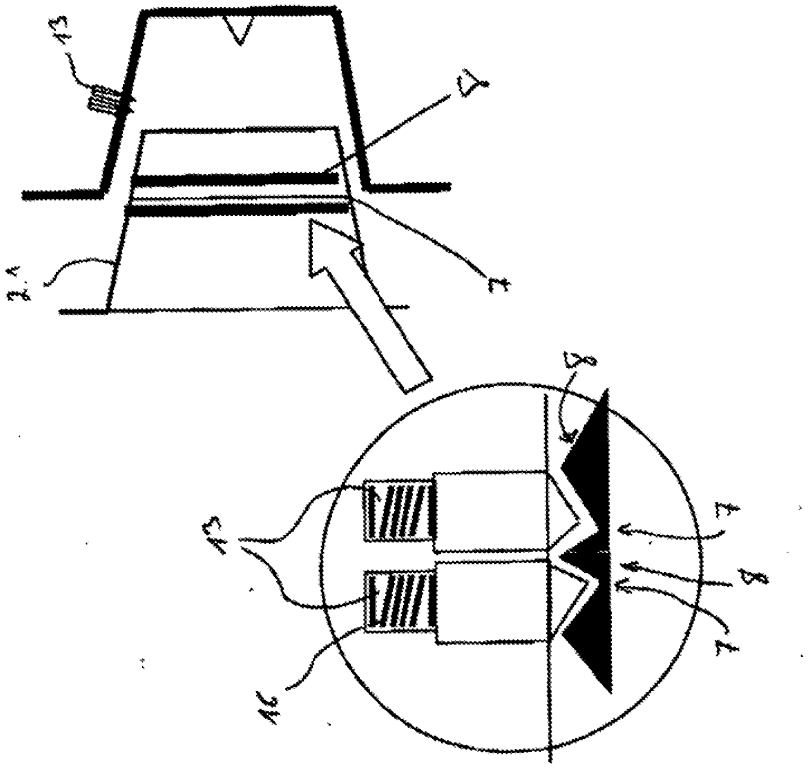


Fig. 3



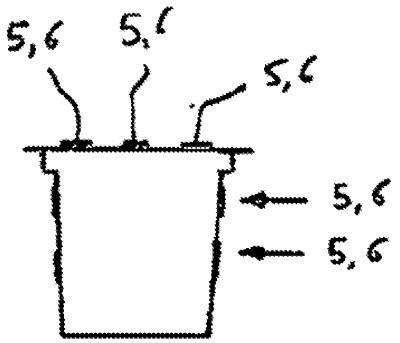


Fig.4

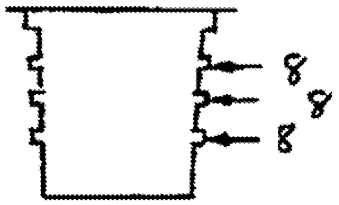


Fig.5

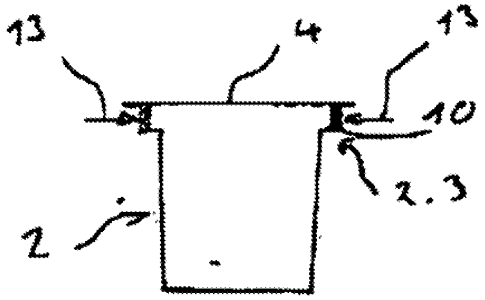


Fig. 6

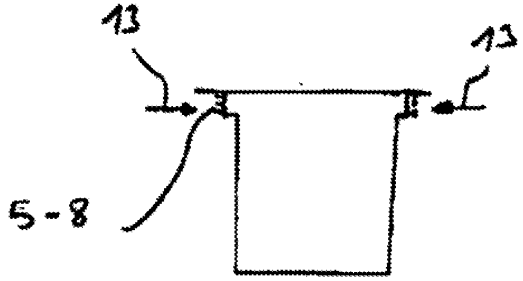


Fig. 7

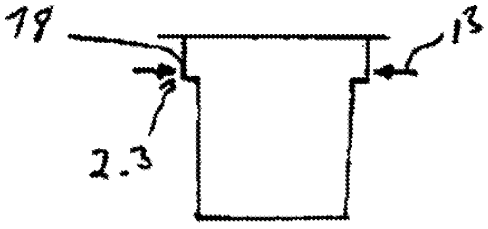


Fig. 8

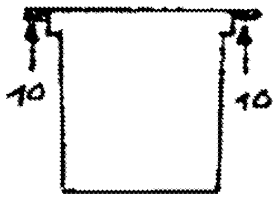


Fig. 9

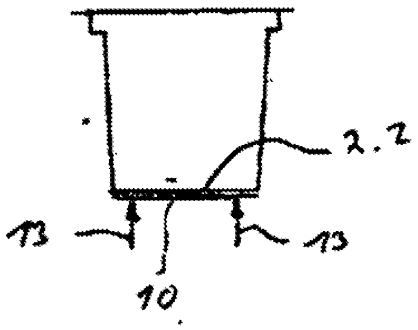


Fig. 10

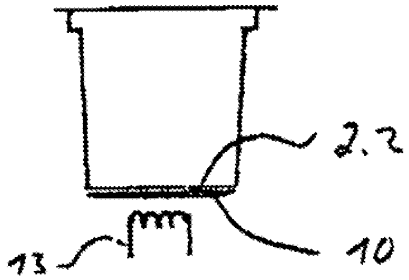


Fig. 11

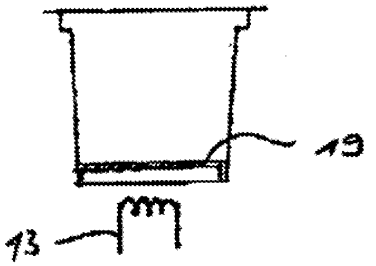


Fig. 12

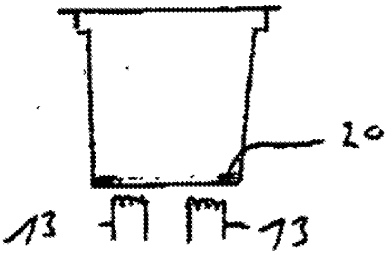


Fig. 13

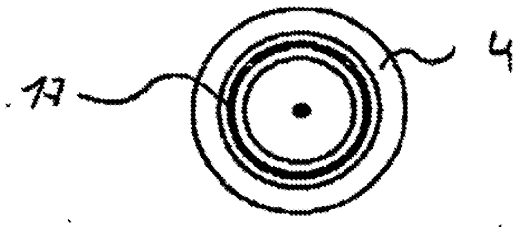
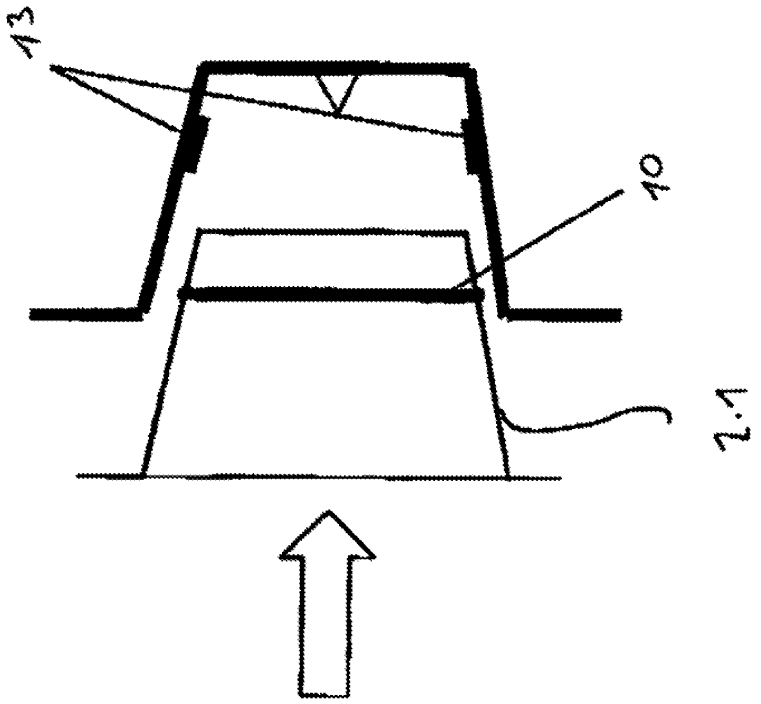


Fig. 14

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.

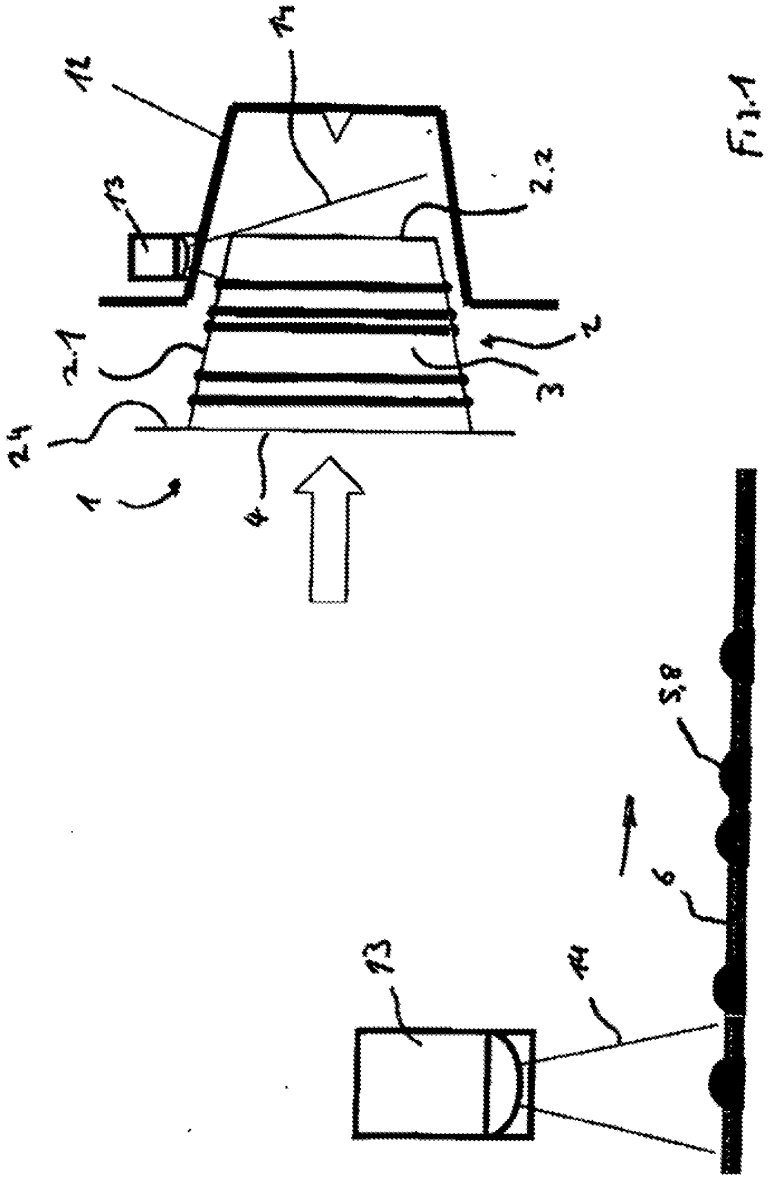


Fig.1

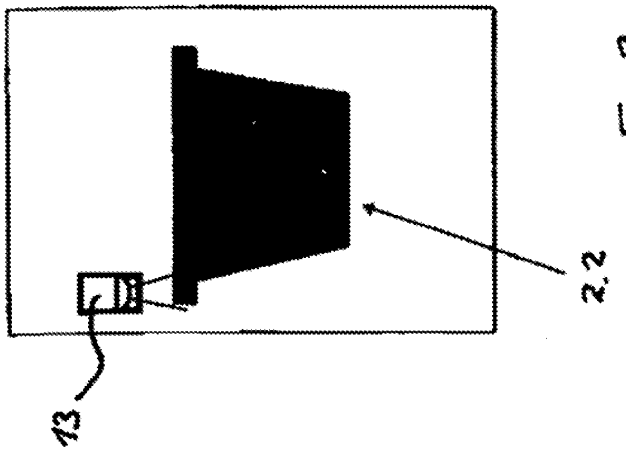


Fig. 2

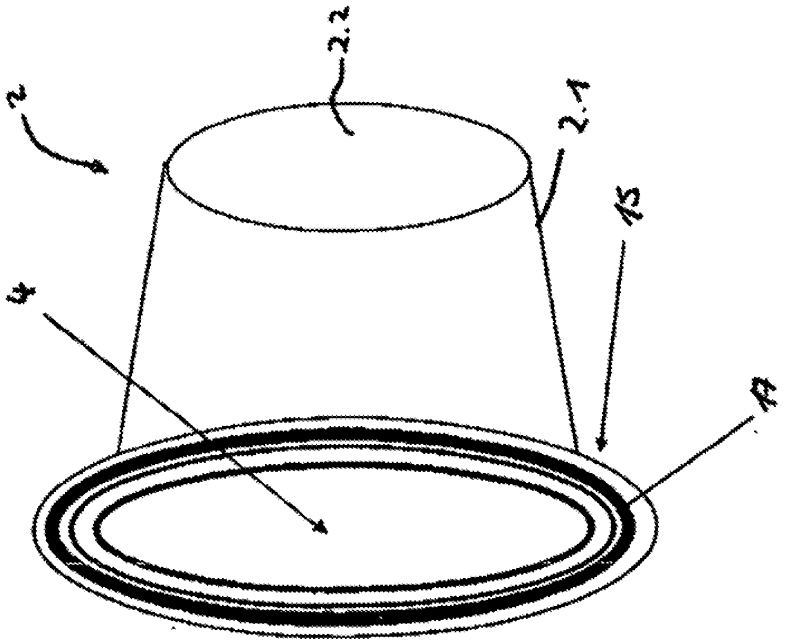
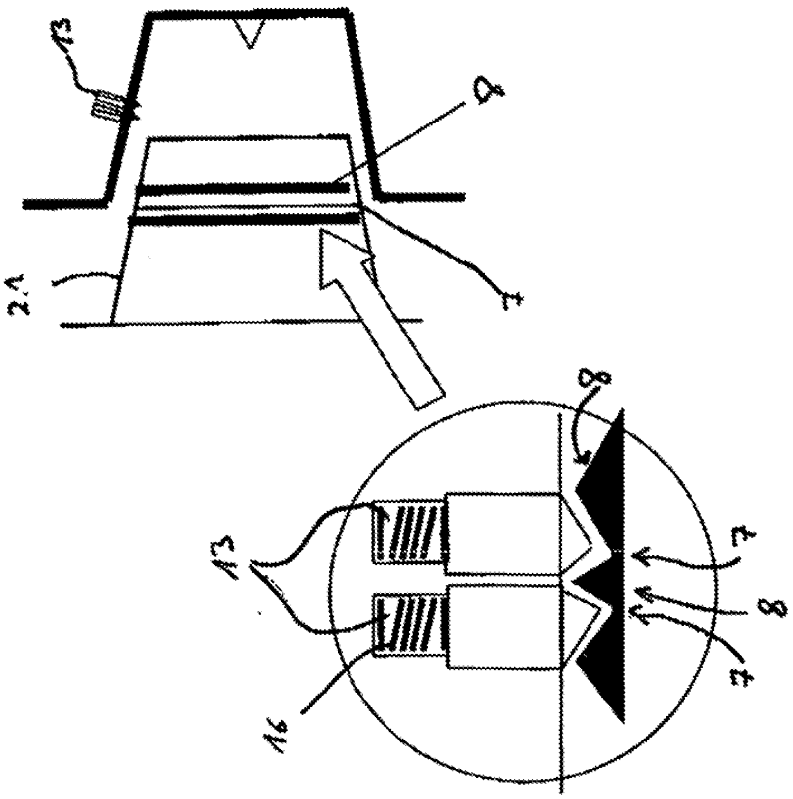


Fig.3



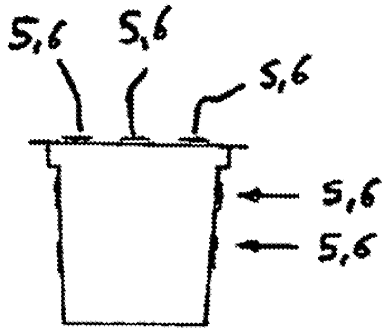


Fig 4

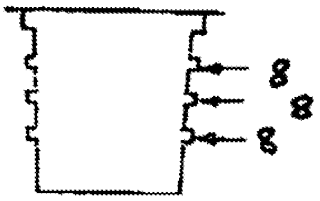


Fig. 5

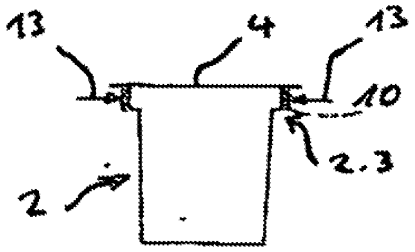


Fig. 6

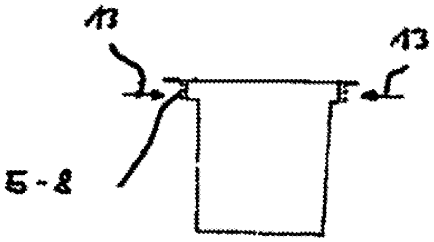


Fig. 7

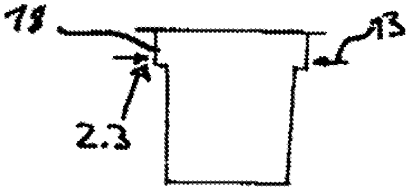


Fig. 8

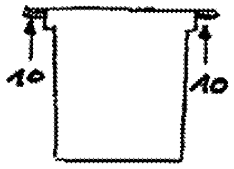


Fig. 9

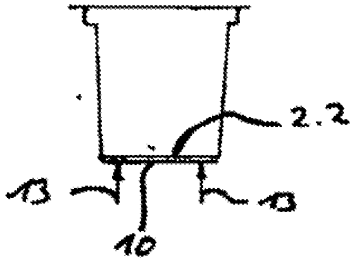


Fig.10

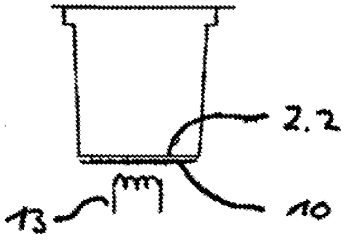


Fig.11

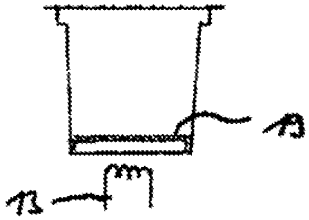


Fig.12

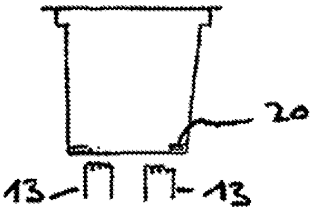


Fig.13

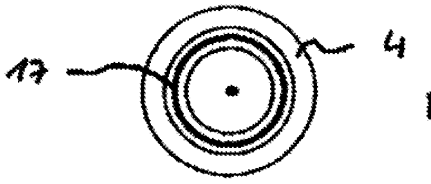
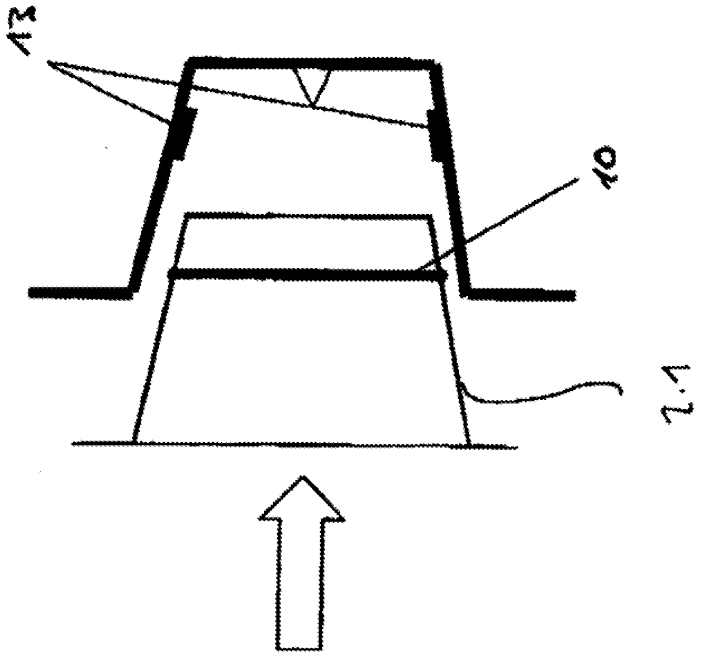
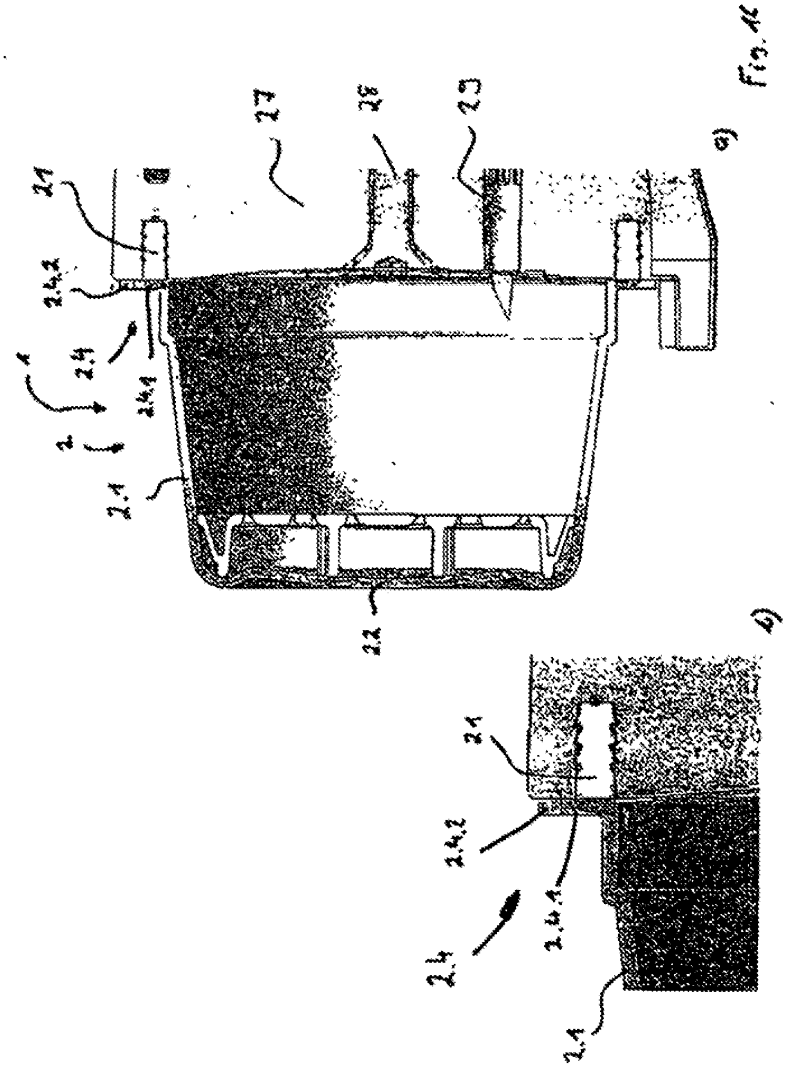


Fig.14

Fig.15




Fig. 4c
a)
17
18
13
21
24.2
24
24.1
2
2.1
22
b)
21
24.2
24
24.1
2.1

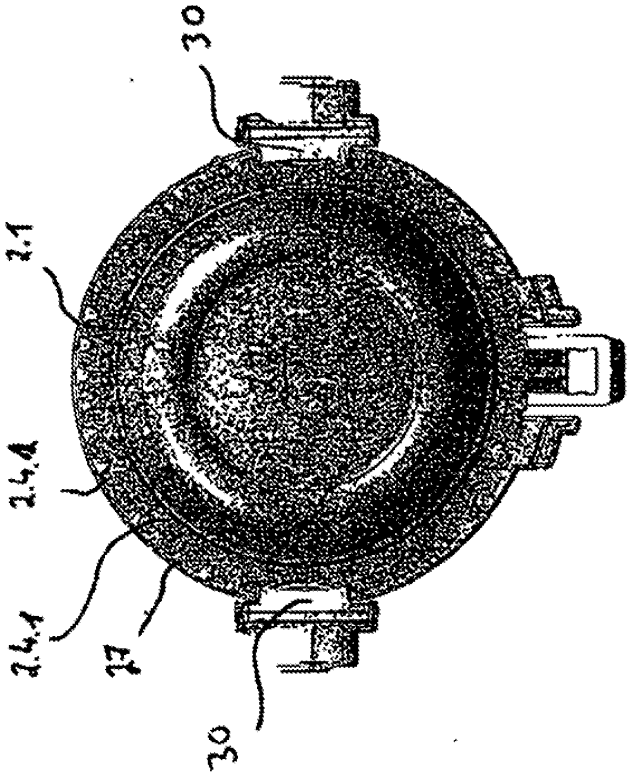
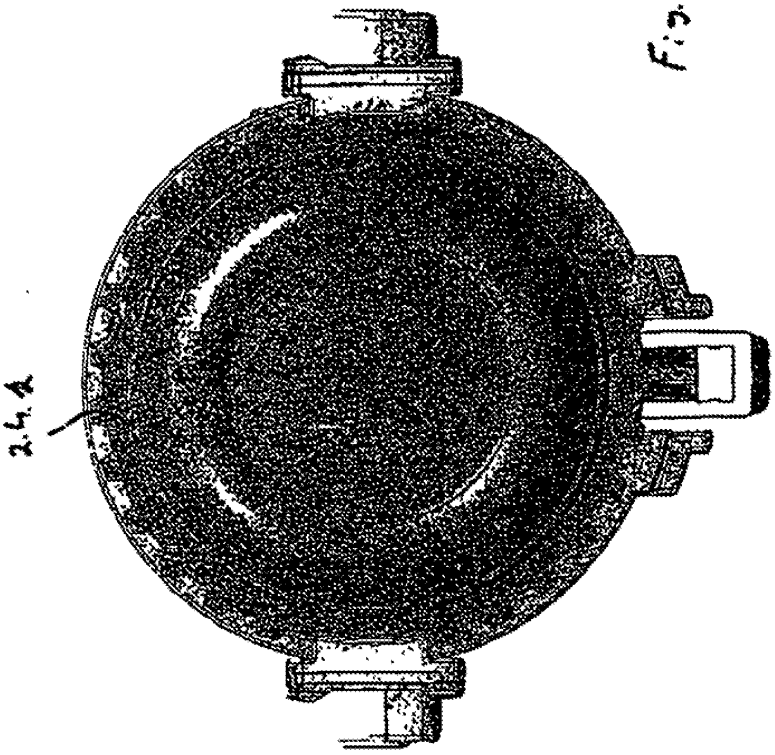


Fig. 17a

Fig. 17c



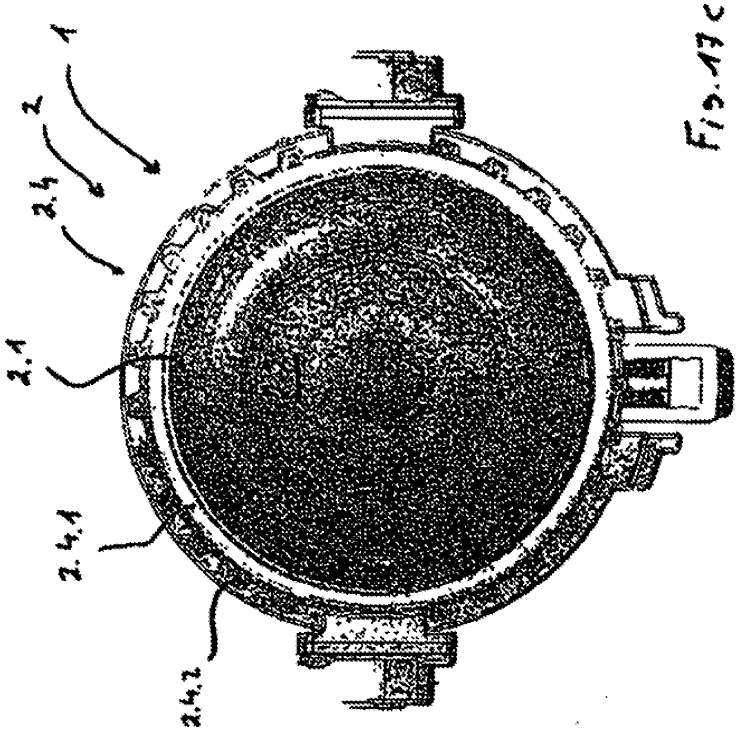
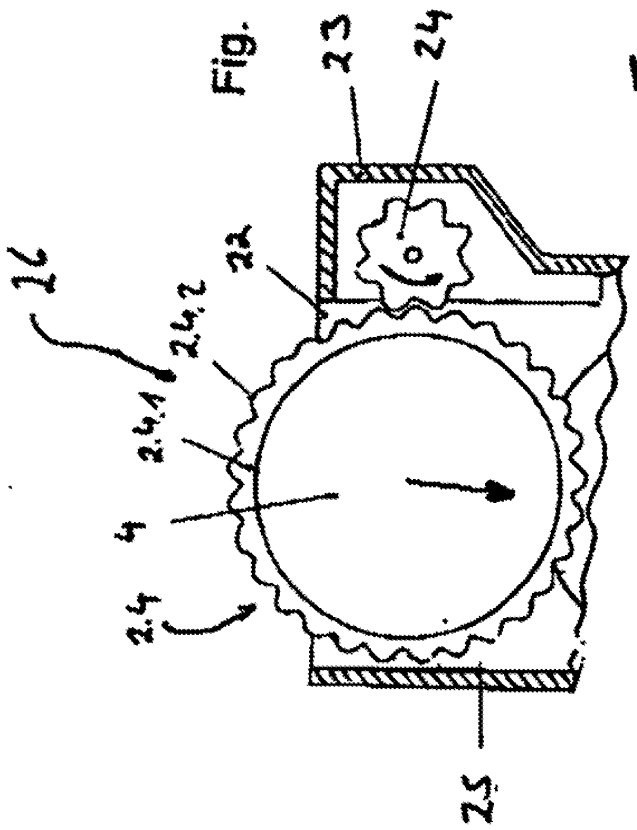


Fig. 17c

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)

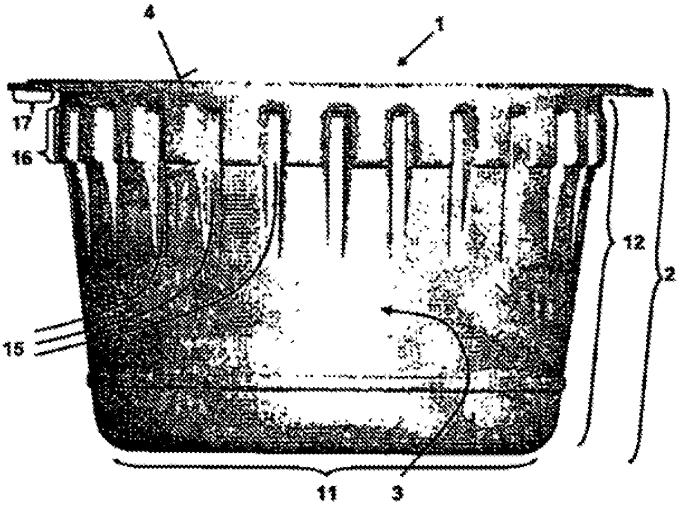


Fig. 1

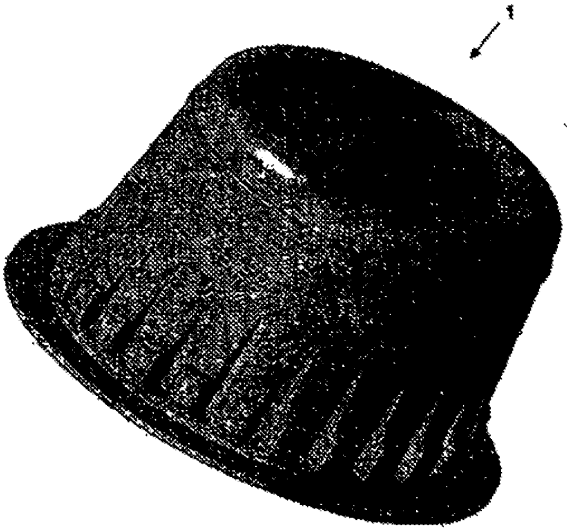


Fig. 2

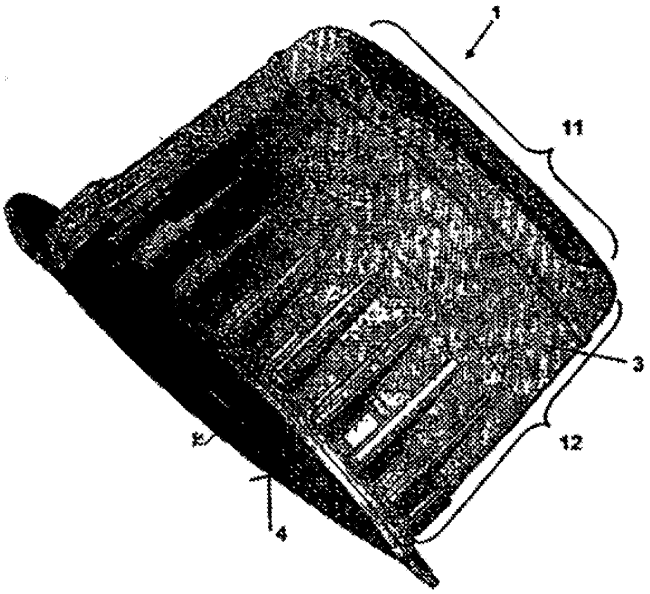


Fig. 3

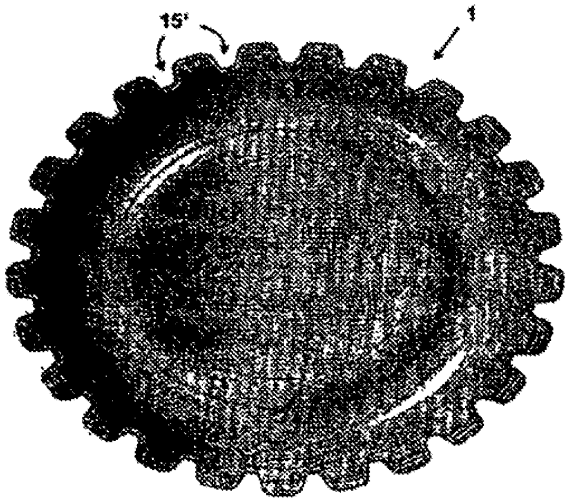


Fig. 4

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.

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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

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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

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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

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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

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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

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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

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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

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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.

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[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

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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.

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[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.

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[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

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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

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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

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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.

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[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

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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

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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

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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

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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.

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CLAIMS

1) 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; 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 comprises a barcode that is provided on the bottom side of the flange; and

a beverage machine comprising: a sensor/detector configured to read the barcode, a media chute configured to receive and support the single-serve capsule, and a pump controlled to supply water into the single-serve capsule.

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

3) The beverage system according to claim 1, wherein the base element comprises a side wall comprising a concavity.

4) The beverage system according to claim 1, wherein the base element comprises a side wall comprising a convexity.

5) The beverage system according to claim 1, wherein the base element comprises a side wall comprising a concavity and a convexity.

6) The beverage system according to claim 5, wherein identifier is also located on the side wall.

7) The beverage system according to claim 1, wherein the base element comprises

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a side wall on which the identifier is also located.

8) The beverage system according to claim 4, wherein the base element comprises a side wall on which the identifier is also located.

9) The beverage system according to claim 5, wherein the single-serve capsule comprises a barrier layer to prevent moisture or aroma from escaping out of the single-serve capsule.

10) The beverage system according to claim 7, wherein the single-serve capsule comprises a barrier layer to prevent moisture or aroma from escaping out of the single-serve capsule.

11) The beverage system according to 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 beverage system according to claim 1, wherein the base element comprises plastic.

13) The beverage system according to claim 5, wherein the sensor/detection means compares the identifier with a stored identifier.

14) The beverage system according to claim 1, wherein the raw beverage material is coffee powder, chocolate powder, milk powder, or tea.

15) The beverage system according to claim 1, wherein the identifier comprises a repeat pattern.

16) A beverage system for making a beverage, comprising:
a single-serve capsule, comprising: a base element with a cavity, in which a raw

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beverage material is provided, the base element is made of a biodegradable material, the base element comprises a side wall comprising a concavity and a convexity; 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 provided on the bottom side of the flange; and

a beverage machine comprising: a sensor/detector to read the barcode, a media chute configured to receive and support the single-serve capsule, and a pump controlled to supply water into the single-serve capsule.

17) The beverage system according to claim 16, wherein the sensor/detection means compares the identifier with a stored identifier.

18) The beverage system according to claim 16, wherein the identifier comprises a repeat pattern.

19) The beverage system according to claim 16, wherein identifier is also located on the side wall.

20) The beverage system according to claim 19, wherein the identifier is a barcode.

K-FEE SYSTEM GMBH, EX2012, page 112
NESPRESSO USA, INC. v. K-FEE SYSTEM GMBH
IPR2023-00485, U.S. PATENT 11,230,430

PORTION CAPSULE HAVING AN IDENTIFIER

ABSTRACT

A beverage system for making a beverage, including: a single-serve capsule including: 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; 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; the single-serve capsule is free of a filter; the capsule has an identifier, which makes it possible to individualize the respective single-serve capsule, the identifier comprises a barcode that is provided on the bottom side of the flange; and a beverage machine including: a sensor/detector configured to read the barcode, a media chute configured to receive and support the single-serve capsule, and a pump controlled to supply water into the single-serve capsule.

K-FEE SYSTEM GMBH, EX2012, page 113
NESPRESSO USA, INC. v. K-FEE SYSTEM GMBH
IPR2023-00485, U.S. PATENT 11,230,430

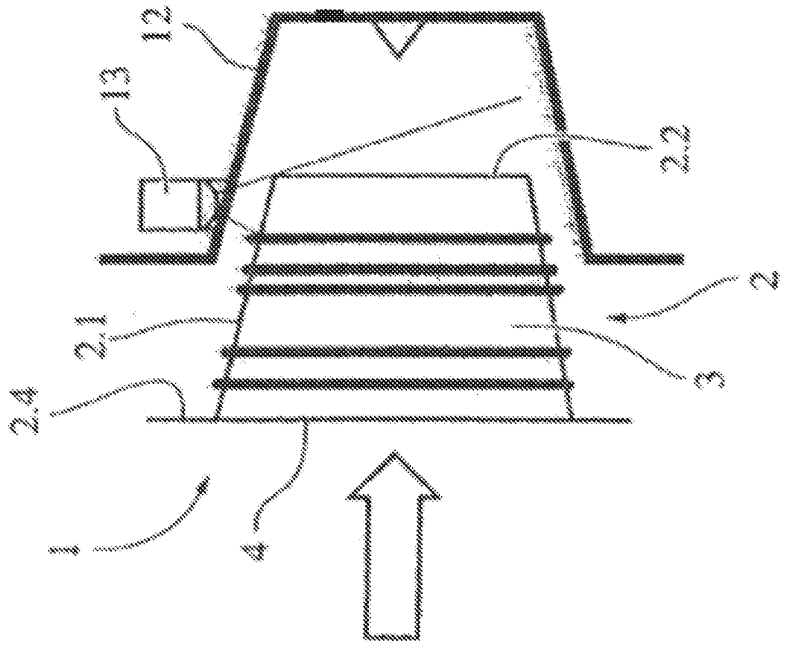


Fig. 1B

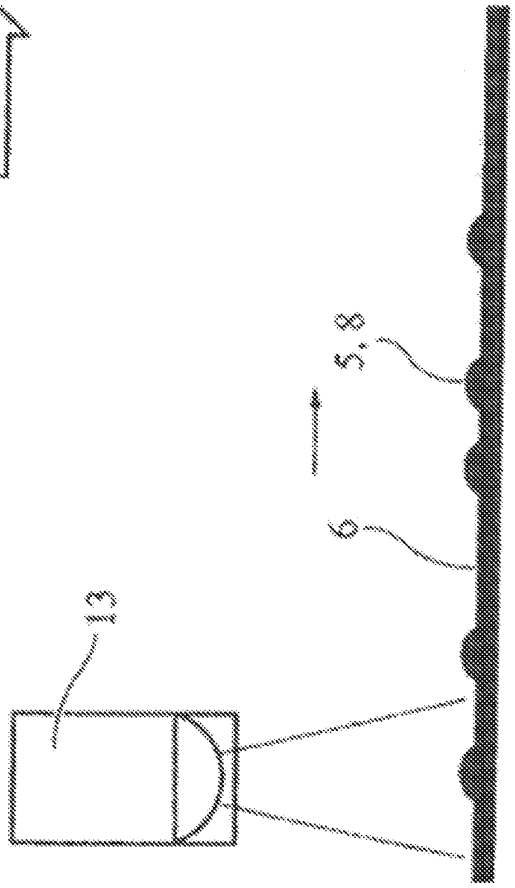


Fig. 1A

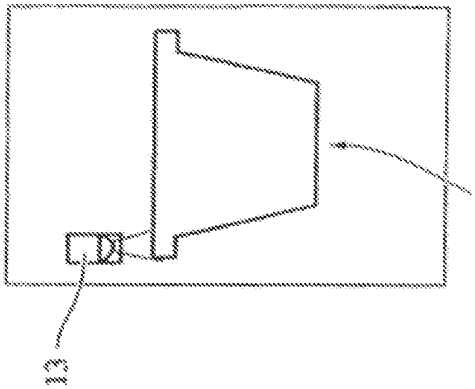


Fig. 2B

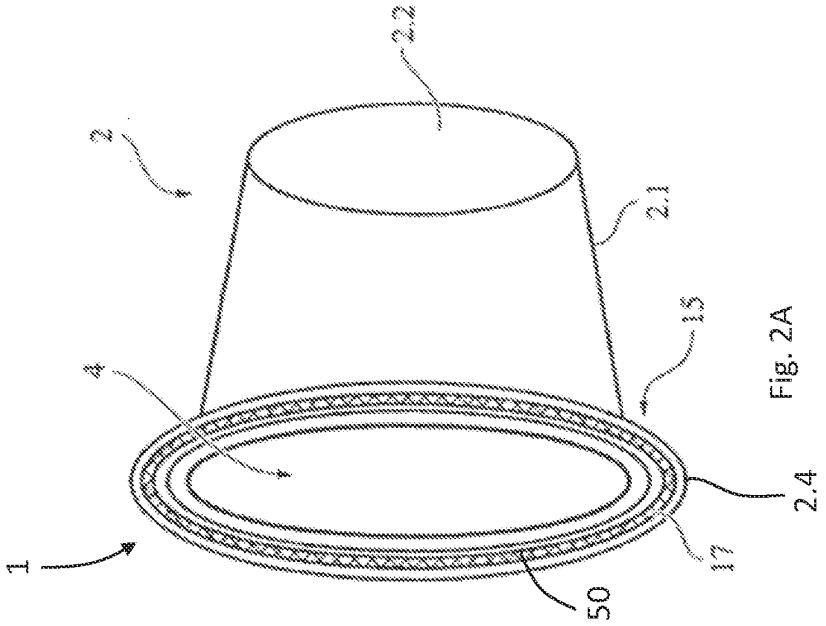


Fig. 2A

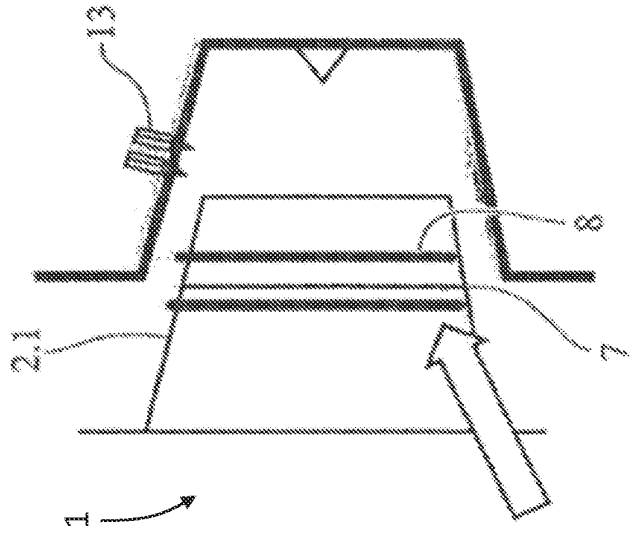


Fig. 3A

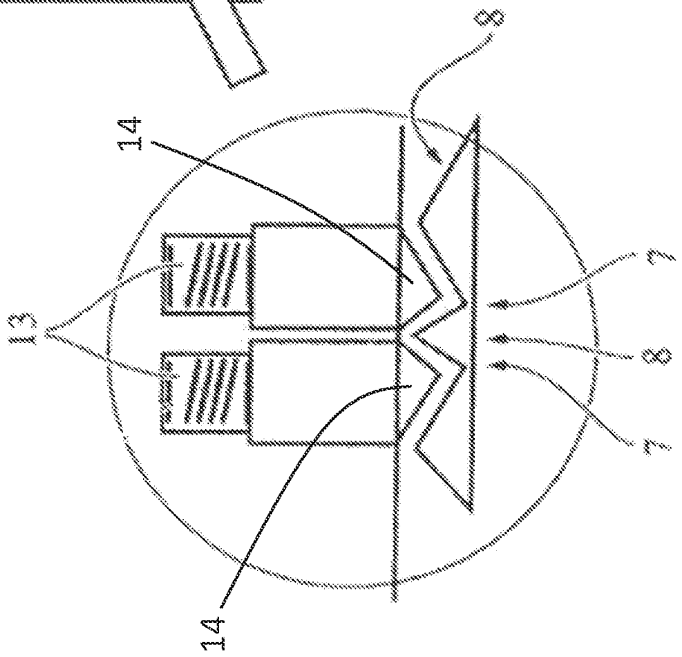


Fig. 3B

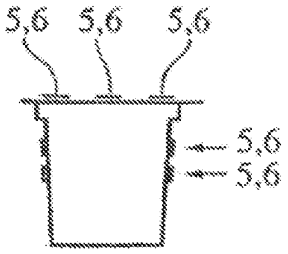


Fig. 4

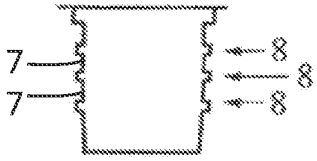


Fig. 5

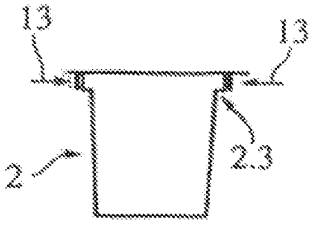


Fig. 6

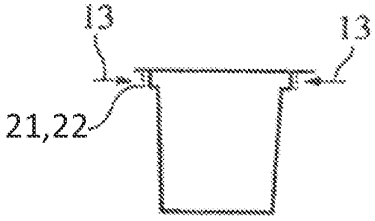


Fig. 7

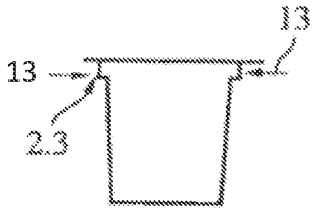


Fig. 8

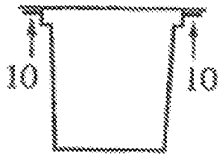


Fig. 9

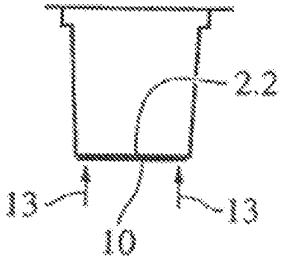


Fig. 10

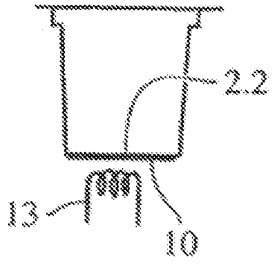


Fig. 11

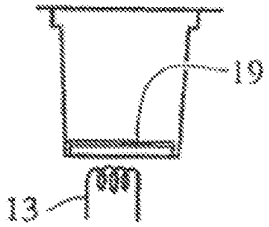


Fig. 12

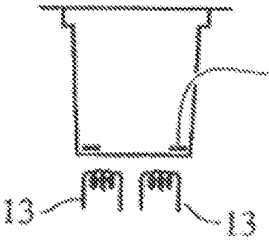


Fig. 13

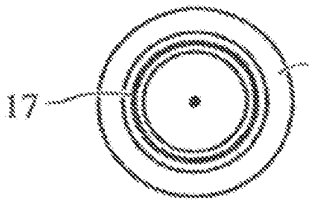


Fig. 14

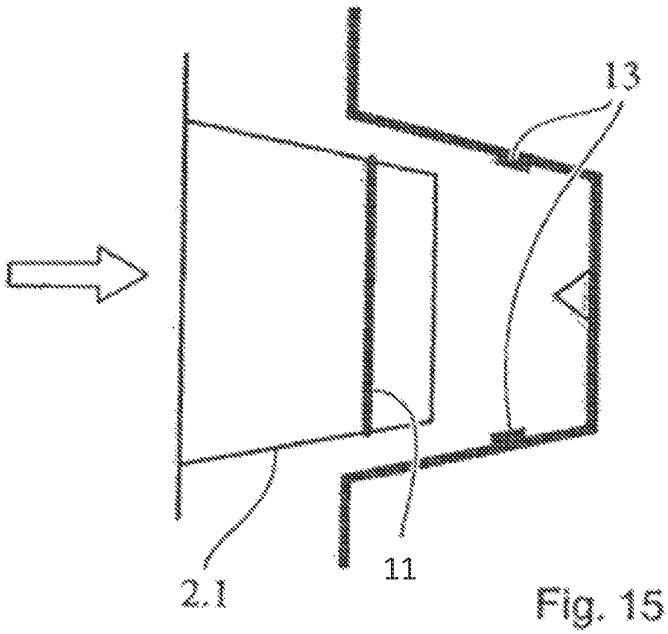


Fig. 15

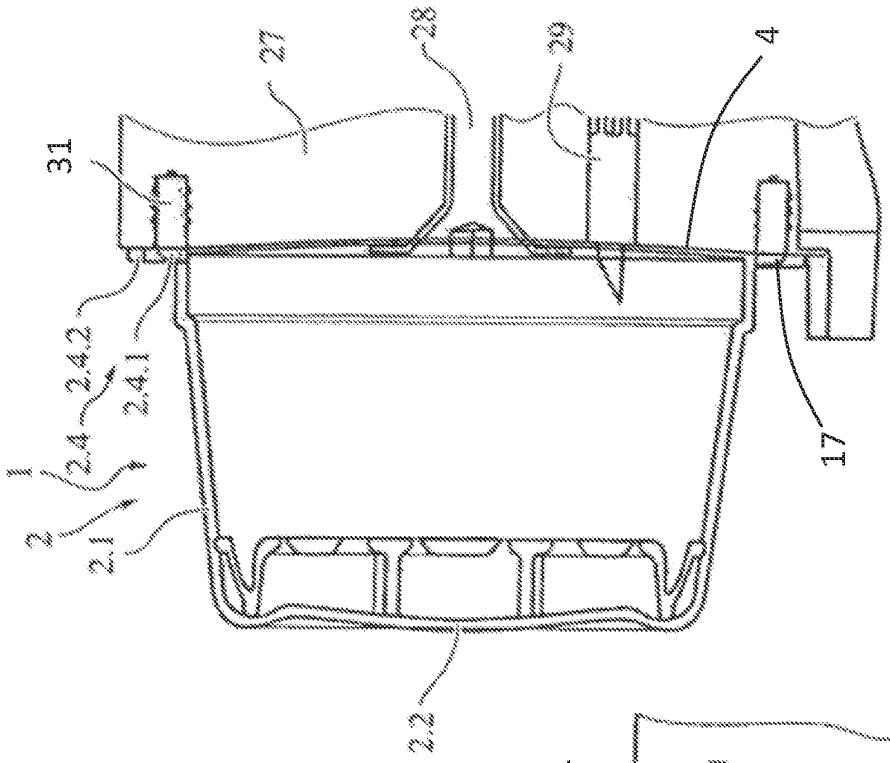


Fig. 16A

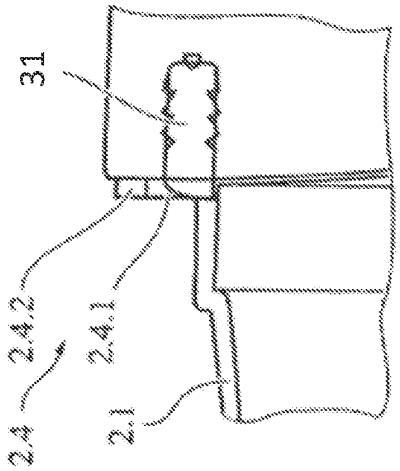


Fig. 16B

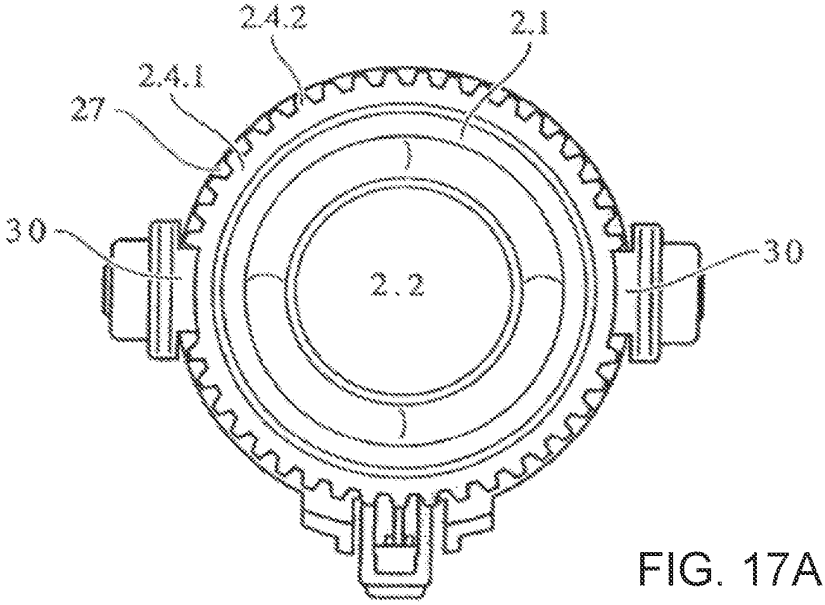


FIG. 17A

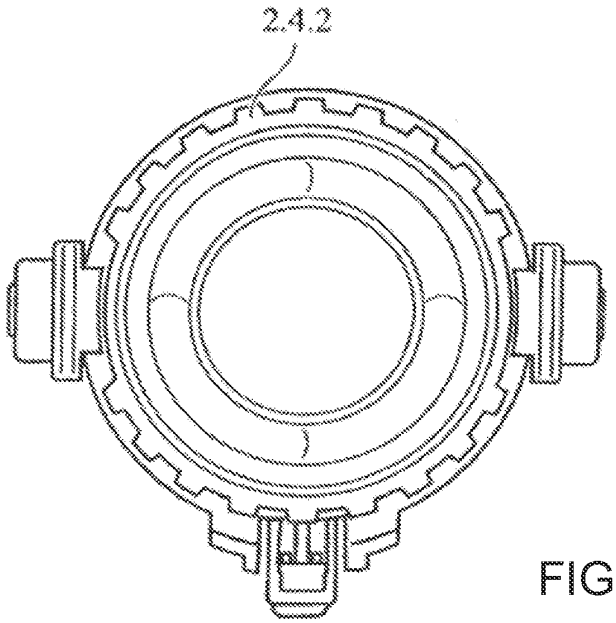


FIG. 17B

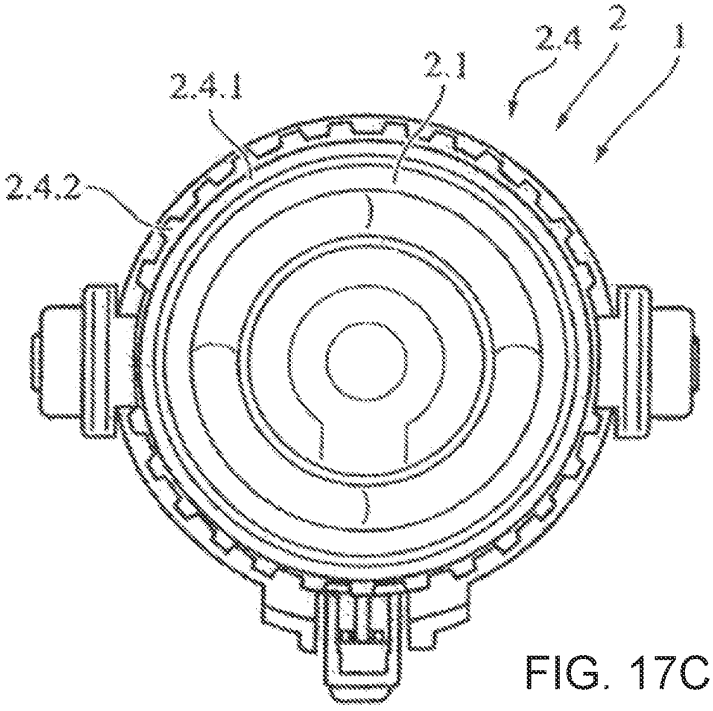


FIG. 17C

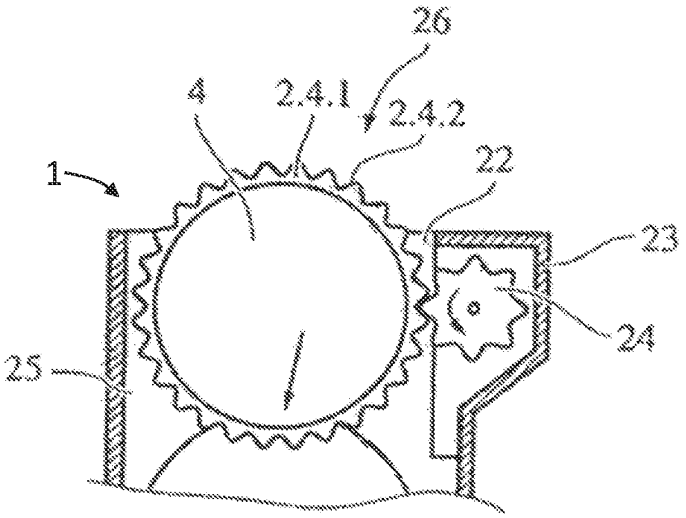


Fig. 18

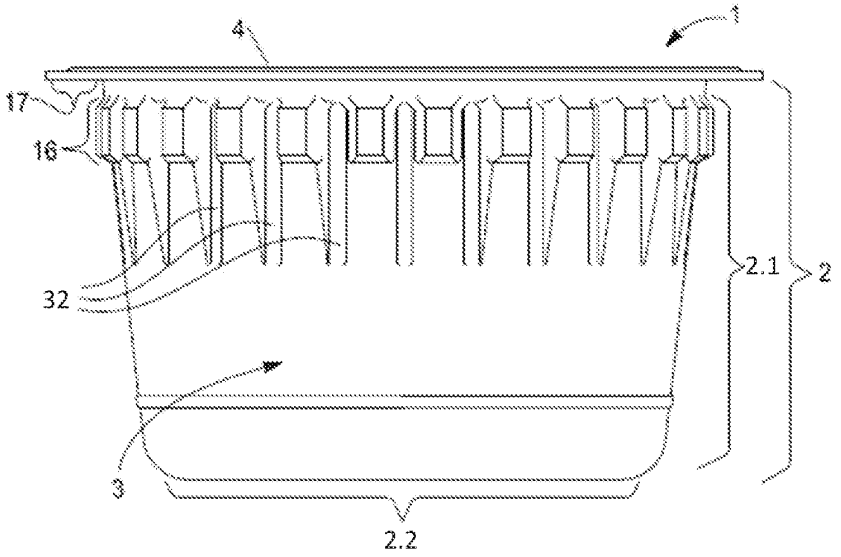


Fig.19

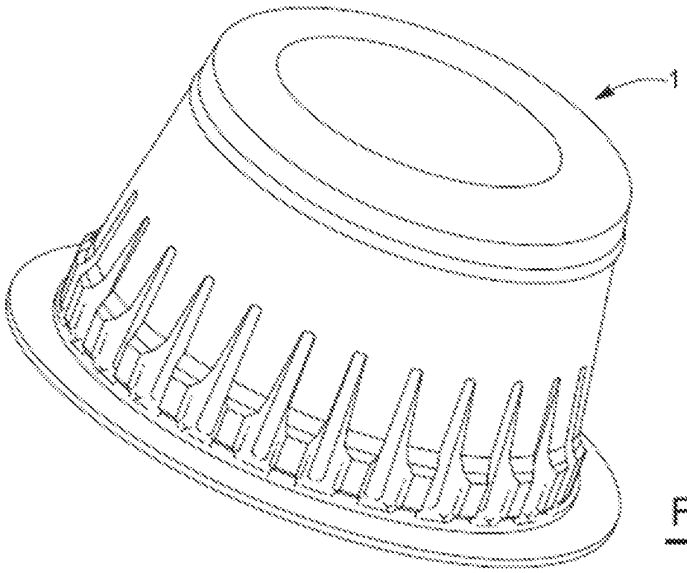


Fig.20

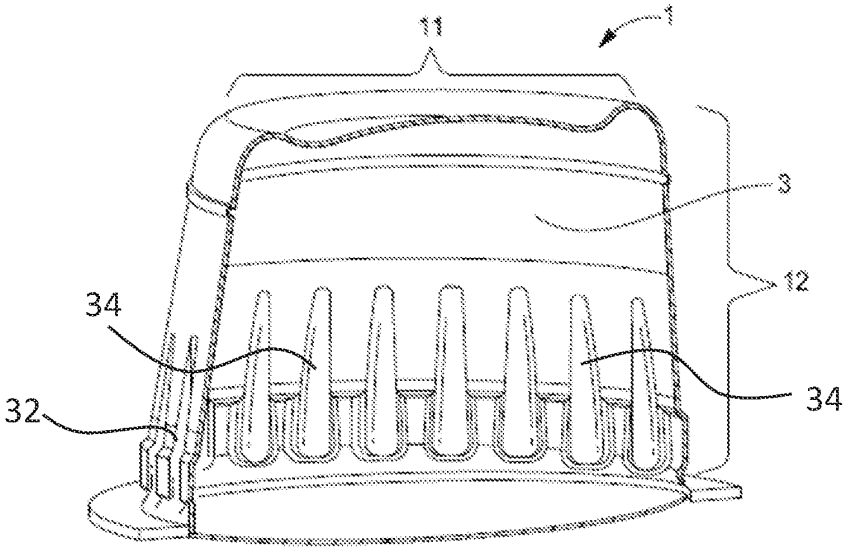


Fig.21

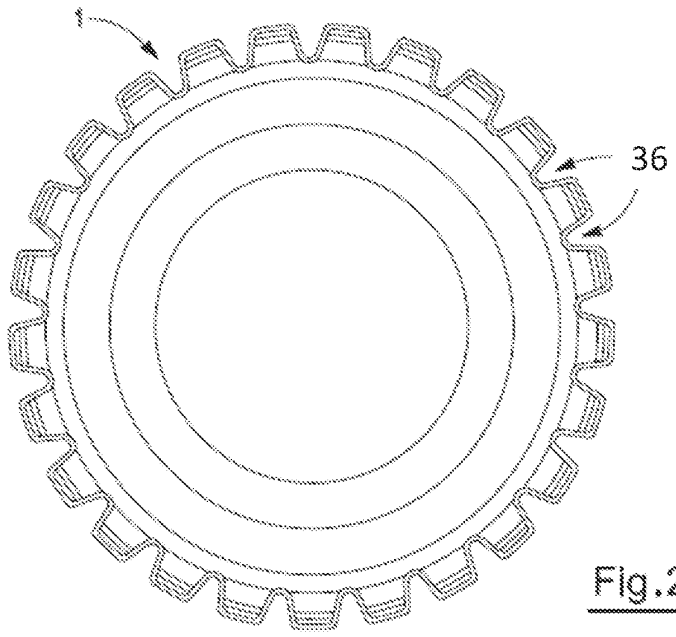


Fig.22

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1859.029USC10
	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	Bergisch Gladbach	Country of Residence [i]	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	1859.029USC10	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

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1859.029USC10
	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	17/330572	2021-05-26

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1859.029USC10
	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)
17/330572	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
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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
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button.			Add

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1859.029USC10
	Application Number	
Title of Invention	PORTION CAPSULE HAVING AN IDENTIFIER	

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.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1859.029USC10
	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.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1859.029USC10
	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.

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1859.029USC10
	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)	2021-07-23
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

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Approved for use through 11/30/2020. OMB 0651-0032
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	1859.029USC10
	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.

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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.

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NESPRESSO USA, INC. v. K-FEE SYSTEM GMBH
IPR2023-00485, U.S. PATENT 11,230,430

Filed via EFS @ USPTO.gov on July 28, 2021
Practitioner's Docket No. 1859.029USC10 (KRU0022-WO-US-T11)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Marc Krüger	Art Unit: 3761
Application No.: 17/383,951	Examiner: TBA
Filed: July 23, 2021	Conf. No.: 6871

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/

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NESPRESSO USA, INC. v. K-FEE SYSTEM GMBH
IPR2023-00485, U.S. PATENT 11,230,430

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/383,951
	Filing Date	July 23, 2021
	First Named Inventor	Marc Krüger
	Art Unit	3761
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC10 (KRU0022-WO-US-T11)

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.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/383,951
	Filing Date	July 23, 2021
	First Named Inventor	Marc Krüger
	Art Unit	3761
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC10 (KRU0022-WO-US-T11)

	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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/383,951
	Filing Date	July 23, 2021
	First Named Inventor	Marc Krüger
	Art Unit	3761
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC10 (KRU0022-WO-US-T11)

	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.

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NESPRESSO USA, INC. v. K-FEE SYSTEM GMBH
IPR2023-00485, U.S. PATENT 11,230,430

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/383,951
	Filing Date	July 23, 2021
	First Named Inventor	Marc Krüger
	Art Unit	3761
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC10 (KRU0022-WO-US-T11)

	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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	First Named Inventor	Marc Krüger
	Art Unit	3761
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC10 (KRU0022-WO-US-T11)

	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.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	Attorney Docket Number	1859.029USC10 (KRU0022-WO-US-T11)

	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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	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.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	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)		
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	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.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/383,951
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	First Named Inventor	Marc Krüger
	Art Unit	3761
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC10 (KRU0022-WO-US-T11)

	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)		
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	Attorney Docket Number	1859.029USC10 (KRU0022-WO-US-T11)

	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	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	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	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	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)		
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	Examiner Name	TBA
	Attorney Docket Number	1859.029USC10 (KRU0022-WO-US-T11)

	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.

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IPR2023-00485, U.S. PATENT 11,230,430

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/383,951
	Filing Date	July 23, 2021
	First Named Inventor	Marc Krüger
	Art Unit	3761
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC10 (KRU0022-WO-US-T11)

	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.	

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	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.	1020050107747	KR	A	11/15/2005	Halliday et al.	
	123.	596919 (also published as US 2010/0303964)	NZ	A	11/29/2013	Beaulieu et al.	
	124.	01/99047 (also published as US 2003/0121979)	WO	A	12/27/2001	Haens et al.	
	125.	02/28241	WO	A	04/11/2002	Boyd	
	126.	02/078498 (also published as US 2004/0089158)	WO	A1	10/10/2002	Mahlich	
	127.	2004/065258	WO	A2	08/05/2004	Gomez et al.	
	128.	2004/082390 (also published as US 2006/0228447)	WO	A1	09/30/2004	Ganesan et al.	
	129.	2005/044067	WO	A1	05/19/2005	Ruchonnet	
	130.	2005/047111	WO	A1	05/26/2005	Rapparini	
	131.	2005/079638 (also published as US 2007/0157821)	WO	A1	09/01/2005	Panesar	
	132.	2006/121520 (also published as US 2005/0183581)	WO	A2	11/16/2006	Kirschner et al.	
	133.	2007/042414 (also published as US 7,981,451)	WO	A1	04/19/2007	Ozanne	
	134.	2007/042486	WO	A2	04/19/2007	Van Belleghem	
	135.	2007/122144	WO	A1	11/01/2007	Blanc et al.	X

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	136.	2008/011913 (also published as US 2008/0026121)	WO	A1	01/31/2008	Mastropasqua et al.	
	137.	2008/132571	WO	A1	11/06/2008	Pineschi	
	138.	2008/090122 (also published as US 2013/0209620)	WO	A2	07/31/2008	Ozanne et al.	
	139.	2008/107645 (also published as US2010/0196545)	WO	A2	09/12/2008	Buffet et al.	
	140.	2008/121489 (also published as US 8,505,440)	WO	A1	10/09/2008	Kirschner et al.	
	141.	2008/126045 (also published as US 2010/0108541)	WO	A1	10/23/2008	Degli	
	142.	2009/084061	WO	A1	07/09/2009	Nani	
	143.	2009/114119 (also published as US 2010/0028495)	WO	A1	09/17/2009	Novak et al.	
	144.	2009/112291	WO	A1	09/17/2009	Eichler et al.	
	145.	2009/115475 (also published as US 2011/0005399)	WO	A1	09/24/2009	Epars et al.	
	146.	2009/130311 (also published as US 2011/0189350)	WO	A1	10/29/2009	Van Belleghem et al.	
	147.	2009/153161	WO	A1	12/23/2009	Ofenhitzer et al.	X
	148.	2010/007633	WO	A1	01/21/2010	Quadrelli	
	149.	2010/013146	WO	A3	04/29/2010`	Cometto	
	150.	2010/026053	WO	A1	03/11/2010	Denisart et al.	
	151.	2010/041179 (also published as US 2011/212225)	WO	A2	04/15/2010	Mariller	
	152.	2010/076761	WO	A1	07/08/2010	Giua et al.	
	153.	2010/076048	WO	A1	07/08/2010	Campiche	
	154.	2010/085824	WO	A1	08/05/2010	Eder et al.	
	155.	2010/118545	WO	A2	10/21/2010	Deuber	X
	156.	2010/137952 (also published as US 2012/0121765)	WO	A1	12/02/2010	Kamerbeek et al.	

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	157.	2010/137960 (also published as US 9,359,126)	WO	A1	12/02/2010	Wong et al.	
	158.	2010/138563 (also published as US 2013/0101716)	WO	A1	11/29/2010	Beaulieu et al.	
	159.	2011/000723 (also published as US 2012/0100264)	WO	A2	01/06/2011	Bucher et al.	
	160.	2011/012501 (also published as US 2012/0126834)	WO	A1	02/03/2011	Kleinhans	
	161.	2011/047836	WO	A1	04/28/2011	Rapparini	
	162.	2011/141532	WO	A1	11/17/2011	Jarisch et al.	
	163.	2011/147491 (also published as US 2013/0084376)	WO	A1	12/01/2011	Fischer et al.	
	164.	2011/147553 (also published as US 2013/0149424)	WO	A1	12/01/2011	Fischer	
	165.	2011/147591 (also published as US 2013/0084363)	WO	A1	12/01/2011	Krueger et al.	
	166.	2012/000878 (also published as US 9,392,902)	WO	A2	01/05/2015	Parentes et al.	
	167.	2012/007257 (also published as US 9,290,317)	WO	A1	01/19/2012	Quinn et al.	
	168.	2012/009668 (also published as US 2013/0209622)	WO	A1	01/19/2012	Fountain et al.	
	169.	2012/019902 (also published as US 9,808,112)	WO	A1	02/16/2012	Favero et al.	
	170.	2012/038063 (also published as US 8,916,220)	WO	A1	03/29/2012	Mahlich	
	171.	2012/080928 (also published as US 2013/0327223)	WO	A1	06/21/2012	Bartoli et al.	

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	172.	2012/100977 (also published as US 9,415,931)	WO	A1	08/02/2012	Gerbaulet et al.	
	173.	2012/104760	WO	A1	08/09/2012	Bartoli et al.	
	174.	2012/135204 (also published as US 2014/0348984)	WO	A1	10/04/2012	Zeller et al.	
	175.	2012/175985 (also published as US 2014/0287104)	WO	A1	12/27/2012	Peter et al.	
	176.	2013/008012 (also published as US 2014/0220191)	WO	A2	01/17/2013	Kelly et al.	
	177.	2013/032330 (also published as US 2014/0178538)	WO	A1	03/07/2013	Husband et al.	
	178.	2013/043048 (also published as US 2014/0287105)	WO	A1	03/28/2013	Husband et al.	
	179.	2013/136209 (also published as US 2016/0037961)	WO	A1	09/19/2013	Digiuni	
	180.	2013/171663 (also published as US 2015/0128525)	WO	A1	11/21/2013	Bartoli et al.	
	181.	2013/189923 (also published as US 2015/0175347)	WO	A1	12/27/2013	Empl	
	182.	2014/001563 (also published as US 2015/0158666)	WO	A1	01/03/2014	Krueger et al.	
	183.	2014/001564 (also published as US 2015/0158665)	WO	A1	01/03/2014	Krueger et al.	
	184.	2014/006048 (also published as US 2015/0173558)	WO	A2	01/09/2014	Cross et al.	
	185.	2014/090567 (also published as US 20150314954)	WO	A1	06/19/2014	Empl	

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	186.	2014/102702 (also published as US 2015/0329282)	WO	A1	07/03/2014	Bartoli et al	
	187.	2014/127863 (also published as US 2015/0375926)	WO	A1	08/28/2014	Fischer	
	188.	2015/028425 (also published as US 2016/0194146)	WO	A2	03/05/2015	Schelch et al.	
	189.	2015/062703 (also published as US 2016/0251150)	WO	A1	05/07/2015	Macchi et al.	
	190.	2015/075584	WO	A1	05/28/2015	Accursi	
	191.	2015/107484	WO	A1	07/23/2015	Rivola et al.	
	192.	2016/077916	WO	A1	05/26/2016	Hanneson et al.	
	193.	98/51396	WO	A1	11/19/1998	Timmermann et al.	X
	194.	99/58035 (also published as US 5,895,672)	WO	A1	11/18/1999	Cooper	
	195.	2004/065258	WO	A2	08/05/2004	Gomez et al.	
	196.	2007/114685	WO	A1	10/11/2007	Verbeek	
	197.	2010/125326	WO	A1	11/04/2010	Hansen et al.	
	198.	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.	

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	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)	

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	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	

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	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	

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	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	

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	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	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/383,951
	Filing Date	July 23, 2021
	First Named Inventor	Marc Krüger
	Art Unit	3761
	Examiner Name	TBA
	Attorney Docket Number	1859.029USC10 (KRU0022-WO-US-T11)

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.			

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NESPRESSO USA, INC. v. K-FEE SYSTEM GMBH
IPR2023-00485, U.S. PATENT 11,230,430

Electronic Acknowledgement Receipt	
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Application Number:	17383951
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First Named Inventor/Applicant Name:	Marc Krüger
Customer Number:	25215
Filer:	Paul J. Palinski/BECKY BALLARD
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1	Information Disclosure Statement (IDS) Form (SB08)	IDS_1859_029USC10_KRU0022_WO_US_T11.pdf	595579 5a6da4ee26f781948a3558f7a7da7170312bfd78	no	28
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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.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Marc KRÜGER	Art Unit: 3761
Application No.: 17/383,951	Examiner: TBA
Filed: July 23, 2021	Conf. No.: 6871

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

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	First Named Inventor	Marc KRÜGER
	Art Unit	3761
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	Attorney Docket Number	1859.029USC10 (KRU0022-WO-US-T11)

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.	

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Examiner Signature		Date Considered	

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Espacenet

KR200435370Y1 Apparatus for detecting remaining thread of a sewing machine

Applicants:

Inventors:

Classifications:

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

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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

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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. ;

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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.

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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]

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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 middle of the operation to detect the residue, and checks the lower thread supply device 1, so there is a problem in that the work efficiency is

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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 156 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 formed in the flange 155 formed in the front of

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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.

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(74) 대리인 최경수

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(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,

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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.

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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

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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

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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

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110: 구동축 120: 겉가마

130: 속가마 139, 156, 158: 통공

140: 가마캡 147: 전방부

149, 165: 관통구 150: 보빈

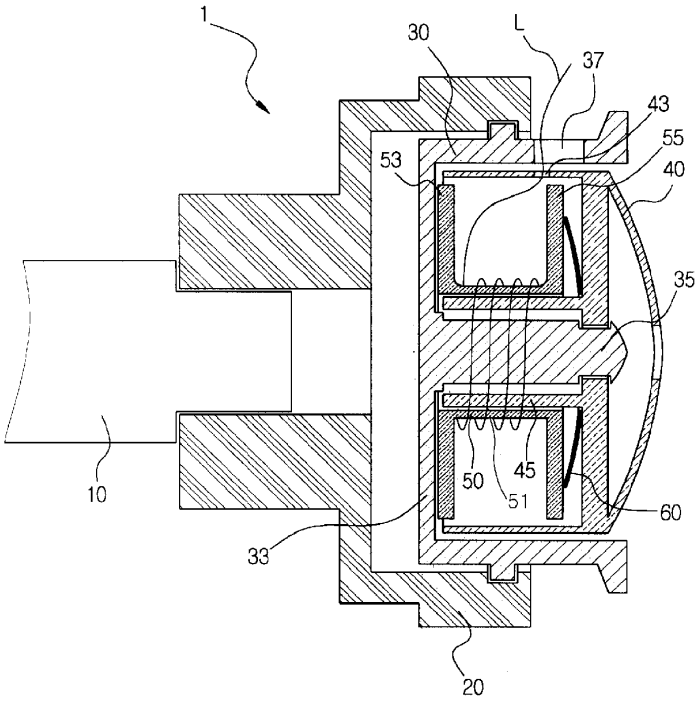
153, 155: 플랜지 160: 접시 스프링

170: 바코드 표시부 180: 바코드 리더기

L: 밀실

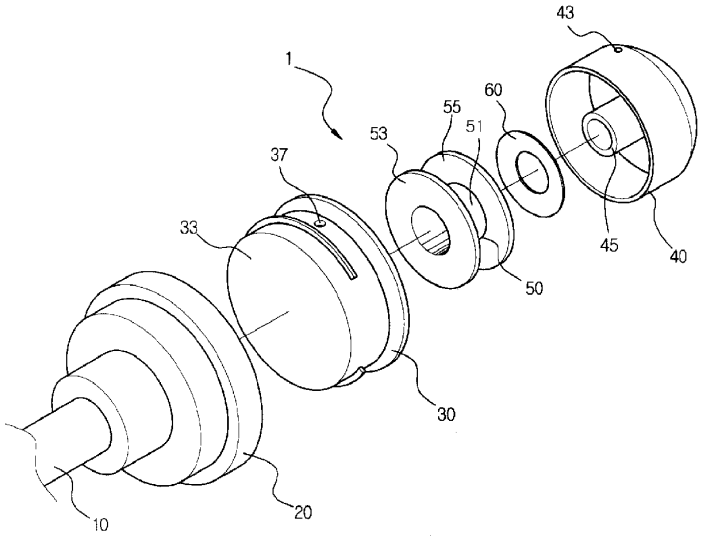
도면

도면1



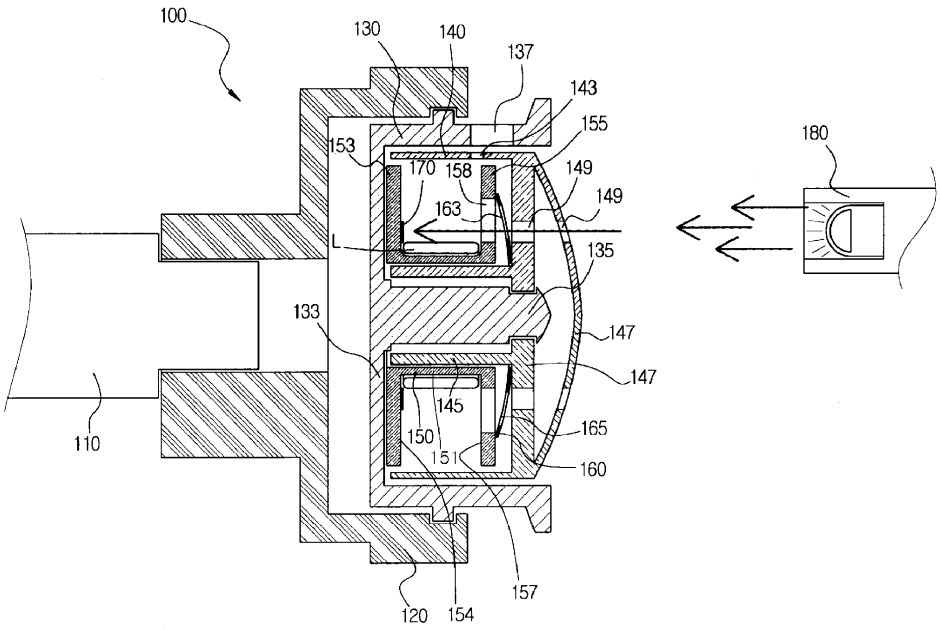
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도면2



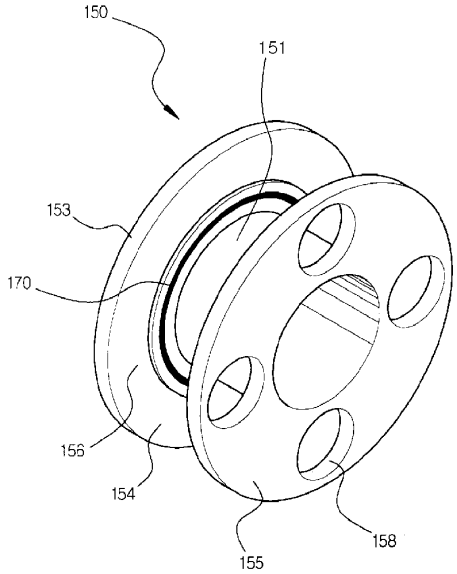
K-FEE SYSTEM GMBH, EX2012, page 180
NESPRESSO USA, INC. v. K-FEE SYSTEM GMBH
IPR2023-00485, U.S. PATENT 11,230,430

도면3

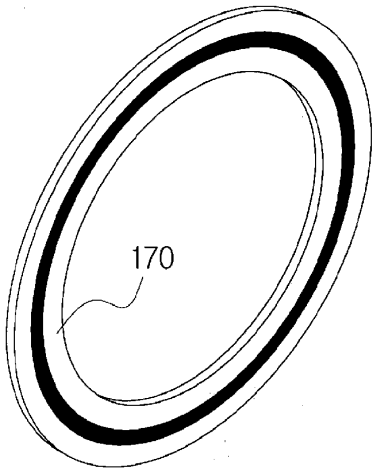


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NESPRESSO USA, INC. v. K-FEE SYSTEM GMBH
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도면4

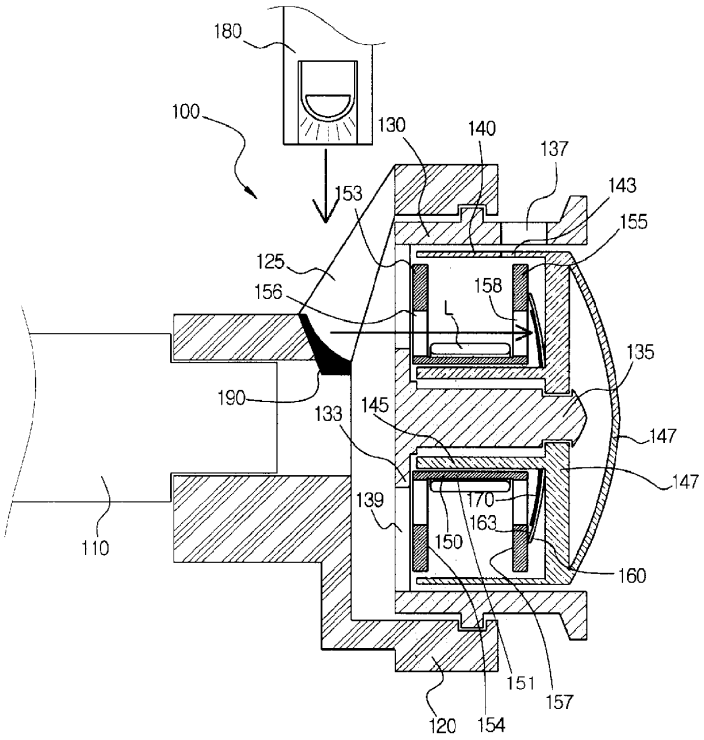


도면5



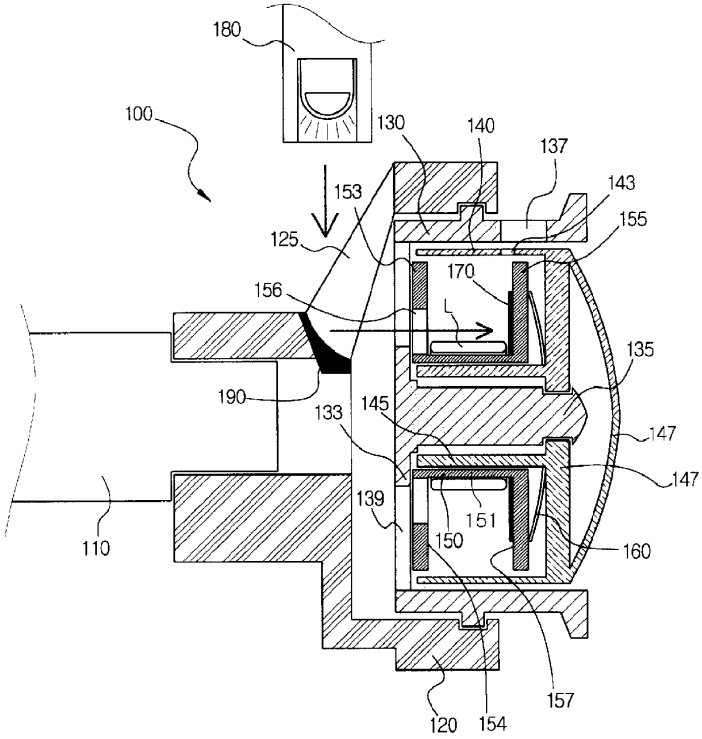
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도면6



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도면7



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IPR2023-00485, U.S. PATENT 11,230,430

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First Named Inventor/Applicant Name:	Marc Krüger
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1	Information Disclosure Statement (IDS) Form (SB08)	Supplemental_IDS_1859_029USC10.pdf	134274 70b649854a630d9600fa399f9a45e07fd24dad7d	no	2

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3	Non Patent Literature	1_IPR_PETITION_Patent_10870531.pdf	3053226 f792d9ccf2e49a95160e34616ab2f7c48877eae8	no	107
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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
17/383,951	07/23/2021	3761	1820	1859.029USC10	20	2

CONFIRMATION NO. 6871

FILING RECEIPT

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

OC000000127800018

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.

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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

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This application 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

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The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 17/383,951**

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Early Publication Request: No

Title

PORTION CAPSULE HAVING AN IDENTIFIER

Preliminary Class

099

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

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NESPRESSO USA, INC. v. K-FEE SYSTEM GMBH
IPR2023-00485, U.S. PATENT 11,230,430

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Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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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).

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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 17/383,951

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.

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United States Patent and Trademark Office
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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
17/383,951	07/23/2021	Marc KRÜGER	1859.029USC10

CONFIRMATION NO. 6871

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

FORMALITIES LETTER

OC000000127800017

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.

K-FEE SYSTEM GMBH, EX2012, page 194
NESPRESSO USA, INC. v. K-FEE SYSTEM GMBH
IPR2023-00485, U.S. PATENT 11,230,430

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:

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Alexandria VA 22313-1450

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/lqchau/

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NESPRESSO USA, INC. v. K-FEE SYSTEM GMBH
IPR2023-00485, U.S. PATENT 11,230,430

Filed via EFS @ USPTO on September 14, 2021
Attorney Docket No.: 1859.029USC10 (KRU0022-WO-US-T11)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Marc KRÜGER	Group Art Unit: 3761
Serial No.: 17/383,951	Examiner: TBA
Filed: July 23, 2021	Confirmation No: 6871

For: PORTION CAPSULE HAVING AN IDENTIFIER

Attorney Docket No.: 1859.029USC10 (KRU0022-WO-US-T11)

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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

K-FEE SYSTEM GMBH, EX2012, page 196
NESPRESSO USA, INC. v. K-FEE SYSTEM GMBH
IPR2023-00485, U.S. PATENT 11,230,430

UNITED STATES PATENT AND TRADEMARK OFFICE

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NESPRESSO USA, INC. v. K-FEE SYSTEM GMBH
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/lqchau/

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NESPRESSO USA, INC. v. K-FEE SYSTEM GMBH
IPR2023-00485, U.S. PATENT 11,230,430

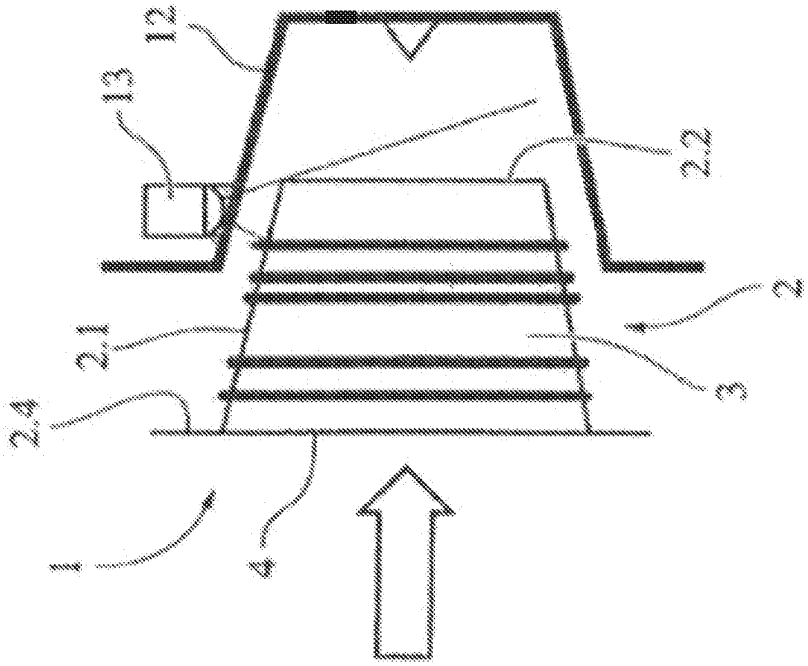


Fig. 1B

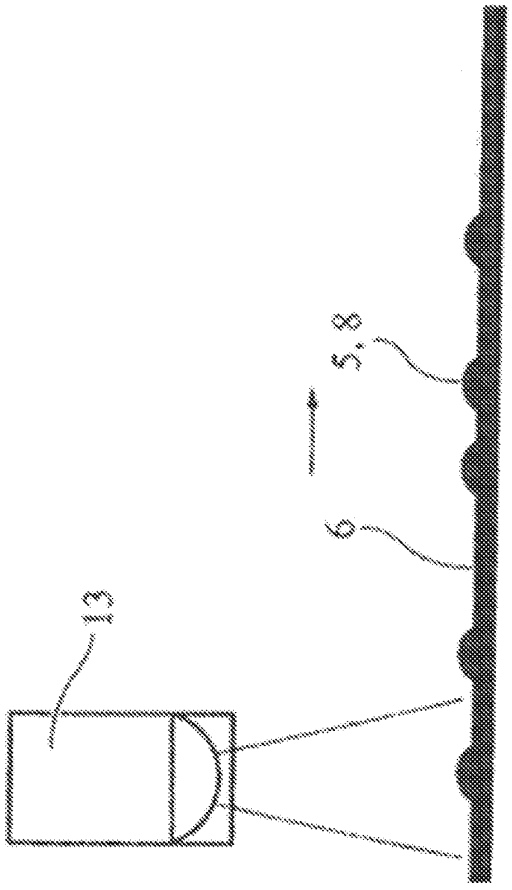


Fig. 1A

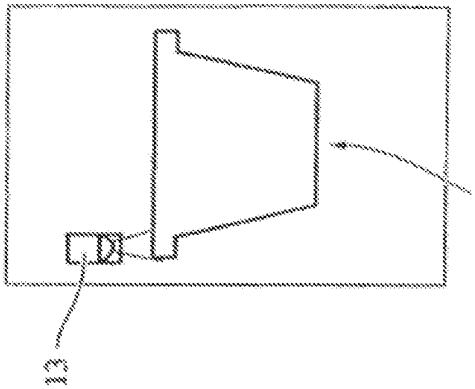


Fig. 2B

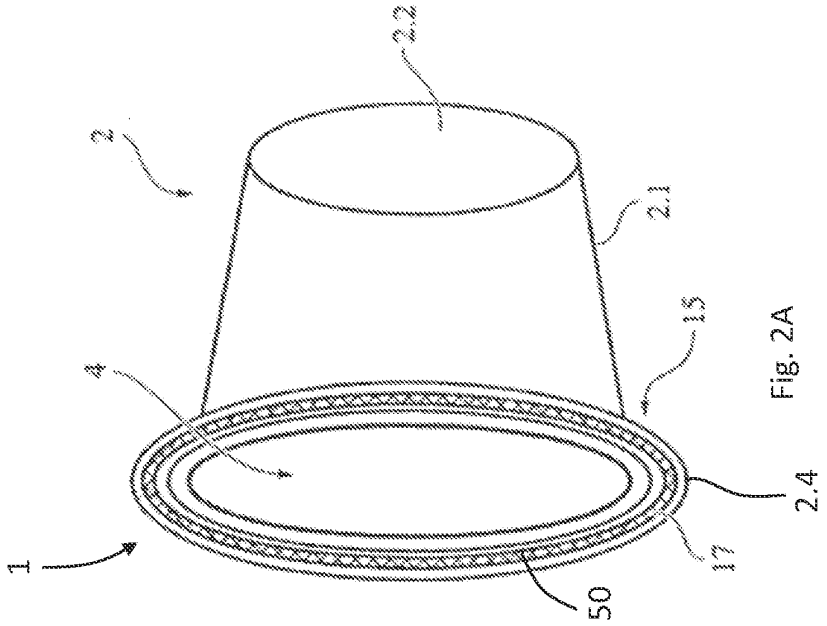


Fig. 2A

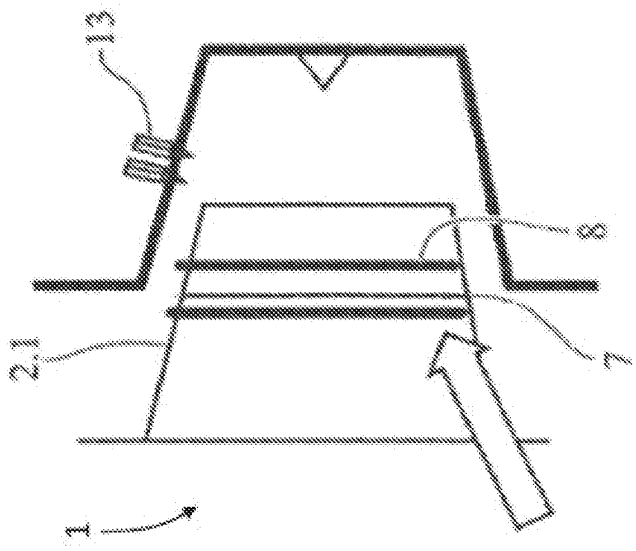


Fig. 3A

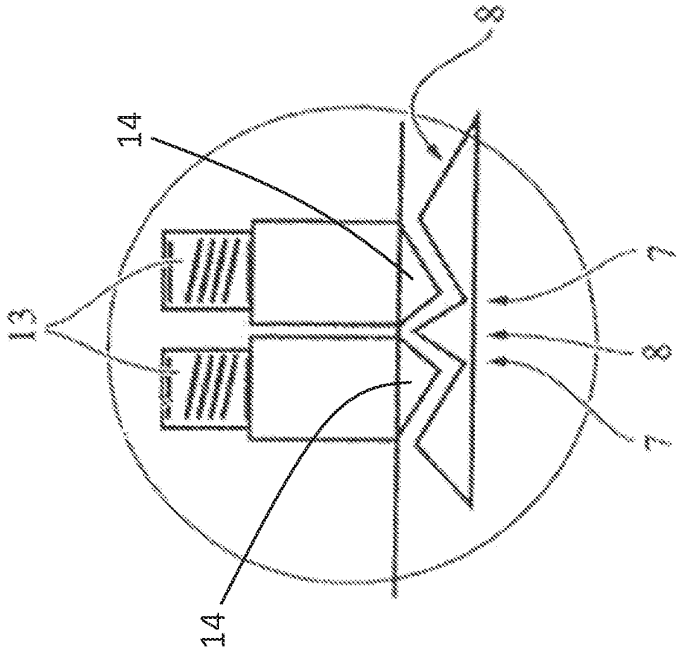


Fig. 3B

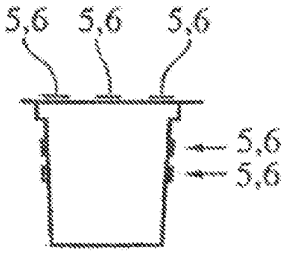


Fig. 4

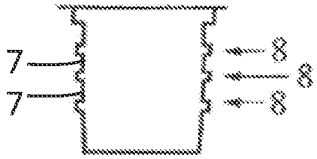


Fig. 5

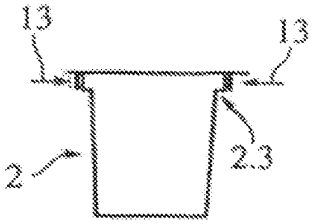


Fig. 6

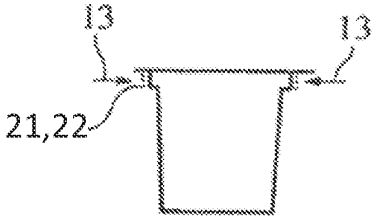


Fig. 7

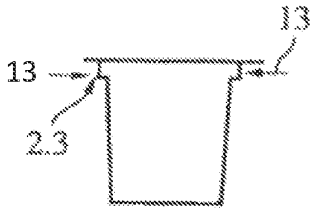


Fig. 8

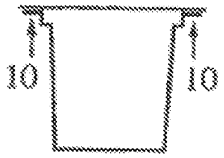


Fig. 9

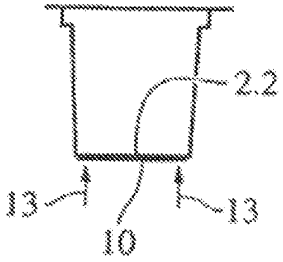


Fig. 10

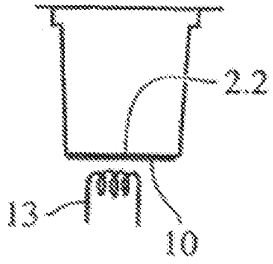


Fig. 11

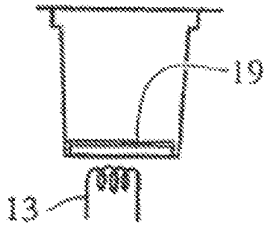


Fig. 12

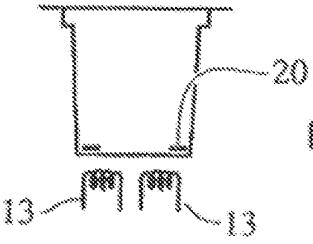


Fig. 13

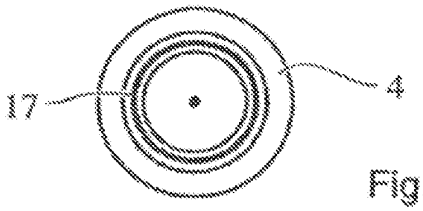


Fig. 14

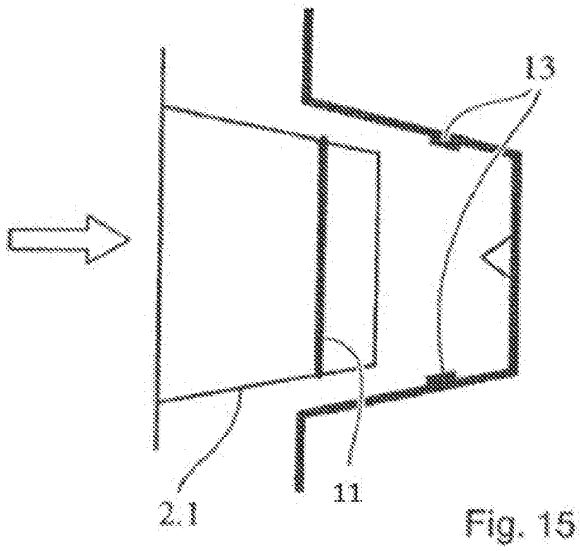


Fig. 15

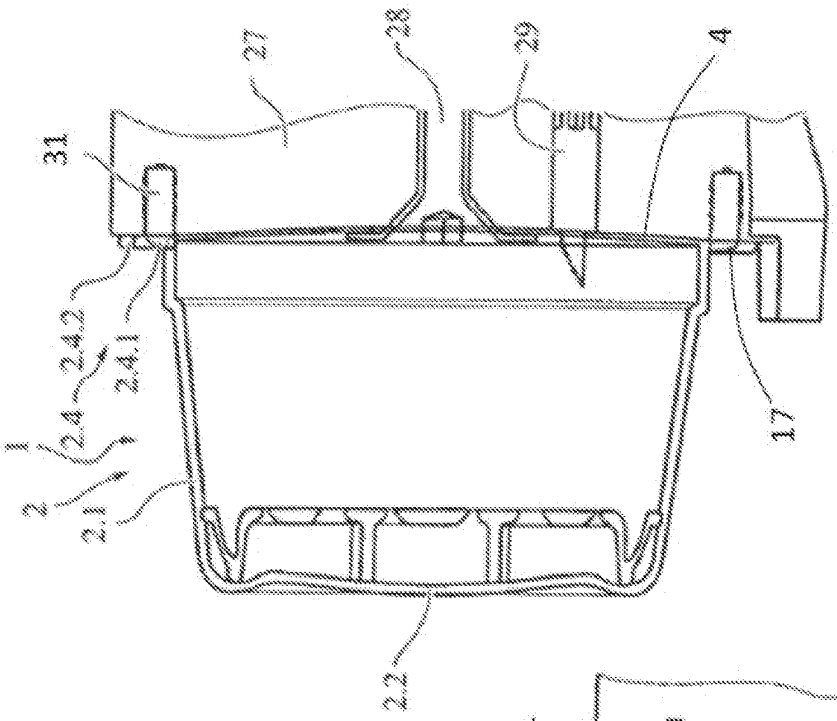


Fig. 16A

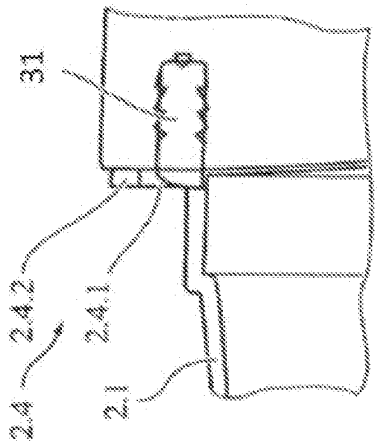


Fig. 16B

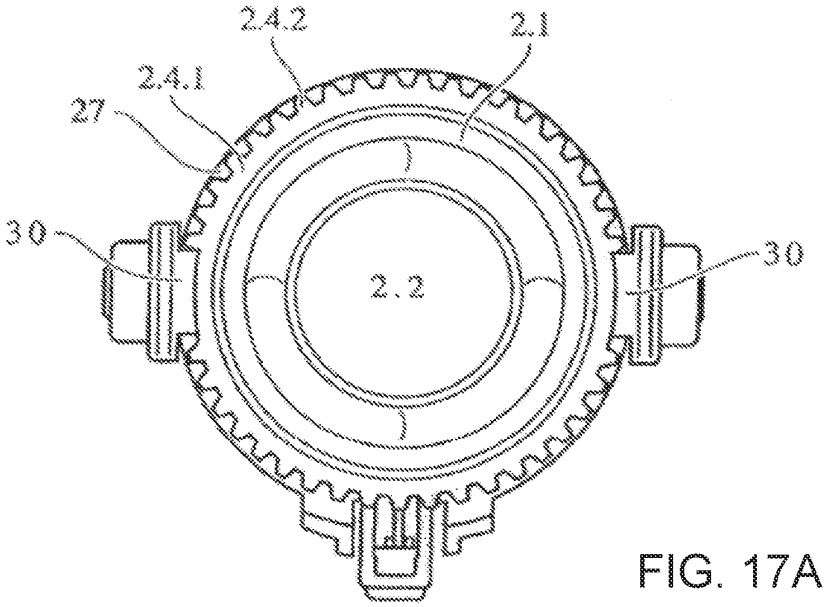


FIG. 17A

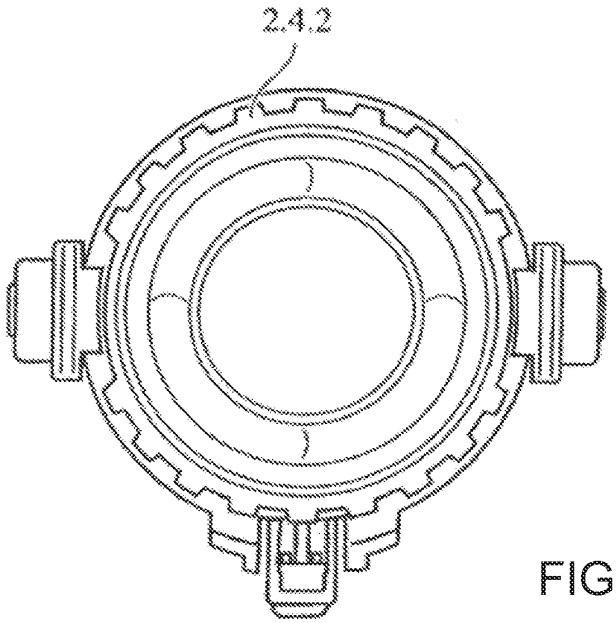


FIG. 17B

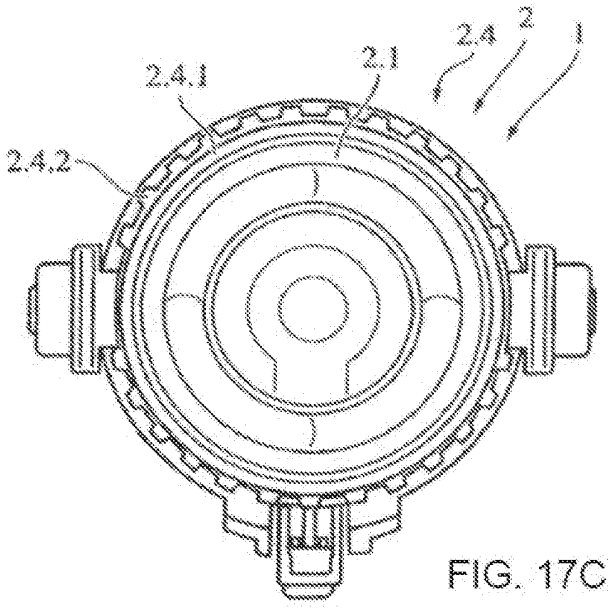


FIG. 17C

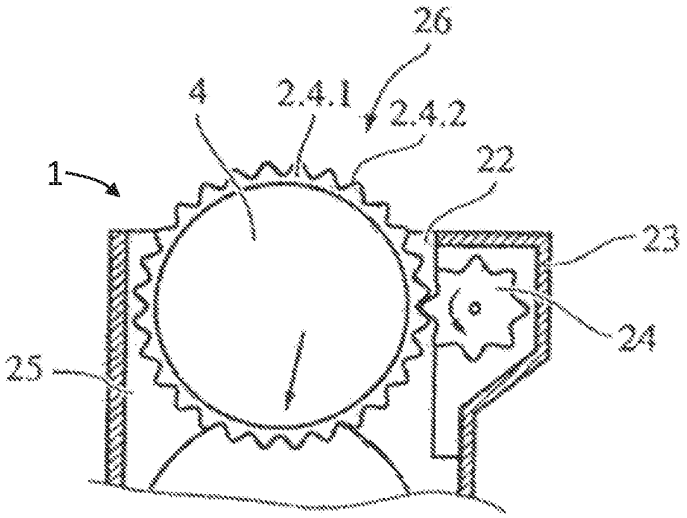


Fig. 18

Electronic Acknowledgement Receipt	
EFS ID:	43755683
Application Number:	17383951
International Application Number:	
Confirmation Number:	6871
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:	1859.029USC10
Receipt Date:	14-SEP-2021
Filing Date:	23-JUL-2021
Time Stamp:	10:58:59
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_029USC10_KRU0022_WO_US_T11.pdf	156757 f9364f489cc33fadcc804acebbd2d53dcbdb3bb8	no	3
Warnings:					

Information:					
2	Drawings-only black and white line drawings	ReplacementDrawings_1859_029USC10_KRU0022_WO_US_T11.pdf	2194354 f9c0ea694928b2df373006582d0816b46c176f41	no	10
Warnings:					
Information:					
			Total Files Size (in bytes):	2351111	

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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.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 17/383,951

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.

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
17/383,951	07/23/2021	3761	1820	1859.029USC10	20	2

CONFIRMATION NO. 6871

UPDATED FILING RECEIPT

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

OC000000128437408

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 17/330,572 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 17/383,951**

Projected Publication Date: 12/23/2021

Non-Publication Request: No

Early Publication Request: No

Title

PORTION CAPSULE HAVING AN IDENTIFIER

Preliminary Class

099

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.

K-FEE SYSTEM GMBH, EX2012, page 213
NESPRESSO USA, INC. v. K-FEE SYSTEM GMBH
IPR2023-00485, U.S. PATENT 11,230,430

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).

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Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

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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.

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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).

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/383,951	07/23/2021	Marc KRÜGER	1859.029USC10	6871

25215 7590 10/26/2021

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
10/26/2021	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.** 17/383,951	**Applicant(s)** KRÜGER, Marc	
	Examiner KIMBERLY A INABINET	**Art Unit** OPET	**AIA (FITF) Status** No

1. THE REQUEST FILED 23 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	

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. 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.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 17/383,951	Filing Date 07/23/2021	☐ To be Mailed

ENTITY: ☑ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $100 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $480 =	
☐ 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).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	11/12/2021	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 15	Minus	** 20	= 0		x $100 =	0
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0		x $480 =	0
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	0

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.	LDRC
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/EVA V GILLIS/
*** 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 number found in the appropriate box in column 1.	

This collection of information is required by 37 CFR 1.16. 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 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.

Filed Via EFS @ USPTO on November 12, 2021
1859.029USC10 / KRU0022-WO-US-T11

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Marc Krüger	Art Unit: 3761
Application No.: 17/383,951	Examiner: Jennison, Brian W.
Filed: July 23, 2021	Conf. No.: 6871

For: PORTION CAPSULE HAVING AN IDENTIFIER

Docket No: 1859.029USC10 / KRU0022-WO-US-T11

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.

K-FEE SYSTEM GMBH, EX2012, page 219
NESPRESSO USA, INC. v. K-FEE SYSTEM GMBH
IPR2023-00485, U.S. PATENT 11,230,430

Amendments to the Abstract

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

A beverage system that includes a capsule and a beverage machine. The capsule includes: a base element; a flange that includes a top side and a bottom side; a cover fastened to the top side, the cover is bowed outwardly and includes a region configured to be pierced; a barrier layer to prevent moisture or aroma from escaping out of the capsule; and an identifier on the bottom side of the flange. The machine includes: a sensor/detector; an insertion shaft configured to receive the capsule; a pump controlled to supply water into the capsule only upon detection of the identifier and a determination by the machine that the capsule is suitable for use with the machine; a mandrel to pierce the cover; a groove that is laterally offset from the mandrel; and a seal that is at least partially seated in the groove and configured to bear against the cover.

K-FEE SYSTEM GMBH, EX2012, page 220
NESPRESSO USA, INC. v. K-FEE SYSTEM GMBH
IPR2023-00485, U.S. PATENT 11,230,430

Amendments to the Claims

1) – 20) (Cancelled)

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

A) a single-serve capsule comprising:

i) a base element with a cavity, in which a beverage material is provided, the base element being symmetrical about a central longitudinal axis thereof and having a rounded bottom portion;

ii) a flange extending outwardly from the base element, the flange comprising a top side and an opposing bottom side;

iii) a cover fastened to the top side of the flange, the cover is bowed outwardly in a central region of the cover relative to a peripheral region of the cover, the cover includes a region configured to be pierced at a location that is offset from the central longitudinal axis;

iv) a barrier layer to prevent moisture or aroma from escaping out of the single-serve capsule; and

v) an identifier, which includes a repeat pattern, provided on the bottom side of the flange;

B) a beverage machine comprising:

i) a sensor/detector;

K-FEE SYSTEM GMBH, EX2012, page 221
NESPRESSO USA, INC. v. K-FEE SYSTEM GMBH
IPR2023-00485, U.S. PATENT 11,230,430

ii) an insertion shaft configured to receive the single-serve capsule and to enable detection of the identifier by the sensor/detector;

iii) a pump controlled to supply water into the single-serve capsule only upon detection of the identifier by the sensor/detector and a determination by the beverage machine that the single-serve capsule is suitable for use with the beverage machine;

iv) a chamfered mandrel that is configured to pierce the cover at the location that is offset from the central longitudinal axis;

v) a groove that is laterally offset from the chamfered mandrel; and

vi) a seal that is at least partially seated in the groove and configured to bear against the top side of the cover in a region between the peripheral edge of the cover and the region of the cover that is pierced by the chamfered mandrel.

22) (New) The beverage system according to claim 21, wherein the beverage machine is configured to compare the detected identifier with a stored reference.

23) (New) The beverage system according to claim 21, wherein the beverage machine is configured to not supply water into the single-serve capsule upon a determination by the beverage machine that the single-serve capsule is not suitable for

use with the beverage machine.

24) (New) The beverage system according to claim 21, wherein the beverage machine comprises a waste container for the single-serve capsule to fall into.

25) (New) The beverage system according to claim 24, wherein the beverage machine comprises a pair of holding arms for guiding the single-serve capsule.

26) (New) The beverage system according to claim 21, wherein the base element comprises a side wall that includes a plurality of indentations arranged about the central longitudinal axis.

27) (New) The beverage system according to claim 26, wherein the cavity is defined by an inside wall, which includes a ledge at an upper region thereof, the ledge projects from the inside wall towards the central longitudinal axis.

28) (New) The beverage system according to claim 26, wherein the identifier is located on the side wall.

K-FEE SYSTEM GMBH, EX2012, page 223
NESPRESSO USA, INC. v. K-FEE SYSTEM GMBH
IPR2023-00485, U.S. PATENT 11,230,430

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

A) a single-serve capsule comprising:

i) a base element with a cavity, in which a beverage material is provided, the base element being symmetrical about a central longitudinal axis and having a rounded bottom portion;

ii) a flange extending outwardly from the base element, the flange comprising a top side and an opposing bottom side;

iii) a cover that is fastened to the top side of the flange, the cover is bowed outwardly in a central region of the cover relative to a peripheral region of the cover, the cover includes a region configured to be pierced at a location offset from the central longitudinal axis;

iv) a barrier layer to prevent moisture or aroma from escaping out of the single-serve capsule; and

v) an identifier, which includes a repeat pattern, provided on the bottom side of the flange;

B) a beverage machine comprising:

i) a sensor/detector;

ii) an insertion shaft configured to receive the single-serve capsule;

iii) a pump controlled to supply water into the single-serve capsule only upon detection of the identifier with the sensor/detector and

K-FEE SYSTEM GMBH, EX2012, page 224
NESPRESSO USA, INC. v. K-FEE SYSTEM GMBH
IPR2023-00485, U.S. PATENT 11,230,430

determination by the beverage machine that the detected identifier agrees with a stored reference;

iv) a chamfered mandrel that is configured to pierce the cover at the location offset from the central longitudinal axis;

v) a pair of holding arms for guiding the single-serve capsule;

vi) a waste container for the single-serve capsule to fall into;

vii) a groove that is laterally offset from the chamfered mandrel; and

viii) a seal that is at least partially seated in the groove and configured to bear against the top side of the cover in a region between the peripheral edge of the cover and the region of the cover that is pierced by the chamfered mandrel.

30) (New) The beverage system according to claim 29, wherein the base element comprises a side wall, which includes a plurality of indentations, and the identifier is located on the side wall.

31) (New) The beverage system according to claim 30, wherein the cavity is defined by an inside wall, which includes a ledge at an upper region thereof, the ledge projects from the inside wall towards the central longitudinal axis.

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

A) a single-serve capsule comprising:

i) a base element with a cavity, in which a beverage material is provided, the base element being symmetrical about a central longitudinal axis;

ii) an inside wall defining the cavity, which includes a ledge at an upper region thereof, the ledge projects from the inside wall towards the central longitudinal axis

iii) a rounded bottom portion;

iv) a flange extending outwardly from the base element, the flange comprising a top side and an opposing bottom side;

v) a cover that is fastened to the top side of the flange, the cover is bowed outwardly in a central region of the cover relative to a peripheral region of the cover, the cover includes a region configured to be pierced at a location offset from the central longitudinal axis;

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

vii) a side wall comprising a plurality of indentations arranged about the central longitudinal axis;

viii) an identifier, which includes a repeat pattern, provided on the bottom side of the flange;

B) a beverage machine comprising:

i) a sensor/detector;

ii) an insertion shaft configured to receive the single-serve capsule and enable detection of the identifier by the sensor/detector;

iii) a pump controlled to supply water into the single-serve capsule only upon detection of the identifier with the sensor/detector and a determination by the beverage machine that the single-serve capsule is suitable for use with the beverage machine;

iv) a chamfered mandrel that is configured to pierce the cover in the location offset from the central longitudinal axis

v) a pair of holding arms for guiding the single-serve capsule;

vi) a waste container for the single-serve capsule to fall into;

vii) a groove that is laterally offset from the chamfered mandrel; and

viii) a seal at least partially seated in the groove and configured to seal against the top side of the cover in a region between a peripheral edge of the flange and the region of the cover that is pierced by the mandrel.

33) (New) The beverage system according to claim 32, wherein the base element is made of a biodegradable material.

34) (New) The beverage system according to claim 32, wherein the base element is deep drawn.

35) (New) The beverage system according to claim 32, wherein a ratio of a diameter of the side wall to a diameter of the flange is between 0.85 and 0.89.

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IPR2023-00485, U.S. PATENT 11,230,430

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 cancelled the previously filed 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: November 12, 2021

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NESPRESSO USA, INC. v. K-FEE SYSTEM GMBH
IPR2023-00485, U.S. PATENT 11,230,430

Electronic Acknowledgement Receipt	
EFS ID:	44267512
Application Number:	17383951
International Application Number:	
Confirmation Number:	6871
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:	1859.029USC10
Receipt Date:	12-NOV-2021
Filing Date:	23-JUL-2021
Time Stamp:	12:48:36
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_029USC10.pdf	128761 102676e814465f921feca9352ca10657e9439e3a	no	2

Warnings:

Information:					
This is not an USPTO supplied IDS fillable form					
2	Non Patent Literature	NespressosInvalidityContentions_20210922.pdf	510270 5bfc6dbb3005eddb2f49509bfa3cc5719cde6eee	no	71
Warnings:					
Information:					
3		PreliminaryAmendment_1859_029USC10.pdf	152545 80c90f8e413dc42ccb4c2cd429e7c8266c2bb97b	yes	11

Multipart Description/PDF files in .zip description

Document Description	Start	End
Preliminary Amendment	1	1
Abstract	2	2
Claims	3	10
Applicant Arguments/Remarks Made in an Amendment	11	11

Warnings:	
Information:	
Total Files Size (in bytes):	791576

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.

<u>New Applications Under 35 U.S.C. 111</u>
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.
<u>National Stage of an International Application under 35 U.S.C. 371</u>
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.
<u>New International Application Filed with the USPTO as a Receiving Office</u>
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
Practitioner's Docket No. 1859.029USC10 (KRU0022-WO-US-T11)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Marc KRÜGER	Art Unit: 3761
Application No.: 17/383,951	Examiner: Brian W. Jennison
Filed: July 23, 2021	Conf. No.: 6871

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 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: November 12, 2021

/Paul J. Palinski/

Paul J. Palinski

Customer No. 25215

Reg. No. 71,080
Attorney for Applicant
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	17/383,951
	Filing Date	July 23, 2021
	First Named Inventor	Marc KRÜGER
	Art Unit	3761
	Examiner Name	Brian W. Jennison
	Attorney Docket Number	1859.029USC10 (KRU0022-WO-US-T11)

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.

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 #
17/383,951	**11/22/2021 01:22:38 PM ET**	**1859.029USC10**

Title of Invention

PORTION CAPSULE HAVING AN IDENTIFIER

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	6871	FILED BY	BECKY BALLARD
PATENT CENTER #	60411339	FILING DATE	07/23/2021
CUSTOMER #	25215	FIRST NAMED INVENTOR	Marc KRÜGER
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Paul Palinski

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
Misc_Letter_OmittedItems_1859_029USC10.pdf	2	Transmittal Letter	145 KB
ClaimCharts_1859_29USC10-LET..docx	1571	Miscellaneous Incoming Letter	7972 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
Misc_Letter_OmittedItems_1859_029USC10.pdf	6093A7631721F135A0784664542EF7E7560A922DA280C32E9FA6BCAC3C9C7250F15762B2A75BC5531C80FEAAE14B888B6B

	FA91D92527B65828AA4BA9872C2878
ClaimCharts_1859_29USC10-LET..docx	04CF5A249FF0894335B70F0BE75EEE5DFAEE5C97979CAE8EB75C9EB9AC392B61B35427199E87054548E8FE43AB9A4FE189D8F3F94DF6E0D7498AECDC8E18B3C1

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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.

Filed via EFS @ USPTO.gov on November 22, 2021
Practitioner's Docket No. 1859.029USC10(KRU0022-WO-US-T11)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Marc Krüger	Art Unit: 3761
Application No.: 17/383,951	Examiner: Brian W. Jennison
Filed: July 23, 2021	Conf. No.: 6871

For: PORTION CAPSULE HAVING AN IDENTIFIER

Practitioner's Docket No. 1859.029USC10(KRU0022-WO-US-T11)

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 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/

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IPR2023-00485, U.S. PATENT 11,230,430

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.

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IPR2023-00485, U.S. PATENT 11,230,430

Exhibit A-1 – Invalidity of U.S. Patent No. 10,858,176 in view of Bentley

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

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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