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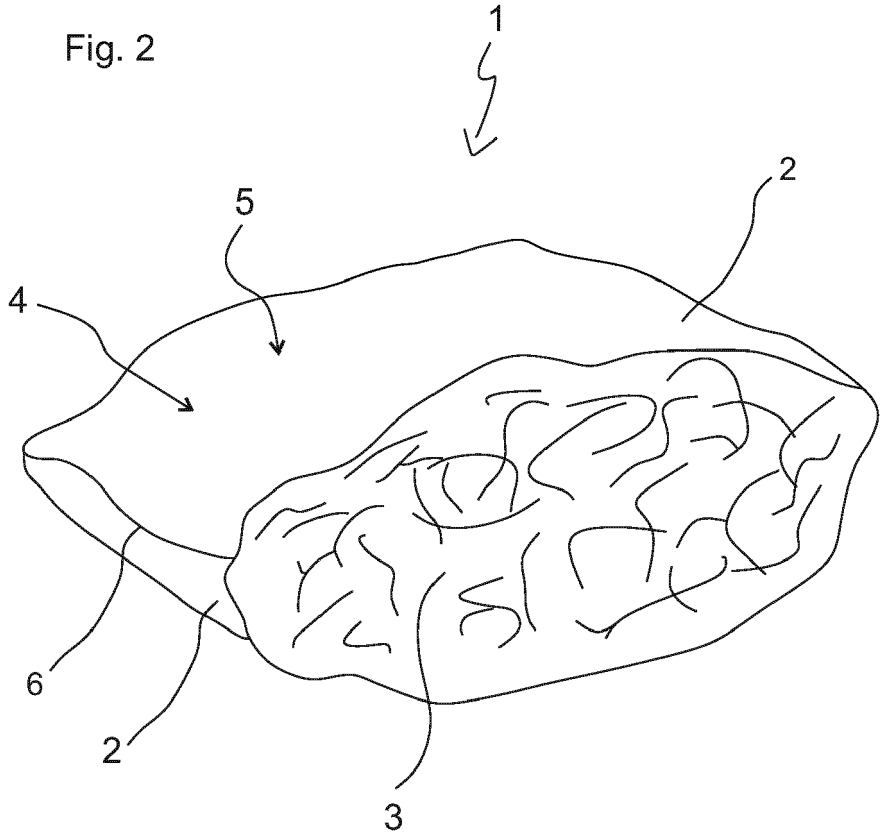
(54) CHILLED POUCH MATERIAL FOR NICOTINE POUCH

(57) Nicotine containing article for smokeless and oral usage comprising a wrapping material and a nicotine containing product, the nicotine containing product being arranged inside the wrapping material, wherein the wrapping material encloses the nicotine containing product from all sides and thereby forms the nicotine containing article in the shape of a pouch, and wherein the wrapping material is fluid permeable and thereby allows a fluid, preferably with nicotine absorbed from the nicotine containing product, to pass through it.

According to the invention at least a part of the wrapping material also comprises cooling agent which causes a cooling effect when using the nicotine containing article, wherein the cooling agent is neutral in taste and/or odour.

Fig. 2



EP 4 144 230 A1

Description

[0001] Nicotine containing article for smokeless and oral usage comprising a wrapping material and a nicotine containing product, the nicotine containing product being arranged inside the wrapping material, wherein the wrapping material encloses the nicotine containing product from all sides and thereby forms the nicotine containing article in the shape of a pouch, and wherein the wrapping material is fluid permeable and thereby allows a fluid, preferably with nicotine absorbed from the nicotine containing product, to pass through it.

[0002] Such nicotine containing products are known from the state of the art and especially as products such as snus or nicotine pouches. From the state of the art it is also known that these nicotine containing products can be provided in various flavours or flavour mixtures, wherein the flavouring agents are commonly mixed with the nicotine containing product inside the pouch. In addition to flavouring agents, nicotine-containing products are also known to contain cooling agents that have a pleasant cooling effect when the product is consumed. The most common cooling agent for this purpose is menthol, whereas also other products such as spearmint or peppermint are used. However, due to natural origin of these cooling agents their usage always goes along with a taint of the original plant they were derived from. This could be disadvantageous, especially if the cooling agent effect is desired without a taint of for example peppermint or spearmint. Therefore it would be advantageous to apply cooling agents to the nicotine containing article which only provide a cooling effect and do not have any inherent taste.

[0003] Also, there are legal restrictions regarding to the ingredients of nicotine containing articles and especially nicotine pouches, whereby the maximum level of flavouring and/or cooling agents allowed to be used inside nicotine containing articles is limited to a maximum threshold value and thus the flavour intensity of these products is also limited. While the restriction only refers to the amount of flavouring and/or cooling agents inside the nicotine containing article, it is assumed that an application on the surface is not regulated and thereby not limited.

[0004] It is therefore the objective of the invention to provide a nicotine containing article with a cooling agent which does not comprise any inherent taste, wherein the cooling effect strength of the nicotine containing article is improved without exceeding the legal maximum threshold value of cooling agent inside the nicotine containing article. This object is achieved by the nicotine containing article of claim 1 and the method for manufacturing the nicotine containing article of claim 13. Preferred embodiments of the invention are object of the dependent claims.

[0005] The afore mentioned problems are solved by a nicotine containing article according to the invention, wherein at least a part of the wrapping material also comprises a cooling agent which causes a cooling effect when using the nicotine containing article, wherein the cooling agent is neutral in taste and/or odour. Thereby the cooling agent is preferably arranged inside the wrapping material and very preferably on the outer surface of the wrapper material which builds the pouch. Preferably the cooling agent is thereby not arranged in the inside of the pouch together with the nicotine containing product. It is conceivable that thereby the amount of applied cooling agent on the nicotine containing article and thereby the cooling effect can be significantly higher and still meet the legal restrictions.

[0006] Preferably the cooling agent is obtained via a chemical process and thereby does not contain any side products which could lead to a taint for a consumer upon consumption. Preferably the cooling agent does not contain any organic derives from spearmint, peppermint, etc. and thereby does not have any taste influence besides the mere cooling effect. Thereby upon consumption of a respective cooling agents a consumer only feels the resulting cooling effect without tasting or smelling any other flavours.

[0007] The cooling agent can preferably be mixed with various other flavouring agents to simultaneously create a flavoured taste experience as well as a cooling effect for a consumer upon consumption of the nicotine containing article. It is conceivable that the cooling agent can also be mixed with nicotine to simultaneously comprise a nicotine effect for a consumer.

[0008] In a preferred embodiment the cooling agent is arranged on the surface area of the wrapping material. Therefore the cooling agent could be arranged such that it covers at least a part of the surface of the wrapping material. It is conceivable that the cooling agent is applied on the complete surface area of the wrapping material. Preferably thereby the cooling agent is arranged on the complete surface of the pouch with the nicotine containing product inside.

[0009] It could be also possible that the cooling agent is arranged on both sides of the wrapping material, wherein in such an embodiment the cooling agent which is arranged on the inner surface of the wrapper material, would be arranged inside the pouch.

[0010] Preferably the cooling agent is arranged as a separated layer on the wrapping material. This separated layer is preferably attached to the wrapper material which results in one combined sheet of wrapper material with cooling agent. Preferably a respective combined sheet is afterwards used to create a pouch for enclosing the nicotine containing article.

[0011] In a preferred embodiment the cooling agent is absorbed inside the wrapping material. For this purpose the wrapping material preferably comprises a porous structure to be able to absorb the cooling agent. Preferably the wrapping material absorbs the applied cooling agent in the porous structure. Thereby the cooling agent is preferably arranged at least partially inside the porous material of the wrapping paper.

[0012] Preferably the cooling agent is applied to the finish nicotine containing article in form of a pouch. Thereby the pouch is formed of the wrapping material before the cooling agent is applied.

[0013] It is conceivable that the wrapping material comprises a porous structure through which salvia of a consumer can pass and which thereby releases the nicotine, cooling agent and/or flavouring agents bound in the wrapping material to the salvia.

[0014] Preferably the wrapping material is a porous material made from cellulose. Thereby the wrapping material could also be made of porous paper and/ different materials which meet the requirements.

[0015] In a preferred embodiment the maximum amount of cooling agent per square metre of wrapping material is more than 0,2 g/m^2 , preferably more than 0,3 g/m^2, more preferably 0,4 g/m^2 and most preferably 0,5 g/m^2.

[0016] In a preferred embodiment the cooling agent comprises at least one substance which provides a cooling effect. The cooling agent could also be mixed from various substances with a cooling effect or with a least one component having a cooling effect. Preferably the used substances with the cooling effect do not comprise any additional taste, which, in addition to the cooling effect, would influence the taste of the cooling agent. Especially the substance preferably has no taste of menthol, spearmint or peppermint.

[0017] Preferably the substance is consumable by a consumer without causing irritations on skin areas and/or mucous membranes. Whereas common natural cooling agents such as menthol, spearmint or peppermint are known for their irritations upon contact with eyes and mucous membranes in the noses, the used cooling agents preferably do not cause any irritations.

[0018] Preferably the cooling effect causes a chilled or cool feeling effect in at least some places of the mouth. This effect preferably appears on the palate, tongue, throat and/or lips. It is conceivable that the effect could appear on multiple or all of the areas.

[0019] Preferably the substance with the cooling effect is a Wilkinson Sword Cooling Compound. These Wilkinson Sword Cooling Compounds are also known from the state of the art as WS-cooling agents, whereby various different WS-cooling agents exist which are all specifically numbered. Preferably the difference of the cooling agents is their strength of cooling, as well as their area of effect in the mouth cavity and the duration of how long respective effects last after consumption.

[0020] In a preferred embodiment the cooling agent comprises at least one of the following substances:

- WS-5 (Ethyl 3-(p-menthane-3-carboxamido)acetate)
- WS-12 ((1R,2S,5R)-N-(4-Methoxyphenyl)-p-menthanecarboxamide)
- WS-3 (N-Ethyl-p-menthane-3-carboxamide)
- WS-14 (N-tert-Butyl-p-menthane-3-carboxamide)
- WS-23 (2-isopropyl-N,2,3-trimethylbutyramide)

[0021] Each of the previous listed substances itself is a substance with a cooling effect and thereby preferably can be used for a cooling agent. Preferably these substances can be used alone or combined with each other.

[0022] It is understood that the term cooling agent is generally used to refer to at least one of the listed substances.

[0023] Preferably WS-5 and/or WS-12 are used as cooling agents on nicotine containing articles. Preferably these cooling agents comprise the biggest cooling effect compared to the other substances. Thereby the strength of the cooling effect of WS-5 is preferably 400%, and the strength of the cooling effect of WS-12 is preferably 350% compared to menthol.

[0024] The cooling effect of WS-12 preferably also lasts at least twice as long and very preferably three times as long as the cooling effect of the other cooling agents.

[0025] In a preferred embodiment the wrapping material and/or the nicotine containing product comprises a flavouring agent with at least one flavouring component. It is conceivable that also multiple flavouring components can be mixed with multiple cooling agents. A resulting flavour could be strawberry ice, for example.

[0026] Flavouring agents can comprise various different tastes, as for example strawberry, lemon, chocolate, coke, black currant and so on. Preferably the flavouring agent can be any artificial or natural flavouring which is known from the state of the art. The flavouring agents can be mixed to gain a cooling effect, which in its flavour could be described as "ice" effect.

[0027] Preferably, flavouring agents can be arranged on and/or inside the nicotine-containing article in the same way as the cooling agents. Preferably the flavouring agent and the cooling agents are mixed before being applicated to the nicotine containing article.

[0028] In a preferred embodiment the cooling agent comprises nicotine and thereby intensifies the effect of the nicotine containing product from inside the pouch. It is conceivable that the nicotine can be mixed with the flavouring and/or cooling agent before being applicated to the nicotine containing article. It is conceivable that the nicotine is applied in solid form (powder, granulate) and mixed with the cooling and/or flavouring agent. Further it might be possible that the nicotine is solved within the cooling and/or flavouring agent. Thereby the combined substance can be either in the form of a powder, or in fluid form.

[0029] In a preferred embodiment the nicotine containing product is a tobacco product. A respective nicotine containing article without cooling agent is thereby preferably known "snus". The cooling agent could also be applied onto snus products which are known from the state of the art. Thereby a snus product preferably gets enriched with a cooling effect. The cooling agents is thereby preferably applied onto the wrapping material of the snus product.

[0030] Preferably the tobacco product inside the nicotine containing product naturally comprises nicotine, wherein the tobacco product comprises a powder and/or fibre form and is preferably extracted from natural tobacco plants.

[0031] In a preferred embodiment the nicotine containing product is a fibre which contains nicotine and/or is enriched with nicotine. Preferably this fibre is a food-safe organic and/or synthetic fibre. Preferably the fibre is also neutral in taste and/or odour. It is conceivable that the fibre does not contain any tobacco product.

[0032] This material is preferably a raw material to which nicotine, cooling and/or flavouring agents are added. Therefore the fibre preferably acts as a carrier material which soaks up the nicotine, cooling and/or flavouring agent and/or nicotine and releases it upon usage to the consumer. It is conceivable that the fibre material therefore comprises a high absorbency.

[0033] It is conceivable that the fibre is arranged inside the pouch of the nicotine containing article which is enclosed by the wrapper material. Preferably the wrapper material and the fibre material themselves are insoluble upon contact with consumer salvia. It is conceivable that the nicotine, cooling and/or flavouring agents applied to the wrapper material and/or the fibre are soluble upon consumption by the salvia of a consumer. Preferably after consumption of the nicotine containing article the wrapper material and the fibre remain as waste product.

[0034] In a preferred embodiment the nicotine containing product comprises a pasty consistency. Therefore the nicotine containing product preferably consists of very small particles and/or powder particles which are mixed with a fluid substance to become a paste.

[0035] It is conceivable that the fibres used in a tobacco free nicotine containing article comprise a powder form and thereby become a paste upon adding of a fluid substance. Preferably this fluid substance is solved nicotine and/or a flavouring agent with a fluid consistency. It is also conceivable that this fluid substance is a cooling agent and/or other binder material with a fluid consistency.

[0036] It is conceivable hat especially a snus product with tobacco comprises a pasty consistency, wherein preferably the nicotine containing product inside the pouch comprises tobacco fibres and/or particles which become a paste upon adding of nicotine and/or a flavouring agent with a fluid consistency. It is also conceivable that this fluid substance is a cooling agent and/or other binder material.

[0037] Preferably the nicotine containing article comprises tobacco particles as nicotine containing product, wherein the tobacco particles naturally comprise a moist and pasty consistency.

[0038] The nicotine containing product with a pasty consistency is preferably arranged inside the wrapper material and thereby in the pouch of the nicotine containing article, wherein the pasty consistency preferably comprises not enough fluid to soak the wrapper material.

[0039] In a preferred embodiment nicotine containing product comprises a moist consistency. Preferably a moist nicotine containing product can deliver its active substances such as the cooling agent, nicotine and/or flavouring agent faster to the consumer's salvia. This preferably happens because of the saliva being able to mix more quickly with an already moist substance, rather than dry particles.

[0040] The object of the invention is also reached by a method for manufacturing a nicotine containing article, wherein the method comprises the following steps:

- Arranging the nicotine containing product at least partially inside the wrapping material;
- Enclosing the nicotine containing product inside the wrapping material by wrapping the wrapping material around it;
- Sealing the wrapping material to form a pouch;

[0041] According to the invention the method further includes a step in which the taste and/or odour neutral cooling agent is at least partially applied to the wrapping material and/or pouch.

[0042] It is conceivable that not only a cooling agent is applied to the wrapping material, but also nicotine and/or a flavouring agent. Preferably all components applied on the wrapping material are mixed before being applied. Thereby upon consumption of the nicotine containing article a consumer not only experiences a cooling effect, but also a direct taste sensation and/or a nicotine rush. Preferably the nicotine containing article also comprises a cooling agent, flavouring agent and/or nicotine inside and thereby releases those products to the consumer upon consumption.

[0043] In a preferred embodiment the cooling agent is applied to the wrapping material before and/or after the manufacturing process of the nicotine containing article. Preferably the cooling agent is applied after the manufacturing of the pouch, whereas this allows the bag to be sealed more easily during the manufacturing process. Preferably the wrapping material is sealed with a glue and/or by perforation of the wrapper material, wherein the contact areas of the wrapper material stick better together without a substance being arranged between them.

[0044] In a preferred embodiment the cooling agent is applied to the wrapping material by spraying, painting and/or immersing the wrapping material into the cooling agent.

[0045] The cooling agents is preferably sprayed onto the nicotine containing article, after the article and especially the pouch is manufactured. Thereby the cooling agent is preferably sprayed onto the outside of the pouch and thereby preferably onto the wrapper material.

[0046] It is conceivable that the wrapper material can be coated with the cooling agent by immersing the wrapper material into it and/or by applying the cooling agent with roller onto the wrapper material.

[0047] Preferably not only a cooling agent, but also flavouring agent and/or nicotine can be applied to the wrapping material by spraying, painting and/or immersing the wrapping material into them. Preferably these are also applied after the nicotine containing article is manufactured and comprises the form of a pouch.

[0048] Further advantages and embodiments according to the invention are illustrated in the attached drawings.

[0049] Herein show:

Fig. 1 nicotine containing article in form of a pouch

Fig. 2 nicotine containing article in form of a pouch in a sectional view

[0050] Figure 1 illustrated a nicotine containing article 1 in form of a pouch, wherein the pouch is formed by the wrapping material 2 being arranged in a specific direction. In figure 1 the pouch comprises the shape of a cushion. However, it is conceivable that the pouch can comprise any other three-dimensional shape that is suitable for enclosing a nicotine containing product 3. Therefore shapes as cuboid, spherical, cylindrical or as tetrahedron are especially preferred.

[0051] Preferably the pouch comprises a flat and square shape to be placed behind the lip by a consumer. The pouch remains in this position while being flushed with salvia of the consumer and releasing its cooling agents, flavouring agent and/or nicotine into the salvia and mucous membranes. After a while the consumer gets the used nicotine containing article 1 in form of the pouch out of the mouth and disposes it.

[0052] Preferably the pouch therefore is at least partially hollow. Thus the pouch is preferably manufactured in a way that a nicotine containing product 3 is arranged inside the nicotine containing article 1, before the pouch is sealed.

[0053] It is conceivable that the wrapping material 2 for manufacturing the nicotine containing article 1 is provided as flat sheet and afterwards bent and arranged in a position which creates the pouch.

[0054] The cooling agent 5 and flavouring agent 4 are preferably arranged on the outer surface of the pouch onto the wrapping material 2, after the nicotine containing article 1 is manufactured. Thus the cooling agent 5 and/or flavouring agent 4 preferably do not influence the manufacturing of the pouch, which could happen by applying them onto junction points 6 of the wrapper material 2 before the pouch is sealed, because the agent 5 and/or flavouring agent 4 reduce the adhesion between the wrapper material 2 layers.

[0055] Preferably the wrapping material 2 comprises an at least partially porous shape which soaks up the applied cooling agent 5 and flavouring agent 4 and further lets the salvia of a consumer pass through it. Preferably by passing through the wrapping material 2 the salvia gets in contact with the nicotine containing product 3 inside the pouch and thereby is able to absorb active substances such as nicotine and/or flavour from it.

[0056] Figure 2 illustrates the nicotine containing article 1 in a sectional view, whereby the pouch is illustrated as halved in the middle. In this perspective the nicotine containing product 3 inside the nicotine containing article 1 can be seen.

[0057] The nicotine containing product 3 inside the nicotine containing article 1 is illustrated as elongated fibres, wherein the particles of the nicotine containing product 3 can also comprise other forms such as powder form, paste form, spherical shaped particles, cuboid shaped particles, tetrahedron shaped particles, or various other three- dimensional shaped particles or consistencies.

[0058] Preferably the nicotine containing product 3 is a tobacco containing substance, or tobacco free fibre material.

[0059] Figure 2 further illustrated that the nicotine containing product 3 is arranged in between two layers of wrapping material 2, wherein the layers are connected to each other at a junction of the wrapping material 6. According to the shape of the nicotine containing article 1 in figure 2, the pouch comprises at on at least three of the four straight outer edges junction areas of the wrapping material 6. Preferably the pouch comprises 4 junction areas 6 if the pouch is made of two layers of wrapping material 2 arranged on top of each other. Preferably the pouch comprises 3 junction areas 6 if one layer of wrapping material 2 is folded in half and thereby one junction area 6 is replaced by a folded edge.

[0060] Preferably all geometrical bodies with at least one straight outer edge can comprise one folded edge instead of a respective junction area 6 by folding the wrapping material respectively.

[0061] The two layers off wrapping material 2 at the junction area 6 be either glued together or mechanically treated to stick together. Preferably the layers of wrapping material 2 are fixed to each other upon a perforation, similar to coffee filters. Therefore the two layers are preferably arranged on top of each other and punched together in the junction area 6.

[0062] Preferably the cooling agent 5 and/or flavouring agent 4 are applied to the nicotine containing article 1 after the sealing of the pouch. Preferably the cooling agent 5 and/or flavouring agent 4 are arranged on the outer side of the wrapping material 2 which first comes into contact with consumer's salvia upon consumption.

Reference signs

[0063]

1 nicotine containing article
2 wrapping material
3 nicotine containing product
4 flavouring agent
5 cooling agent
6 junction of wrapping material

Claims

1. Nicotine containing article (1) for smokeless and oral usage comprising a wrapping material (2) and a nicotine containing product (3), the nicotine containing product (3) being arranged inside the wrapping material (2), wherein the wrapping material (2) encloses the nicotine containing product (3) from all sides and thereby forms the nicotine containing article (1) in the shape of a pouch, and wherein the wrapping material (2) is fluid permeable and thereby allows a fluid, preferably with nicotine absorbed from the nicotine containing product (3), to pass through it,
characterized in that,
at least a part of the wrapping material (2) also comprises a cooling agent (5) which causes a cooling effect when using the nicotine containing article (1), wherein the cooling agent (5) is neutral in taste and/or odour.

2. Nicotine containing article (1) according to claim 1,
characterized in that,
the cooling agent (5) is arranged on the surface area of the wrapping material (2).

3. Nicotine containing article (1) according to claims 1 or 2,
characterized in that,
the cooling agent (5) is absorbed inside the wrapping material (2).

4. Nicotine containing article (1) according to at least one of the preceding claims,
characterized in that,
the maximum amount of cooling agent per square metre of wrapping material is more than 0,2 g/m^2 , preferably more than 0,3 g/m^2, more preferably 0,4 g/m^2 and most preferably 0,5 g/m^2.

5. Nicotine containing article (1) according to at least one of the preceding claims,
characterized in that,
the cooling agent (5) comprises at least one substance which provides a cooling effect.

6. Nicotine containing article (1) according to at least one of the preceding claims,
characterized in that,
the cooling agent (5) comprises at least one of the following substances:

   • WS-5 (Ethyl 3-(p-menthane-3-carboxamido)acetate)
   • WS-12 ((1R,2S,5R)-N-(4-Methoxyphenyl)-p-menthanecarboxamide)
   • WS-3 (N-Ethyl-p-menthane-3-carboxamide)
   • WS-14 (N-tert-Butyl-p-menthane-3-carboxamide)
   • WS-23 (2-isopropyl-N,2,3-trimethylbutyramide)

7. Nicotine containing article (1) according to at least one of the preceding claims,
characterized in that,
the wrapping material (2) and/or the nicotine containing product (3) comprise a flavouring agent (4) with at least one flavouring component.

8. Nicotine containing article (1) according to at least one of the preceding claims,
characterized in that,
the cooling agent (5) comprises nicotine and thereby intensifies the effect of the nicotine containing product (3).

9. Nicotine containing article (1) according to at least one of the preceding claims,
characterized in that,
the nicotine containing product (3) is a tobacco product.

10. Nicotine containing article (1) according to at least one of the preceding claims,
characterized in that,
the nicotine containing product (3) is a fibre which contains nicotine and/or is enriched with nicotine.

11. Nicotine containing article (1) according to at least one of the preceding claims,
characterized in that,
the nicotine containing product (3) comprises a pasty consistency.

12. Nicotine containing article (1) according to at least one of the preceding claims,
characterized in that,
the nicotine containing product (3) comprises a moist consistency.

13. Method for manufacturing a nicotine containing article (1) according to at least one of the preceding claims, wherein the method comprises the following steps:

   - Arranging the nicotine containing product (3) at least partially inside the wrapping material (2);
   - Enclosing the nicotine containing product (3) inside the wrapping material (2) by wrapping the wrapping material (2) around it;
   - Sealing the wrapping material (2) to form a pouch ;

   and is **characterized in that**,
   the method further includes a step in which the taste and/or odour neutral cooling agent (5) is at least partially applied to the wrapping material (2) and/or pouch.

14. Method for manufacturing a nicotine containing article (1) according to claim 13,
characterized in that,
the cooling agent (5) is applied to the wrapping material (2) before and/or after the manufacturing process of the nicotine containing article (1).

15. Method for manufacturing a nicotine containing article (1) according to at least one of the claims 13 and 14,
characterized in that,
the cooling agent (5) is applied to the wrapping material (2) by spraying, painting and/or immersing the wrapping material (2) into the cooling agent (5).

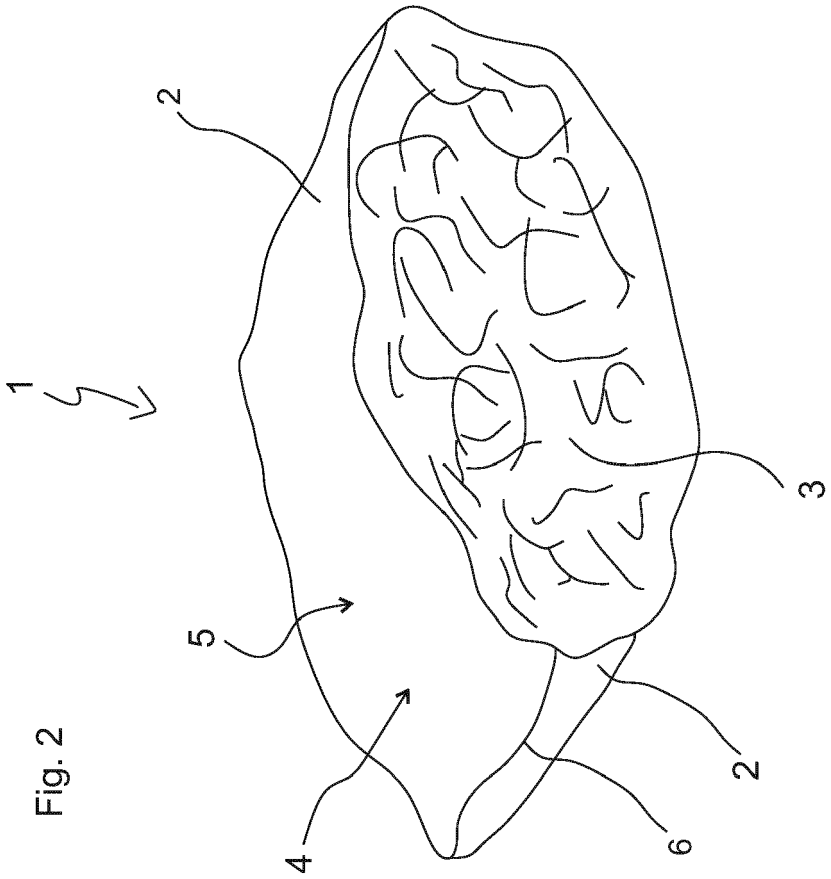


Fig. 2

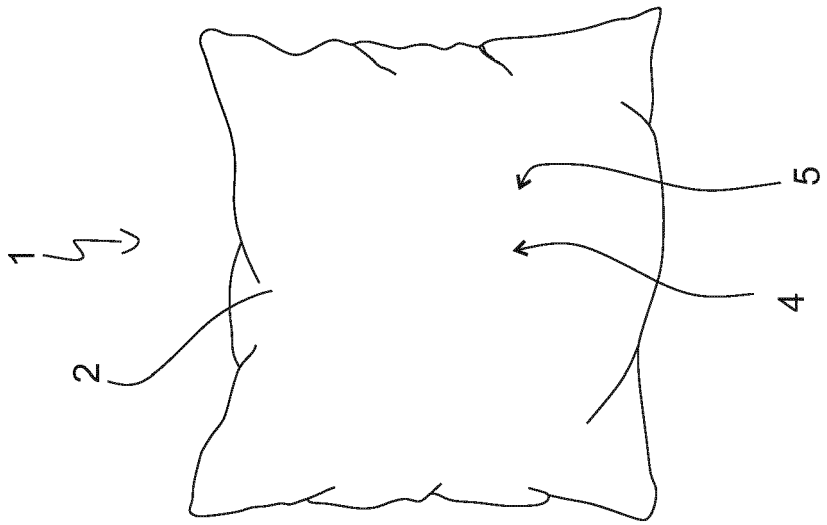


Fig. 1

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EUROPEAN SEARCH REPORT

Application Number
EP 21 19 4803

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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A	EP 2 443 944 A1 (JAPAN TOBACCO INC [JP]) 25 April 2012 (2012-04-25) * paragraph [0001] * * paragraph [0010] - paragraph [0011] * * paragraph [0023] - paragraph [0024] *	1-15	
A	US 2014/219930 A1 (JOHN THUMPALASSERIL V [US] ET AL) 7 August 2014 (2014-08-07) * paragraph [0012] - paragraph [0017] * * paragraph [0028] * * paragraph [0042] * * paragraph [0062] *	1-15	TECHNICAL FIELDS SEARCHED (IPC) A24B A61K

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	24 January 2022	Dimoula, Kerasina

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 21 19 4803

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