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(54) **Smoking articles with filters and apparatus for producing the same.**

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US-A-3 733 246
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Description

The invention relates to elongated smoking articles, for example cigarettes, having a filter at the mouth end of a tobacco rod, the filter being in the form of a rod surrounded by a tipping material, such as paper, suitable for contact with the lips, which overlaps a wrapper or cover surrounding the tobacco rod, and having at its periphery channels for secondary or dilution air covered by the tipping material. The invention also relates to apparatus for producing such an article.

With reference to earlier applications numbers BE—A—891 549, FR—A—2496416 and GB—A—2090117, the applicant has voluntarily limited the scope of the present application and submitted separate claims for Belgium, France and the United Kingdom.

An article of this type is known from DE—OS 2 849 904 in which the filter rod is surrounded by a tubular element in the periphery of which are formed grooves extending to the mouth end and constituting channels for secondary air admitted through cooperating openings in the tipping paper. Through these openings and channels, secondary air is sucked in to dilute the smoke when the article is smoked.

It is an object of the present invention to provide an article of the aforementioned type simply and effectively with secondary air channels.

In accordance with this invention the filter rod is peripherally impermeable to air and that between the tipping material and the filter rod is interposed an intermediate sheet of substantially impermeable material provided with slits extending from the mouth end but occupying only part of the area of the intermediate sheet, thereby forming channels which communicate with perforations in the tipping material.

The intermediate sheet employed according to the invention for providing channels, can be applied in essentially the same way as the tipping paper of conventional cigarettes, so that it is sufficient to provide for the intermediate sheet an additional means for supply and adhesive application, corresponding to that provided for the tipping paper.

The channels formed by the slits have the same cross-sectional depth throughout. They will not be completely compressed, and thus made ineffective, by the lip pressure of the smoker because they still remain open in the areas along their lateral cut edges, even in the case of strong lip pressure. For this purpose it is particularly preferred that the edges of the slits should be cut perpendicular to the plane of the sheet. This result is the opposite to that with channels formed by grooves in the filter rod because, unless it is possible to accept considerable additional cost, the grooves must be of V or U-shaped cross-section and therefore cannot withstand strong lip pressure in the edge areas and, in certain circumstances, may be un-

intentionally blocked and made ineffective.

In order to provide channels with an adequate cross-section, the intermediate sheet must be correspondingly thick. The preferred thickness is from 0.1 to 0.6 mm. If such an intermediate sheet is inserted without special precautions, a shoulder forms at the end of the sheet remote from the mouth. However, this can easily be avoided by a construction in which the intermediate sheet extends from the mouth end of the filter rod to the end remote from the mouth, with the exception of a tolerance gap, and in which the filter rod together with the adherent intermediate sheet has the same cross-section as the tobacco rod.

It has proved advantageous for the channels to have dimensions whereby the slits are uniformly distributed round the periphery of the filter rod, extend in the longitudinal direction of the filter rod, and occupy from 25 to 60% of the filter rod periphery at the mouth end and from 40 to 80% of the total filter rod length.

Apparatus for producing elongated smoking articles of the aforementioned type can easily be converted to produce articles according to the invention, and equipment of the type already used for supplying the tipping paper can be correspondingly used for the intermediate sheet.

The apparatus according to the invention accordingly includes means for supplying and advancing double-width intermediate sheet material, stamping or punching means arranged to make slits in the double-width intermediate sheet, a first adhesive applicator to apply adhesive to the side of the intermediate sheet to be stuck to the tipping paper combining means to assemble the intermediate sheet material into the tipping paper, with their longitudinal axes coincident, to form a combined strip, a second adhesive applicator to apply adhesive to the double-width combined strip. If the perforations for air in the tipping paper are, in the preferred manner, holes communicating with the channels then the perforations can be made initially in the tipping paper strips, or an appropriate stamping or other perforating means can be provided for the strips.

It is desirable that the intermediate sheet should enclose the filter rod with a butt joint and that only the tipping paper should overlap round the rod. This can be achieved by apparatus in which intermediate sheet cutting means are disposed immediately before the combining means to cut the intermediate sheet strip into intermediate sheet portions, the combining means is adapted to apply the intermediate sheet portions at spaced intervals to the tipping paper strip, and that the tipping paper cutting means is synchronised to cut along the edge of each intermediate sheet portion and leave an overlapping edge of the tipping paper strip at the appropriate edge of the resulting cut portion of the combined strip.

It is desirable to apply adhesive in such a way

that no adhesive gets into the vicinity of the channels, so that they cannot be blocked by undesired adhesive. This can be ensured if the first adhesive applicator has an applicator roller which peripherally rolls on the surface of the double-width intermediate sheet strip to be coated with adhesive, and is rotated synchronously with movement of the intermediate sheet strip in such a way that adhesive free zones on the roller contact the slits and prevent the filling thereof with adhesive.

The invention will be described in greater detail, by way of example, with reference to the drawings, in which:

Fig. 1 is a longitudinal section of the mouth end of a smoking article according to the invention, in the form of a cigarette;

Fig. 2 is a view in the direction of the arrow II in Fig. 1.

Fig. 3 shows a double-width intermediate sheet with an underlying double-width tipping paper, whereof half is employed for the single cigarette of Figs. 1 and 2;

Fig. 4 is a diagram of apparatus for inserting the intermediate sheet in producing the article shown in Figs. 1 and 2; and,

Fig. 5 is a perspective view of the adhesive roller of Fig. 4.

In Figs. 1 and 2, a filter rod is permeable to air in the axial direction and is enclosed by an air impermeable wrapper 3. Outside the wrapper 3, the filter rod 1 is surrounded by an intermediate sheet 4, which is made from air impermeable material and has peripherally distributed slits 6 to 10 (Fig. 3) extending in the axial direction. These slits form channels in the finished article, e.g. the slits 6 and 10 form channels 11 and 12 (Figs. 1 and 2). These channels, like the slits, may extend over only 60% but preferably about 70% of the total length 13 of the filter rod 1 and therefore do not reach the end 14 remote from the mouth. The channels occupy 45% of the periphery of the filter rod and are therefore somewhat narrower than the remaining portions of the sheet. The intermediate sheet 4 is preferably 0.2 mm thick. The lateral edges of the slits are cut perpendicular to the plane of the intermediate sheet so that the resulting channels have the cross-section of a curved rectangle, as can be seen in Fig. 2. With the exception of a tolerance gap 15, the intermediate sheet 4 extends up to the end of 14 of the filter rod 1 remote from the mouth and surrounds the filter rod with a butt joint 16, i.e. without overlap.

At the end of the filter rod remote from the mouth is fitted a tobacco rod 17, the cross-section 18 of which, including its air impermeable wrapper 19, is the same as the total cross-section 20 of the filter rod 1 and the intermediate sheet 4. The filter rod, including the wrapper 3 thus has a cross-section which is smaller than the cross-section of the tobacco rod by an amount depending on the thickness of the intermediate sheet.

The profile of the tobacco rod 17, including the wrapper 20 is continued without a shoulder by the filter rod 1 together with the intermediate sheet 4. A tipping paper 21, which surrounds the filter rod with an overlap 22, extends the entire length of the filter rod and overlaps at 23 an adjacent region of the tobacco rod, thereby combining the parts into a single article in the form of a cigarette. In the tipping paper strip shown in Fig. 3, it is the projecting region 24 of the tipping paper that covers the tolerance gap 15 and the adjacent region of the tobacco rod.

The tipping paper 21 contains groups of air holes 26, which communicate with the slits and, in the finished cigarette, form inlets for the flow of secondary air into the channels.

Except for the groups of openings 26, the tipping paper 21 is impermeable to air. The intermediate sheet 4 is stuck to the filter rod 1 on the side and the tipping paper 21 on the other side. When applying the necessary adhesive the slits are avoided as far as possible so as to prevent the channels from becoming constricted by the adhesive. The channels 11 and 12 are open for the flow of secondary air through the corresponding groups of air holes and for the escape of such air at the mouth end, but for the rest are completely airtight. They can if desired be narrowed by the smoker's lips by pressing in the tipping paper in order to reduce the dilution ratio, but cannot be completely closed unintentionally.

In the apparatus shown in Fig. 4, a reel 20 supplies a double-width tipping paper strip 31. The strip 31 passes round a guide roll 32, where it meets cut portions of the intermediate sheet material and then passes to cutting means 33 where it is cut into portions, which then pass to the manufacture of cigarettes, as hereinafter described.

A double-width strip 35 of intermediate sheet material is supplied by a reel 36, from which it is removed by driven rolls 37. The double-width strip 35 passes through a punching device 38 where slits are punched in it as shown at 6 to 10 in Fig. 3. Adhesive is applied to the upper surface of the punched strip 35 by a first adhesive applicator 40. The strip 35 is then cut by a rotary cutter 43 into intermediate sheet portions 44, so dimensioned that each portion can surround a double-length filter rod with a butt joint as shown at 16 in Fig. 2. In combining means 45, which includes the guide roll 32 and is positioned directly behind the intermediate sheet cutting device 43, the portions 44 are brought together with the double-width tipping paper strip 31, to which the portions adhere to form a combined strip 47.

The rate of advance of the intermediate sheet strip 35 is approximately 10% lower than the rate of advance of the tipping paper strip 31. A suction roller 46, forming part of the combining means 45, rotates at a circumferential speed corresponding to the speed of passage of the

tipping paper strip 31. The intermediate sheet portions 44 held by the suction roller 46 move faster than the tipping paper strip, so that spacings are formed which correspond to the desired overlap 22. The intermediate sheet portions 44 and the tipping paper strip 31 are brought together in such a way that the ultimate mouth ends, i.e. the mid-lines of the two strips 31 and 35 coincide at the broken line 34 in Fig. 3.

The underside 49 of the resulting combined strip 47 is coated with adhesive in a second applicator 50 and the combined strip is then severed in the cutting means 33. The cut is made along the leading or trailing edge of the associated intermediate sheet portion 44, so that portions 51 are formed with an edge of the tipping paper projecting to one side, which can form the overlap 22. As in known cigarettes without an intermediate sheet, the tipping paper portions are stuck around the ends of two tobacco rods and intermediately positioned double-length filter rod. The resulting double filter cigarettes are then cut into two filter cigarettes in the centre of the double-length filter rods, as along the broken line 34 in Fig. 3.

The groups of air holes 26 are formed by perforations in the tipping paper 21. For this purpose, continuous perforations can be provided which thus also extend over the gaps between the slits. In this case, it is possible to use a reel 30 of preperforated tipping paper strip. However, one may also use a reel 30 of unperforated paper and then make the perforations in the strip 31 as it is withdrawn from the reel. In this case, perforating apparatus 52 is provided, which is positioned upstream of the combining means 45 and makes air holes 26 in those regions of the tipping paper which will subsequently face the slits.

Although not absolutely necessary, it is desirable that adhesive should not pass into the slits of the intermediate sheet or into the gaps between the intermediate sheet portions. To this end, the furnishing rollers 53 and 54 of the adhesive applicators 40 and 50 transfer a pattern of adhesive to the associated applicator rollers 55 and 56 that provide adhesive-free zones on the latter, as at 57 in Fig. 5. The adhesive-free zones are so arranged and, through appropriate synchronisation, rotate in such a way that they contact the portions 58 of the strip 47 which are not to be coated i.e. the slits and/or the gaps. Such an adhesive pattern can be obtained on an adhesive furnishing roller by providing projections on the periphery thereof which extend over the adhesive-free zones and from which applied adhesive is removed by means of a doctor blade (not shown). The pattern of adhesive on the periphery of the applicator roller 56 has, in addition to adhesive-free zones for the slits, as are formed on the roller 55, adhesive-free zones for the gaps between the intermediate sheet portions 44.

Synchronisation can be brought about by the

use of synchronised, synchronous drives 59, 60 which, as indicated by the chain-dotted arrows, respectively drive the stamping or punching device 38, the pair of rolls 37, the first adhesive applicator 40 and the rotary cutter 43 on the one hand, and the perforating mechanism 52, combining apparatus 45, the second adhesive applicator 50 and the tipping paper cutter 33 on the other, in such a way that the groups of perforations 26 face the slits and the slits are left untouched by adhesive.

Claims for the Contracting states: CH, LI, NL, SE

1. A smoking article having a filter (1) at the mouth end of a tobacco rod (17), the filter being in the form of a rod surrounded by a tipping material (21) suitable for contact with the lips, which overlaps a wrapper (19) surrounding the tobacco rod and having at its periphery channels (11, 12) for secondary air covered by the tipping material, characterised in that the filter rod is peripherally impermeable to air and that between the tipping material and the filter rod is interposed an intermediate sheet (4) of substantially impermeable material provided with slits (6 to 10) extending from the mouth end (5), but occupying only part of the area of the intermediate sheet, thereby forming the said channels which communicate with perforations (26) in the tipping material.

2. An article according to claim 1, characterised in that the slits (6 to 10) have lateral edges cut perpendicular to the plane of the intermediate sheet.

3. An article according to claim 1 or 2, characterised in that the intermediate sheet (4) has a thickness of from 0.1 to 0.6 mm.

4. An article according to any of the preceding claims, characterised in that the intermediate sheet (4) extends from the mouth end (5) of the filter rod (1) to the end (14) remote from the mouth, with the exception of a tolerance gap (15).

5. An article according to any of the preceding claims, characterised in that the tipping material (21) surrounds the intermediate sheet (4) with the overlap (22), but the intermediate sheet surrounds the filter rod (1) with a butt joint (24).

6. An article according to claim 4 or 5, characterised in that the filter rod (1), together with the intermediate sheet (4) has the same total cross-section (20) as the tobacco rod (17).

7. An article according to any of the preceding claims, characterised in that the slits (6 to 10) are uniformly distributed round the periphery of the filter rod (1), extend in the longitudinal direction of the filter rod, and occupy from 25 to 60% of the filter rod periphery at the mouth end and from 40 to 80% of the total length of the filter rod.

8. Apparatus for producing an article according to claim 1, including means (30) for supply-

ing a strip of double-width tipping paper (31), means (33) for cutting the tipping paper into portions, means (50) for applying adhesive to the said portions and means for wrapping the portions individually round double-length filter rods and the adjacent regions of two contiguous tobacco rods and for dividing the resulting double-length cigarettes into single cigarettes, characterised by means (36, 37) for supplying and advancing a strip of double-width intermediate sheet material (35), stamping or punching means (38) arranged to make slits (6 to 10) in the double-width intermediate sheet, a first adhesive applicator (40) to apply adhesive to the side of the intermediate sheet to be stuck to the tipping paper (31), and combining means (45) to assemble the intermediate sheet material with the tipping paper (31), with their longitudinal axes (34) coincident, to form a combined strip (47) having channels in the required position on its face destined to contact the filter rods.

9. Apparatus according to claim 8, characterised in that intermediate sheet cutting means (43) are disposed immediately before the combining means (45) to cut the intermediate sheet strip (35) into intermediate sheet portions (44), that the combining means (45) is adapted to apply the intermediate sheet portions at spaced intervals to the tipping paper strip (31), and that the tipping paper cutting means (33) is synchronised to cut along one edge of each intermediate sheet portion and leave an overlapping edge of the tipping paper strip (31) at the opposite edge of the resulting cut portion (51) of the combined strip (47).

10. Apparatus according to claim 8 or 9, characterised in that the first adhesive applicator (40) and/or the second adhesive applicator (50) has an applicator roller (55, 56) which peripherally rolls on the surface of the double-width intermediate sheet strip (35) to be coated with adhesive, and is rotated synchronously with the movement of the intermediate sheet strip in such a way that adhesive-free zones (57) on the roller contact the slits (6 to 10) and prevent the filling thereof with adhesive.

Claims for the Contracting States: BE, FR, GB

1. A smoking article having a filter (1) at the mouth end of a tobacco rod (17), the filter being in the form of a rod surrounded by a tipping material (21) suitable for contact with the lips, which overlaps a wrapper (19) surrounding the tobacco rod and having at its periphery channels (11, 12) for secondary air covered by the tipping material, characterised in that the filter rod is peripherally impermeable to air, an intermediate sheet (4) of substantially impermeable material is interposed between the tipping material and the filter rod but does not extend between the tipping material and the tobacco rod, and the intermediate sheet is pro-

vided with slits (6 to 10) extending from the mouth end (5), but occupying only part of the area of the intermediate sheet, thereby forming the said channels which communicate with perforations (26) in the tipping material.

2. An article according to claim 1, characterised in that the slits (6 to 10) have lateral edges cut perpendicular to the plane of the intermediate sheet.

3. An article according to claim 1 or 2, characterised in that the intermediate sheet (4) has a thickness of from 0.1 to 0.6 mm.

4. An article according to any of the preceding claims, characterised in that the intermediate sheet (4) extends from the mouth end (5) of the filter rod (1) to the end (14) remote from the mouth, with the exception of a tolerance gap (15).

5. An article according to any of the preceding claims, characterised in that the tipping material (21) surrounds the intermediate sheet (4) with an overlap (22), but the intermediate sheet surrounds the filter rod (1) with a butt joint (24).

6. An article according to claim 4 or 5, characterised in that the filter rod (1), together with the intermediate sheet (4) has the same total cross-section (20) as the tobacco rod (17).

7. An article according to any of the preceding claims, characterised in that the slits (6 to 10) are uniformly distributed round the periphery of the filter rod (1), extend in the longitudinal direction of the filter rod, and occupy from 25 to 60% of the filter rod periphery at the mouth end and from 40 to 80% of the total length of the filter rod.

8. Apparatus for producing an article according to claim 1, including means (30) for supplying a strip of double-width tipping paper (31), means (33) for cutting the tipping paper into portions, means (50) for applying adhesive to the said portions and means for wrapping the portions individually round double-length filter rods and the adjacent regions of two contiguous tobacco rods and for dividing the resulting double-length cigarettes into single cigarettes, characterised by means (36, 37) for supplying and advancing a strip of double-width intermediate sheet material (35), stamping or punching means (38) arranged to make slits (6 to 10) in the double-width intermediate sheet, a first adhesive applicator (40) to apply adhesive to the side of the intermediate sheet to be stuck to the tipping paper (31), and combining means (45) to assemble the intermediate sheet material with the tipping paper (31), with their longitudinal axes (34) coincident, to form a combined strip (47) having channels in the required portion on its face destined to contact the filter rods.

9. Apparatus according to claim 8, characterised in that intermediate sheet cutting means (43) are disposed immediately before the combining means (45) to cut the intermediate sheet strip (35) into intermediate sheet portions (44),

that the combining means (45) is adapted to apply the intermediate sheet portions at spaced intervals to the tipping paper strip (31), and that the tipping paper cutting means (33) is synchronised to cut along one edge of each intermediate sheet portion and leave an overlapping edge of the tipping paper strip (31) at the opposite edge of the resulting cut portion (51) of the combined strip (47).

10. Apparatus according to claim 8 or 9, characterised in that the first adhesive applicator (40) and/or the second adhesive applicator (50) has an applicator roller (55, 56) which peripherally rolls on the surface of the double-width intermediate sheet strip (35) to be coated with adhesive, and is rotated synchronously with the movement of the intermediate sheet strip in such a way that adhesive-free zones (57) on the roller contact the slits (6 to 10) and prevent the filling thereof with adhesive.

Revendications pour les états Contractants CH, LI, NL, SE

1. Article pour fumeur comprenant un filtre (1) à l'extrémité pour la bouche d'un lopet cylindrique de tabac (17), le filtre ayant la forme d'un barreau et étant entouré d'un matériau (21) convenant au contact avec les lèvres et venant en superposition avec l'enveloppe (19) entourant le lopet de tabac, des canaux périphériques (11, 12) pour le passage de l'air secondaire étant couverts par le matériau pour les lèvres, caractérisé en ce que le filtre en forme de barreau est périphériquement imperméable à l'air, une feuille (4) faite d'un matériau substantiellement imperméable étant interposée entre le matériau pour les lèvres et le filtre en forme de barreau et étant munie de fentes (6—10) s'étendant depuis l'extrémité pour la bouche (5) mais n'occupant qu'une partie de l'aire de la feuille intermédiaire pour former ainsi les dits canaux qui communiquent avec des perforations (26) ménagées dans le matériau pour les lèvres.

2. Article selon la revendication 1, caractérisé en ce que les fentes (6—10) ont des bords latéraux coupés perpendiculairement au plan de la feuille intermédiaire.

3. Article selon l'une des revendications 1 ou 2, caractérisé en ce que la feuille intermédiaire (4) a une épaisseur de 0,1 à 0,6 mm.

4. Article selon l'une quelconque des revendications précédentes, caractérisé en ce que la feuille intermédiaire (4) s'étend depuis l'extrémité pour la bouche (5) du filtre en forme de barreau (1) jusqu'à l'extrémité (14) éloignée de la bouche, à l'exception d'un espace de tolérance (15).

5. Article selon l'une quelconque des revendications précédentes, caractérisé en ce que le matériau pour les lèvres (21) entoure la feuille intermédiaire (4) avec une superposition (22), tandis que la feuille intermédiaire entoure le

filtre en forme de barreau (1) selon une jonction à aboutement (24).

6. Article selon l'une des revendications 4 ou 5, caractérisé en ce que le filtre en forme de barreau (1), considéré avec la feuille intermédiaire (4), présente la même section droite totale (20) que le barreau de tabac (17).

7. Article selon une quelconque des revendications précédentes, caractérisé en ce que les fentes (6—10) sont distribuées uniformément autour de la périphérie du filtre en forme de barreau (1), s'étendent dans la direction longitudinale du filtre en forme de barreau et occupent de 25 à 60% de la périphérie du filtre en forme de barreau à l'extrémité de bouche et de 40 à 80% de la longueur totale du filtre en forme de barreau.

8. Appareil pour la production d'un article selon la revendication 1, comprenant des moyens (30) pour délivrer une bande de double épaisseur de papier pour lèvres (31), des moyens (33) pour couper le papier pour lèvres en des portions, des moyens (50) pour appliquer un adhésif à ces portions, et des moyens pour enrouler les portions individuelles autour d'une double longueur de barreaux-filtres et autour des parties adjacentes de deux barreaux de tabac contigus, et pour diviser les deux cigarettes, de double longueur, qui en résultent en des cigarettes simples, caractérisé par des moyens (36, 37) pour délivrer et faire avancer une bande de double largeur du matériau de feuille intermédiaire (33), des moyens de perçage ou découpage (38) agencés pour établir les fentes (6—10) dans la double largeur de feuille intermédiaire, un premier applicateur d'adhésif (40) pour appliquer de l'adhésif sur le côté de la feuille intermédiaire devant être appliquée contre le papier pour lèvres (31), et des moyens combinés (45) pour assembler le matériau de feuille intermédiaire avec le papier à lèvres (31), de façon que leurs axes longitudinaux (34) coïncident pour former une barrette combinée (47) présentant les canaux dans les positions requises sur sa face destinée à contacter les filtres-barreaux.

9. Appareil selon la revendication 8, caractérisé en ce que des moyens (43) de coupage de feuille intermédiaire sont disposés immédiatement avant les moyens combinés (45) pour couper les feuillets (35) de feuille intermédiaire en des portions de feuille intermédiaire (44), en ce que les moyens combinés (45) sont agencés pour appliquer les portions de feuille intermédiaire à des intervalles espacés contre la bande de papier pour lèvres (31), et en ce que les moyens (33) de coupage de papier pour lèvres sont synchronisés pour découper le long d'une tranche de chaque portion de feuille intermédiaire en laissant un bord de superposition de la bande de papier pour lèvres (31) au bord opposé de la portion coupée résultante (51) de la barrette combinée (47).

10. Appareil selon l'une des revendications 8 ou 9, caractérisé en ce que le premier applica-

teur d'adhésif (40) et/ou le second applicateur d'adhésif (50) comprend un rouleau applicateur (55, 56) qui roule périphériquement sur la surface de la bande (35) de feuille intermédiaire de double largeur pour la recouvrir d'adhésif, ce rouleau applicateur étant mû en rotation d'une façon synchrone avec le mouvement de la bande de feuille intermédiaire de façon telle que des zones (57) exemptes d'adhésif sur le rouleau viennent en contact avec les fentes (6—10) afin de prévenir le remplissage de celles-ci avec de l'adhésif.

Revendications pour les états Contractants BE, FR, GB

1. Article pour fumeur comprenant un filtre (1) à l'extrémité pour la bouche d'un lopet cylindrique de tabac (17), le filtre ayant la forme d'un barreau et étant entouré d'un matériau (21) convenant au contact avec les lèvres et venant en superposition avec l'enveloppe (19) entourant le lopet de tabac, des canaux périphériques (11, 12) pour le passage de l'air secondaire étant couverts par le matériau pour les lèvres, caractérisé en ce que le filtre en forme de barreau est périphériquement imperméable à l'air, une feuille (4) faite d'un matériau substantiellement imperméable étant interposée entre le matériau pour les lèvres et le filtre en forme de barreau, mais sans s'étendre entre ce matériau pour les lèvres et le barreau de tabac, cette feuille (4) étant munie de fentes (6—10) s'étendant depuis l'extrémité pour la bouche (5) mais n'occupant qu'une partie de l'aire de la feuille intermédiaire pour former ainsi les dits canaux qui communiquent avec des perforations (26) ménagées dans le matériau pour les lèvres.

2. Article selon la revendication 1, caractérisé en ce que les fentes (6—10) ont des bords latéraux coupés perpendiculairement au plan de la feuille intermédiaire.

3. Article selon l'une des revendications 1 ou 2, caractérisé en ce que la feuille intermédiaire (4) a une épaisseur de 0,1 à 0,6 mm.

4. Article selon l'une quelconque des revendications précédentes, caractérisé en ce que la feuille intermédiaire (4) s'étend depuis l'extrémité pour la bouche (5) du filtre en forme de barreau (1) jusqu'à l'extrémité (14) éloignée de la bouche, à l'exception d'un espace de tolérance (15).

5. Article selon l'une quelconque des revendications précédentes, caractérisé en ce que le matériau pour les lèvres (21) entoure la feuille intermédiaire (4) avec une superposition (22), tandis que la feuille intermédiaire entoure le filtre en forme de barreau (1) selon une jonction à aboutement (24).

6. Article selon l'une des revendications 4 ou 5, caractérisé en ce que le filtre en forme de barreau (1), considéré avec la feuille intermédiaire (4), présente la même section droite totale (20) que le barreau de tabac (17).

7. Article selon une quelconque des revendications précédentes, caractérisé en ce que les fentes (6—10) sont distribuées uniformément autour de la périphérie du filtre en forme de barreau (1), s'étendent dans la direction longitudinale du filtre en forme de barreau et occupent de 25 à 60% de la périphérie du filtre en forme de barreau à l'extrémité de bouche et de 40 à 80% de la longueur totale du filtre en forme de barreau.

8. Appareil pour la production d'un article selon la revendication 1, comprenant des moyens (30) pour délivrer une bande de double épaisseur de papier pour lèvres (31), des moyens (33) pour couper le papier pour lèvres en des portions, des moyens (50) pour appliquer un adhésif à ces portions, et des moyens pour enrouler les portions individuelles autour d'une double longueur de barreaux-filtres et autour des parties adjacentes de deux barreaux de tabac contigus, et pour diviser les deux cigarettes, de double longueur, qui en résultent en des cigarettes simples, caractérisé par des moyens (36, 37) pour délever et faire avancer une bande de double largeur du matériau de feuille intermédiaire (33), des moyens de perçage ou découpage (38) agencés pour établir les fentes (6—10) dans la double largeur de feuille intermédiaire, un premier applicateur d'adhésif (40) pour appliquer de l'adhésif sur le côté de la feuille intermédiaire devant être appliquée contre le papier pour lèvres (31), et des moyens combinés (45) pour assembler le matériau de feuille intermédiaire avec le papier à lèvres (31), de façon que leurs axes longitudinaux (34) coïncident pour former une barrette combinée (47) présentant les canaux dans les positions requises sur sa face destinée à contacter les filtres-barreaux.

9. Appareil selon la revendication 8, caractérisé en ce que des moyens (43) de coupage de feuille intermédiaire sont disposés immédiatement avant les moyens combinés (45) pour couper les feuillets (35) de feuille intermédiaire en des portions de feuille intermédiaire (44), en ce que les moyens combinés (45) sont agencés pour appliquer les portions de feuille intermédiaire à des intervalles espacés contre la bande de papier pour lèvres (31), et en ce que les moyens (33) de coupage de papier pour lèvres sont synchronisés pour découper le long d'une tranche de chaque portion de feuille intermédiaire en laissant un bord de superposition de la bande de papier pour lèvres (31) au bord opposé de la portion coupée résultante (51) de la barrette combinée (47).

10. Appareil selon l'une des revendications 8 ou 9, caractérisé en ce que le premier applicateur d'adhésif (40) et/ou le second applicateur d'adhésif (50) comprend un rouleau applicateur (55, 56) qui roule périphériquement sur la surface de la bande (35) de feuille intermédiaire de double largeur pour la recouvrir d'adhésif, ce rouleau applicateur étant mû en rotation d'une façon synchrone avec le mouvement de la

bande de feuille intermédiaire de façon telle que des zones (57) exemptes d'adhésif sur le rouleau viennent en contact avec les fentes (6—10) afin de prévenir le remplissage de celles-ci avec de l'adhésif.

Patentansprüche für die Vertragsstaaten CH, LI, NL, SE

1. Raucherartikel mit einem Filter (1) am mundseitigen Ende einer Tabakstange (17), wobei das Filter die Form eines mit einem zum Berühren der Lippen geeigneten Mundstückmaterial (21) umgebenen Stabes aufweist, welches Material eine die Tabakstange umgebende Hülle (19) überlappt, und an seinem Umfangsbereich angeordnete, durch das Mundstückmaterial abgedeckte Kanäle (11, 12) für sekundäre Luft besitzt, dadurch gekennzeichnet, dass der Umfangsbereich des Filterstabes für Luft undurchlässig ist und dass zwischen dem Mundstückmaterial und dem Filterstab eine Zwischenschicht (4) aus im wesentlichen undurchlässigem Material angeordnet ist, welche Zwischenschicht sich vom mundseitigen Ende (5) aus erstreckende Schlitz (6 bis 10) aufweist, welche aber nur einen Teil der Fläche der Zwischenschicht belegen und die genannten Kanäle bilden, die mit Perforationen (26) in dem Mundstückmaterial in Verbindung stehen.

2. Artikel nach Anspruch 1, dadurch gekennzeichnet, dass die Schlitz (6 bis 10) seitliche Ränder aufweisen, die senkrecht zur Ebene der Zwischenschicht geschnitten sind.

3. Artikel nach Anspruch 1 oder 2, dadurch gekennzeichnet, dass die Zwischenschicht (4) eine Dicke von 0,1 bis 0,6 mm aufweist.

4. Artikel nach einem der vorangehenden Ansprüche, dadurch gekennzeichnet, dass die Zwischenschicht (4) sich vom mundseitigen Ende (5) Filterstabes (1) bis zum vom Mund entfernten Ende (14) erstreckt, mit der Ausnahme eines Toleranzspaltes (15).

5. Artikel nach einem der vorangehenden Ansprüche, dadurch gekennzeichnet, dass das Mundstückmaterial (21) die Zwischenschicht (4) mit einer Überlappung (22) umgibt, und dass die Zwischenschicht den Filterstab (1) mit einer Stossverbindung (16) umgibt.

6. Artikel nach Anspruch 4 oder 5, dadurch gekennzeichnet, dass der Filterstab (1) zusammen mit der Zwischenschicht (4) den gleichen Gesamtquerschnitt (20) wie die Tabakstange (17) aufweist.

7. Artikel nach einem der vorangehenden Ansprüche, dadurch gekennzeichnet, dass die Schlitz (6 bis 10) gleichmässig über den Umfang des Filterstabes (1) verteilt sind, sich in der Längsrichtung des Filterstabes erstrecken und 25 bis 60% des Umfangs des Filterstabes am mundseitigen Ende und 40 bis 80% der Gesamtlänge des Filterstabes belegen.

8. Einrichtung zum Herstellen des Artikels gemäss dem Anspruch 1, mit Mittel (30) zum Liefern eines Streifens von doppelt breitem

Mundstückpapier (31), Mittel (33) zum Schneiden des Mundstückpapiers in einzelne Teile, Mittel (50) zum Auftragen von Klebstoff auf die genannten Teile und Mittel zum Umwickeln der Teile einzeln um doppelt lange Filterstäbe und um benachbarte Bereiche von ausstossenden Tabakstangen und zum Aufteilen der sich ergebenden doppelt langen Zigarette in einzelne Zigaretten, gekennzeichnet durch Mittel (36, 37) zum Liefern und Vorwärtsbewegen eines Streifens (35) aus doppelt breitem Zwischenschichtmaterial, Stanzmittel (38) zum Stanzen von Schlitz (6 bis 10) in den genannten doppelt breiten Streifen, einen ersten Klebstoffapplikator (40) zum Auftragen von Klebstoff auf jene Seite des Zwischenschichtstreifens, die zum Anlegen an das Mundstückpapier (31) bestimmt ist, und Vereinigungsmittel (45) zum Zusammenbringen des Zwischenschichtmaterials mit dem Mundstückpapier (31), so dass deren Längsachsen (34) übereinstimmen, um einen zusammengesetzten Streifen (47) mit in der benötigten Lage angeordneten Kanälen an derjenigen Seite, die zum Anlegen an die Filterstange bestimmt ist, zu bilden.

9. Einrichtung nach Anspruch 8, dadurch gekennzeichnet, dass Zwischenschichtschneidmittel (43) zum Schneiden des Zwischenschichtstreifens (35) in Zwischenschichtteile (44) unmittelbar vor den Vereinigungsmittel (45) angeordnet sind, dass die Vereinigungsmittel (45) zum Anlegen der Zwischenschichtteile in Abständen an den Mundstückpapierstreifen (31) ausgebildet ist, und dass die Mundstückpapierschneidmittel (33) zum Schneiden längs einer Kante jedes Zwischenschichtteiles und zum Belassen eines überlappenden Randes des Mundstückpapierstreifens (31) an der gegenüberliegenden Kante des resultierenden geschnittenen Teiles (51) des zusammengesetzten Streifens (47) synchronisiert sind.

10. Einrichtung nach Anspruch 8 oder 9, dadurch gekennzeichnet, dass der erste Klebstoffapplikator (40) und/oder der zweite Klebstoffapplikator (50) eine Auftragsrolle (55, 56) aufweist, deren Umfang auf der mit Klebstoff zu beschichtenden Seitenfläche des doppelt breiten Zwischenschichtstreifens (35) abrollt, und die sich synchron mit der Bewegung des Zwischenschichtstreifens so dreht, dass zum Vermeiden des Füllens der Schlitz (6 bis 10) mit Klebstoff klebstofffreie Zonen (57) der Auftragsrolle in Berührung mit den Schlitz ge-

Patentansprüche für die Vertragsstaaten BE, FR, GB

1. Raucherartikel mit einem Filter (1) am mundseitigen Ende einer Tabakstange (17), wobei das Filter die Form eines mit einem zum Berühren der Lippen geeigneten Mundstückmaterial (21) umgebenen Stabes aufweist, welches Material eine die Tabakstange umgebende Hülle (19) überlappt, und an seinem Um-

fangsbereich angeordnete, durch das Mundstückmaterial abgedeckte Kanäle (11, 12) für sekundäre Luft besitzt, dadurch gekennzeichnet, dass der Umfangsbereich des Filterstabes für Luft undurchlässig ist und dass zwischen dem Mundstückmaterial und dem Filterstab eine Zwischenschicht (4) aus im wesentlichen undurchlässigem Material angeordnet ist, die sich aber nicht zwischen das Mundstückmaterial und die Tabakstange erstreckt, welche Zwischenschicht sich vom mundseitigen Ende (5) aus erstreckende Schlitze (6 bis 10) aufweist, welche aber nur einen Teil der Fläche der Zwischenschicht belegen und die genannten Kanäle bilden, die mit Perforationen (26) in dem Mundstückmaterial in Verbindung stehen.

2. Artikel nach Anspruch 1, dadurch gekennzeichnet, dass die Schlitze (6 bis 10) seitliche Ränder aufweisen, die senkrecht zur Ebene der Zwischenschicht geschnitten sind.

3. Artikel nach Anspruch 1 oder 2, dadurch gekennzeichnet, dass die Zwischenschicht (4) eine Dicke von 0,1 bis 0,6 mm aufweist.

4. Artikel nach einem der vorangehenden Ansprüche, dadurch gekennzeichnet, dass die Zwischenschicht (4) sich vom mundseitigen Ende (5) des Filterstabes (1) bis zum vom Mund entfernten Ende (14) erstreckt, mit der Ausnahme eines Toleranzspaltes (15).

5. Artikel nach einem der vorangehenden Ansprüche, dadurch gekennzeichnet, dass das Mundstückmaterial (21) die Zwischenschicht (4) mit einer Ueberlappung (22) umgibt, und dass die Zwischenschicht den Filterstab (1) mit einer Stossverbindung (16) umgibt.

6. Artikel nach Anspruch 4 oder 5, dadurch gekennzeichnet, dass der Filterstab (1) zusammen mit der Zwischenschicht (4) den gleichen Gesamtquerschnitt (20) wie die Tabakstange (17) aufweist.

7. Artikel nach einem der vorangehenden Ansprüche, dadurch gekennzeichnet, dass die Schlitze (6 bis 10) gleichmässig über den Umfang des Filterstabes (1) verteilt sind, sich in der Längsrichtung des Filterstabes erstrecken und 25 bis 60% des Umfanges des Filterstabes am mundseitigen Ende und 40 bis 80% der Gesamtlänge des Filterstabes belegen.

8. Einrichtung zum Herstellen des Artikels gemäss dem Anspruch 1, mit Mittel (30) zum Liefern eines Streifens von doppelt breitem Mundstückpapier (31), Mittel (33) zum Schneiden des Mundstückpapiers in einzelne

Teile, Mittel (50) zum Auftragen von Klebstoff auf die genannten Teile und Mittel zum Umwickeln der Teile einzeln um doppelt lange Filterstäbe und um benachbarte Bereiche von ausstossenden Tabakstangen und zum Aufteilen der sich ergebenden doppelt langen Zigarette in einzelne Zigaretten, gekennzeichnet durch Mittel (36, 37) zum Liefern und Vorwärtsbewegen eines Streifens (35) aus doppelt breitem Zwischenschichtmaterial, Stanzmittel (38) zum Stanzen von Schlitten (6 bis 10) in den genannten Doppelt breiten Streifen, einen ersten Klebstoffapplikator (40) zum Auftragen von Klebstoff auf jene Seite des Zwischenschichtstreifens, die zum Anliegen an das Mundstückpapier (31) bestimmt ist, und Vereinigungsmittel (45) zum Zusammenbringen des Zwischenschichtmaterials mit dem Mundstückpapier (31), so das deren Längsachsen (34) übereinstimmen, um einen zusammengesetzten Streifen (47) mit in der benötigten Lage angeordneten Kanälen an derjenigen Seite, die zum Anliegen an die Filterstange bestimmt ist, zu bilden.

9. Einrichtung nach Anspruch 8, dadurch gekennzeichnet, dass Zwischenschichtschneidmittel (43) zum Schneiden des Zwischenschichtstreifens (35) in Zwischenschichtteile (44) unmittelbar vor den Vereinigungsmittel (45) angeordnet sind, dass die Vereinigungsmittel (45) zum Anlegen der Zwischenschichtteile in Abständen an den Mundstückpapierstreifen (31) ausgebildet ist, und dass die Mundstückpapierschneidmittel (33) zum Schneiden längs einer Kante jedes Zwischenschichtteiles und zum Belassen eines überlappenden Randes des Mundstückpapierstreifens (31) an der gegenüberliegenden Kante des resultierenden geschnittenen Teiles (51) des zusammengesetzten Streifens (47) synchronisiert sind.

10. Einrichtung nach Anspruch 8 oder 9, dadurch gekennzeichnet, dass der erste Klebstoffapplikator (40) und/oder der zweite Klebstoffapplikator (50) eine Auftragsrolle (55, 56) aufweist, deren Umfang auf der mit Klebstoff zu beschichtenden Seitenfläche des doppelt breiten Zwischenschichtstreifens (35) abrollt, und die sich synchron mit der Bewegung des Zwischenschichtstreifens so dreht, dass zum Vermeiden des Füllens der Schlitze (6 bis 10) mit Klebstoff klebstofffreie Zonen (57) der Auftragsrolle in Berührung mit den Schlitten gelangen.

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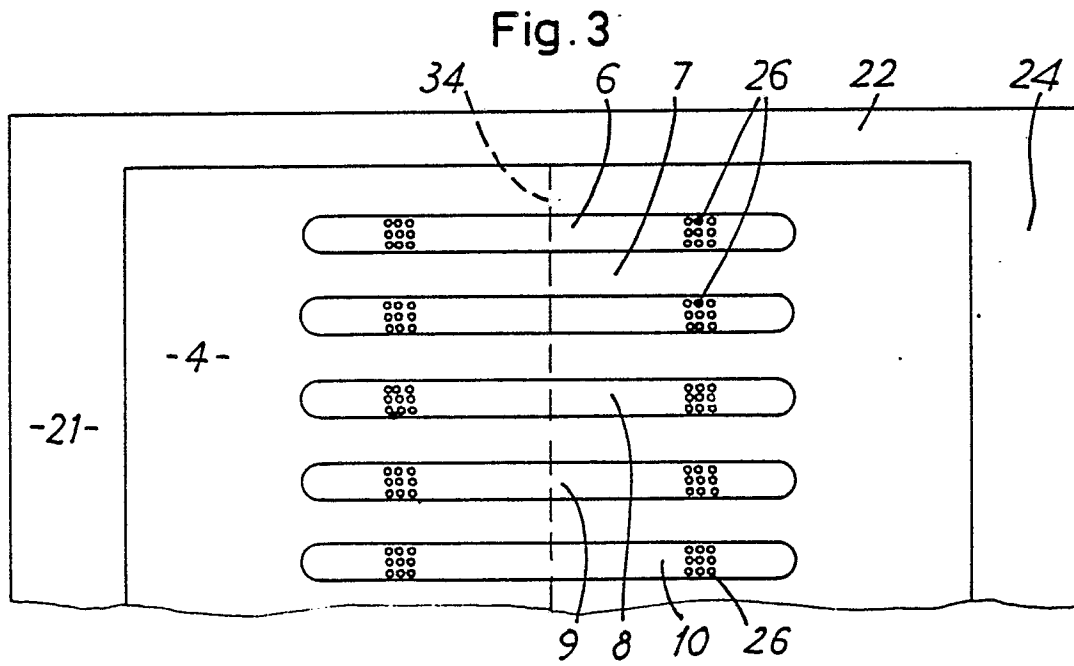
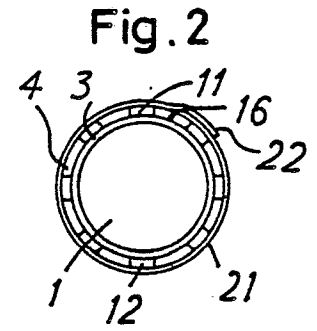
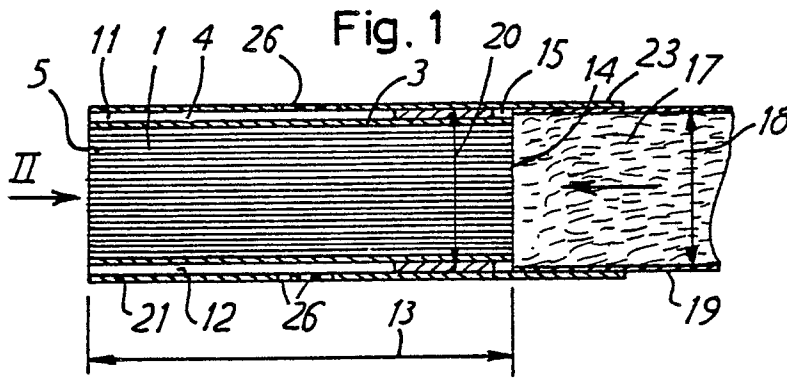


Fig. 5

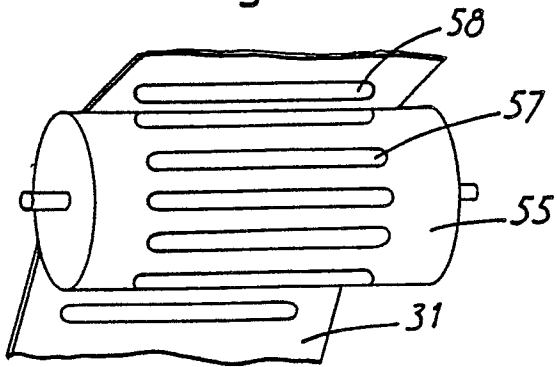


Fig. 4

