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(54) **HAIR BRUSH AND HAIR STYLING SYSTEM**

(57) A hair brush and hair styling brush, comprising a body having a first handle portion having a first outer end, which is graspable with one hand, and further comprising a second portion which is made in one piece with the first handle portion, the second portion comprising an outer surface from which extend a plurality of hairs or bristles for combing the hair.

The brush comprises an inner cavity which extends within the first handle portion and within the second portion, further the inner cavity comprises an inlet conduit for introducing a mixture of cold air enriched with oxygen within the cavity, and wherein the inlet conduit is made within the first outer end of the first handle portion; further, the second portion comprises a plurality of through-holes made within the outer surface which are directly connected to the inner cavity to allow hair styling and in particular hair fixing in particular in combination with a hair dryer, and simultaneously to comb and treat with oxygen enriched hair of a person.

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Description

[0001] The present invention relates to a hair brush in particular for styling hair and to a system for styling hair.

[0002] The existing brushes are used to comb the hair also while drying it in combination with a hot and/or cold air electric hair dryer.

[0003] It is an object of the present invention to make a hair brush in particular for styling hair and a system for styling hair which facilitate hair fixing and hair styling.

[0004] A further purpose is to be able to have a hair brush in particular for styling hair and a system for styling hair which are cost-effective.

[0005] These purposes according to the present invention are achieved by making a hair brush in particular for styling hair and a system for hair styling as set out in claims 1 and 11.

[0006] Further features of the invention are shown by the following claims.

[0007] The features and advantages of a hair brush in particular for styling hair and a system for styling hair according to the present invention will be more apparent from the following exemplary and non-limiting description.

[0008] According to the present invention, a hair brush is provided in particular for styling hair, which comprises a body, preferably made of a polymeric material, said body comprising a first handle portion provided with a first outer end, which is graspable with one hand, and further said body comprising a second portion which is made in one piece with said first handle portion, wherein said second portion is preferably enlarged with respect to said first portion, further said second portion comprises an outer surface from which extend a plurality of hairs or bristles for combing hair.

[0009] According to the present invention said brush comprises an inner cavity extending within said first handle portion and within said second portion, further said inner cavity comprises an inlet conduit for introducing within the same a mixture of cold air enriched with oxygen, and wherein said inlet conduit is made within said first outer end of said first handle portion, and further said second portion comprises a plurality of through holes made within said outer surface which are directly connected to, and in particular communicating with, said inner cavity to allow hair styling and in particular hair fixing in particular in combination with a hair dryer, and simultaneously for combing and treating with said oxygen-enriched cold air mixture the hair of a person.

[0010] This makes it possible to reduce the time for styling and treating a person's hair with said oxygen-enriched cold air mixture by performing two operations at the same time.

[0011] This also has the advantage that said oxygen-enriched cold air mixture, being cold, allows for better fixing and styling of the hair, and also allows oxygen to penetrate into the hair, making it shinier and more purified.

[0012] Preferably said first handle portion includes a second end which is made in one piece with said second portion.

[0013] Preferably said brush comprises diffusion means in particular attached to said outer surface of said second portion for uniformly distributing said oxygen-enriched cold air mixture over at least a portion of said outer surface of said second portion of said brush.

[0014] Preferably said diffusion means comprise at least one foil preferably metallic and in particular perforated, which is fixed to said outer surface of said second portion at a predetermined distance therefrom, and wherein said foil is surrounded by said plurality of hairs or bristles for combing the hair.

[0015] Preferably said hair brush comprises a supply conduit of said oxygen-enriched cold air mixture, which is connectable to said hair brush for facilitating movement of said hair brush and to supply said oxygen-enriched cold air mixture at the same time.

[0016] Preferably said first end of said first handle portion comprises connecting means in particular integrated with said first end of said first handle portion, for connecting a supply conduit of said oxygen-enriched cold air mixture for facilitating the movement of said hair brush.

[0017] Preferably said connecting means, in particular of the male/female type, are quick connection means which are in particular integrated respectively with said first end of said first handle portion and with a first end of said supply conduit.

[0018] Preferably said connecting means comprise a quick coupling, in particular of the snap-on type preferably of the male/female type which is integrated with said first outer end of said first handle portion and with said first end of said supply conduit.

[0019] In particular said snap-on male/female type quick coupling allows the passage of said cold air mixture enriched with oxygen and also allows a rotation of said hair brush with respect to said supply conduit.

[0020] Preferably said connection means comprise a threaded connection which is made with corresponding threaded portions respectively made in said first outer end of said first handle portion and in said first end of said supply conduit.

[0021] Preferably said plurality of hairs or bristles is distributed over the entire outer surface of said second portion of said hair brush, and in particular said hairs are made with natural fibres or with a polymeric material having preferably a spherical end.

[0022] Preferably said hair brush is a round brush or an oval or cushion brush.

[0023] Preferably said hair brush comprises an electric machine for producing a mixture of cold air enriched with oxygen at a percentage of more than 82 % and in particular more than 90 %.

[0024] In particular said electric machine for producing a mixture of cold air enriched with oxygen is an oxygen concentrator in particular portable and preferably of the trolley type.

[0025] In particular said electrical machine for producing said oxygen-enriched cold air mixture comprises a connection cable to the electric network and further comprises an outlet for supplying said oxygen-enriched cold air mixture wherein said outlet is connectable to a second end of said supply conduit, in particular said outlet and said second end of said supply conduit comprise a second quick coupling, in particular of the snap-on type preferably of the male/female type which is realized on said second end of said supply conduit and on said second end of said supply conduit.

[0026] Preferably said brush further comprises an electric hair dryer which in particular is separated from said brush.

[0027] According to the present invention a system for styling hair is provided comprising at least one hair brush, and preferably a plurality of hair brushes and in particular at least three hair brushes, according to one or more features and/or variants or forms of embodiment previously described, each of which is connectable in particular to said supply conduit of said oxygen-enriched cold air mixture.

[0028] In particular said hair styling system further comprises a hair cap, preferably washable and/or sterilisable, which is made of a non-breathable material and which comprises a connection preferably quick for introducing said oxygen-enriched cold air mixture into said hair cap, and further which is wearable by a person for spraying said person's hair with said oxygen-enriched cold air mixture.

[0029] In particular said hair cap comprises diffusion means which are fixed or integrated within said hair cap for uniformly distributing, internally to said hair cap, said mixture of cold air enriched with oxygen.

[0030] Preferably said hair styling system further comprises an airbrush which is connectable to said supply conduit of said oxygen-enriched cold air mixture for spraying a person's hair with said oxygen-enriched cold air mixture.

[0031] Preferably said system for styling hair comprises an electric hair dryer which in particular is separate from said brush.

[0032] According to another aspect of the present invention, a method for styling the hair by means of at least one hair brush, and preferably a plurality of hair brushes and in particular at least three hair brushes, according to one or more features and/or variants or forms of embodiment previously described, or by means of a system for styling the hair according to one or more features and/or variants or forms of embodiment previously described, and by means of an electric hair dryer, is provided.

[0033] Said method comprises a step of a) combing and treating a person's hair with an oxygen-enriched cold air mixture, in particular said method further comprises a step of b) heating and drying said person's hair by means of said electric hair dryer wherein said step b) is performed simultaneously or sequentially with said step a).

[0034] Preferably said step a) comprises a step of a1) grasping said first handle portion with a first hand, and further said step b) comprises a step of b1) grasping with a second hand said electric hair dryer, wherein in particular said first hand and said second hand are of the same further person.

[0035] Preferably said step a) comprises a step of a2) delivering a flow of said oxygen-enriched cold air mixture of between 0,3 and 10 litres/minute, and in particular of between 0,5 and 5 litres/minute for improving the styling and fixing of the hair without slowing down the drying time, and simultaneously for allowing at the same time to comb and treat said hair of said person with said oxygen-enriched cold air mixture.

[0036] Preferably said method comprises repeating said step a) and said step b) a plurality of times for combing and styling said hair and to simultaneously treat said hair of a person with said oxygen-enriched cold air mixture, in particular said method comprises repeating said step a) and said step b) for at least 5 minutes and preferably for at least 10 minutes and even more particularly for at least 15 minutes.

[0037] It has thus been seen that a hair brush in particular for hair styling and a system for hair styling according to the present invention achieves the purposes previously highlighted.

[0038] The hair brush in particular for styling hair and the one hair styling system of the present invention thus conceived are susceptible to numerous modifications and variations, all of which fall within the same inventive concept.

[0039] Furthermore, in practice the materials used, as well as their dimensions and components, may be any according to technical requirements.

Claims

1. A hair brush in particular for styling hair, which comprises a body, preferably made of a polymeric material, said body comprising a first handle portion provided with a first outer end, which is graspable with one hand, and further said body comprising a second portion which is made in one piece with said first handle portion, wherein said second portion is preferably enlarged with respect to said first portion, further said second portion comprises an outer surface from which extend a plurality of hairs or bristles for combing hair, **characterized in that** said brush comprises an inner cavity which extends within said first handle portion and within said second portion, further said inner cavity comprises an inlet conduit for introducing within the same a mixture of cold air enriched with oxygen, and wherein said inlet conduit is made within said first outer end of said first portion of said handle, and further said second portion comprises a plurality of through holes made within said outer surface which are directly connected to said inner

cavity for permitting hair styling and in particular hair fixing in particular in combination with a hair dryer, and simultaneously for combing and treating with said mixture of cold air enriched with oxygen the hair of a person.

2. Brush according to claim 1, **characterized by** comprising diffusion means in particular fixed to said outer surface of said second portion for uniformly distributing said oxygen-enriched cold air mixture over at least a portion of said outer surface of said second portion of said brush.

3. Brush according to claim 2, **characterized in that** said diffusion means comprise at least one foil preferably metallic and in particular perforated, said foil being fixed to said outer surface of said second portion at a predetermined distance therefrom, and wherein said foil is surrounded by said plurality of hairs or bristles for combing the hair.

4. Brush according to any one of claims 1 to 3, **characterized in that** it comprises a supply conduit of said oxygen-enriched cold air mixture, said supply conduit being connectable to said brush for facilitating the movement of said hair brush and for supplying at the same time said oxygen-enriched cold air mixture.

5. Brush according to any one of claims 1 to 4, **characterized in that** said first end of said first handle portion comprises connecting means in particular integrated with said first end of said first handle portion, for connecting a supply conduit of said oxygen-enriched cold air mixture for facilitating the movement of said hair brush.

6. Brush according to claim 5, **characterized in that** said connecting means, in particular of male/female type, are quick connection means which are in particular integrated respectively with said first end of said first handle portion and with a first end of said supply conduit.

7. Brush according to claim 6, **characterized in that** said connecting means comprise a quick coupling, in particular of the snap-on type preferably of the male/female type which is integrated with said first outer end of said first handle portion and with said first end of said supply conduit, wherein in particular said snap-on type male/female quick coupling allows the passage of said oxygen-enriched cold air mixture and further allows a rotation of said hair brush with respect to said supply conduit.

8. Brush according to any one of claims 1 to 7, **characterized by** comprising an electrical machine for producing a mixture of cold air enriched with oxygen at a percentage of more than 82 % and in particular more than 90 %.

9. Brush according to claim 8, **characterized in that** said electrical machine for producing a mixture of cold air enriched with oxygen is an oxygen concentrator in particular portable and preferably of the trolley type.

10. Brush according to claim 8, **characterized in that** said electrical machine for producing said mixture of cold air enriched with oxygen comprises a connection cable to the electrical network and further comprises an outlet for supplying said mixture of cold air enriched with oxygen wherein said outlet is connectable to a second end of said supply conduit, in particular said outlet and said second end of said supply conduit comprise a second quick coupling, in particular of the snap-on type preferably of the male/female type which is realized on said second end of said supply conduit and on said second end of said supply conduit.

11. A hair styling system **characterized in that** it comprises at least one hair brush, and preferably a plurality of hair brushes and in particular at least three hair brushes, according to any one of claims 1 to 10.

12. Hair styling system according to claim 11, **characterized in that** it comprises a hair cap, preferably washable and/or sterilisable, which is made of a non-breathable material and which comprises a connection preferably quick for introducing into the same said oxygen-enriched cold air mixture, and further which is wearable by a person for spraying said person's hair with said oxygen-enriched cold air mixture.

13. Hair styling system according to claim 12, **characterized in that** said hair cap comprises diffusion means which are fixed to or integrated within the same for uniformly distributing, internally to said hair cap, said mixture of cold air enriched with oxygen.

14. Hair styling system according to any one of claims 1 to 13, **characterized in that** it comprises an airbrush which is connectable to said supply conduit of said oxygen-enriched cold air mixture for spraying the hair of a person with said oxygen-enriched cold air mixture.

15. A method of styling hair by means of at least one hair brush according to any one of claims 1 to 10 or by means of a system for styling hair according to any one of claims 11 to 14, and by means of an electric hair dryer, said method **characterized in that** it comprises a step of a) combing and treating a person's hair with an oxygen-enriched cold air mixture, in particular said method further comprising a step

of b) heating and drying said person's hair by means of said electric hair dryer wherein said step b) is performed simultaneously or sequentially with said step a), said method comprising repeating said step a) and said step b) a plurality of times for combing and styling the hair and for simultaneously treating said person's hair with said oxygen-enriched cold air mixture; preferably said step a) comprises a step a1) of grasping said first handle portion with a first hand, and further said step b) comprises a step of b1) grasping said electric hair dryer with a second hand, wherein in particular said first hand and said second hand are of the same further person.

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EUROPEAN SEARCH REPORT

Application Number
EP 21 00 0151

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	7 October 2021	Ehrsam, Sabine

CATEGORY OF CITED DOCUMENTS

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L : document cited for other reasons

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 21 00 0151

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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