(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 3 960 040 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
02.03.2022 Bulletin 2022/09

(21) Application number: **21193808.9**

(22) Date of filing: **30.08.2021**

(51) International Patent Classification (IPC):
A47G 19/22 *(2006.01)* ***A47G 21/14*** *(2006.01)*

(52) Cooperative Patent Classification (CPC):
A47G 19/2205; A47G 21/14; A47G 21/145

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

(30) Priority: **31.08.2020 IT 202000020698**

(71) Applicant: **Barilla G. e R. Fratelli S.p.A.**
43122 Parma (IT)

(72) Inventors:
- **Arico', Antonio**
  20125 Milano (IT)
- **Bonoretti, Cristina**
  43123 Parma (IT)
- **Mossini, Cinzia**
  43022 Montechiarugolo (IT)
- **Bernardelli, Elena**
  43123 Parma (IT)

(74) Representative: **Ferreccio, Rinaldo**
Botti & Ferrari S.p.A.
Via Cappellini, 11
20124 Milano (IT)

(54) **MULTIFUNCTIONAL MUG**

(57) The present disclosure relates to a multifunctional mug comprising a main container (2) comprising a first internal compartment (21), a secondary container (3) which is coaxial and can be separably associated with a bottom of the main container (2). The secondary container (3) comprises a second internal compartment (31), the first internal compartment (21) being separated from the second internal compartment (31). The mug (1) further comprises a lid (4) coaxial with the main container (2) and comprising a third compartment (41), and a first element (42) and a second element (43) separably connected together. The second element (43) is in direct contact with the main container (2) and the first element (42) is mounted on top of the second element (43). The mug (1) also comprises an elastic band (5) connected to an outer surface (24) of the main container (2) and a piece of cutlery (52). The elastic band (5) has externally a fixing seat (51), the piece of cutlery (52) being removably connected to the fixing seat (51) and adjacent to the outer surface (24) of the main container (2).

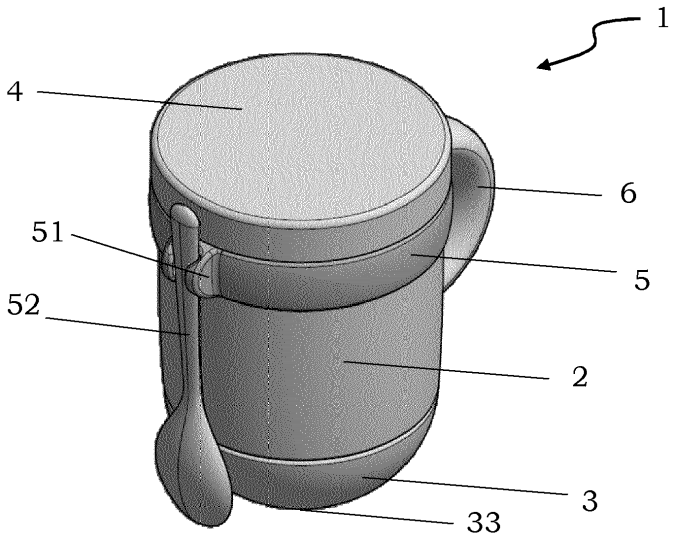

FIG. 1

EP 3 960 040 A1

Description

Field of application

[0001] According to its more general aspect the present disclosure relates to a multifunctional mug for transporting and consuming food.

[0002] In particular, such a disclosure has a possible, although not exclusive, application in the sector relating to the consumption, outside of one's home, of food in liquid and/or solid form.

Prior art

[0003] The mug is a container, generally with a circular mouth and in many cases provided with a looped handle, which is used in particular to serve hot drinks such as black coffee, milk coffee, cappuccino, tea, hot chocolate or broth.

[0004] In this connection a wide range of possible mugs has been developed in a great variety of shapes and sizes, also with many, purely aesthetic, alternative designs so as to give the mug character and make it more attractive.

[0005] Likewise, many different materials have been used, depending on the aesthetic requirements, but also depending on the intended use and the preferred users for the specific container made.

[0006] The most commonly used materials are porcelain and ceramic material. There exist, however, also mugs made of glass, metal, plastic, or other materials.

[0007] Often the mugs are used in a domestic environment in order to allow the consumption of specific beverages.

[0008] On the other hand, the increasingly frantic pace of everyday life, with a reduction in many cases of the amount of time spent at home, has resulted in the development of many examples of transportable mugs so as to allow the consumption of the said beverages also outside of the home, for example at the office, when travelling or during picnics, etc. These solutions are also suitable in the case where the beverage is bought from a point of sale and it is preferred to consume it elsewhere, i.e. from take-away distributions.

[0009] Generally, in these cases where the mugs are intended for transportation of the liquids, special lids are provided in order to protect the liquid contained inside them from contamination in the event of contact with the air or from spillage due to accidental falls or knocks.

[0010] Often, the user of the mug will also have other containers for transporting further food such as biscuits, cereals, muesli, dried fruit, or additives, such as sugar, sweeteners, powdered milk or cream, so that they may be consumed together with or independently of the beverage transported in the aforementioned mug.

[0011] These additional containers may be of widely varying types, or, in the case of the additives, may consist of specific disposable packaging.

[0012] The need to transport all these further foods and/or additives may, however, result in items being accidentally forgotten or problems transporting them, since often another container is needed in order to transport together all the various containers, resulting also in the obvious use of a greater amount of transportation material, with evident impact in ecological and economic terms.

[0013] The technical problem underlying the present invention is to provide a container allowing to overcome the drawbacks mentioned with respect to the prior art.

[0014] A further object of the present invention is to provide a practical container for transporting and/or consuming beverages and/or solid foods.

[0015] Yet another object is to provide a container, which may be easily used by any user, without the need for particular instructions or precautions when used.

[0016] Yet another object of the invention is to provide a container which is not subject to particular problems in terms of wear or permanent damage due to repeated use.

[0017] Finally, a further object of the invention is to provide a container which is simple to manufacture.

Summary

[0018] The idea underlying the present invention is to provide a container which allows different foodstuffs to be transported while avoiding contamination or premature interaction between them.

[0019] The aforementioned object is achieved by a multifunctional mug comprising a main container comprising a first internal compartment and a bottom, and a secondary container which is coaxial and can be separably associated with the bottom of the main container. The secondary container comprises a second internal compartment, the first internal compartment being separated from the second internal compartment. The mug further comprises a lid coaxial with the main container and comprising a first element and a second element separably connected together, the second element being in direct contact with the main container and the first element being mounted on the second element. The mug also comprises an elastic band connected to an outer surface of the main container.

[0020] Moreover, the mug further comprises a piece of cutlery, and the elastic band has externally a fixing seat, the piece of cutlery being removably connected to this fixing seat, adjacent to the outer surface of the main container.

[0021] Preferably, a spoon is provided.

[0022] The main container is generally intended to contain a beverage or other liquid food and the secondary container is generally intended to contain a solid food or an additive such as that defined above. The secondary container is preferably made with a single wall.

[0023] Advantageously, the present solution allows the transportation of beverages and/or solid foods simultaneously and without interaction or contact between them

and the external environment, thus maintaining the characteristics of the various products contained inside mug and isolation thereof until the moment of consumption.

[0024] Moreover, advantageously, the present solution allows to easily consume the liquids or suitably mix the liquids together with additives such as sugar, sweeteners, etc.

[0025] Preferably, the elastic band is furthermore adapted to be at least partially interposed between the first element and the second element of the lid in order to provide a fluid-tight joint.

[0026] Advantageously, the present solution allows to avoid accidental spillages and therefore ensure safer transportation even if the mug is shaken a lot.

[0027] Preferably, the main container and the secondary container are interconnected by means of a threaded joint.

[0028] Advantageously, this solution is both simple to realize during production and easy to use for the user.

[0029] Preferably, the main container and the second element of the lid are also interconnected by means of a threaded joint.

[0030] Advantageously, this solution is practical, but also safe as regards closing of the lid.

[0031] More preferably, one or both the aforementioned threaded joints are formed by means of at least one wide-radius complementary spiral thread.

[0032] Advantageously, this allows quick and easy access to the various compartments of the mug in the event of introduction and/or consumption of the liquids and/or solid foods.

[0033] Moreover, advantageously, this type of joining system may be easily used by any user, without the need for particular instructions or precautions when used.

[0034] Preferably, the main container has a substantially cylindrical shape and the secondary container has a substantially inverted-dome shape flattened along a spherical portion thereof, thus generating a support surface for the mug.

[0035] Advantageously, this shape is practical for all requirements, in terms of both transportation and consumption.

[0036] Furthermore, preferably the mug comprises a handle element formed on the outer surface of the main container.

[0037] Advantageously this allows the mug to be firmly held in the case where the liquids contained inside it are very hot and provides a gripping means which facilitates opening and/or closing of the various containers forming the mug.

[0038] More preferably, the elastic band is made of polypropylene.

[0039] It also possible, however, to use an elastomeric material such as natural rubber, silicone rubber, FPM, EPDM, SBR rubber, butyl rubber.

[0040] It also possible to use yet other materials.

[0041] Advantageously, such materials ensure good sealing characteristics for all the functions involving interaction of the elastic band with the other components of the mug according to the invention.

[0042] Even more preferably, the main container of the mug is made with a heat-insulating structure.

[0043] Advantageously, this allows the temperature of the liquids and the solid foods contained inside the mug to be maintained until the moment of consumption.

[0044] More preferably, the mug is made of non-toxic material suitable for containing food, e.g. stainless steel or food-grade plastic material, such as polyethylene or polypropylene.

[0045] Advantageously, this solution is optimal for the function and for any certification of the mug itself.

[0046] Further characteristic features and advantages will emerge more clearly from the detailed description provided hereinbelow of a preferred, but non-exclusive, embodiment of the present invention, with reference to the attached figures provided by way of a non-limiting example.

Brief description of the figures

[0047] The attached figures show a possible embodiment of the mug according to the present disclosure, in detail:

- Figure 1 shows a perspective view of the mug in the embodiment of the present disclosure;
- Figure 2 shows a longitudinally sectioned view of the mug according to Figure 1;
- Figure 3 shows an exploded view of the mug according to Figure 1.

[0048] For easier understanding and clarity of the figures, the parts shown in them might not be on a scale representative of reality. Furthermore, similar elements in the figures will be identified by similar reference numbers.

Detailed description

[0049] With reference to Figure 1 to 3, 1 denotes overall and schematically a mug for transporting and consuming food in liquid or solid form, designed in accordance with the present invention.

[0050] Figure 1 shows in particular a perspective view which provides an overall view of the mug 1 forming the subject of the present disclosure. The mug 1 comprises a main container 2, a secondary container 3, a lid 4, an elastic band 5, and a handle 6.

[0051] The main container 2 has a substantially cylindrical shape, while the secondary container 3 has a substantially inverted-dome shape flattened along a spherical portion thereof, thus generating a support surface 33 for said mug 1.

[0052] It is also possible to adopt a different shape,

also for purely aesthetic reasons.

[0053] The secondary container 3 is preferably made with a single wall.

[0054] The elastic band 5 of the mug 1 is connected to the outer surface 24 of the main container 2.

[0055] Furthermore, the elastic band 5 has externally a fixing seat 51 to which a piece of cutlery 52, preferably but not exclusively a spoon, may be removably connected, adjacent to the outer surface 24 of the main container 2.

[0056] This allows, for example, the possible mixing of an additive to the transported beverage.

[0057] The elastic band 5 is made of polypropylene.

[0058] It also possible, however, to use an elastomeric material suitable for contact with food, such as natural rubber, silicone rubber, FPM, EPDM, SBR rubber, butyl rubber.

[0059] It also possible to use yet other materials.

[0060] These materials ensure easy and stable connection of the said elastic band 5 to the main container 2 and the lid 4, but it is possible to use different materials for different needs.

[0061] Furthermore, the mug 1, in the embodiment shown, comprises a handle element 6. In this embodiment, the handle element 6 is C-shaped and is formed on the outer surface 24 of the main container 2.

[0062] This allows the mug 1 to be firmly held even if it should contain liquids which are very hot.

[0063] The person skilled in the art will readily understand that various embodiments of the handle 6 are possible without departing from the scope of protection of the attached claims, such as a looped, heartshaped, triangular, square or other form of the handle.

[0064] Furthermore, it is possible to provide a handle element 6 which is both removable from the outer surface 24 of the mug 1 or a handle element 6 integrally formed therewith.

[0065] According to a further embodiment (not shown) it is possible to envisage an embodiment without handle element 6, in which the preferred gripping surface may be for example in the region of the elastic band 5, this variant being included within the scope defined in the attached claims.

[0066] As can be seen in particular in Figures 2 and 3, the main container 2 of the mug 1 comprises a first internal compartment 21 closed at an end opposite to the lid 4 by a bottom 23.

[0067] The secondary container 3 of the mug 1 comprises a second compartment 31 and is coaxial with the main container 2. Furthermore, the secondary container 3 can be separably associated with the bottom 23 of the main container 2.

[0068] The bottom 23 acts as a separating element between the first internal compartment 21 and the second internal compartment 31.

[0069] The lid 4 of the mug 1 is also coaxial with the main container 2 and comprises, in the present exemplary and non-limiting embodiment, a first element 42 and a second element 43 which define a third compartment 41 between them. The first element 42 and the second element 43 are connected together separably. The second element 43 is in direct contact with the main container 2 and acts as an upper closing element for the first internal compartment 21 of the main container 2. The first element 42 is mounted on top of the second element 43 and acts as an upper closing element for the third compartment 41 of the lid 4.

[0070] Therefore, the first element 42 and the second element 43 are interconnected, thus forming the internal compartment 41, in order to ensure a better heat seal between the first internal compartment 21 and the exterior, and furthermore in order to realize a structure which is optimized in terms of use of the materials. However, it is also possible to use the compartment 43 of the lid 4 of the mug 1 in order store for example additives such as sugar, sweeteners, etc.

[0071] The second element 43 has essentially a cup-shaped form with a contact surface on its outer edge 45 for limiting the insertion of the second element 43 itself inside the main container 2.

[0072] Furthermore, the second element 43 has a thread 44 on its outer surface 46 situated underneath the outer edge 45 and adapted to be connected to a corresponding female-thread surface on the inner side 22 of the main container 2.

[0073] The first element 42 of the lid 4 is mounted, as mentioned, on top of this second element, forming a friction joint on the outer surface 24 of the main container 2.

[0074] Preferably, the elastic band 5 is partially interposed between the first element 42 of the lid 4 and the second element 43 of the lid 4 so as to form a fluid-tight joint and therefore provides a joint able to prevent the accidental spillage of beverages during transportation, even in the event of knocks, falls or overturning of the mug 1.

[0075] Preferably, the main container 2 and the secondary container 3 are also interconnected by means of a threaded joint.

[0076] In particular, the secondary container 3 has a joining portion 35 of the secondary container 3 in the form of a cylinder projecting towards the main container 2. A thread 34 is provided on this joining portion 35. In a complementary manner a female-thread portion 38 is provided on the inner surface 22 of the main container 2.

[0077] The joint formed by the thread 34 and the female-thread portion 38 therefore ensures easy connection and disconnection for the user.

[0078] It is also possible to employ a different joining system, for example a friction joint between the two components.

[0079] Furthermore, the joining portion 35 of the secondary container 3 terminates in a contact step 36 designed to allow abutment of the main container 2 and limit the screwing together with the bottom 23 of the main container 2.

[0080] In the embodiment shown, in the assembled

condition, the outer surface 24 of the main container 2 forms a continuation of the outer surface 37 of the secondary container 3.

[0081] In the exemplary and non-limiting embodiment shown, the threaded joints between main container 2 and second element 43 and between main container 2 and secondary container 3 are formed by means of at least one wide-radius spiral thread.

[0082] This type of joint allows quick and easy joining together of the different components.

[0083] Moreover, this type of joining system may be easily used by any user, without the need for particular instructions or precautions when used.

[0084] The threaded joint 34 furthermore facilitates the operations of introducing and/or removing the beverages and/or solid foods.

[0085] The compartments 21 and 31 of the mug 1, being separate, allow the transportation of different beverages and/or solid foods for each compartment 21, 31, while keeping separate the beverages and/or solid foods contained inside the compartments 21 and 31, and the lid 4 with the compartment 41 prevents interaction with the external environment, while maintaining the taste, consistency, and temperature of the food products until the moment of consumption.

[0086] In the embodiment shown comprising the handle element 6, the latter provides a further gripping means, facilitating opening and/or closing of the various compartments 21, 31, 41 of the mug 1.

[0087] The mug 1 is made of non-toxic material, since it comes into contact with or is situated close to food products.

[0088] Furthermore, this material must be preferably also resistant to the various storage and/or consumption temperatures, for example ranging between -10°C and 100°C. According to a non-limiting example of embodiment the material used is certified steel suitable for contact with food, for example AISI 304, AISI 316, AISI 420 or AISI 440. According to a further, alternative, example of embodiment the material used is a plastic material, for example a thermoplastic material or thermosetting material.

[0089] This allows the characteristics of the beverages and/or solid foods transported in the mug 1 to be maintained, and then consumed, without any alteration in terms of taste and colour.

[0090] Furthermore, the use of these materials ensures that the mug 1 is not subject to particular problems of wear or permanent damage due to repeated use.

[0091] Furthermore, this allows the mug 1 to be easily cleaned and decontaminated by means of washing manually or inside a dishwasher.

[0092] Also, this facilitates the ad hoc shaping of the components of the mug 1, making it simpler to manufacture and suitable for production on a large scale.

[0093] It is also possible to use different materials for different needs, also in terms of production and distribution costs.

[0094] Preferably, but not exclusively, the main container 2 of the mug may be made so as to be heat-insulating, for example, using two layers of steel with an air gap, polystyrene or other suitable insulating material. This allows the temperature of the beverages and/or the solid foods contained inside the mug to be maintained until the moment of consumption.

[0095] It is also possible to use, for example, a single material with particular heat-insulating properties or provide the mug 1 with a greater thickness, in order to obtain the same heat-insulating effect.

[0096] Advantageously, with the mug 1 according to the present invention it is possible to have a single transportation element for several food products.

[0097] Furthermore, advantageously, with the present invention it is possible to have dedicated compartments for different types of food, thus avoiding cross-contamination.

[0098] Again, advantageously, the present invention is particularly useful for everyday use, being practical in terms of transportation and easy to use.

[0099] Finally, advantageously, the present solution is simple to realize from a production point of view, also ensuring optimization in terms of the materials used and the associated costs.

[0100] The embodiments relating to the mug 1 and its components described in the present disclosure are to be regarded as exemplary and non-limiting.

Claims

1. Multifunctional mug (1) comprising:

- a main container (2) comprising a first internal compartment (21) and a bottom (23);
- a secondary container (3) that is coaxial and can be separably associated with the bottom (23) of said main container (2), said secondary container (3) comprising a second internal compartment (31), said first internal compartment (21) being separated from said second internal compartment (31);
- a lid (4) that is coaxial with said main container (2) and comprises a first element (42) and a second element (43) separably connected together, said second element (43) being in direct contact with said main container (2) and said first element (42) being mounted on top of said second element (43);
- an elastic band (5) that is connected to an outer surface (24) of said main container (2);
- a piece of cutlery (52),

and **characterized in that** said elastic band (5) has externally a fixing seat (51), said piece of cutlery (52) being removably connected to said fixing seat (51) and adjacent to said outer surface (24) of said main

container (2).

2. Mug (1) according to claim 1, wherein said elastic band (5) is further adapted to be at least partially interposed between said first element (42) of the lid (4) and said second element (43) of the lid (4) so as to form a fluid-tight joint.

3. Mug (1) according to claim 1 or 2, wherein said main container (2) and said secondary container (3) are interconnected by means of a threaded joint.

4. Mug (1) according to any one of the preceding claims 1 to 3, wherein said main container (2) and said second element (43) of the lid (4) are interconnected by means of a threaded joint.

5. Mug (1) according to claim 3 or 4, wherein said threaded joint is formed by means of at least one wide-radius complementary spiral thread.

6. Mug (1) according to any one of claims 1 to 5, further comprising a handle element (6) formed on said outer surface (24) of said main container (2).

7. Mug (1) according to any one of claims 1 to 6, wherein said main container (2) has a substantially cylindrical shape and said secondary container (3) has a substantially inverted-dome shape flattened along a spherical portion thereof, thus generating a support surface (33) for said mug (1).

8. Mug (1) according to any one of claims 1 to 7, wherein said elastic band (5) is made of polypropylene.

9. Mug (1) according to any one of claims 1 to 8, wherein said main container (2) of said mug (1) is made with a heat-insulating structure.

10. Mug (1) according to any one of claims 1 to 9, wherein said mug (1) is made of non-toxic material suitable for containing food.

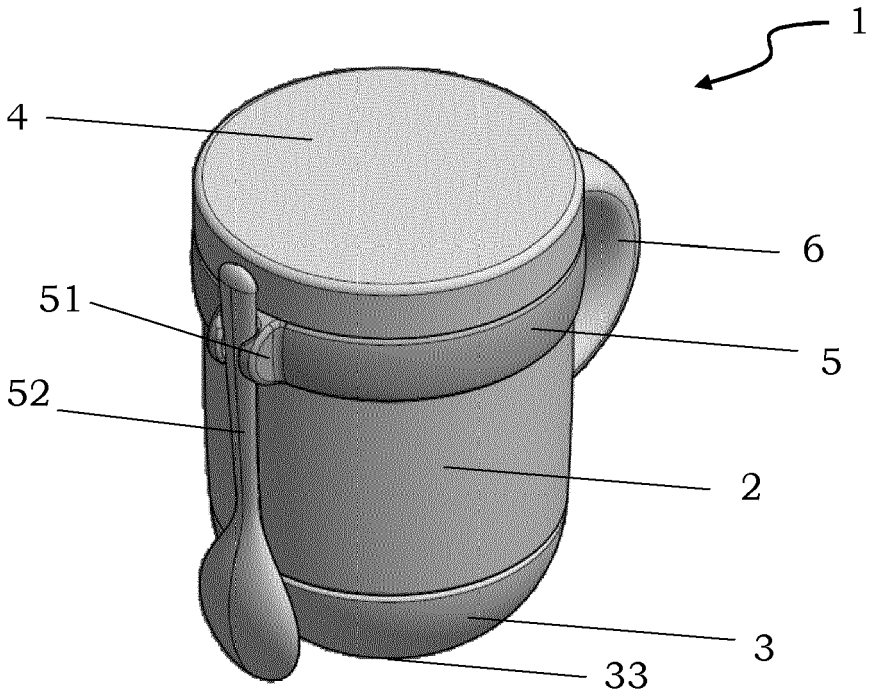

FIG. 1

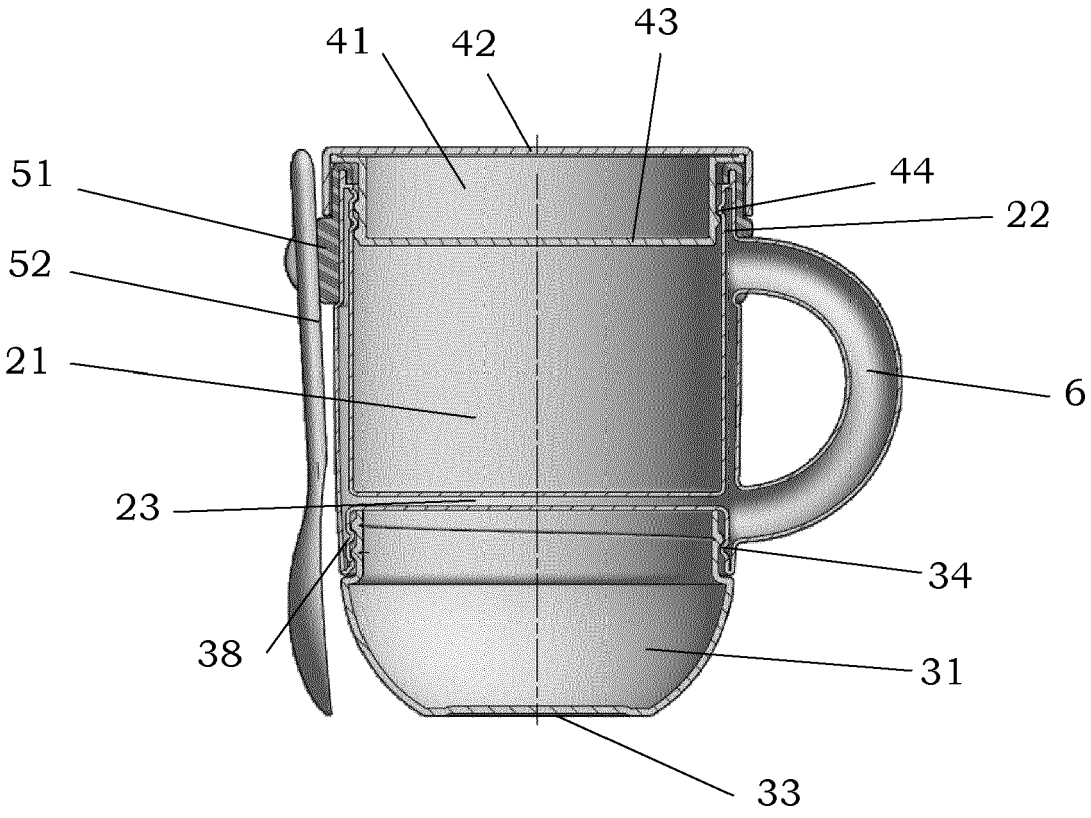

FIG. 2

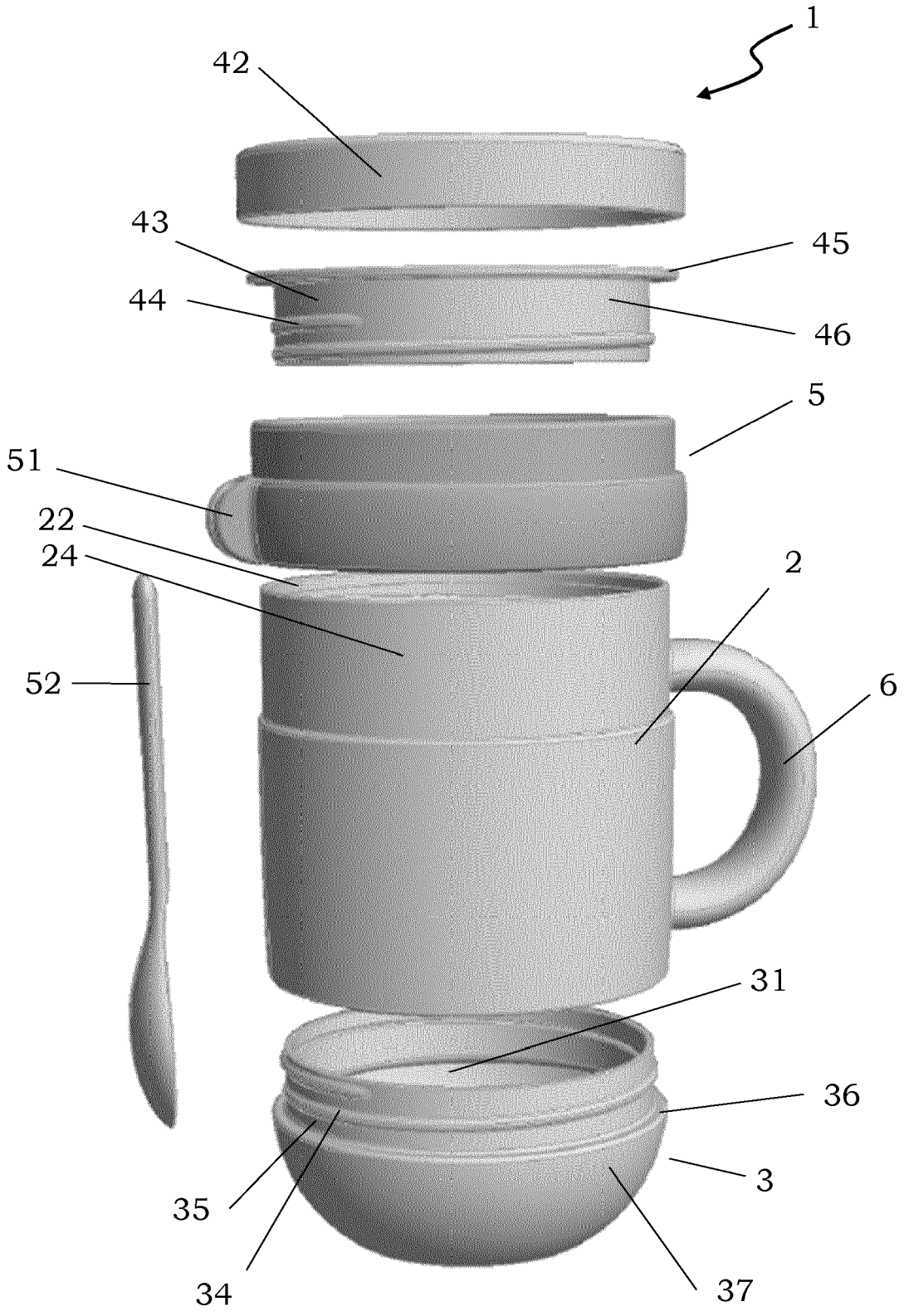

FIG. 3

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 21 19 3808

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	CN 202 874 793 U (SHENZHEN POLYTECHNIC) 17 April 2013 (2013-04-17) * abstract; figures *	1-10	INV. A47G19/22 A47G21/14
A	CN 207 821 608 U (FUJIAN DEHUA HUANGMING CERAM CO LTD) 7 September 2018 (2018-09-07) * abstract; figures *	1-10	
Y	US 2019/246822 A1 (HORWITZ WARREN RUSSEL [CA]) 15 August 2019 (2019-08-15) * paragraphs [0019], [0020] *	2	
A	KR 2014 0075523 A (YANG MIN WOO [KR]) 19 June 2014 (2014-06-19) * paragraph [0026]; figures *	1	
A	DE 203 05 673 U1 (WOLFRAM ADELHEID [DE]) 28 August 2003 (2003-08-28) * figure 1 *	1	
Y	US 2002/074334 A1 (KARP MORRY [US]) 20 June 2002 (2002-06-20) * figure 9 *	3-6	TECHNICAL FIELDS SEARCHED (IPC) A47G B65D
Y	DE 20 2008 007596 U1 (KOCH BEATE [DE]) 21 August 2008 (2008-08-21) * claims; figure 2 *	1-10	

1 The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	12 January 2022	Zattoni, Federico

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 21 19 3808

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

12-01-2022

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
CN 202874793 U	17-04-2013	NONE	
CN 207821608 U	07-09-2018	NONE	
US 2019246822 A1	15-08-2019	NONE	
KR 20140075523 A	19-06-2014	NONE	
DE 20305673 U1	28-08-2003	NONE	
US 2002074334 A1	20-06-2002	NONE	
DE 202008007596 U1	21-08-2008	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82