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(54) **COCKTAIL STIRRER**

(57) A device for storing, dispensing, and stirring a beverage additive is provided. The device comprises a tubular body containing the beverage additive and being provided with perforations for extraction and/or dissolving at least part of the additive in a carbonated and/or alcoholic beverage when inserted into the beverage to provide a modified beverage for human consumption.

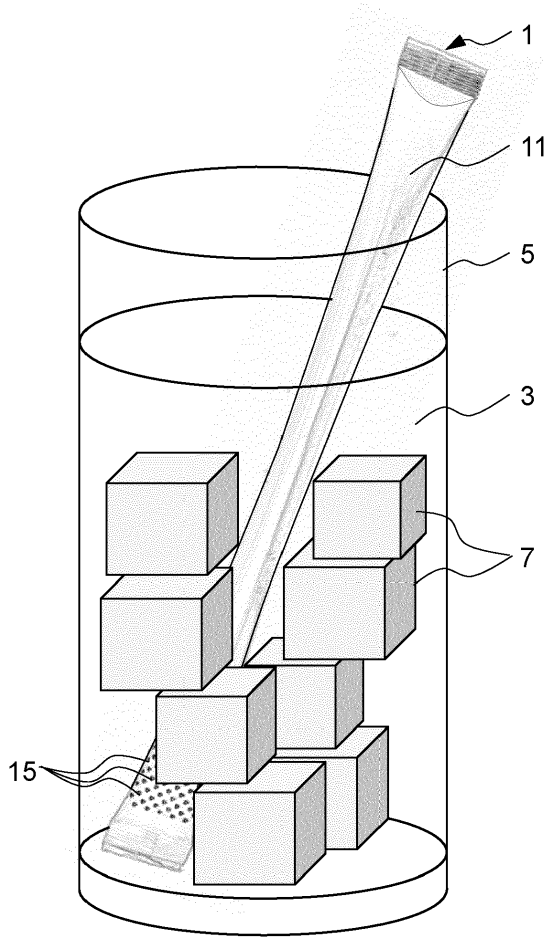

Fig. 2

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Description

TECHNICAL FIELD

[0001] The present disclosure relates to preparation of beverages, in particular to alcoholic beverages and/or chilled beverages, more in particular chilled cocktails.

BACKGROUND

[0002] Cocktails, alcoholic or not, are best served freshly mixed. However, preparation thereof may be time consuming and/or require specific skills of a bartender in particular in case of ingredients like fresh fruits. It is further noted that some cocktail recipes only require a small fraction of a fruit per serving so that the remainder may go to waste if no suitable further orders are placed.

[0003] Also, for chilled beverages, a coolant like chilled objects, ice chunks, like ice cubes or crushed ice, should be added at the time of serving or shortly before, so as to prevent warming up of the beverage and/or melting of the ice. In particular, for cocktails a significant part of the beverage volume may be occupied by ice chunks. Cocktails and chilled beverages may require stirring to mix ingredients and/or prevent uneven dilution in case of melting ice. Some cocktails also contain pieces of fruits. Hence, cocktails require sturdy stirrers.

[0004] Further, consumers tend to like personalised beverages and variety.

[0005] It is noted that beverage additive dispensers are known for hot beverages such as tea and coffee. See, e.g. US 4,387,809, US 5,125,534, WO 01/70080, US 2007/0059408, US 2011/200713, US 2012/0453383, US 2012/213891, WO 13/049645. However, it has been found that the disclosed beverage additives and their dispensers are unsuitable for chilled beverages and cocktails because the materials are incompatible with carbonated and/or alcoholic liquids and, in particular, cannot stir beverages containing chunks of ice and/or fruit. Moreover, their manufacture tends to be expensive.

SUMMARY

[0006] In view of the above herewith is provided a beverage device as discussed below. Various aspects thereof are specified in the appended claims.

[0007] The provided device is for storing, dispensing, and stirring a beverage additive. The device comprises a tubular body containing the beverage additive and being provided with perforations for extraction and/or dissolving at least part of the additive in a carbonated and/or alcoholic beverage when inserted into the beverage to provide a modified beverage for human consumption.

[0008] In the device, the tubular body, preferably the device as a whole, may be formed of a laminate film having polymer layers with an aluminium layer in between, the aluminium layer having a thickness of more than 4 micrometer, the thickness may be less than 25 micrometer. Preferably the thickness is in a range 5-10 micrometer, more preferably in a range 6-9 micrometer, most preferably 7-8 micrometer. The tubular body defines a lumen for containing the beverage additive and the perforations connect the lumen with the atmosphere surrounding the device.

[0009] Such device allows dispensing the beverage additive into the beverage at the time of serving the beverage or shortly before consumption. The beverage additive allows scenting, flavouring and/or colouring the beverage from an initial beverage into the modified beverage. The beverage additive may, at least in combination with an initial beverage, provide the modified beverage with at least a representation of a scent, a flavour and/or a colour of a traditionally prepared and/or mixed beverage, e.g. a fruit-juice containing cocktail. Thus, appropriate selection of the additives from a plurality of devices with different additives allows provision of different modified beverages. A consumer may thus obtain a modified beverage as desired.

[0010] The aluminium layer being laminated between the polymer layers provides protection to the aluminium layer and it facilitates providing symmetry of the material. The aluminium layer increases strength and/or structural integrity of the material, assisting defining and/or maintaining a shape of the device and/or regaining the shape after deformation. This protects the additive against crushing prior to use and in particular it fortifies the device for stirring beverages containing solid objects such as chunks of fruit and/or ice. Thus, another stirrer than the device in the beverage is obviated, facilitating reduction of one or more of costs, inventory, cleaning, waste, etc. The aluminium layer further provides opacity to the device. In particular in case the perforations are added as a final step for completion of the of the device, the aluminium layer may assist conservation of the beverage additive.

[0011] Also or alternatively, in the device, the tubular body, preferably the device as a whole, may have a length in a range of 15-20 cm, preferably 16-19 cm, more preferably 17-18 cm, and/or a circumference perpendicular to the length in a range of 3,0-5,0 cm, preferably 3,2-4,0 cm more preferably 3,4-3,8 cm. The circumference may in general be 0,15-0,25 times the length, preferably 0,18-0,22 times, e.g. 0,2 times.

[0012] Such device fits most cocktail and/or long drink glasses and provides appropriate ergonomic properties. The device may remain in the beverage container (e.g. cocktail glass) and be easily manipulatable for an average human adult. Also, the device is not likely to fall out of the beverage container. Also or alternatively, the device allows for a suitable amount of beverage additive. The tubular body may have a shape in cross section perpendicular to the length that is generally round, but which may vary. In particular, the device may have a cushion- or sachet-shape due to flow forming.

[0013] Also or alternatively, in the device, the tubular body, preferably the device as a whole, may be formed

of a film having a thickness of at least 50 micrometer, preferably at least 70 micrometer, more preferably more than 80 micrometer, most preferably in a range from 80 to 100 micrometer. In particular in the device, the tubular body, preferably the device as a whole, may be formed of a laminate film having polymer layers with an aluminium layer in between, wherein the polymer layers each have a thickness in a range of 25 to 60 micrometers, preferably 30 to 50 micrometers, more preferably 35 to 45 micrometers.

[0014] Thus, the tubular body may have a comparably thin wall providing a large storage volume for the additive, even though the amount of additive may only occupy a small fraction of the storage volume prior to use. This also reduces weight of the device and waste volume after use. Also, such thicknesses allow providing sufficient strength to stir beverages comprising significant amounts of solid material such as ice and/or fruit chucks. Providing each polymer layer with comparable or the same thickness facilitates providing symmetry of the material.

[0015] In the device, the tubular body, preferably the device as a whole, polymer layers may be surface layers. Polymer material in the device may be biodegradable. Polymer material in the device may comprise, be based on, or be essentially one or more of polylactic acid (PLA), e.g. Bi-axially Oriented PLA, polylactic glycolic acid (PLGA), e.g. Bi-axially Oriented PLGA, and/or polyethylene furanoate (PEF), e.g. Bi-axially Oriented PEF, and/or polyhydoxylalkanoate (PHA), e.g. Bi-axially Oriented PHA.

[0016] At least part of the device, in particular a film thereof may comprise an ink layer. Such ink layer may be arranged between polymer layers. The ink layer may be arranged on the aluminium layer, if present.

[0017] This facilitates providing well controllable surface layer and a cost-effective device. PLA, PEF and PHA are food safe and biodegradable. The ink layer may provide for branding, content information, advertising, etc. and/or for providing opacity of the device protecting the additive from light and preventing degradation thereof.

[0018] The device may be formed as a tube with sealed opposite ends, e.g. a heat seal and or adhesive seal. In particular, the seals may be pinch seals, e.g. pinch welds, which provide substantially flat ends which may be used as a spoon and/or facilitate holding the device. The tubular body may thus be formed between the seals. The device may be formed by flow packaging from a sheet or web of the film. This facilitates effective and fast manufacturing using established techniques. The seals may be parallel to each other, providing the shape of a sachet. The seals may also be non-parallel to each other, in particular be perpendicular to each other. This may increase strength of the device.

[0019] The tubular body may make up more than 50%, preferably more than 75%, more preferably more than 80% e.g. 80%-95% or still more of (the length of) the device. The seals may then make up any remaining length of the device. This may facilitate manufacturing and may increase storage volume for containing the beverage additive in a lumen of the tubular body.

[0020] The perforations may each have an open area in a range of 0,2-0,8 mm^2, preferably 0,3-0,7 mm^2, more preferably 0,4-0,6 mm^2 e.g. about 0,5 mm^2. Also or alternatively, the perforations may each have a substantially round shape with a diameter in a range of 0,5-1,0 mm, preferably 0,6-0,9 mm, more preferably 0,7-0,8 mm. Manufacturing of such perforations may be done with perforation needles of sufficient robustness to survive production for large numbers of devices and at high production speeds.

[0021] In any device described herein, the perforations may be restricted to an area less than 25% of the length of the tubular body, preferably less than 20%, more preferably less than 15%, e.g. 10% or less, and/or the perforations may be restricted to an area spanning from one end of the tubular body less than 25% of the length of the tubular body, preferably less than 20%, more preferably less than 15%, and/or the perforations may be restricted to a zone having a width in a range of 1,0-3,0 cm, preferably 1,5-2,5 cm, more preferably 1,7-2,0 cm.

[0022] In any device herein, the number of perforations may be in a range of 100-200 perforations, preferably 120-180 perforations, more preferably between 130-160 perforations such as 140 to 150 perforations. Also or alternatively, the perforations may together have a total open area in a range of 50-100 mm^2, preferably 60-80 mm^2, more preferably 70-75 mm^2.

[0023] It has been found that such perforation sizes and arrangement one or more of facilitate a rapid extraction and/or dissolution of the beverage additive, retaining small-size granules of additive providing large additive surface area, maintaining robustness of the device, cooperate with relatively high stirring speeds and liquid flow through the tubular body and its interior, prevent floating of the device; reduce conspicuous colorants concentration differences into a transparent beverage. By appropriate sizing and arrangement of the perforations, the remainder of the tubular body may be left intact and not weakened by the perforations, so that the device can displace large objects in a liquid and therefore supports stirring a beverage containing significant amounts of objects such as ice chunks, pieces of fruit (including olives), etc.

[0024] The remainder of the tubular body preferably is devoid of perforations. This facilitates defining a top and bottom end of the device. It may also prevent leaking of liquid from the tubular body if the device is removed from the beverage and held upside down; the size and number of perforations may assist quick draining of the tubular body upon removal from a beverage container, also reducing spilling. However, one or more perforations towards an opposite end of the device than the perforations discussed predominantly may be provided to prevent floating of the device subject to gas forming on an inside of the tubular body when used with a carbonated bever-

age and/or to provide a symmetric device.

[0025] During forming a film into the tubular body the perforations may be provided in the film. The perforations may be provided using any suitable technique comprising material deformation and/or material removal, e.g. one or more of punching, cutting, burning, melting, and irradiating the film material such as by high-energy beams, e.g. laser drilling.

[0026] In any device described herein, the film may comprise a laminate having polymer layers with an ink layer in between and each perforation may then be separated from inks, at least from inks of the ink layer for at least 1,0 mm, preferably at least 1,2 mm more preferably at least 1,5 mm.

[0027] Thus, the ink layer may be encapsulated by the polymer layer providing protection to the aluminium layer and symmetry of the material. This facilitates (securing of) preventing elution of the inks into the beverage and/or ensuring that the device is compliant to food & beverage requirements. Also, it may prevent contamination of any perforators used to provide the perforations and/or it may simplify recycling of perforation chaff (i.e. material removed by the perforation process from the (intended) subject material of the product).

[0028] In any device described herein, the beverage additive may contain or consist essentially of dried fruit portions (e.g. freeze dried) and/or coated fruit portions wherein the coating is food safe and dissolvable; and/or it may contain fruit extracts supported on carriers, the carriers preferably comprising or being vegetable fiber material; and/or it may contain one or more natural scents and/or natural flavourings and/or natural colorants.

[0029] Thus, the additive, at least the part included into the beverage for drinking, may be an essentially natural product, preventing that the consumer is exposed to non-natural, purely chemical, products.

[0030] In any device described herein, the tubular body may contain, prior to use, 0,7 - 2,0 grams of dry beverage additive, preferably 1,0 - 1,5 grams, e.g. 1,1 - 1,3 grams.

[0031] The tubular body may contain, prior to use, 0,3 - 3,0 ml of dry beverage additive, preferably 0,4 - 2,0 ml, e.g. 0,5 - 1,0 ml, e.g. the beverage additive being formed of particles forming the volume.

[0032] The amount of additive may be associated with one or mere particular recipes. Also, providing the additive as a small amount, e.g. having a high concentration of scents and/or flavourings and/or colorants facilitates rapid extraction and/or dissolution into the beverage. It is noted that the tubular body may accommodate significantly larger amounts of beverage additives, but such amounts may not be required. Also, robustness of the device may not be derived from (one or more carriers of) the additive.

[0033] In any device described herein, the beverage additive preferably is formed of particles being larger than the perforations, in particular the particles having a size that is larger than the perforations by a factor in a range of 10%-30% preferably 12,5%-20% e.g. 15%. The beverage additive may be retained or retainable in a sieve test with sieving apertures having a diameter of at least equal to the diameter of the perforations, preferably at least 5% larger than the diameter of the perforations, more preferably at least 10% larger e.g. 20% larger; and/or the beverage additive may be retained or retainable in a sieve test with sieving apertures having an open area of at least equal to the open area of the perforations, preferably at least 5% larger than the open area of the perforations, more preferably at least 10% larger e.g. 20% larger.

[0034] Thus the additive is retained in the tubular body, preventing premature loss of the additive. At the same time, the additive is divided in small particles thus providing a large surface area for contact with the beverage liquid, promoting extraction and/or dissolution of the additive into the liquid.

[0035] In any device herein, the device may be food-safe for submersion in a beverage for human consumption, wherein the beverage one or more of:

has a temperature in a range from -10 to +100 degrees Celsius, preferably from -5 to +50 degrees Celsius, more preferably from -5 to +20 degrees Celsius, most preferably from 0 to 10 degrees Celsius;
contains ice chunks such as ice cubes and/or shaved ice and/or crushed ice, preferably for at least 10%vol of the beverage, more preferably for at least 15%vol, such as for at least 25%vol or for at least 50%vol;
contains a carbonated liquid (e.g. a fizzy drink);
contains alcohol, the beverage preferably having an alcohol content of at least 5%vol, preferably at least 10%vol, more preferably at least 15%vol, still more preferably at least 20%vol e.g. at least 25%vol;
contains quinine;
has a pH of at most 6, preferably at most 5, more preferably at most 4;
contains malic acid and/or lactic acid and/or citric acid at a concentration of at least 1%wt, preferably more than 2 %wt e.g. 3%wt.

[0036] Such beverages form a suitable base for providing a cocktail as foreseen with the present concepts. In particular, the beverage may be based on alcoholic beverages such as gin, vodka, akvavit, rum; and/or soft drinks such as tonic, cola, fizzy mineral water; and/or fruit juices such as orange juice, lemon juice, pineapple juice, etc. in any ratio; and optionally objects such as crushed ice, ice cubes, chunks of lemon, orange, pineapple, etc. The device should preferably be able to withstand and stir such physically and chemically demanding liquid for prolonged duration, e.g. up to 15 or 30 minutes or even up to an hour, without losing any of its physical and/or chemical composition. Note that consumers tend to withdraw cocktail stirrers and play with them; and the device should also withstand such use, which differs significantly from usage of objects for hot beverages such as coffee and tea, like tea spoons or sugar sticks.

[0037] In view of the foregoing, herewith is provided a beverage comprising a liquid, preferably a carbonated liquid, and comprising ice chunks and being provided with any device described herein.

[0038] Such beverage may be provided on order and directly before, or even by, a consumer; e.g. at a bar or club but also at home. Thus, (at least taste and/or appearance of) an intricate cocktail recipe may be provided, or at least be mimicked, in seconds.

[0039] The beverage may be alcohol-free, however, the beverage may also comprise alcohol, the beverage preferably having an alcohol content of at least 1%vol, preferably at least 5%vol, more preferably at least 10%vol, such as at least 15%vol or at least 20%vol.

[0040] The beverage additive is preferably substantially dissolvable in aqueous and/or alcoholic beverage liquid within 15 seconds, preferably within 10 seconds, more preferably within 5 seconds, e.g. within 3 seconds.

[0041] The relevant time period may be determined as a half-time, wherein at least 50% of the initial mass of additive is extracted and/or dissolved into the beverage liquid. Most preferably the additive is extracted and/or dissolved into the beverage liquid completely. Such time period ensures quick establishment of the intended modified beverage (the intended beverage composition) and/or quick satisfaction of the beverage supplier and/or consumer, and/or has little effect on temperature changes of the beverage (warming up of the beverage and/or associated with melting of any ice in the beverage). Also or alternatively, in particular if the additive comprises a colourant for the beverage the beverage supplier and/or consumer may be assured that, the extraction and/or dissolving process is proceeding and no additive is retained within the device and/or that extended stirring need not be required.

[0042] In view of the foregoing, herewith is provided a method of preparing a beverage, comprising providing a drinking container, e.g. a long drink glass or a cocktail glass; providing in the drinking container a carbonated and/or alcoholic beverage and ice chunks, and providing in the drinking container also any device as described herein.

BRIEF DESCRIPTION OF THE DRAWINGS

[0043] The above-described aspects will hereafter be more explained with further details and benefits with reference to the drawings showing a number of embodiments by way of example.

Fig. 1 shows a device as provided herein;
Figs. 2-3 show a beverage comprising the device;
Fig. 4 is a cross section of a film material.

DETAILED DESCRIPTION OF EMBODIMENTS

[0044] It is noted that the drawings are schematic, not necessarily to scale and that details that are not required for understanding the present invention may have been omitted. The terms "upward", "downward", "below", "above", and the like relate to the embodiments as oriented in the drawings, unless otherwise specified. Further, elements that are at least substantially identical or that perform an at least substantially identical function are denoted by the same numeral, where helpful individualised with alphabetic suffixes.

[0045] Further, unless otherwise specified, terms like "detachable" and "removably connected" are intended to mean that respective parts may be disconnected essentially without damage or destruction of either part, e.g. excluding structures in which the parts are integral (e.g. welded or moulded as one piece), but including structures in which parts are attached by or as mated connectors, fasteners, releasable self-fastening features, etc. The verb "to facilitate" is intended to mean "to make easier and/or less complicated", rather than "to enable".

[0046] Figs. 1-3 show a device 1 for storing, dispensing, and stirring a beverage additive into a beverage 3 (Figs. 2-3). The beverage 3 is contained in a long drink glass 5 (Fig. 2) or cocktail glass 6 (Fig. 3) also containing ice cubes 7 and optional fruit chunks 8. The device 1 may therefore be called a "cocktail stick".

[0047] The device 1 comprises a tubular body 11 formed from a film by flow packaging as a tube with sealed opposite ends, here pinch seals 13 of the flow packaging process. The tubular body 11 contains a beverage additive in granular form (not shown) and is provided with perforations 15 for extraction and/or dissolving at least part of the additive into the beverage 3 when inserted into the beverage (Figs. 2-3) to modify the beverage 3.

[0048] The device 1 of Figs. 1 and 3 further comprises optional markings 16, here text and symbols, in an ink layer 17 covering only part of the device 1. The ink layer 17 has a boundary 19 so that the layer is separated from the perforations 15 by a distance along the film of 1,5 mm at the closest nearing (e.g. at "N" in Fig. 1).

[0049] Fig. 4 schematically shows a suitable film material for the device having a first polymer layer P1, e.g. PLA having a thickness T_{P1} of about 35-45 micrometer thickness, an ink layer (marked "Ink"), an aluminium layer A1 having a thickness T_{A1} of about 6-8 micrometer and a second polymer layer P2, e.g. PLA having a thickness T_{P2} of about 35-45 micrometer, providing an overall thickness T_{TOT} of about 85-95 micrometer. Possibly one or more further layers and/or adhesive layers may be provided as well (not indicated). One or both polymer layers P1, P2 may be a laminate of polymer layers. As indicated in Fig. 1, at least the polymer layer on an outside of the device 1 may be at least partly transparent showing (markings of) the ink layer 17.

[0050] The device 1 has a length L of about 17-18 cm. The tubular body 11 has a length L_{TB} spanning about 90% of the length L of the device 1, the pinch seals 13 spanning a length L_S of about 10% of the length L of the device 1. Due to the pinch seals 13, the device 1 is cushion-shaped. The circumference of the device is about 3,5

cm. At the seals 13, where the film is pressed together and glued and/or welded, therefore the device has a width of about 1,8 cm, i.e. about 10% of the length of the device and most of the device, e.g. 60% or more, generally 75% or more, like 80-90%, of the tubular body has a generally round shape in cross section perpendicular to the length L, resulting in a width of about 1,1-1,2 cm; that round shape may be substantially constant for 50% or more, e.g. 60-75% of the tubular body.

[0051] The perforations 15 each have a substantially round shape with a diameter of about 0,8 mm; however, other shapes may be provided. The perforations 15 are restricted to an area A_P having a length L_P in a range of about 1,7-2,0 cm, i.e., about 10%-15% of the length of the tubular body 11, the area A_P spanning less than 25% of the length L from a bottom end of the device 1. In a preferred embodiment the area A_P surrounds the tubular body 1, possibly except for a longitudinal seal of the film for forming the tubular body from the film (not shown). Then, the area spans about 20-25% of the surface area of the tubular body 11. However, in other embodiments the perforations may be distributed differently; e.g. in plural portions of perforations separated by relatively large un-perforated portions, in particular patterns possibly forming symbols, etc. In the shown embodiment, the area A_P of the device 1 contains about 145 substantially circular perforations each with diameter of about 0,8 mm, providing a total open area of the perforations of 70-75 mm^2. The device 1 is, as an option, devoid of other perforations or openings.

[0052] The disclosure is not restricted to the above-described embodiments which can be varied in a number of ways within the scope of the claims.

[0053] Elements and aspects discussed for or in relation with a particular embodiment may be suitably combined with elements and aspects of other embodiments, unless explicitly stated otherwise.

Claims

1. A device (1) for storing, dispensing, and stirring a beverage additive, comprising a tubular body (11) containing the beverage additive and being provided with perforations (15) for extraction and/or dissolving at least part of the additive in a carbonated and/or alcoholic beverage (3) when inserted into the beverage (3) to provide a modified beverage for human consumption,
   wherein the tubular body (11) is formed of a laminate film having polymer layers (P1, P2) with an aluminium layer (Al) in between, the aluminium layer (Al) having a thickness (T_{Al}) of more than 4 micrometers, preferably having a thickness in a range 5-10 micrometers, more preferably in a range 6-9 micrometers, most preferably 7-8 micrometers.

2. The device (1) according to claim 1, wherein the tubular body (11) has a length (L) in a range of 15-20 cm, preferably 16-19 cm, more preferably 17-18 cm, and/or has a circumference perpendicular to the length (L) in a range of 3,0-5,0 cm, preferably 3,2-4,0 cm more preferably 3,4-3,8 cm.

3. The device (1) according to any preceding claim, wherein the tubular body (11) is formed of a film material having a thickness (T_{TOT}) of at least 50 micrometer, preferably at least 70 micrometer, more preferably more than 80 micrometer, most preferably in a range from 80 to 100 micrometer, in particular the polymer layers (P1, P2) each having a thickness (T_{P1}, T_{P2}) in a range of 25 to 60 micrometers, preferably 30 to 50 micrometers, more preferably 35 to 45 micrometers.

4. The device (1) according to any preceding claim, wherein one or more of:

   the polymer layers (P1, P2) are polymer surface layers;
   the polymer layers (P1, P2) are biodegradable;
   at least one of the polymer layers (P1, P2) contains or is essentially one or more of polylactic acid (PLA), e.g. Bi-axially Oriented PLA, polylactic glycolic acid (PLGA), e.g. Bi-axially Oriented PLGA, polyethylene furanoate (PEF), e.g. Bi-axially Oriented PEF, polyhydoxylalkanoate (PHA), e.g. Bi-axially Oriented PHA;
   the film is substantially opaque; and
   the film comprises an ink layer (Ink), in particular an ink layer in between the polymer layers (P1, P2).

5. The device (1) according to any preceding claim, wherein the device (1) is formed as a tube with sealed opposite ends, the tubular body (11) being is formed between the seals (13), wherein in particular the device is formed by flow packaging.

6. The device (1) according to any preceding claim, wherein the perforations (15) each have an open area in a range of 0,2-0,8 mm^2, preferably 0,3-0,7 mm^2, more preferably 0,4-0,6 mm^2 e.g. about 0,5 mm^2; and/or wherein the perforations (15) each have a substantially round shape with a diameter in a range of 0,5-1,0 mm, preferably 0,6-0,9 mm, more preferably 0,7-0,8 mm.

7. The device (1) according to any preceding claim, wherein
   the perforations (15) one or more of

   are all restricted to an area (A_P) less than 25% of the length (L_T) of the tubular body (11), preferably less than 20%, more preferably less than 15%, e.g. 10% or less, and/or

are all restricted to an area (A_P) spanning from one end of the tubular body (11) less than 25% of the length (L) of the tubular body (11), preferably less than 20%, more preferably less than 15%; and/or
wherein the perforations are restricted to an area having a width in a range of 1,0-3,0 cm, preferably 1,5-2,5 cm, more preferably 1,7-2,0 cm; and/or
wherein the device (1) contains between 100 and 200 perforations (15), preferably between 120 and 180 perforations, more preferably between 130 and 160 perforations such as between 140 and 150 perforations; and/or wherein the perforations together have a total open area in a range of 50-100 mm^2, preferably 60-80 mm^2, more preferably 70-75 mm^2.

8. The device (1) according to any preceding claim, wherein the film material comprises a laminate having polymer layers (P1, P2) with an ink layer (Ink) in between, and wherein each perforation (15) is separated from inks, at least from inks of the ink layer (Ink) for at least 1,0 mm, preferably at least 1,2 mm more preferably at least 1,5 mm.

9. The device (1) according to any preceding claim, wherein

the beverage additive one or more of:

contains or consists essentially of (freeze) dried fruit portions,
contains fruit extracts supported on carriers, the carriers preferably comprising or being vegetable fiber material,
contains one or more natural scents and/or natural flavourings and/or natural colorants; and/or

wherein the device (1) comprises, prior to use, 0,7 - 2,0 grams of dry beverage additive, preferably 1,0 - 1,5 grams, e.g. 1,1 - 1,3 grams; and/or
wherein the device (1) comprises, prior to use, 0,3 - 3,0 ml of dry beverage additive, preferably 0,4 - 2,0 ml, e.g. 0,5 -1,0 ml, e.g. the beverage additive being formed of particles forming the respective volume.

10. The device (1) according to any preceding claim, wherein the beverage additive is formed of particles

being larger than the perforations (15), in particular the particles having a size that is larger than the perforations by a factor in a range of 10%-30% preferably 12,5%-20% e.g. 15%; and/or
being retained or retainable in a sieve test with sieving apertures having a diameter of at least equal to the diameter of the perforations, preferably at least 5% larger than the diameter of the perforations, more preferably at least 10% larger e.g. 20% larger; and/or
being retained or retainable in a sieve test with sieving apertures having an open area of at least equal to the open area of the perforations, preferably at least 5% larger than the open area of the perforations, more preferably at least 10% larger e.g. 20% larger.

11. The device (1) according to any preceding claim, wherein the device (1) is food-safe for submersion in a beverage (3) for human consumption, wherein the beverage (3) one or more of:

has a temperature in a range from -10 to +100 degrees Celsius, preferably from -5 to +50 degrees Celsius, more preferably from -5 to +20 degrees Celsius, most preferably from 0 to 10 degrees Celsius;
contains ice chunks such as ice cubes (7) and/or shaved ice and/or crushed ice, preferably for at least 10%vol of the beverage, more preferably for at least 15%vol, such as for at least 25%vol or for at least 50%vol;
contains a carbonated liquid (e.g. a fizzy drink);
contains alcohol, the beverage preferably having an alcohol content of at least 5%vol, preferably at least 10%vol, more preferably at least 15%vol, still more preferably at least 20%vol e.g. at least 25%vol;
contains quinine;
has a pH of at most 6, preferably at most 5, more preferably at most 4;
contains malic acid and/or lactic acid and/or citric acid at a concentration of at least 1%wt, preferably more than 2 %wt e.g. 3%wt.

12. Beverage (3) comprising a liquid, preferably a carbonated liquid, and comprising ice chunks (7) and provided with a device (1) according to any preceding claim.

13. Beverage (3) according to claim 13, also comprising alcohol, the beverage (3) preferably having an alcohol content of at least 1%vol, preferably at least 5%vol, more preferably at least 10%vol, such as at least 15%vol or at least 20%vol.

14. Beverage (3) according to claim 12 or 13, wherein the beverage additive is substantially dissolvable in aqueous and/or alcoholic beverage liquid within 15 seconds, preferably within 10 seconds, more preferably within 5 seconds, e.g. within 3 seconds.

15. Method of preparing and/or modifying a beverage (3), comprising

providing a drinking container (5), e.g. a long drink glass or a cocktail glass,
providing in the drinking container (5) a carbonated and/or alcoholic beverage (3) and ice chunks (7), and
providing in the beverage (3) in the drinking container (5) a device (1) according to any one of claims 1-11.

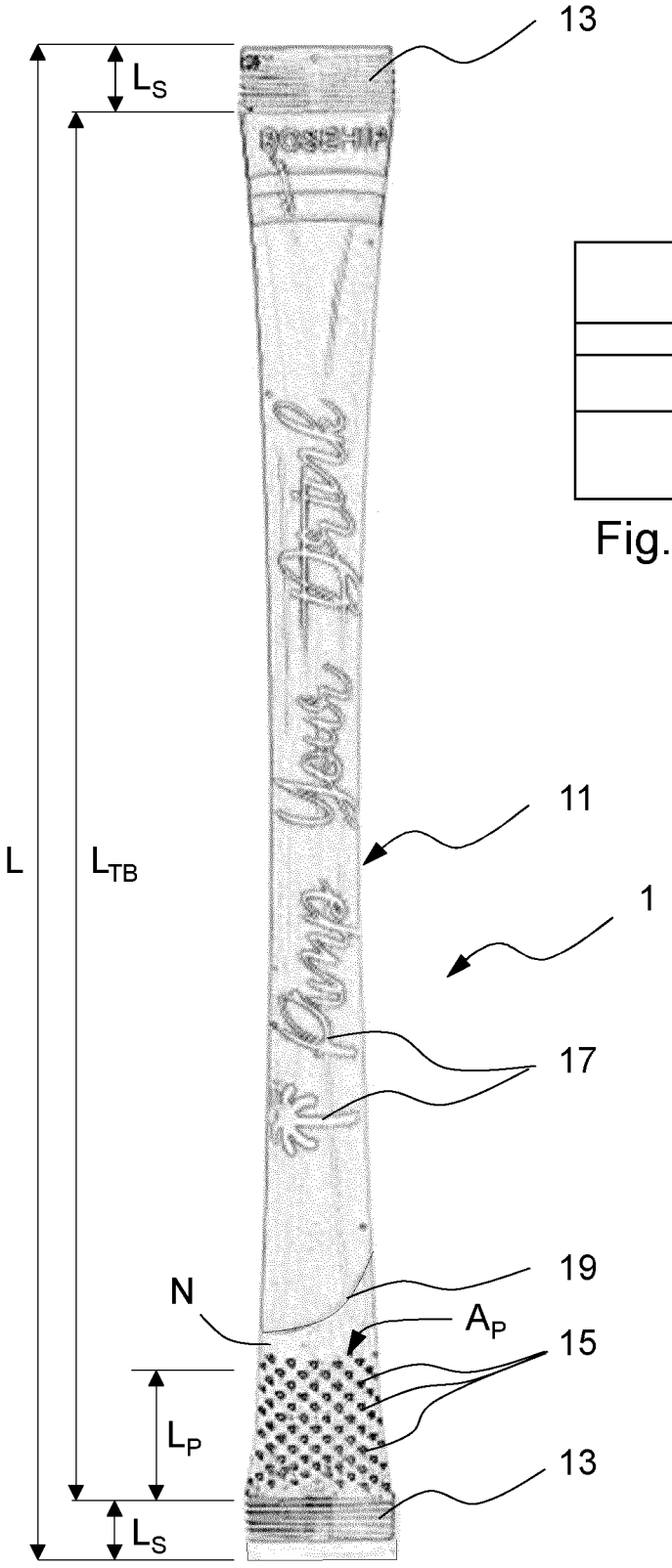

Fig. 1

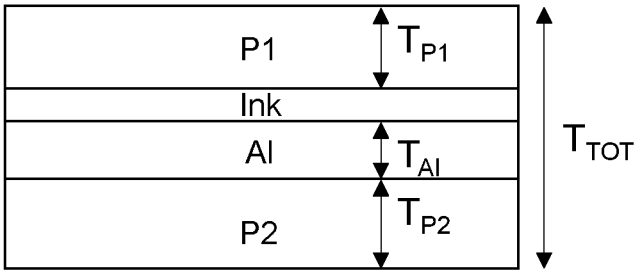

Fig. 4

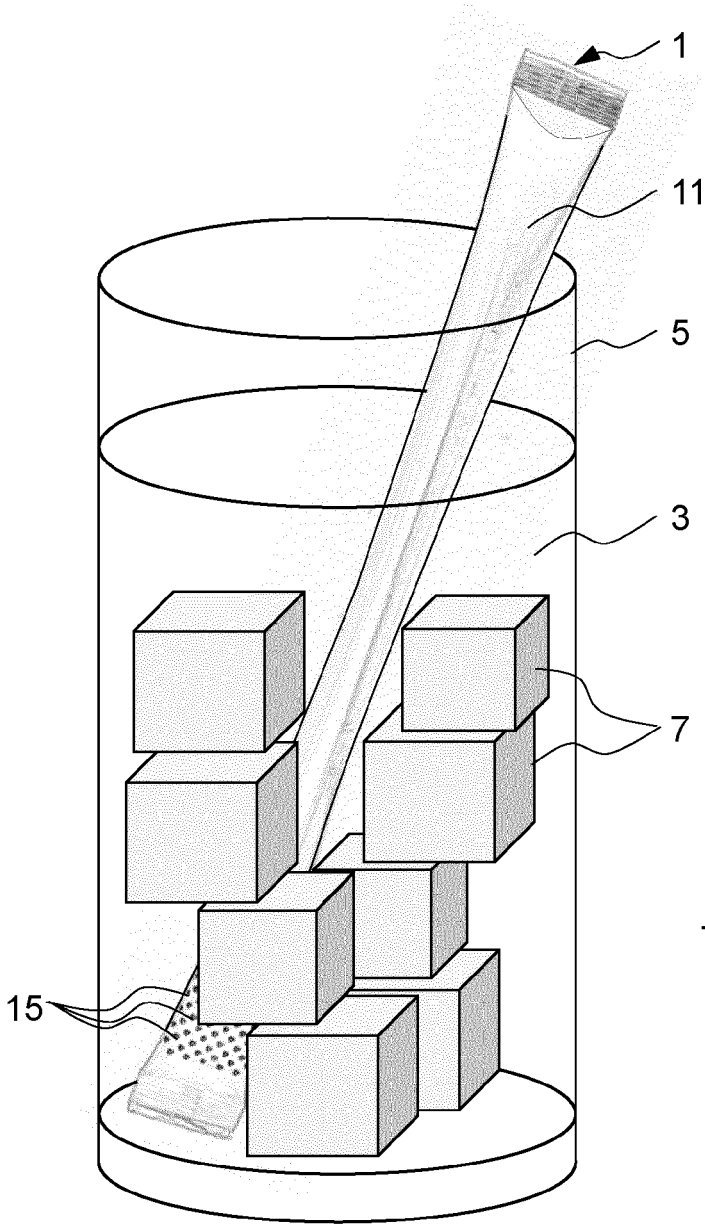

Fig. 2

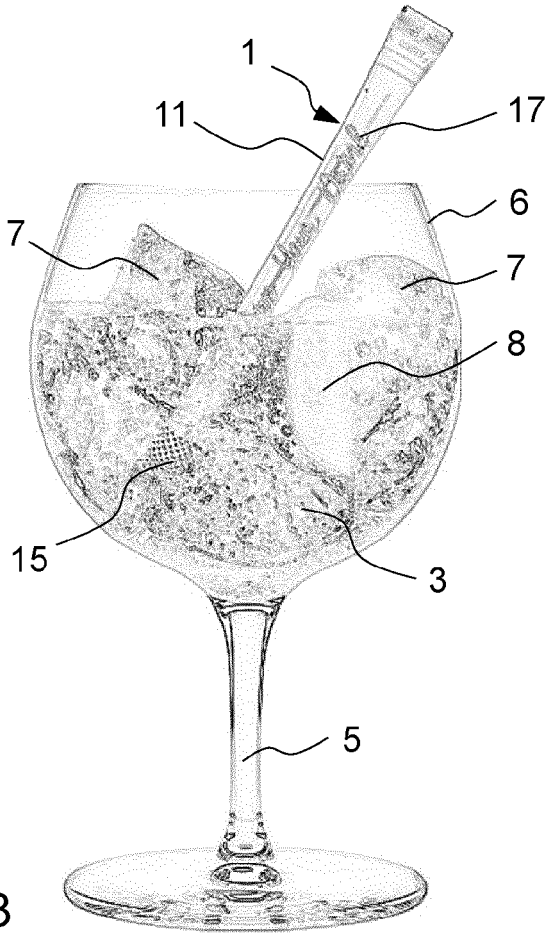

Fig. 3

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EUROPEAN SEARCH REPORT

Application Number
EP 22 17 8403

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	15 November 2022	Jervelund, Niels

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