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(54) **SMOKING ARTICLE FILTER**

FILTER FÜR EINEN RAUCHARTIKEL

FILTRE POUR ARTICLE À FUMER

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Description

[0001] The present invention relates to a filter for a smoking article. In particular, it relates to a smoking article filter through which smoke passes prior to inhalation by a user. Smoking article filters are, of course, well known.

[0002] It is also relatively well known to provide smoking articles with a filter and which contain one or more user-activated components.

[0003] The purpose of the user-activated component(s) is to allow a user to activate it when desired to alter the smoke during the smoking process. For example the component may be a capsule which is crushed by a user to add flavour to smoke during use of the smoking article.

[0004] Whilst such smoking articles are becoming popular amongst users, there can be a problem in that it is difficult for the user to know whether or not they have activated the component(s) sufficiently to provide the desired effect on the smoke. WO 2011/038430 discloses a filter for a smoking article.

[0005] According to the present invention there is provided a filter for a smoking article, the filter comprising filter material and a user-activated component for altering smoke passing through the filter, the filter further comprising an indicator component for cooperating with the user-activated component to indicate when the user has activated the user-activated component, and further comprising: liquid retaining means is provided to prevent liquid driven through the indicator component from coming out from the filter, wherein the indicator component is a thread.

[0006] In the present invention, the term "cooperating" should be understood to imply a physical and/or chemical interaction between the indicator component of the tipping element with the user-activated component and/or its contents. Preferably, the cooperation between the indicator component of the tipping element with the user-activated component and/or its contents at least comprises fluid communication between the two features. In other examples, the cooperation between the indicator component of the tipping element with the user-activated component and/or its contents could comprise liquid communication between the two features, interaction of particles and/or compounds, any chemical contact, or any physical contact between items to induce a change in properties of one or the other of the items.

[0007] The user-activated component may be a flavour releasing means and may be in the form of a capsule or thread.

[0008] The indicator component may be able to drive liquid released by the user-activated material faster or further than the rest of the filter material in at least one direction. Further, the indicator component may be pre-impregnated with an indicator material that is activated when the user activates the component. The activation of the indicator component may occur through wetting of the thread with liquid from the user-activated component.

[0009] The filter may be arranged such that activation occurs by a user applying pressure on the sides of the filter or by applying a radial twisting force to the filter.

[0010] The indicator component may be provided at least around a portion of the outer edge of the filter. Further, the indicator component may be provided at a proximal end of the filter adjacent to where a user places their mouth in use.

[0011] In some examples, the user-activated component may be surrounded by material prior to its insertion into the filter component, said material forming part of the indicator component.

[0012] The indicator component may be arranged to indicate the degree of activation of the user-activated component.

[0013] In some examples, the filter further comprises a plug wrap surrounding the filter material, and wherein the indicator component is formed on or in the plug wrap material.

[0014] With the filter of the present invention it is possible to provide to a user a clear indication that activation of the smoke altering user-activated component(s) has definitely occurred. This assists the user when activation has occurred, and also indicates when the smoke altering user-activated component(s) has been used so that a user does not try to activate it a second time.

[0015] According to the present invention there is also provided an indicator component for use in a filter according to the invention as described above, arranged to provide an indication to the user when a user-activated component associated therewith is activated in use.

[0016] According to the present invention there is also provided a smoking article comprising the filter or the indicator component as described above.

[0017] An example of the present invention will now be described with reference to the accompanying drawings, in which:

- Figures 1A and B are side cross-sectional views of a smoking article employing a filter which is not according to the present invention;
- Figure 2 is a series of end views of the smoking article of Figure 1 showing the location of indicators;
- Figures 3, 4A and 4B show further examples of indicator configurations, only Figure 4A is according to the present invention;
- Figures 5A and 5B show examples of the present invention in which the indicator is prevented from extending all the way to the distal end;
- Figure 6 shows an example filter which is not according to the present invention with liquid directing components;
- Figure 7 shows an example array of capsules in a filter- not in accordance with the present invention; and
- Figures 8A and 8B show an alternative pair of filter configurations-not in accordance with the present invention.

[0018] Referring to Figure 1, a smoking article 1 comprises a tobacco rod 2 and a filter 3. In use a smoking article 1 is lit at a free distal end 2a of the tobacco rod 2 and smoke is drawn from this distal free end 2a of the tobacco rod 2 through the filter 3 and onto a proximal end 3b of said filter 3 where it is inhaled by a user.

[0019] Usually the tobacco rod 2 will be surrounded by a wrapping 6, usually made of paper, which acts to retain the tobacco rod 2 in place and to direct the smoke towards the filter 3.

[0020] There will usually also be provided tipping material 4 which surrounds the filter 3 and extends over the wrapping 6 of the tobacco rod 2 to connect them together. The tipping material 4 retains a proximal connecting end 2b of the tobacco rod 2 and a distal connecting end 3a of the filter 3 in abutment against each other to provide structural integrity to the smoking article 1 and allow proper guiding of the smoke from the distal end 2a to the proximal end 3b of the smoking article 1.

[0021] In these examples the filter 3 comprises a user-activated component 5 which, in this example, is in the form of a capsule 5 of the type disclosed in EP-A-1906775. In alternative examples, the user-activated component 5 may be in the form of multiple capsules or, alternatively, in the form of one or more threads or extruded components embedded within the filter material of the type described in WO-A-2001/058319, for example.

[0022] The user-activated component 5 may comprise a smoke altering component or substance, for example a flavour altering liquid which alters the flavour of the smoke when it is activated. If one or more threads are provided as the user-activated component 5 then these may be impregnated with a smoke altering liquid or other material. What all the possibilities have in common is, however, that the activation of the user-activated component 5 by a user either by compression, in which case the capsule is broken or the thread(s) release smoking altering material, or by twisting to provide a similar effect. If activation is achieved via twisting then the filter 3 may be provided by two components that can be twisted with respect to one another, the twisting applying a force to the user-activated component 5 in order to activate it.

[0023] As can be seen from Figures 1A and 1B, the filter 3 also provides an indicator component 7 which indicates to the user when the user-activated component 5 has been activated. The indicator component 7 can for example be a single thread (Figure 1A) or multiple threads (Figure 1B).

[0024] In the example of Figure 1A the indicator component 7 takes the form of one thread which is impregnated with a colour or contrast-changing material or dye that is activated by the presence, preferably by contact of the smoke altering component released by activation of the user-activated component 5. As an alternative it may be activated by the same force application that activates the user-activated component 5. The thread is positioned so that it is visible to a user, in this case, by

being positioned to extend to the proximal end 3b of the filter 3 where it is easily viewed by a user. Markings 8 may be provided on the exterior of the filter 3 to indicate the exact location of the user-activated component 5 and/or of the indicator component 7 to make it easy to view by a user.

[0025] In the example of Figure 1B there are also threads as indicator component 7, but in this case the threads are made by extruding material within the filter and they are exposed only at the proximal end 3b of the filter 3 where a user normally places their mouth. A symmetrical shape is shown, and this may be preferable for ease of manufacture, although it is not essential. Of course, the extruded material may be replaced with multiple single threads as shown in Figure 1A to produce a pattern formed from spots, for example.

[0026] In both of these examples, threads are shown as indicator component 7 but these threads could be replaced by components made from paper, nonwoven fabric, hollow fibres or hollow tubes. In these cases it may be preferable, particularly if wetting of the indicator component 7 is used, to alter its appearance so that the indicator component 7 has a rapid capillary reaction when compared to the surrounding filter material such that the indicator component 7 is activated quickly and a clear visual indication is provided to a user as quickly as possible.

[0027] Figure 2 shows a number of proximal end front views of a filter 3 each illustrating alternative indicator arrangements. In Figure 2A four examples of indicator components 7 are shown, each employing separate threads which extend to the proximal end 3b of the filter 3. They vary from a single hollow thread through to multiple solid threads.

[0028] Figure 2B shows a number of examples of shape indicator components 7, all of which are generally symmetrical for ease of manufacture, and all of which may or may not extend all the way to the proximal end 3b of the filter 3 as will be described below.

[0029] Figure 2C shows three examples of indicator components 7 in which planes of indicator material are formed within the filter 3. Again these planes may or may not be recessed.

[0030] Finally, figure 2D shows a number of corona type configurations of indicator components 7, of differing shapes, where filler material surrounds an outer indicator component that again is generally symmetrical, but may be a simple circle or oval or may have a more complex configuration.

[0031] Figure 3 to 5B shows examples of a filter 3 where liquid retaining means is provided within the filter 3 to prevent liquid released by the user-activated component after activation being driven through the indicator component 7 and coming out from the filter 3.

[0032] Figure 3 shows another example in which a barrier layer 10 is provided over a central indicator component 7 to ensure that any smoke altering material from the user-activated component 5 is directed towards the

proximal end 3b of the filter 3 as rapidly as possible. The barrier layer 10 may be a wax coating over the indicator component 7, or a plastic sheath or other sealed component.

[0033] Figure 4A shows a similar configuration for a corona-type structure, where an outer barrier layer of material 10 is provided beneath the tipping paper 4 to prevent liquid seeping to the tipping paper 4 and damaging it. Alternatively, the tipping paper 4 itself can act as an outer barrier layer to prevent the liquid seeping to the external surface of the tipping paper and wetting the user's fingers. The tipping paper 4 can also be at least partially translucent and thus contribute to the visual effect of the indicator component 7 on a side of the filter 3, not only at the proximal end 3b of it.

[0034] Figure 4B shows a side sectional view of a further configuration in which the filter 3 comprises a plug wrap 11 and the indicator component 7 is arranged within the plug wrap 11. In Figure 4B, the indicator component 7 is shown as a series of threads within the plug wrap 11, but it will be appreciated that the plug wrap 11 could in itself be formed of a material that can provide the necessary indicator functionality, or the plug wrap 11 could be provided either with an external or internal surface formed from indicator material such that, after activation of the user-activated component 5, an indication is provided to a user as with other examples. In this example, the tipping paper 4 can also contribute to visualizing the indicator component 7 on a side of the plug wrap 11.

[0035] Figures 5A and 5B show configurations in which the indicator component 7 is recessed at the proximal end 3b of the filter 3, so that it does not completely reach to said proximal end 3b but is still apparent to the user and prevents liquid that is driven through the thread from coming out of the filter 3. In Figure 5A the indicator component 7 is recessed from the proximal end 3b, and in Figure 5B an end seal 12 is provided with the material which does not draw liquid through it, that material being, for example, wax or melted thread which seals the end, yet which still permits the user to observe a contrast or colour change in the thread of the indicator component 7.

[0036] Figure 6 shows an alternative configuration of the filter 3 in which the user-activated component 5 is a capsule 14 which is encased in thread 13 in a "sock" type configuration, such that, when it is activated, liquid is readily drawn into the thread to provide an indication. Figure 7 shows an array of capsules 14 that could be provided into a stream of filter material and then sliced to form individual filters. This "sock" type configuration may also help avoiding unintentional damage to the capsule 14 during its insertion into a filter at manufacture.

[0037] Figures 8A and 8B show an alternative configuration in which smoke altering material is retained within a user-activated component 5 that is in the form of a compressible bag 15 and has attached thereto one or more plugs or valves 16 which are activated by compression of the bag 15 that forces the smoke altering material out through the plugs or valves 16 to the indicator com-

ponent 7, which is made of one or more threads for example. An optional filter component made of regular, well known, filter material may be included adjacent to the tobacco when the filter 3 is assembled in the smoking article 1.

[0038] In certain instances it may be desirable to provide an indicator component 7 which provides an indication of the degree of activation of the user-activated component 5. For example, user-activated components 5 are known which require not only activation, but then continued pressure application to dispense the smoke altering substance they contain. For example, the user may have to apply pressure over an extended period of time to dispense smoke altering substance, for instance liquid, from the user-activated component 5. In such a case the indicator component 7 may be configured to change contrast or colour dependent upon the amount of liquid that it receives from the user-activated component 5 to indicate in the extent of activation. Alternatively, if multiple indicator components 7 are used it may be that these are structured so that the number that are affected by activation of the user-activated component 5 is depended upon the extent to which the user-activated component 5 is activated.

[0039] In all these examples, the thread acting as an indicator component 7 may be configured so that it is able to draw any smoke altering substance that activates it rapidly to the surface where it can be viewed by a user. This ensures rapid indication of activation.

[0040] With the configuration of the filter of the present invention it is possible to provide a filter 3 with a user-activated component 5 which alters a smoking experience yet still provides certainty to the user that activation has occurred on a simple and effective manner that is not dependent upon the component or material being used for altering that smoking experience.

Claims

1. A filter (3) for a smoking article (1), the filter comprising filter material and a user-activated component for altering smoke passing through the filter, the filter further comprising an indicator component for cooperating with the user-activated component to indicate when the user has activated the user-activated component, **characterized in that** the filter further comprises liquid retaining means (4, 10) provided to prevent liquid driven through the indicator component (7) from coming out from the filter, and **in that** the indicator component (7) is a thread.
2. A filter (3) according to claim 1, in which the user-activated component (5) is a flavour releasing means
3. A filter (3) according to claim 1 or 2, in which the user-activated component (5) is in the form of a capsule or thread.

4. A filter (3) according to claim 1 to 3, in which the indicator component (7) is able to drive liquid released by the user-activated material faster or further than the rest of the filter material in at least one direction. 5
5. A filter (3) according to claim 1 to 4, in which the indicator component (7) is pre-impregnated with an indicator material that is activated when the user activates the user-activated component. 10
6. A filter (3) according to any of claims 1 to 5, in which the indicator component activation occurs through wetting of the thread with liquid from the user-activated component (5). 15
7. A filter (3) according to any of claims 1 to 6, in which the filter is arranged such that activation of the user-activated component (5) occurs by a user applying pressure on the sides of the filter or by applying a radial twisting force to the filter. 20
8. A filter (3) according to any of claims 1 to 7, in which the indicator component (7) is provided at least around a portion of the outer edge of the filter. 25
9. A filter (3) according to any of claims 1 to 7, in which the indicator component (7) is provided at a proximal end of the filter adjacent to where a user places their mouth in use. 30
10. A filter (3) according to any preceding claim, in which the user-activated component (5) is surrounded by material prior to its insertion into the filter component, said material forming part of the indicator component. 35
11. A filter (3) according to any preceding claim, in which the indicator component (7) is further arranged to provide an indication of the extent of activation of the user-activated component (5). 40
12. A filter (3) according to any preceding claim, further comprising a plug wrap surrounding the filter material, and wherein the indicator component (7) is formed on or in the plug wrap material. 45
13. A smoking article (1) comprising a filter (3) according to any of claims 1 to 12. 50

Patentansprüche

1. Filter (3) für einen Raucherartikel (1), wobei der Filter Filtermaterial und eine benutzeraktivierte Komponente zum Ändern von durch den Filter hindurchströmendem Rauch aufweist, wobei der Filter ferner eine Anzeigerkomponente zum Zusammenwirken 55

mit der benutzeraktivierten Komponente aufweist, um anzuzeigen, wenn der Benutzer die benutzeraktivierte Komponente aktiviert hat, **dadurch gekennzeichnet, dass** der Filter ferner ein Flüssigkeitsrückhaltemittel (4, 10) aufweist, das bereitgestellt ist, um zu verhindern, dass durch die Anzeigerkomponente (7) getriebene Flüssigkeit aus dem Filter herauskommt, und dadurch, dass die Anzeigerkomponente (7) ein Gewinde ist.

2. Filter (3) nach Anspruch 1, bei dem die benutzeraktivierte Komponente (5) ein Aroma freisetzendes Mittel ist.
3. Filter (3) nach Anspruch 1 oder 2, bei dem die benutzeraktivierte Komponente (5) die Form einer Kapsel oder eines Fadens hat.
4. Filter (3) nach einem der Ansprüche 1 bis 3, bei dem die Anzeigerkomponente (7) von dem benutzeraktivierten Material freigesetzte Flüssigkeit in wenigstens einer Richtung schneller oder weiter treiben kann als der Rest des Filtermaterials.
5. Filter (3) nach einem der Ansprüche 1 bis 4, bei dem die Anzeigerkomponente (7) mit einem Anzeigerstoff vorgetränkt ist, der aktiviert wird, wenn der Benutzer die benutzeraktivierte Komponente aktiviert.
6. Filter (3) nach einem der Ansprüche 1 bis 5, bei dem die Aktivierung der Anzeigerkomponente durch Benetzen des Fadens mit Flüssigkeit aus der benutzeraktivierten Komponente (5) stattfindet.
7. Filter (3) nach einem der Ansprüche 1 bis 6, bei dem der Filter so angeordnet ist, dass die Aktivierung der benutzeraktivierten Komponente (5) dadurch stattfindet, dass ein Benutzer Druck auf die Seiten des Filters ausübt oder eine radiale Verdrehkraft auf den Filter ausübt.
8. Filter (3) nach einem der Ansprüche 1 bis 7, bei dem die Anzeigerkomponente (7) wenigstens um einen Teil des Außenrands des Filters herum bereitgestellt ist.
9. Filter (3) nach einem der Ansprüche 1 bis 7, bei dem die Anzeigerkomponente (7) an einem proximalen Ende des Filters neben der Stelle bereitgestellt ist, wo ein Benutzer im Gebrauch seinen Mund ansetzt.
10. Filter (3) nach einem der vorhergehenden Ansprüche, bei dem die benutzeraktivierte Komponente (5) vor ihrer Einsetzung in die Filterkomponente von Material umgeben ist, wobei das genannte Material Teil der Anzeigerkomponente bildet.
11. Filter (3) nach einem der vorhergehenden Ansprü-

che, bei dem die Anzeigerkomponente (7) ferner zum Bereitstellen einer Anzeige des Ausmaßes der Aktivierung der benutzeraktivierten Komponente (5) angeordnet ist.

12. Filter (3) nach einem der vorhergehenden Ansprüche, der ferner einen das Filtermaterial umgebenden Filterbelag aufweist und wobei die Anzeigerkomponente (7) auf oder in dem Filterbelagmaterial gebildet ist.
13. Raucherartikel (1), der einen Filter (3) nach einem der Ansprüche 1 bis 12 aufweist.

Revendications

1. Filtre (3) destiné à un article à fumer (1), le filtre comportant un matériau de filtre et un élément activé par l'utilisateur destiné à modifier la fumée qui passe à travers le filtre, le filtre comportant en outre un élément indicateur destiné à coopérer avec l'élément activé par l'utilisateur pour indiquer lorsque l'utilisateur a activé l'élément activé par l'utilisateur, **caractérisé en ce que** le filtre comporte en outre :

un moyen de retenue de liquide (4, 10) fourni pour empêcher du liquide entraîné à travers l'élément indicateur (7) de sortir du filtre, et **en ce que** l'élément indicateur (7) est un fil.

2. Filtre (3) selon la revendication 1, dans lequel l'élément activé par l'utilisateur (5) est un moyen de libération d'arôme.
3. Filtre (3) selon la revendication 1 ou 2, dans lequel l'élément (5) activé par l'utilisateur se présente sous la forme d'une capsule ou d'un fil.
4. Filtre (3) selon la revendication 1 à 3, dans lequel l'élément indicateur (7) est capable d'entraîner le liquide libéré par le matériau activé par l'utilisateur plus vite ou plus loin que le reste du matériau de filtre dans au moins une direction.
5. Filtre (3) selon la revendication 1 à 4, dans lequel l'élément indicateur (7) est préimprégné d'un matériau indicateur qui est activé lorsque l'utilisateur active l'élément activé par l'utilisateur.
6. Filtre (3) selon l'une quelconque des revendications 1 à 5, dans lequel l'activation de l'élément indicateur survient par le mouillage du fil avec le liquide provenant de l'élément activé par l'utilisateur (5).
7. Filtre (3) selon l'une quelconque des revendications 1 à 6, dans lequel le filtre est agencé de telle sorte que l'activation de l'élément activé par l'utilisateur

(5) survient par application par un utilisateur d'une pression sur les côtés du filtre ou par application d'une force de torsion radiale sur le filtre.

8. Filtre (3) selon l'une quelconque des revendications 1 à 7, dans lequel l'élément indicateur (7) est fourni au moins autour d'une partie du bord externe du filtre.
9. Filtre (3) selon l'une quelconque des revendications 1 à 7, dans lequel l'élément indicateur (7) est fourni au niveau d'une extrémité proximale du filtre à côté de l'endroit où un utilisateur place sa bouche lors du fonctionnement.
10. Filtre (3) selon l'une quelconque des revendications précédentes, dans lequel l'élément activé par l'utilisateur (5) est entouré de matériau avant son insertion dans l'élément filtre, ledit matériau faisant partie de l'élément indicateur.
11. Filtre (3) selon l'une quelconque des revendications précédentes, dans lequel l'élément indicateur (7) est en outre agencé pour fournir une indication de l'étendue de l'activation de l'élément activé par l'utilisateur (5).
12. Filtre (3) selon l'une quelconque des revendications précédentes, comportant en outre une enveloppe de bout-filtre entourant le matériau de filtre, et dans lequel l'élément indicateur (7) est formé sur ou dans le matériau d'enveloppe de bout-filtre.
13. Article à fumer (1) comportant un filtre (3) selon l'une quelconque des revendications 1 à 12.

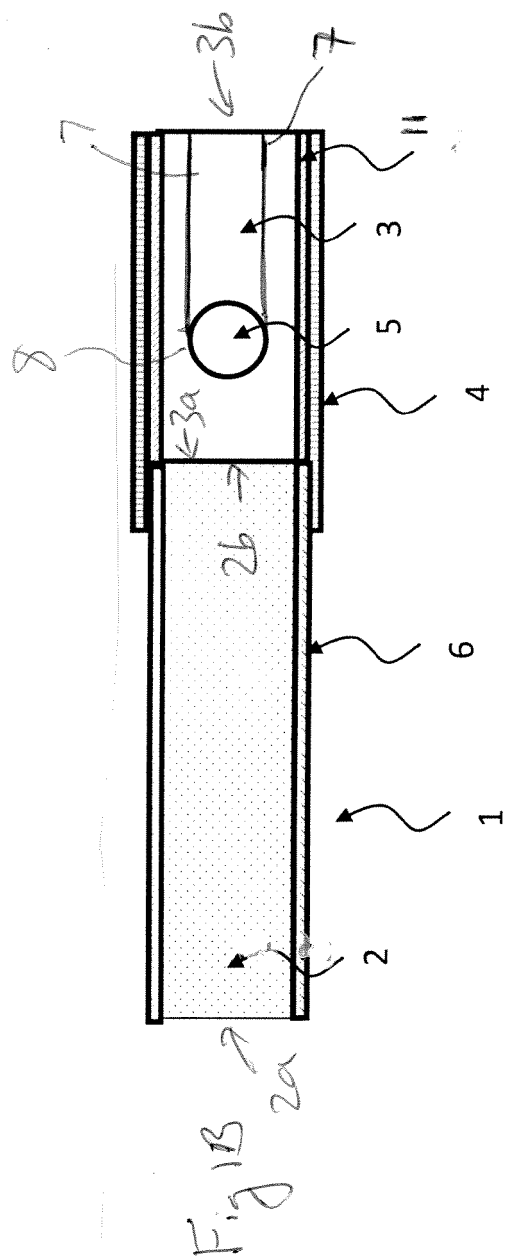
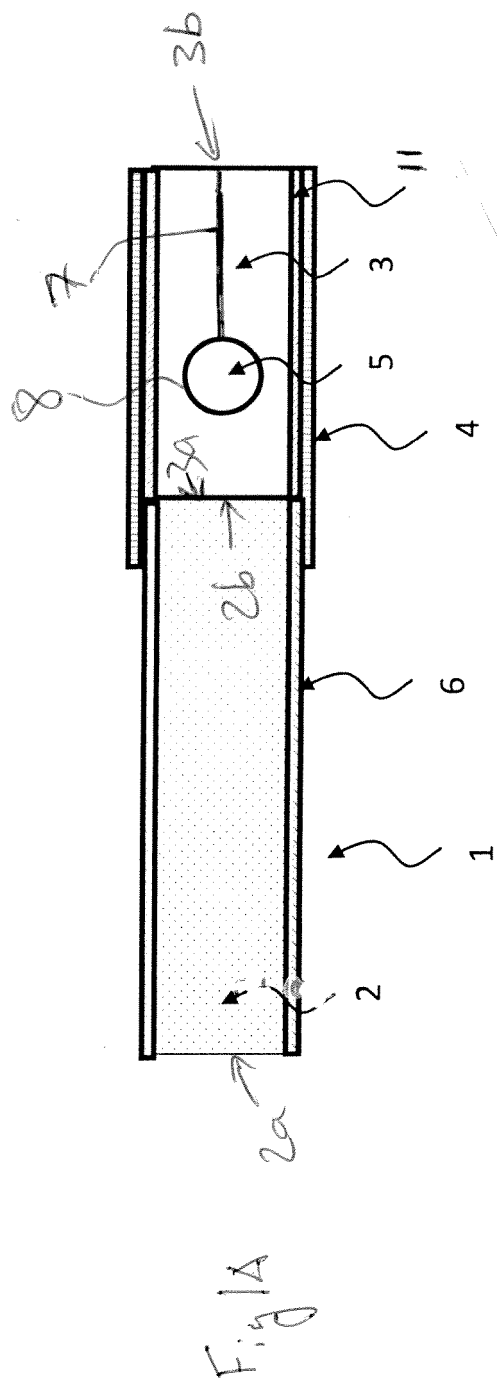
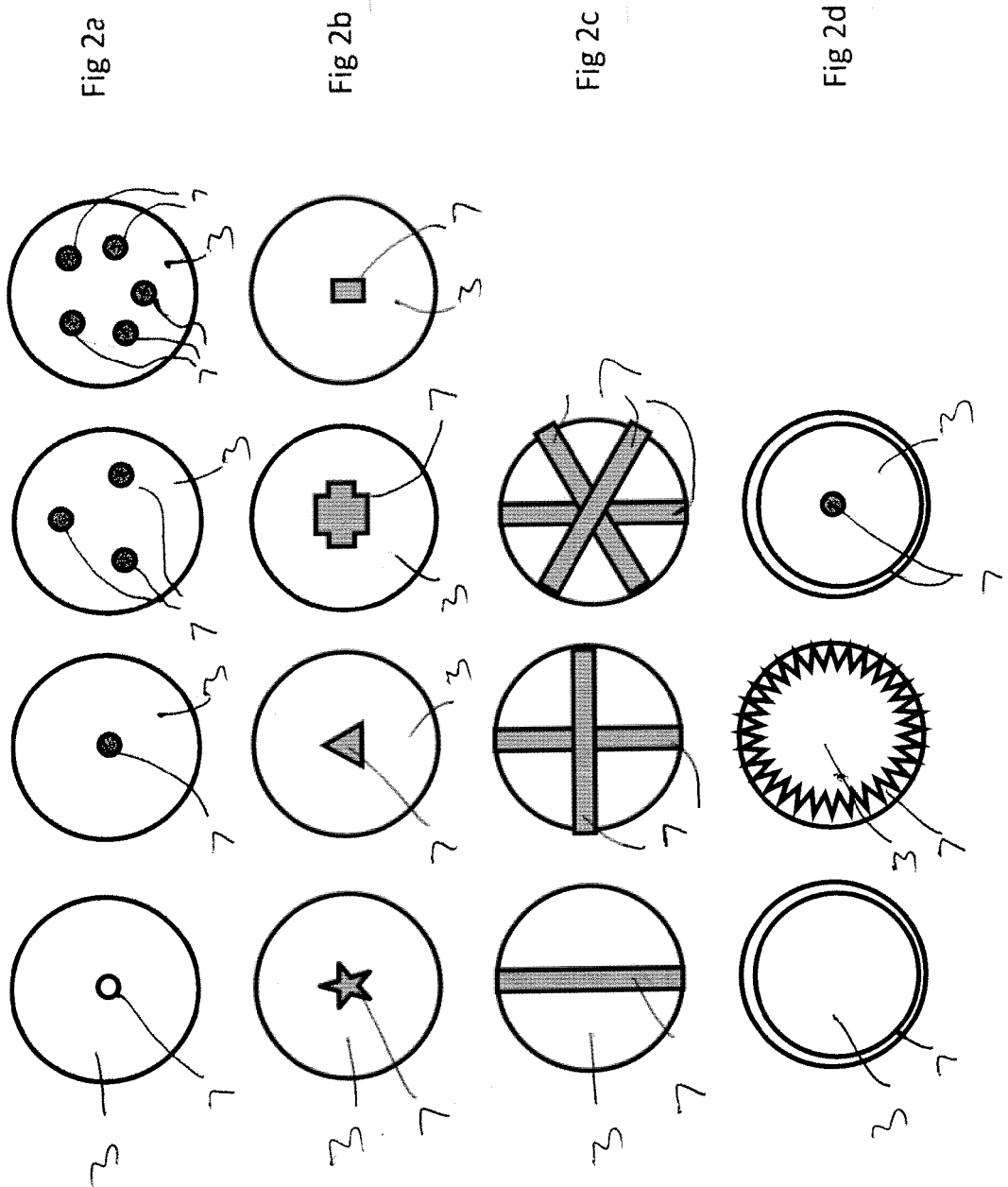


Fig 2



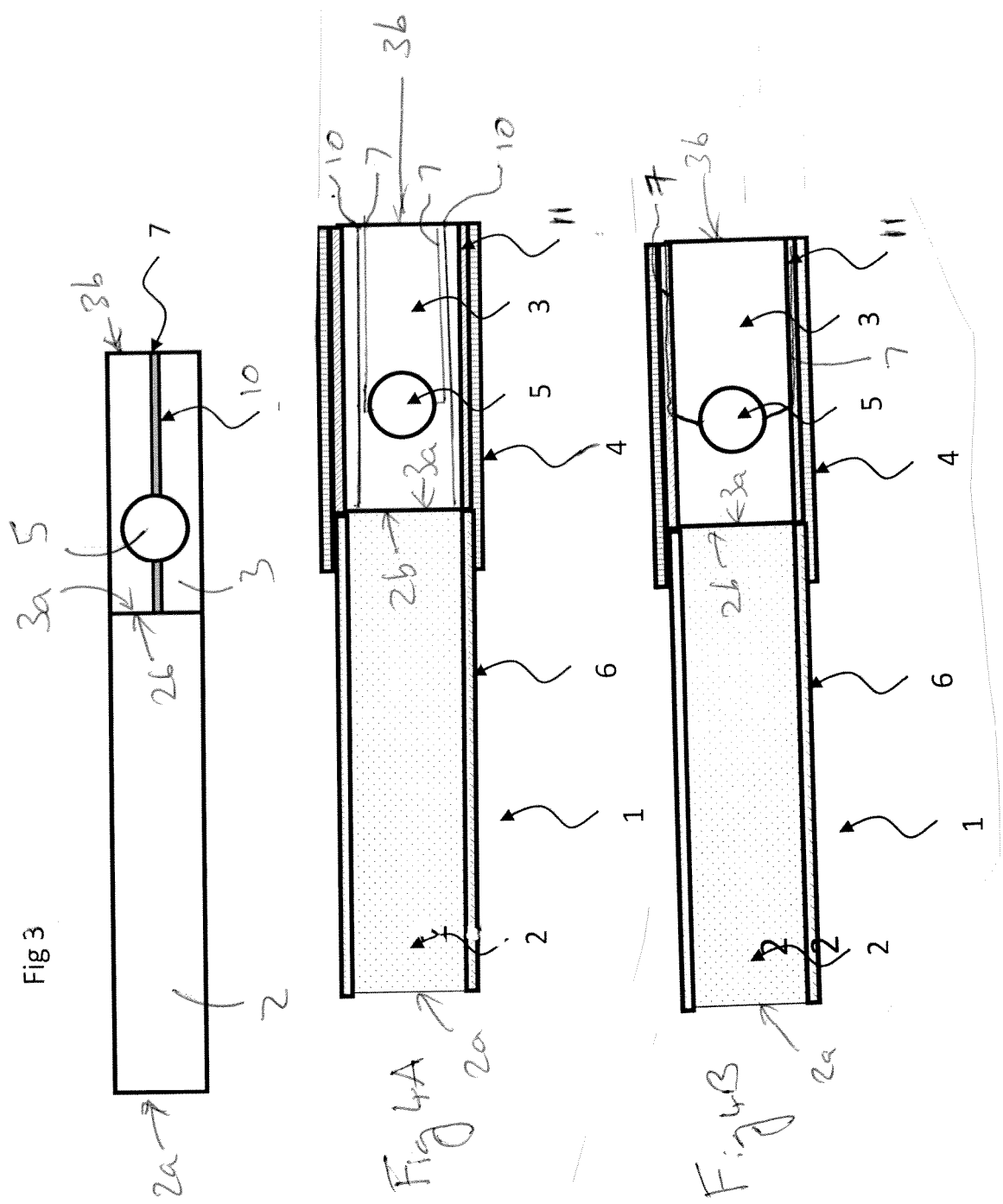


Fig 5A

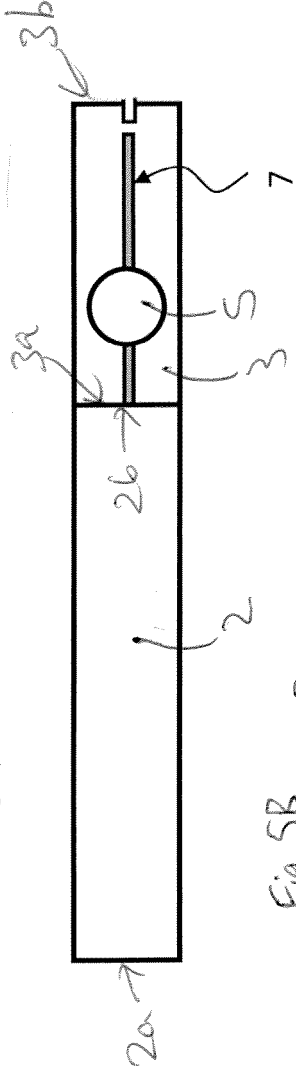


Fig 5B

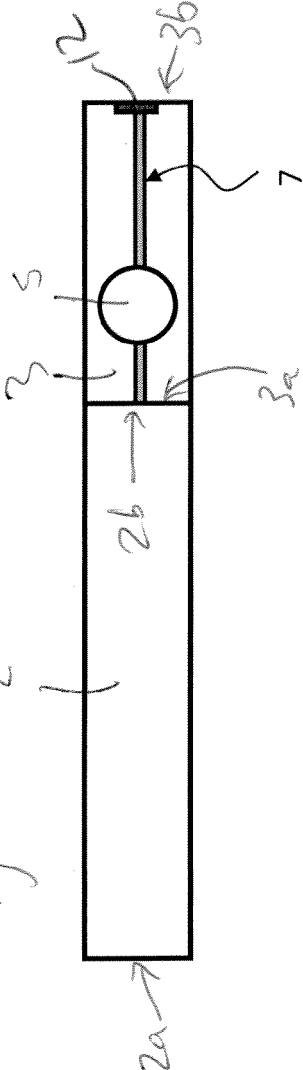


Fig 6

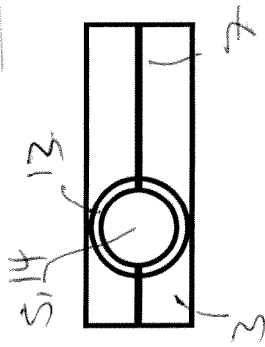


Fig 7

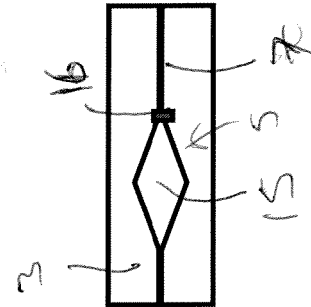
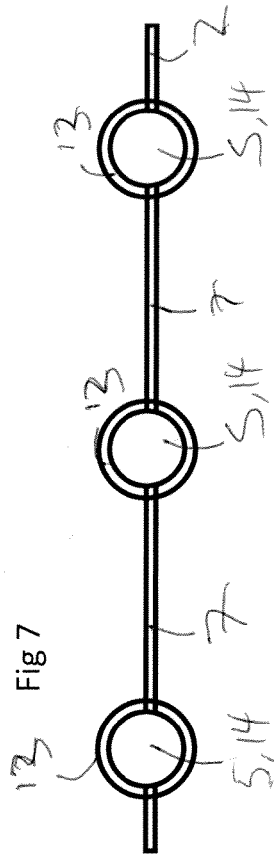


Fig 8A

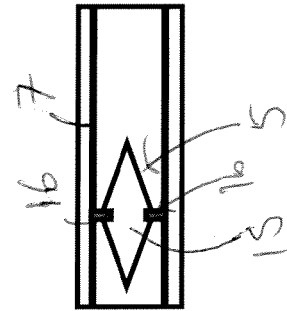


Fig 8B

REFERENCES CITED IN THE DESCRIPTION

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