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⑤④ **Filter cigarette.**

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Description

This invention relates to a filter cigarette, comprising a tobacco column, wrapped up in cigarette paper, and a filter, which filter comprises cellulose acetate or other suitable material surrounded by a layer which is impermeable to air, such as filter wrapping paper, and surrounded by tip paper which is perforated or porous over at least a part of its area and which is extending over the filter wrapping paper and an end portion of the cigarette paper.

A filter for such a cigarette is known from NL—A—80 01948. This known filter has filter wrapping paper which is impermeable to air in which slots are pressed in more or less regular distances around the outer periphery, which slots also locally compress the cellulose acetate. As the tip paper of the known filter is porous or is provided with perforations and none of the slots is extending over the entire length of the filter, only air would reach the mouth of the smoker through that slots when smoking a cigarette provided therewith. So the smoke would be diluted with ventilation air as it were, and that would have advantageous influence on the tar and nicotine supply of the cigarette.

The reduction of tar and nicotine with this known filter seems attractive but requires a production process which guarantees that the filter wrapping paper is not separated from the cellulose acetate before or during smoking. This guarantee cannot be given apparently.

The invention aims to improve the situation as described above.

According to the invention it surprisingly appeared to be possible to position a layer of material with an open structure between the layer impermeable to air and the tip paper, of which layer the ring adjacent to the tobacco column is sealed. In this way it is guaranteed that no flowing of smoke or air can take place between the tobacco column and the layer of material with an open structure and vice versa.

The material with the open structure can be a non-woven or a tissue of which the warp and weft preferably have different crimp. In the latter case the warp threads with a stronger crimp than the weft threads extend preferably in the direction of the longitudinal axis of the cigarette.

The invention is further explained with reference to the drawing in which as an example a cigarette in perspective according to the invention is shown, the tip paper being shown in the not entirely closed position.

The cigarette shown in the drawing comprises a tobacco column surrounded by cigarette paper 1 and a filter 2.

The filter, with a length of approximately 25 mm comprises in radial direction from the inside to the outside a bar of cellulose acetate 3 surrounded by filter wrapping paper 4 impermeable to air. A layer 5 made of a material with an open structure is wrapped around this filter wrapping paper of which a ring 6 is sealed which is adjacent to the tobacco column. Instead of by application of separate filter wrapping paper the layer impermeable to air 4 can also be obtained by sealing one of the surfaces of the layer 5 with open structure.

The outer periphery of the filter comprises a tip paper 8 provided with perforations 7 which is also connected to part of the cigarette paper 1 in order to achieve a connection between the tobacco column and the filter.

The preferred material for layer 5 is a kind of gauze, but a non-woven material can be preferred, as the visible end of the filter does not have an appearance which differs from the appearance of a normal filter cigarette.

In order to verify whether the invented cigarette shows the desired qualities in practice some experiments are carried out in which the layer 5 comprised a tissue which is crimped to a large extent and the sealed ring had a width of about 2 mm. The whole was surrounded with tip paper 8 with two lines of a suitable perforation 7 and by fastening a tobacco column of about 6 cm thereon, cigarettes were made with that filter. The ventilation degree of these cigarettes, that is to say the percentage of air, flowing from the sucking side which when through the perforations, appeared to be 60%. After sealing the layer 5 to the connection with the tobacco column the average ventilation degree appeared to have descended very much. As to the tar and nicotine outturn the following changes appeared to occur after sealing:

| | Sucking side layer 5 open | Sucking side layer 5 sealed |
|--|---------------------------------|-----------------------------------|
| Dry condensate minus nicotine (mg/cig.) | 5.3 | 14.1 |
| Nicotine (mg/sig.) | 0.48 | 0.95 |

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Other embodiments are also covered in the scope of the claims.

Claims

1. Filter cigarette comprising a tobacco column, wrapped up in cigarette paper (1), and a filter (2), which filter comprises a cellulose acetate (3) or other suitable material surrounded by a layer (4) which is impermeable to air, such as filter wrapping paper, and surrounded by a tip paper (8) which is perforated or porous over at least a part of its area and which extends over the layer (4) impermeable to air and an end portion of the cigarette paper, characterized in that between the layer (4) impermeable to air and the tip paper (8) a layer (5) made of a material with an open structure is positioned, of which layer a ring (6) adjacent to the tobacco column is sealed, whereby no flowing of smoke or air can take place between the tobacco column and the layer of material with an open structure and vice versa.

2. Filter cigarette according to claim 1, characterized in that the material with an open structure is a non-woven material.

3. Filter cigarette according to claim 1, characterized in that the material with an open structure is a tissue of which the warp and weft have different crimps.

4. Filter cigarette according to claim 3, characterized in that the warp threads with a stronger crimp than the weft threads extend in the direction of the longitudinal axis of the cigarette.

Patentansprüche

1. Filterzigarette mit einem mit Zigarettenpapier (1) umwickelten Tabakstrang, und einem Filter (2), welches Filter ein Zelluloseacetat (3) oder ein anderes geeignetes Material enthält das von einer luftdichten Schicht (4) wie Filterwickelpapier und von einem Mundstückpapier (8) das über wenigstens einen Teil seines Bereichs perforiert oder porös ist und das sich über die luftdichte Schicht (4) und einen Endteil des Zigarettenpapiers erstreckt, umgeben ist, dadurch gekennzeichnet, dass zwischen der luftdichten Schicht (4) und dem Mundstückpapier (8) eine Schicht (5) aus einem Material mit einer offenen Struktur angebracht ist, von welcher Schicht ein Ring (6)

angrenzend an dem Tabakstrang zugeklebt ist, wodurch keine Strömung von Rauch oder Luft zwischen dem Tabakstrang und der Schicht aus Material mit einer offenen Struktur und v.v. stattfinden kann.

2. Filterzigarette nach Anspruch 1, dadurch gekennzeichnet, dass das Material mit offener Struktur ein Faservliesmaterial ist.

3. Filterzigarette nach Anspruch 1, dadurch gekennzeichnet, dass das Material mit einer offenen Struktur ein Gewebe ist, dessen Ketten- und Schussfäden eine verschiedene Kräuselung aufweisen.

4. Filterzigarette nach Anspruch 3, dadurch gekennzeichnet, dass die Kettenfäden mit einer stärkeren Kräuselung als die Schussfäden sich in der Richtung der Längsachse der Zigarette erstrecken.

Revendications

1. Cigarette à filtre comprenant une colonne de tabac, enveloppée dans du papier à cigarette (1), et un filtre (2), lequel filtre comprend un acétate de cellulose (3) ou autre matériau convenable entouré par une couche (4) qui est imperméable à l'air, telle que papier d'enveloppement de filtre, et entourée par un papier pour bout (8) qui est perforé ou poreux sur une partie au moins de son aire et qui s'étend par-dessus la couche (4) imperméable à l'air et une partie extrême du papier à cigarettes, caractérisée en ce qu'entre la couche (4) imperméable à l'air et le papier pour bout (8) est disposée une couche (5) en une matière à structure ouverte, couche dont un anneau (6) adjacent à la colonne de tabac est scellé, de sorte qu'aucun écoulement de fumée ou d'air ne peut avoir lieu entre la colonne de tabac et la couche de matière à structure ouverte et vice versa.

2. Cigarette à filtre selon la revendication 1, caractérisée en ce que la matière à structure ouverte est une matière non tissée.

3. Cigarette à filtre selon la revendication 1, caractérisée en ce que la matière à structure ouverte est un tissu dont la chaîne et la trame ont des crêpages différents.

4. Cigarette à filtre selon la revendication 3, caractérisée en ce que les fils de chaîne plus fortement crêpés que les fils de trame s'étendant suivant l'axe longitudinal de la cigarette.

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