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(54) **CIGARETTE PROVIDED WITH A SELF-LIGHTING DEVICE**

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(57) **ABSTRACT**

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The invention relates to a cigarette provided with a self-lighting device comprising: a primary chemical material (7) placed at the lighting end (4) of the cigarette (1), and a secondary chemical material (8) that is incompatible with the primary material (7), said primary and secondary materials being inflammable when they are in contact with each other. The secondary material (8) is contained in a receptacle (9) initially arranged at one of the ends of the cigarette, in an arrangement preventing said secondary material and said primary material (7) from coming into contact, and said receptacle is removable and configured in such a way as to be positioned against the end (4) to be lit, in an arrangement enabling the secondary material (8) to be brought into contact with the primary material (7), the receptacle being initially fixed to the end (5) opposing the end to be lit (4).

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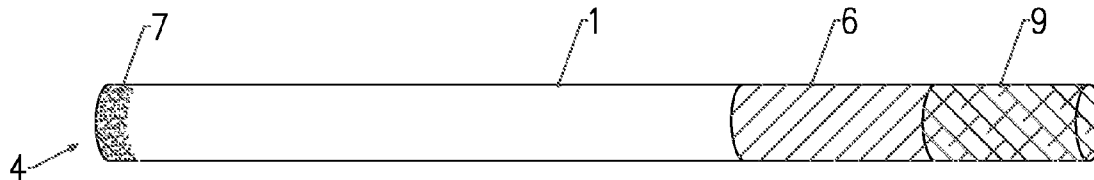
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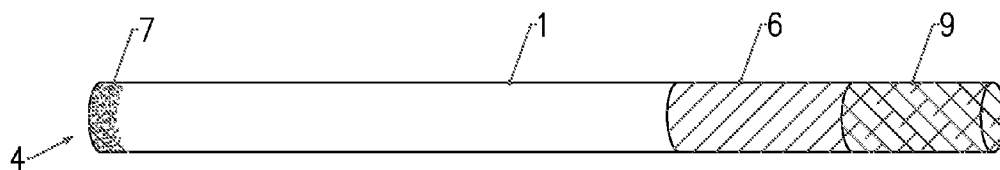


Fig. 1

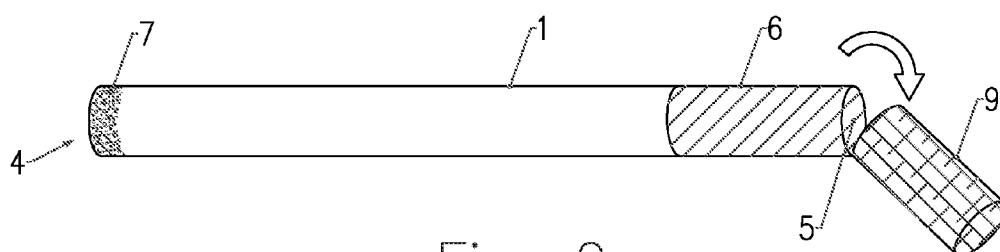


Fig. 2

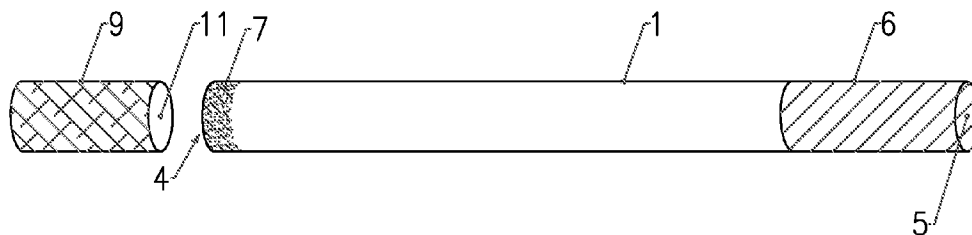


Fig. 3

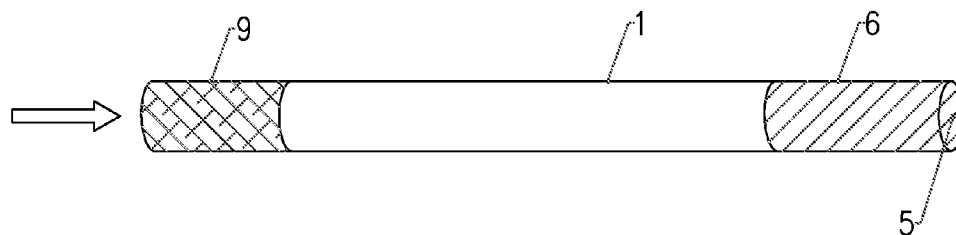


Fig. 4

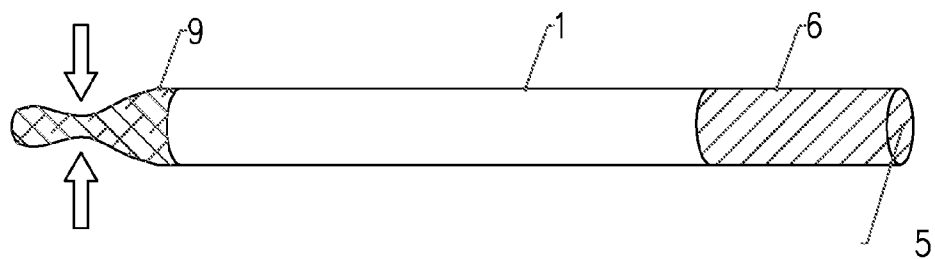


Fig. 5

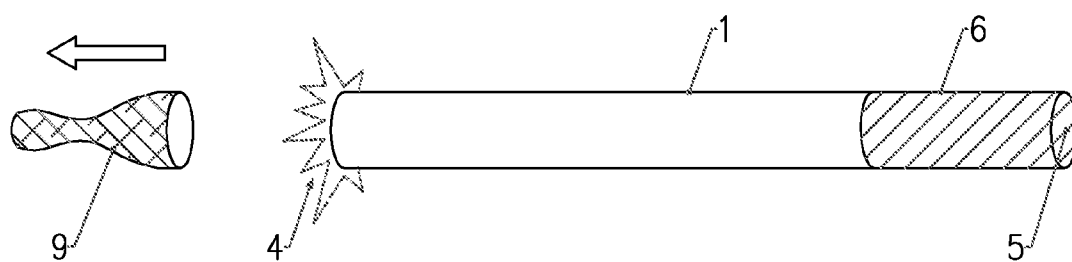


Fig. 6

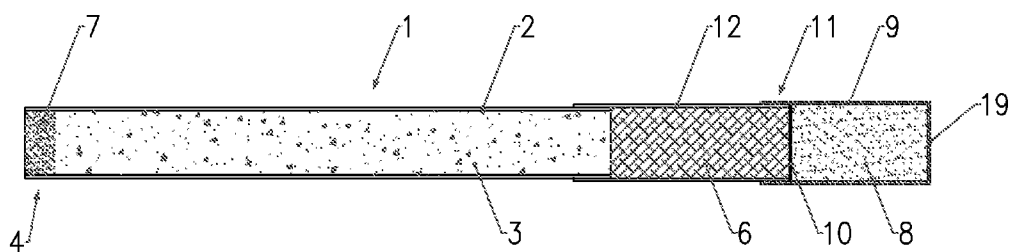


Fig. 7a

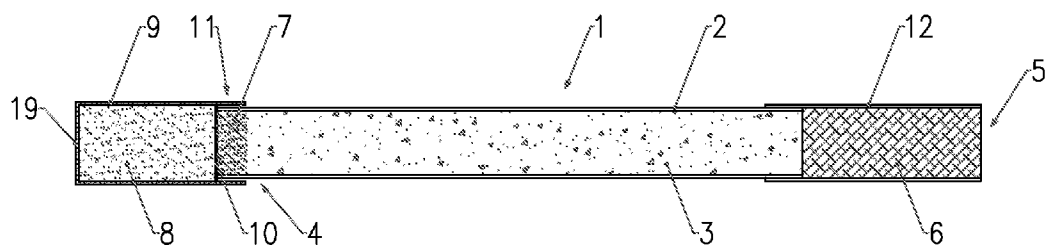


Fig. 7b

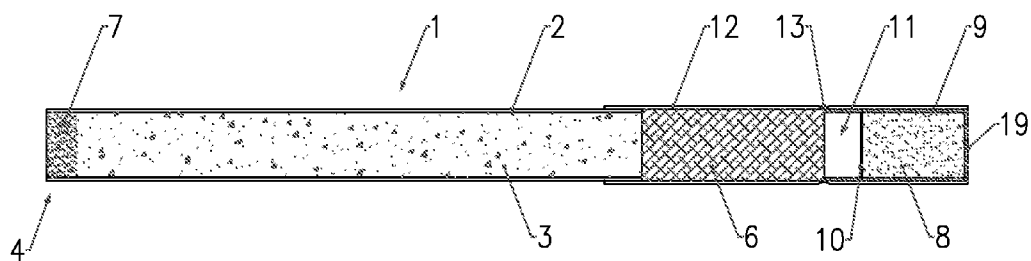


Fig. 8a

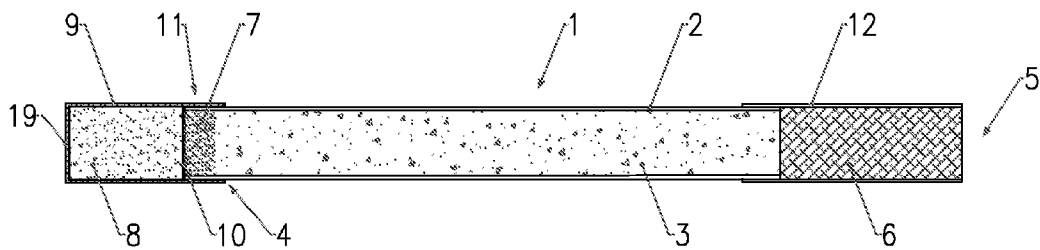


Fig. 8b

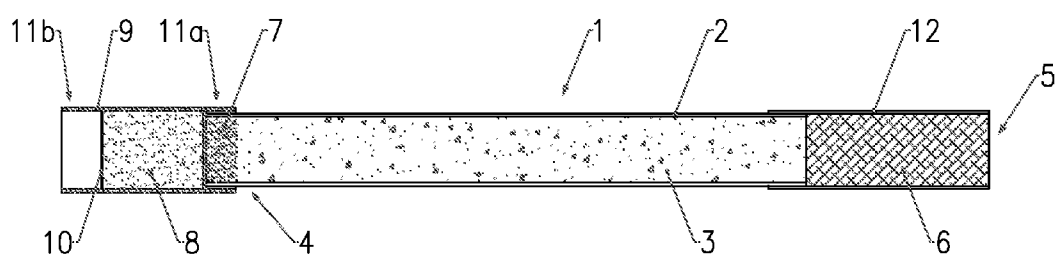


Fig.9a

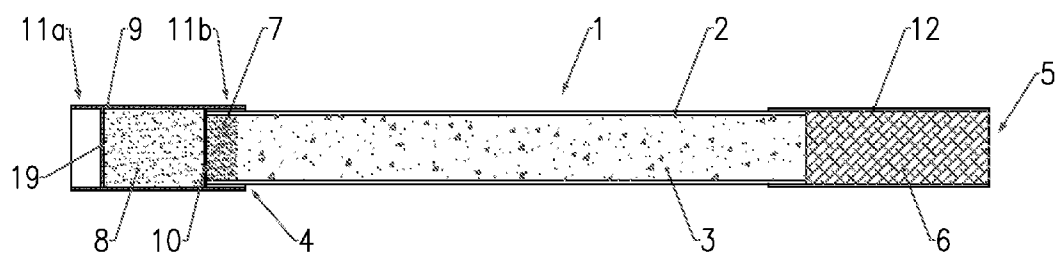


Fig.9b

CIGARETTE PROVIDED WITH A SELF-LIGHTING DEVICE

TECHNICAL FIELD OF THE INVENTION

[0001] The invention relates to a cigarette provided with a self-lighting device as well as a method for lighting a cigarette.

[0002] It relates to the technical field of pyrotechnical devices and more particularly those intended for lighting cigarettes and supplying an alternative to the conventional means of the lighter or match type.

PRIOR ART

[0003] Devices for self-lighting cigarettes illustrating prior art are described in the following patent documents: FR 2 905 231 (Charli ABISDID), BG 407 714 (M. MARGOLIS), DE 3 509 293 (LIECHTENSTEIN RICHARD VON), EP 0 066 021 (YOO, BYUNG EON) FR 7 539 535 (TOKYO ENGINEERING CO.) D5: GB 314 145 (Piedad and Alejandro LIFCHUZ), FR 709 175 (Giulio TURRI), JP 2005 5 224 232 (ISHIKAWA JOJI), GB 406 153 (Ansley HERMAN FOX). These devices comprise an ignition material configured to ignite a flammable material under the effect of an impact or friction. The friction strips generally used, are worn as the cigarettes are lit. And the more the strip is worn, the more difficult it is to light a cigarette.

[0004] In order to overcome this disadvantage, it is known through documents FR 1 014 899 (Louis Thomas FONDO), BG 1 012 826 (Pierre JACQUET), BG 97 941 (BONCHEV MIROSLAV B.), GB 356 861 (Robert SUTHERLAND), GB 752 365 (Hans HANNO MOSER), GB 790 341 (Kurt KORBER), devices for self-lighting comprising a primary chemical material placed at the end to be lit of the cigarette, and a secondary chemical material that is incompatible with the primary material. These devices use the principle of incompatibility of chemical materials that ignite spontaneously when they are brought into contact with each other. In practice, the secondary chemical material is:

[0005] either conditioned on one of the faces of the cigarette pack in such a way that during the manipulation of said pack, said secondary chemical material can be detached, causing, because of this, difficulties to later light cigarettes,

[0006] or conditioned in individual containers, in such a way that it is indispensable to not forget to take said containers in order to light cigarettes.

[0007] It is known more particularly through document U.S. Pat. No. 3,109,435 (PALEY), a cigarette provided with a self-lighting device comprising: a primary chemical material placed at the end to be lit of the cigarette, and a secondary chemical material that is incompatible with said primary material. The secondary material is contained in a removable receptacle configured in such a way as to be positioned against the end to be lit, in an arrangement enabling said secondary material to be brought into contact with the primary material. The receptacle described in this document is initially arranged on the end to be lit. With such a device, the risks of accidental detachment of the receptacle and of bringing it into contact with the primary lighting material cannot be excluded.

[0008] Faced with these conditions, the invention has for main objective to provide a device allowing for an easy light-

ing of a cigarette, while still suppressing the deficiencies linked to the conditioning of the secondary chemical material known in prior art.

[0009] The invention also has for purpose to provide a device for self-lighting that is easy to use, of simple design and inexpensive.

DIVULGATION OF THE INVENTION

[0010] The solution proposed by the invention is a cigarette provided with a self-lighting device comprising:

[0011] a primary chemical material placed at the end to be lit of the cigarette,

[0012] a secondary chemical material that is incompatible with the primary material,

[0013] said primary and secondary materials being capable to ignite when they are in contact with each other.

[0014] This cigarette is remarkable in that the secondary material is contained in a receptacle initially arranged at one of the ends of the cigarette, in an arrangement preventing said secondary material from coming into contact with the primary material. And in that the receptacle is removable, and configured in such a way as to be positioned against the end to be lit, in an arrangement enabling the secondary material to be brought into contact with the primary material.

[0015] Being able to associate a unitary receptacle to each cigarette allows the user to systematically have a sufficient dose of secondary material available, providing the user with an effective lighting of cigarettes. Furthermore the design of such a receptacle can be carried out easily at the industrial stage and using it is attractive for users.

[0016] In order to prevent a cigarette from being lit accidentally when the pack wherein it is stored, is shaken or crushed, the receptacle is advantageously configured to:

[0017] be positioned at the inhalation end opposite the end to be lit of the cigarette, so that the secondary chemical material is initially physically separated from the primary chemical material,

[0018] fit over the end to be lit, in order to bring the secondary chemical material into contact with the primary chemical material and ignite the end to be lit of the cigarette.

[0019] According to a first embodiment of the invention making it possible to easily and quickly detach the receptacle from the inhalation end and position it against the end to be lit, said receptacle comprises a fastening zone configured to:

[0020] fit over the inhalation end opposite the end to be lit of the cigarette,

[0021] and to fit over the end to be lit.

[0022] According to a second embodiment making it possible to limit the risks of accidental detachment of the receptacle from the inhalation end, said receptacle is initially positioned, preferably fixed, to the inhalation end opposite the end to be lit, said receptacle being scored in such a way as to allow for an independent manipulation of the cigarette and of said receptacle.

[0023] In order to quickly and effectively incorporate the receptacle to a cigarette, during the manufacture of the latter:

[0024] a filter can be fixed by a packaging onto the inhalation end of the cigarette,

[0025] the receptacle can be a cylindrical tube arranged in the extension of the filter, with the packaging providing for the fastening of said tube onto said filter.

[0026] In the absence of a filter, the receptacle is a cylindrical tube arranged in the extension of the inhalation end, said receptacle being fixed by a packaging directly onto said inhalation end.

[0027] So that the user can easily separate the receptacle from the rest of the cigarette, the packaging advantageously comprises a fragile portion on the junction of the filter (or of the inhalation end) and of said receptacle. This fragile portion making it possible to manually detach the receptacle by traction, bending, twisting or rotation.

[0028] With the purpose of facilitating the positioning of the receptacle against the end to be lit, said receptacle preferably has the shape of a cylindrical tube configured to fit over said end to be lit and bring the secondary chemical material into contact with the primary chemical material.

[0029] In an alternative embodiment, the receptacle is initially fixed to the end to be lit. The receptacle can then comprise:

[0030] a first fastening zone that is sealed with regards to the secondary chemical material, said first zone being configured to fit over the end to be lit of the cigarette, so that said secondary chemical material is initially physically separated from the primary chemical material,

[0031] a second fastening zone that is sealed with regards to the secondary chemical material, said second zone being configured to fit over the end to be lit, in order to bring said secondary chemical material into contact with the primary chemical material and ignite the end to be lit of the cigarette.

[0032] The receptacle can also be a cylindrical tube arranged in the extension of the end to be lit, said receptacle being fixed by a packaging directly onto said end to be lit. The packaging advantageously comprises a fragile portion making it possible to manually detach the receptacle by traction, bending, twisting or rotation.

[0033] In order to prevent the secondary material from exiting the receptacle when the pack wherein the cigarette is conditioned is crushed, said secondary material is preferably conditioned in one or several capsules arranged in the receptacle, said receptacle comprising one or several flexible walls making it possible to break said capsules by crushing when a force of pressure is exerted on said flexible wall or walls.

[0034] According to another advantageous characteristic of the invention making it possible to provide an optimum conditioning of the secondary material while still facilitating its extraction from the receptacle, said receptacle is closed by a frangible seal.

[0035] According to another advantageous characteristic of the invention making it possible to comply with the current sanitary standards, the primary chemical material comprises potassium permanganate and the secondary chemical material comprises glycerin. The pair of "potassium permanganate/glycerin" primary and secondary chemical materials makes it possible to rapidly ignite the end to be lit of the cigarette while still being eliminated easily with the ashes during the combustion of said end.

[0036] Another aspect of the invention relates to a method for lighting a cigarette wherein:

[0037] a primary chemical material is placed at the end to be lit of the cigarette,

[0038] the primary chemical material is brought into contact with a secondary chemical material that is incompatible in such a way as to ignite the end to be lit.

[0039] This method is remarkable in that:

[0040] the secondary material is arranged in a receptacle initially arranged at one of the ends of the cigarette, in an arrangement preventing said secondary material from coming into contact with the primary material,

[0041] said receptacle is arranged against the end to be lit, according to an arrangement enabling the secondary material to be brought into contact with the primary material.

DESCRIPTION OF THE FIGURES

[0042] Other advantages and characteristics of the invention shall appear better when reading the following description of a preferred embodiment, in reference to the annexed drawings, carried out by way of non-restricted examples for the purpose of information and wherein:

[0043] FIGS. 1 to 6 diagrammatically show the various steps making it possible to light a cigarette by means of a self-lighting device in accordance with the invention,

[0044] FIGS. 7a and 7b diagrammatically show a first embodiment of a self-lighting device in accordance with the invention, with the receptacle being respectively arranged on the inhalation end of the cigarette and on the end to be lit of said cigarette,

[0045] FIGS. 8a and 8b diagrammatically show a second embodiment of a self-lighting device in accordance with the invention, the receptacle being respectively arranged on the inhalation end of the cigarette and on the end to be lit of said cigarette,

[0046] FIGS. 9a and 9b diagrammatically show a third embodiment of a self-lighting device in accordance with the invention, the receptacle being arranged on the end to be lit of the cigarette.

EMBODIMENTS OF THE INVENTION

[0047] The invention makes it possible to self-light a cigarette 1. "Cigarette" means a conventional cigarette with or without a filter, a cigarillo, a cigar, or other similar object that can be consumed by a smoker. As shown diagrammatically in FIGS. 1 to 6, a cigarette 1 generally has the shape of a cylinder formed from a sheet of paper 2 and inside of which are arranged chopped leaves of tobacco 3. It has a diameter that can vary from 3 mm to 7 mm and a length that can vary from 60 mm to 100 mm. It comprises an end to be lit 4 and an inhalation end 5 opposite said end to be lit. The inhalation end 5 can in particular comprise a filter 6.

[0048] The self-lighting device of the invention comprises a primary chemical material 7 (or material "to be lit") intended to be placed at the end to be lit 4 of the cigarette 1. The primary chemical material 7 can be put into place via impregnation, coating, compression, insertion into the leaves of tobacco 3, of a liquid, gel, solid, microcapsules, crystals, granules, etc. In practice, the primary material 7 is present over a depth of a few millimetres from the end to be lit 4. The setting in place of the primary material 7 is preferably carried out when the cigarette 1 is manufactured.

[0049] According to the shape chosen, a drying of the primary material 7 can be provided in order to ensure the compatibility of the technology before a storing of the cigarette 1 in a pack over a long duration. Indeed, a material that is not dry would risk polluting the pack, could cause the sticking of

the cigarettes together, could soil fingers, the clothing of the user or objects (such as tables or ashtrays) whereon the cigarette **1** would be placed, etc.

[0050] Also, using a liquid primary material **7** that is encapsulated beforehand makes it possible to protect said primary material from being accidentally spilled, while still allowing the user to break this encapsulation via a suitable voluntary action (for example, by crushing by pressing the end of the cigarette **1** between two fingers). The technique of encapsulation can also be considered with a solid primary material **7**.

[0051] The self-lighting device of the invention further comprises a secondary chemical material **8** (or "lighting" material) chosen to be incompatible with the primary chemical material **7**. As such, the primary and secondary materials are able to react and to ignite when they are in contact with each other. "Ignite" for the purposes of this invention means to produce a thermal energy (for example from 150° C. to 700° C.), with or without a flame, able to light the cigarette **1**. The secondary material **8** can have the form of a liquid, gel, solid, microcapsules, crystals, granules, etc.

[0052] The primary material **7**/secondary material **8** pair can for example be an oxidant/fuel pair of the type potassium permanganate/glycol; silver nitrate/red phosphorus; silver nitrate/sulphur; chlorates and boric acid/glycols; aluminium/tincture of iodine; sodium metal or other metals of the same family/water or reagents with an alcohol end; Raney nickel or phosphoric materials/oxidants (MnO₂, chlorate); nitrocellulose/strong acids (sulphuric, hydrochloric); etc.

[0053] Additional substances can be used to dilute, bind, fix, activate or on the contrary slow down or passivate the chemical matter of incompatible bases implemented in the invention. Other substances can furthermore make it possible to reinforce the resistance of the primary **7** and secondary **8** materials in ambient conditions, in particular of humidity (for example water repellents). It is possible to improve the flammability of the tobacco by impregnating the end to be lit **4** with a "sensitising" material such as nitrocellulose, before depositing the primary material **7**. This has for advantage to make the lighting reliable while still allowing for the reduction of the primary material **7** to the strict minimum.

[0054] The respective quantities of primary **7** and secondary chemical material can vary from 0.1 mg to 5 mg per cigarette.

[0055] Preferably, in order to comply with the health standards in effect and prevent any risk of toxicity, the primary material **7** can comprise potassium permanganate and the secondary material **8** can comprise glycerin. Glycerin is a product commonly used as a food additive: it has the form of a viscous liquid that is transparent, colourless, odourless and non-toxic and which has a sweet taste. As for potassium permanganate, this is an inorganic salt commonly used as a disinfectant and as a deodoriser. It is in particular used for treating drinking water.

[0056] The chemical reaction initiated by this pair of chemical materials is not instantaneous; a short incubation period of a few seconds is required, without this leading the user to conclude that the cigarette was not lit. The reaction is announced by the prior release of a non-toxic smoke consisting solely of carbon dioxide and water vapour. The reaction is not excessively intense, with the effect being similar to that provoked by the flame of a lighter or of a match. Once the reaction is complete, the end **4** of the cigarette is sufficiently lit to allow time for the smoker to bring the cigarette to his lips and to start breathing in the tobacco smoke ensuring that he

does not breathe in the smoke from the incompatibility reaction. These conditions secure the self-lighting of the cigarette **1** and reassure the user. Furthermore, these two chemical materials are sufficiently stable to provide for a duration of use that is sufficient over time.

[0057] In order to make available to the user, in a single operation, everything that he needs to light the cigarette as soon as he extracts it from the pack, the secondary material **8** is contained in a receptacle **9** initially arranged at one of the ends of the cigarette, in an arrangement preventing said secondary material from coming into contact with the primary material **7**. This receptacle **9** is removable, and configured in such a way as to be positioned against the end to be lit **4**, in an arrangement enabling the secondary material **8** to be brought into contact with the primary material **7**. In practice, the secondary material **8** is arranged in a removable receptacle **9** configured to be fitted to the end to be lit **4**. "Fit" in the terms of this invention means the possibility that a receptacle **9** has to be positioned on, against and/or around the end to be lit **4**, with the possibility of remaining or not remaining fixed to said end. Therefore, as the primary **7** and secondary **8** materials are already present on the cigarette **1**, the user does not have to retain in his hand the pack or an element containing the secondary material, contrary to most of the solutions known from prior art. When the user purchases a pack, each cigarette is already provided with its own receptacle **9**, which makes it possible to limit to the minimum of the quantity of secondary material used.

[0058] The receptacle **9** can have a cylindrical, spherical, parallelepiped, or other shape, and be made of paper, cardboard preferably plasticised, of plastic, of rubber, of wadding or "expanded" material of the type used for manufacturing cigarette filters, etc. It can have one or several ends opened towards the exterior or be entirely closed. In practice, the receptacle **9** has the shape of a cylindrical tube, preferably closed at one of its ends **19** and of which the outer diameter corresponds substantially to that of the cigarette **1**. The diameter of the receptacle **9** can for example vary from 2 mm to 8 mm. Its length can vary from a few millimetres to a few centimetres.

[0059] For safety reasons, it is advantageous that the secondary material **8** cannot accidentally be brought into contact with the primary material **7**. For this reason, the receptacle **9** is advantageously initially positioned, preferably fixed, to the inhalation end **5**, i.e. separated from the primary material **7**. The bringing into contact of the two chemical materials can therefore be voluntary only. Before this act, the primary material **7** is physically isolated from the secondary material **8**.

[0060] According to a first embodiment shown in FIGS. *7a* and *7b*, the receptacle **9** comprises a fastening zone **11** configured to fit over the inhalation end **5** and over the end to be lit **4**. This fastening zone **11** has the shape of a cylindrical portion which is opposite the closed end **19** of the tube forming the receptacle **9**. A frangible seal **10** forms the bottom of the fastening zone **11**, the secondary material **8** being arranged between said seal and the closed end **19** of the receptacle **9**. The other end of the fastening zone **11** is open in such a way as to allow for its fitting over the end to be lit **4**. The fastening zone has an inner diameter greater than or equal (for example from 0.1 mm to 1 mm) to the outer diameter of the cigarette **1**, and a length that can vary from 3 mm to 10 mm. When the receptacle **9** is initially fitted over the inhalation end **5**, one or two glue points can be provided in the fastening zone **11** in such a way as to prevent any untimely separation.

[0061] In an alternative embodiment shown in FIGS. 8*a* and 8*b*, the receptacle 9 is scored in such a way as to allow for an independent manipulation of the cigarette 1 and of said receptacle. The initial fastening fixation of the receptacle onto the inhalation end of the cigarette, combined with the scored nature of said receptacle in order to manipulate it, offers a high degree of safety. Indeed, the risks of accidental detachment of the receptacle and of it coming into contact with the primary lighting material are as such substantially limited. In practice, a filter 6 is fixed by a packaging 12 onto the inhalation end 5 of the cigarette 1. This packaging 12 generally has the form of a sheet of paper of which a portion is wrapped around the inhalation end 5 and another portion is wrapped around the filter 6. The packaging 12 is generally sealed by gluing. The receptacle 9 then has the shape of a cylindrical tube initially fixed to the inhalation end 5, in the extension of the filter 6. The packaging 12 then provides for the fastening of the cylindrical tube forming the receptacle onto the filter 6. The sheet of paper forming the packaging 12 has a length chosen to be wrapped around: the inhalation end 5, the filter 6 and the tube forming the receptacle 9. In practice, the packaging 12 can comprise a fragile portion 13 on the junction of the filter 6 and of the receptacle 9, making it possible to manually detach said receptacle by traction, bending, twisting or rotation. This fragile portion 13 can for example consist in a zone with a lesser thickness or in perforations made on the packaging 12, on the junction of the filter 6 and of the receptacle 9. In practice, the receptacle 9 comprises a fastening zone 11 configured to be fitted over the end to be lit 4. This fastening zone has the shape of a cylindrical portion which is opposite the closed end 19 of the tube forming the receptacle 9. A frangible seal 10 forms the bottom of the fastening zone 11, the secondary material 8 being arranged between said seal and the closed end 19 of the receptacle 9. The other end of the fastening zone 11 is open in such a way as to allow for its fitting over the end to be lit 4. The fastening zone 11 has an inner diameter greater than or equal (for example from 0.1 mm to 1 mm) to the outer diameter of the cigarette 1, and a length that can vary from 3 mm to 10 mm.

[0062] In the absence of a filter 6, the receptacle 9 always has the shape of a cylindrical tube initially positioned, preferably fixed, at the inhalation end 5, in the extension of the latter. The packaging 12, preferably provided with a fragile portion 13, provides for the direct fastening of the receptacle 9 on the inhalation end 5. The setting in place of the receptacle 9 is thus carried out in the same way as that of a filter on the cigarettes that are provided with one.

[0063] In FIGS. 1, 2, 7*a* and 8*a*, the receptacle 9 is initially positioned on the inhalation end 5 of the cigarette 1. It can however be provided that the receptacle 9 be initially positioned on the end to be lit 4. This third embodiment is shown in FIGS. 9*a* and 9*b*. The receptacle 9 comprises two fastening zones 11*a* and 11*b*, each configured to be fitted over the end to be lit 4. These fastening zones 11*a*, 11*b* have the shape of a cylindrical portion. The first fastening zone 11*a* is sealed with regards to the secondary material 8 and located in the extension of the closed end 19 of the receptacle 9, while the second fastening zone 11*b* is opposite said closed end.

[0064] The closed end 19 of the receptacle 9 forms the bottom of the first fastening zone 11*a*, with the latter being in fact sealed. The primary material 7 can as such be initially physically isolated from the secondary material 8. The other end of the first fastening zone 11*a* is open in such a way as to allow for its fitting over the end to be lit 4.

[0065] A frangible seal 10 forms the bottom of the second fastening zone 11*b*, the secondary material 8 being arranged between said seal and the closed end 19 of the receptacle 9. The other end of the second fastening zone 11*b* is open in such a way as to allow for its fitting on the end to be lit 4.

[0066] The fastening zones 11*a*, 11*b* have an inner diameter greater than or equal (for example from 0.1 mm to 1 mm) to the outer diameter of the cigarette 1, and a length that can vary from 3 mm to 10 mm. The first fastening zone 11*a* is initially fitted over the end to be lit 4 (FIG. 9*a*). One or two glue points can be provided in such a way as to prevent any untimely separation. In order to bring the secondary material 8 into contact with the primary material 7, it is sufficient to turn over the receptacle 9 and to fit the second fastening zone 11*b* onto the end to be lit 4 (FIG. 9*b*).

[0067] In place of, or in addition to, the first fastening zone 11*a* it is possible to provide a scored receptacle 9, similar to the one described previously for the second embodiment and diagrammatically shown in FIGS. 8*a* and 8*b*, but initially fixed onto the end to be lit 4.

[0068] The secondary material 8 can be directly introduced into the receptacle 9 when it is in solid, gel or creamy form. When it is in fluid form, a spongy material of the sponge type can be inserted into the receptacle 9, in such a way as to contain said secondary material 8, a simple pressure on said spongy material making it possible to release said secondary material.

[0069] It can also be initially conditioned in one or several capsules, which themselves are arranged later in the receptacle 9. In such a configuration with capsules, the receptacle 9 preferably comprises one or several flexible walls making it possible to break said capsules by crushing when a force of lateral pressure (perpendicular to the axis of the cigarette) or longitudinal pressure (in the axis of the cigarette) is exerted on said flexible wall or walls.

[0070] In order to prevent the secondary material 8 from escaping from the receptacle 9, the latter can be closed by a frangible seal 10 made of paper, plastic material, aluminium, etc. A simple pressure of the end to be lit 4 on this seal 10 makes it possible to open it and to release the secondary material 8. In practice, as the secondary material 8 is intended to exit the receptacle 9 from the fastening zone 11, the frangible seal 10 is located on this zone.

[0071] Other technical solutions can however be considered. The primary material 7 can for example be placed in a small receptacle of which the walls are configured (for example micro-perforated) in order to allow a fluid secondary material 8 to pass through. This solution has the advantage of being able to retain a primary material 7 at the powdery state, without any treatment beforehand that can change its crystalline characteristics.

[0072] Likewise, it can be imagined that the primary material 7 be deposited via dusting onto a paper covered with an adhesive whereon the particles of said primary material are glued. The adhesive loaded with particles of primary material 7 is then wound around the end to be lit 4 of the cigarette 1.

[0073] The cigarette paper itself can also incorporate an adhesive strip on the side of the end to be lit 4 of the cigarette 1: the paper is loaded beforehand with particles of primary material 7 and used as such before loading with tobacco of the cigarette 1.

[0074] FIGS. 1 to 6 show how a smoker can light a cigarette with simple gestures, whether he is holding said cigarette in a hand or brings it not yet lit to his mouth.

[0075] According to the first embodiment (FIGS. 7a and 7b) and the second embodiment (FIGS. 8a and 8b) the receptacle 9 is initially fixed to the inhalation end 5 opposite the end to be lit 4 of the cigarette 1, so that the secondary chemical material 8 is physically separated from the primary chemical material 7 (FIG. 1). The user separates the receptacle 9 from the inhalation end 5 (FIG. 2) and positions it facing the end to be lit 4 (FIG. 3). The receptacle 9 is then brought into contact with the end to be lit 4 in such a way that the secondary material 8 wets the primary material of which the end to be lit 4 is coated (FIG. 4). When the receptacle 9 is closed, the user can bring the secondary material 8 into contact with the primary material 7 by crushing said receptacle (FIG. 5). When the receptacle 9 is closed by a frangible seal 10, the user can bring the secondary material 8 into contact with the primary material 7 by piercing said seal by means of the end to be lit 4. When the receptacle 9 is opened towards the exterior, the user can bring the secondary material 8 into contact with the primary material 7 by directly inserting the end to be lit 4 of the cigarette 1 inside said receptacle. Once the secondary material 8 is in contact with the primary material 7, the user removes the receptacle 9 from the end to be lit 4 (FIG. 6). The reaction is initiated and the end to be lit 4 is ignited.

[0076] According to the third embodiment (FIGS. 9a and 9b), first the seal of the receptacle 9 is broken on its free portion which is not in contact with the end to be lit 4. The receptacle 4/cigarette 1 connection is then broken, then said receptacle is turned over in such a way as to fit the second fastening zone 11b against the end to be lit 4. It is then sufficient to exert a pressure on the receptacle 4 in order to empty it of its secondary material 8 and initiate the reaction.

1. A cigarette provided with a self-lighting device comprising:

a primary chemical material placed at the end to be lit of the cigarette,

a secondary chemical material that is incompatible with the primary material, said primary and secondary materials being flammable when they are in contact with each other,

the secondary material is contained in a receptacle initially arranged at one of the ends of the cigarette, in an arrangement preventing said secondary material from coming into contact with the primary material, said receptacle being removable, and configured in such a way as to be positioned against the end to be lit, in an arrangement

enabling said secondary material to be brought into contact with said primary material,

characterised in that the receptacle is initially fixed to the inhalation end opposite the end to be lit, said receptacle being scored in such a way as to allow for an independent manipulation of the cigarette and of said receptacle.

2. A cigarette according to claim 1, characterised in that: a filter is fixed by a packaging onto the inhalation end, the receptacle is a cylindrical tube arranged in the extension of the filter, with the packaging providing the fastening of said tube onto said filter.

3. A cigarette according to claim 1, characterised in that the receptacle is a cylindrical tube arranged in the extension of the inhalation end, said receptacle being fixed by a packaging directly onto said inhalation end.

4. A cigarette according to claim 2, characterised in that the packaging comprises a fragile portion making it possible to manually detach the receptacle by traction, bending, twisting or rotation.

5. A cigarette according to claim 1, characterised in that the receptacle is configured to:

be positioned at the inhalation end opposite the end to be lit of the cigarette, so that the secondary chemical material is initially physically separated from the primary chemical material,

fit over the end to be lit, in order to bring the secondary chemical material into contact with the primary chemical material and ignite the end to be lit of the cigarette.

6. A cigarette according to claim 1, characterised in that the receptacle has the shape of a cylindrical tube configured to fit over the end to be lit of the cigarette and bring the secondary chemical material into contact with the primary chemical material.

7. A cigarette according to, characterised in that the secondary chemical material is conditioned in one or several capsules arranged in the receptacle, said receptacle comprising one or several flexible walls making it possible to break said capsules by crushing when a force of pressure is exerted on said flexible wall or walls.

8. A cigarette according to claim 1, characterised in that the receptacle is closed by a frangible seal.

9. A cigarette according to claim 1, characterised in that the primary chemical material comprises potassium permanganate.

10. A cigarette according to claim 1, characterised in that the secondary chemical material comprises glycerin.

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