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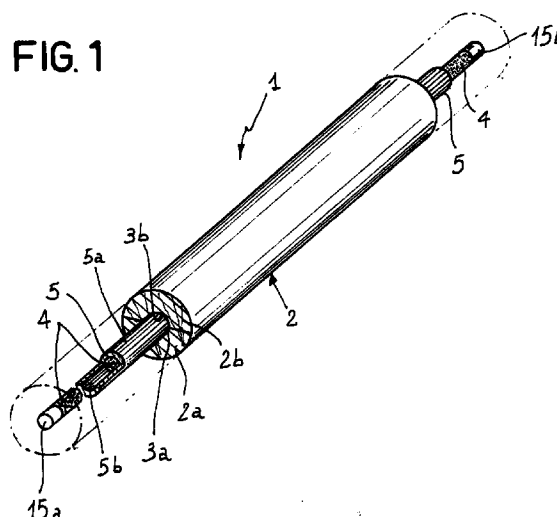
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(54) A method of making cosmetic pencils, and a cosmetic pencil obtained by same

(57) In the manufacture of a pencil for cosmetic use, the pencil core or stick (4) is obtained by injecting a melted cosmetic mixture into a stiffening tube (5) of plastic material which, after being optionally closed at the ends, is fitted between the two half cases (2a, 2b) of wood forming the external body (2) of said pencil (1). By the use of said stiffening tube (5) an automatic handling of the cores (4) is allowed even when the mixture injected into the tube, once cooling has occurred, still exhibits a high malleability.



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Description

The present invention relates to a method of making cosmetic pencils, as well as a cosmetic pencil obtained by same, said pencil being of the type comprising: an external wooden body formed of at least two mutually coupled half cases; a core or stick longitudinally enclosed in a longitudinal housing defined between the coupled half cases, said core consisting of a cosmetic mixture comprised of hydrogenated oils and mineral oils in an amount included between 30 and 50 parts by weight (for 100 parts of the product), hydrogenated vegetable fats in an amount included between 5 and 15 parts by weight, synthetic waxes in an amount included between 15 and 25 parts by weight, ball-shaped inert fillers in an amount included between 7 and 15 parts by weight, pigments in an amount included between 15 and 25 parts by weight.

More particularly, the invention is directed to the manufacture of pencils for cosmetic use of the so-called "poured-core" type.

It is known that, in the cosmetic field, the use of pencils exhibiting an external wooded body consisting of two mutually coupled parts is widely spread, which parts define an internal longitudinal housing enclosing a core made up of the cosmetic mixture to be applied to the user's skin.

More particularly, in usual production processes of said pencils, first a pair of wooden boards of rectangular section is made, and a plurality of longitudinal grooves of semicircular section parallelly spaced apart from each other according to a predetermined pitch is formed in one of the faces of said boards.

Engaged in the longitudinal grooves of one of said boards are, after interposition of a glue layer, corresponding pencil cores produced separately.

The second board previously coated with another glue layer on its surface exhibiting said grooves, is then placed upon the core-holding board and pressed against it, so as to achieve a stable coupling, on drying of the glue.

At this point, the boards and cores enclosed therein are trimmed to be brought exactly to the desired length and the boards are forced to longitudinally pass through appropriately shaped cutting elements causing separation of the individual pencils and finishing of the external wooden body according to the desired sizes.

After completion of the above step, further painting and lacquering steps follow, as well as other optional finishing treatments of the external body.

In the manufacture of pencils of less recent conception, the cosmetic mixture components forming the core are selected according to proportions capable of giving the mixture a consistency sufficient to make it possible to obtain a core by extrusion and to subsequently handle the core without running too many risks of deformation or breakage of the core itself.

As a general rule, the cosmetic mixtures for pencil cores obtained by extrusion contain, just as an indication, an amount included between 30 and 50 parts by weight (for 100 g of the product) of hydrogenated vegetable fats in the solid state at room temperature, 7 to 15 parts by weight of hydrogenated vegetable oils and/or mineral oils, 3 to 10 parts by weight of synthetic waxes, 30 to 55 parts by weight of pigments and inert fillers.

In making pencils the stick or core of which is obtained by extrusion, the consistency and structural resistance of the cosmetic mixture causes the assembling of the wooden body halves and the core interposed therebetween to be carried out to advantage in an automatic manner. In fact, the pencil cores are arranged in a hopper feeder from which they are engaged by falling on a rotating transfer drum laying them down into the board grooves, a belt conveyor causing passage of the boards under said drum.

It is to be noted however, that, due to the high structural consistency of the mixture, some problems may arise in terms of practical and safe use of said pencils.

In fact, in order to enable the mixture to be conveniently transferred to the user's skin, the pencil tip needs to be passed over the same area several times, by exerting some pressure thereon. However, not only this necessity is not very pleasant from a practical point of view, but it also involves some risks as far as safety is concerned, above all with reference to pencils to be used as make-up on eyelids.

In order to obviate the above drawbacks as much as possible, pencils made of a cosmetic mixture much softer than that of the previously described pencils have been put on the market.

In principle, the cosmetic mixtures used to this end contain 30 to 50 parts by weight of hydrogenated oils and mineral oils; 5 to 15 parts by weight of hydrogenated vegetable fats; 15 to 25 parts by weight of synthetic waxes; 7 to 15 parts by weight of ball-shaped inert fillers; 15 to 25 parts by weight of pigments.

Pencil cores made up of this type of mixture however, due to the low consistency exhibited by the mixture itself, cannot be obtained following the traditional extrusion processes. In fact the pencil core production takes place by pouring the melted mixture into appropriate moulds from which the cores themselves are subsequently drawn out after cooling to the solidification temperature, being then enclosed in the half cases of wood forming the external body.

Pencils thus obtained, commercially referred to as "poured-core pencils", offer much higher qualitative performance as compared to extruded-core pencils, in terms of easy marking on the skin, in that they make it possible to obtain sufficiently emphasized marks even when the pencil tip, is passed only once over the concerned area and the pressure exerted on said area is much lower than with usual extruded-core pencils.

However, due to the low mixture consistency of said poured cores, the automatic assembling process described above with reference to pencils provided with an extruded core is made impossible. In particular, extraction of the cores from the respective pouring moulds, as well as introduction of same into the longitudinal grooves of the boards must be carried out manually, which brings about a clear increase in the working times and costs.

It should be also noted that it is presently technically impossible to employ cosmetic mixtures for poured cores which have a structural consistency lower than given limits beyond which even manual handling of said cores could not be effected.

Another drawback found both in poured-core pencils and extruded-core pencils (though to a lower degree) is given by the fact that the great amount of oils, fats, waxes and other components contained in the mixture tends to permeate by capillarity through the wood forming the external body, thereby giving rise to a qualitative decay of the mixture over time, as well as other problems due, for example to the separation of the applied painting or lacquering from the external surface of the pencil body. For the purpose of limiting the above phenomenon, in some cases the pencil wood is treated with appropriate waterproofing paintings applied to the region of the longitudinal grooves formed in the boards. This treatment brings about an increase in the production costs and, on the other hand, is not always sufficiently efficient.

The main object of the present invention is substantially to overcome the problems and limits of the known art, by providing a method enabling pencils to be made with a cosmetic mixture adapted for poured cores, capable of being assembled automatically in the same manner as it occurs with the present extruded-core pencils and completely free of the drawbacks resulting from permeation of the cosmetic mixture components through the wood fibres.

The above and still further objects, that will become more apparent in the course of the present description are substantially achieved by a method of making cosmetic pencils, characterized in that it comprises the steps of: hot-mixing oils, fats, waxes and pigments to obtain a mixture of a cosmetic substance in a melted state; injecting the melted mixture into at least one stiffening tube; making at least two half portions or cases of wood provided each with at least one longitudinal groove; interposing the stiffening tube between the longitudinal grooves of said two half cases; coupling said half cases with each other to fixedly enclose therebetween the stiffening tube interposed between said longitudinal grooves.

Still in accordance with the present invention, by said method a pencil for cosmetic use is obtained, which is characterized in that it comprises a stiffening tube made of plastic material, interposed between the pencil core and the inner surfaces of the longitudinal core housing exhibited by an external body made of wood.

Further features and advantages will become more apparent from the detailed description of a preferred embodiment of a method of making cosmetic pencils and a pencil obtained by said method, according to the present invention. This description is given hereinafter by way of non-limiting example, with reference to the accompanying drawings, in which:

- Fig. 1 is a fragmentary perspective view partly in section of a pencil obtained according to the present invention;
- Fig. 2 is a fragmentary enlarged perspective view of an end portion of the pencil shown in Fig. 1 in which a marking tip has been formed;
- Fig. 3 is a diagrammatic plan view of a plant to make pencil cores to be used in the manufacture of pencils for cosmetic use, according to the present invention;
- Fig. 4 is a diagrammatic plan view of a possible alternative embodiment of the plant for the manufacture of pencil cores as shown in Fig. 1.

Referring particularly to Fig. 1, a pencil for cosmetic use made in accordance with the present invention has been generally identified by reference numeral 1.

Pencil 1 conventionally has an external body 2 of wood, consisting of two half cases 2a, 2b to be mutually coupled by gluing. Each of said half cases 2a, 2b exhibits a longitudinal groove 3a, 3b with a semicircular profile.

When the two half cases 2a, 2b are assembled, the longitudinal grooves define a housing at the inside of body 2 for receiving and enclosing a pencil core or stick generally denoted by 4.

Preferably the core 4 is made up of a cosmetic mixture of the type used in conventional cores obtained by pouring. Just as an indication, this mixture comprises 30 to 50 parts by weight of hydrogenated oils and mineral oils, 5 to 15 parts by weight of hydrogenated vegetable fats; 15 to 25 parts by weight of synthetic waxes; 7 to 15 parts by weight of ball-shaped inert fillers; 15 to 25 parts by weight of pigments.

In more detail, the following table reproduces, by way of indication only, one example of a formulation for a cosmetic mixture to be used to make cosmetic pencils according to the present invention.

Component	Parts by Weight
MIGLYOL 812	20-30
LYTOL	12-18
SYNCROWAX BB4	8-10
SILDEX H121	7-10
SOFTISAN 100	6-10
WHITE OZOKERITE SP 1026	4-7
YELLOW CARNAUBA WAX	4-7
PARAPROPYL	0.1-0.3
OXYNET LM	0.05-0.15
TUDOR EBONY A 401-03	13-17
BLEU DE PRUSSE W 745	1-3
TIMICA EXTRA LARGE SPARKLE	1-2
TUDOR ASPEN A 310	0.5-2

According to the present invention, the cosmetic mixture forming the core 4 is contained in a stiffening tube 5, interposed between the core itself and the inner surface of the longitudinal housing formed of the grooves 3a, 3b. The stiffening tube 5 is fastened to the longitudinal housing by gluing. In order to promote gluing of the tube 5 within the wood body 3, it is provided to advantage that the tube should have surface ribs 5a on the external surface thereof. In addition, in order to promote adhesion of the mixture forming the core in the tube 5, said tube may be also provided with auxiliary surface ribs 5b formed on the inner surface thereof.

The presence of at least one closing element 15a, 15b may be also provided, which is slidably and sealingly engaged at least at one of the ends of the stiffening tube 5, to avoid evaporation of the volatile substances contained in the cosmetic mixture. Such closing elements 15a, 15b can be made of a plastic material or of a jelly-like substance injected into the tube 5, as better clarified in the following.

Alternatively, instead of using the above closing elements, the ends of the stiffening tube 5 may be hermetically sealed by squashing or heat-sealing.

Independently of how the closing elements 15a, 15b are made, one of them will be eliminated when one of the ends of pencil 1 is sharpened by a conventional pencil sharpener to give origin to the marking tip 6.

As can be easily viewed from Fig. 2, once the tip 6 has been formed the cosmetic mixture forming the pencil core 4 projects to the outside of the external body 3 and the stiffening tube 5, being therefore ready for application to the user's skin.

The method of manufacturing the above described pencil 1 involves preparation of the cosmetic mixture by heat-blending of the different components, in a manner known per se, for example within a blending vessel or mixer 7. This blending is preferably carried out at a temperature included between 75°C and 110°C, for example 90°C, or at all events at a temperature higher than the solidification temperature of the mixture, so that the latter is maintained in a melted state with an appropriate viscosity.

The stiffening tubes 5 of plastic material, obtained by extrusion for example, are disposed at a predetermined distance on driving chains 8 or equivalent means imparting the tubes a stepping movement, according to a given path along which a series of work stations is located, as better described in the following.

Referring particularly to Fig. 3, each tube 5 first encounters a filling station 9 in which, by a gear pump 10 or equivalent means, a given amount of mixture is drawn from vessel 7 and injected into the tube itself. As shown by way of example in Figs. 3 and 4, the gear pump 10 is connected to a nozzle 10a movable between a work position in which, as shown by solid line, it is engaged with an inlet end of the tube 5 located close to the filling station 9 for carrying out injection of the melted mixture, to a rest position in which it is spaced apart from the tube 5, as shown by dotted line, to enable moving away of same and positioning of a new tube 5 at the filling station 9.

Once the tube 5 filled with the cosmetic mixture has left the filling station 9, it executes one or more movement steps in a cooling station 11, where the mixture temperature goes down to the solidification point, generally lower than

55°C. Cooling can be indifferently obtained, depending on requirements, by making the tube 5 stand at room temperature and/or by arranging appropriate forced ventilation means or cold-air blowing means in the cooling station.

A trimming station 12 may be conveniently provided downstream of the cooling station 11, in which by means of blades 12a or other cutting means, the opposite ends of tube 5 are cut so as to bring the tube itself to a predetermined length and eliminate its end portions that possibly have not been filled with the cosmetic mixture.

Downstream or upstream of said trimming station 12, a heat-sealing station 13 may be also provided where closure of the opposite ends of tube 5 is carried out by squashing and simultaneous heat-sealing.

In the embodiment shown in Fig. 4 closing of tubes 5 is carried out by insertion of a first and a second closing element, 15a and 15b respectively, before and after injection of the mixture into the tube itself.

In more detail, arranged upstream of the filling station 9 is a first closing station 14 where insertion of the first closing element 15a is carried out close to the inlet end of the tube 5 located therein. The closing element 15a may be made of plastic material, in which case the inserting operation can be executed for example by a pusher 14a provided with a reciprocating motion coaxially with the tube 3. Alternatively, the closing element 15a may be formed of a jelly-like material introduced into the inlet end of tube 5 by injection.

During the following injection of the cosmetic mixture at the filling station 9, the first closing element 15a will slide along the tube 5 under the thrust action of the injected mixture, until it reaches the tube end opposite to the injection nozzle 10a.

A second closing station 16, operating downstream of the cooling station 11 for example, and at all events downstream of the filling station 9, carries out the insertion of the second closing element 15b into the tube 5. In this case too the second closing element 15b can be made of plastic material, being inserted by a pusher 16a, or may consist of a jelly-like substance, introduced by injection into the tube 5 end.

The pencil core 4 thus formed within the stiffening tube 5 lends itself to be handled easily without running the risk of being deformed or broken, even if the cosmetic mixture of which it is made up has a very low structural consistency.

It is therefore possible to dispose the stiffening tubes 5 containing the pencil cores 4 into the usual automatic apparatus designed to carry out assembling of said cores with the other components so as to make pencils 1.

More particularly, in a manner known per se, in making pencils, the formation of two wood boards of rectangular section is first provided, on one face of said boards a plurality of longitudinal grooves 3a, 3b being formed which are designed to define each one housing for engagement of the core 4 in the external body 3 of the finished pencil.

One of said boards, previously coated with glue at least in the region of said grooves 3a, 3b is passed under a rotating drum by which, in a manner known per se, a given number of tubes 5 containing the respective cores 4 is taken up by a hopper feeder and distributed in the individual board grooves. During this step therefore, the insertion of each core 4 in the longitudinal housing 3a formed in one half portion 3a of the corresponding external wooden body substantially takes place.

The board carrying the cores 4 and tubes 5 is then matched with the other board, after optionally interposing another layer of glue; then, drying of the glue being completed, the matched boards are forced to pass through appropriate cutting elements causing the separation of the individual pencils and shaping of same to the desired form and sizes.

Finally, the individual pencils are submitted to the usual painting and lacquering steps or other finishing steps carried out on the external body.

The present invention achieves the intended purposes.

In fact, the method in question enables cosmetic pencils to be manufactured in a completely automatic manner even when the pencil core is made up of a very malleable cosmetic mixture, devoid of any structural consistency.

It is therefore possible to produce pencils of the "poured-core" type at costs comparable with those of the traditional extruded-core pencils. In addition, it is possible to produce new types of pencils with cosmetic mixtures still more malleable than those usually found in poured-core pencils.

It should be also recognized that the presence of the stiffening tube of plastic material optionally provided with closure elements, ensures the qualitative features of the mixture to be maintained over time, while all risks of dispersion of the mixture components by evaporation or absorption by the wood forming the external body are eliminated.

It is understood that many modifications and variations may be made to the invention as conceived, all of them falling within the scope of the inventive idea as defined by the claims.

Claims

1. A method of making cosmetic pencils, characterized in that it comprises the steps of:

- hot-mixing oils, fats, waxes and pigments to obtain a mixture of a cosmetic substance (4) in a melted state;
- injecting the melted mixture (4) into at least one stiffening tube;
- making at least two half portions or cases (2a, 2b) of wood provided each with at least one longitudinal groove (3a, 3b);

- interposing the stiffening tube (5) between the longitudinal grooves (3a, 3b) of said two half cases (2a, 2b);
- coupling said half cases (2a, 2b) with each other to fixedly enclose therebetween the stiffening tube (5) interposed between said longitudinal grooves (3a, 3b).

- 5 2. A method according to claim 1, characterized in that said injection step is preceded by a step of introducing one closing element (15a) into an inlet end of the stiffening tube (5), said first closing element (15a) being slidably and sealingly engaged in the tube (5) so that during the injection step it is moved away from said inlet end by effect of a thrust action exerted by the injected mixture (4).
- 10 3. A method according to claim 2, characterized in that said injection step is followed by a step of introducing a second closing element (15b) into the stiffening tube (5), which closing element is sealingly engaged in the tube itself.
4. A method according to claim 3, characterized in that at least one of said closing elements (15a, 15b) is formed of a jelly-like material and is fitted in the stiffening tube (5) by injection.
- 15 5. A method according to claim 1, characterized in that, after said injection step, the stiffening tube (5) is submitted to a closing step involving closure of the respective opposite ends by squashing and heat-sealing.
- 20 6. A method according to claim 1, characterized in that the step of injecting the melted mixture (4) into the stiffening tube (5) is followed by a cooling step involving cooling of the mixture until the solidification temperature of same.
7. A method according to claim 6, characterized in that said cooling step is carried out by making the stiffening tube (5) stand at room temperature.
- 25 8. A method according to claim 6, characterized in that said cooling step is carried out by blowing cold air onto the stiffening tube (5).
9. A method according to claim 1, characterized in that the interposition of the stiffening tube (5) between said half portions (2a, 2b) takes place by gluing of the tube itself in the longitudinal groove (3a, 3b) of one of said halves before they are assembled.
- 30 10. A method according to claim 1, characterized in that after the injection step, a trimming step is carried out on the ends of the stiffening tube (5).
- 35 11. A method according to claim 1, characterized in that said mixing step is carried out on the following components:
 - 30 to 50 parts by weight (for 100 parts of the product) of hydrogenated oils and mineral oils;
 - 5 to 15 parts by weight of hydrogenated vegetable fats;
 - 15 to 25 parts by weight of synthetic waxes;
 - 40 - 7 to 15 parts by weight of ball-shaped inert fillers;
 - 15 to 25 parts by weight of pigments.
12. A method according to claim 1, characterized in that the mixing step is carried out at a temperature included between 75°C and 110°C.
- 45 13. A cosmetic pencil comprising:
 - an external wooden body (2) formed of at least two mutually coupled half cases (2a, 2b);
 - a core or stick (4) enclosed in a longitudinal housing (3a, 3b) defined between said assembled half cases, said
 - 50 core consisting of a cosmetic mixture comprised of hydrogenated oils and mineral oils in an amount included between 30 and 50 parts by weight (for 100 parts of the product), hydrogenated vegetable fats in an amount included between 5 and 15 parts by weight, synthetic waxes in an amount included between 15 and 25 parts by weight, ball-shaped inert fillers in an amount included between 7 and 15 parts by weight, pigments in an amount included between 15 and 25 parts by weight,
 - 55 characterized in that it further comprises a stiffening tube (5) made of plastic material, interposed between the pencil core (4) and the inner surfaces of the longitudinal housing (3a, 3b) exhibited by said external body (2) made of wood.

14. A cosmetic pencil according to claim 13, characterized in that said stiffening tube (5) exhibits at least one closing element (15a, 15b) slidably and sealingly engaged at least at one of its ends.

5 **15.** A cosmetic pencil according to claim 14, characterized in that said closing element (15a, 15b) is made of a plastic material.

16. A cosmetic pencil according to claim 14, characterized in that said closing element (15a, 15b) is made of a jelly-like material.

10 **17.** A cosmetic pencil according to claim 13, characterized in that said stiffening tube (5) has its ends closed by heat-sealing.

18. A cosmetic pencil according to claim 13, characterized in that said stiffening tube (5) is provided with surface ribs (5a) on its outer surface.

15 **19.** A cosmetic pencil according to claim 13, characterized in that said stiffening tube (5) exhibits surface ribs (5b) on its inner surface.

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FIG. 1

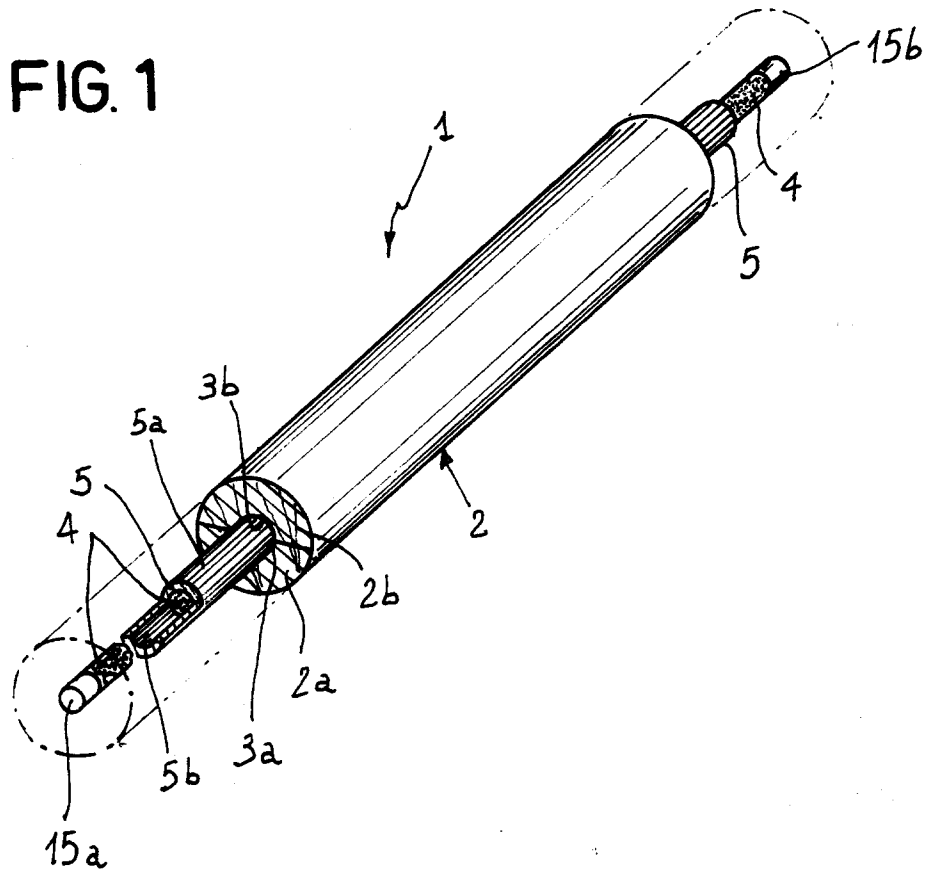
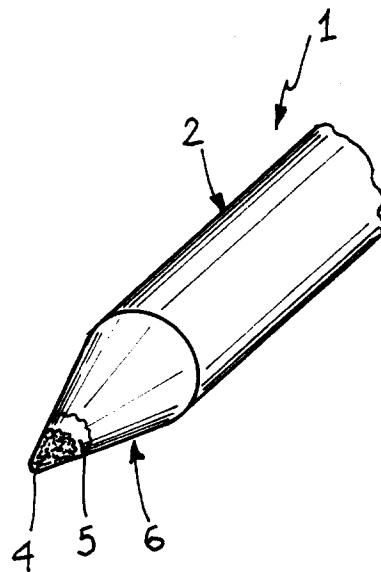
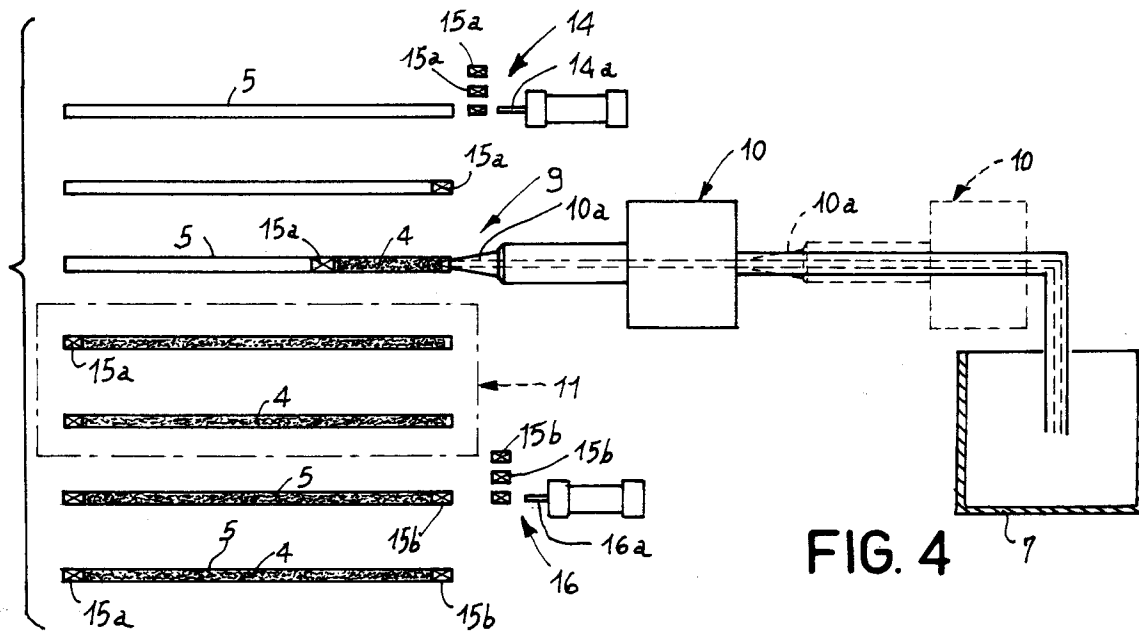
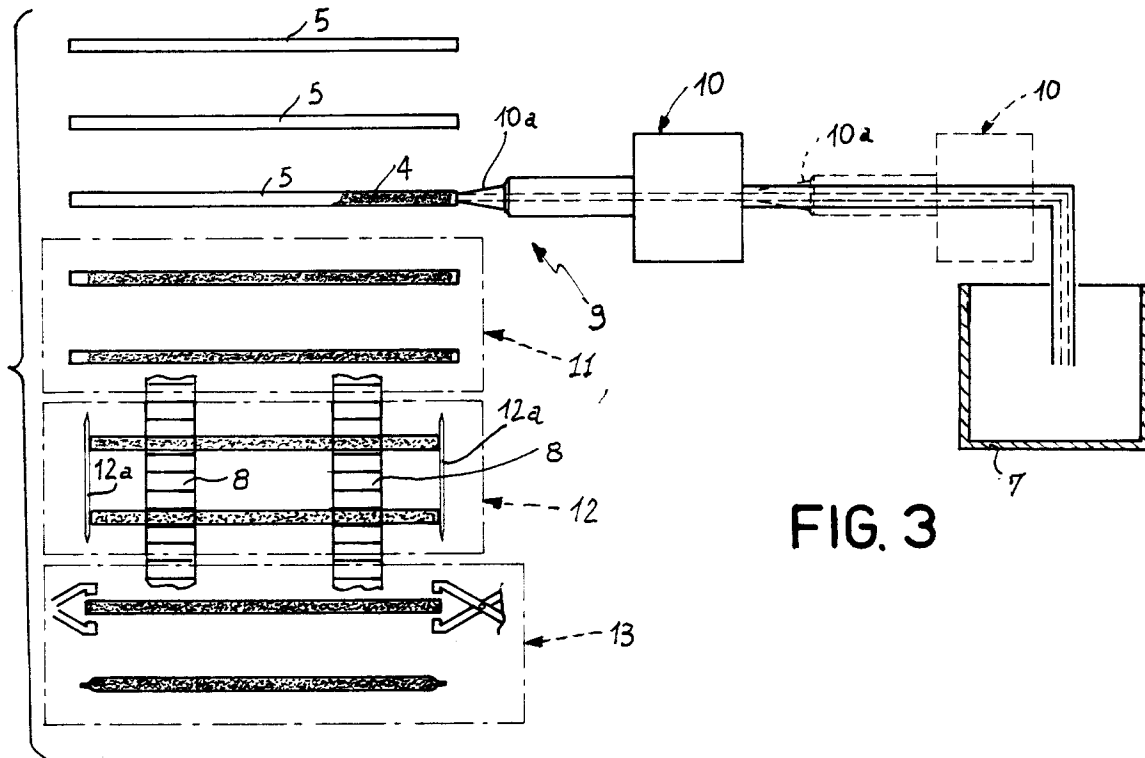


FIG. 2







European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 94 83 0580

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	DE-A-43 05 369 (SCHWAN-STABILO SCHWANHÄUSSER GMBH)	1,6,9	B43K19/18 B43K15/02 A45D40/20
Y		2,3	
A	* the whole document *	4,5, 12-17	

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A	* column 2, line 18 - line 27; claims *	4,14-16	

A	GB-A-2 084 084 (L'OREAL)	1,6-8, 11,13, 18,19	
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A	GB-A-2 144 374 (SCHWAN-STABILO SCHWANHÄUSSER GMBH)	1,13	
	* page 2, line 48 - page 3, line 122; figures *		

A	DE-U-92 15 799 (SCHWAN-STABILO SCHWANHÄUSSER GMBH)	1,13	
	* page 7, paragraph 4 - page 10, paragraph 2; figures *		

A	DE-A-15 61 766 (BLEISTIFTMASCHINENFABRIK FR. EHRHARDT)	10	
	* claims 1,3; figures 1,2 *		

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A	SOAP, PERFUMERY AND COSMETICS, vol. 57, no. 4, 1 April 1984 LONDON, GB, W. SCOTLAND 'THE MANUFACTURE OF COSMETIC PENCILS' PAGES 181, 183 & 203	11,13	

The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		23 May 1995	Raven, P
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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