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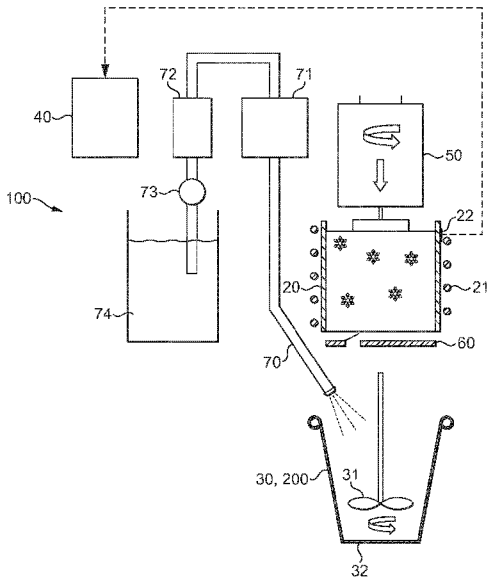

FIG. 1

(57) Abstract: The invention relates to a system (100) for delivering frozen or chilled beverages comprising a container (20) and a device (10), the container (20) comprising a frozen product and the device (10) being configured for receiving the container (20) and for processing the product in the container (20) to deliver the final beverage; the system (100) comprising slicing means (60) relatively moveable with respect to the product in the container (20) in order to slice it; the system (100) further comprising driving means (50) configured to provide the relative motion of the slicing means (60) and of the product in the container (20); the system also comprising injection means (70) to provide a jet of liquid to the sliced product in order to dissolve and/or homogenise and/or hydrate the final beverage. The invention further relates to the use of a system (100) as the one described to prepare frozen or chilled beverages from a product in a container (20) and to a method for delivering frozen or chilled beverages with such system (100).

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System for frozen or chilled beverages

Field of the invention

The present invention is directed to a system for delivering frozen or chilled beverages, the system comprising in particular a device and a container, the container comprising a frozen product to prepare the beverage.

Background of the invention

At present, the offer for beverage preparation machines delivering frozen beverages is relatively limited. The most known machines are granita machines embedding a cooling unit (compressor) and thus being very bulky and heavy, thus not suitable for home applications. Moreover, these machines are conceived for the preparation of large quantities of beverages and so need very long times to be ready for operation (typically, several hours). Similarly, water fountains and other cold beverage machines exist but do not guarantee real cold beverages and the products are often very limited, so they do not offer a real alternative to chilled ready-to-drink products.

Most frozen beverage machines known in the state of the art, for example as described in document US 2011297272 A1, are very bulky and require the use of large cooling units; in fact, they are conceived for business applications (B2B). Some other machines known in the state of the art disclose the dispensing of liquid product together with shaved ice (from water ice cubes) directly into a blending unit, being then blended, as per documents US 5960701, US 5619901 or US 2010151083 for example: however, these documents also disclose big and bulky machines not adapted to be easily used in home applications.

Machines for preparing the so called granita beverages are also known in the state of the art as per documents US 2012055189 A1 or US 2004060307 A1: however, the machines described in these documents are also voluminous machines, requiring long operation times and not adapted for home applications.

The present invention is intended to address these and other drawbacks of the known prior art, by providing a convenient system for chilled or frozen beverages that is small, easy to use and that is also able to deliver these beverages in a very short time.

The system of the present invention offers a wide range of frozen and chilled beverages in a very convenient way and with the use of a low cost device. Moreover, natural and fresh ingredients are guaranteed as they make the basis of the frozen products in the containers with which the system of the invention works, as it will be further described in detail.

Summary of the invention

According to a first aspect, the invention relates to a system for delivering frozen or chilled beverages. The system comprises a container and a device: the container comprises a frozen product and the device is configured for receiving the container and for processing the product in the container to deliver the final beverage. The system of the invention comprises slicing means relatively moveable with respect to the product in the container in order to slice it: the system further comprises driving means configured to provide the relative motion of the slicing means and of the product in the container, the system also comprising injection means to provide a jet of liquid to the sliced product in order to dissolve and/or homogenise and/or hydrate the final beverage.

Preferably, in the system of the invention, the type and characteristics of the beverage delivered depend on one or a plurality of the following parameters: speed of the relative motion of the slicing means and of the product in the container, positioning of the frozen product within the system, temperature and/or quantity and/or flow rate of the jet of liquid provided, positioning of the interstice in the slicing means.

According to an embodiment of the system of the present invention, the product in the container simultaneously rotates and displaces towards the slicing means, the slicing means remaining stationary.

According to another embodiment of the system of the invention, the product in the container displaces towards the slicing means while the slicing means move in rotation.

Yet according to a different embodiment of the system of the invention, the slicing means simultaneously rotate and displace inside the container and with respect to the product in it, which remains stationary.

Still according to a further embodiment of the system of the invention, the product in the container rotates while the slicing means displace inside the container towards the product in it.

Typically, in the system of the invention, the container comprises heating means able to at least partially detach the product inside the container before it is sliced.

Preferably, the system of the invention further comprises a mixing chamber receiving sliced product, the injection means providing the jet of liquid into the mixing chamber. According to one embodiment, the mixing chamber further comprises stirring means rotatable within said mixing chamber. According to another embodiment, the device further comprises stirring means configured to be rotatable within the mixing chamber.

Typically, the mixing chamber is provided within the container, the volume of said mixing chamber being variable depending on the relative movement of the slicing means with respect to the product.

Preferably, the container is provided with identification means comprising information on the product in the container and/or on the processing parameters of the said product in the system.

The system of the invention further typically comprises a control unit configured to read the information in the identification means and to actuate the device according to corresponding processing parameters.

In the system of the invention, the jet of liquid is typically provided in different shapes and/or configurations: as a shower, having a conical shape, as a straight line, etc.

According to a second aspect, the invention relates to the use of a system as the one described to prepare frozen or chilled beverages from a product in a container.

According to a third aspect, the invention further relates to a method for delivering frozen or chilled beverages with a system as the one previously described, the method comprising the steps of:

- dispensing a frozen product from the container and slicing it, at a certain rate defined by the relative motion of the slicing means and of the product;
- dissolving and homogenising the sliced product with a jet of liquid provided by the injection means.

The method of the invention typically further comprises the step of detaching at least partially the product inside the container before it is sliced.

Preferably, the method of the invention further comprises the step of retrieving information in the identification means in the container and actuating the device according to corresponding processing parameters.

In the method of the present invention, the jet of liquid provided to the sliced product is typically previously heated.

Preferably, in the method of the invention, the sliced product mixed with the jet of liquid is further mixed and/or heated.

Brief description of the drawings

Further features, advantages and objects of the present invention will become apparent for a skilled person when reading the following detailed description of non-limiting embodiments of the present invention, when taken in conjunction with the appended drawings, in which:

Fig. 1 shows a schematic view of a system for delivering frozen or chilled beverages according to one embodiment of the invention, where the product in the container simultaneously rotates and displaces towards stationary slicing means.

Fig. 2 shows a schematic view of a system for delivering frozen or chilled beverages according to another embodiment of the invention, where the product in the container displaces towards slicing means, while the slicing means move in rotation.

Fig. 3 shows a schematic view of a system for delivering frozen or chilled beverages according to yet another embodiment of the invention, where the product in the container rotates while the slicing means displace inside the container towards the product in it.

Fig. 4 shows a schematic view of a system for delivering frozen or chilled beverages according to the invention, further comprising a mixing chamber receiving sliced product and injection means providing a jet of liquid into the mixing chamber.

Fig. 5 shows a schematic view of a system for delivering frozen or chilled beverages according to the invention, wherein the container is provided with a mixing chamber.

Fig. 6 shows a schematic view of a system for delivering frozen or chilled beverages according to the invention, further comprising a mixing chamber provided with stirring means rotatable within said mixing chamber.

Figs. 7a-b show schematically an example of a frozen product recipe to be prepared in a system for delivering frozen or chilled beverages according to the invention.

Detailed description of exemplary embodiments

According to a first aspect, the present invention is directed to *a system for delivering frozen or chilled beverages*. The beverages provided by the system of the invention will also comprise granitas, for example, as chilled or partially frozen spoonable beverages. The system 100 of the invention comprises a container 20 and

a device 10, as represented for example in Figure 2. The container 20 comprises a frozen product inside and the device 10 is configured for receiving the container 20 and for processing the product in the container 20 in order to deliver the final beverage. The product in the container 20 can be completely or partially frozen. The product inside the container 20 is typically coming from a natural and fresh product that is frozen before being used in the system 100 to prepare the frozen or chilled beverage from it. The idea of the invention is that, once the container 20 having inside the frozen product, is attached to the device 10, the frozen product is sliced into flakes or small slices of product (still frozen) that will be sent into a cup or recipient 200, where a jet of liquid (typically water) will be added in order to prepare the final beverage. For producing the flakes or slices of frozen product, the system 100 will comprise slicing means 60 relatively moveable with respect to the product in the container 20, so as to slice it. Different ways of moving the two (product and slicing means) relative to each other can be envisaged, as it will be further explained in more detail in what follows.

The system 100 further comprises driving means 50 configured to provide the relative motion of the slicing means 60 and the product in the container 20, as shown in Figure 1. As further represented in this Figure, the system 100 further comprises injection means 70 providing a jet of liquid to the sliced product (the sliced product was sent to the recipient or cup 200) in order to dissolve and/or homogenise and/or hydrate the final beverage.

The product can be driven directly by the driving means 50or indirectly through the container 20. This means that, for example, in the case where you move the container 20 by rotation, the product inside of it (frozen product) moves together with the container 20 (i.e. there is no sliding between container and product and they move solidarily): the product is pushed downwards by linear movement towards the slicing means 50, so there is a vertical sliding of the product with respect to the internal walls of the container 20, while both (container and product) rotate at the same time.

As represented in Figure 1, the injection means 70 are configured to provide a jet of liquid to the frozen product sliced and they are thus connected to a water tank 74 through a water pump 72. Preferably, a flow meter 73 to control the flow of the jet injected is further provided and optionally also a heater 71, in order to offer the possibility of adding a hot jet of liquid instead. The jet of liquid provided by the injection means 70 can be delivered into different shapes and/or configurations, such

as a shower, having a conical shape, as a straight line, etc. Also, the injection means 70 can be made moveable with respect to the product, in order to provide a faster speed of homogenization, hydration, mixing, or the like.

In the system of the invention, the type and characteristics of the beverage delivered depend on one or a plurality of the following parameters: the speed of the relative motion of the slicing means 60 and of the product in the container 20, the positioning of the frozen product within the system and the temperature and/or quantity and/or flow rate of the jet of liquid provided to the frozen product, as well as the positioning of the interstice in the slicing means.

Different embodiments will be now presented covering different possibilities of the relative motion of the frozen product in the container 20 with respect to the slicing means 60. One embodiment is represented by schematic arrows in Figure 1, where the product in the container 20 simultaneously rotates and displaces towards the slicing means 60, and the slicing means 60 remain stationary. The slicing means 60 typically comprise a blade with an interstice 61 through where the frozen product will be sliced in small slices or flakes by the movement in rotation and displacement of the said block of frozen product with respect to the stationary blade and interstice 61. According to a possible embodiment of the invention, the height of this interstice 61 will be fixed but, according to another possible embodiment, this height can be regulated as desired (by means of a pivotable part, for example, rotating at one point).

Another possibility is represented in Figure 2: here, the product in the container 20 displaces towards the slicing means 60 while the slicing means 60 move in rotation. This relative movement of the product and the slicing means makes it possible to produce small slices or flakes of frozen product, similarly as in the previous case described.

Figure 3 represents a further possible embodiment where the product in the container 20 rotates while the slicing means 60 displace inside the container 20 and towards the product in it, in order to similarly produce slices or flakes of frozen product.

Still another embodiment is possible wherein the slicing means 60 simultaneously rotate and displace inside the container 20 and with respect to the

product in it, which remains stationary, thus to produce the small slices or flakes of frozen product.

In order to make the frozen product inside the container 20 move with respect to the slicing means 60 (rotating and displacing as in Figure 1 or Figure 6, displacing downwards as in Figure 2 or simply rotating as in Figure 3 or 5), the container 20 can optionally be provided with heating means 21 (see Figure 1) that facilitate detaching, at least partially, the frozen product from the inner walls of the container 20, in order to initiate the movement of the product towards the slicing means 60 (movement thereafter continued by the driving means 50). Depending on the product nature, it may be particularly advantageous to detach the product from inside the container 20 by heating or pre-heating.

In another embodiment of the invention, the system 100 is further provided with a mixing chamber 30 to where the slices or flakes of frozen product are sent. There are several possibilities of incorporating this mixing chamber 30 in the overall system 100: the mixing chamber 30 can be the same as the recipient or cup 200 where the final beverage will be served (see for example Figure 1 or Figure 6) or it can be a separate part of the system (see Figure 4) or it can be made as a separate part into the container 20 (see Figure 5). In the example shown in Figure 4, the flakes or slices of frozen product coming from the product inside the container 20 are sent into a mixing chamber 30 to where the injection means 70 provide the jet of liquid in order to mix, homogenise, dissolve or hydrate the product before it is delivered into a recipient or cup 200. A valve 80 arranged at the exit of the mixing chamber 30 controls the flow of the beverage into the recipient or cup 200, as represented in Figure 4.

Another example is shown in Figure 5, where the mixing chamber 30 is arranged in the container 20: the frozen product inside the container 20 is made rotate (after having been optionally detached by way of being heated from the inner walls of the said container 20, for example) and, while it is rotating, the slicing means 60 are configured to displace vertically upwards towards the rotating product. The volume of said mixing chamber 30 is variable depending on the relative movement of the slicing means 60 with respect to the product. This relative movement provides slices or flakes of frozen product into a mixing chamber 30, which is configured in the container 20 itself, as represented in this Figure 5. Secondary injection means 70' can optionally be provided and configured to inject a jet of fluid (typically water) into this mixing

chamber 30 to first mix, homogenise, hydrate and/or dissolve the flakes or slices of frozen product in that chamber 30. A valve 80 is arranged at the exit of the mentioned mixing chamber 30 in order to control the dispensing of the product in the said chamber into a recipient or cup 200. Further injection means 70 are configured to add a jet of liquid into the recipient 200 so as to prepare the final beverage. Both injection means 70 and 70' can be provided or any one of the two, depending on different embodiments of the system of the present invention.

In the embodiment of the system 100 of the invention shown in Figure 6, the mixing chamber 30 further comprises stirring means 31 rotatable within the inner volume of said mixing chamber 30. The frozen product inside the container 20 rotates and displaces vertically downwards towards slicing means 60, typically a blade, having a blade interstice 61, so that the frozen product is sliced (turned into small pieces, slices or flakes of frozen product 300). The sliced product 300 goes into a mixing chamber 300 (in this embodiment, the same as the recipient or cup 200) where injecting means 70 inject a jet of liquid to prepare the beverage. The mixing chamber 30 comprises stirring means 31, typically configured as a whisk, rotatable within said chamber 30 by means of a motor 82 and controlled with the aid of a control unit 81. This control unit 81 can be rechargeable or inductive and/or can be made connectable to a power source.

In the embodiment shown in Figure 1, the mixing chamber 30 is also the recipient or cup 200 for the final beverage, to where the slices or flakes of frozen product are sent, and to where the jet of liquid from the injection means 70 go. In this embodiment, the device 10 further comprises stirring means 31 rotatable by driving means 50 in the device 10. The stirring means 31 are preferably configured as a whisk. Optionally, the mixing chamber 30 can be provided with heating means 32 to improve final mixing and homogenization of the beverage and/or to control the final beverage temperature. Also, the stirring means 31 can provide a certain level of foaming in the final beverage dispensed, when desired.

Preferably, according to the invention, the container 20 is provided with identification means 22 (see for example Figure 1): these identification means 22 comprise information on the product in the container 20 and/or on the processing parameters of the said product, such as: speed of the relative motion of the slicing means 60 and of the product, positioning of the frozen product within the system, temperature and/or quantity and/or flow rate of the jet of liquid provided. The system

of the invention will typically further comprise a control unit 40 configured to read the information in these identification means 22 and to actuate the device 10 according to the corresponding processing parameters. The control unit 40 will typically comprise a human-machine interface (HMI).

With the system 100 of the invention it is also possible to prepare beverages having different products departing from a layered initial frozen product, as for example represented in Figures 7a and 7b. Departing for example from a frozen product as shown in these Figures, comprising for example coconut, pineapple and banana, in exemplary quantities of 25 grams, 30 grams and 55 grams, for example, the final beverage prepared by the system will comprise these, as these components will be progressively sliced and sent into the final beverage. As different possibilities of slicing (shape and/or size of the flakes delivered) and/or quantity of liquid, typically water, provided to make the dissolution, the textures of the product provided into the beverage may be adapted. It is evident that other compositions and layers can be similarly used in the system of the invention. Compositions of products as solid products, liquid products, leaves (of basil, for example), purées, entire foods etc. could also be included in the frozen product in the container 20 so as to be delivered in the final beverage dispensed.

According to a second aspect, the invention relates to *the use of a system to prepare frozen or chilled beverage* from a frozen product in a container 20, using a system 100 as the one previously described.

According to a third aspect, the invention refers to *a method for delivering frozen or chilled beverages* with a system 100 as described previously. This method comprises the following steps:

- dispensing a frozen product from the container 20 and slicing it, at a certain rate defined by the relative motion of the slicing means 60 and of the product;
- dissolving and homogenising the sliced product with a jet of liquid provided by the injection means 70.

The method of the invention typically further comprises the step of detaching at least partially the product inside the container 20 before it is sliced, preferably by heating, the heating being typically provided by heating means 21, as shown in Figure 1. Preferably, the detachment of the product from the container is made by heating

this product without producing liquid out of it, or a very limited amount of liquid. The heating means 21 can be resistive, induction, infrared, hot air, etc. The preferred execution will be using hot air heating means 21 because of its simplicity.

The method of the invention can further comprise the step of retrieving information in the identification means 22 in the container 20 and actuating the device 10 according to corresponding processing parameters, depending on the type of product in the said container. The jet of liquid provided by the injection means 70 to the sliced product can also be previously heated by a heater 71, as schematically shown in Figure 1. It is also an option of the system of the invention to provide a later heating of both the sliced product and the jet of liquid, typically by means of mixing heating means 32 arranged in the recipient 200, as represented in Figure 1.

In summary, as previously explained, the present invention addresses a system for delivering chilled or frozen beverages in a very short time. The products used in the machine are frozen blocks stored in the user's freezer, in a container 20 suitable to insert in the device 10 of the system of the invention. The user inserts a container 20 with the frozen block of product in the device 10 and it is processed. The first step consists in a slicing of the frozen product block so as to get ice flakes (shaved ice) of the product, as explained; then, these flakes are sprayed by a water jet so as to dissolve whole or part of it (further providing homogenization), depending on the desired final texture and temperature of the beverage. The machine parameters are mainly the speed and thickness of the slicing, the positioning of the product block (the product can be layered for complex preparations, as represented schematically in figures 7a and b, for example), the temperature and quantity of water.

From a product point of view, the advantages of the system of the invention are numerous. First, the freezing process allows working with natural and fresh ingredients (nutriments are not damaged) and offer a very long preservation. Then, the slicing method allows cutting small pieces of product enlarging the scope of textures and in-mouth feelings. The variety of ingredients used in the machine is very large, including fruits, vegetables, syrups, herbs, cereals, etc. The system of the invention is able to provide real cold and natural and fresh products using a low cost machine.

Therefore, the system of the invention offers a wide range of real frozen and cold beverages in a very convenient way and with a low-cost machine. Moreover, the advantage of frozen base product are numerous and in line with present beverage trends demanding more freshness and natural products.

An embodiment of the system of the invention uses an additional mixing chamber to complete the shaving and dissolving features. The range of preparations is enlarged thanks to the mixing chamber arranged after the product outlet. Some of the advantages of this additional mixing chamber are the following:

- increased number of preparations through mixing/foaming;
- increased homogeneity of the beverages;
- decrease of dilution ratio (no or less water addition for homogenization);
- new textures, notably through foaming;
- hygienic system allowing the use of liquid products other than water;
- mixing technology can be either built-in the machine or presented as an accessory for the device;
- can be connected and driven by the master device for complex recipes.

Although the present invention has been described with reference to preferred embodiments thereof, many modifications and alterations may be made by a person having ordinary skill in the art without departing from the scope of this invention which is defined by the appended claims.

CLAIMS

1. System (100) for delivering frozen or chilled beverages comprising a container (20) and a device (10), the container (20) comprising a frozen product and the device (10) being configured for receiving the container (20) and for processing the product in the container (20) to deliver the final beverage;
the system (100) comprising slicing means (60) relatively moveable with respect to the product in the container (20) in order to slice it;
the system (100) further comprising driving means (50) configured to provide the relative motion of the slicing means (60) and of the product in the container (20);
the system also comprising injection means (70) to provide a jet of liquid to the sliced product in order to dissolve and/or homogenise and/or hydrate the final beverage.

2. System (100) according to claim 1 wherein the type and characteristics of the beverage delivered depend on one or a plurality of the following parameters: speed of the relative motion of the slicing means (60) and of the product in the container (20), positioning of the frozen product within the system, temperature and/or quantity and/or flow rate of the jet of liquid provided, positioning of an interstice (61) in the slicing means (60).

3. System (100) according to any of the previous claims wherein the product in the container (20) simultaneously rotates and displaces towards the slicing means (60), the slicing means (60) remaining stationary.

4. System (100) according to any of claims 1-2 wherein the product in the container (20) displaces towards the slicing means (60) while the slicing means (60) move in rotation.

5. System (100) according to any of claims 1-2 wherein the slicing means (60) simultaneously rotate and displace inside the container and with respect to the product in it, which remains stationary.

6. System (100) according to any of claims 1-2 wherein the product in the container (20) rotates while the slicing means (60) displace inside the container towards the product in it.

7. System (100) according to any of the previous claims wherein the device (10) comprises heating means (21) adapted to be coupled with the container (20) to at least partially detach the product inside the container before it is sliced.

8. System (100) according to any of the previous claims further comprising a mixing chamber (30) receiving sliced product, the injection means (70) providing the jet of liquid into the mixing chamber (30).

9. System (100) according to claim 8 wherein the mixing chamber (30) further comprises stirring means (31) rotatable within said mixing chamber (30).

10. System (100) according to claim 8 wherein the device (10) further comprises stirring means (31) configured to be rotatable within the mixing chamber (30).

11. System (100) according to any of claims 8-10 wherein the mixing chamber (30) is provided within the container (20), the volume of said mixing chamber (30) being variable depending on the relative movement of the slicing means (60) with respect to the product.

12. System (100) according to claim 11 further comprising secondary injection means (70') configured to provide a jet of liquid into the mixing chamber (30).

13. System (100) according to any of the previous claims wherein the container (20) is provided with identification means (22) comprising information on the product in the container and/or on the processing parameters of the said product in the system.

14. System (100) according to claim 13 further comprising a control unit (40) configured to read the information in the identification means (22) and to actuate the device (10) according to corresponding processing parameters.

15. System (100) according to any of the previous claims wherein the jet of liquid is provided in different shapes and/or configurations: as a shower, having a conical shape, as a straight line, etc.

16. Use of a system (100) according to any of the previous claims to prepare frozen or chilled beverages from a product in a container (20).

17. Method for delivering frozen or chilled beverages with a system (100) according to any of claims 1-15, the method comprising the steps of:

- dispensing a frozen product from the container (20) and slicing it, at a certain rate defined by the relative motion of the slicing means (60) and of the product;
- dissolving and homogenising the sliced product with a jet of liquid provided by the injection means (70).

18. Method according to claim 17 further comprising the step of detaching at least partially the product inside the container before it is sliced.

19. Method according to any of claims 17-18 further comprising the step of retrieving information in the identification means (22) in the container (20) and actuating the device (10) according to corresponding processing parameters.

20. Method according to any of claims 17-19 wherein the jet of liquid provided to the sliced product is previously heated.

21. Method according to any of claims 17-20 wherein the sliced product mixed with the jet of liquid is further mixed and/or heated.

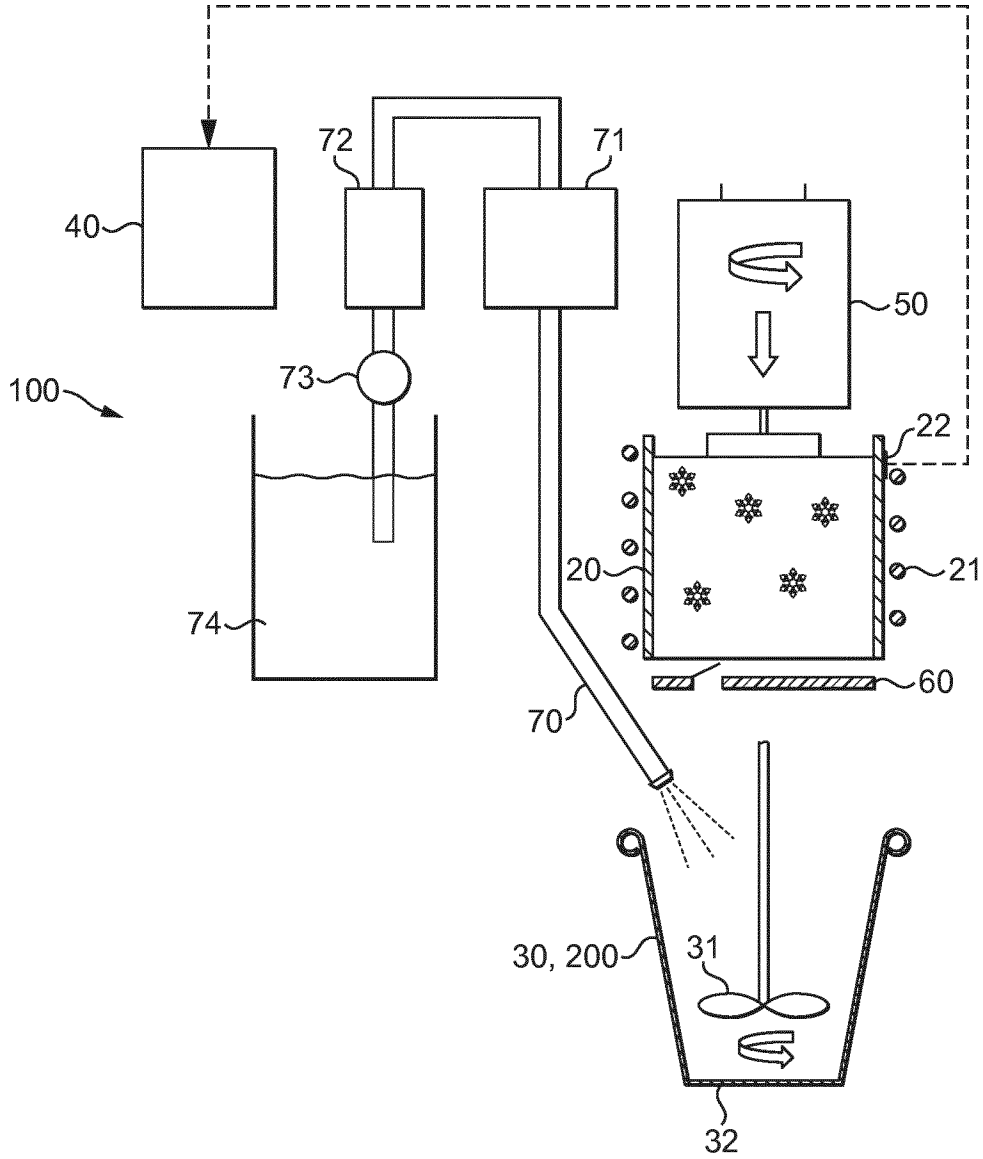

FIG. 1

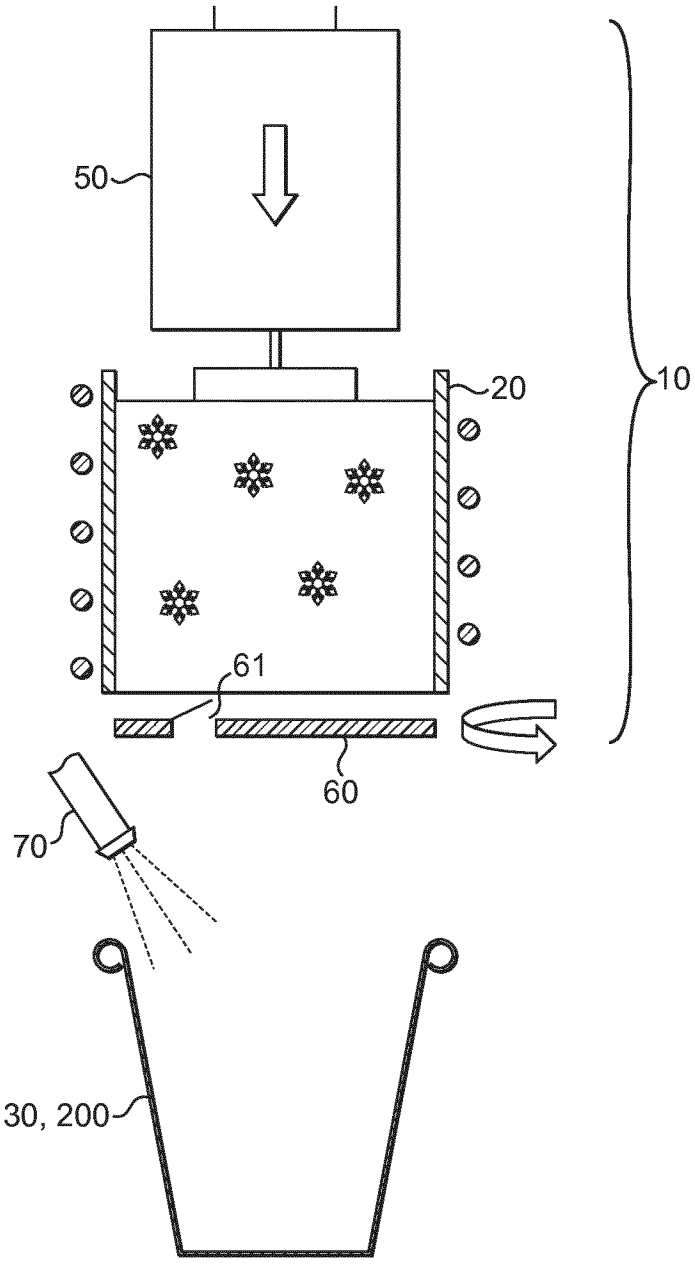

FIG. 2

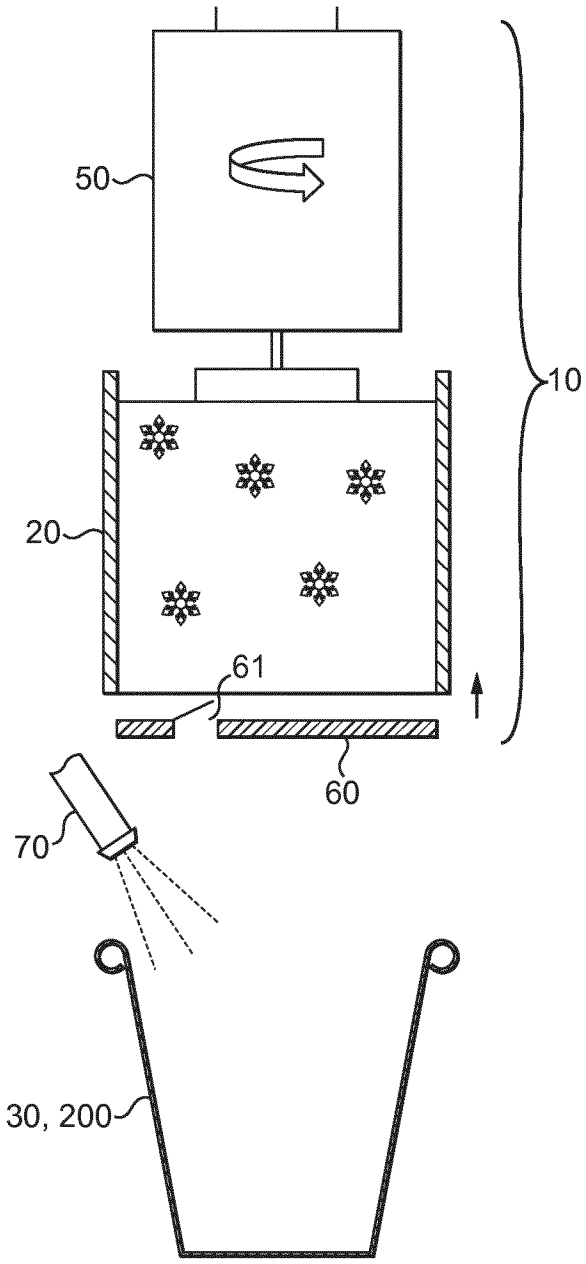

FIG. 3

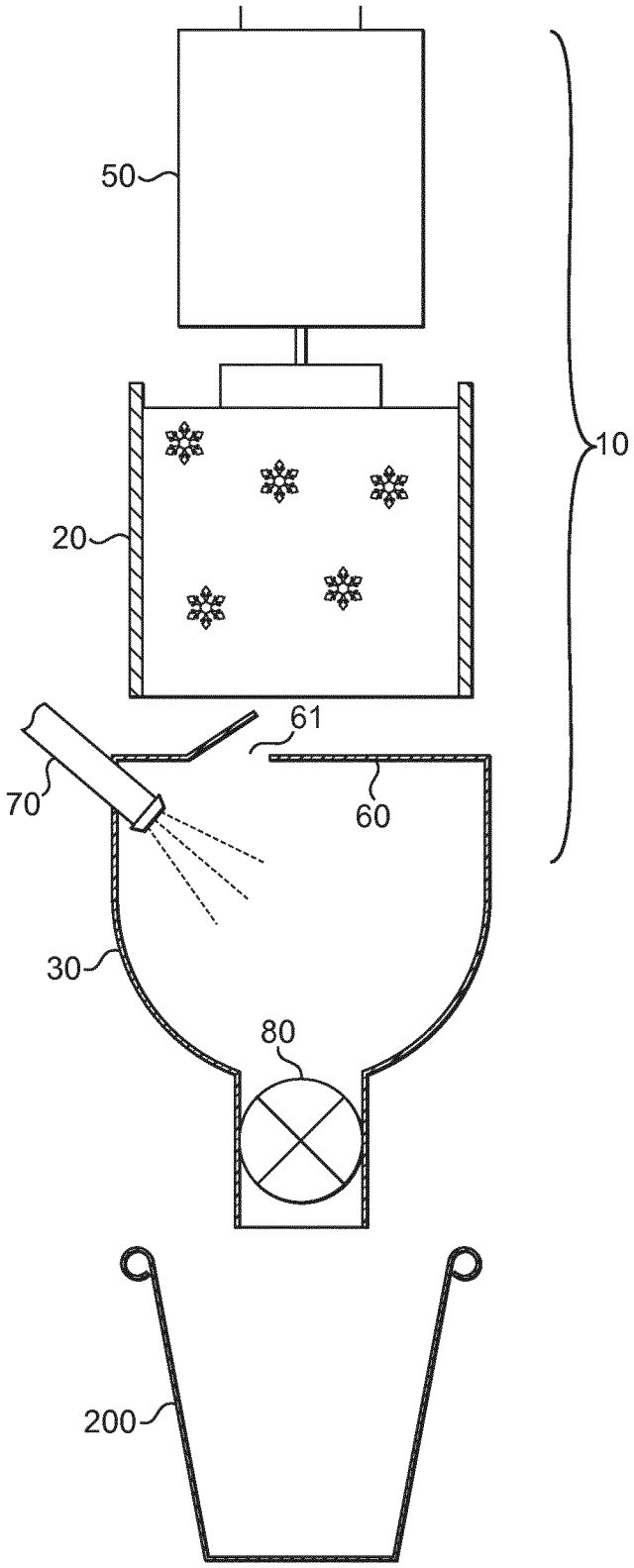

FIG. 4

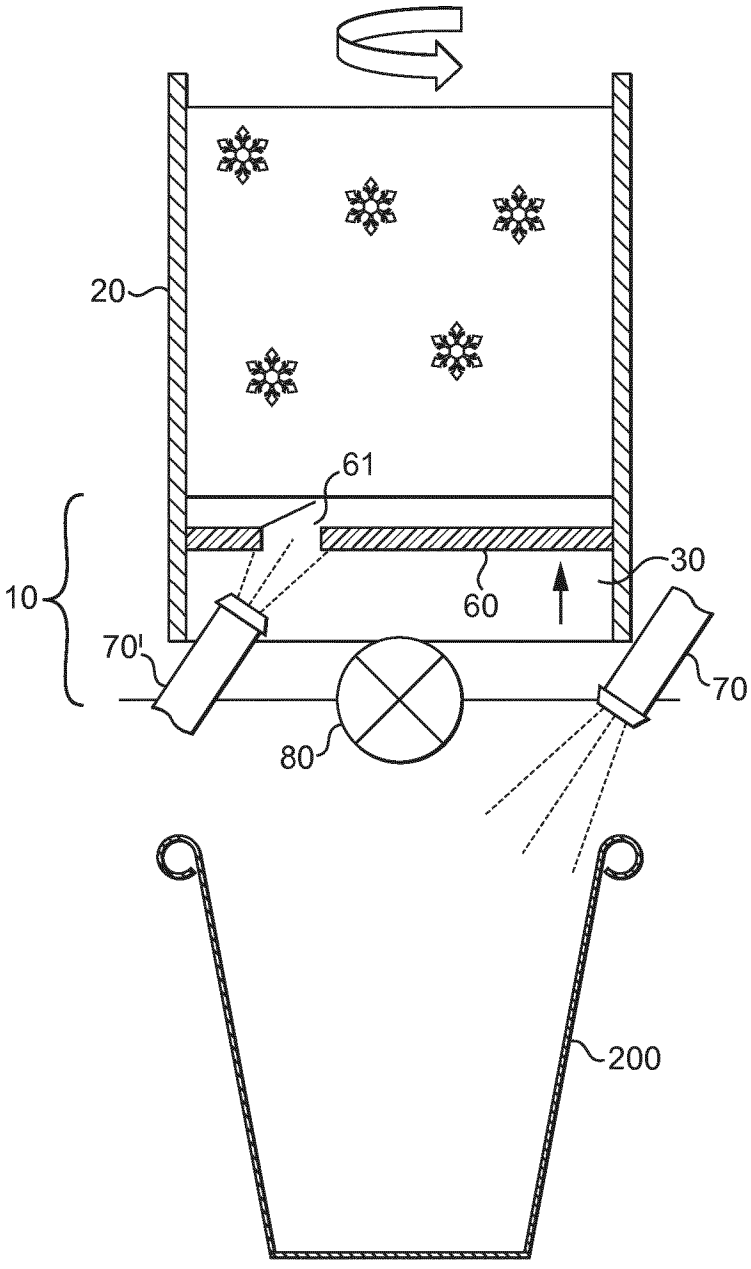

FIG. 5

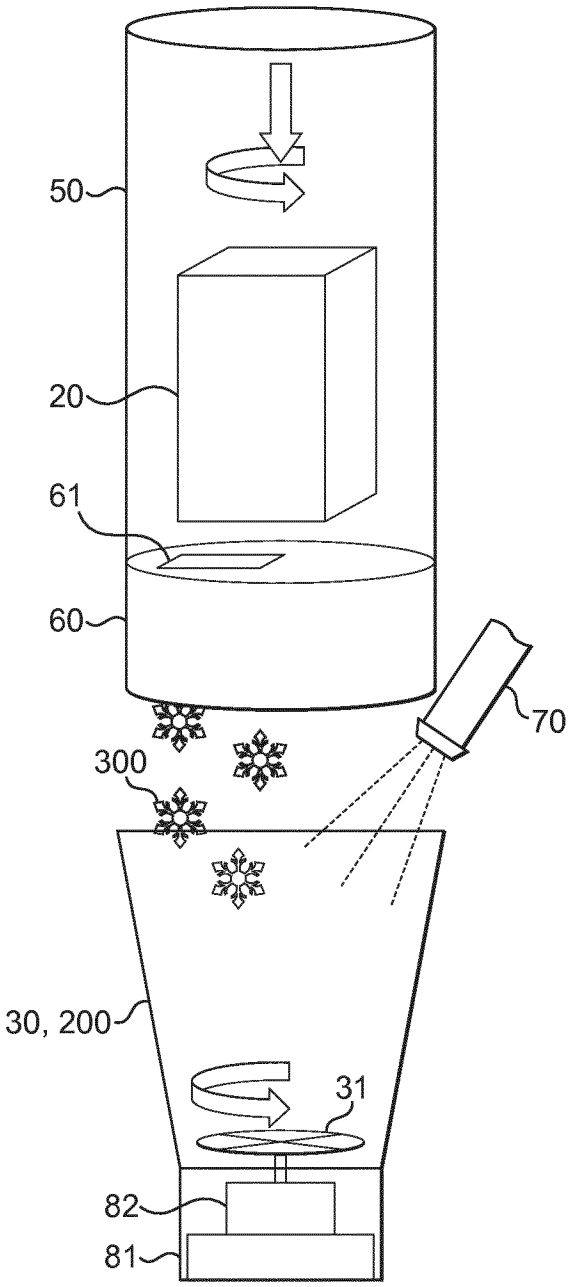

FIG. 6

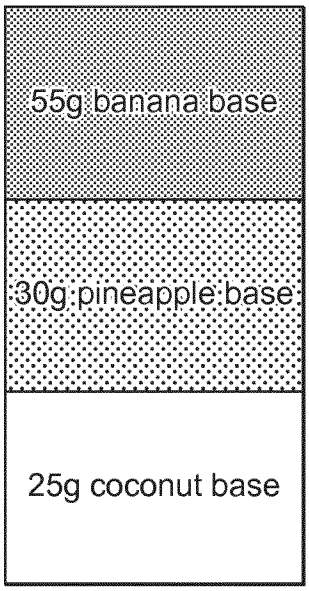
55g banana base
30g pineapple base
25g coconut base

FIG. 7a

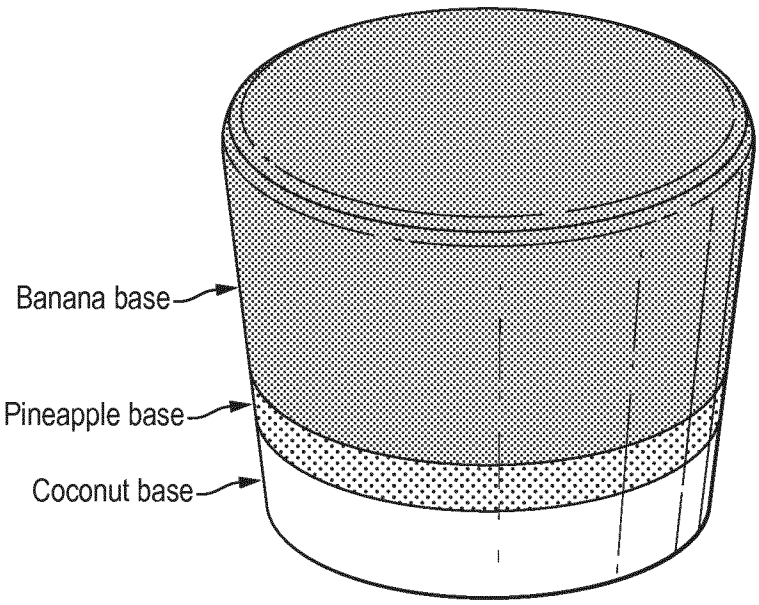
Banana base
Pineapple base
Coconut base

FIG. 7b

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2018/061099

A. CLASSIFICATION OF SUBJECT MATTER
INV. A23G9/04
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A23G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data, FSTA

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CA 2 426 464 A1 (COORS WORLDWIDE INC [US]) 17 October 2004 (2004-10-17) pages 1-8; claims; figures -----	1-21
X	US 2003/145734 A1 (ERVIN DAVID [US]) 7 August 2003 (2003-08-07) pages 1-3; claims; figures -----	1-21
X	US 2002/194999 A1 (ERVIN DAVID [US]) 26 December 2002 (2002-12-26) pages 1-3; claims; figures -----	1-21
X	GB 2 448 299 A (SCOTSMAN BEVERAGE SYSTEMS LTD [GB]) 15 October 2008 (2008-10-15) pages 1-9; claims; figures -----	1-21

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[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
18 May 2018	30/05/2018

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Boddaert, Peter

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INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2018/061099

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2012/030312 A1 (KOVTUN YURIY VLADIMIROVICH [UA]) 8 March 2012 (2012-03-08) the whole document	1-21
X	US 2010/151083 A1 (KLIER NIRI [IL] ET AL) 17 June 2010 (2010-06-17) cited in the application pages 1-7; claims; figures	1-21
X	US 5 960 701 A (REESE JOSEPH J [US] ET AL) 5 October 1999 (1999-10-05) cited in the application the whole document	1,16,17
X	GB 2 305 717 A (DAEWOO ELECTRONICS CO LTD [KR]) 16 April 1997 (1997-04-16) the whole document	1,16,17
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
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