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(54) Title: FLAVOR ADDITIVE ACCESSORY

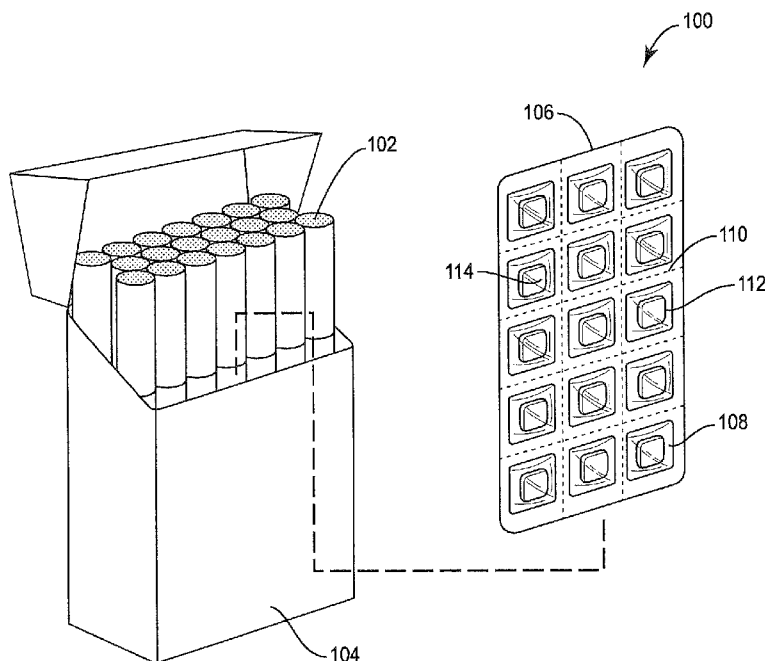


FIG. 1

(57) Abstract: A method of incorporating a
flavor material into combination with a to-
bacco product is described herein. The meth-
od may include accessing a flavor delivery in-
sert of a flavor additive accessory, associating
the flavor delivery insert with at least one of
the tobacco product and a package containing
the tobacco product, and actively or passively
releasing the flavor material from the flavor
delivery insert such that the flavor material is
incorporated with the tobacco product. Also
described herein are flavor delivery inserts, to-
bacco products having flavor delivery inserts,
and flavor additive accessories having flavor
delivery inserts.



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FLAVOR ADDITIVE ACCESSORY

FIELD OF THE DISCLOSURE

The present disclosure relates to flavor additive accessories intended for delivery of flavors for human consumption. The flavor may contain ingredients or components obtained or derived from plants of the *Nicotiana* species, or intended to enhance products having ingredients or components derived from such plants.

5

BACKGROUND

Popular "smoking" articles, such as cigarettes, have a substantially cylindrical rod shaped structure and include a charge, roll or column of smokable material such as shredded tobacco (e.g., in cut filler form) surrounded by a paper wrapper thereby forming a so-called "tobacco rod." Normally, a cigarette has a
10 cylindrical filter element aligned in an end-to-end relationship with the tobacco rod. Typically, a filter element comprises plasticized cellulose acetate tow circumscribed by a paper material known as "plug wrap." Typically, the filter element is attached to one end of the tobacco rod using a circumscribing wrapping material known as "tipping paper." A cigarette is employed by a smoker by lighting one end thereof and burning the tobacco rod. The smoker then receives mainstream smoke into his/her mouth by
15 drawing on the opposite end (e.g., the filter end) of the cigarette. Other smoking articles include cigars or the burning of loose tobacco through a pipe.

Tobacco also may be enjoyed in a so-called "smokeless" form. Particularly popular smokeless tobacco products are employed by inserting some form of processed tobacco into the mouth of the user. See for example, the types of smokeless tobacco formulations, ingredients, and processing methodologies set
20 forth in U.S. Pat. Nos. 1,376,586 to Schwartz; 3,696,917 to Levi; 4,513,756 to Pittman et al.; 4,528,993 to Sensabaugh, Jr. et al.; 4,624,269 to Story et al.; 4,991,599 to Tibbetts; 4,987,907 to Townsend; 5,092,352 to Sprinkle, III et al.; 5,387,416 to White et al.; 6,668,839 to Williams; 6,834,654 to Williams; 6,953,040 to Atchley et al.; 7,032,601 to Atchley et al.; and 7,694,686 to Atchley et al.; US Pat. Pub. Nos. 2004/0020503 to Williams; 2005/0115580 to Quinter et al.; 2005/0244521 to Strickland et al.; 2006/0191548 to Strickland
25 et al.; 2007/0062549 to Holton, Jr. et al.; 2007/0186941 to Holton, Jr. et al.; 2007/0186942 to Strickland et al.; 2008/0029110 to Dube et al.; 2008/0029116 to Robinson et al.; 2008/0029117 to Mua et al.; 2008/0173317 to Robinson et al.; 2008/0196730 to Engstrom et al.; 2008/0209586 to Neilsen et al.; 2008/0305216 to Crawford et al.; 2009/0065013 to Essen et al.; 2009/0293889 to Kumar et al.; and 2010/0291245 to Gao et al; PCT WO 04/095959 to Arnarp et al. and WO 2010/132444 A2 to Atchley; and
30 U.S. patent application Ser. No. 12/638,394, filed Dec. 15, 2009, to Mua et al.; each of which is incorporated herein by reference.

Many alternative smoking devices have been proposed through the years as improvements upon, or alternatives to, smoking products that require combusting tobacco for use. Many of those devices purportedly have been designed to provide the sensations associated with cigarette, cigar or pipe smoking,

but without delivering considerable quantities of incomplete combustion and pyrolysis products that result from the burning of tobacco. To this end, there have been proposed numerous smoking products, flavor generators and medicinal inhalers that utilize electrical energy to vaporize or heat a volatile material, or attempt to provide the sensations of cigarette, cigar or pipe smoking without burning tobacco to a significant degree. See, for example, the various alternative smoking articles, aerosol delivery devices and heat generating sources set forth in the background art described in U.S. Pat. Nos. 7,726,320 to Robinson et al. and 8,881,737 to Collett et al., which are incorporated herein by reference. See also, for example, the various types of smoking articles, aerosol delivery devices and electrically-powered heat generating sources referenced by brand name and commercial source in U.S. Pat. Pub. No. 2015/0216232 to Bless et al., which is incorporated herein by reference. Additionally, various types of electrically powered aerosol and vapor delivery devices also have been proposed in U.S. Pat. Pub. Nos. 2014/0096781 to Sears et al. and 2014/0283859 to Minskoff et al., as well as U.S. Pat. App. Ser. Nos. 14/282,768 to Sears et al., filed May 20, 2014; 14/286,552 to Brinkley et al., filed May 23, 2014; 14/327,776 to Ampolini et al., filed July 10, 2014; and 14/465,167 to Worm et al., filed August 21, 2014; all of which are incorporated herein by reference.

It would be desirable to provide a flavor additive accessory to be combined, in whole or in part, with one or more smoking articles, smokeless articles, and alternative smoking articles to provide or enhance a perceived flavor associated with these articles.

BRIEF SUMMARY

This disclosure provides a flavor additive accessory comprising one or more flavor delivery inserts that may be combined with a tobacco product for the delivery of alternative or additional flavor materials to the tobacco product. The present disclosure also includes related methods and tobacco products.

Embodiments of the present disclosure include a method of incorporating a flavor material into combination with a tobacco product. The method may comprise accessing a flavor delivery insert of a flavor additive accessory, associating the flavor delivery insert with at least one of the tobacco product and a package containing the tobacco product, and actively or passively releasing the flavor material from the flavor delivery insert such that the flavor material is incorporated with the tobacco product. In one embodiment, the package is a carton, and the tobacco product comprises one or more cigarettes. The step of associating the flavor delivery insert may comprise replacing one of the cigarettes with the flavor delivery insert within the carton. In another embodiment, the package is a tin, and the tobacco product comprises at least one smokeless tobacco product. In such an embodiment, the step of associating the flavor delivery insert may comprise inserting the flavor delivery insert into the tin. In yet other embodiments, the tobacco product is a cigarette, and the step of associating the flavor delivery insert may comprise inserting the flavor delivery insert into a filter of the cigarette.

In some embodiments, the step of actively or passively releasing the flavor material comprises at least one of: breaking a rupturable capsule, diffusing a volatile material, applying mouth conditions,

drawing air past the flavor material and adding the flavor material to aerosol precursor. In some embodiments, accessing the flavor delivery insert comprises removing a first flavor delivery insert from a packet, wherein the packet contains a plurality of flavor delivery inserts. In related embodiments, the first flavor delivery insert may comprise a first flavor material and at least one of the plurality of flavor delivery inserts may comprise a second flavor material, different from the first.

Embodiments of the present disclosure also include tobacco products. The tobacco product may include a package, the package at least partially enclosing a flavor chamber. The product may also include at least one flavor delivery insert disposed within the flavor chamber, where the flavor delivery insert may comprise a carrier and a flavor material included with and releasable from the carrier. The tobacco product may also include at least one tobacco article removably located within the package, wherein the at least one flavor delivery insert is configured to selectively release the flavor material into combination with the consumable tobacco article.

Embodiments of the tobacco product may include a carton as the package and the consumable tobacco article comprising at least one cigarette. In some embodiments the flavor material is volatile such that the flavor material is diffused into the package. In some embodiments, the at least one flavor delivery insert comprises a plurality of flavor delivery inserts and the at least one cigarette comprises a plurality of cigarettes, and the plurality of flavor delivery inserts are individually combinable with the plurality of cigarettes. In one example, the carrier is an insert for disposal in a filter of a respective cigarette. In other examples, the carrier comprises at least one of a breakable capsule, a pellet, a filament, a fiber, paper, and cellulose. In some embodiments the package comprises a tin and the tobacco article comprises at least one smokeless tobacco product. In some instances the package comprises a tank, and the tobacco article comprises e-liquid.

Additionally, embodiments of the present disclosure also include flavor additive accessories for use with a tobacco product. The flavor additive accessory may include a pack and a plurality of flavor delivery inserts. Each insert may comprise a carrier and a flavor material included in and releasable from the carrier. Each flavor delivery insert is adapted for delivery of the flavor material to a respective tobacco product by combining the flavor delivery insert with the tobacco product or a package containing the tobacco product. In some embodiments, the carrier comprises at least one of a filter, a breakable capsule, a pellet, a glue, a filament, a fiber, paper, and cellulose. The flavor additive accessory may also include instructions for combining one of the plurality of flavor delivery inserts with the tobacco product or the package containing the tobacco product.

These and other aspects of the present disclosure will become apparent to those skilled in the art after a reading of the following description of the preferred embodiments, when considered in conjunction with the drawings. It should be understood that both the foregoing general description and the following detailed description are explanatory only and are not restrictive of the invention as claimed.

The invention includes, without limitation, the following embodiments:

Embodiment 1: A method of incorporating a flavor material into combination with a tobacco product, comprising: accessing a flavor delivery insert of a flavor additive accessory; associating the flavor delivery insert with at least one of the tobacco product and a package containing the tobacco product; and
5 actively or passively releasing the flavor material from the flavor delivery insert such that the flavor material is incorporated with the tobacco product.

Embodiment 2: The method of any previous or subsequent embodiment, wherein: the package is a carton, and the tobacco product comprises one or more cigarettes; and associating the flavor delivery insert comprises replacing one of the cigarettes with the flavor delivery insert within the carton.

10 Embodiment 3: The method of any previous or subsequent embodiment, wherein: the package is a tin, and the tobacco product comprises at least one smokeless tobacco product; and associating the flavor delivery insert comprises inserting the flavor delivery insert into the tin.

Embodiment 4: The method of any previous or subsequent embodiment, wherein the tobacco product is a cigarette, and associating the flavor delivery insert comprises inserting the flavor delivery insert
15 into a filter of the cigarette.

Embodiment 5: The method of any previous or subsequent embodiment, wherein actively or passively releasing the flavor material comprises at least one of: breaking a rupturable capsule, diffusing a volatile material, applying mouth conditions, drawing air past the flavor material and adding the flavor material to aerosol precursor.

20 Embodiment 6: The method of any previous or subsequent embodiment, wherein accessing the flavor delivery insert comprises removing a first flavor delivery insert from a packet, wherein the packet contains a plurality of flavor delivery inserts.

Embodiment 7: The method of any previous or embodiment, wherein the first flavor delivery insert comprises a first flavor material and at least one of the plurality of flavor delivery inserts comprises a second
25 flavor material, different from the first.

Embodiment 8: A tobacco product, comprising: a package, the package at least partially enclosing a flavor chamber; at least one flavor delivery insert disposed within the flavor chamber, the flavor delivery insert comprising: a carrier; and a flavor material included with and releasable from the carrier; and at least one consumable tobacco article removably located within the package, wherein the at least one flavor
30 delivery insert is configured to selectively release the flavor material into combination with the consumable tobacco article.

Embodiment 9: The tobacco product of any previous or subsequent embodiment, wherein the package comprises a carton and the consumable tobacco article comprises at least one cigarette.

35 Embodiment 10: The tobacco product of any previous or subsequent embodiment, wherein the flavor material is volatile such that the flavor material is diffused into the package.

Embodiment 11: The tobacco product of any previous or subsequent embodiment, wherein the at least one flavor delivery insert comprises a plurality of flavor delivery inserts and the at least one cigarette

comprises a plurality of cigarettes, and the plurality of flavor delivery inserts are individually combinable with the plurality of cigarettes.

Embodiment 12: The tobacco product of any previous or subsequent embodiment, wherein the carrier is an insert for disposal in a filter of a respective cigarette.

5 Embodiment 13: The tobacco product of any previous or subsequent embodiment, wherein the carrier comprises at least one of a breakable capsule, a pellet, a filament, a fiber, paper, and cellulose.

Embodiment 14: The tobacco product of any previous or subsequent embodiment, wherein the package comprises a tin and the tobacco article comprises at least one smokeless tobacco product.

10 Embodiment 15: The tobacco product of any previous embodiment, wherein the package comprises a tank, and the tobacco article comprises e-liquid.

Embodiment 16: A flavor additive accessory for use with a tobacco product, comprising: a packet; and a plurality of flavor delivery inserts, each insert comprising: a carrier; and a flavor material included in and releasable from the carrier; wherein each flavor delivery insert is adapted for delivery of the flavor material to a respective tobacco product by combining the flavor delivery insert with the tobacco product or
15 a package containing the tobacco product.

Embodiment 17: The flavor additive accessory according to any previous or subsequent embodiment, wherein the carrier comprises at least one of a filter, a breakable capsule, a pellet, a glue, a filament, a fiber, paper, and cellulose.

Embodiment 18: The flavor additive accessory according to any previous or subsequent
20 embodiment, wherein the plurality of flavor delivery inserts comprise at least two different flavor materials selected from the group comprising tobacco extract, sweeteners, vanilla, coffee, tea, chocolate, cream, mint, spearmint, menthol, peppermint, wintergreen, lavender, cardamom, nutmeg, cinnamon, clove, cascarilla, sandalwood, honey, maple, jasmine, ginger, anise, sage, licorice, lemon, orange, apple, peach, lime, cherry, and strawberry.

25 Embodiment 19: The flavor additive accessory according to any previous or subsequent embodiment, further comprising instructions for combining one of the plurality of flavor delivery inserts with the tobacco product or the package containing the tobacco product.

These and other features, aspects, and advantages of the disclosure will be apparent from a reading of the following detailed description together with the accompanying drawings, which are briefly described
30 below. The invention includes any combination of two, three, four, or more of the above-noted embodiments as well as combinations of any two, three, four, or more features or elements set forth in this disclosure, regardless of whether such features or elements are expressly combined in a specific embodiment description herein. This disclosure is intended to be read holistically such that any separable features or elements of the disclosed invention, in any of its various aspects and embodiments, should be viewed as
35 intended to be combinable unless the context clearly dictates otherwise.

BRIEF DESCRIPTION OF THE DRAWINGS

In order to provide an understanding of embodiments of the invention, reference is made to the appended drawings, which are not necessarily drawn to scale, and in which reference numerals refer to components of exemplary embodiments of the invention. The drawings are exemplary only, and should not be construed as limiting the invention.

5 FIG. 1 is a perspective view of a flavor additive accessory according to embodiments of the present disclosure.

 FIG. 2 is a perspective view of a cigarette combined with a flavor delivery insert according to embodiments of the present disclosure.

10 FIG. 3 is a perspective view of another flavor additive accessory according to other embodiments of the present disclosure.

 FIG. 4 is a perspective view of another flavor additive accessory according to other embodiments of the present disclosure.

 FIG. 5 is a perspective view of another flavor additive accessory according to other embodiments of the present disclosure.

15 FIG. 6 is a perspective view of another flavor additive accessory according to other embodiments of the present disclosure.

DETAILED DESCRIPTION

20 The present invention now will be described more fully hereinafter. This invention may, however, be embodied in many different forms and should not be construed as limited to the embodiments set forth herein; rather, these embodiments are provided so that this disclosure will be thorough and complete, and will fully convey the scope of the invention to those skilled in the art. As used in this specification and the claims, the singular forms “a,” “an,” and “the” include plural referents unless the context clearly dictates otherwise. Reference to “dry weight percent” or “dry weight basis” refers to weight on the basis of dry
25 ingredients (i.e., all ingredients except water).

 Referring to FIG. 1, there is shown a flavor additive accessory 100 configured to provide flavor enhancement for a tobacco product, such as a plurality of cigarettes 102 in a carton 104. The flavor additive accessory 100 may be sold with, attached to, integrated within or sold separately from the tobacco product. According to one embodiment, the flavor additive accessory 100 comprises a packet 106 formed with
30 individual compartments or segments 108. The packet 106 may have a size and shape corresponding to the approximate size of the carton 104 of cigarettes 102 such that the flavor additive accessory 100 may be inserted into the pack or carton.

 The segments 108 of the packet 106 may be distinguishable from one another using perforations 110, score lines or other structure to facilitate breaking down the packet 106 into the individual segments
35 108 thereof. Alternatively, the segments 108 of packet 106 may be visually identified by indicia such as printed markings, pressed or molded portions of the packet 106, etc. The markings may help identify the

separate segments 108 of the packet 106 even if the segments 108 are intended to remain connected with one another.

Each segment 108 may initially include a flavor delivery insert 112. Each flavor delivery insert 112 is configured for selectively providing a flavor material (also referred to as a flavoring agent) into combination with the tobacco product, such as a cigarette 102. Each flavor delivery insert 112 may include a carrier 114 and flavor material carrier by the carrier. For example, the flavor material may be within, combined with, provided on, held by, absorbed by, or impregnated into the carrier.

Where the tobacco product is a carton 104 having cigarettes 102, the flavor delivery inserts 112 may combine the flavor material with each cigarette individually. In one example, a user may open, or separate a segment 108 of the packet 106, retrieve the associated flavor delivery insert 112 and combine the flavor delivery insert with the cigarette 102 (see FIG. 2). Combining the flavor delivery insert 112 with the cigarette 102 may include inserting the flavor delivery insert into the filter 116 of the cigarette as seen in FIG. 2. In some embodiments, the filter 116 may be provided with a channel 118 for accepting the flavor delivery insert 112. The channel 118 may be a recess, a cavity, an opening, a groove or other structure configured to accept the flavor delivery insert 112. In other embodiments, insertion of the flavor delivery insert 112 into the filter may result in permanent or resilient deformation of at least part of the filter. The flavor material may then be released from the flavor delivery insert 112 into combination with the cigarette 102 in accordance with the type of carrier 114 selected, as discussed below.

In other embodiments, the flavor material of a flavor delivery insert 112 may be combined with a plurality of tobacco products simultaneously. For example, the step of at least partially opening one of the segments 108 of the packet 106 may result in flavor material diffusing from the flavor delivery insert 112 into the carton 104, adding to, fortifying, or otherwise altering the flavor of the cigarettes 102 remaining in the pack. Altering the flavor of a plurality of tobacco products simultaneously may be referred to as bulk flavoring of the tobacco products. Bulk flavoring is not limited to the use of a single flavor delivery insert 112 from a single segment 108. The flavor material from a plurality of flavor delivery inserts 112 may be used at one time to select the strength level of the flavor. For example, a stronger flavor may be obtained when using a plurality of flavor delivery inserts. Use of a plurality of flavor delivery inserts may also allow for bulk flavoring with flavor combinations. For example, the flavor material from one flavor delivery insert 112 may be different from the flavor material of another flavor delivery insert such that the use of the two inserts in combinations provide the tobacco products with a flavor combination of unique flavors.

Fig. 3 shows another embodiment of a flavor additive accessory 200. The flavor additive accessory 200 is again sized and shaped to fit within a given volume of a tobacco product. In the illustrated embodiment the flavor additive accessory 200 matches the approximate size of a cigarette 102 to be capable of accommodation within the carton 104 after the removal of one cigarette. The flavor additive accessory 200 may be formed by a packet 206 or other wrapping, packaging, or substrate to hold together or otherwise represent a plurality of individual compartments 208, also referred to as segments or portions. Each compartment 208 may represent a flavor delivery insert 212. The compartments 208 may be separated by

perforations 210 or other structures or techniques to facilitate the separation of each compartment 208 from the remainder of the packet 206. Similar to the embodiment of FIG. 1, a user can selectively release a flavor material from one of the flavor delivery inserts 212 while the flavor additive accessory 200 is within the carton 104 of cigarettes 102 to add, fortify, or modify the flavor of the cigarettes remaining within the pack.

5 Similar to the example shown in FIG. 2, a flavor delivery insert 212 or an entire compartment 208 of the packet 206 may be inserted into a filter of a cigarette 102 according to some embodiments.

FIG. 4 shows another embodiment of a flavor additive accessory 300. The flavor additive accessory 300 of the illustrated embodiment also includes a packet 306 containing a plurality of flavor delivery inserts 312. In this embodiment, the flavor additive accessory 300 is not intended to be inserted into a pre-existing package of tobacco products, such as the carton 104 of cigarettes 102. Instead, the individual flavor delivery inserts 312 are configured to be added to the pre-existing package of tobacco products one at a time. Once a flavor delivery insert 312 is provided within a flavor chamber 320 created within the carton 104, the flavor material may be dispersed from the flavor delivery insert 312. This embodiment may be particularly pertinent if the flavor material is a volatile substance capable of diffusing from a carrier 314 of the flavor delivery insert 312.

FIG. 5 presents yet another embodiment of a flavor additive accessory 400. In this embodiment, the flavor additive accessory 400 includes a packet 406 and a plurality of flavor delivery inserts 412. The flavor delivery inserts 412 of the present embodiment may be configured as flavor pouches (sachet) of similar size and shape to a pouch of smokeless tobacco 402 commonly sold in tins 404. A flavor delivery insert 412 may be removed from the packet 406 and inserted into the tin 404 to infuse the pouches of smokeless tobacco 402 with flavor material. Use of the pouches of smokeless tobacco 402 may be given at least a hint of flavor solely by being stored in the presence of the flavor material given certain types of flavor material and carriers as discussed below. Thus the flavor material of the embodiments of FIGS. 4 and 5 may be allowed to combine with tobacco products simply by providing close proximity and the free circulation of ambient air from the flavor delivery insert to the tobacco product.

FIG. 6 presents yet another embodiment of a flavor additive accessory 500. In this embodiment, the flavor additive accessory 500 includes a packet 506 comprised of a plurality of segments 508, each segment may have a reservoir or carrier 514 for a flavor material. Each segment 508 may be separable from the packet 506 by perforations 510 or other structures configured to allow the segments to be taken apart from one another. The carrier 514 may constitute a reservoir formed in the shape of a dropper which can be squeezed to release the flavor material into a tank 504. The tank 504 may be adapted for use with an alternative smoking article such as an electronic cigarette where the tobacco product is an e-liquid. The liquid flavor of the flavor delivery insert 512 of this embodiment may be combined with alternative smoking articles in other ways. For example, the flavor delivery insert could be a cartridge attached to or for replacement of a mouth cap of an e-cigarette.

One skilled in the art will appreciate that the flavor material within each flavor delivery insert may vary such that the flavor material of separate flavor delivery inserts within the same flavor additive

accessory can be different. Each flavor delivery insert or each segment of the flavor additive accessory may be marked by indicia such as text, a symbol, or a distinctive color to identify which flavor material is within each segment or insert.

In one embodiment, each flavor additive accessory may have a designed flavor and strength, such as high strength menthol. Low and medium strength flavor delivery inserts may be available from other flavor additive accessories. Thus, the purchaser may select the flavor additive accessory that fits their needs. In other embodiments, a flavor additive accessory may include a plurality of flavor delivery inserts with a variety of strengths. Therefore the user may be able to select a flavor delivery insert that matches their designed flavor strength from the flavor additive accessory. The strength of each insert within the accessory may be indicated with text, a symbol or a distinctive color much the same way as suggested for distinguishing between flavor delivery inserts having unique flavor materials.

One feature of several embodiments is the ability to include the flavor material on demand. For example, flavor is dispersed from the flavor delivery insert on demand by breaking the carrier or by removing or otherwise exposing the carrier from a sealed segment of the packet. Thus the user is able to add flavor when the flavor is desired. The strength of the flavor can be increased in most embodiments by using more than one flavor delivery insert at any one time. In each embodiment discussed above, the flavor delivery inserts include a flavor material and a carrier. The form and flavor of the flavor material may vary. The form of the carrier may also vary. Some embodiments of the flavor material may be better suited for some embodiments of the carrier.

Flavor materials may be provided in liquid form, such as the mixture of water, extract and a humectant. Flavor materials may be provided in a semisolid form, such as a slurry. Alternatively, flavor materials may be provided in solid form such as powders, pellets, capsules, beads, pearls, pills, flacks, yarns, filaments, glues, etc.

Carriers may be porous materials capable of accepting and being combined with the flavor materials. Methods of combination include, by not limited to, absorbing the flavor material, embedding the flavor material, saturating the carrier with flavor material, or coating the flavor material on the carrier.

Suitable powders and methods of forming the powders are discussed in U.S. Pat. Pub. 2012/0192880 to Dube et al, the contents of which are incorporated herein in their entirety. Flavor pellets are also known in the art that use a solid polymer base to create a pellet that will slowly release the flavor material.

Flavor materials may include tobacco extract or similar flavor being derived from, but not itself including, dried shredded tobacco leaves. Tobacco extract or a similar extract from another *Nicotiana* species can be provided as the flavor material of a flavor delivery insert to strength an existing tobacco product.

Tobacco based flavor selected for use in the flavor delivery insert can be derived from a variety of species, using a variety of techniques that produce extract in a variety of usable forms. The extract may be provided in a liquid form absorbed within one or more of the components discussed above. The extract may

be provided in a substantially solid pellet-form suspended or otherwise held by one or more of the article's components. The extract may also be microencapsulated or selectively released from a breakable capsule.

The *Nicotiana* species used to derive the extract can be selected for the content of various compounds that are present therein. For example, where tobacco extracts are employed in the articles of the present disclosure, plants can be selected on the basis that those plants produce relatively high quantities of one or more of the compounds desired to be isolated therefrom. In certain embodiments, plants of the *Nicotiana* species (e.g., Galpao commun tobacco) are specifically grown for their abundance of leaf surface compounds. Tobacco plants can be grown in greenhouses, growth chambers, or outdoors in fields, or grown hydroponically.

In some other embodiments, the flavor delivery insert contains non-tobacco based flavor materials. The flavor material may also be referred to as a "flavor", "flavorant", "flavoring", or "flavoring agent". Each term describes any flavorful or aromatic substance capable of altering the sensory characteristics associated with the existing tobacco product and at least partially available for consumption by the user. Exemplary sensory characteristics that can be modified by the flavor material include, taste, mouth feel, moistness, coolness/heat, and/or fragrance/aroma.

The flavor materials can be provided from sources other than tobacco, can be natural or synthetic, and the character of these flavors can be described as, without limitation, fresh, sweet, herbal, confectionary, floral, fruity or spice. Such flavoring agents can be employed as concentrates or flavor packages. Specific types of flavors include, but are not limited to, vanilla, coffee, tea, chocolate, cream, mint, spearmint, menthol, peppermint, wintergreen, lavender, cardamom, nutmeg, cinnamon, clove, cascarilla, sandalwood, honey, maple, jasmine, ginger, anise, sage, licorice, lemon, orange, apple, peach, lime, cherry, and strawberry. Flavorants utilized in disclosed products also can include components that are considered moistening, cooling or smoothening agents, such as eucalyptus. These flavors may be provided neat (i.e., alone) or in a composite (e.g., spearmint and menthol or orange and cinnamon). In some instances, the flavorant may be provided in a spray-dried form.

Sweeteners can be used in natural or artificial form or as a combination of artificial and natural sweeteners. In one embodiment, syrup (e.g. corn syrup), sucralose, sucrose, or a combination thereof is the primary sweetener ingredient. When present, a representative amount of sweetener, whether an artificial sweetener and/or natural sugar, may make up at least about 0.2 percent, at least about 1 percent, or at least about 5 percent, of the total dry weight of the composition. Preferably, the amount of sweetener within the composition will not exceed about 40 percent, often will not exceed about 35 percent, and frequently will not exceed about 30 percent, of the total dry weight of the composition.

For other examples of flavoring materials that may be suitable for the products disclosed, see, for example, US Pat. Appl. Pub. Nos. 2002/0162562 to Williams; 2002/0162563 to Williams; 2003/0070687 to Atchley et al.; 2004/0020503 to Williams, 2005/0178398 to Breslin et al.; 2006/0191548 to Strickland et al.; 2007/0062549 to Holton, Jr. et al.; 2007/0186941 to Holton, Jr. et al.; 2007/0186942 to Strickland et al.;

2008/0029110 to Dube et al.; 2008/0029116 to Robinson et al.; 2008/0029117 to Mua et al.; 2008/0173317 to Robinson et al.; and 2008/0209586 to Neilsen et al., each of which is incorporated herein by reference.

In some embodiments, the flavor materials used in the flavor delivery insert are provided in a microencapsulated form. The microencapsulated form may be used for all, some, or none of the flavor materials. Use of microencapsulation may help preserve the flavor material or provide for extended release of the flavor material. Generally, microencapsulated flavor material will still rely upon a separate carrier for the formation of a flavor delivery insert.

The microencapsulated form may include a wall or barrier structure defining an inner region or payload that contains the flavor material. Use of additives in microencapsulated form can improve storage stability of the flavor additive accessory, particularly the stability of the sensory profile of the accessory, and protect certain additives from degradation over time. Microencapsulation can also insulate the user from undesirable sensory characteristics associated with the encapsulated ingredient, such as certain fillers, or provide a milder sensory experience by extending the release of certain flavorants over time. Microencapsulation of water can allow the product to be produced, stored, and transported at a lower moisture level, which can reduce storage and transportation costs and improve storage stability of the accessory.

A representative microcapsule embodiment has an outer cover, shell, or coating that envelopes a liquid or solid core region, and in certain embodiments, the microcapsule can have a generally spherical shape. By encapsulating an additive within the core region of a microcapsule, the ability of the additive to interact with other components of the product is reduced or eliminated, which can enhance the storage stability of the resulting flavor delivery insert. The core region, which typically releases the additive when the outer shell undergoes some type of physical destruction, breakage, or other loss of physical integrity (e.g., through dispersion, softening, crushing, application of pressure, or the like), thereby provides for altering the sensory properties of a pre-existing tobacco product. Thus, in many embodiments, the outer shell of the microcapsules is designed to rupture during use or is water soluble under conditions of normal use.

The relative amounts of the various flavoring materials within the flavor delivery article, including the amount of the flavoring within the core region of the microcapsules, may vary.

Exemplary manners and methods for providing encapsulated materials, such as microencapsulated flavoring agents, are set forth in Gutcho, *Microcapsules and Microencapsulation Techniques* (1976) and Gutcho, *Microcapsules and Other Capsules Advances Since 1975* (1979). Exemplary types of microcapsules can have diameters of less than 100 microns, and often can have outer shells that are gelatin based, cyclodextrin based, or the like. Microcapsules have been commercially available, and exemplary types of microcapsule technologies are of that type set forth in Kondo, *Microcapsule Processing and Technology* (1979); Iwamoto et al., *AAPS Pharm. Sci. Tech.* 2002 3(3): article 25; and U.S. Pat. No. 3,550,598 to McGlumphy and U.S. Pat. No. 6,117,455 to Takada et al.

A plurality of microcapsules containing flavor material may be held by a carrier, such as in a binding substrate. In one embodiment the carrier may be a selectively crushable capsule. The crushable capsule may contain flavor material that is or is not itself microencapsulated. Breakage of the crushable capsule acts to release the contents that are contained and sealed therein. Application of tactile pressure to the capsule, for example by a squeezing action provided by the fingers of the user, causes relevant regions of the carrier to deform and hence causes the capsule to rupture and release its payload. The rupture of the capsule can be discerned by an audible pop, snap, or a rapid decrease in the resistance to the pressure applied by the user. Rupture of the capsule causes contents of its payload to disperse, such as into portions of a tobacco product or a package containing tobacco products. The capsules can be generally spherical in shape and possess a rigid outer shell, such as a gelatin outer shell, that surrounds an internal payload. Suitable capsules are commercially available from Mane Aromatic Flavors, located in Nice, France as gelatin encapsulated mixtures of medium chain triglycerides and flavor agents. The designations of a number of flavor capsules that are available from Mane Aromatic Flavors are: Spearmint, E209123; Cinnamon, E0303392; Russian Tea, E0303386; Lemon, E127382; and Menthol, E127384. Such representative capsules have diameters of about 3.5 mm and about 4 mm.

Use of crushable capsules may be preferred in embodiments of the present disclosure where the flavor delivery insert is directly combined with the tobacco product such as seen in FIGS. 1-3. In these embodiments the flavor delivery insert can be added to the tobacco product, e.g. cigarette 102 and then manipulated to release the flavor material into the cigarette. In some embodiments, a liquid flavor material may be microencapsulated and the microcapsules may be suspended within a crushable capsule.

The outer shell of the capsule is preferably constructed of a food grade gelatin derived from bovine, piscine or porcine stock. A wide variety of gelatins may be used, and the selection of a gelatin for the capsule outer surface is considered a matter of design choice to those of ordinary skill in the art. See, Kirk-Othmer, Encyclopedia of Chemical Technology, (4th Ed.) 12, 406-416 (1994), which is incorporated herein by reference. The type of gelatin used for constructing the outer shell of the capsule provides that capsule with the capability of being exposed to triacetin (a common plasticizer used in cigarette filter manufacture) or 1,2 propylene glycol (a common tobacco casing component) for relatively long periods of time without experiencing undesirable interaction (e.g., dissolution of the gelatin therein). Because the gelatins used in the preferred embodiments may dissolve in water over extended periods of time, it is desirable to employ virtually anhydrous payloads (or payloads possessing very low amounts of water) with capsules having gelatin outer coatings.

The capsule payload can have a form that can vary; and typically, the payload has the form of a liquid, a gel, or a solid (e.g., a crystalline material or a dry powder).

In one embodiment, the payload is a mixture of a flavor material and a diluting agent. The preferred diluting agent is a triglyceride, such as a medium chain triglyceride, and more particularly a food grade mixture of medium chain triglycerides. See, for example, Radzuan et al., *Porim Bulletin*, 39, 33-38 (1999). Example flavorings of the payload have been discussed above.

The amount of flavor material and diluting agent within the capsule may vary. In some instances, the diluting agent may be eliminated altogether, and the entire payload can be composed of flavoring agent. Alternatively, the payload can be almost entirely comprised of diluting agent, and only contain a very small amount of relatively potent flavoring agent. In one embodiment using a capsule of, for example,

5 approximately 3.5 mm in diameter, the weight of the liquid payload (e.g., flavoring agent and diluting agent) is preferably in the range of about 15 mg to about 25 mg, and more preferably in the range of about 20 mg to about 22 mg. The preferred composition of the mixture of flavoring and diluting agent is in the range of about 5 percent to about 25 percent flavoring, and more preferably in the range of about 10 to about 15 percent flavoring, by weight based on the total weight of the payload, with the balance being diluting agent.

10 In some embodiments, carriers can include a filter material, such as commonly found in cigarettes 102, that may absorb liquid flavor material or be impregnated with solid form flavor materials directly or indirectly. For example, microcapsules may form a first carrier of a liquid flavor material that can be impregnated within the filter material as a second carrier.

The filter material can vary, and can be any material of the type that can be employed for providing

15 a filter for cigarettes. Preferably a traditional cigarette filter material is used, such as cellulose acetate tow, gathered cellulose acetate web, polypropylene tow, gathered cellulose acetate web, gathered paper, or the like. Especially preferred is filamentary tow such as cellulose acetate, polyolefins such as polypropylene, or the like. One preferred filter material that can provide a suitable filter element is cellulose acetate tow having 3 denier per filament and 40,000 total denier. As another example, cellulose acetate tow having 3

20 denier per filament and 35,000 total denier can provide a suitable filter element. As another example, cellulose acetate tow having 8 denier per filament and 40,000 total denier can provide a suitable filter element. For further examples, see the types of filter materials set forth in U.S. Pat. Nos. 3,424,172 to Neurath; 4,811,745 to Cohen et al.; 4,925,602 to Hill et al.; 5,225,277 to Takegawa et al. and 5,271,419 to Arzonico et al.

25 The filter material may also comprise other highly porous fibers, tows, films, pellets, threads, or non-woven materials such as, for example, rayon, polyester, or polypropylene, in addition to or instead of cellulose acetate. Where provided, the highly porous fibers may be configured to collect and retain a liquid flavor material, such as tobacco extract.

Other types of carriers that can incorporate flavor material include polymer solids used in pelletized flavor

30 materials, threads accepting flavor much like a filter, glues or even tape having a flavoring agent included.

Many modifications and other embodiments of the invention will come to mind to one skilled in the art to which this invention pertains having the benefit of the teachings presented in the foregoing description. Therefore, it is to be understood that the invention is not to be limited to the specific embodiments disclosed and that modifications and other embodiments are intended to be included within the scope of the appended

35 claims. Although specific terms are employed herein, they are used in a generic and descriptive sense only and not for purposes of limitation.

CLAIMS:

1. A method of incorporating a flavor material into combination with a tobacco product, comprising:
accessing a flavor delivery insert of a flavor additive accessory;
associating the flavor delivery insert with at least one of the tobacco product and a package
containing the tobacco product; and
5 actively or passively releasing the flavor material from the flavor delivery insert such that the flavor
material is incorporated with the tobacco product.
2. The method of claim 1, wherein: the package is a carton, and the tobacco product comprises one or
more cigarettes; and associating the flavor delivery insert comprises replacing one of the cigarettes with the
10 flavor delivery insert within the carton.
3. The method of claim 1, wherein: the package is a tin, and the tobacco product comprises at least one
smokeless tobacco product; and associating the flavor delivery insert comprises inserting the flavor delivery
insert into the tin.
15
4. The method of claim 1, wherein the tobacco product is a cigarette, and associating the flavor
delivery insert comprises inserting the flavor delivery insert into a filter of the cigarette.
5. The method of claim 1, wherein actively or passively releasing the flavor material comprises at least
20 one of: breaking a rupturable capsule, diffusing a volatile material, applying mouth conditions, drawing air
past the flavor material and adding the flavor material to aerosol precursor.
6. The method of claim 1, wherein accessing the flavor delivery insert comprises removing a first
flavor delivery insert from a packet, wherein the packet contains a plurality of flavor delivery inserts.
25
7. The method of claim 6, wherein the first flavor delivery insert comprises a first flavor material and
at least one of the plurality of flavor delivery inserts comprises a second flavor material, different from the
first.
- 30 8. A tobacco product, comprising:
a package, the package at least partially enclosing a flavor chamber;
at least one flavor delivery insert disposed within the flavor chamber, the flavor delivery insert
comprising:
a carrier; and
35 a flavor material included with and releasable from the carrier; and

at least one consumable tobacco article removably located within the package,
wherein the at least one flavor delivery insert is configured to selectively release the flavor material
into combination with the consumable tobacco article.

5 9. The tobacco product of claim 8, wherein the package comprises a carton and the consumable
tobacco article comprises at least one cigarette.

10. The tobacco product of claim 9, wherein the flavor material is volatile such that the flavor material
is diffused into the package.

10

11. The tobacco product of claim 9, wherein the at least one flavor delivery insert comprises a plurality
of flavor delivery inserts and the at least one cigarette comprises a plurality of cigarettes, and the plurality of
flavor delivery inserts are individually combinable with the plurality of cigarettes.

15 12. The tobacco product of claim 11, wherein the carrier is an insert for disposal in a filter of a
respective cigarette.

13. The tobacco product of claim 8, wherein the carrier comprises at least one of a breakable capsule, a
pellet, a filament, a fiber, paper, and cellulose.

20

14. The tobacco product of claim 8, wherein the package comprises a tin and the tobacco article
comprises at least one smokeless tobacco product.

15. The tobacco product of claim 8, wherein the package comprises a tank, and the tobacco article
25 comprises e-liquid.

16. A flavor additive accessory for use with a tobacco product, comprising:
a packet; and
a plurality of flavor delivery inserts, each insert comprising:

30

a carrier; and

a flavor material included in and releasable from the carrier;

wherein each flavor delivery insert is adapted for delivery of the flavor material to a respective
tobacco product by combining the flavor delivery insert with the tobacco product or a package containing
the tobacco product.

35

17. The flavor additive accessory according to claim 16, wherein the carrier comprises at least one of a
filter, a breakable capsule, a pellet, a glue, a filament, a fiber, paper, and cellulose.

18. The flavor additive accessory according to claim 16, wherein the plurality of flavor delivery inserts comprise at least two different flavor materials selected from the group comprising tobacco extract, sweeteners, vanilla, coffee, tea, chocolate, cream, mint, spearmint, menthol, peppermint, wintergreen,
5 lavender, cardamom, nutmeg, cinnamon, clove, cascarilla, sandalwood, honey, maple, jasmine, ginger, anise, sage, licorice, lemon, orange, apple, peach, lime, cherry, and strawberry.

19. The flavor additive accessory according to claim 16, further comprising instructions for combining one of the plurality of flavor delivery inserts with the tobacco product or the package containing the tobacco
10 product.

1/6

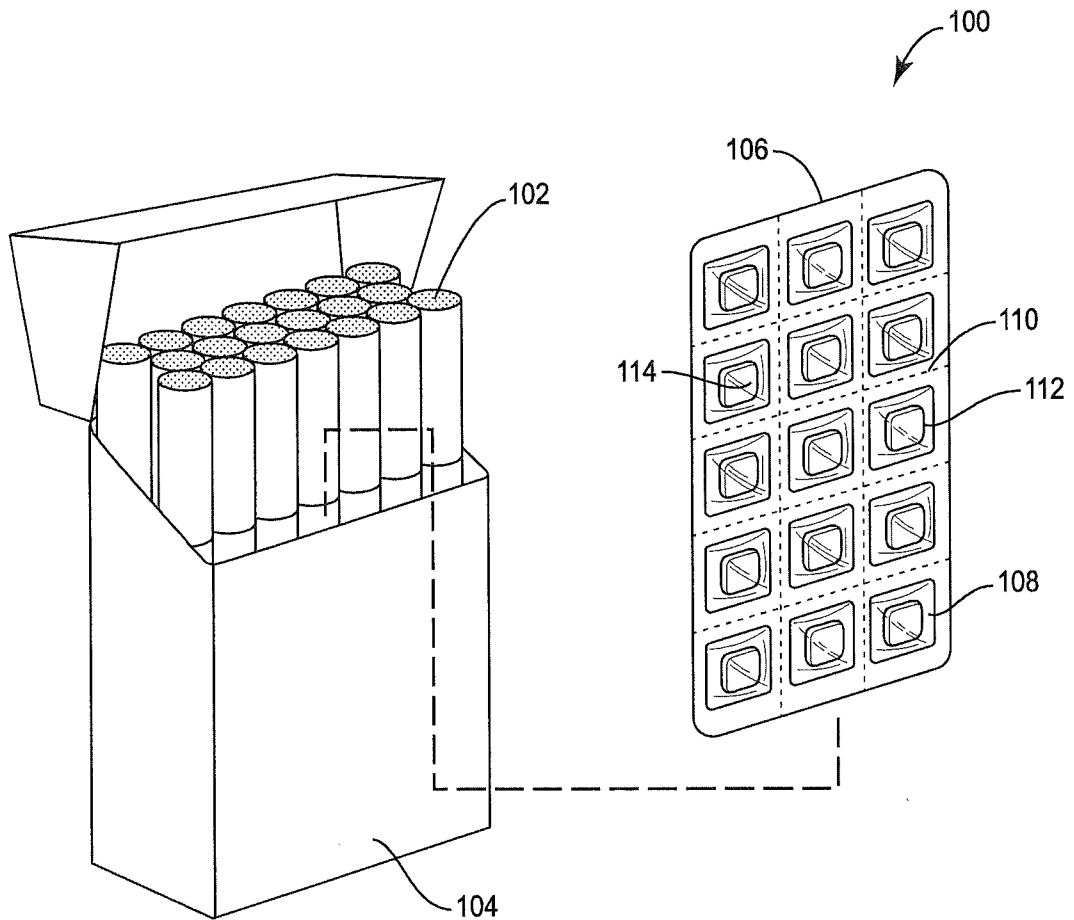


FIG. 1

2/6

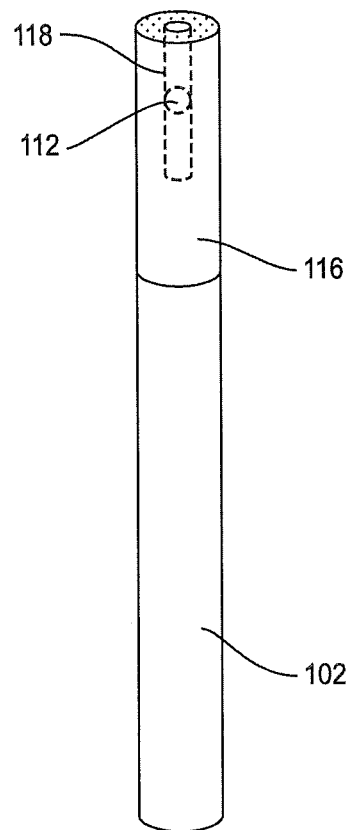


FIG. 2

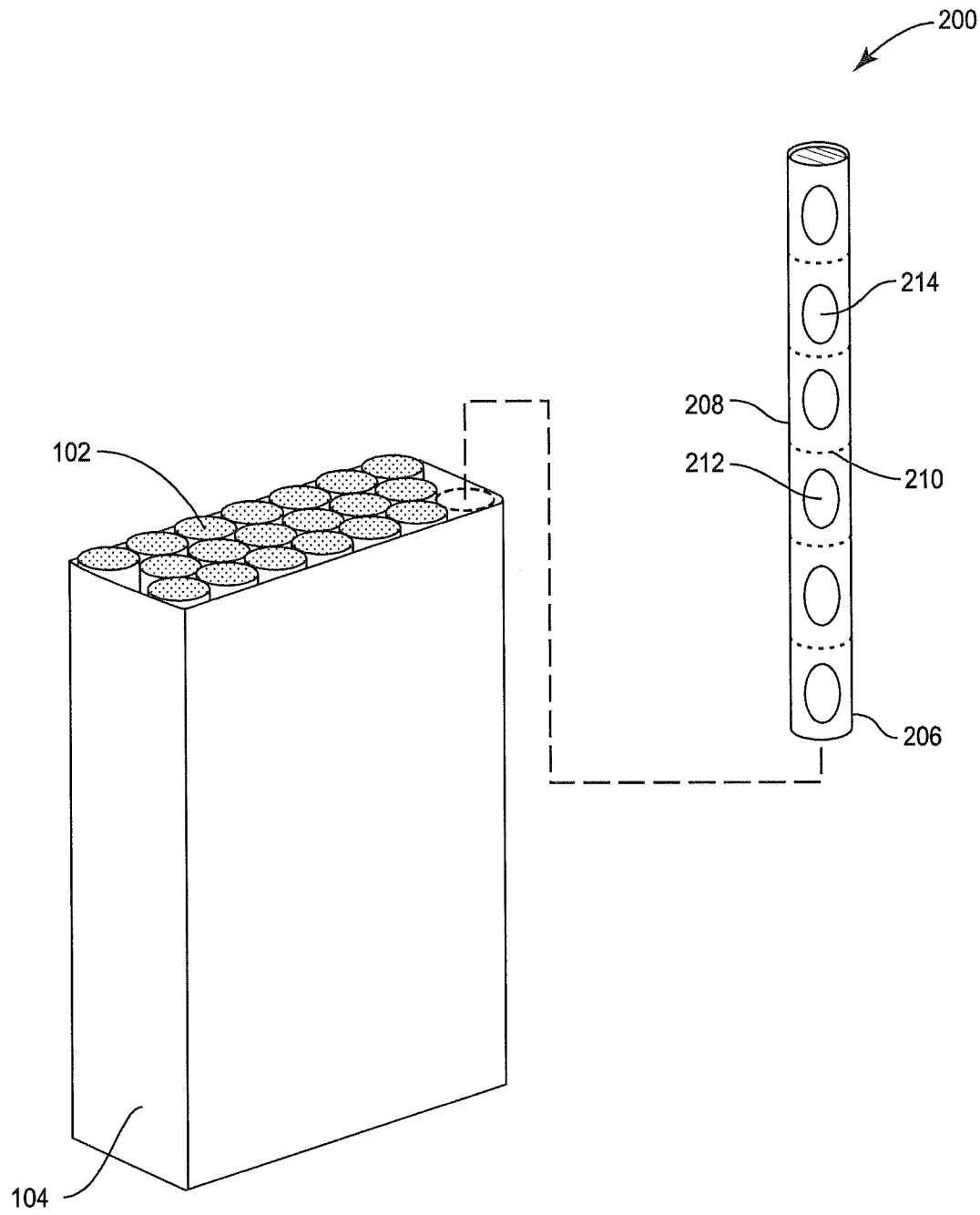


FIG. 3

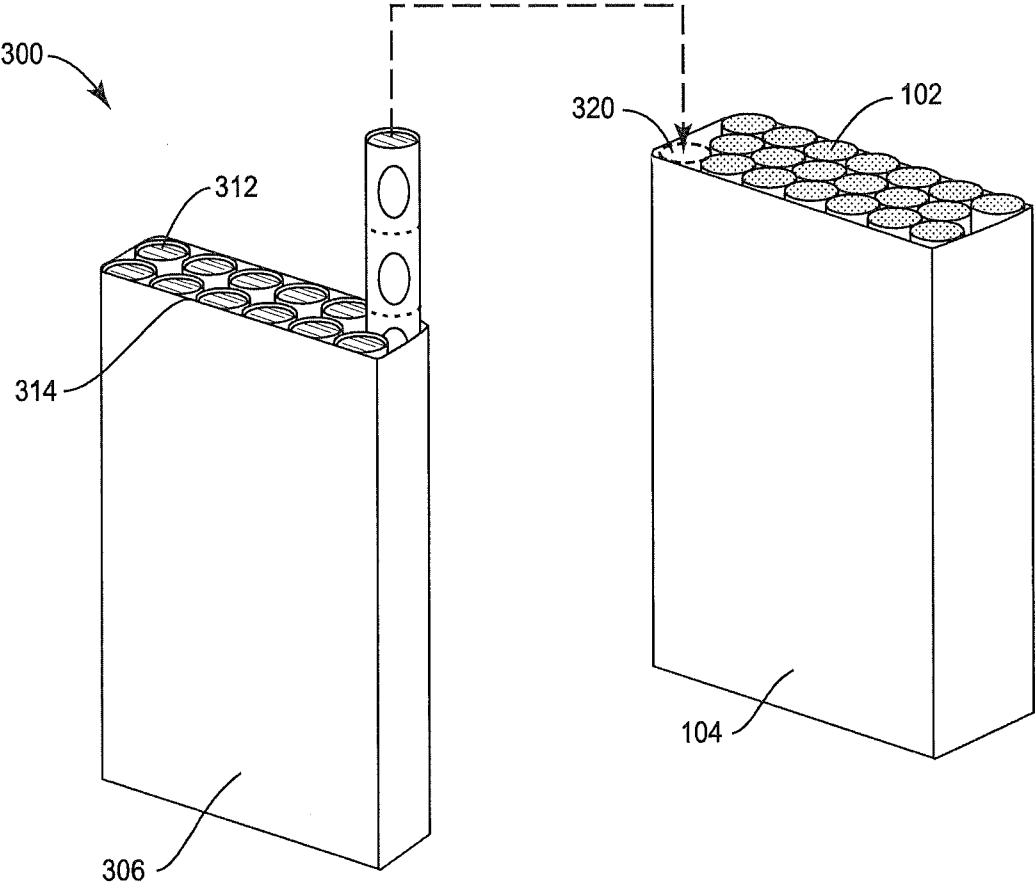


FIG. 4

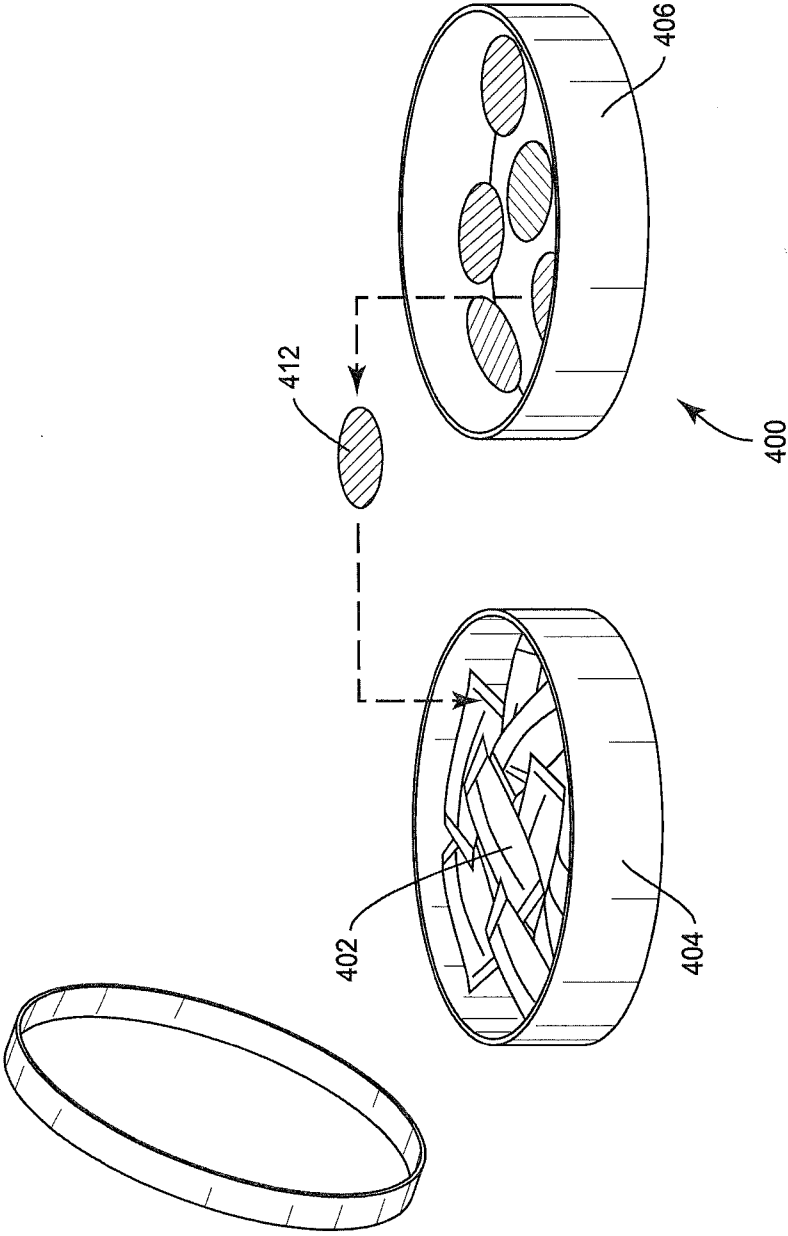


FIG. 5

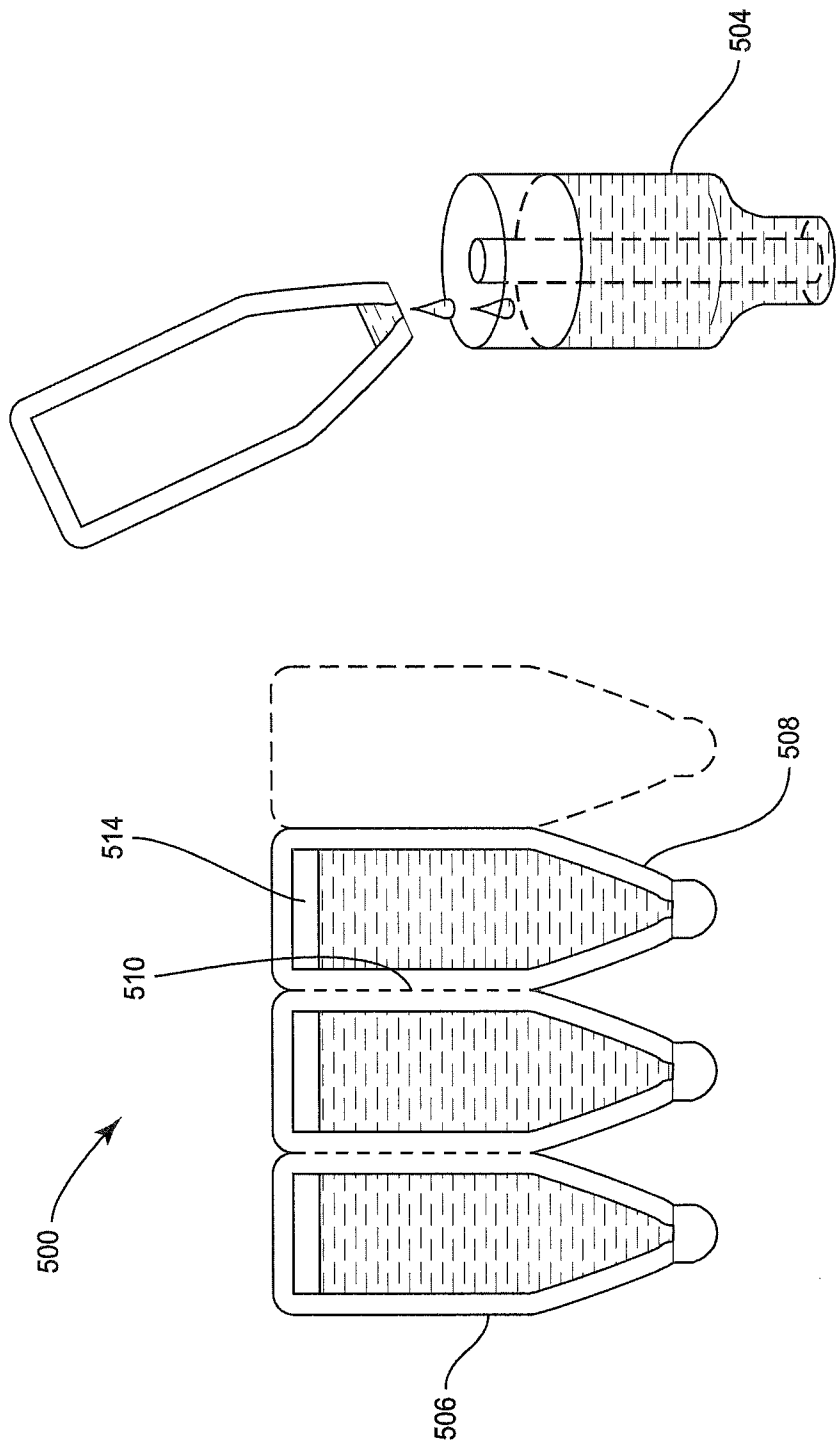


FIG. 6

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2016/057590

A. CLASSIFICATION OF SUBJECT MATTER
INV. A24D3/06
ADD.

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A24D

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

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EP0-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2009/092823 A1 (BRITISH AMERICAN TOBACCO CO [GB]; BLICK KEVIN [JP]; POTTER DENNIS LEE) 30 July 2009 (2009-07-30) the whole document -----	1,2, 5-11,13, 16-19
A	US 2015/013693 A1 (FUISZ RICHARD C [US] ET AL) 15 January 2015 (2015-01-15) the whole document -----	1-19
A	WO 2012/156708 A1 (BRITISH AMERICAN TOBACCO CO [GB]; RUSSELL DAVID MORRISON [GB]; SCHOENM) 22 November 2012 (2012-11-22) the whole document -----	1-19



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

29 May 2017

Date of mailing of the international search report

07/06/2017

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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