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Description

FIELD

[0001] This invention relates, among other things, to an additive-containing member.

BACKGROUND

[0002] Filter elements for smoking articles such as cigarettes typically comprise a plug of cellulose acetate material surrounded by a plugwrap wrapper. In cigarette manufacture, filter elements are aligned with tobacco rods and wrapped with a further wrapper known as a "tipping paper" to join them together.

[0003] It is known to provide a breakable menthol-containing capsule inside the plug of a cigarette filter. By applying pressure to the outside of the filter, the smoker may break the capsule, thereby releasing the flavourant so as to flavour the smoke drawn from the cigarette.

[0004] WO2010/003899 describes a method of manufacturing capsule-containing cigarette filter rods in which an elongate tube containing a plurality of capsules is pulled from a reel into a flow of filter tow to form an elongate filter rod, which is then cut into segments to form individual capsule-containing filter rods.

[0005] US3390686 describes a tobacco smoke filter element with frangible capsules of liquid that can be breached upon the application of force to introduce smoke-treating liquid into the path of smoke drawn through the filter element.

SUMMARY

[0006] In accordance with embodiments of the invention, there is provided an additive-containing member having first and second regions, the second region comprising a predetermined region having a reduced strength limit relative to the first region so that the predetermined region is caused to break when pressure is applied to the additive-containing member, thereby to release additive on compression of the additive under the pressure, wherein the predetermined region is at a seal between two parts of the additive-containing member, and wherein the predetermined region is a corner region.

[0007] The two parts of the additive containing member may be substantially parallel planar parts.

[0008] The predetermined region may be substantially linear.

[0009] The additive-containing member may be formed from a polymeric material such as polyvinyl alcohol (PVOH) or polyethylene (PE).

[0010] There may be provided an arrangement of smoking article additive-containing members, comprising a plurality of additive-containing members and an elongate connecting member connecting the additive-containing members together, wherein the plurality of additive-containing members comprises the above addi-

tive-containing member.

[0011] In accordance with embodiments of the invention, there is provided an arrangement of smoking article additive-containing members, comprising a plurality of additive-containing members and an elongate connecting member connecting the additive-containing members together, wherein said plurality of additive-containing members comprises an additive-containing member having first and second regions, the second region comprising a predetermined region having a reduced strength limit relative to the first region so that the predetermined region is caused to break when pressure is applied to the additive-containing member, thereby to release additive.

[0012] An edge of the additive-containing member may be formed at an acute angle to the length of the elongate member, thereby to define the predetermined region.

[0013] The elongate member may comprise a tape.

[0014] The elongate member may be formed of two layers sealed together to form pocket regions for containing additive.

[0015] There may be provided a filter rod for use in the manufacture of smoking articles, comprising a segment of the above arrangement, wherein the segment includes one or more additive-containing members.

[0016] There may be provided a smoking article filter having a mouth end and a tobacco end, comprising the above additive-containing member or the above arrangement thereof, wherein the predetermined region is formed to direct additive towards a predetermined region of the filter.

[0017] The predetermined region may be formed to direct additive exclusively towards one of the tobacco end or the mouth end of the filter.

[0018] The predetermined region may be formed so as to direct additive towards the side of the filter.

[0019] The additive-containing member may be surrounded by filter material.

[0020] The smoking article filter may comprise a first additive-containing member containing a first additive and a second additive-containing member containing a second additive different to the first additive.

[0021] Preferably, the elongate member has a width of between 3 and 9 mm and the pocket regions have a width of between 1 and 6 mm.

[0022] The additive-containing members preferably releasably contain one or more additives. Preferably, each additive-containing member comprises an outer wall encapsulating an inner space for additive.

[0023] The elongate member preferably connects the additive-containing members together. The connection may be direct or indirect. The elongate connecting member may comprise a strip having two laterally extending surfaces defining first and second sides. The additive-containing members may comprise pockets formed in the strip.

[0024] Preferably, the elongate member is formed from a polymeric material such as a PVOH, PE, SCMC or HP-

MC. Using a polymeric material leads to advantages in terms of long shelf life, low crush strength requirement, low cost, and robustness against freezing/thawing which may occur in the supply chain.

[0025] Preferably, the elongate member is a continuous strip formed of two polymeric layers. Alternatively, starches may be used to form the strip.

[0026] As used herein, the term "smoking article additive" refers to any substance that may be suitably added to a smoking article. Many different additives are envisaged, including solid additive(s) such as tobacco (e.g.: ground fire-cured tobacco). However, fluid additive(s) are preferred. Possible additives include smoke-modifying agents such as flavourants, humectants or adsorbents. Preferably, each additive-containing member contains between 10 and 100 µl of additive.

[0027] As used herein the term fluid includes any substance which flows and therefore includes liquids, gases and solids (e.g. in powder or granule or grain form, or plastic solids or mixtures thereof) which are able to flow.

[0028] As used herein, the terms "flavour" and "flavourant" refer to materials which, where local regulations permit, may be used to create a desired taste or aroma in a product. They may include extracts e.g., licorice, hydnangea, Japanese white bark magnolia leaf, chamomile, fenugreek, clove, menthol, Japanese mint, aniseed, cinnamon, herb, wintergreen, cherry, berry, peach, apple, Dramboui, bourbon, scotch, whiskey, spearmint, peppermint, lavender, cardamon, celery, cascarilla, nutmeg, sandalwood, bergamot, geranium, honey essence, rose oil, vanilla, lemon oil, orange oil, cassia, caraway, cognac, jasmine, ylang-ylang, sage, fennel, piment, ginger, anise, coriander, coffee, or a mint oil from any species of the genus *Mentha*, flavour masking agents, bitterness receptor site blockers, receptor site enhancers, sweeteners e.g., sucralose, acesulfame potassium, aspartame, saccharine, cyclamates, lactose, sucrose, glucose, fructose, sorbitol, or mannitol, and other additives such as chlorophyll, minerals, botanicals, or breath freshening agents. They may be imitation, synthetic or natural ingredients or blends thereof. They may be in any suitable form, for example, oil, liquid, or powder.

[0029] As used herein, the term "smoking article" includes smokable products such as cigarettes, cigars and cigarillos whether based on tobacco, tobacco derivatives, expanded tobacco, reconstituted tobacco or tobacco substitutes and also heat-not-burn products. The smoking article may be provided with a filter for the smoke drawn from the smoking article. Various filter dimensions are possible. For example, typical filter sizes are a diameter of between 4 and 8mm and a length of between 22 and 27 mm

[0030] The invention also provides a filter rod for use in the manufacture of smoking articles, comprising a segment of any of the arrangements referred to herein.

[0031] The invention also provides a filter rod comprising an additive-containing member to selectively release additive inside the filter, and an additive-transfer member

to transfer additive released from the additive-containing member to the periphery of the filter to indicate that the additive has been released.

[0032] The invention also provides an additive-containing member having first and second regions, the second region comprising a predetermined region having a reduced strength limit relative to the first region so that the predetermined region is caused to break when pressure is applied to the additive-containing member, thereby to release additive.

[0033] The predetermined region may be formed to direct additive exclusively towards one of the tobacco end or the mouth end of the filter.

[0034] Alternatively, or in addition, the predetermined region may be formed to direct additive towards the side of the filter. In this way, the additive, for example additive comprising a colourant, may reach the periphery of the filter so that a visual indication is provided to the user that the additive has been released.

BRIEF DESCRIPTION OF THE DRAWINGS

[0035] Embodiments of the invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

Figure 1 shows a tape having a plurality of sealed pockets having weakened regions spaced along its length;

Figure 2 is a schematic showing a filter cigarette having a cut section of the tape disposed inside the filter; Figure 3 is a schematic illustrating rupturing of a pocket by squeezing the outside of the filter, wherein the weakened region directs additive towards the tobacco end of the filter cigarette;

Figure 4 is a schematic illustrating rupturing of a pocket by squeezing the outside of the filter, wherein the weakened region directs additive towards the mouth end of the filter cigarette;

Figure 5 is a schematic illustrating a method of manufacturing a tape having a plurality of sealed pockets with weakened regions spaced along its length;

Figure 6a is a schematic illustrating a further example of a section of tape inside a cigarette filter;

Figure 6b is a schematic illustrating rupturing of two pockets by squeezing the outside of the filter;

Figure 7 shows a further example of an additive release component having a weakened region;

Figure 8 shows a further example of an additive release component having a weakened region, wherein (a) is a perspective view, (b) is an end view, (c) is a sectional view along the line AA' shown in (b) and (d) is a sectional view along the line BB' shown in (b).

DESCRIPTION OF EMBODIMENTS

[0036] Figure 1 shows a tape 1 having a plurality of additive-containing members in the form of sealed pock-

ets 2 spaced along its length. Each pocket 2 has an inner space containing an additive. The tape and pockets may be formed from a flexible polymeric material such as Polyvinyl alcohol (PVOH) or polyethylene (PE).

[0037] As illustrated in Figure 2, a cut section 1a of the tape 1 may be positioned within the cellulose acetate plug of the filter 3 of a cigarette 4. By applying pressure to the outside of the filter 3, the smoker can cause the pocket 2 to rupture so as to release its additive. In this way, the smoker may cause the smoke drawn from the cigarette 4 to be selectively flavoured.

[0038] The tape 1 is provided with a weakened corner region 5 at one end of the pocket 2. As illustrated in the example shown in Figure 3, the pocket breaks in weakened corner region 5 when pressure is applied to the outside of the filter 3. In the example of Figure 3, the pocket 2 includes a smoke modifying agent (e.g. water, triacetin, or a flavourant) and the weakened corner region 5 is configured to direct the smoke modifying agent towards the tobacco rod of the cigarette 4. This is particularly advantageous in filters in which smoke flow is slower nearer the tobacco end than nearer the mouth end, which may for example be the case if ventilation holes are provided near the mouth end. In this case directing smoke modifying agent towards the mouth end provides increased interaction time between the smoke modifying agent and the smoke.

[0039] Alternatively, as shown in Figure 4, each pocket 2 is provided with a weakened corner region 5 on the mouth end region of the pocket rather than on the tobacco end region. In the example of Figure 4, a smoke modifier in the form of a flavourant is contained in the pocket 2. Thus, the pocket 2 of Figure 4 is configured to direct flavourant towards the mouth end of the cigarette 4. This results in the flavourant being released near the mouth end for maximum flavour.

[0040] A horizontal or vertical form, fill, seal method may be used to manufacture the tape 1. The tape 1 may be formed from two or more polymeric layers which are sealed together such that the non-sealed areas form the pockets 2. Heat-sealing, ultrasonic sealing, water bonding or any other suitable process may be used to form the seals.

[0041] The weakened corner regions 5 of the tape 1 may be formed in a modified vertical form, fill, seal method. The seal step in particular may be modified to provide the pocket 2 with a transverse edge which makes an acute angle with the longitudinal axis of the filter 3, thereby to provide a weakened corner region 5.

[0042] Figure 5 illustrates a method of manufacturing the tape 1.

[0043] At step A, cavities 7 are formed in a first layer 6. This forming may involve causing the first layer 6 to adopt to the shape of a mould (not shown) which is under vacuum. The cavities 7 protrude from one side (e.g. the lower side) of the layer 6. The cavities 7 are shaped such that they have a transverse edge which makes an acute angle with the longitudinal axis of the first layer 6. At step

B, the cavities 7 are filled with additive 8. At step C, a second layer 9 is positioned on the first layer 6 on the opposite side (e.g. the upper side) from the side from which the cavities 7 protrude. At step D, the layers 6, 9 are sealed to each other, e.g. using heat sealing. A sealed area 10 is formed around each of the cavities 7, thus forming the pockets 2 in the tape 1.

[0044] Alternative methods of manufacturing the tape 1 may be used.

[0045] For example, the cavities may be regularly shaped, e.g. with transverse edges that are perpendicular to the longitudinal axis of the first layer. In this case, the part of the sealed area between the pockets may be provided with a transverse edge which makes an acute angle with the longitudinal axis of the tape.

[0046] Other examples of tapes having a weakened sealing region may also be manufactured using a similar method.

[0047] For example, unsealed areas may be provided between the pockets such that there is a narrower sealed area at a transverse edge of each pocket than there is at the longitudinal edges of each pocket. When pressure is applied to the pocket, the layers of the tape come apart in this narrower sealed area and the pocket ruptures.

[0048] Alternatively, a sealed area at a longitudinal edge of each pocket may be made sufficiently narrow that the layers of the tape come apart in this area.

[0049] In either case, a sealed area may be made weaker by including therein one or more unsealed areas.

[0050] For example, a sealed area may include a narrow unsealed area ("line") passing therethrough in a direction perpendicular to the edge of the pocket. The line is sufficiently narrow that the additive cannot pass therethrough but makes it easier for the layers of the tape to come apart. The strength of the seal could also be controlled by varying, for example, the temperature of the sealing unit.

[0050] The tape 1 may be wound onto a reel and then drawn from the reel into a flow of filter tow passing through a filter rod maker, so as to be incorporated into an elongate filter rod. The cutter of the filter maker then cuts the elongate filter rod into segments to form individual filter rods, each containing one or more pockets 2. This filter manufacturing process is substantially similar to that described in WO2010/003899, but with the elongate capsule-containing tube of WO2010/003899 replaced by the tape 1.

[0051] Therefore, the methods described above facilitate the positioning of the pocket 2 and its weakened region 5 in the filter 3.

[0052] In some examples, a part of the tape 1 along a longitudinal edge of the tape 1 may be folded back and sealed to the tape 1. This can have the effect of reducing the longitudinal tensile stretch and increasing the longitudinal tensile strength of the tape 1. This in turn can facilitate the handling of the tape 1 during manufacture, for example when the tape 1 is wound onto and subsequently drawn from the reel.

[0053] Figure 6a shows a further example of a section 11a of tape 11 positioned within the cellulose acetate plug of the filter 13 of a cigarette 14. The section 11a includes a first fluid-containing pocket 12a and a second fluid-containing pocket 12b. The pair of pockets 12a, 12b have the same longitudinal disposition along the tape 11. As shown in Figure 6b, the pockets 12a, 12b are positioned so that applying squeezing finger-pressure to the outside of the filter causes both pockets 12a, 12b to break simultaneously so as to simultaneously release both fluid additives. Weakened regions (not shown) in each of the pockets may direct the smoke modifying agent towards the tobacco rod and/or the mouth end of the cigarette, wherein the direction may depend upon the type of additive as described above.

[0054] The tape 11 may be manufactured and included in the filter 13 using similar methods to those described above.

[0055] Figure 7 shows a further example of an additive release component 15. The additive release component 15 is a substantially elongate tube, and preferably has a substantially circular or elliptical cross-section.

[0056] The additive release component 15 may be substantially tubular with curved ends. A flange 16 may extend at the curved ends, which may comprise excess material for forming the outer shell.

[0057] The additive release component 15 comprises a line of weakening 17. The line of weakening extends longitudinally, preferably extends substantially the whole length of the additive release component 15. The additive release component 15 may rupture only along the line of weakening, or may rupture initially at the line of weakening and immediately rupture over substantially the whole area of the additive release component 15. The line of weakening may be formed by a joint between two parts of the additive release component 15.

[0058] Additive release components 15 may be manufactured using a blow-fill-seal method or a bag-fill-seal method.

[0059] Figure 8 show a further example of an additive release component 20. The additive release component 20 includes a body 21 and an additive 22. The additive 22 may include a fluid, a powder or any other suitable additive material. The body 21 is formed from a flexible material, preferably a polymeric material such as Polyvinyl alcohol (PVOH). The body 21 includes a tubular section 21a having a first end section 21b at one of its ends and a second end section 21c at the other of its ends. The sections 21a, 21b and 21c together form a container for the additive 22.

[0060] The first end section 21b includes an end wall which closes one end of the tubular section 21a. This end wall is preferably rounded. The tubular section 21a may be substantially cylindrical towards the first end section 21b and the first end section 21b may include a substantially hemispherical end wall, as shown in the figure.

[0061] The walls of the tubular section 21a are distorted to form a closure at the second end section 21c. Pref-

erably, wall sections corresponding to two opposing halves of the tubular section 21a are flattened and brought into contact, wherein the area of contact is a substantially flat rectangular area. The two wall sections may be joined together in any suitable way, as will be explained below.

[0062] The additive release component 20 can be made by the following process. The unsealed body, i.e. the body 21 without the second end section 21c, is first moulded using any suitable process. The un-sealed body is then filled with the additive 22. This may involve holding the un-sealed body vertically with its open end facing upwards. The un-sealed body is then sealed by distorting and then joining together walls sections of the tubular section 21a, thereby forming the second end section 21c. The wall sections may be joined together by heat sealing, ultrasonic welding, water bonding or any other suitable process.

[0063] In use, the additive release component 20 is adapted to contain the additive 22 until such time as it is released by the smoker. In response to pressure applied to the component 20, for example by the smoker squeezing the outside of a filter in which it is included, the component 20 is adapted to rupture in the second end section 21c. In particular, the sealing between the walls sections is adapted to partly or fully break. The additive 22 is then forced out of the component 20 through the ruptured second end section 21c. The component 20 can be aligned with the longitudinal axis of the filter and can have weakened regions at either end so that the additive 22 is released towards either the tobacco end or the mouth end of the filter.

[0064] The additive release components 16, 20 may be connected by an elongate member, for example as described in WO2010/003899, or they may be attached to a tape with adhesive. A filter may then be manufactured using a similar method to that described above. Alternatively, the additive release components 16, 20 may be included directly in the filter.

[0065] Many further modifications, variations and embodiments are possible.

[0066] For example, the additive-containing member may have any suitable shape.

[0067] Further, although insertion of additive-containing members into filter rods is described above, in other examples additive-containing member(s) may be positioned elsewhere in or on a smoking article, for example on the periphery of the smoking article or inside the tobacco rod. In some examples a tape 1, 11 may be configured as a tear-off strip or as a plug wrap or a tipping paper for use in the manufacture of smoking articles.

[0068] Furthermore, although additive-containing members in the form of additive-containing pockets are described above, in some examples additive-containing members may alternatively or in addition comprise flavour-pellets or beads, for example, or other solid objects which have one or more additive components.

[0069] Further, although the additive-containing pock-

ets discussed above release additive under pressure, alternate release not according to the claimed invention are also envisaged. For example, certain additive-containing members outside the scope of the invention may release additive by dissolving in response to the presence of moisture. In this way, when smoke is drawn from the eventual smoking article, moisture in the smoke may cause the additive to be released.

[0070] The terms additive release component and additive-containing member are used interchangeably herein.

[0071] The additive release components may be capsules having an outer shell, containing additive fluid (liquid or powder) in an interior cavity. The outer shell of each additive release component is frangible to release all of the additive on application of pressure.

[0072] The filter may comprise a reaction surface against which the additive release component can be urged, in order to facilitate release of additive. In particular, the additive release components may be located on a periphery of the filter. The radially adjacent filtration material may provide a reaction surface against which the additive release component can be urged. Preferably, the filtration material may be relatively hard (e.g. by containing an increased amount of plasticiser) to form the reaction surface, and may have a hardness on the Filtrona scale of more than 90%. The additive release components may be located within the filtration material, or may be located in a cavity adjacent to the filtration material. The cavity may be formed by an elongate inner rod of filtration material, which one or two annular outer sections of filtration material surround. A covering layer forming an exterior of the filter is attached to one or both of the outer sections of filtration material, and spaced from the inner rod to define a cavity. Preferably, the inner rod is harder than the annular outer sections, optionally by containing more plasticiser.

[0073] Alternatively, each additive release component may release its additive contents in a plurality of discrete doses, preferably actuated by a plurality of separate applications of pressure. This type of additive release component may comprise a resiliently or plastically deformable outer shell, preferably configured to release additive through a slit formed in a pre-determined area. Alternatively, this type of additive release components may comprise a porous absorbent substrate having an open cell structure (e.g. open cell foam), in which the additive is contained. The substrate may be at least partially resiliently deformable. The substrate is surrounded by an outer shell to retain the additive, which may be frangible, resiliently deformable, plastically deformable, or a thin coating. The substrate may form discrete additive release components, or may be in the form of an annulus in the first filter section. Alternatively, this type of additive release component may comprise a porous matrix containing the additive in discrete cavities and having a closed cell structure (e.g. closed cell foam), which is plastically deformable to release the additive.

[0074] The additive release components may be individually attached to the filter or substrate. Alternatively, the additive release components may be connected by a web, and may be connected by laminated strips of sheet material. Alternatively, the strips of sheet material may form the additive release components, such that the additive release components do not have a separate outer shell, and the strips of sheet material contain the additive.

[0075] The additive release components may be manually manipulated to release the additive or a movable part may be configured such that movement of the movable part around an exterior of the smoking article releases additive from at least one of the additive release components. The movement is preferably sliding or rotation, by a ring or C-shaped clip, over an external surface of the filter. The filter may provide a reaction surface, against which the additive release components are urged by the movable part.

[0076] The additive release components may be located in one or more grooves, extending circumferentially, longitudinally or helically. Alternatively, the movable part comprises a covering layer defining two adjacent surfaces, wherein the additive release components are located between the adjacent surfaces such that relative movement of the adjacent surfaces of the covering layer releases additive from at least one of the additive release components.

[0077] The additive release components are preferably spherical. Alternatively, the additive release components may be elongate, with a longitudinal axis extending parallel to a longitudinal axis of the filter. The elongate additive release component preferably has a circular or elliptical cross-section, and contain more additive than an additive release component of the same diameter. The elongate additive release component preferably has a maximum lateral extent of less than 3.5mm, or less than 3mm, or from 2mm to 3mm. Alternatively, or in addition, the elongate additive release component may have a radial cross-sectional area which is less than 50% of the radial cross-sectional area of the smoking article, and optionally, less than 40% or less than 30%.

[0078] The additive release components are preferably individually located in the smoking article. Alternatively, a plurality of the additive release components may be surrounded by an outer wall or outer encapsulation. The outer encapsulation may be porous or configured to rupture or deform to allow release of additive on compression. The outer encapsulation may itself be contained within a further encapsulation. The additive may be contained within a plurality of discrete cavities within an open cell substrate, or a closed cell substrate. The open cell substrate, and optionally the closed cell substrate, have an outer encapsulation. One or more additive release components may be affixed to an exterior of a substantially larger additive release component. Alternatively, a plurality of additive release components, of the same or different sizes, may be affixed together. Any of these embodiments may be considered as a plurality of

components connected in a unitary structure.

[0079] Embodiments of the invention are configured to comply with applicable regulations, such as, by way of non-limiting example, regulations relating to flavours, additives, emissions, constituents, and/or the like. For example, the invention may be configured such that a smoking article implementing the invention is compliant with applicable regulations before release of an additive, after release of a first additive, and remains compliant after the release of one or more additional additives.

[0080] In order to address various issues and advance the art, the entirety of this disclosure shows by way of illustration various embodiments in which the claimed invention(s) may be practiced and provide for superior additive-containing members. The advantages and features of the disclosure are of a representative sample of embodiments only, and are not exhaustive and/or exclusive. They are presented only to assist in understanding and teach the claimed features. It is to be understood that advantages, embodiments, examples, functions, features, structures, and/or other aspects of the disclosure are not to be considered limitations on the disclosure as defined by the claims.

Claims

1. A smoking article additive-containing member (20) having first and second regions, the second region comprising a predetermined region having a reduced strength limit relative to the first region so that the predetermined region is caused to break when pressure is applied to the additive-containing member (20), thereby to release additive (22) on compression of the additive under the pressure, wherein the predetermined region is at a seal between two parts of the additive-containing member, and wherein the predetermined region is a corner region (5).
2. A smoking article additive-containing member (20) as claimed in claim 1, wherein the two parts of the additive containing member are substantially parallel planar parts.
3. A smoking article additive-containing member as claimed in claim 1 or 2, wherein the predetermined region is substantially linear.
4. A smoking article additive-containing member (20) as claimed in any preceding claim, wherein the seal comprises a weld between the two parts.
5. A smoking article additive-containing member as claimed in any preceding claim, formed from a polymeric material such as polyvinyl alcohol, PVOH, or polyethylene, PE.
6. An arrangement of smoking article additive-contain-

ing members, comprising a plurality of additive-containing members (16, 20) and an elongate connecting member connecting the additive-containing members together, wherein said plurality of additive-containing members (16, 20) comprises an additive-containing member as claimed in any preceding claim.

7. An arrangement as claimed in claim 6, wherein an edge of said additive-containing member is formed at an acute angle to the length of the elongate member, thereby to define said predetermined region.
8. An arrangement as claimed in claim 6 or 7, wherein the elongate member comprises a tape (1).
9. An arrangement as claimed in any one of claims 6 to 8, wherein the elongate member is formed of two layers sealed together to form pocket regions (2) for containing additive (22).
10. A filter rod (3) for use in the manufacture of smoking articles, comprising a segment of the arrangement claimed in any one of claims 7 to 10, wherein said segment includes one or more additive-containing members (16, 20).
11. A smoking article filter (3) having a mouth end and a tobacco end, comprising an additive-containing member (20) as claimed in any one of claims 1 to 6 or an arrangement thereof as claimed in any one of claims 7 to 10, wherein said predetermined region is formed to direct additive towards a predetermined region of the filter (3).
12. A smoking article as claimed in claim 11, wherein said predetermined region is formed to direct additive (22) exclusively towards one of the tobacco end or the mouth end of the filter (3).
13. A smoking article filter (3) as claimed in claim 11, wherein said predetermined region is formed so as to direct additive (22) towards the side of the filter (3).
14. A smoking article filter (3) as claimed in any one of claims 11 to 13, wherein said additive-containing member is surrounded by filter material.
15. A smoking article filter as claimed in any one of claims 11 to 14, comprising a first additive-containing member containing a first additive and a second additive-containing member containing a second additive different to the first additive.

Patentansprüche

1. Rauchartikeladditivhaltiges Element (20) mit einem

- ersten und einem zweiten Bereich, wobei der zweite Bereich einen vorbestimmten Bereich mit einer verringerten Festheitsgrenze im Vergleich zum ersten Bereich umfasst, sodass der vorbestimmte Bereich zum Brechen gebracht wird, wenn Druck auf das additivhaltige Element (20) ausgeübt wird, um dadurch Additiv (22) bei Kompression des Additivs unter dem Druck freizusetzen, wobei der vorbestimmte Bereich an einer Dichtung zwischen zwei Teilen des additivhaltigen Elements liegt und wobei der vorbestimmte Bereich ein Eckbereich (5) ist.
2. Rauchartikeladditivhaltiges Element (20) nach Anspruch 1, wobei die zwei Teile des additivhaltigen Elements im Wesentlichen parallele ebene Teile sind.
 3. Rauchartikeladditivhaltiges Element nach Anspruch 1 oder 2, wobei der vorbestimmte Bereich im Wesentlichen linear ist.
 4. Rauchartikeladditivhaltiges Element (20) nach einem der vorhergehenden Ansprüche, wobei die Dichtung eine Schweißnaht zwischen den beiden Teilen umfasst.
 5. Rauchartikeladditivhaltiges Element nach einem der vorhergehenden Ansprüche, gebildet aus einem Polymermaterial, wie Polyvinylalkohol, PVOH, oder Polyethylen, PE.
 6. Anordnung von rauchartikeladditivhaltigen Elementen, umfassend eine Vielzahl von additivhaltigen Elementen (16, 20) und ein längliches Verbindungselement, das die additivhaltigen Elementen miteinander verbindet, wobei die Vielzahl von additivhaltigen Elementen (16, 20) ein additivhaltiges Element nach einem der vorhergehenden Ansprüche umfasst.
 7. Anordnung nach Anspruch 6, wobei eine Kante des additivhaltigen Elements in einem spitzen Winkel zur Länge des länglichen Elements gebildet ist, um dadurch den vorbestimmten Bereich zu definieren.
 8. Anordnung nach Anspruch 6 oder 7, wobei das längliche Element ein Band (1) umfasst.
 9. Anordnung nach einem der Ansprüche 6 bis 8, wobei das längliche Element aus zwei Schichten gebildet ist, die miteinander versiegelt sind, um Taschenbereiche (2) zum Enthalten von Additiv (22) zu bilden.
 10. Filterstab (3) zur Verwendung bei der Herstellung von Rauchartikeln, umfassend ein Segment der Anordnung nach einem der Ansprüche 7 bis 10, wobei das Segment ein oder mehrere additivhaltige Elemente (16, 20) beinhaltet.
 11. Rauchartikelfilter (3) mit einem Mundende und einem Tabakende, umfassend ein additivhaltiges Element (20) nach einem der Ansprüche 1 bis 6 oder eine Anordnung davon nach einem der Ansprüche 7 bis 10, wobei der vorbestimmte Bereich so gebildet ist, dass er Additiv zu einem vorbestimmten Bereich des Filters (3) hin leitet.
 12. Rauchartikel nach Anspruch 11, wobei der vorbestimmte Bereich so gebildet ist, dass er Additiv (22) ausschließlich zum Tabakende oder zum Mundende des Filters (3) hin leitet.
 13. Rauchartikelfilter (3) nach Anspruch 11, wobei der vorbestimmte Bereich so gebildet ist, dass er Additiv (22) zur Seite des Filters (3) hin leitet.
 14. Rauchartikelfilter (3) nach einem der Ansprüche 11 bis 13, wobei das additivhaltige Element von Filtermaterial umgeben ist.
 15. Rauchartikelfilter nach einem der Ansprüche 11 bis 14, umfassend ein erstes additivhaltiges Element, das ein erstes Additiv enthält, und ein zweites additivhaltiges Element, das ein zweites Additiv enthält, das sich vom ersten Additiv unterscheidet.

Revendications

1. Élément contenant un additif pour article à fumer (20) comportant une première et une seconde région, la seconde région comprenant une région prédéterminée comportant une limite de résistance réduite par rapport à la première région de sorte que la région prédéterminée soit amenée à se briser lorsqu'une pression est appliquée sur l'élément contenant un additif (20), permettant ainsi de libérer l'additif (22) lors de la compression de l'additif sous la pression, dans lequel la région prédéterminée se trouve au niveau d'un joint entre deux parties de l'élément contenant un additif, et dans lequel la région prédéterminée est une région de coin (5).
2. Élément contenant un additif pour article à fumer (20) selon la revendication 1, dans lequel les deux parties de l'élément contenant un additif sont des parties planes sensiblement parallèles.
3. Élément contenant un additif pour article à fumer selon la revendication 1 ou 2, dans lequel la région prédéterminée est sensiblement linéaire.
4. Élément contenant un additif pour article à fumer (20) selon l'une quelconque des revendications précédentes, dans lequel le joint comprend une soudure entre les deux parties.

5. Élément contenant un additif pour article à fumer selon l'une quelconque des revendications précédentes, formé à partir d'un matériau polymère tel que l'alcool polyvinylique, PVOH, ou le polyéthylène, PE. 5
6. Agencement d'éléments contenant un additif pour article à fumer, comprenant une pluralité d'éléments contenant un additif (16, 20) et un élément de connexion allongé reliant les éléments contenant un additif les uns aux autres, dans lequel ladite pluralité d'éléments contenant un additif (16, 20) comprend un élément contenant un additif selon l'une quelconque des revendications précédentes. 10
7. Agencement selon la revendication 6, dans lequel un bord dudit élément contenant un additif est formé selon un angle aigu par rapport à la longueur de l'élément allongé, pour définir ainsi ladite région prédéterminée. 15
8. Agencement selon la revendication 6 ou 7, dans lequel l'élément allongé comprend une bande (1). 20
9. Agencement selon l'une quelconque des revendications 6 à 8, dans lequel l'élément allongé est formé de deux couches scellées ensemble pour former des régions de poches (2) destinées à contenir un additif (22). 25
10. Bâtonnet-filtre (3) destiné à être utilisé dans la fabrication d'articles à fumer, comprenant un segment de l'agencement selon l'une quelconque des revendications 7 à 10, dans lequel ledit segment comprend un ou plusieurs éléments contenant un additif (16, 20). 30
11. Filtre pour article à fumer (3) comportant une extrémité bouche et une extrémité tabac, comprenant un élément contenant un additif (20) selon l'une quelconque des revendications 1 à 6 ou un agencement de celui-ci selon l'une quelconque des revendications 7 à 10, dans lequel ladite région prédéterminée est formée pour diriger l'additif vers une région prédéterminée du filtre (3). 35
12. Article à fumer selon la revendication 11, dans lequel ladite région prédéterminée est formée pour diriger l'additif (22) exclusivement vers l'une de l'extrémité tabac ou de l'extrémité bouche du filtre (3). 40
13. Filtre pour article à fumer (3) selon la revendication 11, dans lequel ladite région prédéterminée est formée de manière à diriger l'additif (22) vers le côté du filtre (3). 45
14. Filtre pour article à fumer (3) selon l'une quelconque des revendications 11 à 13, dans lequel ledit élément contenant un additif est entouré d'un matériau fil- 50
15. Filtre pour article à fumer selon l'une quelconque des revendications 11 à 14, comprenant un premier élément contenant un additif contenant un premier additif et un second élément contenant un additif contenant un second additif différent du premier additif. 55

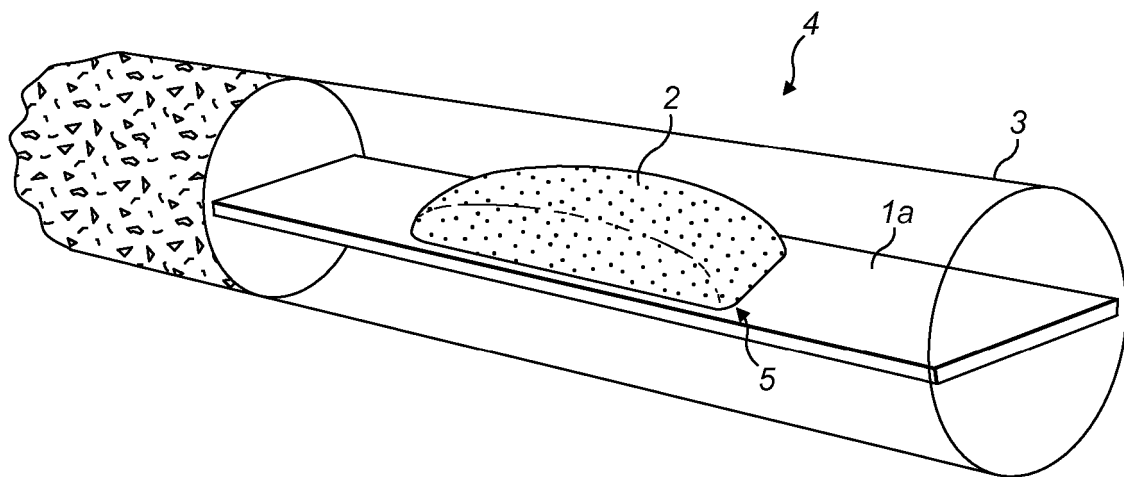
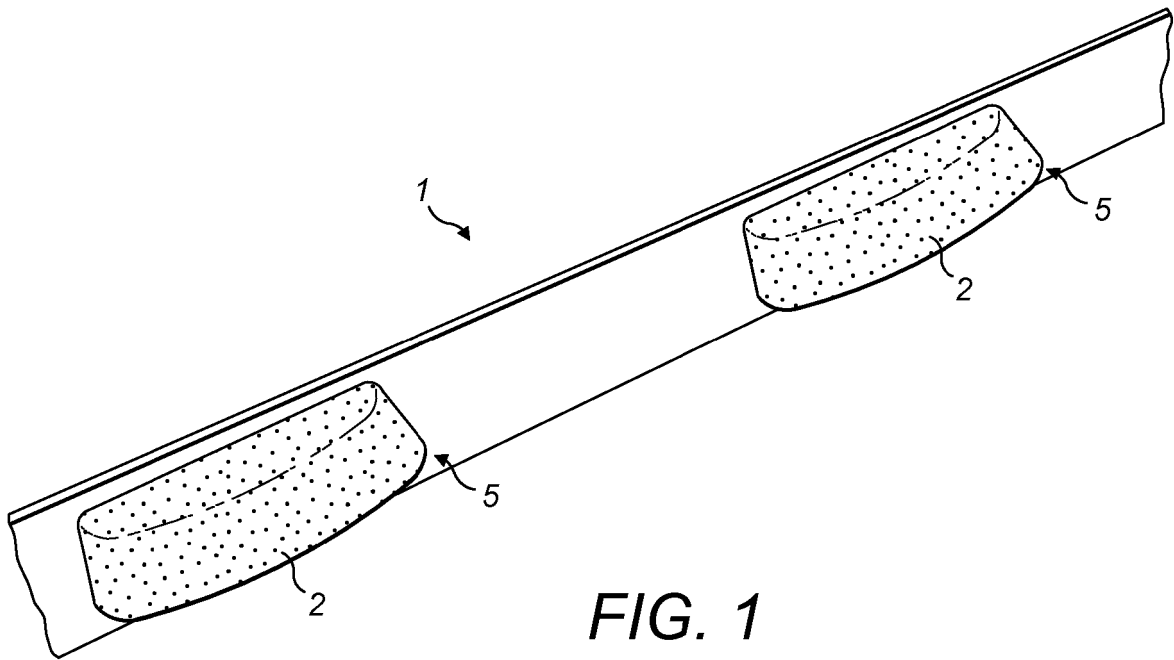


FIG. 2

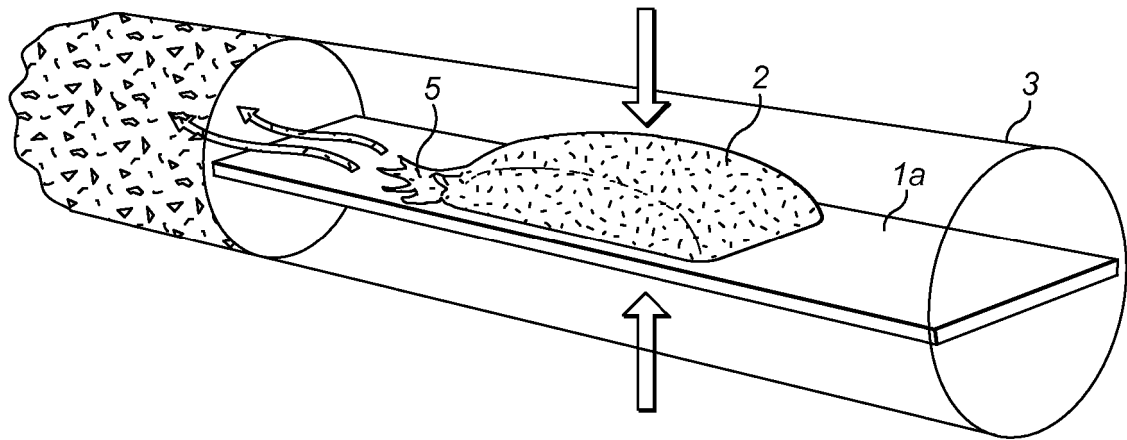


FIG. 3

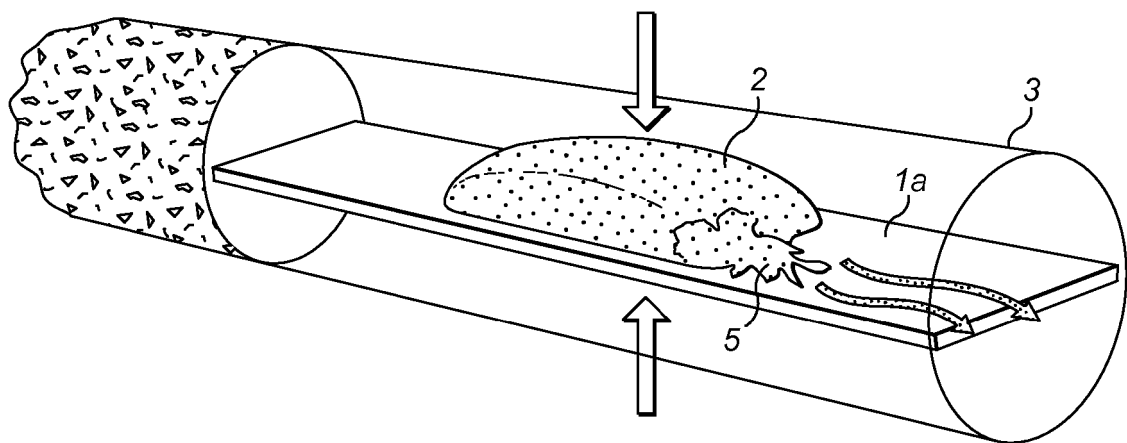


FIG. 4

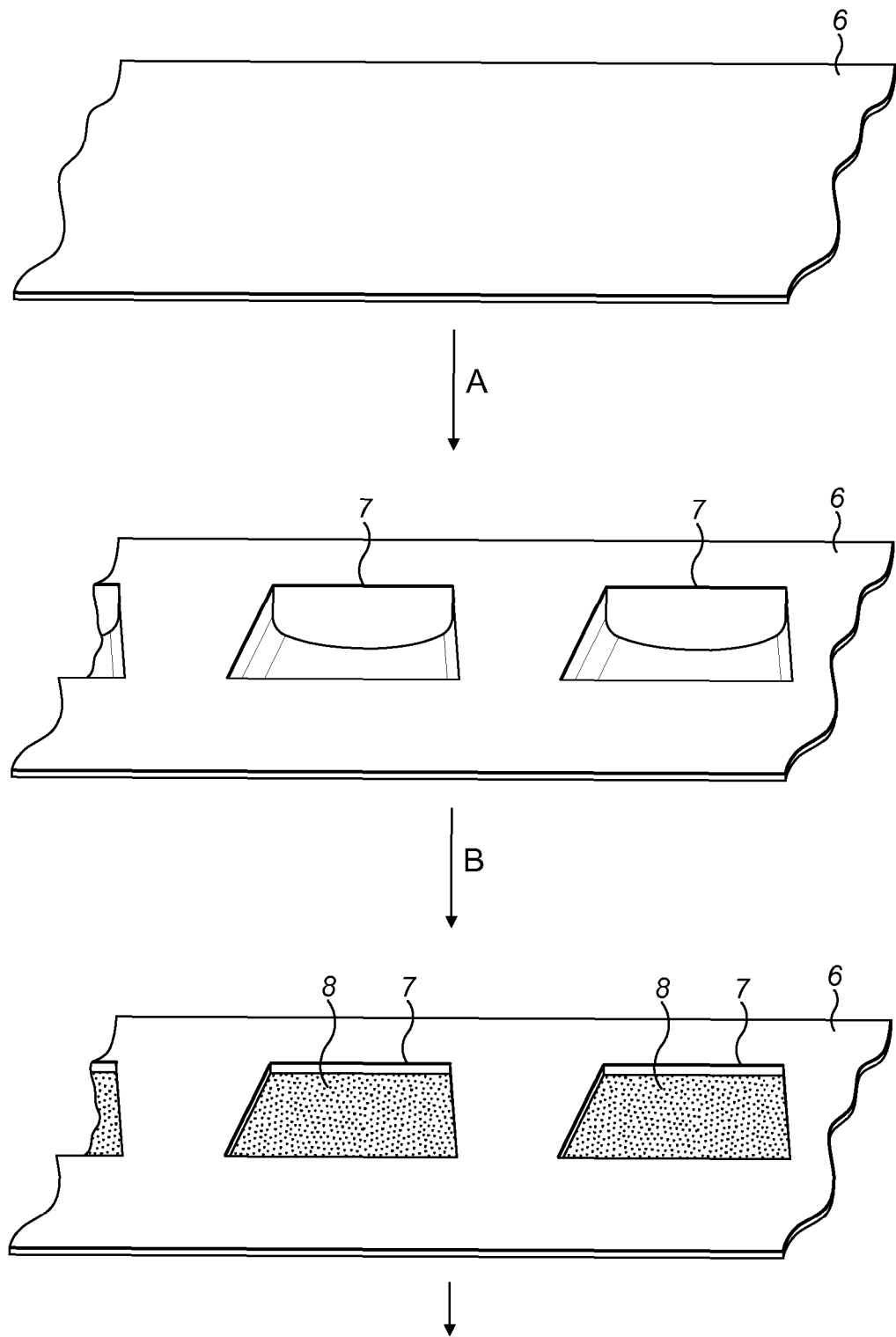


FIG. 5

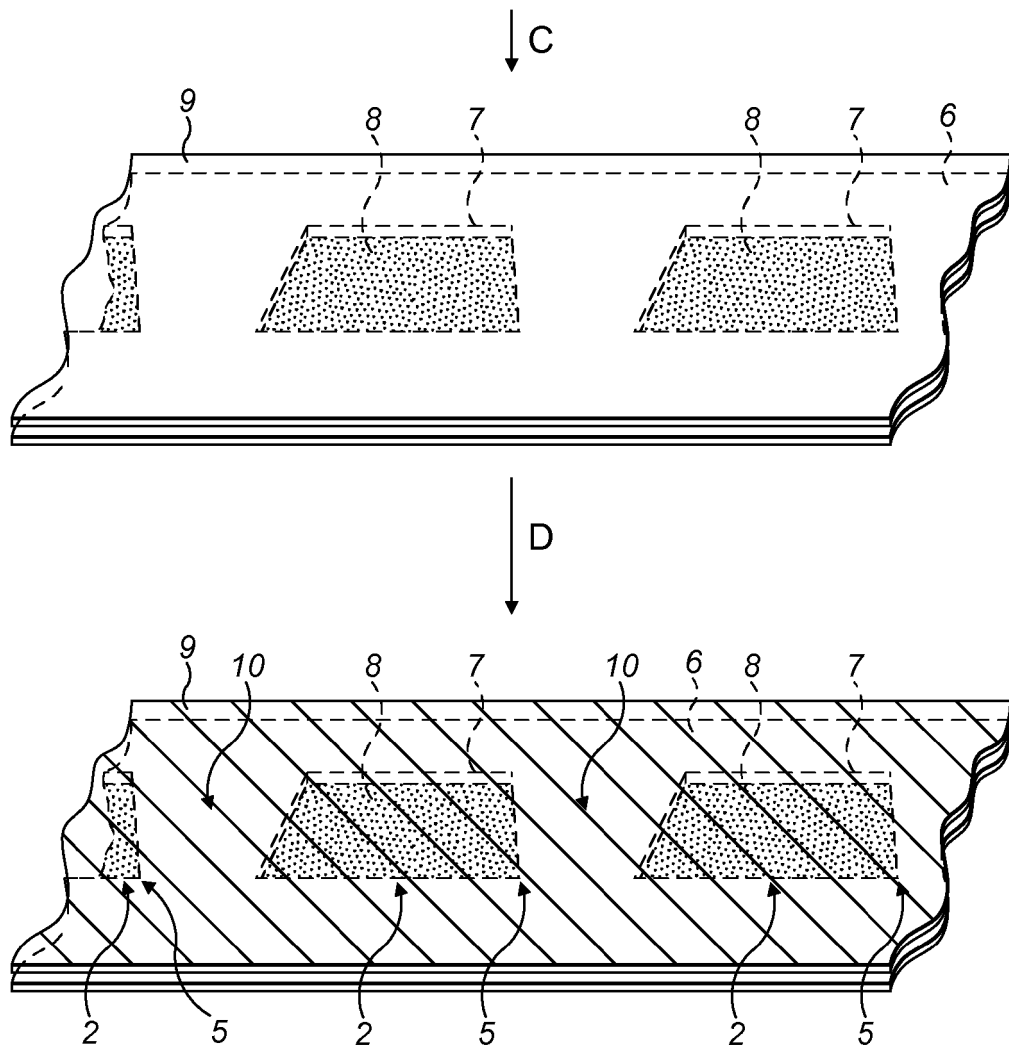


FIG. 5 Cont'd

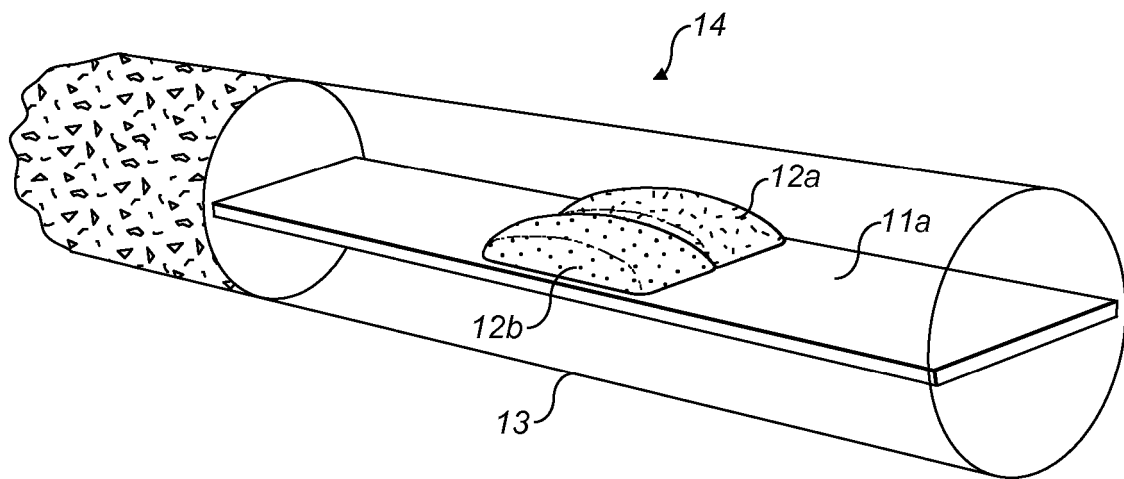


FIG. 6a

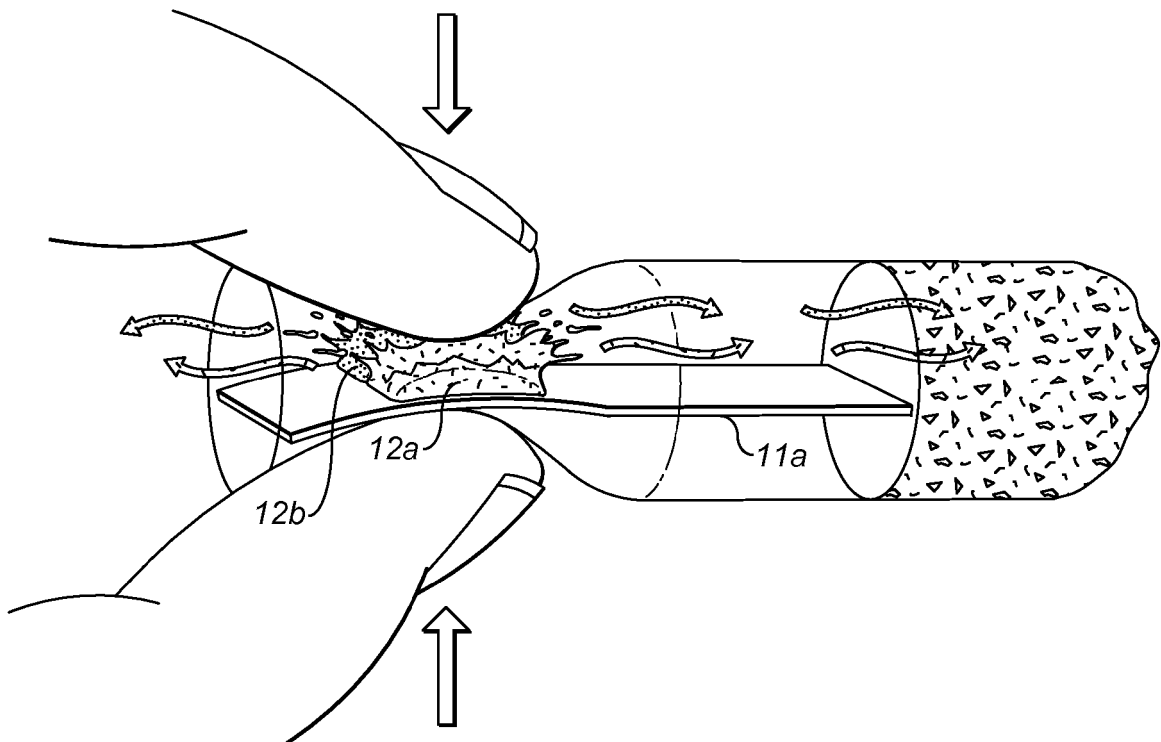


FIG. 6b

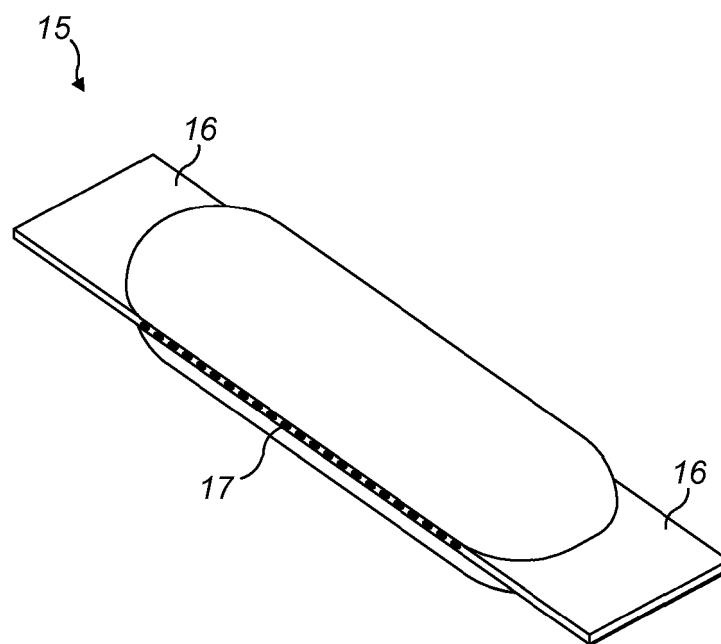


FIG. 7

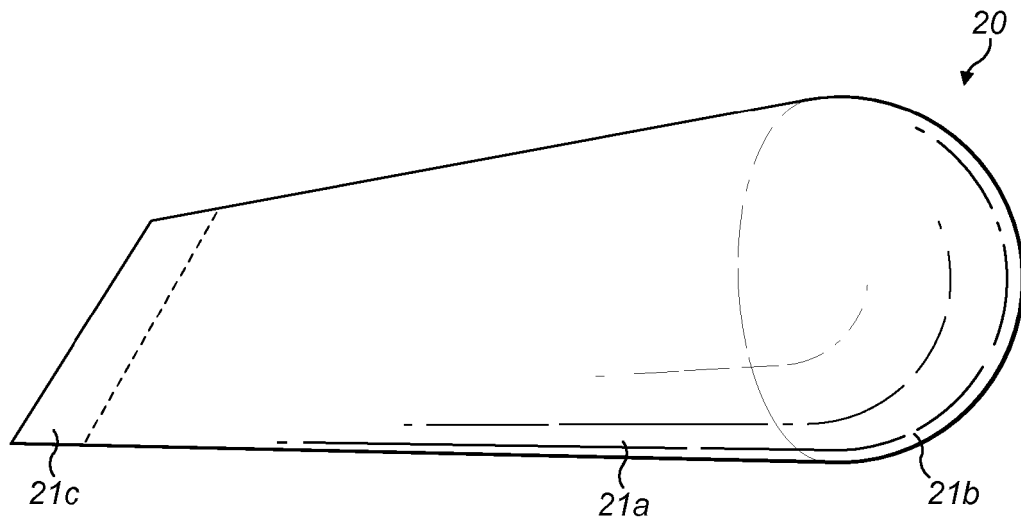


FIG. 8a

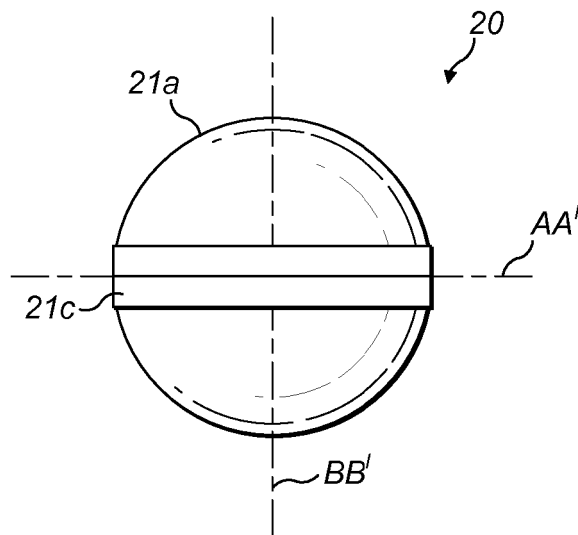


FIG. 8b

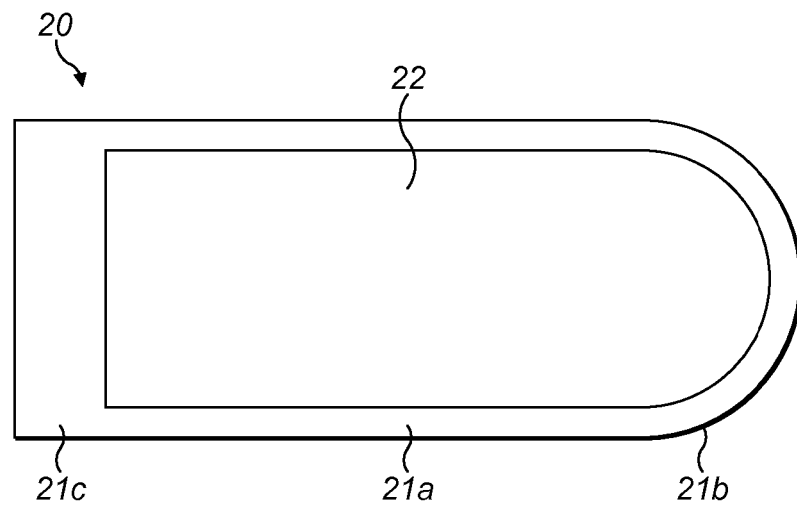


FIG. 8c

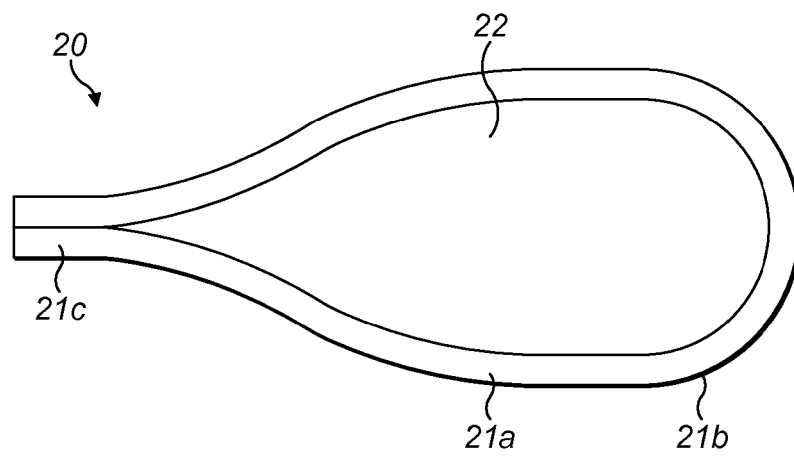


FIG. 8d

REFERENCES CITED IN THE DESCRIPTION

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- US 3390686 A [0005]