



(11) **EP 1 106 104 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention
of the grant of the patent:
29.08.2007 Bulletin 2007/35

(51) Int Cl.:
A46B 9/02 (2006.01)

(21) Application number: **00123662.9**

(22) Date of filing: **30.10.2000**

(54) **Hair brush**

Haarbürste

Brosse à cheveux

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE**

(30) Priority: **30.11.1999 US 451747**

(43) Date of publication of application:
13.06.2001 Bulletin 2001/24

(73) Proprietor: **Plásticos Vandux De Colombia S.A., a
Colombian Corporation
50493 Barranquilla (CO)**

(72) Inventor: **Bigio, Alberto Lee
Barranquilla (CO)**

(74) Representative: **Lindner, Manfred Klaus
Patentanwälte
Walter-Eggers-Lindner
Göllheimer Strasse 5
81241 München (DE)**

(56) References cited:
**FR-A- 1 049 631 US-A- 3 949 765
US-A- 4 694 525 US-A- 5 479 951
US-A- 5 853 011 US-A- 5 911 226**

Note: Within nine months from the publication of the mention of the grant of the European patent, any person may give notice to the European Patent Office of opposition to the European patent granted. Notice of opposition shall be filed in a written reasoned statement. It shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Description

Technical Field

[0001] The present invention relates to a hair brush.

Background of the Invention

[0002] Conventional hair brushes include an elongated member typically including a handle segment and a bristle segment. Commonly, the bristle segment is a solid, cylindrical shape having a constant diameter throughout its axial length.

[0003] A brush according to the preamble of claim 1 is known from US-A-5 911 226. Another brush which can be fixed to a hairdryer is known from US-A-3 949 765.

[0004] There is a need in the marketplace for an anatomically correct hair brush.

Summary of the Invention and Advantages Thereof

[0005] It is an object of the present invention to provide an anatomically correct hair brush.

[0006] It is another object of the present invention to provide a hair brush that has an hourglass shape about its bristle substrate.

[0007] It is a further object of the present invention to utilize bristles having a substantially equivalent length such that hourglass shape of the substrate is projected radially outward to the outer peripheral edges of the bristles.

[0008] It is a further object of the present invention to provide an anatomically correct hair brush which requires less force to pass through the user's hair.

[0009] It is another object of the present invention to provide an anatomically correct hair brush which presents less bristle material in the central mid-region of the brush thereby reducing the force needed to brush one's hair and enhancing the heating and blow drying of one's hair.

[0010] It is a further object of the present invention to provide a brush with a concave substrate, forming a concave shape bristle edges, on a generally rectangular bristle substrate.

[0011] It is an additional object of the present invention to provide an anatomically correct hair brush which enables the user to roll-up more hair on the brush due to the hourglass shape of the bristle substrate.

[0012] It is an additional object of the present invention to provide an anatomically hair brush wherein the hourglass shape enables a tighter hold on hair wrapped about the hourglass shape bristle system.

[0013] It is another object of the present invention to provide an anatomically correct hair brush which, when utilized, creates hair styles with more volume.

[0014] The hair brush includes an elongated member having a handle segment and a bristle substrate segment. In one embodiment the bristle substrate defines a

cylindrical core having a smoothly curve, concave central region and radially larger end regions. A plurality of bristles are attached over the bristle substrate. The bristles have substantially equal length such that the outer peripheral portions of the plurality of bristles define a smooth curve, concave shape complementary to the concave central region of the bristle substrate. The bristles are further segmented into groups of small bundles and these bundles are disposed over the peripheral surface of the bristle substrate in a series. Each series of bristle bundles are axially spaced apart in a common radial plane passing through the axial center line of the brush. A rectangular bristle substrate with a concave shape is also disclosed herein.

Brief Description of the Drawings

[0015] The accompanying drawings illustrate the salient portions of the invention wherein:

FIG. 1 diagrammatically illustrates a perspective view of the hair brush;

FIG. 2 diagrammatically illustrates a side view of the hair brush;

FIG. 3 diagrammatically illustrates the hair brush particularly the hourglass shape or smoothly curved concave central portion of the bristle segment substrate;

FIG. 4 diagrammatically illustrates a side view of a rectangular bristle substrate with a concave central region; and

FIG. 5 illustrates an end view of the brush of FIG. 4.

Detailed Description

[0016] The present invention relates to a hair brush.

[0017] FIG. 1 diagrammatically shows a perspective view of hair brush 12. FIG. 2 diagrammatically illustrates a side view of the hair brush and FIG. 3 diagrammatically illustrates a schematic of the hair brush particularly showing the hourglass shape of bristle substrate segment 14. The figures are discussed concurrently herein. Similar reference numbers are utilized in all the figures. Brush 12 includes handle segment 13 and bristle substrate segment 14. As best shown in FIG. 3, bristle substrate 14 has a generally cylindrical core segment with a smoothly curved concave central region 16 and radially larger end regions 18, 20. Bristle substrate 14 carries a plurality of bristles 25 on its peripheral surface.

[0018] The plurality of bristles 25 are grouped together in small bundles, one of which is identified as bristle bundle 27 in FIG. 1. A sub-plurality of bundles are axially aligned in a row such as row 29 shown in FIG. 1. Bristle row 29 is linear such that all bundles in the row of bristles are disposed in a common radial plane extending through the axial centerline of the core. See bristle row 31 in FIG. 2. Further, the bristle rows are circumferentially distributed about the peripheral surface of bristle substrate 14.

This circumferential or angular offset between adjacent radial rows of bristles reduces the force necessary to pass the brush through the hair of the user, enables faster drying of the hair with a blow dryer and requires less heat to blow-dry the hair. Further, the hourglass shape of concave central region 16 (FIG. 3) enables faster blow drying time, less heat and less effort to brush the user's hair. The brush also gives the hair style more volume. The angular offset between radial rows also enhances massaging of the scalp during a brushing session.

[0019] Hair brush 12 is anatomically configured such that the hourglass shape of curved concave central region 16 (FIG. 3) generally matches curves on the user's head.

[0020] Handle segment 13 has a continuously curved convex region 40 and radially smaller end regions 42, 44.

[0021] The bristles have substantially equivalent lengths 46 such that the outer periphery of a row of bristles defines a smooth curved concave shape about central region 50 that is complementary the hourglass shape 16 of bristle substrate 14.

[0022] FIG. 4 diagrammatically illustrates hair brush 12 with an elongated, generally rectangular member 43. A cross-sectional aspect of member 43 and 77, from the perspective of section line 80'-80," is generally rectangular in shape. This generally rectangular cross-sectional shape is carried forward to core segment 70 which is part of the bristle substrate segment. FIG. 5 shows the end as a rectangular shape.

[0023] Brush 12 includes handle segment 78 and a bristle substrate segment extending over region 72. Bristles 25 protrude upward from the smoothly curved concave central region 74 of the elongated, rectangular shape of bristle substrate segment 72. Concave central region 74 and bristles 25 create a concave plurality of bristles at region 76. The angular offset of bristles 25 in linear rows is shown in FIG. 5.

[0024] The brush may be made of wood, plastic, aluminum or other material. Any combination of those elements can be utilized in the brush. The brush can be manufactured with different lengths and in different colors.

[0025] The claims appended hereto are meant to cover modifications and changes within the scope and spirit of the present invention.

Industrial Application

[0026] The present invention has industrial application in the hair brush technological arts.

Claims

1. A hairbrush (12) defined by an elongated member element having a handle segment (13) and a bristle substrate segment (14) on a common axial centerline, said brush having a plurality of bristles (25) at-

tached over said bristle substrate (14) and said bristle substrate (14) defines a cylindrical core segment with a smoothly curved concave central region (16) and radially larger end regions (18, 20), **characterized in that** said cylindrical core segment smoothly curved concave central region (16) and end regions (18, 20) have a peripheral surface, said plurality of bristles (25) carried on said peripheral surface have a substantially equal lengths such that outer peripheral portions of said plurality of bristles define a smooth curved concave shape (50) complementary to said smoothly curved peripheral surface of said concave central region (16) of said central core region such that there is less bristle material in the central mid-region of the brush thereby reducing the force needed to brush one's hair, and said plurality of bristles (25) are segregated into groups of small bundles (27) and are disposed over a peripheral surface of said bristle substrate in a series of axially aligned and radially distributed linear bristle rows (29, 31), each row consisting of a sub-plurality of bristle bundles, each bristle bundle in a respective linear row spaced axially apart along said bristle substrate.

2. A brush as claimed in claim 1, wherein said handle segment (13) is generally cylindrically shaped (Fig. 1).
3. A brush as claimed in claim 1 or 2, wherein said handle segment (13) defines a continuously curved convex region (40) having radially smaller handle end regions (42, 44).
4. A hairbrush comprising an elongated member element having a handle segment (13) and a bristle substrate segment on a common axial centerline, said bristle substrate defining an elongated, rectangular core segment (70) with an upper surface (74) thereof having a smoothly curved concave central region (74) with a peripheral surface and dimensionally larger end regions, said brush having a plurality of bristles attached over said upper peripheral surface of said bristle substrate, wherein said plurality of bristles (25) have a substantially equal lengths such that outer peripheral portions of said plurality of bristles define a smooth curved concave shape (76) complementary to said concave central region (74) of said core region.
5. A brush as claimed in 4 wherein said plurality of bristles (25) are segregated into groups of small bundles (27) and are disposed over said upper surface (74) of said bristle substrate in a series of axially aligned and laterally spaced apart linear bristle rows (29), each row consisting of a sub-plurality of bristle bundles, each bristle bundle in a respective linear row spaced axially apart along said bristle substrate.

Patentansprüche

1. Haarbürste (12), definiert durch ein längliches Stabelement, das ein Griffsegment (13) und ein Borstensubstratsegment (14) auf einer gemeinsamen axialen Mittellinie hat, welche Bürste eine Mehrzahl von Borsten (25) hat, die über dem Borstensubstrat (14) angebracht sind, und welches Borstensubstrat (14) ein zylindrisches Kernsegment mit einer sanft gekrümmten konkaven Zentralregion (16) und radial größeren Endregionen (18, 20) definiert, **dadurch gekennzeichnet, dass** die sanft gekrümmte konkave Zentralregion (16) und die Endregionen (18, 20) des zylindrischen Kernsegmentes eine Umfangsoberfläche haben, die Mehrzahl von Borsten (25), die an der Umfangsoberfläche getragen werden, im wesentlichen gleiche Längen haben, so dass äußere Umfangsteile der Mehrzahl von Borsten eine sanft gekrümmte konkave Form (50) komplementär zu der sanft gekrümmten Umfangsoberfläche der konkaven Zentralregion (16) der Zentralkernregion definiert, so dass es in der zentralen Mittelregion der Bürste weniger Borstenmaterial gibt, wodurch die Kraft verringert wird, die erforderlich ist, um sich die Haare zu bürsten, und die Mehrzahl von Borsten (25) in Gruppen von kleinen Bündeln (27) getrennt ist und über eine Umfangsoberfläche des Bürstensubstrates in einer Reihe von axial ausgerichteten und radial linear verteilten Borstenreihen (29, 31) angeordnet ist, wobei jede Reihe aus einer Untermehrzahl von Borstenbündeln besteht, wobei jedes Borstenbündel in einer jeweiligen linearen Reihe längs des Bürstensubstrates axial beabstandet ist.
2. Bürste nach Anspruch 1, wobei das Griffsegment allgemein zylindrisch geformt ist (Fig. 1).
3. Bürste nach Anspruch 1 oder 2, wobei das Griffsegment eine kontinuierlich gekrümmte konvexe Region (40) definiert, die radial kleinere Griffendregionen (42, 44) hat.
4. Bürste, enthaltend ein längliches Stabelement, das ein Griffsegment (13) und ein Borstensubstratsegment an einer allgemein axialen Mittellinie hat, welches Borstensubstrat ein längliches rechtwinkliges Kernsegment (70) definiert, wobei eine obere Oberfläche (74) davon eine sanft gekrümmte, konkave Zentralregion (74) mit einer Umfangsoberfläche und dimensionsmäßig größeren Endbereichen hat, welche Bürste eine Mehrzahl von Borsten hat, die über der oberen Umfangsoberfläche des Borstensubstrates angeordnet ist, wobei die Mehrzahl von Borsten (25) im wesentlichen gleiche Längen hat, so dass Außenumfangsteile der Mehrzahl von Borsten eine sanft gekrümmte konkave Form (76) komplementär

zu der konkaven Zentralregion (74) der Kernregion definiert.

5. Bürste nach Anspruch 4, wobei die Mehrzahl von Borsten (25) in Gruppen von kleinen Bündeln (27) getrennt ist und über der oberen Oberfläche (74) des Bürstensubstrates in einer Reihe von axial ausgerichteten und seitlich linear beabstandeten Borstenreihen (29) angeordnet ist, wobei jede Reihe aus einer Untermehrzahl von Borstenbündeln besteht, wobei jedes Borstenbündel in einer jeweiligen linearen Reihe längs des Borstensubstrates axial beabstandet ist.

Revendications

1. Brosse à cheveux (12) définie par un élément allongé ayant un segment formant manche (13) et un segment formant substrat pour des poils (14) sur une ligne centrale axiale commune, ladite brosse ayant une pluralité de poils (25) attachés sur ledit substrat de poils (14), et ledit substrat de poils (14) définit un segment d'âme cylindrique avec une région centrale concave (16) à courbure douce, et des régions terminales (18, 20) radialement plus larges, **caractérisée en ce que** dans ledit segment d'âme cylindrique, la région centrale concave (16) à courbure douce et les régions terminales (18, 20) ont une surface périphérique, ladite pluralité de poils (25) portés sur ladite surface périphérique ont des longueurs sensiblement égales, de telle façon que des portions périphériques extérieures de ladite pluralité de poils définissent une forme concave (50) à courbure douce complémentaire de ladite surface périphérique à courbure douce de ladite région centrale concave (16) de ladite région d'âme centrale, de telle façon qu'il existe une moindre quantité de matériau de poils dans la région médiane centrale de la brosse, réduisant ainsi la force nécessaire pour brosser les cheveux, et ladite pluralité de poils (25) sont classés en groupes de petits faisceaux (27) et sont disposés sur une surface périphérique dudit substrat de poils dans une série de rangées de poils linéaires (29, 31) axialement alignées et radialement distribuées, chaque rangée étant constituée d'une sous-pluralité de faisceaux de poils, et chaque faisceau de poils dans une rangée linéaire respective étant espacé axialement le long dudit substrat de poils.
2. Brosse à cheveux selon la revendication 1, dans laquelle ledit segment formant manche (13) a généralement une forme cylindrique (figure 1).
3. Brosse selon la revendication 1 ou 2, dans laquelle ledit segment formant manche (13) définit une région convexe à courbure continue (40) ayant des régions terminales de manche (42, 44) radialement plus pe-

tites.

4. Brosse à cheveux comprenant un élément allongé ayant un segment formant manche (13) et un segment formant substrat de poils sur une ligne centrale axiale commune, ledit substrat de poils définissant un segment d'âme allongée rectangulaire (70) avec une surface supérieure (74) présentant une région centrale concave (74) à courbure douce avec une surface périphérique et des régions terminales de dimensions plus larges, ladite brosse ayant une pluralité de poils attachés sur ladite surface périphérique supérieure dudit substrat de poils, ladite pluralité de poils (25) ayant des longueurs sensiblement égales de telle façon que des portions périphériques extérieures de ladite pluralité de poils définissent une forme concave (76) à courbure douce complémentaire de ladite région centrale concave (74) de ladite région d'âme.
5. Brosse selon la revendication 4, dans laquelle ladite pluralité de poils (25) sont classifiés en groupes de petits faisceaux (27) et sont disposés sur ladite surface supérieure (74) dudit substrat de poils dans une série de rangées de poils linéaires (29) axialement alignées et latéralement espacées, chaque rangée étant constituée d'une sous-pluralité de faisceaux de poils, chaque faisceau de poils dans une rangée linéaire respective étant espacé axialement le long dudit substrat de poils.

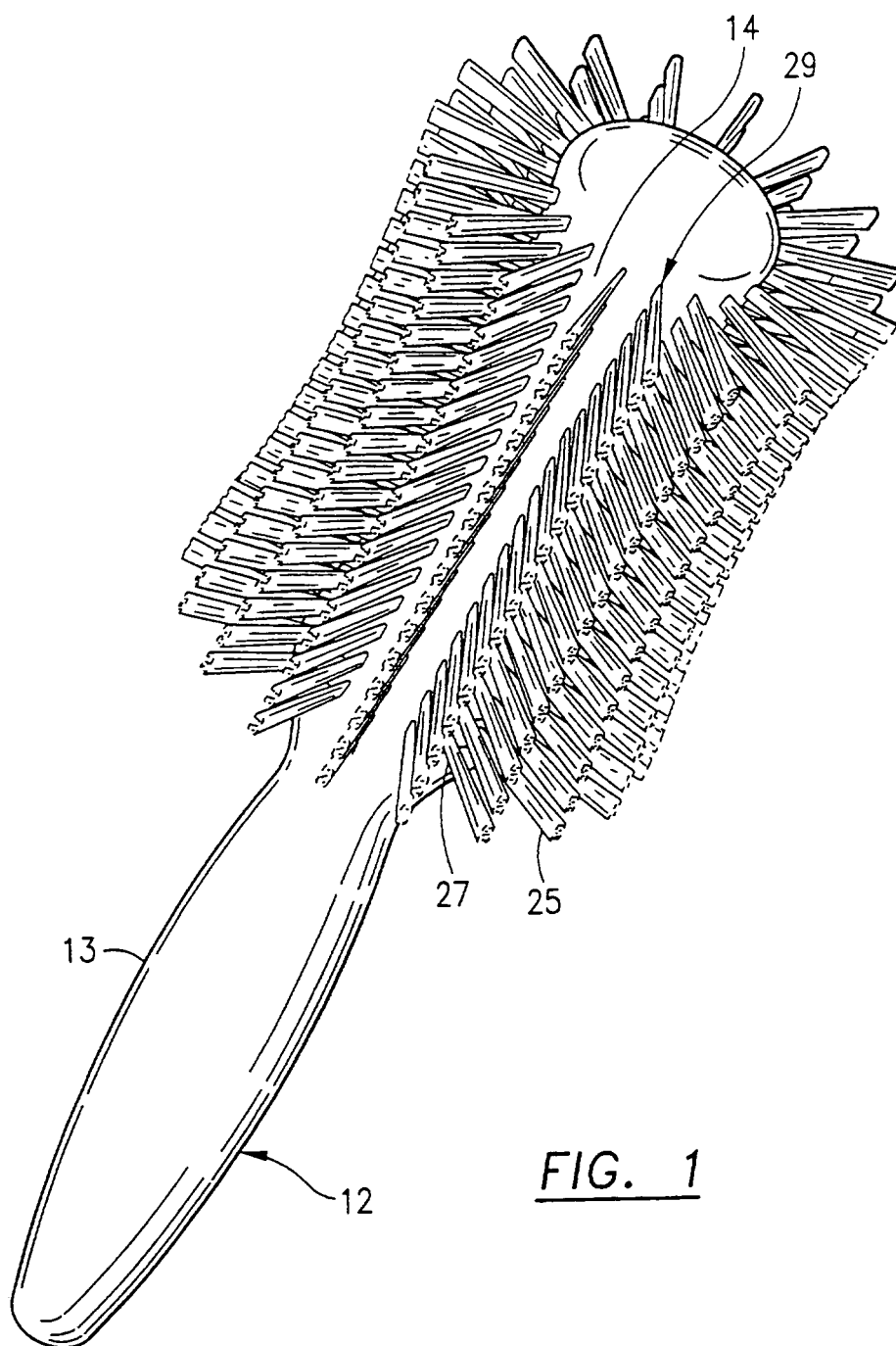
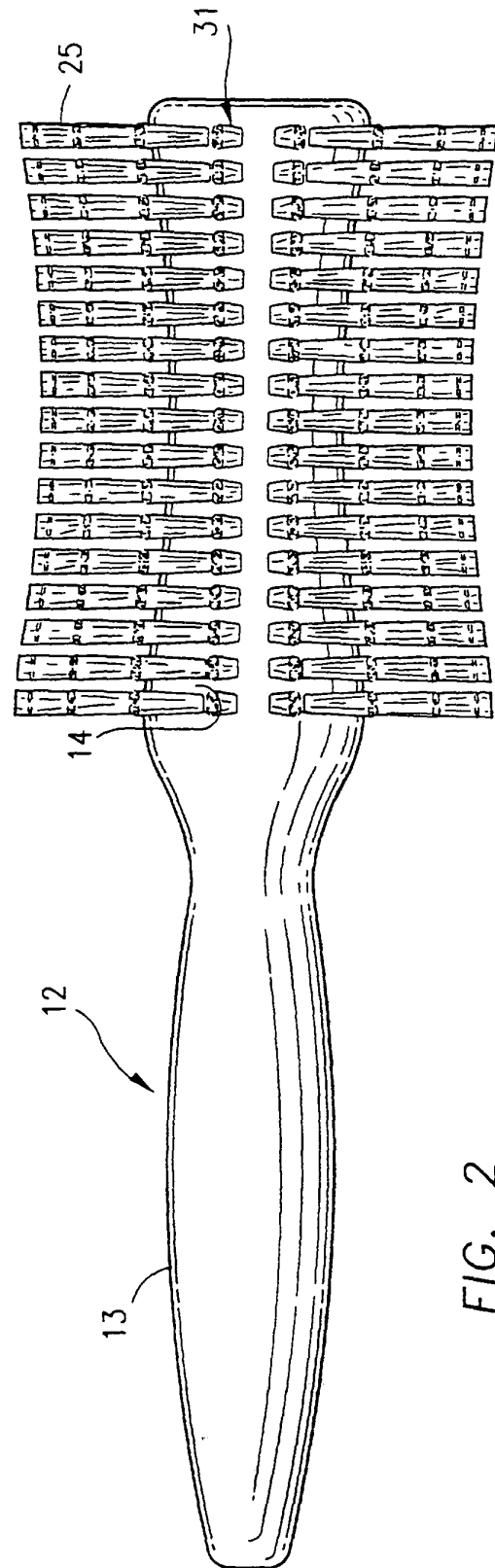
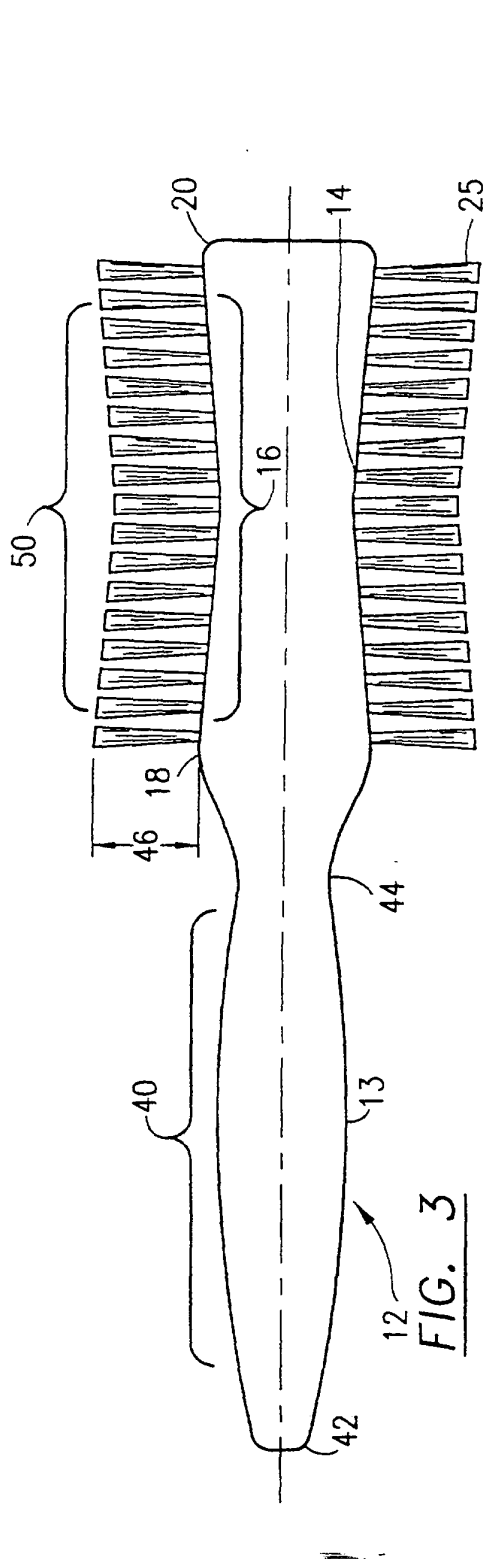


FIG. 1



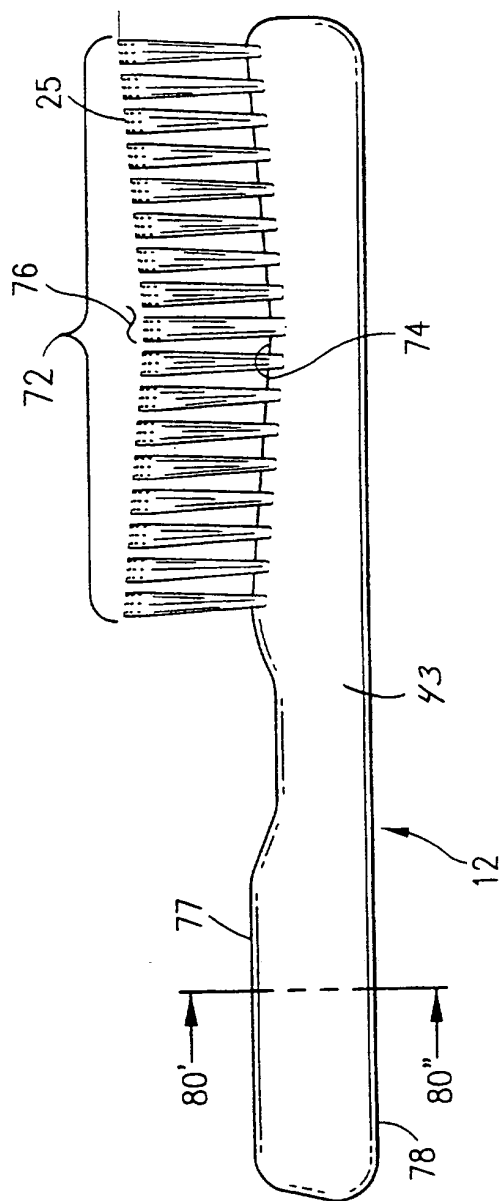


FIG. 4

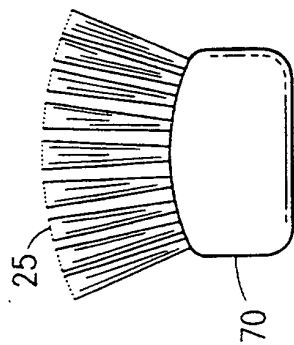


FIG. 5

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- US 5911226 A [0003]
- US 3949765 A [0003]