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(54) METHOD FOR PRODUCING A SNUFF COMPOSITION FOR ORAL USE AND A SNUFF COMPOSITION PRODUCED BY THE METHOD

(57) A method of producing a snuff composition for oral use, the snuff composition, the method comprising the following steps:
a) providing an initial snuff composition (1);
b) depositing the initial snuff composition (1) on a moving conveyor belt (2);
c) moving the initial snuff composition (1) through an oven (3); wherein the snuff composition (1) is heated in a first heating step while being transported on the moving conveyor belt (2), the snuff composition (1) being heated in the first heating step to a temperature within the range of 70°C to 100°C for a time period of 10 minutes to 72 hours to provide a pasteurized snuff composition (1); and wherein
water (4) is added to the snuff composition (1), either prior to the first heating step c) and/or during the first heating step c).

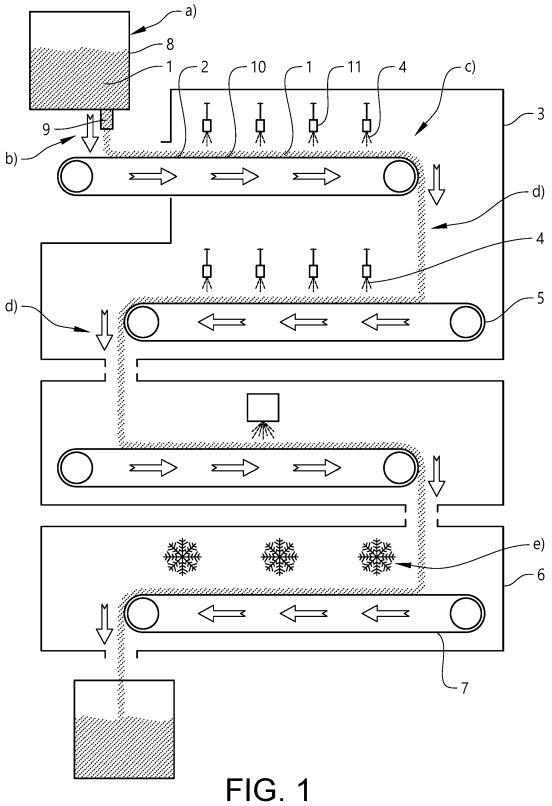

FIG. 1

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Description

TECHNICAL FIELD

[0001] The present invention relates to a method of producing a snuff composition for oral use and a snuff composition produced by the method.

BACKGROUND

[0002] Smokeless tobacco for oral use includes chewing tobacco, dry snuff and moist (wet) snuff. Generally, dry snuff has a moisture content of less than 10 wt% and moist snuff has a moisture content of above 40 wt%. Semi-dry products having a moisture content between 10 wt% to 40 wt% are also available.

[0003] There are two types of moist snuff, the American type and the Scandinavian type which is also called snus. American- type moist snuff is commonly produced through a fermentation process of moisturized ground or cut tobacco. Scandinavian-type moist snuff (snus) is commonly produced by using a heat-treatment (pasteurization). Both processes reduce the bitterness of unprocessed tobacco and soften the texture of the tobacco, which are the primary reasons for not using unprocessed tobacco in the production of moist snuff. The heat-treatment is also carried out to degrade, destroy or denature a major part of the microorganisms within the snuff preparation.

[0004] In production processes typically used today for producing pouched snuff products, the snuff preparation normally has a water content within the range of from about 22 to about 44 wt%. Generally, additional water, salt, pH adjuster and additional ingredients, such as flavours, are added to the snuff preparation after the heat-treatment in order to provide a final smokeless snuff composition, such as a moist snuff composition.

[0005] The pasteurization step is currently often carried out in batches in a pasteurization pot. The snuff composition is blended with water, salt, ph-regulators and heated while being mixed. Previous pasteurization methods include mixing the snuff and providing the snuff in barrels which are placed in an oven, such pasteurization did not involve mixing of the snuff during the pasteurization process. After pasteurization, the heated snuff composition may be cooled in a cooling facility or the pasteurization pot may be equipped with a cooling unit.

[0006] The current snuff production is well functioning but is limited by being produced in batches. Furthermore, the subsequent step of cooling the snuff composition after pasteurization takes long time and requires lots of energy.

[0007] Consequently, there is a need to provide an improved method with higher capacity, efficiency as well as flexibility.

SUMMARY

[0008] One or more of the above objects may be achieved by a method of producing a snuff composition for oral use according to claim 1 and by the snuff composition obtained by the method according to claim 17. Further advantages and advantageous features of the invention are disclosed in the following description and in the dependent claims

[0009] As set out herein, the present disclosure relates to a method of producing a snuff composition for oral use, the method comprising the following steps:

a) providing an initial snuff composition;
b) depositing the initial snuff composition on a moving conveyor belt;
c) moving the initial snuff composition through an oven; wherein the snuff composition is heated in a first heating step while being transported on the moving conveyor belt, the snuff composition being heated in the first heating step to a temperature within the range of 70°C to 100°C for a time period of 10 minutes to 72 hours to provide a pasteurized snuff composition; and wherein
water is added to the snuff composition, either prior to the first heating step c) and/or during the first heating step c).

[0010] As used herein, the term "oral use" refers to the use of the snuff composition in contact with mucous membranes in the oral cavity, such as buccal placement of the snuff composition.

[0011] The first heating step may for example be carried out by means of hot air, steam, radiation, electric heating, microwaves, or any combination thereof. The moving conveyor belt may be heated, which may be the sole source of heat or which may be combined with a top heating system, such as in combination with hot air, steam, radiation, electric heating and/or microwaves.

[0012] The first heating step reduces the microorganism content of the initial snuff composition and thus provides a heat-treated snuff composition having reduced microorganism content. In particular, the first heating step may reduce the microorganism content of the initial snuff composition with at least 50%, such as at least 70%, at least 80%, at least 90%, at least 95% or at least 99%.

[0013] The first heating step may provide a heat-treated tobacco preparation having less than 10 000 colony forming units (CFU) of microorganisms, such as bacteria, per gram, measured for example by a spread plate method.

[0014] The initial snus composition may be constituted by or comprise grinded, cut or shredded tobacco and/or non-tobacco plant material. The initial snuff composition is provided in a layer on the conveyor belt, such as in grinded, cut or shredded form and has not been packed in pouch material.

[0015] The initial snuff composition may be added to

a conveyor belt in a snuff composition layer, such as an evenly distributed snuff composition layer, and the conveyor belt may subsequently move into the oven for the first heating step or the initial snuff composition may be directly introduced into the oven and onto the moving conveyor belt. The oven may be a closed oven, such as a heating tunnel.

[0016] Since the initial snuff composition is pasteurized continuously on a moving conveyor belt instead of batch wise, the capacity, efficiency and flexibility of the method may be increased. Since the snuff is not produced batch wise but instead continuously on a moving conveyor belt, both the amount of snuff composition and the type of snuff composition produced may be adapted more easily. If for example different types of snuff, such as with differing flavors, are desired, the amounts which can currently be produced are determined by the batch size. A further drawback with the batch wise production is that if a smaller amount of snuff for a certain flavor is desired, the pasteurization pot will not be completely filled up, thereby reducing the efficiency of the method.

[0017] The method may comprise a step d) of mixing the snuff composition, step d) being carried out between step b) of depositing the initial snuff composition on the moving conveyor belt and step c) of moving the initial snuff composition through the oven, or step d) may be carried out during step c). The method may include one or more mixing steps, such as two or more mixing steps. The method may include one to five mixing steps.

[0018] The mixing step d) may be carried out by allowing the snuff composition being transported on a first section of the moving conveyor belt to fall onto a second section of the moving conveyor belt or alternatively onto a second moving conveyor belt and/or by means of the moving conveyor belt comprising a shaking transport section and/or being mixed in a mixing drum. A mixing step which is carried out during pasteurization while the initial snuff composition is being transported through the oven is highly efficient in terms of time saved as no separate mixing step is necessary.

[0019] The method may comprise a cooling step e) wherein the pasteurized snuff composition is cooled down in a cooling section.

[0020] Since the pasteurized snuff composition is continuously fed into the cooling section, instead of batch wise, cooling time for the snuff composition may be greatly reduced as well as the energy consumption for the cooling step.

[0021] In the cooling step e) the pasteurized snuff composition may be cooled down in the cooling section while being transported on the moving conveyor belt, optionally during a time range of from 1 minute to 5 hours, such as during a time period within the range of from 15 minutes to 5 hours. This will increase the efficiency, both in terms of time and energy consumed, as the pasteurized snuff composition is spread out in a layer on the conveyor belt such that a large surface of the pasteurized snuff composition is exposed to the chilling temperature. The chilling section may for example comprise a chilling tunnel. The cooling of the snuff composition may for example be made by cooling of the conveyor belt and/or by cooled air and/or by liquid nitrogen and/or liquid carbon dioxide and/or carbon dioxide from in the solid state, i.e. dry ice. In a conventional batch wise process, a considerably longer time is required for chilling the pasteurized snuff composition as whole volume of the batch is cooled down at the same time. In certain batch wise processes, the pasteurization pot is used as a chilling pot after the pasteurization step to reduce the number of method steps. However, this implies an even higher energy consumption since the material in the pot itself needs to be cooled down as well after the heating step.

[0022] Alternatively, the snuff composition may be transported in a moving transport belt, either the same as during pasteurization or a separate moving transport belt, in room temperature and may be cooled down without being exposed to chilling temperatures.

[0023] The pasteurized and cooled snuff composition may exit the cooling section on the moving conveyor belt. Flavours may be added to the snuff composition after exiting the cooling section. Since the method of producing is a continuous method, the flexibility in terms of the amount of snuff composition with different flavour which may be produced is improved. Hence, if there is a desire to prepare a larger amount of a snuff composition with a certain flavour and a smaller amount with another flavour this may easily by customized with a method according to the present disclosure.

[0024] In step c) of moving the initial snuff composition through an oven, the temperature of the snuff composition during the first heating step may be within the range of from 70°C to 100°C for a time period of at least 30 minutes, such as at least 1 hour, at least 3 hours or at least 5 hours, optionally for a time period within the range of from 30 minutes to 24 hours, such as within the range of from 1 hour to 10 hours.

[0025] The water may be continuously or discontinuously added to the snuff composition during the first heating step by spraying, steaming, dripping or pouring the water onto the snuff composition during the entire step of during parts of the heating step, in order for the snuff composition to maintain a certain moisture content during the heating step.

[0026] To perform a pasteurization step, the snuff composition should not be completely dry and water may be added either prior to the pasteurization step in an amount keeping it moist during the pasteurization step and/or water may continuously or discontinuously be added during the pasteurization. An advantage with continuous of discontinuous addition of water during the pasteurization step is that a relatively constant moisture level may be kept in the snuff composition throughout the pasteurization step.

[0027] The water may be added in an amount within the range of from 10 to 75 wt%, such as in an amount within the range of from 15 wt% to 70 wt% of the snuff

composition.

[0028] The moisture content of the snuff composition during the first heating step may be within the range of from 3 wt% to 70 wt%, such as within the range of from 5 wt% to 60 wt%, such as within the range of from 10 wt% to 58 wt% or within the range of from 10 wt% to 56 wt%, optionally within the range of from 15 wt% to 56 wt%.

[0029] As used herein, the term "moisture content" refers to the total amount of oven volatile ingredients, such as water and other oven volatiles (e.g. propylene glycol) in a preparation, composition or product. The moisture content is given herein as percent by weight (wt%) of the total weight of the preparation, composition or product. The moisture content as referred to herein may be determined by using a method based on literature references Federal Register/ vol.74, no. 4/712-719/Wednesday, January 7, 2009/Notices "Total moisture determination" and AOAC (Association of Official Analytical Chemics), Official Methods of Analysis 966.02: "Moisture in Tobacco" (1990), Fifth Edition, K. Helrich (ed). In this method, the moisture content is determined gravimetrically by taking 2.5±0.25 g sample and weighing the sample at ambient conditions, herein defined as being at a temperature of 22°C and a relative humidity of 60%, before evaporation of moisture and after completion of dehydration. Mettler Toledo's Moisture Analyzer HB43, a balance with halogen heating technology, is used (instead of an oven and a balance as in the mentioned literature references) in the experiments described herein. The sample is heated to 105°C (instead of 99.5±0.5°C as in the mentioned literature references). The measurement is stopped when the weight change is less than 1 mg during a 90 seconds time frame. The moisture content as weight percent of the sample is then calculated automatically by the Moisture Analyzer HB43.

[0030] The initial snuff composition may be deposited onto the moving conveyor belt such that a layer of the initial snuff composition is formed, the layer may have a thickness of up to 100 mm is formed, optionally a thickness within the range of from 1 mm to 100 mm, optionally wherein the thickness of the layer is up to 70 mm, such as up to 50 mm. This has been found by the present inventors to provide a uniform heating of the initial snuff composition.

[0031] Ingredients, such as sodium carbonate, water and salt etc., may be added to the snuff composition on the moving conveyor belt during the heating step c) and/or after the heating step c).

[0032] The method may include a final step of enclosing portions of the snuff composition in saliva-permeable pouch material thereby providing portion-packed pouched snuff products.

[0033] The moisture content of the final snuff composition may be within the range of from 20 wt% to 65 wt% or within the range of from 30 wt% to 58 wt%.

[0034] The snuff composition may be a tobacco or non-tobacco snuff composition or may be a blend of tobacco and non-tobacco components.

[0035] By "tobacco" is meant any part, e.g., leaves, stems, and stalks, of any member of the genus Nicotiana. The tobacco may be whole, shredded, threshed, cut, ground, cured, aged, fermented, or otherwise treated, e.g., granulated or encapsulated

[0036] Non-tobacco components may be one or more fibers derived from non-tobacco plants, such as fibers derived from maize fibers, oat fibers, tomato fibers, barley fibers, rye fibers, sugar beet fibers, buck wheat fibers, potato fibers, cellulose fibers, apple fibers and cocoa fibers, preferably in flour form, optionally preceded by grinding or cutting and/or sieving of raw material for providing said one or more plant fibers.

[0037] Disclosed herein is also a snuff composition which has been prepared according to the method disclosed herein.

BRIEF DESCRIPTION OF THE DRAWINGS

[0038] The present invention will be further explained hereinafter by means of a non-limiting example and with reference to the appended drawing wherein:
Fig. 1 illustrates schematically a method of producing a snuff composition for oral use according to the present disclosure.

DETAILED DESCRIPTION

[0039] It is to be understood that the drawing is schematic and that individual components are not necessarily drawn to scale. The method shown in the figure is provided as an example only and should not be considered limiting to the invention. Accordingly, the scope of invention is determined solely by the scope of the appended claims.

[0040] Figure 1 schematically illustrates a method according to this disclosure. The method involves a step a) of providing an initial snuff composition 1 in a container 8 comprising an outlet 9.

[0041] In a second step b) the initial snuff composition 1 is deposited in a layer 10 on a moving conveyor belt 2. The initial snuff composition 1 may have an initial moisture content within the range of from 3 to 70 wt%. The conveyor belt 2 transports the initial snuff composition 1 into an oven 3 in a step c) wherein the initial snuff composition 1 is heated in a first heating step while being transported on the moving conveyor belt 2. The initial snuff composition 1 is heated in the first heating step to a temperature within the range of 70°C to 100°C for a time period of 10 minutes to 72 hours to provide a pasteurized snuff composition. Optionally, the snuff composition 1 is heated in the first heating step during a time period of at least 30 minutes, such as at least 1 hour, at least 3 hours or at least 5 hours, optionally for a time period within the range of from 30 minutes to 24 hours, such as within the range of from 1 hour to 10 hours.

[0042] In the oven 3, water 4 is added via nozzles 11 to the snuff composition 1 during the first heating step by

continuously spraying water 4 onto the snuff composition such that the snuff composition 1 does not dry out during the pasteurization step. The oven may be provided with any suitable type of heating means, such as for example hot air, steam, radiation, electric heating, microwaves, or any combination thereof. The moving conveyor belt 2 may be heated, which may be the sole source of heat or which may be combined with a top heating system, such as in combination with hot air, steam, radiation, electric heating and/or microwaves. According to one embodiment of the present disclosure every second or every third nozzle spray's steam instead of water 4.

[0043] The snuff composition 1 is mixed in a step d) by allowing the snuff composition 1 which is transported on the moving conveyor belt 2 to fall onto a second moving conveyor belt 5. The method may comprise a first and a second mixing step d) as illustrated in Fig. 1. Alternatively, or additionally, the snuff composition 1 may be mixed by allowing the snuff composition 1 to fall from a first section of a moving conveyor belt to a second section of the moving conveyor belt and/or that a section of the conveyor belt is a shaking transport section or that the entire conveyor belt is a shaking conveyor belt. Alternatively, or additionally, the snuff composition 1 may be mixed in a mixing drum, such as a revolving drum of the cement mixer type, the mixed snuff composition may for example enter the mixing drum from a conveyor belt and be mixed in the mixing drum and subsequently be provided on a new section of the conveyor belt or onto a second conveyor belt. Alternatively, or additionally, the snuff composition 1 may be mixed by mixer blades or plough blades being provided in the oven which mixes the snuff composition by moving the snuff composition around on the conveyor belt, the blades may either be rotating blades or static blades mixing the snuff composition on the moving conveyor belt.

[0044] After the initial snuff composition 1 has been pasteurized, the pasteurized snuff composition 1 is transported into a cooling section 6 for being cooled down in a step e). The pasteurized snuff composition 1 is continuously fed into the cooling section 6, which may greatly reduce the time and in energy consumed for the cooling step e) as compared to a conventional batch wise cooling step. In the cooling step e) illustrated in Fig. 1, the pasteurized snuff composition is cooled down in the cooling section, such as a cooling tunnel, while being transported on the moving conveyor belt, the pasteurized snuff composition may alternatively be provided onto a third conveyor belt and subsequently be transported into the cooling section. The pasteurized snuff composition 1 may be cooled down in the cooling section 6 during a time range of from 1 minute to 5 hours, or during a time range of from 10 minutes to 30 hours. The cooling time depends on the efficiency of the cooling section.

[0045] The cooling of the snuff composition may for example be made by cooling of the conveyor belt and/or by cooled air and/or by liquid nitrogen and/or by liquid carbon dioxide and/or by carbon dioxide from in the solid state, i.e. dry ice. The pasteurized snuff composition may alternatively be cooled by means of the ambient temperature, either by allowing the snuff composition to be transported in a room in an ambient temperature or by having a cooling section with ambient temperature wherein the snuff composition is stored.

[0046] The pasteurized and cooled snuff composition 1 exits the cooling section 6 on a third moving conveyor belt 7. After the cooling step, flavours may be added to the snuff composition exiting the cooling section. Since the method of producing the snuff compositions as disclosed herein is a continuous method, there is an enhanced flexibility in the amount of snuff composition with a particular flavour and/or with a particular blend of tobacco and/or non-tobacco material which may be manufactured. Hence, if there is a desire to prepare a larger amount of a snuff composition with a particular flavour and/or a particular blend and a smaller amount with another flavour and/or another blend the method may easily be customized to the requirements for each particular snuff composition.

[0047] The initial snuff composition used in the method disclosed herein may comprise divided tobacco material and/or a non-tobacco plant material, such as ground or cut tobacco and/or non-tobacco plant material. The initial snuff composition may have a water content within the range of from 3% to 70 wt%, it may further include added salt (e.g. sodium chloride, potassium chloride, magnesium chloride, calcium chloride and any combinations thereof), pH adjuster (e.g. sodium hydroxide, potassium hydroxide, potassium carbonate, sodium carbonate or sodium bicarbonate) and optionally one or more additional ingredients (e.g. flavouring agents).

[0048] The term "additional ingredient" as used herein denotes substances other than tobacco or non-tobacco plant material, salt (e.g. sodium chloride, potassium chloride, magnesium chloride, calcium chloride and any combinations thereof), pH adjuster (e.g. sodium hydroxide, potassium hydroxide, potassium carbonate, sodium carbonate or sodium bicarbonate) and water.

[0049] "Flavour" or "flavouring agent" is used herein for a substance used to influence the aroma and/or taste of the snuff product, including, but not limited to, essential oils, single flavour compounds, compounded flavourings, and extracts.

[0050] Since the method is a continuous method, the flexibility of having different sized amount of snuff products having different flavours produced

[0051] Salt, such as sodium chloride, potassium chloride, magnesium chloride, calcium chloride and any combinations thereof, is added mainly for its taste enhancing properties, but it also has a preservative effect which contributes to improved shelf life of the product. Salt, such as sodium chloride lowers the water activity of the products, thus preventing microorganisms from growing. The natural occurrence of sodium chloride in tobacco material is normally below 2 wt%, typically below 1 wt%, based on dry weight of the tobacco/non-tobacco plant material.

Normally, the amount of added salt in the snuff composition is within the range of from about 0.5 to about 10 wt% based on dry weight of the snuff composition. All salt of the snuff composition may be included in the initial snuff preparation. Alternatively, all salt of the snuff composition may be added to the heat-treated snuff preparation. Further alternatively, a first amount of salt may be contained in the initial snuff preparation and a second amount of salt may be added to the heat-treated snuff preparation.

[0052] PH adjusters, such as sodium carbonate, are added to bring the pH value of the snuff composition to the slightly alkaline side, such as about pH 7.5 to 9. Sodium carbonate may also be used to give the products their characteristic aroma profile. Typically, the amount of pH adjuster in the snuff composition is less than about 7 wt%, such as within the range of from 3 to 5 wt%, based on dry weight of the tobacco composition. All pH adjuster of the snuff composition may be included in the initial tobacco preparation. Alternatively, all pH adjuster of the snuff composition may be added to the heat-treated tobacco preparation. Further alternatively, a first amount of pH adjuster may be contained in the initial snuff preparation and a second amount of pH adjuster may be added to the pasteurized snuff preparation.

[0053] Humectants, such as propylene glycol or glycerol, may also be added to protect the product from drying out and may also have a preservative effect since the water activity of the product will be lowered, thereby preventing microorganisms from growing. Normally, the amount of humectant in the snuff composition is within the range of from about 5 wt% to about 15 wt% based on dry weight of the snuff composition

Claims

1. A method of producing a snuff composition for oral use, the method comprising the following steps:

   a) providing an initial snuff composition (1);
   b) depositing the initial snuff composition (1) on a moving conveyor belt (2);
   c) moving the initial snuff composition (1) through an oven (3); wherein the snuff composition (1) is heated in a first heating step while being transported on the moving conveyor belt (2), the snuff composition (1) being heated in the first heating step to a temperature within the range of 70°C to 100°C for a time period of 10 minutes to 72 hours to provide a pasteurized snuff composition (1); and wherein
   water (4) is added to the snuff composition (1), either prior to the first heating step c) and/or during the first heating step c).

2. The method according to claim 1, wherein the method comprises a step d) of mixing the snuff composition (1), step d) being carried out between step b) and step c), or step d) being carried out during step c).

3. The method according to claim 2, wherein the mixing step d) is carried out by allowing the snuff composition (1) being transported on a first section of the moving conveyor belt (2) to fall onto a second section of the moving conveyor belt or alternatively onto a second moving conveyor belt (5) and/or by means of the moving conveyor belt (2) comprising a shaking transport section and/or being mixed in a mixing drum.

4. The method according to any one of claims 1 to 3, wherein the method comprises a cooling step e) wherein the pasteurized snuff composition is cooled down in a cooling section (6).

5. The method according to claim 4, wherein in the cooling step e) the pasteurized snuff composition (1) is being cooled down in the cooling section while being transported on the moving conveyor belt or a on a third conveyor belt (7).

6. The method according to claim 5, wherein the pasteurized and cooled snuff composition (1) exits the cooling section (6) on the moving conveyor belt (2), optionally wherein flavours are added to the snuff composition (1) after exiting the cooling section (6).

7. The method according to any one of the preceding claims, wherein in step c), the temperature of the snuff composition during the first heating step is within the range of from 70°C to 100°C for a time period of at least 30 minutes, such as at least 1 hour, at least 3 hours or at least 5 hours, optionally for a time period within the range of from 30 minutes to 24 hours, such as within the range of from 1 hour to 10 hours.

8. The method according to any one of the preceding claims, wherein water (4) is continuously or discontinuously added to the snuff composition (1) during the first heating step by spraying, steaming, dripping or pouring the water onto the snuff composition.

9. The method according to any one of the preceding claims, wherein water is added in an amount within the range of from 10 wt% to 75 wt%, such as within the range of from 15 wt% to 70 wt% of the snuff composition.

10. The method according to any one of the preceding claims, wherein the moisture content of the snuff composition (1) during the first heating step is within the range of from 3 to 70 wt%, such as within the range of from 5 to 60 wt%, such as within the range of from 10 to 58 wt% or within the range of from 10

to 56 wt%, as measured by the method "Total moisture determination" as disclosed herein.

11. The method according to any one of the preceding claims, wherein the initial snuff composition (1) is deposited onto the moving conveyor belt (2) such that a layer of the initial snuff composition (1) is formed on the moving conveyor belt (2), optionally the layer has a thickness of up to 100 mm, optionally the thickness of the layer is up to 70 mm, such as up to 50 mm.

12. The method according to any one of the preceding claims, wherein ingredients, such as sodium carbonate, water and salt etc., are added to the snuff composition on the moving conveyor belt during the heating step c) and/or after the heating step c).

13. The method according to any one of the preceding claims, wherein the method comprises a final step of enclosing portions of the snuff composition in saliva-permeable pouch material thereby providing portion-packed pouched snuff products.

14. The method according to any one of the preceding claims, wherein the moisture content of the final snuff composition is within the range of from 20 to 65 wt% or within the range of from 30 to 58 wt%.

15. The method according to any one of the preceding claims, wherein the snuff composition (1) is a tobacco or non-tobacco snuff composition.

16. A snuff composition (1) prepared according to a method according to any one of the preceding claims.

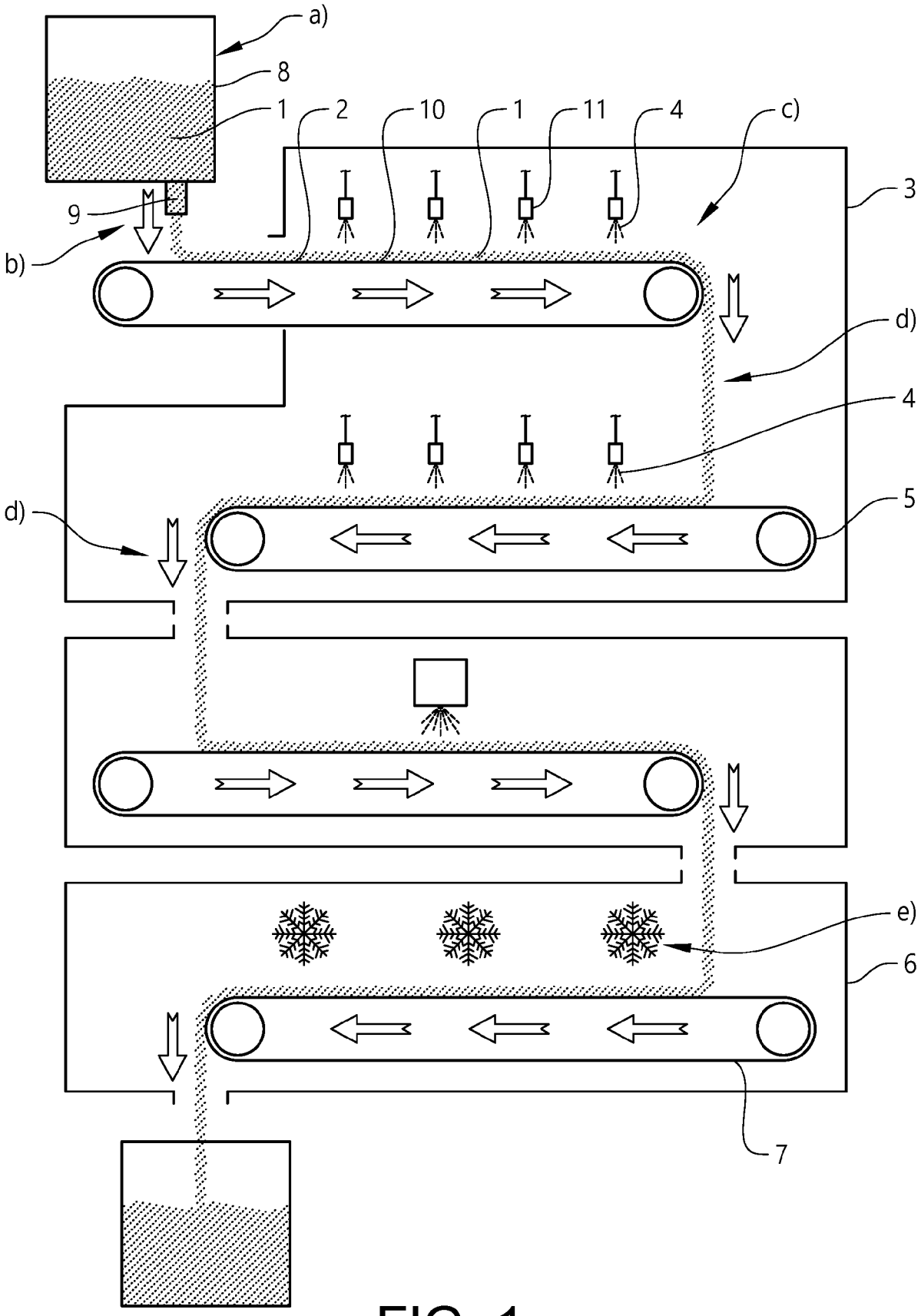

FIG. 1

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EUROPEAN SEARCH REPORT

Application Number
EP 21 15 4401

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X A	WO 2013/127528 A1 (PHILIP MORRIS PROD [CH]) 6 September 2013 (2013-09-06) * page 1, paragraph 1 * * page 2, paragraph 7 - paragraph 8 * * page 3, paragraph 2 - paragraph 3 * * page 4, paragraph 3 * * figure 1 * -----	1,4-7,9, 10,14-16 2,3,8, 11-13	INV. A24B13/00 A24B15/18 A24B15/28
X A	WO 2008/135469 A1 (BRITISH AMERICAN TOBACCO CO [GB]; FALLON GARY [GB]) 13 November 2008 (2008-11-13) * page 5, line 31 - page 6, line 17 * -----	16 1-15	
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X A	US 2012/167901 A1 (ONNO GAEL [GB]) 5 July 2012 (2012-07-05) * paragraph [0022] - paragraph [0024] * -----	16 1-15	TECHNICAL FIELDS SEARCHED (IPC) A24B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	28 June 2021	Dimoula, Kerasina

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 21 15 4401

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28-06-2021

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