



US 20040237987A1

(19) **United States**(12) **Patent Application Publication** (10) **Pub. No.: US 2004/0237987 A1**
Gold (43) **Pub. Date: Dec. 2, 2004**(54) **STICKER FOR THE APPLICATION OF HAIR
AND THE LIKE AND RELATED METHOD
OF MANUFACTURING****Publication Classification**(51) **Int. Cl.⁷** **A41G 3/00**(52) **U.S. Cl.** **132/201; 132/53**(76) **Inventor: David Anthony Gold, Nepi (IT)**

Correspondence Address:

LEFFERT JAY & POLGLAZE, P.A.**P.O. BOX 581009****MINNEAPOLIS, MN 55458-1009 (US)**(57) **ABSTRACT**

A sticker for the application of hair is very easy to apply and very comfortable for the user and it comprises adhesive laminar support, anti allergic and transpiring, having a first side wherein hair is ran into and a second side suitable to be directly adhered on skin. The related manufacturing process comprises the steps of: providing of an adhesive laminar support, anti allergenic and transpiring; providing a quantity of hair in proximity to this laminar support, each hair having an end apt to be run into said laminar support; and generating an electrostatic field at the laminar support so as to positioning said ends against the laminar support, causing them to run into the laminar support.

(21) **Appl. No.:** **10/485,290**(22) **PCT Filed:** **Jul. 29, 2002**(86) **PCT No.:** **PCT/IB02/02938**(30) **Foreign Application Priority Data**

Jul. 30, 2001 (IT) RM2001A000460



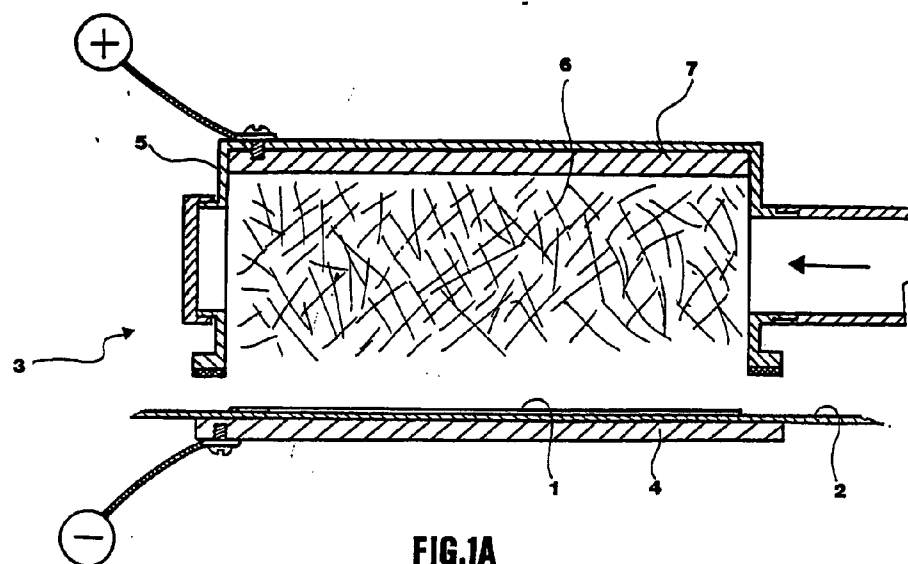


FIG. 1A

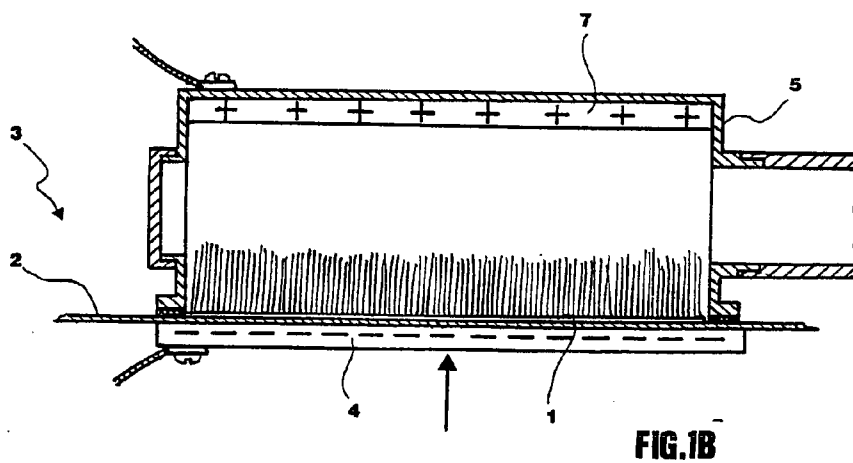


FIG. 1B

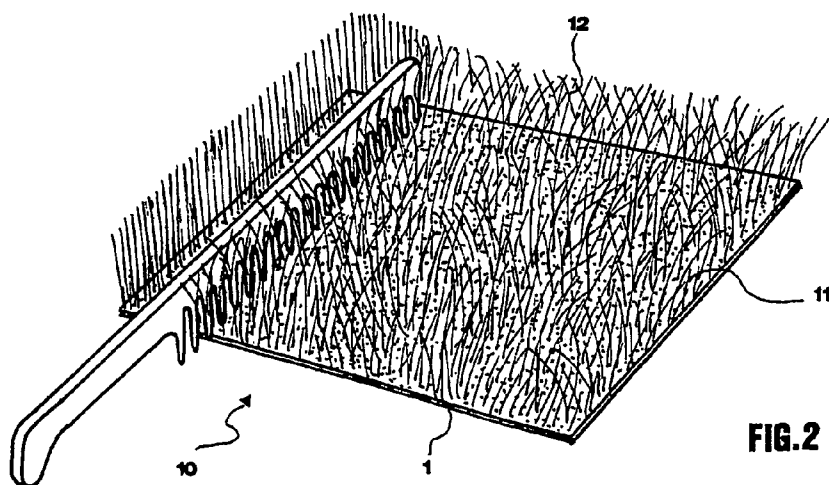


FIG. 2

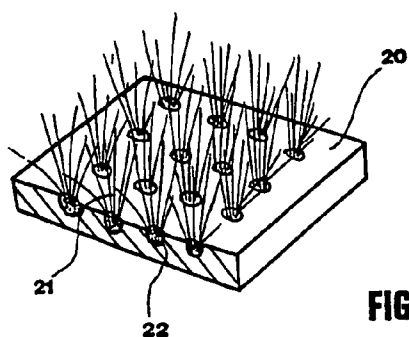


FIG. 3

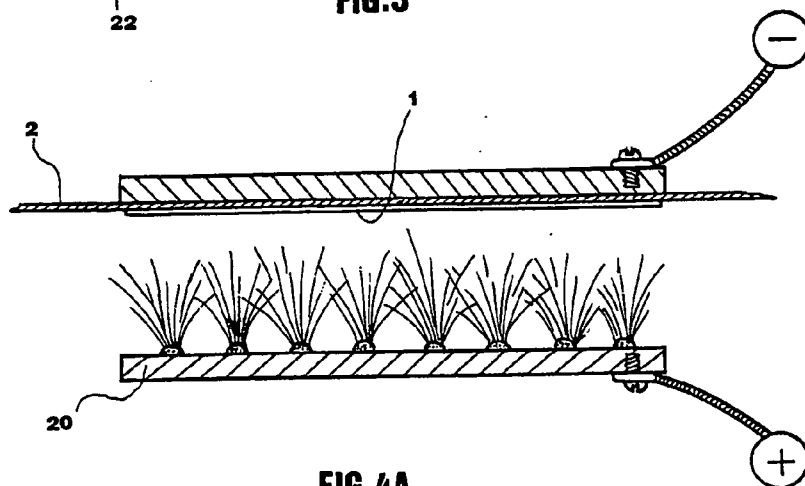


FIG. 4A

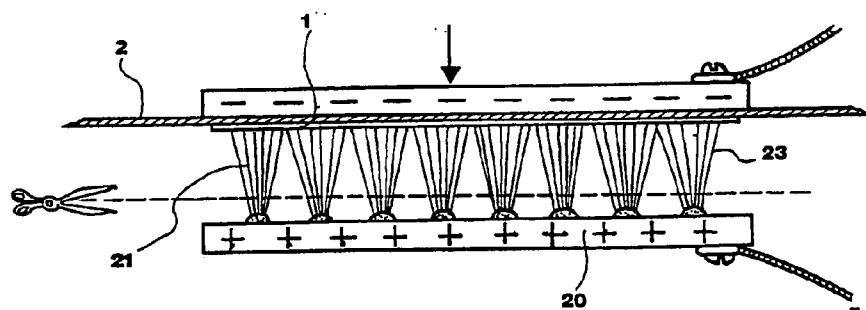


FIG. 4B

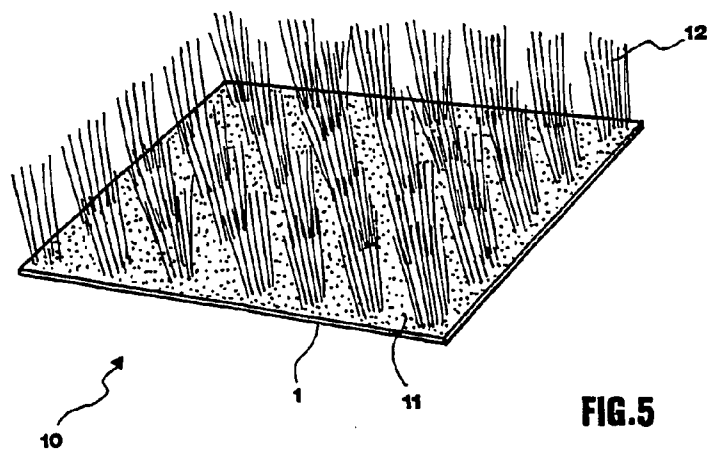


FIG. 5

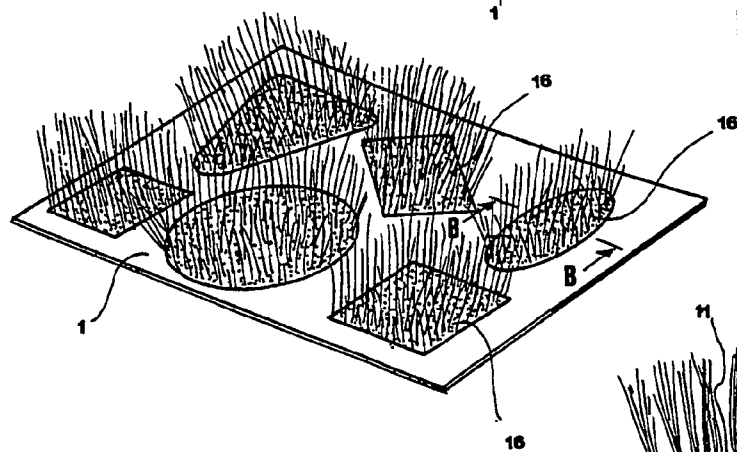
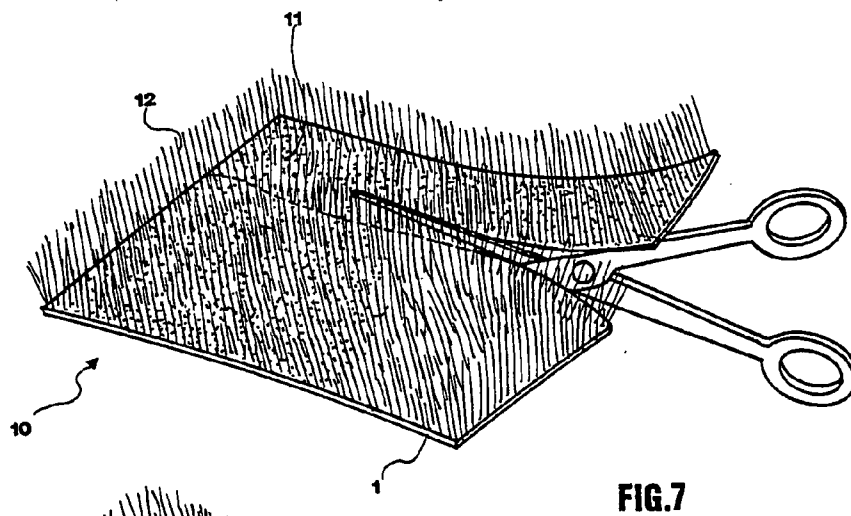
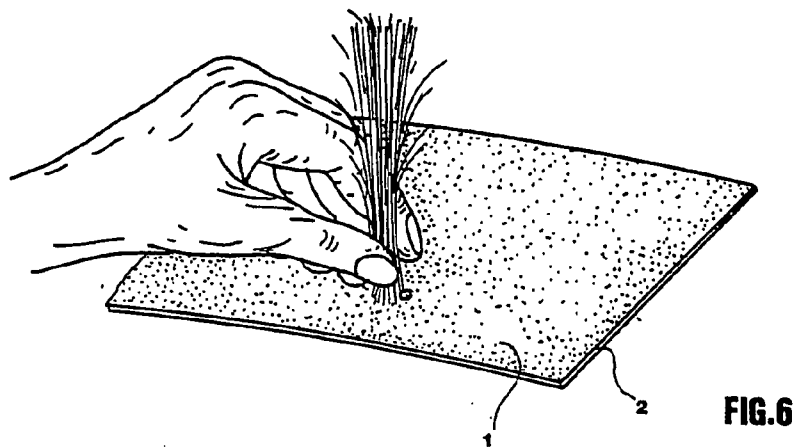


FIG. 8A

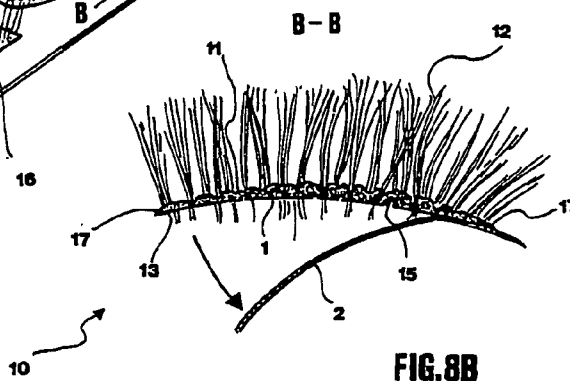


FIG. 8B

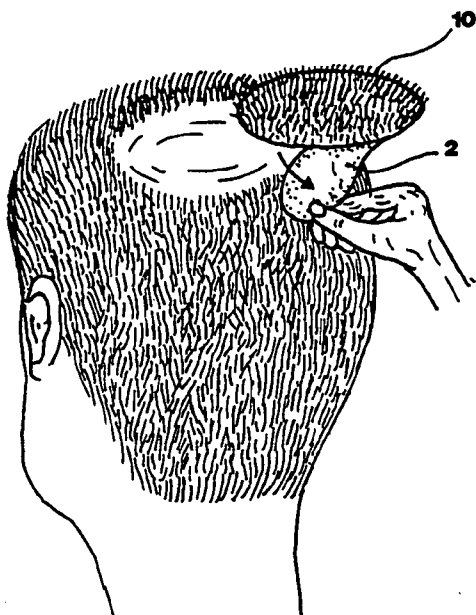


FIG. 9A

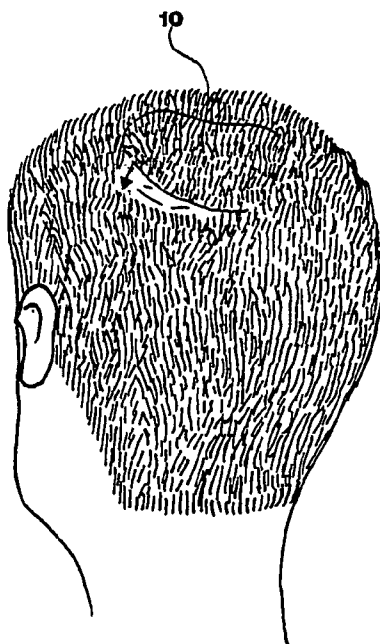


FIG. 9B

STICKER FOR THE APPLICATION OF HAIR AND THE LIKE AND RELATED METHOD OF MANUFACTURING

[0001] This invention is generally referred to the field of hair or similar application to solve, for example, baldness problems and it is specifically based on an adhesive for the application of hair or similar and on a the related manufacturing process.

[0002] In beauty field there are several systems of hair application such as wigs or through the sticking to the skin or to the scalp of a sheet shaped base having hair projecting from a face thereof.

[0003] The base can be of various nature: it can be made for example of tissue or plastic. To fix this base to the skin or to the scalp, it is necessary to use an adhesive that can have different shapes but that, anyway, since it is directly in touch with the skin, has not to cause allergy, has to be transpiring and has to allow hair growth.

[0004] This kind of sticker is for example disclosed in FR 2,295,708 and a related manufacturing process is disclosed in DE 3126605.

[0005] Basically the adhesive can be provided in a quantity to be directly spread on skin and/or on the inner part of the base or as bi-adhesive tape.

[0006] The presence of the base and the adhesive cannot often be so comfortable both for the weight on skin and because it, the whole support usually covering a wide portion of skin and being stuck at several points, can cause itch or other troubles.

[0007] Another problem related to these applications, is the care and labour to manufacture these bases on which there are uniformly inserted hair.

[0008] In fact, to insert each hair to the base it is necessary to use sewing techniques, very heavy in terms of time, or glues not leading to good results in view of the risk to stick hair.

[0009] The technical problem at the root of the present invention is to provide a sticker for hair application that exceeds all the drawbacks mentioned with reference to the prior art.

[0010] The problem is solved by a sticker for the application of hair comprising an adhesive laminar support made of adhesive material, antiallergenic and transpiring, which comprises a first side wherein a plurality of hair has been run into and a second side apt to be directly stuck to the skin.

[0011] According to a preferred embodiment, the adhesive according to the invention has a removable film put on the second side to be eliminated before the application, for example silicone-made as the one used to protect self-sticking labels.

[0012] The main advantage of the sticker according to the present invention is that hair directly stuck to the skin without the above-mentioned support.

[0013] The present invention is also referred to a manufacturing process for the above defined sticker, comprising the steps of:

[0014] providing of an adhesive laminar support, anti allergenic and transpiring, made of a layer of an adhesive material, on a support plane;

[0015] providing a quantity of hair in proximity to this laminar support, each hair having an end apt to be run into said laminar support;

[0016] generating an electrostatic field at the laminar support so as to positioning said ends against the laminar support, causing them to run into the laminar support.

[0017] The advantage of the manufacturing process according to the invention is the elimination of the manual application of hair on a support.

[0018] The present invention is hereinafter described according to some preferred embodiments thereof, provided for an exemplary and non limiting purpose with reference to the following examples and to the annexed drawings wherein:

[0019] **FIG. 1A** is a schematic and partially sectioned view of a flocking apparatus used in the process according to the invention;

[0020] **FIG. 1B** is a view of the apparatus of **FIG. 1** in a different operative step;

[0021] **FIG. 2** is a perspective view of a sticker according to the invention in a following step of said process;

[0022] **FIG. 3** is a perspective view of a detail that illustrates an alternative embodiment of the process according to the invention;

[0023] **FIG. 4A** shows a first step of said alternative embodiment;

[0024] **FIG. 4B** shows a second step of said alternative embodiment;

[0025] **FIG. 5** is a perspective view of a sticker obtained through said alternative embodiment;

[0026] **FIG. 6** shows a further embodiment of the process according to the invention;

[0027] **FIG. 7** shows a following step of the process according to the invention;

[0028] **FIG. 8A** is a perspective view of another procedure the process of the first embodiment;

[0029] **FIG. 8B** is a section view of a sticker manufactured through said procedure; and

[0030] **FIGS. 9A and 9B** show two steps of sticker application.

[0031] In order to better explain some different manufacturing modes of the sticker according to the invention, some different process embodiments will be described, the process also being related to the same innovative concept.

[0032] With reference to **FIGS. 1A and 1B**, in a first embodiment of manufacturing process, a laminar support 1 made of adhesive material is provided on a support plane which is made in particular of a removable film 2, for example obtained in silicone-based paper of the kind used to protect self-sticking labels or in an equivalent material.

[0033] The adhesive material doesn't cause allergy and it is transpiring.

[0034] The laminar support **1** and the removable film **2** are then treated according to a process of flocking called as velveting process, carried out with a flocking apparatus **3** which is schematically depicted in **FIGS. 1 and 2**.

[0035] The film **2** is put on a first electrostatic plate **4** to which can be given, according to techniques known in the art and not disclosed herein, an electric charge, in particular a negative charge.

[0036] Above the plate **4** there is a closed space surrounded by a case **5** wherein it is let in a quantity of hair **6**, preferably but not exclusively natural hair **6**, having lengths necessarily non fixed but not too different than an average length, in the shape of segments of a length from few millimetres to few centimetres.

[0037] Together with hair, an amount of soft flocking fibres is put on this space, as those usually employed for the production of chamois-tissues and velvet.

[0038] Hence, hair have two ends and one of these end will be run into the adhesive laminar support under process.

[0039] Hair are kept on excitation and suspension for example through an air flow. The case **5** has a further and second electrostatic plate **7** that, together with the previous mentioned one, generates an electrostatic field at the laminar support **1**, whereby positioning said ends against the laminar support **1** and causing them to run into the laminar support **1** itself.

[0040] According to the flocking process, said hair are electrostatically charged and thrown down the laminar support **1**. The electrostatic field and the charge of hair allow hair to be on a vertical position so that one end is run into the laminar support **1**.

[0041] The same process acts on the flocking fibres filling all the spaces empty from hair, the latter being larger. In this way the so treated surface of the laminar support **1** assumes a soft compactness.

[0042] At the end of this step of running into, hair can be combed and carded (**FIG. 2**) in order to confer to hair a fixed orientation and to eliminate all the excessive and non perfectly inserted hair.

[0043] A further preferred embodiment refers to a calendaring, preferably a hot-calendaring, to confer to hair a modelled orientation, partings and so on.

[0044] At the end of this step, the sticker **10** is substantially ready to be used. The so treated laminar support **1** is formed by a first side **11**, into hair have been ran, and a second side **13** that can be stuck to the skin.

[0045] The laminar support **1** and the removable film **2** can be a rectangular paper or a roll. In this case the above-mentioned apparatus may work continuously according to techniques well known to the man skilled in the art.

[0046] When hair are satisfactorily stuck to the laminar support **1**, it is possible to obtain stickers from the laminar support **1** and from the removable film **2**, suitable to be applied to the skin.

[0047] These stickers (**FIGS. 9A and 9B**) will preferably be small sized stickers to prevent waves during adhesion. They can have every shape through cutting or punching of the laminar support and the removable film.

[0048] They can have striped, arched, semicircle, circle, oval and elliptic shapes. They can be simply and directly stuck to skin, simply taking off the removable film and adhering the opened side of the laminar support to the skin.

[0049] All the shapes can be pre-formed but also they can be formed at the moment, cutting the adhesive sheet according the invention following a preferred shape (**FIG. 7**).

[0050] Advantageously, the laminar support **1** has a small thickness, for example from 0,02 mm to 1,00 mm but preferably between 0,05 mm and 0,50 mm. The application techniques for applying the adhesive material to the removable film can be for example offset printing technique and silk-screen process.

[0051] According to a variation of the manufacturing process, influencing directly sticker structure, the adhesive can be of acrylic and water based material.

[0052] Furthermore, the adhesive material can be mixed with air dispersed in small bubbles. When the laminar support is put on the removable film, the small bubbles or part of them explode causing many craters **15** and a discontinuous positioning of the adhesive material on the laminar support **1**.

[0053] This arrangement increases the transpiration of the adhesive and its capacity of growth of hair through its thickness.

[0054] According to another variation of the process and with the above-mentioned flocking process, the laminar base is stuck to defined parts **16** of the removable film **2** so that the shape of the adhesive is not determined by cutting but it is pre-formed before the hair application.

[0055] In this connection, it is possible to use a silk-screen process or an equivalent process to print the parts of laminar support on the removable film. Through these techniques it is possible to give to the borders of each parts a tapering **17** that's to say a progressive reduction of the quantity of adhesive, providing the following effects: on one hand hair are made thinner in proximity to the border of the portion, simulating more effectively the thinning of hair at the border of a hair head, and on the other hand this arrangement makes borders less evident to touch and sight.

[0056] By tapering, it is meant a reduction of adhesive quantity at the borders because the silk-screen process releases on the surface a fair quantity and which can be varied of printed adhesive in the shape of small drops.

[0057] Advantageously, the tapering **17** can be applied only on curved borders that's to say to the borders really placed on the limits of hair.

[0058] To obtain this effect with silk-screen processes, it is enough to reduce the porosity of silk-screen process pad near borders.

[0059] It is possible to use silk-screen process loom of a variable density from 43 to 120 yarns.

[0060] Thanks to this technique, it is possible to obtain an arrangement of the adhesive that forms the laminar support by craters without air through a suitable regulation of pad's porosity.

[0061] Also the above described adhesive can be obtained in single sheets or rolls. The single parts or groups of parts can be packed and covered by a wrapping or by an envelope that protects the surface of laminar support with hair.

[0062] With reference to **FIGS. 3, 4A** and **4B** it is described a different embodiment of the manufacturing process allowing to obtain stickers according to the invention.

[0063] According to this second embodiment, a first electrostatic plate **20** is provided with locks hair **21** having the same length, connected to the plate at a lock end which, for example, can be inserted in recesses **22** regularly distributed on the surface of the plate **20**.

[0064] To the electrostatic plate **20**, it is conferred an electric charge causing the immediate raising of hair of every single lock **21**. In fact, the distal ends **23** of hair will assume the same charge moving away from each other so that all these ends will be positioned at a certain distance, from the plate surface, corresponding to the hair length.

[0065] In this way the generated electrostatic field can direct these distal ends against a laminar support **1**, for example placed facing to said electrostatic plate, with the surface thereof, freed by the removable film side **2**, so that they are run into the laminar support **1** itself. To finish the sticker **10**, at this point it is enough to cut every lock **21** at the level of the electrostatic plate and to comb and card the so obtained hair deposition.

[0066] This method can be applied to every kind of the above-mentioned stickers: with an uniform and continuous placing of laminar support or with a placing by portions, in every embodiment.

[0067] The described method allows to apply hair of different lengths, for example it is possible to put shorter hair at the borders of the sticker parts.

[0068] It is also meant that the sticker can be manufactured through a manufacturing process non implying an electrostatic system. Hair can be put on the right position, run into the laminar support, through a mechanical process with particular combs or through a manual process (**FIG. 6**).

[0069] In this case the laminar support is provided on a removable film in turn placed on a fixed surface plate. The length of hair run into the laminar support can be adjusted before or after their application.

[0070] As for the application of the above described stickers, they can be provided in small parts to be put side by side on the skin of the user, realizing a sort of mosaic; their application is therefore quick and easy and it is not necessary to use further substances or tools.

[0071] The ends of hair run into the laminar support are put substantially in contact with the skin itself, to which it is only added the minimum thickness of the laminar support itself.

[0072] The result is extraordinarily similar to those of the percutaneous transplantation but without the uneasiness related to that application.

[0073] Since the adhesive is thin, light and transpiring, it doesn't cause sensations of inconvenience, too much weight or itch.

[0074] The effect to the touch is almost slight. The advantage is that the sticker of the laminar support is transparent or almost transparent so that it can have the colour of the skin.

[0075] The above-mentioned sticker has also a lasting application but it can be removed and easily changed simply peeling the adhesive from skin.

[0076] For this reason the adhesive will be removable.

[0077] With reference to the above described method, it allows a continuous production of stickers for the application of hair reducing to minimum the manual intervention.

[0078] In a single solution it is possible to produce stickers of the desired shapes, even different to each other, for example in a single kit suitable to be used by a single user.

[0079] If, during flocking, hair of different colours are mixed, we can have automatically a mèches effect.

[0080] To the above described stickers for the application of hair and to the related manufacturing process, a man skilled in the art, to achieve different and contingent needs, can provide modifications or changes, in any case all included within the protection scope of the present invention as defined in the appended claims.

1. A sticker (**10**) for the application of hair comprising an adhesive laminar support (**1**) made of adhesive material, antiallergenic and transpiring, which comprises a first side wherein a plurality of hair (**12**) has been run into and a second side apt to be directly stuck to the skin.

2. The sticker (**10**) according to claim 1, provided with a removable film (**2**) adhered to the second side to be removed before application.

3. The sticker (**10**) according to claim 2, wherein the removable film is made of silicone paper.

4. The sticker (**10**) according to claim 1, wherein the laminar support has a thickness between 0.02 mm and 1.00 mm.

5. The sticker (**10**) according to claim 4, wherein the thickness is between) 0.05 mm and 0.5 mm.

6. The sticker (**10**) according to claim 1, wherein the adhesive material is water based acrylic material.

7. The sticker (**10**) according to claim 1, wherein this adhesive is mixed with air dispersed in small bubbles so that the laminar support has a plurality craters (**15**) in a discontinuous arrangement.

8. The sticker (**10**) according to claim 1, wherein the laminar support has a tapering (**17**) at the borders thereof.

9. The sticker (**10**) according to claim 8, wherein said tapering is applied to the curved borders thereof.

10. The sticker (**10**) according to claim 1, wherein on the laminar support there are soft flock fibers.

11. A method for the manufacturing of a sticker for the application of hair, comprising the steps of:

providing of an adhesive laminar support (**1**), anti allergenic and transpiring, made of a layer of an adhesive material, on a support plane (**2**);

providing a quantity of hair (**6**) in proximity to this laminar support (**1**), each hair having an end apt to be run into said laminar support (**1**); and

generating an electrostatic field at the laminar support (1) so as to position said ends against the laminar support (1), causing them to run into the laminar support (1).

12. The method according to claim 11, wherein the step of generation of an electrostatic field comprises a flocking process.

13. The method according to claim 12, wherein the flocking process is carried out in a flocking apparatus (3).

14. The method according to claim 12, wherein said quantity of hair is mixed with an amount of soft flocking fibers.

15. The method according to claim 11, comprising a subsequent step of combing and/or carding.

16. The method according to claim 11, comprising a subsequent step of calendering.

17. The method according to claim 11, wherein this said support plane is made of a removable film (2) adhered to the adhesive material, to be eliminated before the application.

18. The method according to claim 17, wherein this removable film (2) is made of silicone paper.

19. The method according to claim 17, wherein the removable film (2) and the laminar support (1) are cut in stickers suitable to be stuck to the skin.

20. The method according to claim 11, wherein the laminar support (1) has a thickness between 0.02 mm and 1.00 mm.

21. The method according to claim 20, wherein this thickness is between 0.05 mm and 0.5 mm.

22. The method according to claim 11, wherein the adhesive material is water based acrylic material.

23. The method according to claim 11, wherein the adhesive material is mixed with air dispersed in small bubbles.

24. The method according to claim 17, wherein the laminar support (1) is adhered on parts of the removable film (2).

25. The method according to claim 17, wherein the laminar support is obtained through a silk-screen printing process.

26. The method according to claim 25, wherein the silk-screen printing is carried out with a silk-screen pad having a silk density between 43 and 120 yarns.

* * * * *