

(19)



(11)

EP 3 589 144 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention of the grant of the patent:

24.05.2023 Bulletin 2023/21

(21) Application number: **18708975.0**

(22) Date of filing: **01.03.2018**

(51) International Patent Classification (IPC):

A24C 5/60 (2006.01)

(52) Cooperative Patent Classification (CPC):

A24C 5/608

(86) International application number:

PCT/EP2018/055111

(87) International publication number:

WO 2018/158400 (07.09.2018 Gazette 2018/36)

(54) **A FLAVOUR APPLICATOR FOR A CIGARETTE AND A CLEANSING STICK**

GESCHMACKSAPPLIKATOR FÜR EINE ZIGARETTE UND REINIGUNGSSTÄBCHEN

APPLICATEUR D'ARÔME POUR UNE CIGARETTE, ET TIGE DE NETTOYAGE

(84) Designated Contracting States:

**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR**

(30) Priority: **01.03.2017 GB 201703325**

(43) Date of publication of application:

08.01.2020 Bulletin 2020/02

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Description

[0001] The present invention relates to a flavour applicator for a cigarette and to a method of flavouring a cigarette with such a flavour applicator.

[0002] A cigarette is of course very well-known and may generally be defined as a tobacco rod wrapped in paper with or without a filter tip. A cigarette can be either factory-made or self-made, known as "roll-your-own" or "make-your-own" smoking articles. Typically a cigarette has a cylindrical shape body with a diameter between 6 and 8 mm.

[0003] Many smokers like the taste of menthol cigarettes from time to time but not all the time and therefore choose to live without menthol cigarettes. In particular, given the cost of cigarettes, many smokers do not want to buy a full packet of menthol cigarettes if they might only want to smoke one or two as a novelty. In addition, when a user has purchased a box of menthol cigarettes, after the pack has been opened the menthol concentration decreases quickly. That means that it is not practicable to buy a box of menthol and simply store them for when they might be desired as if there is a delay of more than, say, a few days the menthol flavour might all have gone.

[0004] In some countries menthol or other such flavoured cigarettes have been banned or are due to be banned in the near future.

[0005] Products do exist that allow the mentholisation of a pack of cigarettes, by inserting a piece of cardboard impregnated with menthol crystals. Transfer of the menthol aroma flavour takes at least an hour and all the cigarettes in the packet will be mentholised. Equal uniform distribution of the menthol flavour to the cigarettes within the box can take several hours.

[0006] Such a solution does not easily enable the selective mentholisation of only some, e.g. a single one, of the cigarettes within a box.

[0007] GB-A-1,305,008 discloses a make-up applicator for applying perfume directly to a user. A felt tip pen like device is used.

[0008] US-A-2009/0317432 discloses an assembly for the application of nail varnish composition. The assembly comprises a felt-tip applicator and a nail varnish composition provided within it.

[0009] GB2495925 discloses a flavoured liquid for application to a smoking article such as a cigarette. When the liquid composition is applied to an exterior surface of a combustible portion of the smoking article and the smoking article is lit, the composition delivers flavour into mainstream smoke. The liquid composition is preferably applied to the smoking article by a device such as a pen.

[0010] US4116571 discloses a dispenser adapted for use in personal application of viscous liquid to a cigarette. The dispenser includes a hollow container for the liquid and a valve structure on the container. The valve is automatically shiftable by actuation of an exterior portion thereof to bias a spring structure and permit flow of the

viscous liquid. The spring structure is designed so that a substantially uniform opening is provided to facilitate uniform dispensing of viscous liquid such as a lotion. For this purpose, the spring structure includes a plurality of spaced spring stems which act in concert to submit uniformly to pressure in opening of the valve and to substantially uniformly close the valve when the pressure is released.

[0011] According to a first aspect of the present invention, there is provided a cigarette flavour applicator, comprising a housing defining a reservoir for the flavour; an application tip arranged in use in contact with the reservoir; a flavouring contained within the reservoir for application to the filter of a cigarette; and, a closure mechanism arranged in use to provide a seal to the reservoir and characterised in that the closure mechanism is arranged such that upon application of pressure to the application tip release of flavouring from the reservoir is enabled, in which the application tip comprises a fibrous or a porous ceramic material arranged to wick flavour from the reservoir.

[0012] The invention provides a cigarette flavour applicator which uses an application tip in contact with a reservoir of a flavouring. This facilitates the selective flavouring of an individual cigarette on an as-needed basis by the user. Furthermore, the flavour applicator can be stored and retained separately from the cigarettes themselves which means that the problems associated with evaporation of the flavouring due to decreasing concentration after exposure to air is addressed. A closure mechanism is provided, arranged in use to provide a seal to the reservoir, and upon application of pressure to enable flavouring to be released from the reservoir so that it can be absorbed or soaked up by the filter of a cigarette. This enables an individual cigarette to be individually flavoured without any adverse effect on the appearance or structural integrity of the cigarette itself.

[0013] Furthermore, by providing a fibre-tipped applicator, the amount of flavouring applied to an individual cigarette can be varied on an individual basis. That means that in contrast to conventional methods of flavouring cigarettes, if a user wants to have a particularly strong flavouring on a specific cigarette, he can apply more flavouring than on any other. Thus a reliable, easy to use and simple mechanism for selectively varying and controlling the flavouring on cigarettes is achieved.

[0014] In one example, the closure mechanism is spring biased such that absent application of pressure the closure mechanism hermetically seals the reservoir. This is particularly advantageous as it means that when not being used there is no risk of the applicator losing its functionality due to evaporation of the flavouring or composition stored within the reservoir.

[0015] In one example, the applicator tip is removably mounted within the closure mechanism. Preferably, the applicator tip is removably mounted via a press fit. This means that the applicator tip can easily and conveniently be replaced if it becomes worn in use. This further means

that the material used for the applicator tip can be selected for optimal qualities in terms of, say, wicking or transfer of flavour, and even if it might wear out in the medium term the device as a whole can be re-used once a new applicator tip is provided.

[0016] In one example, the flavouring is selected from the group consisting nicotine, sweetening, coffee, tea, whisky, spirit, fruit, mint, menthol or confectionary.

[0017] Accordingly the flavour applicator can be used to selectively flavour a cigarette with any one of a number of possible flavouring. This list above is not exhaustive and it is expected that other possible flavourings can be used.

[0018] In one example, the application tip has a profile for engagement with a cigarette. Preferably, the profile is concave and more preferably, the concavity, has a curvature to match that of a standard cigarette.

[0019] Thus a flavour applicator is provided that has a tip that is shaped for optimal engagement with a cigarette. This enables controlled, simplified and repeatable application of flavouring to cigarettes. In other words, with a tip that is shaped for engagement with a cigarette a user knows (or can learn very easily and quickly) how much flavour will be applied by, say a single stroke of the applicator.

[0020] In an example, the flavouring comprises a base liquid as a solvent formed of one or more of, or a mixture of PG (propylene glycol) and glycerol ((VG) vegetable glycerine).

[0021] In an example, the flavouring contains up to 10 % water by volume.

[0022] In an example, the flavouring contains nicotine up to 4 % by volume.

[0023] In an example, the flavouring contains between 1% and 5% by volume of a flavour.

[0024] In an example, the flavouring contains up to 10% glycerol by volume.

[0025] In an example, the flavouring contains up to 25% glycerol by volume.

[0026] In an example, the flavouring contains up to 50% glycerol by volume.

[0027] In an example, the application tip comprises a fibrous material arranged to wick flavour from the reservoir. In other words the tip might be in the form of an elongate fibrous wicking member arranged in use to have a first end in contact or contactable with flavouring in the reservoir such that the fibrous tip can then serve to wick flavouring along its length for application to a cigarette.

[0028] In another example, the application tip is formed of a porous ceramic material. Again, the tip might be in the form of an elongate member arranged in use to have a first end in contact or contactable with flavouring in the reservoir such that the porous tip can then serve to enable transport of flavouring along its length for application to a cigarette

[0029] According to another aspect of the present disclosure, which is not covered by the invention, there is provided a cleansing stick comprising a housing defining

a reservoir for a flavouring; a cleaning tip arranged in use in contact with the reservoir; a flavouring contained within the reservoir for flavouring a surface or article to be cleaned and a closure mechanism arranged in use to provide a seal to the reservoir and upon application of pressure to enable flavouring to be released from the reservoir.

[0030] In an embodiment, the closure mechanism is spring biased to a closed position, such that without application of pressure the reservoir for a flavouring is hermetically sealed.

[0031] In an embodiment, the cleaning tip is a fibrous or a porous member.

[0032] In an embodiment, the applicator tip is removably mounted within the closure mechanism.

[0033] In an embodiment, the applicator tip is removably mounted via a press fit. Having a removably mounted cleaning tip means that it can be easily replaced which is useful as it may become worn and/or dirty in use.

[0034] According to a second aspect of the present invention, there is provided a method of flavouring a cigarette according to claim 13.

[0035] By applying flavouring to the filter of a cigarette the effect of flavouring can be achieved in a way that does not noticeably affect the appearance of the cigarette. Furthermore there need not be any possible weakening of the cigarette by wetting of the paper of the cigarette.

[0036] In an embodiment, applying pressure to the filter of a cigarette comprises pressing the application of the applicator against an end surface of the filter of the cigarette.

[0037] In an embodiment, the method comprises selectively varying the time of application to control the amount of flavouring transferred to the cigarette.

[0038] In an embodiment, the method comprises applying pressure for between 5 and 20 seconds.

[0039] In an embodiment, the method comprises applying pressure for between 10 and 15 seconds.

[0040] The cleaning article is similar to the flavour applicator of the first aspect. The tip is fibrous or in some way suitable for cleaning and as well as or instead of being used to apply flavour to a cigarette the fibrous tip is specifically for use in cleaning surfaces. Typical surface that can be cleaned include teeth that have become discoloured to smoking or indeed the fingers or finger nails of smokers. By using a flavouring, such as menthol, the article being cleaned can also be perfumed which is a desired effect with an article being cleaned. In one specific example if a user is cleaning his teeth with the article the use of a mint or menthol flavour is desired a sit leaves a pleasant taste within the user's mouth.

[0041] According to another aspect of the present disclosure, which is not covered by the invention, there is provided a method of applying flavour to a cigarette, comprising with a flavour applicator according to the first aspect of the present invention drawing on a cigarette so as to apply flavouring to the cigarette.

[0042] Embodiments of the present invention will now be described in detail with reference to the accompanying drawings, in which:

Figure 1 is a schematic representation of an example of a flavour applicator (unassembled) for a cigarette, which is not covered by the present invention;

Figure 2 is a view showing the use of a flavour applicator with a cigarette;

Figure 3 is an example of a cleansing stick for cleaning teeth, shown in use;

Figure 4 is a view of a tip maintenance step; and

Figure 5 is a schematic representation of a cigarette for use in an adjustably flavourable cigarette and applicator assembly; and

Figure 6 is a schematic representation of a flavour applicator for a cigarette according to the present invention.

[0043] Figure 1 shows the unassembled component parts of a cigarette flavour applicator which is not covered by the present invention. The applicator comprises a housing 1 arranged to receive and hold a reservoir 3. An application unit 2 is provided, which will be described in more detail below. A lid 5 is provided. Finally, a source of flavouring (not shown) is provided which is typically a bottle of a flavouring to be poured into the reservoir prior to the reservoir 3 being placed (or after it is placed) within the housing 1.

[0044] The application unit 2 includes a tip 4 formed of a generally fibrous material and connected or formed integrally with a wicking part arranged, when assembled, to be in contact with flavouring provided within the reservoir 3. Three differently shaped tips are shown numbered 4a to 4c. The application unit 2 is arranged to threadably engage with the housing 1 once the reservoir 3 filled with flavouring has been arranged within the housing 1. A threaded portion 1a is provided on the housing for engagement with a correspondingly threaded portion 2a forming part of the application unit 2.

[0045] On engagement of the application unit 2 with the housing 1, the wicking part of the tip 4 will be in engagement with the liquid flavouring and thereby provide wicking of the liquid towards the application tip 4. Whilst some aspects of this arrangement will be familiar from other fields, within the field of flavour application to cigarettes the assembly provides a novel and useful way for flexibly flavouring an individual cigarette upon desire.

[0046] Figure 2 shows a view of an individual cigarette 8 being flavoured with the assembly 9. As can be seen, a relatively straightforward process is required by which a line of flavouring can be applied along the length of a cigarette. As will be explained below, this provides effi-

cient and uniform distribution of flavouring within a cigarette such that the experience that a user has is that the cigarette smoked will be like a menthol cigarette rather than a conventional cigarette filled with pure tobacco with no additional flavouring.

[0047] In Figure 2 the end of the application tip can be seen to be curved in a manner so as to match the cylindrical curvature of the cigarette itself. This enables a larger surface area of the cigarette to be covered with only a single stroke of the applicator and therefore a larger amount of flavour to be applied with reduced effort by the user. In some examples, the degree of curvature is varied so as to vary the amount of flavouring that would be added with a single stroke of the applicator. Referring again to Figure 1, three different examples of tips 4 are shown each having a different shaped end. The end of Figure 4c is curved as described above and as shown in Figure 2 so as to match the cylindrical surface of the cigarette. In Figure 4a a more pointed tip is shown which, will enable a degree of control to be achieved by a user by controlling which part of the tip actually engages with a cigarette during flavour application. If the very end part of the tip is used, then for each line drawn on the cigarette, a relatively small amount of flavour will be applied. If the edge of the triangular end part is used then the application surface area will be increased. The tip 4b of Figure 1 is a straight line so enables variation to be achieved easily by varying the pressure applied during flavour application.

[0048] The pressure that a user applies and the natural resilience of the cigarette itself can also affect the amount of flavouring applied in a single stroke. It is assumed that after a few uses a user will grow familiar with the force required and/or the amount of flavouring required to flavour the cigarette to the desired degree.

[0049] Referring now to Figure 5 a view of a cigarette is shown for use with the flavour applicator of Figures 1 and 2. The cigarette includes the usual parts that would be expected of a cigarette i.e. a filter end 10, a lighting end 11 and paper 12 rolled and filled with tobacco 13. In addition, provided on the cigarette paper are a number of markings 14 which run substantially along the entire length of the cigarette. In some examples they do extend along the entire length of the cigarette, or at least along the entire smoking length of the cigarette, i.e. the length of the cigarette that is filled with tobacco and would normally be smoked. This might be the length of the cigarette minus the length of the filter tip when one is provided.

[0050] In this example, three lines 14 are provided thereby defining two channel regions 15. By providing such markings, and in particular by providing a plurality of channels 15, it is possible to provide fiducial markings which act as a guide to a user to denote regions on the cigarette that should be covered or applied with the flavour. This means that the amount of flavour applied by a user can be consistently repeated which is particularly helpful for a user once they are aware of the strength of flavouring that they find optimal. For example, some us-

ers may find that filling one of the channels provides a sufficient amount of flavouring whereas others might prefer two, or more. Clearly, the number of channels can be varied and if desired, can extend all the way around the circumference of the cigarette.

[0051] In addition, markings 16 are provided along the length of one or more of the channels or lines which enables a user to selectively flavour only a part of their cigarette and again, to do so consistently and repeatedly with confidence.

[0052] Considering again Figures 1 and 2, it is typical that the housing 1, the application unit 2 and the cap 5 are formed of plastic and/or metal such as aluminium. They might typically be manufactured by injection moulding. Alternative materials for use for any or all of these components include metal such as steel and copper or wood or indeed ceramics.

[0053] The reservoir 3 and tip 4 of the application unit 2 are commonly formed from plastic fibres. Polyester fibres such as polyethylene terephthalate provide good performance. Porous ceramics can be used alternatively for the reservoir and/or the tip if better durability is required. The application unit 2 and the tip 4 including the wicking part provide a specific function which is to facilitate the transport of the flavouring from the reservoir 3 to the tip 4 and onward to a cigarette to be flavoured. It will be appreciated that typically and most easily, the reservoir 3 will be provided as a plastic or metal tube within which liquid can be poured and then when used, arranged to receive the wicking end of the tip 4. However it is also possible that the entirety of the reservoir 3, the tip 4 and the application unit 2 are provided as a single unitary component formed of a porous ceramic. When the user needs to restock the application assembly, the entirety of the reservoir can be submerged within a source of flavouring which is then absorbed into the body of the porous member.

[0054] The flavour itself that is used will typically be a menthol flavouring which will involve some flavouring elements themselves together with an appropriate solvent.

The liquid:

[0055] Liquid formulations are similar to common commercial e-liquids. Typically a solvent or base liquid is provided which is a mixture of PG (propylene glycol) and glycerol ((VG) vegetable glycerine). The base liquid can range from 100 per cent PG to 100 per cent VG.

[0056] PG and VG are hygroscopic and adsorb water from ambient air during usage. Prior to sale, the flavouring will be provided in a bottle preferably contained within hermetically sealed packaging. Accordingly after opening the sealed packaging, the PG and VG are expected to adsorb water from ambient air. Typical water uptake over several weeks of usage ranges from 3% (PG) to 8 % (VG) and mixtures in-between accordingly. Adding a few per cent water to the mixture reduces the effect. Preferably the mixture is provided with about 5% water. It is

known that commercial e-liquids contain between zero and 10% water.

[0057] Nicotine content ranges from zero (nicotine-free) to 4% and flavour content from zero (for users who mix it by themselves) to 5%. Typically the flavour concentration of around 1% is sufficient for most flavourings.

[0058] It is preferred that the glycerol content should be on the lower side, e.g. for use in the flavouring composition. Typically, the glycerol concentration is at a maximum of 25%, and more preferably about 10%. A maximum of 50% would typically be used.

[0059] The materials for use in the manufacture of the application device are commercially available. The size, shape and liquid reservoir capacity can vary from application to application and adapted according to a user's needs.

[0060] Examples have been made and have been shown to have significant shelf lives and stability. Samples have been shown to be functional 6 months after manufacture and to have demonstrated no leakage or drying-out.

[0061] Hygienic aspects have also been considered for applications with saliva or skin contact. This is particularly important when the device is configured or used as a cleansing stick as will be described in greater detail below. PG/VG mixtures have well-described and well known anti-bacterial properties. In any event, regular replacement of the tip 4 or indeed the entire application unit 2 is possible.

[0062] Nicotine containing products require child-proof packaging, e.g. sealed in blister packs.

[0063] A number of possible applications have been developed. These include menthol flavouring or indeed alternative flavourings such as coffee aroma and nicotine. Four different examples have been prepared and tested as follows:

Taste enhancement of tobacco products, flavour application on cigarettes

a) Product M1
for menthol application on cigarette wrapper; 5 % menthol in PG, max 10 % VG, 5 % water

b) Product M2

Menthol replacement: 10 % DL-iso-menthone in PG
Menthone is milder, less sharp than menthol.
See also 3. Cleansing.

c) Product TM
for applying menthol-nicotine-aroma: 65 % PG, 25 % VG, 1 % menthol, 1 % nicotine, 1 % tobacco extract, 5 % water.

d) Product CN
50 % PG, 42 % VG, 5 % water, 2 % nicotine, 1 % coffee aroma (also for oral administration)

[0064] As explained above, in use then to flavour a cigarette, liquid is added to the smoking article by drawing one or more lines along the paper seam of a cigarette. By drawing the line on the seam paper porosity is minimised and so preferably the fiducial marking referred to above are provided on or close to the seam on the cigarette. In practice, it will be expected that the wrapper or paper will become slightly transparent. Drying could take a few minutes but it is not necessary for the smoking experience. The paper structure is not affected by the solvents used, which contrasts with water-based liquids which would cause wrinkling or waving of the paper surface. If coloured liquids are used, the line will remain visible.

[0065] In one example, in addition to the ingredients mentioned above, for use in the various flavourings, some ethanol (up to 20% by volume) is added which speeds up the drying of the flavouring on the cigarette.

[0066] In a further embodiment, the application can be used for the oral administration of nicotine. Instead of or as well as using a flavouring such as menthol, nicotine is provided in solution within the reservoir 4 of the application unit 9. In such cases, an application tip 5 is provided wider than that shown in Figures 1 and 2. A user can then directly apply nicotine to their mouths. It is known that nicotine uptake in the mouth cavity is slower as compared to inhalation during smoking of cigarettes or e-cigarettes. Accordingly, the nicotine content within the solution is provided as between 2% and 4%, 1% and 6%, or preferably between 2% and 4% within the solution. Nicotine is colourless and tasteless but due to the fact that some users report a slight bitterness, a sweetening flavouring can be added or indeed any flavouring which will counteract the sense of bitterness. For example flavours such as coffee, tea, whisky, fruit or confectionary would work well and deliver a more intense sensation by comparison to the administration of inhalation products such as cigarettes or e-cigarettes.

[0067] Furthermore, the nicotine administration device can also be used instead of orally, by applying directly onto a user's skin. In other words the action would be similar to applying a felt tip to one's skin but the nicotine would quickly be received by the user. This provides a very easy to use and flexible way to provide nicotine without any smoking and without the lack of flexibility provided by skin-based nicotine patches.

[0068] Figures 3a and 3b show a further example of the flavour applicator. In this example, the applicator is configured for use as a cleansing stick. The stick can be used to clean teeth and fingers to remove tar staining and smell and also to remove adhesive or glue residues which can appear after tearing off price sticker labels from goods or removing sticky residues on plastic cards such as credit cards. Most materials such as plastics, wood, metal and cardboard are PG-resistant. Resistance of colours and coatings on cardboard boxes may be tested before using the stick. A touch of menthol or peppermint flavouring supports the cleansing effect. If the tip

gets dirty or disintegrated at the top after some usage, it can be cut and reshaped by scissors several times or easily exchanged with a spare.

[0069] Figure 4 shows a tip being replaced. A knife 17 is used to remove an end region 18 of the tip which has become damaged due to use. A new exposed region 19 can then be used by a user in due course.

[0070] Figure 6 is a schematic representation of a flavour applicator for a cigarette according to the present invention. The applicator 30 comprises a housing 32 which functions as a liquid reservoir. An application tip 34 is provided as part of an application assembly 36 or closure mechanism including a spring valve 38. The closure mechanism is arranged in use to provide a seal to the housing or reservoir 32 and upon application of pressure to enable flavouring to be released from the reservoir.

[0071] The spring valve 38 includes a spring 40 together with a valve mechanism 42 arranged in normal use to ensure that the liquid reservoir 32 is sealed, e.g. hermetically sealed, such that no liquid or vapour can leave via the valve 38. The application tip 34 is arranged, in use, in engagement with the valve 38 such that upon application of pressure to the application tip 34, the seal, e.g. the hermetic seal provided by the valve 38, is broken and vapour and liquid can leave the reservoir 32. The application tip 34 is typically provided as a fibrous or porous member which is able to take up liquid from the reservoir 32 for onward application to an external element in the form of a cigarette filter end.

[0072] The examples described above in which flavouring such as menthol can be added to a cigarette by drawing lines on the paper wrapper work well but in some cases can lead to lines of liquid generating a transparent line effect on cigarettes that have been drawn on with the applicator, such that tobacco fibres are visible through the paper. Although not necessarily affecting function, this is nonetheless undesirable. Using the system of Figure 6, this is addressed in that flavouring is applied directly to the filter of the cigarette and not to the main body of the cigarette holding the tobacco.

[0073] In use, the application tip 34 is brought into contact with the circular end face of the cigarette filter. A slight pressure can be applied so as to cause the application tip to open the spring valve 38 and thereby allow flavouring from the liquid reservoir to pass into and through the application tip and then onto the cigarette filter. Typically, by maintaining the slightly pressurised contact between the application tip and the filter for an extended period of time ranging from 3 to 20 seconds and preferably between 10 and 15 seconds, sufficient flavouring can be applied to the filter such that a desired flavouring effect can be experienced by a user subsequently smoking the cigarette. Instead the application tip 34 may be brought into contact with side of the cigarette filter.

[0074] The structure of a cigarette filter is typically in the form of a compressed fibrous body in which longitu-

dinal fibres are arranged generally longitudinally in alignment with respect to the longitudinal axis of the cigarette itself. This means that a capillary effect is caused which encourages the take up of the flavouring in the filter from the application tip of the applicator 30. By varying the duration of application, the amount of flavouring and therefore the "strength" of the flavouring effect can be easily controlled. There is little if any visible effect on the cigarette itself. A small depression in the end of the filter can be generated, however if an appropriate strength of spring is selected this is minimal.

[0075] The mechanism operates well and in tests done by the inventor, the flavour impression has been shown to be stable for at least an hour between application and use. Thus, a cigarette can be flavoured in this way up to an hour before actual smoking by a user and the flavouring effect will be maintained.

[0076] The material for the application tip is typically a fibrous material or it can be formed out of a porous material as described above. In the example shown, a generally pyramidal end surface of the application tip is provided in that in cross section longitudinally, it appears generally triangular or parabolic. In one example, the end surface of the application tip is selected to be flat and to be of circular shape such that a large surface area of interaction with the filter tip is easily achieved. In one example, the end surface of the application tip is selected to be generally convex and having a dimension such that the surface area which will in use contact the filter tip is between 1 and 8 square mm. In one example, the contact surface area of the application tip is between 3 and 5 square mm. In a further example, the diameter d of the application tip is approximately equal to the diameter of a normal cigarette. In other examples, the diameter is significantly smaller, e.g. between 20 and 30% of the diameter of the cigarette on which it will be used.

[0077] The possible flavourings for use within the liquid reservoir can be any of those listed above with respect to the examples described above and shown in Figures 1 to 5.

[0078] In another aspect of the present disclosure, an assembly similar to that shown in Figure 6, is provided as a tooth cleaning device. The spring valve opens by pushing down the tip or by slightly pressing the application tip against a tooth or a surface being cleaned. The mechanism provides a number of advantages including the fact that it is easy and simple to fill by removal of the entire valve assembly 36, which is typically provided with an internal thread for engagement with a corresponding external thread on the liquid reservoir housing 32. The fact that a valve closure mechanism is provided means that improved aroma protection is provided since the substantially hermetic seal of the liquid reservoir means that contents of the liquid reservoir do not leak out when the valve is not open.

[0079] Furthermore, the application tip itself 34 is preferably removable and this is particularly advantageous since it means that when used as a cleaning device, a

replacement tip can easily be arranged within the assembly 30 as a whole. When a used application tip becomes so dirty because of the length of time for which it has been used, it can easily be replaced. The application tip is typically held within the housing element 44 by an interference fit, but the interference fit is not too tight so as to not allow a degree of freedom of movement such that the application tip, when pressed against a surface to be cleaned can interact with the spring and cause it to open the valve mechanism and allow liquid to interact with the application tip.

[0080] The shape of the application tip 34 can be as described generally herein and includes the shapes shown in and described above and labelled 4a to 4c in Figure 1.

[0081] Embodiments include a cigarette flavour applicator, comprising a housing defining a reservoir for the flavour; an application tip arranged in use in contact with the reservoir; a flavouring contained within the reservoir for application to a cigarette.

[0082] In an embodiment, the flavouring is selected from the group consisting nicotine, sweetening, coffee, tea, whisky, spirit, fruit, mint, menthol or confectionary.

[0083] In an embodiment, the application tip has a profile for engagement with a cylindrical-shaped body with diameter between 6 and 8 mm.

[0084] In an embodiment, the profile is concave.

[0085] In an embodiment, the concavity, has a curvature to match that of a standard cigarette.

[0086] In an embodiment, the flavouring comprises a base liquid as a solvent formed of one or more of, or a mixture of PG (propylene glycol) and glycerol ((VG) vegetable glycerine).

[0087] In an embodiment, the flavouring contains up to 10 % water by volume.

[0088] In an embodiment, the flavouring contains nicotine up to 4 % by volume.

[0089] In an embodiment, the flavouring contains between 1% and 5% by volume of a flavour.

[0090] In an embodiment, the flavouring contains up to 10% glycerol by volume.

[0091] In an embodiment, the flavouring contains up to 25% glycerol by volume.

[0092] In an embodiment, the flavouring contains up to 50% glycerol by volume.

[0093] In an embodiment, the application tip comprises a fibrous material arranged to wick flavour from the reservoir.

[0094] In an embodiment, the application tip is formed of a porous ceramic material.

[0095] In an embodiment, there is provided a cleansing stick comprising: a housing defining a reservoir for a flavouring; a fibrous cleaning tip arranged in use in contact with the reservoir; a flavouring contained within the reservoir for flavouring a surface or article to be cleaned.

[0096] In an embodiment, there is provided a cigarette paper for rolling a cigarette, the cigarette paper comprising at least one marking arranged such that it is visible

on the cigarette when rolled, wherein the marking runs substantially along the entire length of the smoking length of the cigarette when rolled.

[0097] In an embodiment, there is a plurality of markings positioned so as to define one or more visible channels along the length of a cigarette when rolled.

[0098] In an embodiment, there is provided a method of flavouring a cigarette, the method comprising, with a flavour applicator, comprising a housing defining a reservoir for the flavour; an application tip arranged in use in contact with the reservoir; and a flavouring contained within the reservoir for application to a cigarette, drawing on a cigarette to thereby apply flavour to the cigarette.

[0099] In an embodiment, drawing comprises applying a line of flavour to the cigarette.

[0100] In an embodiment, the method comprises drawing plural lines onto the cigarette.

[0101] In an embodiment, the method comprises moving the tip in engagement with the cigarette at a speed selected so as to impart to the cigarette a desired amount of flavour.

[0102] Embodiments of the present invention have been described with particular reference to the examples illustrated. However, it will be appreciated that variations and modifications may be made to the examples described within the scope of the present invention, as defined in the appended claims.

Claims

1. A cigarette flavour applicator (30), comprising

a housing defining a reservoir for the flavour;
an application tip (34) arranged in use in contact with the reservoir;

a flavouring contained within the reservoir (32) for application to the filter of a cigarette; and,
a closure mechanism arranged in use to provide a seal to the reservoir (32) and **characterised in that** the closure mechanism is arranged such that upon application of pressure to the application tip (34) release of flavouring from the reservoir is enabled, in which the application tip (34) comprises a fibrous or a porous ceramic material arranged to wick flavour from the reservoir (32).

2. A cigarette flavour applicator according to claim 1, in which the flavouring is selected from the group consisting nicotine, sweetening, coffee, tea, whisky, spirit, fruit, mint, menthol or confectionary.

3. A cigarette flavour applicator according to claim 1 or 2, in which the application tip (34) has a profile for engagement with a cylindrical-shaped body with diameter between 6 and 8 mm.

4. A cigarette flavour applicator according to claim 3,

in which the profile is concave.

5. A cigarette flavour applicator according to claim 4, in which the concavity, has a curvature to match that of a standard cigarette.

6. A cigarette applicator according to any of claims 1 to 5, in which the flavouring comprises a base liquid as a solvent formed of one or more of, or a mixture of PG (propylene glycol) and glycerol ((VG) vegetable glycerine).

7. A cigarette applicator according to claim 6, in which the flavouring contains up to 10 % water by volume.

8. A cigarette applicator according to any of claims 1 to 7, in which the flavouring contains nicotine up to 4 % by volume.

9. A cigarette applicator according to any of claims 1 to 8, in which the flavouring contains between 1% and 5% by volume of a flavour.

10. A cigarette applicator according to any of claims 1 to 9, in which the closure mechanism is spring biased such that absent application of pressure the closure mechanism hermetically seals the reservoir.

11. A cigarette applicator according to any of claims 1 to 10, in which the application tip (34) is removably mounted within the closure mechanism.

12. A cigarette applicator according to claim 11, in which the application tip (34) is removably mounted via a press fit.

13. A method of flavouring a cigarette, the method comprising, with a flavour applicator according to any of claims 1 to 12, applying pressure to the filter of a cigarette to thereby apply flavour to the cigarette.

14. A method according to claim 13, wherein applying pressure to the filter of a cigarette comprises pressing the application of the applicator against an end surface of the filter of the cigarette.

15. A method according to claim 14, comprising selectively varying the time of application for a period of time between 5 and 20 seconds to control the amount of flavouring transferred to the cigarette.

Patentansprüche

1. Aroma-Applikator für eine Zigarette, umfassend

ein Gehäuse, das ein Reservoir für das Aroma definiert;

- eine Applikationsspitze (34), die im Gebrauch in Kontakt mit dem Reservoir angeordnet ist; einen in dem Reservoir (32) enthaltenen Aromastoff zum Applizieren in den Filter einer Zigarette; und einen Verschlussmechanismus, der im Gebrauch so angeordnet ist, dass er eine Dichtung für das Reservoir (32) bereitstellt, und **dadurch gekennzeichnet, dass** der Verschlussmechanismus so angeordnet ist, dass bei Aufbringen von Druck auf die Applikationsspitze (34) eine Freisetzung des Aromastoffes aus dem Reservoir ermöglicht wird, wobei die Applikationsspitze (34) ein faseriges oder ein poröses keramisches Material umfasst, das so angeordnet ist, dass es Aroma aus dem Reservoir (32) ableitet.
2. Aroma-Applikator für eine Zigarette nach Anspruch 1, wobei der Aromastoff ausgewählt ist aus der Gruppe bestehend aus Nikotin, Süßstoff, Kaffee, Tee, Whisky, Spirituosen, Frucht, Minze, Menthol oder Süßwaren.
 3. Aroma-Applikator für eine Zigarette nach Anspruch 1 oder 2, wobei die Applikationsspitze (34) ein Profil zum Eingriff in einen zylinderförmigen Körper mit einem Durchmesser zwischen 6 und 8 mm aufweist.
 4. Aroma-Applikator für eine Zigarette nach Anspruch 3, wobei das Profil konkav ist.
 5. Aroma-Applikator für eine Zigarette nach Anspruch 4, wobei die Konkavität eine Krümmung aufweist, die derjenigen einer Standardzigarette entspricht.
 6. Aroma-Applikator für eine Zigarette nach einem der Ansprüche 1 bis 5, wobei der Aromastoff eine Basisflüssigkeit als Lösungsmittel umfasst, das aus einem oder mehreren von, oder einer Mischung aus, PG (Propylenglykol) und Glycerin ((VG) pflanzliches Glycerin) gebildet ist.
 7. Applikator für eine Zigarette nach Anspruch 6, wobei der Aromastoff bis zu 10 Vol.-% Wasser enthält.
 8. Applikator für eine Zigarette nach einem der Ansprüche 1 bis 7, wobei der Aromastoff bis zu 4 Vol.-% Nikotin enthält.
 9. Applikator für eine Zigarette nach einem der Ansprüche 1 bis 8, wobei der Aromastoff zwischen 1 und 5 Vol.-% eines Aromas enthält.
 10. Applikator für eine Zigarette nach einem der Ansprüche 1 bis 9, wobei der Verschlussmechanismus durch eine Feder so vorgespannt ist, dass der Verschlussmechanismus bei fehlendem Aufbringen von Druck das Reservoir hermetisch abdichtet.
 11. Applikator für eine Zigarette nach einem der Ansprüche 1 bis 10, wobei die Applikationsspitze (34) abnehmbar innerhalb des Verschlussmechanismus befestigt ist.
 12. Applikator für eine Zigarette nach Anspruch 11, wobei die Applikationsspitze (34) über eine Presspassung abnehmbar befestigt ist.
 13. Verfahren zum Aromatisieren einer Zigarette, wobei das Verfahren umfasst, dass mit einem Aroma-Applikator nach einem der Ansprüche 1 bis 12 Druck auf den Filter einer Zigarette aufgebracht wird, um dadurch Aroma in die Zigarette zu applizieren.
 14. Verfahren nach Anspruch 13, wobei das Aufbringen von Druck auf den Filter einer Zigarette das Pressen der Applikation des Applikators gegen eine Endfläche des Filters der Zigarette umfasst.
 15. Verfahren nach Anspruch 14, umfassend das selektive Variieren der Applikationszeit für eine Zeitspanne zwischen 5 und 20 Sekunden, um die auf die Zigarette übertragene Aromastoffmenge zu steuern.

Revendications

1. Applicateur d'arôme pour cigarette (30) comprenant
 - un carter définissant un réservoir pour l'arôme ;
 - une pointe d'application (34) conçue en cours d'utilisation pour être en contact avec le réservoir ;
 - un arôme contenu à l'intérieur du réservoir (32) pour être appliqué sur le filtre d'une cigarette : et
 - un mécanisme de fermeture conçu en cours d'utilisation pour sceller le réservoir (32) et **caractérisé en ce que** le mécanisme de fermeture est conçu de sorte qu'à l'application d'une pression sur la pointe d'application (34), une libération d'arôme est permise depuis le réservoir, la pointe d'application (34) comprenant un matériau fibreux ou un matériau céramique poreux conçu pour acheminer par effet de mèche de l'arôme depuis le réservoir (32).
2. Applicateur d'arôme pour cigarette selon la revendication 1, dans lequel l'arôme est choisi dans le groupe constitué de nicotine, édulcorant, café, thé, whisky, spiritueux, fruit, menthe, menthol ou confiserie.
3. Applicateur d'arôme pour cigarette selon la revendication 1 ou 2, dans lequel la pointe d'application (34) a un profil conçu pour s'engager sur un corps cylindrique de diamètre entre 6 et 8 mm.
4. Applicateur d'arôme pour cigarette selon la revendication 1 ou 2, dans lequel la pointe d'application (34) est constituée d'un matériau poreux.

cation 3, dans lequel le profil est concave.

5. Applicateur d'arôme pour cigarette selon la revendication 4, dans lequel la concavité a une courbure conçue pour correspondre à une cigarette standard. 5
6. Applicateur d'arôme pour cigarette selon l'une quelconque des revendications 1 à 5, dans lequel l'arôme contient un liquide de base solvant constitué d'au moins un parmi ou un mélange de PG (propylène glycol) et glycérol ((VG) glycérine végétale). 10
7. Applicateur d'arôme pour cigarette selon la revendication 6, dans lequel l'arôme contient jusqu'à 10 % d'eau en volume. 15
8. Applicateur d'arôme pour cigarette selon l'une quelconque des revendications 1 à 7, dans lequel l'arôme contient de la nicotine à hauteur de jusqu'à 4 % en volume. 20
9. Applicateur d'arôme pour cigarette selon l'une quelconque des revendications 1 à 8, dans lequel l'arôme contient entre 1 % et 5 % en volume d'un arôme. 25
10. Applicateur d'arôme pour cigarette selon l'une quelconque des revendications 1 à 9, dans lequel le mécanisme de fermeture est sollicité par ressort de sorte qu'en absence d'application de pression, le mécanisme de fermeture scelle hermétiquement le réservoir. 30
11. Applicateur d'arôme pour cigarette selon l'une quelconque des revendications 1 à 10, dans lequel la pointe d'application (34) est montée de façon amovible à l'intérieur du mécanisme de fermeture. 35
12. Applicateur d'arôme pour cigarette selon l'une quelconque des revendications 1 à 11, dans lequel la pointe d'application (34) est montée de façon amovible via une insertion forcée. 40
13. Procédé d'aromatisation d'une cigarette, le procédé comprenant, avec un applicateur d'arôme selon l'une quelconque des revendications 1 à 12, d'appliquer une pression au filtre d'une cigarette pour ainsi appliquer un arôme à la cigarette. 45
14. Procédé selon la revendication 13, dans lequel appliquer une pression au filtre d'une cigarette comprend d'appuyer l'application de l'applicateur contre une surface terminale du filtre de la cigarette. 50
15. Procédé selon la revendication 14, comprenant de faire varier sélectivement la durée d'application sur une durée entre 5 et 20 secondes pour contrôler la quantité d'arôme transférée à la cigarette. 55

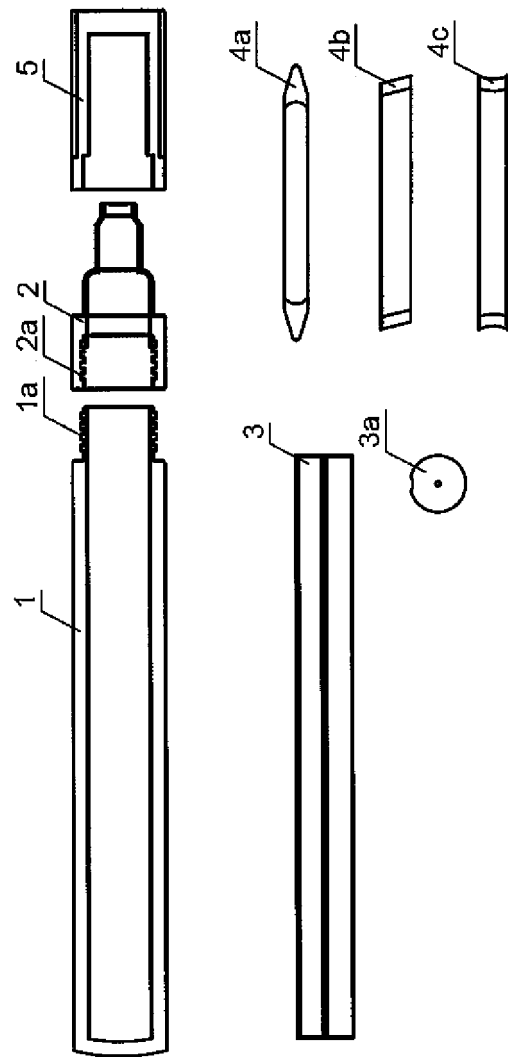


Fig. 1

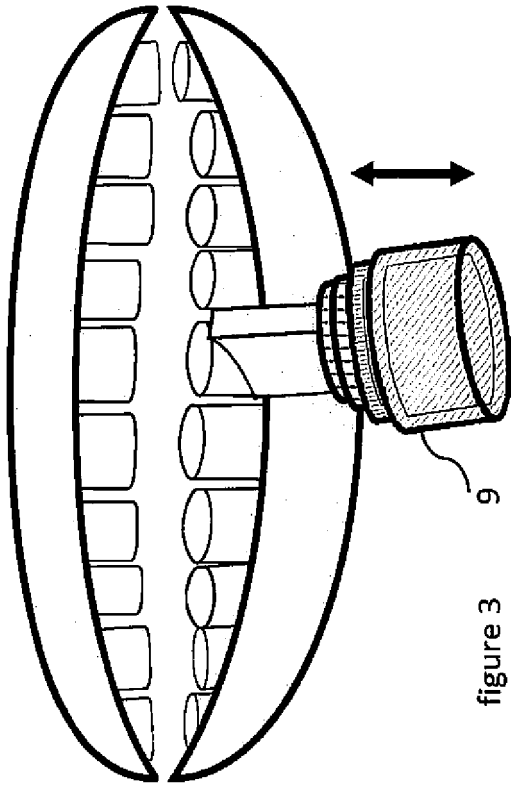


figure 3

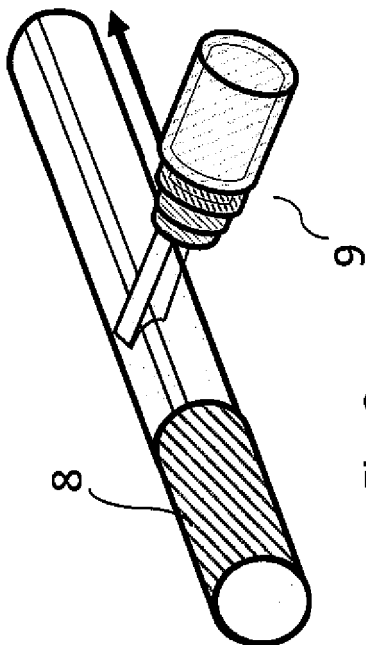


Fig. 2

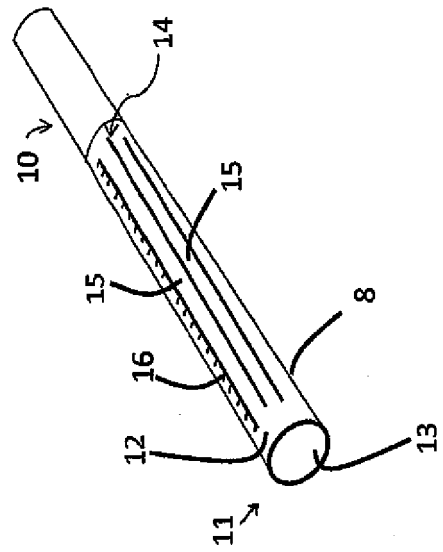


Fig. 5

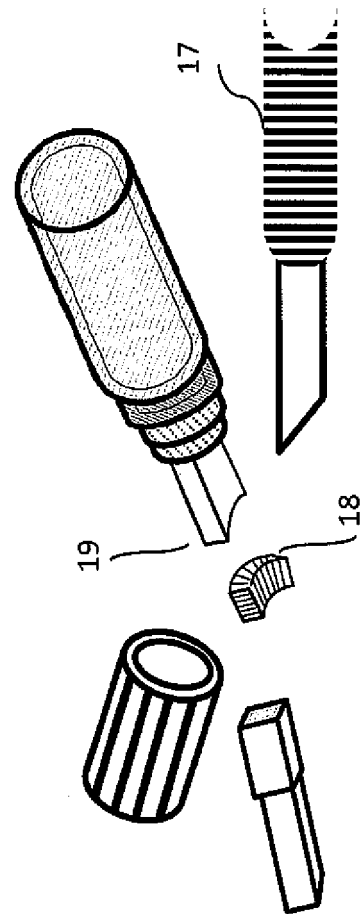
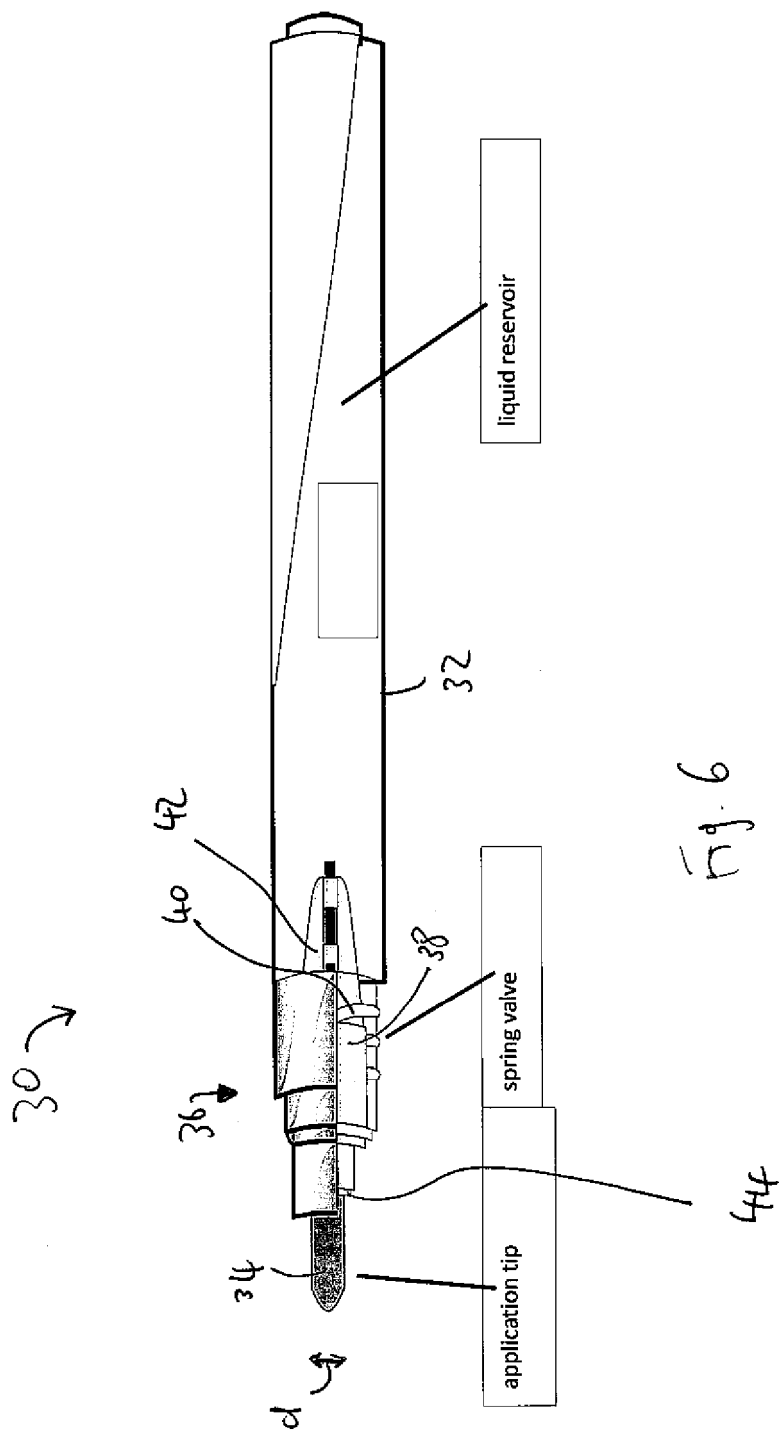


Figure 4:



REFERENCES CITED IN THE DESCRIPTION

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