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## CLAIMS JP2007105144

1.

A setter body (1) provided with a plurality of types of attachments (A1) · (A2) · (A3) exchanged mounted in the setter body (1), Setter body (1) includes a blower fan (2) and a cylindrical body casing having a built-in heater (3) (4), a tubular to be connected and fixed to the air outlet (5) side of the main body case (4) and a holder (6), Each attachment (A1) · (A2) · (A3) may be integrated with the setter body (1) by fitted attached to the holder (6), The discharge and transformer (31) units that constitute the ion generating device (27), the interior of the transformer (31) is the main body case (4), the discharge unit (27) is separated respectively in the interior of the holder (6) hair setter, characterized in that it is arranged.

2.

It fitted mounting the respective attachment to the holder (6) (A1) · (A2) · (A3) is engaging member provided on the tip of the holder (6) and (23), the connecting base end of the holder (6) is supported out with provided a connecting tube (16), which is held at the locking means provided between the main body case 4 and each of the attachment (A1) · (A2) · (A3), Between the respective attachment (A1) · (A2) · (A3) and the holder (6), a holder (6) outside ventilation passage of the drying air blown from the outlet (18) of (72) is formed Hair setter according to claim 1, wherein you are.

3.

A holder (6), between the holder (6) discharge unit in (27), the inner vent path for sending out of the negative ions holders generated in the discharge unit (27) (6) (71 ) hair setter according to claim 2, it is formed.

4.

Body case (4), which is composed of joining a pair of split cases are divided formed along the casing central axis (4a) · (4 b), Connecting tube holder (6) made of plastic molding (16) is embraced by a pair of said separate casing (4a) · (4 b), both separate casing (4a) · (4 b) of the connection tube (16) externally secured to a metallic connection cap (25) at inseparably hair setter according to claim 1, which is engaged and fixed to.

5.

Holder (6) is provided with connecting tube provided in the coupling end of the main body case (4) and (16), the strut tube for accommodating the discharge unit (27) and (17), Discharge unit (27) comprises an electrode frame (34), and a plurality of discharge electrodes which are arranged separately to the electrode frame (34), Large ion outlet opening area (21) is formed around the wall of the discharge electrode facing the strut tube (17), the strut tube (17) opening area small group of vents around the walls of the remaining (22) opening to hair setter of claim 1 or 2, wherein are.

6.

The outer peripheral surface of the column tube of the holder 6 (17), hair setter according to claim 5, wherein the far-infrared radiation layer (17a) is formed.

7.

Hair setter a plurality of discharge electrodes, according to claim 5 are separated disposed along a plurality of radial center line which is attached to the electrode frame (34).

8.

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A plurality of discharge electrodes to be attached to the electrode frame (34), hair setter according to claim 5, wherein are separated disposed along the longitudinal direction of the electrode frame (34).

9.

Discharge electrodes to be attached to the electrode frame (34), a central electrode (41) arranged back to back shape, ambient surrounding the center electrode sandwiched between the electrode frames (34) (41) electrode (42) and it is constructed out with a dielectric cylinder (43), Hair setter according to any one of claims 5-8 in which each of the center electrode (41) and the peripheral electrode forming a pair (42) is formed as a single unit member.

10.

Electrode frame (34), cross section U-shaped main frame (35), a circular electrode seat formed on the top and bottom of the main frame (35) and (38), a central electrode (41) an electrode seat ( comprises a slit (39) for loading the central portion 38), the upper and lower electrode pairs each other consisting of a pair of right and left central electrodes arranged back to back shape (41), (41), a lead plate (44 ) are integrated are connected by, Each electrode seats four peripheral electrode that is attached to the outer fitting shape (38) (42), are integrated via a transverse frame (45) and the vertical frame (46), The main frame (35) loaded with lead plates inside the (44), is fixed in the main frame (35) an insulating sealing material filled in the (47), Horizontal frame fitted on the electrode seat (38) mounted to the peripheral electrode (42) (45), according to claim engaged with a groove formed in the circumferential surface of the electrode seat (38) (50) is positioned 9 Hair setter described.



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(19)日本国特許庁(JP)　(12)公開特許公報(A)　(11)特許出願公開番号
特開2007-105144
(P2007-105144A)
(43)公開日　平成19年4月26日(2007.4.26)

| (51)Int.Cl. | | F I | | | テーマコード（参考） |
|---|---|---|---|---|---|
| A45D 20/10 | (2006.01) | A45D | 20/10 | 104 | 3B040 |
| A45D 20/12 | (2006.01) | A45D | 20/12 | J | |
| | | A45D | 20/12 | Z | |

審査請求 未請求　請求項の数 10　OL　（全 15 頁）

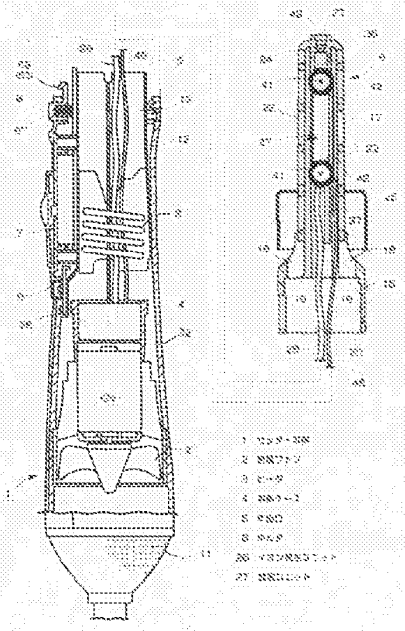
(21)出願番号　特願2005-297381 (P2005-297381)
(22)出願日　平成17年10月12日 (2005.10.12)

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Fターム(参考)　3B040 CE00

(54)【発明の名称】ヘアーセッター

(57)【要約】
【課題】ヘアーセッターにおけるマイナスイオン発生用の放電ユニット、トランスなどの機器配置を好適化して、セッター本体の一側に設けたホルダを小形化し、ホルダに交換装着されるブロープラシやロールブラシなどの使いやすさの向上を図る。
【解決手段】セッター本体１と、セッター本体１に交換装着される、ロールブランＡ１を含む複数種のアタッチメントＡ１・Ａ２・Ａ３とを有する。セッター本体１は、送風ファン２およびヒータ３が配置される筒状の本体ケース４と、本体ケース４の吹出口５側に連結固定される筒状のホルダ６とを有し、各アタッチメントＡ１・Ａ２・Ａ３をホルダ６に交換装着できる。イオン発生装置を構成するトランス３１は、本体ケース４の内部に、放電ユニット２７はホルダ６の内部にそれぞれ分離して配置し、ホルダ６の大形化を防ぐ。
【選択図】図１



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【特許請求の範囲】
【請求項1】
セッター本体（１）と、セッター本体（１）に交換装着される複数種のアタッチメント（Ａ１）・（Ａ２）・（Ａ３）とを備えており、
セッター本体（１）は、送風ファン（２）およびヒータ（３）を内蔵する筒状の本体ケース（４）と、本体ケース（４）の吹出口（５）側に連結固定される筒状のホルダ（６）とを有し、
各アタッチメント（Ａ１）・（Ａ２）・（Ａ３）は、ホルダ（６）に外嵌装着することによってセッター本体（１）と一体化することができ、
イオン発生装置を構成するトランス（３１）と放電ユニット（２７）とは、トランス（３１）が本体ケース（４）の内部に、放電ユニット（２７）がホルダ（６）の内部にそれぞれ分離して配置されていることを特徴とするヘアーセッター。
【請求項2】
ホルダ（６）に外嵌装着した各々のアタッチメント（Ａ１）・（Ａ２）・（Ａ３）が、ホルダ（６）の突端に設けた係合体（２３）と、ホルダ（６）の連結基端に設けた接続筒（１６）とで支持されて、本体ケース４と各々のアタッチメント（Ａ１）・（Ａ２）・（Ａ３）との間に設けたロック手段で固定保持されており、
各々のアタッチメント（Ａ１）・（Ａ２）・（Ａ３）とホルダ（６）との間には、ホルダ（６）の送出口（１８）から吹き出る乾燥風の外通気路（７２）が形成されている請求項１記載のヘアーセッター。
【請求項3】
ホルダ（６）と、ホルダ（６）内の放電ユニット（２７）との間には、放電ユニット（２７）で生成したマイナスイオンをホルダ（６）の外へ送出するための内通気路（７１）が形成されている請求項２記載のヘアーセッター。
【請求項4】
本体ケース（４）が、ケース中心軸線に沿って分割形成された一対の分割ケース（４ａ）・（４ｂ）を接合することより構成されており、
プラスチック成形品からなるホルダ（６）の接続筒（１６）が一対の前記分割ケース（４ａ）・（４ｂ）で抱持され、両分割ケース（４ａ）・（４ｂ）が、接続筒（１６）に外嵌固定した金属製の連結キャップ（２５）で分離不能に係合固定されている請求項１記載のヘアーセッター。
【請求項5】
ホルダ（６）が、本体ケース（４）との連結端に設けた接続筒（１６）と、放電ユニット（２７）を収容する支柱筒（１７）とを備えており、
放電ユニット（２７）が、電極フレーム（３４）と、電極フレーム（３４）に分離して配置された複数個の放電電極とを含み、
放電電極と対向する支柱筒（１７）の周囲壁に開口面積の大きなイオン送出口（２１）が形成され、残る支柱筒（１７）の周囲壁に開口面積が小さな一群の通気口（２２）が開口している請求項１または２記載のヘアーセッター。
【請求項6】
ホルダ６の支柱筒（１７）の外周面に、遠赤外線放射層（１７ａ）が形成されている請求項５記載のヘアーセッター。
【請求項7】
電極フレーム（３４）に装着される複数個の放電電極が、複数の放射中心線に沿って分離配置してある請求項５記載のヘアーセッター。
【請求項8】
電極フレーム（３４）に装着される複数個の放電電極が、電極フレーム（３４）の長手方向に沿って分離配置してある請求項５記載のヘアーセッター。
【請求項9】

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電極フレーム（３４）に装着される放電電極が、背中合わせ状に配置される中央電極（４１）と、電極フレーム（３４）を間に挟んで中央電極（４１）の周囲を囲む周囲電極（４２）および誘電筒（４３）とで構成されており、
対をなす中央電極（４１）および周囲電極（４２）のそれぞれが１個のユニット部品として形成されている請求項５～８のいずれかに記載のヘアーセッター。
【請求項10】
電極フレーム（３４）が、横断面がコ字状の主枠（３５）と、主枠（３５）の上下に形成される円形の電極座（３８）と、中央電極（４１）を電極座（３８）の中央部に装填するためのスリット（３９）とを備えており、背中合わせ状に配置した左右一対の中央電極（４１）・（４１）からなる上下の電極対どうしが、リード板（４４）で接続されて一体化されており、
各電極座（３８）に外嵌状に装着される４個の周囲電極（４２）が、横枠（４５）と縦枠（４６）とを介して一体化されており、
主枠（３５）内に装填したリード板（４４）が、主枠（３５）内に充填した絶縁シール材（４７）で固定されており、
電極座（３８）に外嵌装着した周囲電極（４２）の横枠（４５）が、電極座（３８）の周面に形成した溝（５０）と係合して位置決めされている請求項９記載のヘアーセッター

【発明の詳細な説明】
【技術分野】
【0001】
本発明は、温風を吹き出し供給するセッター本体と、ブローブラシ、ロールブラシ、ノズルなどのセッター本体に対して付け換え可能な複数種のアタッチメントとを備えているヘアーセッターに関する。
【背景技術】
【0002】
本発明は、ブローブラシやロールブラシなどのアタッチメントが、セッター本体の一側に設けたホルダに外嵌装着されたヘアーセッターを対象とする。この種のヘアーセッターは特許文献１に公知である。そこでは、ホルダの内部に蒸気発生用のヒータを配置し、ホルダの外面にロールブラシが装着されている。
【0003】
本発明のヘアーセッターにおいては、前記ホルダ内にマイナスイオン発生装置の放電電極を配置して、ホルダに装着のブローブラシやロールブラシで捕捉した髪に対してマイナスイオンを送給する。この種のマイナスイオン発生装置を備えたヘアーセッターは、特許文献２、３に公知である。特許文献４のヘアーセッターにおいては、セッター本体の一側に設けたかまぼこ形のホルダ部に、アタッチメント化したブローブラシを着脱できるようにしてあり、そのホルダ部の内部にマイナスイオン発生装置が配されている。
【0004】
【特許文献1】特開平５－１６８５１５号公報（段落番号０００９、図１）
【特許文献2】特開２００２－３６９７１３号公報（段落番号００２０、図１）
【特許文献3】特開平９－３５０号公報（段落番号００２４、図1）
【特許文献4】特開２００３－２８４６０９号公報（段落番号００２９、図１）
【発明の開示】
【発明が解決しようとする課題】
【0005】
複数種のアタッチメントを備えたヘアーセッターにおいて、例えば特許文献２のように、個々のアタッチメントにマイナスイオン発生装置の放電電極を組み込んであると、ヘアーセッターの全体コストが高く付く。このようなコスト増を避けるには、特許文献４の例にみるように、セッター本体のホルダ部の内部に、マイナスイオン発生用の放電電極、トランス、回路基板などを設けて、個々のアタッチメントの構造を簡素化するとよい。
【0006】

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因みに、アタッチメント化されたロールブラシ、ブローブラシ、ノズルなどをセッター本体のホルダ部に対して付け換え可能とするには、ホルダに対する各アタッチメントの装着構造を共通化することが要求される。

【0007】

また、特許文献４のヘアーセッターのように、かまぼこ形のホルダ部にロールブラシを装着することは極めて困難であるから、各アタッチメントの構造の違いを考慮すると、円筒状に構成されるロールブラシを基準にしてホルダの形態を決定せざるを得ない。具体的には、ホルダをロールブラシに対応して筒状に形成したうえで、ブローブラシやノズルなどの装着構造をロールブラシの装着形式と一致させるのが合理的である。

【0008】

しかし、ロールブラシにホルダを対応させて筒状に形成する場合には、特許文献４のヘアーセッターのように放電電極、トランス、回路基板などを筒状のホルダ内に収容することが困難となる、ホルダを大径化すると先の部品を収容することはできるが、アタッチメント化されたロールブラシやブローブラシが大形化し、使いやすさが大幅に損なわれるからである。

【0009】

本発明の目的は、マイナスイオン発生用の放電ユニットやトランスなどの機器配置を好適化することにより、セッター本体の一側に設けたホルダを小形化し、これによってブローブラシ、ロールブラシ、ノズルなどのアタッチメントの使いやすさが向上するヘアーセッターを提供することにある。

【0010】

本発明の目的は、ブローブラシ、ロールブラシ、ノズルなどのアタッチメントをセッター本体に対して付け換えることにより、整髪、乾燥、くせ付けなどの髪処理が幅広く行え、全ての髪処理場面において、より大量のマイナスイオンを髪に送給して髪に潤いを与えながら仕上げることが可能なヘアーセッターを提供することにある。

【課題を解決するための手段】

【0011】

本発明のヘアーセッターは、セッター本体１と、セッター本体１に交換装着される複数種のアタッチメントＡ１・Ａ２・Ａ３とを備えている、セッター本体１は、図１に示すごとく送風ファン２およびヒータ３を内蔵する筒状の本体ケース４と、本体ケース４の吹出口５側に連結固定される筒状のホルダ６とを有する。

【0012】

各アタッチメントＡ１・Ａ２・Ａ３は、図２に示すごとくホルダ６に外嵌装着することによってセッター本体１と一体化することができる。以て、イオン発生装置を構成するトランス３１と放電ユニット２７とは、トランス３１が本体ケース４の内部に、放電ユニット２７がホルダ６の内部に分離してそれぞれ配置されていることを特徴とする。

【0013】

ホルダ６に外嵌装着した各々のアタッチメントＡ１・Ａ２・Ａ３は、ホルダ６の突端に設けた係合体２３と、ホルダ６の連結基端に設けた接続筒１６とで支持して、本体ケース４と各々のアタッチメントＡ１・Ａ２・Ａ３との間に設けたロック手段で固定保持する。各々のアタッチメントＡ１・Ａ２・Ａ３とホルダ６との間には、図４に示すごとくホルダ６の送出口１８から吹き出る乾燥風の外通気路７２が形成されている。

【0014】

更に、ホルダ６と、ホルダ６内の放電ユニット２７との間には、図４に示すごとく放電ユニット２７で生成したマイナスイオンをホルダ６の外へ送出するための内通気路７１が形成されている。

【0015】

前記本体ケース４は、ケース中心軸線に沿って分割形成された一対の分割ケース４ａ・４ｂを接合することにより構成し、プラスチック成形品からなるホルダ６の接続筒１６を一対の分割ケース４ａ・４ｂで抱持し、両分割ケース４ａ・４ｂは、図４および図５に示

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すごとく、接続筒１６に外嵌固定した金属製の連結キャップ２５で分離不能に係合固定することができる。

【0016】

ホルダ６は、図１に示すごとく本体ケース４との連結端に設けた接続筒１６と、放電ユニット２７を収容する支柱筒１７とを備えている。そこでの放電ユニット２７は、電極フレーム３４と、電極フレーム３４に分離して配置された複数個の放電電極とを含み、図２に示すごとく、放電電極と対向する支柱筒１７の周囲壁に開口面積の大きなイオン送出口２１を形成し、残る支柱筒１７の周囲壁に開口面積が小さな一群の通気口２２を開口することができる。そのホルダ６の支柱筒１７の外周面には、図６に示すごとく遠赤外線放射層１７ａを形成することができる。

【0017】

電極フレーム３４に装着される複数個の放電電極は、複数の放射中心線に沿って分離配置する、または、電極フレーム３４に装着される複数個の放電電極は、電極フレーム３４の長手方向に沿って分離配置する。

【0018】

または、電極フレーム３４に装着される放電電極は、背中合わせ状に配置される中央電極４１と、電極フレーム３４を間に挟んで中央電極４１の周囲を囲む周囲電極４２および誘電筒４３とで構成し、対をなす中央電極４１および周囲電極４２のそれぞれを１個のユニット部品として形成することができる。

【0019】

その場合の電極フレーム３４は、図８に示すごとく横断面がコ字状の主枠３５と、主枠３５の上下に形成される円形の電極座３８と、中央電極４１を電極座３８の中央部に装填するためのスリット３９とを備えており、背中合わせ状に配置した左右一対の中央電極４１・４１からなる上下の電極対どうしが、リード板４４で接続して一体化されており、各電極座３８に外嵌状に装着される４個の周囲電極４２が、横枠４５と縦枠４６とを介して一体化されており、主枠３５内に装填したリード板４４が、図６に示すごとく主枠３５内に充填した絶縁シール材４７で固定されており、電極座３８に外嵌装着した周囲電極４２の横枠４５が、電極座３８の周面に形成した溝５０と係合して位置決めされた形態にすることができる。

【発明の効果】

【0020】

本発明のヘアーセッターは、送風ファン２およびヒータ３を内蔵する筒状の本体ケース４と、本体ケース４の吹出口５側に連結固定される筒状のホルダ６とでセッター本体１を構成し、ホルダ６に対して複数種のアタッチメントＡ１・Ａ２・Ａ３を交換装着できるようにした。そのうえで、イオン発生装置を構成するトランス３１は、スペースに余裕のある本体ケース４の内部に配置し、トランス３１に比べてコンパクトな放電ユニット２７のみをホルダ６の内部に分離して配置した。

【0021】

かかる本発明によれば、イオン発生装置が組み込まれたヘアーセッターであるにもかかわらず、各アタッチメントＡ１・Ａ２・Ａ３が装着されるホルダ６を十分に小形化できる。これにより、ロールブラシＡ１、ブローブラシＡ２、ノズルＡ３などが大形化するのを防止して、各アタッチメントＡ１・Ａ２・Ａ３の使いやすさの向上を図りながら、整髪、乾燥、くせ付けなどの髪処理を幅広く行えるヘアーセッターが得られる。

【0022】

各々のアタッチメントＡ１・Ａ２・Ａ３は、ホルダ６の突端に設けた係合体２３と、ホルダ６の連結基端に設けた接続筒１６とで支持することにより、各々のアタッチメントＡ１・Ａ２・Ａ３とホルダ６との間に形成した外通気路７２を介して乾燥風を送給できるようにしてあると、ホルダ６内の放電ユニット２７で生成したマイナスイオンは、外通気路７２を流動する乾燥風に乗せて効果的に髪へ吹き出し供給できる。ホルダ６の突端と連結基端の２箇所で固定支持した各アタッチメントＡ１・Ａ２・Ａ３は、セッター本体１に対

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して常に安定した装着状態となり、整髪、乾燥、くせ付けなどの髪処理が使用者の意図通りに的確に行える。

【0023】

ホルダ６の内部に、放電ユニット２７で生成したマイナスイオンをホルダ６外に送出するための内通気路７１が形成されていると、内通気路７１を流動する乾燥風によっても、放電ユニット２７で生成したマイナスイオンを強制的にホルダ６の周囲の外通気路７２へ送出できるので、構造が異なる各アタッチメントＡ１・Ａ２・Ａ３の使用時に、放電ユニット２７で生成したマイナスイオンを、外通気路７２を介して確実に髪へ吹き出し供給して、髪処理を効果的に行える。

【0024】

一対の分割ケース４ａ・４ｂで本体ケース４を構成し、ホルダ６の接続筒１６を一対の分割ケース４ａ・４ｂで抱持し、さらに分割ケース４ａ・４ｂを接続筒１６に外嵌固定した金属製の連結キャップ２５で分離不能に係合固定してあると、本体ケース４に対してホルダ６をぐらつきのない状態で強固に接続固定して整年度を向上できる。使用時には、連結キャップ２５の外面が各アタッチメントＡ１・Ａ２・Ａ３に共通の連結筒５１で覆われているので、加熱されやすい連結キャップ２５に肌が接触するのを確実に防止し、高温の温風を各アタッチメントＡ１・Ａ２・Ａ３に送給する場合でも安全に使用できる。

【0025】

電極フレーム３４と、これに対して分離配置した複数個の放電電極とで放電ユニット２７を構成し、放電電極と対向する支柱筒１７の周囲壁に開口面積の大きなイオン送出口２１を形成し、残る支柱筒１７の周囲壁に開口面積が小さな一群の通気口２２を開口したホルダ６によれば、放電ユニット２７で生成したマイナスイオンは、開口面積の大きなイオン送出口２１から、ホルダ６に装着した各アタッチメントＡ１・Ａ２・Ａ３の外面へ向かって抵抗なく確実に送出できる。一群の通気口２２からは主として乾燥風が送出されるが、この乾燥風は、外通気路７２を流動する乾燥風と協同して、外通気路７２に放出されたマイナスイオンを各アタッチメントＡ１・Ａ２・Ａ３の外面へ送出することに役立つ。

【0026】

ホルダ６の支柱筒１７の外周面に遠赤外線放射層１７ａが形成されていると、各アタッチメントＡ１・Ａ２・Ａ３の使用時に等しく遠赤外線を放出して、髪を内部からより速やかに加熱でるので、整髪、乾燥、くせ付けなどの髪処理をさらに効果的に行える。個々のアタッチメントＡ１・Ａ２・Ａ３に遠赤外線放射層１７ａを形成する必要がないので、ヘアーセッターこれ全体の製造コストを削減化できる。

【0027】

複数個の放電電極が電極フレーム３４の複数の放射中心線に沿って分離配置してあると、各放電電極で生成したマイナスイオンを複数の放射中心線に沿って放出できるので、例えばロールブラシＡ１を使用する場合に、ブラシに巻きつけられた髪に均等にマイナスイオンを送給できるし、一方向へのみ乾燥風を吹き出すブローブラシＡ２やノズルＡ３などを使用する場合にも、より大量のマイナスイオンを髪に吹き付けることができる。

【0028】

複数個の放電電極が電極フレーム３４の長手方向に沿って分離配置されていると、支柱筒１７の長手方向の複数箇所からマイナスイオンを送給して、ロールブラシＡ１やブローブラシＡ２に捕捉された髪、あるいはノズルＡ３のノズル口８５と正対する髪に対しても満遍なくマイナスイオンを送給して、整髪、乾燥、くせ付けなどの髪処理が効果的に行える。

【0029】

背中合わせ状に配置される中央電極４１と、電極フレーム３４を間に挟んで中央電極４１の周囲を囲む周囲電極４２および誘電筒４３などで放電電極を構成し、対をなす中央電極４１および周囲電極４２のそれぞれが１個のユニット部品として形成されていると、それぞれ背中合わせ状に配置される中央電極４１と周囲電極４２とを、電極フレーム３４に対してより少ない手間で組み付けることができるので、放電ユニット２７の組み立てに要

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する手間が軽減し、その製造コストを削減できる。中央電極４１および周囲電極４２を個別に組み付ける場合に比べて、位置決めの手間も省くことができる。

【0030】

背中合わせ状に配置した左右一対の中央電極４１・４１からなる上下の電極対どうしをリード板４４で接続して一体化し、４個の周囲電極４と横枠４５と縦枠４６とを一体化して、これらのユニット部品を電極フレーム３４の主枠３５および電極座３８に組み付けるようにした放電ユニット２７によれば、４個の放電電極の組み立てが更に少ない手間で行えて、放電ユニット２７の組み付けコストを削減化できる。さらに、上下の電極対どうしをリード板４４で接続して一体化し、あるいは４個の周囲電極４と横枠４５と縦枠４６とを１個の部品として構成してあると、中央電極４１および周囲電極４２を電極フレーム３４に個別に組み付ける場合に比べて、放電ユニット２７の信頼性が向上して、マイナスイオンの生成がばらつきなく均一になる。

【発明を実施するための最良の形態】

【0031】

（実施例１）　図１ないし図１１は本発明に係るヘアーセッターの実施例１を示す。図１および図２において本発明のヘアーセッターは、上下縦長のセッター本体１と、セッター本体１に交換装着される複数種のアタッチメントＡ１・Ａ２・Ａ３とを備えている。

【0032】

セッター本体１は、送風ファン２およびヒータ３などを内蔵する筒状の本体ケース４と、図１において本体ケース４の上端の吹出口５側に連結固定される丸筒状のホルダ６とを有する。先のアタッチメントＡ１・Ａ２・Ａ３は、それぞれホルダ６に外嵌装着することによってセッター本体１と一体化する。

【0033】

グリップを兼ねる本体ケース４の上部外面には、モータ２ａおよびヒータ３への通電状態を切り換えるスイッチノブ７と、ホルダ６に装着したアタッチメントＡ１を取り外すためのロック解除用のボタン８と、ヘアーセッターの稼動状態を表示する表示灯９などを設けてある。

【0034】

送風ファン２は、本体ケース４の下端に設けた吸込口１１から吸い込んだ空気を加圧して吹出口５へ向かって送出する。ヒータ３は十文字状に組んだ絶縁枠にニクロム線を螺旋状に巻き付けて構成してあり、その外周面が金属板製の導風筒１２で覆われている。導風筒１２の上端の開口が、先の吹出口５となる。

【0035】

本体ケース４は、ケース中心軸に沿って左右に分割された一対の分割ケース４ａ・４ｂを接合することで構成されており（図５参照）、その上端内面にホルダ６を連結固定するための溝１３が形成されている。この溝１３の上壁上面には、３個の係合爪１４を上向きに突設してある（図４参照）。

【0036】

ホルダ６は、本体ケース４との連結端（下端）側に設けられた大径丸筒状の接続筒１６と、接続筒１６の上部に連続する小径丸筒状の支柱筒１７とを一体に備えたプラスチック成形品である。接続筒１６と支柱筒１７との間には、温風や冷風を吹き出す送出口１８が開口している。接続筒１６と支柱筒１７とは、送出口１８を周方向へ区分する放射状のリブ１９を介して繋がっている。支柱筒１７の外周面には、図６に示すごとく例えばセラミック製の遠赤外線放射体をコーティングして遠赤外線放射層１７ａが形成されている。

【0037】

接続筒１６の下部周面には、前記溝１３に係合するフランジ２０と、係合爪１４を受け入れる凹部とが形成されている。支柱筒１７の周囲壁には、後述する放電電極に対応する開口面積の大きな４個のイオン送出口２１と、開口面積の小さな一群の通気口２２とがそれぞれ開口している。

【0038】

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図４においてイオン送出口２１は、支柱筒１７の上下方向２箇所の対向筒壁に２個ずつ、合計４個設けた。支柱筒１７の上端には上向きに開口する係合ボス（係合体）２３が一体に形成されており、その内部に四角形の締結枠２４が形成されている。

【0039】

ホルダ６は、分割ケース４ａ・４ｂを蓋合わせ状に接合して固定することにより本体ケース４と一体化する。詳しくは、フランジ２０が溝１３と係合する状態で分割ケース４ａ・４ｂを蓋合わせ状に接合して、接続筒１６を一対の分割ケース４ａ・４ｂで抱持する。さらに、金属薄板製の連結キャップ２５を接続筒１６に外嵌装着して、係合爪１４を連結キャップ２５と接続筒１６とで内外に挟み固定する。この後に、図４に示すごとく連結キャップ２５の対向周面からビス６６を接続筒１６にねじ込むことにより、ホルダ６を本体ケース４に一体化する。

【0040】

ホルダ６に装着した各アタッチメントＡ１・Ａ２・Ａ３で髪処理を行うとき、マイナスイオンを髪に送給するために、セッター本体１の内部にイオン発生装置が組み込まれる。そのイオン発生装置はイオン発生ユニット２６と、放電ユニット２７と、これら両者２６・２７を接続する高圧リード２８などを含む。

【0041】

図７においてイオン発生ユニット２６は、商用電源から供給される１００Ｖの電流を半波整流する整流回路２９と、整流された電流をパルス電流に変換するパルス発生回路３０と、パルス電流を昇圧するトランス３１などで構成する。実際には、整流回路２９やパルス発生回路３０などが実装された基板と、トランス３１とを直方体状にプラスチック成形された絶縁ブロック内に封入してイオン発生ユニット２６を構成している。

【0042】

ホルダ６の支柱筒１７は直径寸法が小さいので、その内部にイオン発生ユニット２６を配置することはできない。そこで、外形寸法が大きなイオン発生ユニット２６はスペースに余裕のある本体ケース４の内部に配置し、放電ユニット２７のみを支柱筒１７の内部に配置する。

【0043】

詳しくは、図１に示すように送風ファン２のモータ２ａに丸筒状のケース３２を固定し、その内部にイオン発生ユニット２６を収容する。このように、モータ２ａに隣接する空間を利用してイオン発生ユニット２６およびケース３２が配置されていると、送風ファン２から送出された空気の流れがイオン発生ユニット２６によって乱されることがなく、本体ケース４内における通風抵抗が小さくなり、その分だけ送風ファン２の送風効率が向上する。

【0044】

放電ユニット２７は、プラスチック成形された電極フレーム３４と、電極フレーム３４に分離して配置される４個の放電電極とで構成する。電極フレーム３４は、図８に示すように横断面がコ字状の主枠３５の上下に、締結ボス３６とつまみ３７とを一体に備えている。主枠３５の左右側壁の上下両端には、それぞれ円形の電極座３８と、中央電極４１を電極座３８の中央部に装填するためのスリット３９とが形成してある。スリット３９は、電極座３８の１箇所を分断するよう形成されていて主枠３５の枠内空間に連続している。

【0045】

個々の放電電極は、針状の中央電極４１と、Ｃ字リング状の周囲電極４２と、筒形のマイカからなる誘電筒４３とで構成されている。中央電極４１は周囲電極４２との間で放電を行ってイオンを発生させ、周囲電極４２は中央電極４１の放電のきっかけをつくるために設けられる。誘電筒４３は、中央電極４１と周囲電極４２との間で火花放電が生じてイオン発生量が減少するのを防ぐために設けられており、周囲電極４２と同心状に配置される。４個の放電電極の組み付けを容易化するために、図８に示すように左右一対の中央電極４１・４１は、各中央電極４１・４１の先端が正反対の方向を向く状態で背中合わせ状に配置し、さらに上下の電極対どうしをリード板４４で接続する。

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【0046】
イオン発生ユニット２６から導出した高圧リード２８は、リード板４４に接続する。左右の周囲電極４２は横枠４５を介して一体化してあり、上下の横枠４５は縦枠４６を介して一体化してある。つまり、４個の周囲電極４２と横枠４５と縦枠４６とは、薄い銅板を素材にして１個のアレス成形品として形成した。符号４８は縦枠４６に接続されるアースリードである。高電圧が印加される高圧リード２８は、アースリード４８に比べて充分に太いリード線で形成してある。
【0047】
４個の中央電極４１が固定されたリード板４４を主枠３５に嵌め込みながら、中央電極４１をスリット３９に差し込み装填した状態で、主枠３５内にシリコンゴムなどの絶縁シール材４７を充填することにより、中央電極４１およびリード板４３を電極フレーム３４に固定して、中央電極４１を電極座３８の中央に位置させることができる。
【0048】
この後に、周囲電極４２を電極座３８の周囲に嵌め込み固定し、さらに誘電筒４３を電極座３８の内面に嵌め込み固定することにより、電極フレーム３４の上下２箇所に、背中合わせ状に隣接する２組の放電電極を設けることができる。この組み付け状態における横枠４５は、電極座３８の周面に凹み形成した溝５０と係合して位置決めされている（図６参照）。
【0049】
上記構成の放電ユニット２７は、ホルダ６の支柱筒１７の内部に装填し、締結ボス３６を締結枠２４に差し込み係合したうえで、図１に示すようにビス４９を係合ボス２３側から締結ボス３６にねじ込むことにより、放電ユニット２７をホルダ６に一体化する。このとき、つまみ３７をつかんだ状態で放電ユニット２７を支柱筒１７の内部に装填することにより、締結ボス３６を締結枠２４に対して的確に係合することができる。この係合状態において、締結ボス３６は締結枠２４で回転不能に受け止められるので、４個の放電電極は、それぞれ支柱筒１７に開口したイオン送出口２１に対して的確に正対させることができる。
【0050】
ホルダ６に付け換えられるアタッチメントとして、図示例ではロールブラシＡ１と、フローブラシＡ２と、ノズルＡ３の３種を用意した。これらのアタッチメントＡ１・Ａ２・Ａ３には、ホルダ６に対する共通の装着構造として、図２に示すごとく接続筒１６に外嵌する丸筒状の連結筒５１と、支柱筒１７の上端の係合ボス２３に係合する突起５２とを備えており、さらに連結筒５１と本体ケース４との間にロック手段を有する。連結筒５１の内面には、後述するロック爪６８を落ち込み係合させるためのロック溝５３が凹み形成されている（図１参照）。
【0051】
図４および図６においてロールブラシＡ１は、ホルダ６の支柱筒１７に外嵌装着される固定内筒５４と、固定内筒５４に回転自在に支持されるブラシ体５５と、必要に応じてブラシ体５５を回転不能に保持するロックボタン５６と、ロックボタン５６を押し上げ付勢するばね５７とを含む。
【0052】
固定内筒５４の周囲壁には、図６に示すごとく支柱筒１７に形成したイオン送出口２１に対応する４個のイオン出口６０と、一群の通気口６１とが開口しており、その下部に先の連結筒５１と乾燥風の吹出口６２とを設けてある。突起５２は、固定内筒５４の上端壁の内面にリング状の突起として形成した。
【0053】
ブラシ体５５は上下面が開口する丸筒からなり、その周囲壁に櫛歯６３の列と、通気口６４の列とが交互に形成され、櫛歯列の上下２箇所で、固定内筒５４のイオン出口６０と正対する周壁にイオン出口６５が開口してある（図９参照）。常態においてブラシ体５５は固定内筒５４に対して回転できないが、ロックボタン５６をばね５７に抗して押し込み

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操作すると、図４に示すごとくロックボタン５６の爪５８とブラシ体５５の溝５９との係合が解除されて、ブラシ体５５は自由に回転できるので、ロックボタン５６の押し込み状態を維持することにより、ブラシ体５５に巻きつけた髪を容易に開放することができる。また、押し込み状態のロックボタン５６を開放すると、ブラシ体５５はロックボタン５６の爪５８に係合して定位置にロック固定されるので、ブラシ体５５に設けたイオン出口６５が固定内筒５４のイオン出口６０と正対する。

【0054】

ロールブラシＡ１をホルダ６に装着した図３の状態においては、固定内筒５４の連結筒５１が接続筒１６で支持され、同時に突起５２が係合ボス２３に外嵌係合するので、ロールブラシＡ１の中心をホルダ６の中心に一致させて、その装着姿勢を適正化できる。

【0055】

図１において前記ロック手段は、ロックボタン８と、ロックボタン８をロック姿勢に押圧付勢する圧縮コイル形のばね６７と、連結筒５１の内面に設けた前記ロック溝５３（図１０参照）とからなる。

【0056】

ロックボタン８は、本体ケース４に対して出没自在に支持されており、その上部にロック溝５３に落ち込み係合するロック爪６８を一体に形成してある。ロックボタン８をばね６７に抗して押し込み操作すると、ロック爪６８とロック溝５３との係合が解除されるので、ロールブラシＡ１はホルダ６から分離して水洗い清掃できる。

【0057】

使用状態において、本体ケース４の吹出口５から送出された乾燥風は、ホルダ６の送出口１８と、固定内筒５４の吹出口６２とを介してブラシ体５５の周面へと吹き出る。乾燥風の一部は、支柱筒１７の内部の内通気路７１（図４参照）を流動し、各放電電極から放出されるマイナスイオンと共にイオン送出口２１およびイオン出口６０から送出される。同時に、固定内筒５４と支柱筒１７との間に形成された外通気路７２を流動した乾燥風が、イオン出口６０と通気口６１から送出される。

【0058】

マイナスイオンを含む乾燥風は、ブラシ体５５のイオン出口６５、および通気口６４から送出されてブラシ体５５に巻き付けられた髪と接触して髪に潤いを与える。４個の放電電極で生成したマイナスイオンを髪に送給するので、従来のこの種ヘアーセッターに比べて、髪に到達するマイナスイオンの量が増強し、髪処理作業が円滑に行える。

【0059】

図２および図１０においてブローブラシＡ２は、下部に連結筒５１が一体に形成されたブラシホルダ７４と、ブラシホルダ７４の背面側を覆うカバー７５と、ブラシホルダ７４の前面側に固定されるゴム製のブラシベース７６と、ブラシベース７６に組み付けられた一群のブリッスル７７などで構成されている。

【0060】

ブラシホルダ７４の上部内面には、係合ボス２３に外嵌係合する前記突起５２を形成してある。この場合の突起５２は、係合ボス２３を挟み保持する左右一対の板状の突起とした。ブラシベース７６の上下２箇所には、イオン出口７８が開口しており、ブリッスル７７の列の間に通気口７９の列が開口している。接続筒１６の内面にはロック溝５３が形成されており、接続筒１６の上部には乾燥風の一部を一群のブリッスル７７へ向かって吹き出す吹出口８０が開口している。

【0061】

使用状態において、本体ケース４の吹出口５から送出された乾燥風は、ホルダ６の送出口１８からブラシホルダ７４の内部へ送出され、一部の乾燥風が吹出口８０からブリッスル７７へ向かって吹き出る。乾燥風と共にイオン送出口２１からブラシホルダ７４内へ送出されたマイナスイオンは、ブラシベース７６に開口したイオン出口７８や通気口７９から送出され、同時に支柱筒１７まわりに形成された外通気路７２を介して通気口７９から送出されて、ブリッスル７７に捕捉された髪に潤いを与る。

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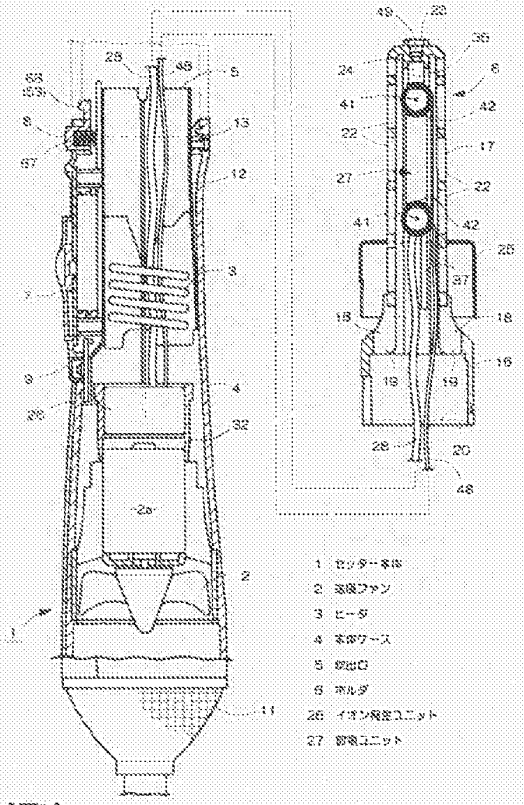
【0062】
このとき、４個の放電電極で生成されたマイナスイオンの全てが、ブローブラシの片面に設けたイオン出口７８や通気口７９から集中的に送出されるので、ロールブラシＡ１を使用する場合に比べて、より大量のマイナスイオンが髪に付着して、潤い付与効果が向上する。
【0063】
図２および図１１に示すように前記ノズルＡ３は、連結筒５１に連続する上すぼまり状の変向筒８３を有し、変向筒８３の前面側に上下に長いノズル筒８４を一体に形成したプラスチック成形品であり、ノズル筒８４の前面に開口するノズル口８５から乾燥風を吹き出し供給する。
【0064】
支柱筒１７のイオン出口２１から送出されたマイナスイオンは、変向筒８３内を流動する乾燥風と共にノズル口８５から送出される。変向筒８３の内面上部には、係合ボス２３を挟み保持する左右一対の板状の突起５２が形成されており、接続筒１６の内面には前記ロック溝５３が形成されている。接続筒１６の筒壁の上部には、乾燥風の一部を吹き出す吹出口８６が開口している。ノズル筒８４の内面は２個の整流板８７で３個の区画に区分しておく。
【0065】
各アタッチメントＡ１～Ａ３を取り外した状態においては、熱風によって加熱された状態の支柱筒１７が剥き出しになるが、ホルダ６全体がプラスチック成形品で形成されていて熱伝動しにくいので、誤って手指が支柱筒１７に触れることがあったとしても熱さを感じにくく、火傷などを生じるおそれがない。
【0066】
（別実施例）　図１２（ａ）～（ｄ）は放電電極の配置形態を変更した本発明のそれぞれ異なる別実施例を示す。図１２（ａ）では、２個の放電電極を電極フレーム３４の上下に互違い状に配置した。図１２（ｂ）では、２個の放電電極を電極フレーム３４の上部に背中合わせ状に配置した。図１２（ｃ）では、３個の放電電極を３個の放射中心線に沿って分離配置した。図１２（ｄ）では、２個の放電電極を電極フレーム３４の一側上下に分離配置した。このように、電極フレーム３４に装着される放電電極は少なくとも２個以上あればよい。
【0067】
上記の実施例以外に、アタッチメントとしては蓄熱式のヘアーカーラーなどをホルダ６に交換装着することができる。放電電極は、実施例で説明した構造である必要はなく、中央電極４１に印加される電圧を低く設定する場合には、誘電筒４３を省略することができる。また、中央電極４１に印加される電圧が高い場合でも、中央電極４１と周壁電極４２とが、前後に位置ずれする状態で配置してある場合には、火花放電を生じることがないので、誘電筒４３を省略することができる。マイカ板やセラミック板で形成される絶縁板（誘電体）の表と裏に放電電極と誘導電極を分離配置した沿面放電型であってもよく、あるいは２個の針状電極を対向配置した電極構造であってもよい。要は、イオンを発生できる放電電極であれば、その構造を限定するものではない。
【0068】
突起５２と係合ボス２３とは、突起５２が係合ボス２３に内嵌係合する構造に変更できる。上記の実施例においては、整流回路２９やパルス発生回路３０などが実装された基板とトランス３１とが一体化してあるイオン発生ユニット２６を本体ケース１の内部に配置したが、その必要はなく、トランス３１のみを本体ケース１の内部に配置してもよい。その場合には、整流回路２９やパルス発生回路３０などが実装された基板をホルダ６内に配置してもよい。
【図面の簡単な説明】
【0069】
【図1】セッター本体の分解断面図である。

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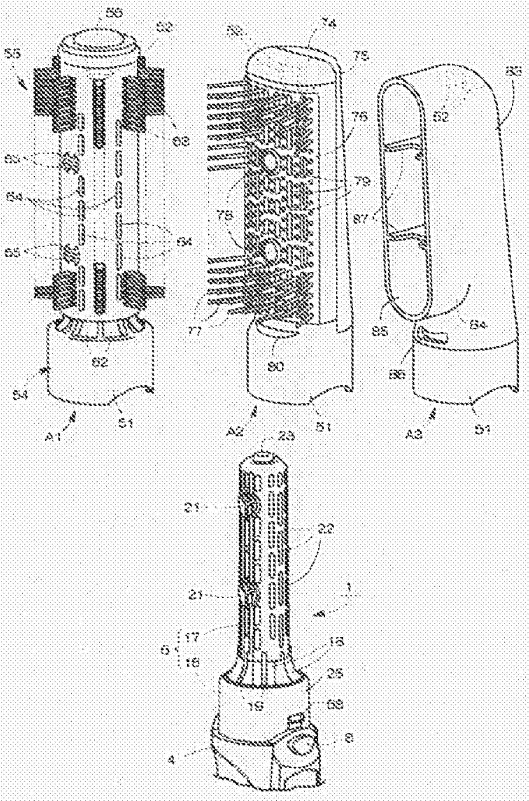
【図2】ヘアーセッターの分解斜視図である。
【図3】ロールブラシを装着した状態のヘアーセッターの正面図である。
【図4】ヘアーセッターの上半部の断面図である。
【図5】図４におけるＡ－Ａ線断面図である。
【図6】図４におけるＢ－Ｂ線断面図である。
【図7】イオン発生装置の回路構造を示すブロック図である。
【図8】放電ユニットの分解斜視図である。
【図9】ロールブラシの側面図である。
【図10】ブローブラシを装着した状態のヘアーセッターの断面図である。
【図11】ノズルを装着した状態のヘアーセッターの断面図である。
【図12】図１２（ａ）～（ｄ）は放電電極の配置形態のそれぞれ異なる別実施例を示す説明図である。
【符号の説明】
【0070】
１　セッター本体
２　送風ファン
３　ヒータ
４　本体ケース
４ａ・４ｂ　分割ケース
５　吹出口
６　ホルダ
１６　接続筒
１７　支柱筒
１７ａ　遠赤外線放射層
１８　送出口
２１　イオン送出口
２２　通気口
２３　係合体
２５　連結キャップ
２６　イオン発生ユニット
２７　放電ユニット
３４　電極フレーム
３５　主枠
３８　電極座
４１　中央電極
４２　周囲電極
４３　誘電筒
４４　リード板
４５　横枠
４６　縦枠
４７　シリコンゴム
５０　溝
７１　内通気路
７２　外通気路
Ａ１　ロールブラシ
Ａ２　ブローブラシ
Ａ３　ノズル

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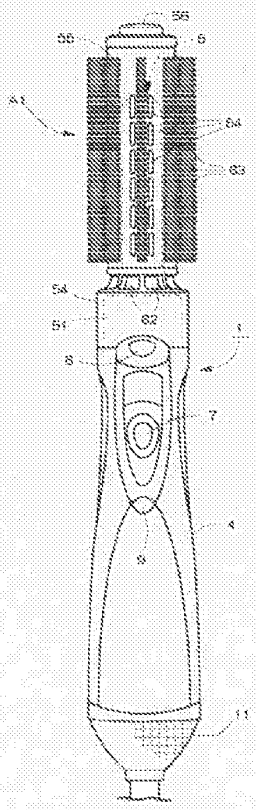
【図１】


1 センター本体
2 集塵ファン
3 ヒータ
4 本体ケース
5 吸込口
6 ホルダ
26 イオン発生ユニット
27 静電ユニット

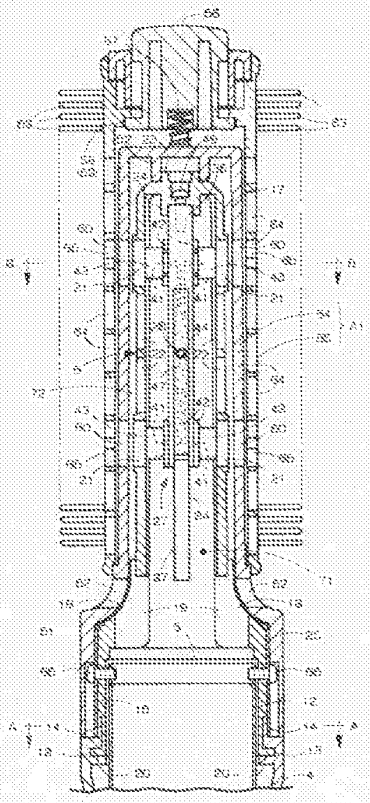
【図２】



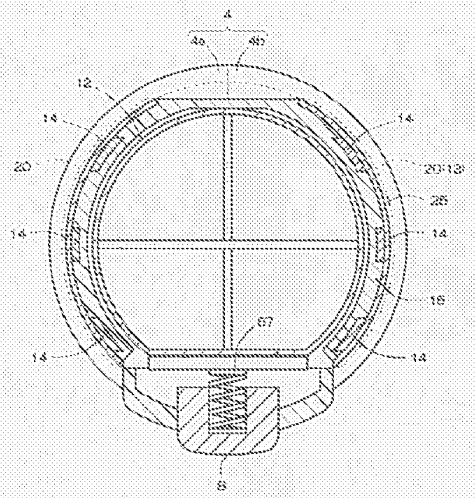
【図３】



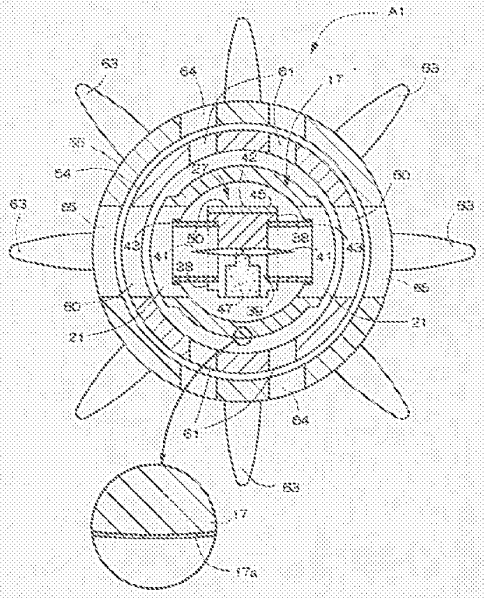
【図４】



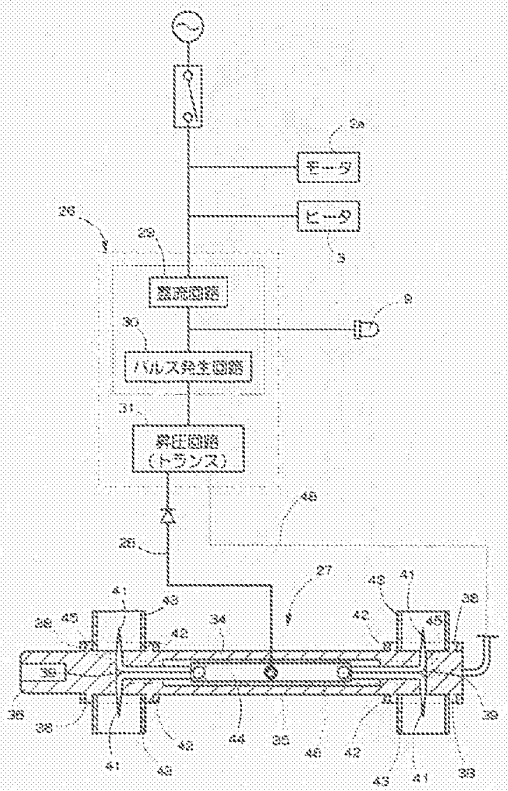
【図５】



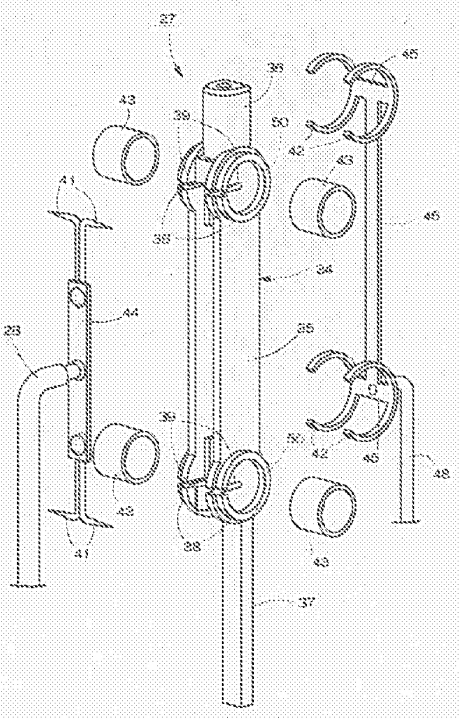
【図６】



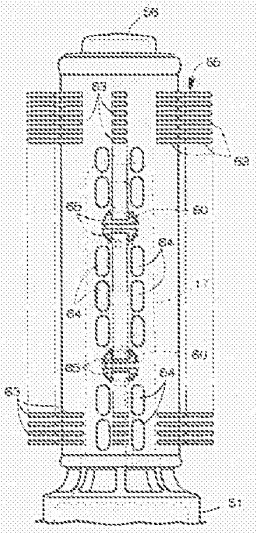
【図７】



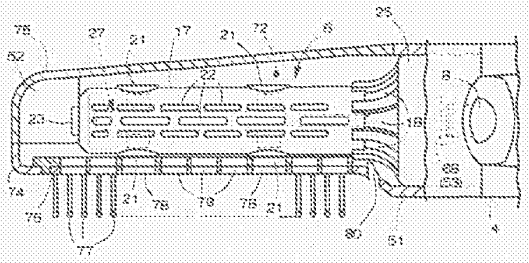

【図８】



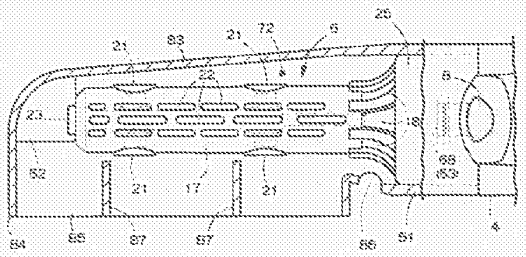
【図9】



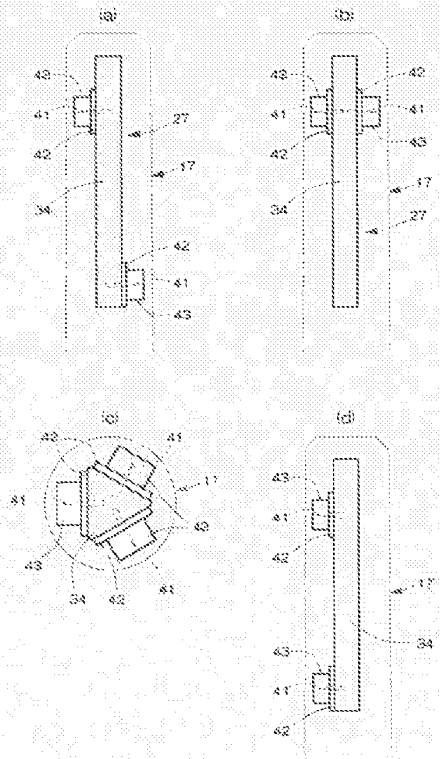
【図10】



【図11】



【図12】



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# Bibliographic data: CN201691269 (U) — 2011-01-05

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## Long nose concentrator

| | |
|---|---|
| **Page bookmark** | CN201691269 (U) - Long nose concentrator |
| **Inventor(s):** | HANXIAN YOU ± |
| **Applicant(s):** | HANXIAN YOU ± |
| **Classification:** | - international: ***A45D20/12*** |
| | - cooperative: |
| **Application number:** | CN20102214613U 20100603 |
| **Priority number(s):** | CN20102214613U 20100603 |

## Abstract of CN201691269 (U)

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The utility model discloses a long nose concentrator which is characterized in that the concentrator comprises a concentrator body, cylindrical bodies with gradually reduced diameters are arranged on the circumference of the concentrator body, the adjacent cylindrical bodies are in sleeve joint mutually, and an annular cavity between the two adjacent cylindrical bodies is an air blowing channel. The part between the two adjacent cylindrical bodies is shaped like a step or spiral. A clip is arranged at the end part of the concentrator body. Small air slots are formed on the walls of the cylindrical bodies. The concentrator can blow air to the front part and avoid blowing air to the face of a person; the clip is arranged at the front end of the concentrator, so that hair ends can be clipped instead of being grasped by hand, which solves the problem of hand scald; and the small air slots are formed on the concentrator, thereby solving the problem poor shaping caused by the reason that part of the hair is not blown by hot air due to thick overlapping.

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## DESCRIPTION CN201691269

The utility model discloses a long nose concentrator nozzle, wherein: the concentrator nozzle assembly comprises a nozzle body with decreasing diameter cylindrical body circumferentially concentrator nozzle body adjacent cylinder mutual socket body, an annular cavity between two adjacent cylindrical body for hair channel. It stepped between the two adjacent cylindrical body. The spiral between two adjacent cylindrical body. The concentrator nozzle body ends with a clip. The cylinder wall has a small duct. The utility model integrates air nozzles wind forward, not easily blown human face; concentrator nozzle tip with a clip, do not grab the hair by hand, to solve the problem of manpower burns; in the mouth with a set of wind small duct can solve part of the hair blowing hot air because there is no overlapping thick and stereotypes bad problem.

A long-nose nozzle set

TECHNICAL FIELD

The invention relates to the field of hairdressing tools, specifically, is a nozzle for a hair dryer on.

Background technique

Hairdryer people's daily essential household items, the existing structure of the hair dryer mainly consists of a housing, a fan motor, heating wire. Housing provided with a tubular body, one end of the outlet, the other end of the air inlet, the air inlet filter mask with a fan motor is located inside the inlet side of the body, through the fan blades rotate achieve suction, blowing operation , the inlet air to the hollow tube along the side of the discharge outlet, the heating wire is located at the side of the outlet, switch electric heating wire and disposed in the housing connected through the switch hair dryer cold and hot air and wind speed switching options. Existing hair dryers are generally equipped with a set of air nozzles on the hairdryer, set the wind in the mouth has a flat shape or round shape hair export outlet or other forms of hair set wind mouth, but the presence of the existing set of wind Zuidou some shortcomings, such as the wind blowing easy person's face, easy to burn the hand of bad hair styling and other shortcomings.

SUMMARY

The utility model is intended to provide an easy wind not blowing people's faces, to avoid burns manpower, good hair styling concentrator nozzle.

The utility model aims to achieve the following technical solutions.

A long-nose concentrator nozzle, wherein: the concentrator nozzle assembly comprises a nozzle body with decreasing diameter cylindrical body circumferentially concentrator nozzle body, the cylindrical body adjacent to each other socket, annular cavity between two adjacent cylindrical body for hair channel.

It stepped between the two adjacent cylindrical body

The spiral between two adjacent cylindrical body.

The concentrator nozzle body ends with a clip.

The cylinder wall has a small duct.

The utility model and has the following advantages over the prior art.

The utility model integrates air nozzles wind forward, not easily blown human face; concentrator nozzle tip with a clip, do not grab the hair by hand, to solve the problem of manpower burns; in the mouth with a set of wind small duct can solve part of the hair blowing hot air because there is no overlapping thick and stereotypes bad problem.

BRIEF DESCRIPTION

1 is a schematic block diagram of a utility model set air nozzles schematic diagram (a);

Figure 2 is a configuration utility model integrates air nozzles schematic diagram (b).

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detailed description

With reference to the following set of wind mouth of the utility model as described in further detail.

The utility model comprises a set of nozzle assembly nozzle body 1, is provided on the circumference of the nozzle body set decreasing diameter cylindrical body 2, cylindrical body adjacent to each other socket, between two adjacent cylindrical body an annular cavity for the hair channel. As shown in Figure 1, stepped between two adjacent cylindrical body. 2 between two adjacent cylindrical body spiral as shown. Since the hair channel to two adjacent annular cavity between the cylindrical body, set air nozzles wind blowing from the front of the annular cavity, not easily blown in the face. End of the nozzle body has a set of clamps 3, by holding the hair may not solve the problem of manpower burns. In the mouth it has a small wind-collecting duct, solve part of the hair blowing hot air because there is no overlapping thick and stereotypes bad problem.



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## CLAIMS CN201691269

[1]

1. A long-nose concentrator nozzle, wherein: the concentrator nozzle assembly comprises a nozzle body with decreasing diameter cylindrical body circumferentially concentrator nozzle body, the cylindrical body adjacent to each other socket, annular cavity between two adjacent cylindrical body for hair channel.

[2]

2. Long nose assembly of claim 1, wherein the nozzle, wherein: a stepped between the two adjacent cylindrical body.

[3]

3. Long nose assembly of claim 1, wherein the nozzle, wherein: the spiral between two adjacent cylindrical body.

[4]

4. Long nose assembly of claim 1 wherein the nozzle, characterized in that: the end of the nozzle body assembly is provided with a clip.

[5]

5. According to a long nose nozzle set forth in claim 1, characterized in that: the cylindrical body wall with a small duct.

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(19)中华人民共和国国家知识产权局

(12)实用新型专利

(10)授权公告号 CN 201691269 U
(45)授权公告日 2011.01.05

(21)申请号 201020214613.2

(22)申请日 2010.06.03

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(72)发明人 尤汉贤

(51)Int.Cl.
*A45D 20/12*(2006.01)

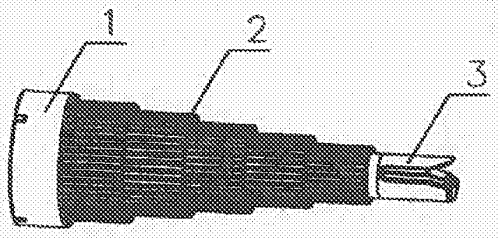
权利要求书 1 页 说明书 2 页 附图 1 页

(54)实用新型名称

一种长鼻子集风嘴

(57)摘要

本实用新型公开了一种长鼻子集风嘴，其特征在于：所述集风嘴包括集风嘴本体，集风嘴本体的圆周上设有直径逐渐减小的圆筒体，相邻圆筒体相互套接，两相邻圆筒体之间的环形腔体为吹风通道。所述两相邻圆筒体之间呈阶梯状。所述两相邻圆筒体之间呈螺旋状。所述集风嘴本体的端部设有夹子。所述圆筒体壁上设有小风槽。本实用新型集风嘴的风吹向前方，不容易吹到人的脸上；集风嘴前端设有夹子，可不用手抓住发梢，解决灼伤人手的问题；在集风嘴上设有小风槽，可解决部分头发因重叠太厚没有吹到热风而定型不好的问题。




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1. 一种长鼻子集风嘴，其特征在于：所述集风嘴包括集风嘴本体，集风嘴本体的圆周上设有直径逐渐减小的圆筒体，相邻圆筒体相互套接，两相邻圆筒体之间的环形腔体为吹风通道。

2. 根据权利要求 1 所述的长鼻子集风嘴，其特征在于：所述两相邻圆筒体之间呈阶梯状。

3. 根据权利要求 1 所述的长鼻子集风嘴，其特征在于：所述两相邻圆筒体之间呈螺旋状。

4. 根据权利要求 1 所述的长鼻子集风嘴，其特征在于：所述集风嘴本体的端部设有夹子。

5. 根据权利要求 1 所述的长鼻子集风嘴，其特征在于：所述圆筒体壁上设有小风槽。



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# 一种长鼻子集风嘴

## 技术领域

[0001] 本实用新型涉及美发工具领域，具体来说是一种用于吹风机上的集风嘴。

## 背景技术

[0002] 吹风机是人们日常必备的生活用品，现有的吹风机的结构主要由壳体、风扇马达、发热丝组成。壳体上设有一管状主体，其一端为出风口，另一端为进风口，进风口处设有滤网面罩，风扇马达位于进风一侧的主体内，通过风扇叶片转动达到吸、吹风的操作，使进风得以顺中空管形向出风口一侧排出，发热丝位于出风口处的一侧，发热丝与设置在壳体上的开关电连接，通过开关控制吹风机的冷、热风及风速的切换选择。现有的吹风机一般都在吹风机上装有一个集风嘴，在集风嘴上设有一个扁形状吹风出口或者是圆形状吹风出口或其它形式的集风嘴，但现有的集风嘴都存在一些不足，比如风容易吹到人的脸上、容易灼伤人手、对头发定型不好等缺点。

## 发明内容

[0003] 本实用新型的目的是提供一种使风不容易吹到人的脸上，避免灼伤人手，头发定型好的集风嘴。

[0004] 本实用新型的目的通过以下技术方案来实现。

[0005] 一种长鼻子集风嘴，其特征在于：所述集风嘴包括集风嘴本体，集风嘴本体的圆周上设有直径逐渐减小的圆筒体，相邻圆筒体相互套接，两相邻圆筒体之间的环形腔体为吹风通道。

[0006] 所述两相邻圆筒体之间呈阶梯状。

[0007] 所述两相邻圆筒体之间呈螺旋状。

[0008] 所述集风嘴本体的端部设有夹子。

[0009] 所述圆筒体壁上设有小风槽。

[0010] 本实用新型与现有技术相比具有以下优点。

[0011] 本实用新型集风嘴的风吹向前方，不容易吹到人的脸上；集风嘴前端设有夹子，可不用手抓住发梢，解决灼伤人手的问题；在集风嘴上设有小风槽，可解决部分头发因重叠太厚没有吹到热风而定型不好的问题。

## 附图说明

[0012] 图 1 为本实用新型集风嘴的结构示意图（一）；

[0013] 图 2 为本实用新型集风嘴的结构示意图（二）。

## 具体实施方式

[0014] 下面结合附图对本实用新型集风嘴作进一步详细描述。

[0015] 本实用新型集风嘴包括集风嘴本体 1，集风嘴本体的圆周上设有直径逐渐减小的



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圆筒体 2，相邻圆筒体相互套接，两相邻圆筒体之间的环形腔体为吹风通道。如图 1 所示，两相邻圆筒体之间呈阶梯状。如图 2 所示两相邻圆筒体之间呈螺旋状。由于将吹风通道设置为两相邻圆筒体之间的环形腔体，集风嘴的风从环形腔体内吹向前方，不容易吹到人的脸上。集风嘴本体的端部设有夹子 3，可不用手抓住发梢，解决灼伤人手的问题。在集风嘴上设有小风槽，可解决部分头发因重叠太厚没有吹到热风而定型不好的问题。



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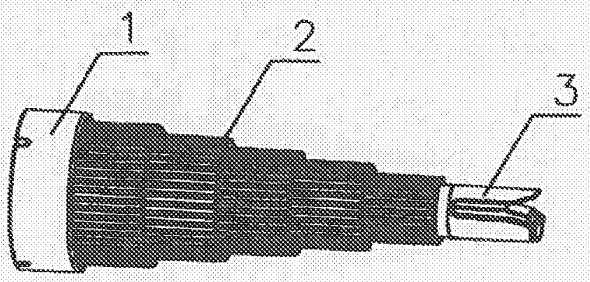



图 1

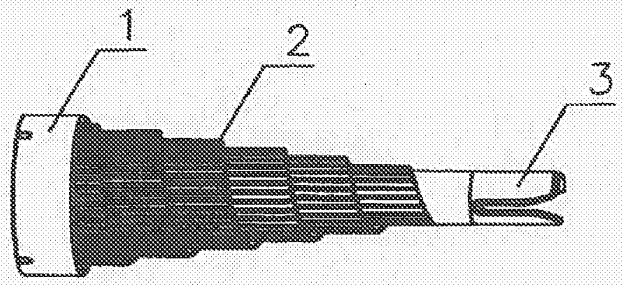



图 2



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Unexamined Patent Publication(A)

## Bibliographic Data


| | |
|---|---|
| **Int.Cl.** | A45D 1/04 | A45D 1/28 |
| **Application No.** | 1020110014733 |
| **Application Date** | 20110218 |
| **Unexamined Publication No.** | 1020120095206 |
| **Unexamined Publication Date** | 20120828 |
| **Agent.** | MUHANN PATENT & LAW FIRM |
| **Inventor** | LEE,SEUNG-SOO |
| **Applicant** | LEE,SEUNG-SOO |


## Title of Invention

*** of the hair iron.

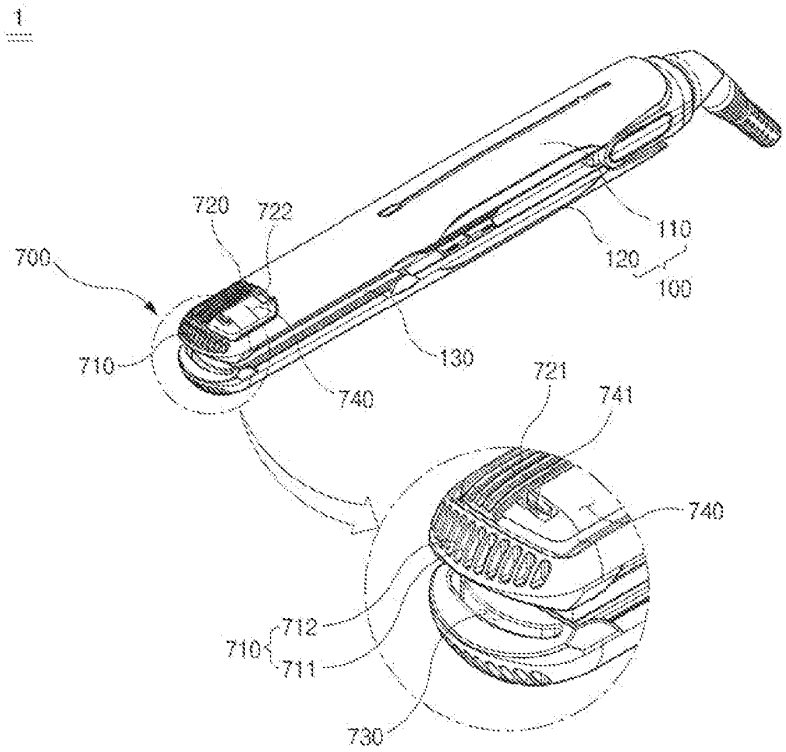
## Abstract

The invention provides *** of the hair iron in which in order that the user grips with the e asily the heat radiation Cool tip part in which the multiple grooves and rib are repeated dr awn of the pattern is equipped as to the hair iron which includes the body of pair, and the heating plate equipped in the inner side of the body as long as the back-end is hinged to t he according to a preferred embodiment of the present invention in the top-end part of the hair iron as the hair iron in which the Cool tip part is equipped in the top-end part of the b ody.

## 대표도면(Representative drawing)



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## Scope of Claims

**Claim 1:**

*** of the hair iron in which the heat radiation Cool tip part in which the multiple grooves and rib are repeated drawn of the pattern is equipped as to the hair iron which includes th e body of pair, and the heating plate equipped in the inner side of the body as long as the back-end is hinged to each other in the top-end part of

body.

**Claim 1:**

*** of the hair iron in which the heat radiation Cool tip part in which the multiple grooves and rib are repeated drawn of the pattern is equipped as to the hair iron which includes th e body of pair, and the heating plate equipped in the inner side of the body as long as the back-end is hinged to each other in the top-end part of

body.

**Claim 2:**

As for claim 1, *** of the hair iron in which the heat radiation Cool tip part is assembled b y fastening means in the top-end part of

body.

**Claim 2:**



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As for claim 1, *** of the hair iron in which the heat radiation Cool tip part is assembled b y the fastening means in the top-end part of

body.

**Claim 3:**

As for claim 1, *** of the hair iron in which the separate space part is formed between

heating plate and heat radiation Cool tip part ; and the heat transmission is prevented fro m the heating plate to the heat radiation Cool tip part.

**Claim 3:**

As for claim 1, *** of the hair iron in which the separate space part is formed between

heating plate and heat radiation Cool tip part ; and the heat transmission is prevented fro m the heating plate to the heat radiation Cool tip part.

**Claim 4:**

As for claim 1, *** of the hair iron which separates at the upper side of the body and in w hich the formed Cool tip cover of the heat radiation protrusion of the desired pattern is eq uipped in the top-end part one side of

body in the outer side surface.

**Claim 4:**

As for claim 1, *** of the hair iron which separates at the upper side of the body and in w hich the formed Cool tip cover of the heat radiation protrusion of the desired pattern is eq uipped in the top-end part one side of

body in the outer side surface.

**Claim 5:**

As for claim 4, *** of the hair iron in which the Cool tip cover unites with the top-end part one side of

body ; a pair of joint grooves are formed in the top-end part one side of the body ; and th e union projection of pair is formed as long as it is faced and connected in the Cool tip cov er in the joint groove.

**Claim 5:**

As for claim 4, *** of the hair iron in which the Cool tip cover unites with the top-end part one side of

body ; a pair of joint grooves are formed in the top-end part one side of the body ; and th e union projection of pair is formed as long as it is faced and connected in the Cool tip cov er in the joint groove.

**Claim 6:**

As for claim 4, *** of the hair iron in which the side direction opening is formed in the side of circumference of



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Cool tip cover.

**Claim 6:**

As for claim 4, *** of the hair iron in which the side direction opening is formed in the side of circumference of

Cool tip cover.

**Claim 7:**

As for claim 5, *** of the hair iron in which the spacing groove part is formed in

Cool tip cover combination between the edge and body of the Cool tip cover.

**Claim 7:**

As for claim 5, *** of the hair iron in which the spacing groove part is formed in

Cool tip cover combination between the edge and body of the Cool tip cover.

**Claim 8:**

As for claim 4, *** of the hair iron in which at least one muricate for the interval holding is formed in the bottom surface of

Cool tip cover.

**Claim 8:**

As for claim 4, *** of the hair iron in which at least one muricate for the interval holding is formed in the bottom surface of

Cool tip cover.

**Claim 9:**

As for claim 4, *** of the hair iron in which the discolor red skeins recon in which color is t ransformed according to the temperature is equipped in one side of

Cool tip cover.

**Claim 9:**

As for claim 4, *** of the hair iron in which the discolor red skeins recon in which color is t ransformed according to the temperature is equipped in one side of

Cool tip cover.

## Technical Field



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The present invention relates to the hair iron, more particularly, to *** of the hair iron in which the heat generated in the heating plate of the inside is radiated and the user easily grips the top-end part of the hair iron.

## Background Art

Generally, the hair iron is used when using the heating of the heating plate, the hair is reel ed and the hairline is set at wave or the curled hairs texture is spread and it sets straight.

Such hair iron comprises the heating plate equipped in the inner side of the main body par t, which is made of the body of pair as long as it is hinged and body. And in the state takin g place with the spring, it sets the hair at the form which desires while pressurizing to the fit power after it positions the hair between the heating plate of the main body part.

The user while the hair iron is rotated after the hair is positioned the hair is set. The hair ir on is accurately rotated at the desired direction or in order that the large pressure is more given to the hair and the heat of the heating plate is appropriately delivered to the hair the top-end part of the main body part has to be gripped to hand as long as it is different betw een the heating plate it does opens the main body part.

But generally, the heating plate is arranged in the inner front end part of the main body pa rt. Therefore many heats are delivered in the top-end part of the main body part from the heating plate and accordingly the top-end part temperature of the main body part outside is on the increase. The state that grips the top-end part of the main body part since the te mperature so highly rises in case of performing an operation for a long time cannot perfor m an operation. In addition the state has the danger of the image.

In the prior art, for solving this as shown in FIG. 1, KR10-2009-0116434 A (hair iron), the hair iron which includes bodies (11,12) of pair, the heating plate (13), and the insulating member (14) as long as it is hinged to each other is disclosed. As to the, heat is generated with the electric supply while being combined in the inner side of a pair of bodies (11,12). The insulating member (14) is combined in a pair of bodies (11,12) and prevents the exter nal transfer generated in the heating plate (13) of heat.

But there is a problem that according to the prior art, the edge of the insulating member (14) combined in bodies (11,12) adheres closely with bodies (11,12). Therefore the tempe rature rise of the insulating member (14) is inevitable with the heat transmission through t his and the temperature of the insulating member (14) rises since the heat copied from th e heating plate (13) to the upper side of bodies (11,12) and lower side intervening space o f the insulating member (14) is unable to be gone to the outside and the heat is accumulat ed.

Moreover, the user strongly presses the insulating member (14) and while the bottom surf ace of the insulating member (14) is contacted with the upper surface of bodies (11,12) th e heat transmission is comprised of case the grips and the top-end part temperature of bo dies (11,12) rises from the heating plate (13) as the heat transmission is made of the top- end part of bodies (11,12).

## Summary of Invention

### Problem to be solved

As for the hair iron in which a preferred embodiment of the present invention includes the body of pair, and the heating plate equipped in the inner side of the body to for solving the problem as described above as long as the back-end is hinged to each other of the invention, it relates to *** of the hair iron in which the heat radiation Cool tip part in which the multiple grooves and rib are repeated drawn of the pattern is equipped in the top-end part of the body.

### Means to solve the problem



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According to the embodiment doing with desirable of the present invention., *** of the hair iron in which the heat radiation Cool tip part in which the multiple grooves and rib are repeated drawn of the pattern is equipped in the top-end part of the body is provided as to the hair iron which includes the body of pair, and the heating plate equipped in the inner side of the body as long as the back-end is hinged to each other.

Here, the heat radiation Cool tip part can be assembled by the fastening means in the top-end part of the body.

Moreover, the separate space part is formed between the heating plate and heat radiation Cool tip part and it is the be desirable that the heat transmission is prevented from the heating plate to the heat radiation Cool tip part.

Moreover, it separates at the upper side of the body and the formed Cool tip cover of the heat radiation protrusion of the desired pattern is equipped in the top-end part one side of the body in the outer side surface.

Then, the Cool tip cover can unite with the top-end part one side of the body and a pair of joint grooves are formed in the top-end part one side of the body and it is the be desirable that the union projection of pair is formed as long as it is faced and connected in the Cool tip cover in the joint groove.

Moreover, it is the be desirable that the side direction opening is formed in the side of circumference of the Cool tip cover.

Moreover, it is the be desirable that the spacing groove part is formed in the Cool tip cover combination between the edge and body of the Cool tip cover.

Moreover, in the bottom surface of the Cool tip cover, it is the be desirable that at least one muricate for the interval holding is formed.

And in one side of the Cool tip cover, the discolor red skeins recon in which color is transformed according to the temperature can be equipped.

**Effects of the Invention**

According to the embodiment doing with desirable of the present invention., the Cool tip part is equipped in the top-end part of the hair iron. In that way the user grips the top-end part of the hair iron from the safely and the hair can be set.

Then, in the top-end part of the hair iron main body part, the heat radiation Cool tip part in which the multiple grooves and rib are repeated drawn of the pattern is equipped and the user minimizes the heat transmission in the waste paper.

Moreover, in the inside tip portion of the body, the separate space part is formed between the heating plate and heat radiation Cool tip part. Therefore it can prevent the heat of the heating plate from being delivered to the heat radiation Cool tip part.

In the meantime, the Cool tip cover is combined in the top-end part one side of the body comprising the main body part. At this time, the spacing groove part is formed between the edge and body of the Cool tip cover and it can prevent the heat of the body from being delivered to the Cool tip cover.

Moreover, in the side of circumference of the Cool tip cover, the side direction opening is formed. Therefore the heat of the heating plate is not accumulated in the lower part of the Cool tip cover and the heat is emitted through the side direction opening to the outside.

Moreover, in the bottom surface of the Cool tip cover, the muricate for the interval holding is formed with multiple. Therefore the user grips the Cool tip cover from the strongly. And yet the Cool tip cover and body maintain the fixed interval and the heat transmission by the contact is prevented.

And using the discolor red skeins recon equipped in one side of the Cool tip cover, the user easily can recognize clearly the temperature change of the Cool tip cover.



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## Description of Embodiments

Hereinafter, referring to the figure the preferred embodiment of *** of the hair iron accord ing to a preferred embodiment of the present invention decides to be illustrated. In this pr ocess, the size of the thickness shown in drawing of the lines or the element etc. are boast fully illustrated clarity and for convenience of the description.

Moreover, the following terms this can be changed according to the user, and the intention or the conventions of the operator as terms defined in consideration of the function at the i nvention. Therefore, it does on the content spanning this detailed statement all and the de finition about such terms should be given.

And it is nothing but the illustrative matter of the element in which following embodiment does not limit the scope of protection of the present invention but which is presented in th e claims of the invention and embodiment which are included in the technical spirit which s pans the detailed statement all of the invention and include the replaceable element in the element of the claims as the equivalent can be included in the scope of protection of the pr esent invention.

**Embodiment** .

Figure 2 is a perspective view of the hair iron according to a preferred embodiment of the present invention.

As shown in FIG. 2, as to the hair iron (1) according to a preferred embodiment of the pre sent invention, the user grips with one hand and it includes the main body part (100) open ed and closes, and the Cool tip part (700) and it prevents the heat of the high temperatur e from being delivered from the heating plate (130) equipped in the main body part (100) inner side to the Cool tip part (700). In that way it is safe the user can grip the Cool tip pa rt (700) without the danger of the image. The Cool tip part (700) in order that grips with h and as long as the user is different and the user pressurizes is prepared in the top-end par t of the main body part (100).

At this time, the Cool tip part (700) includes the heat radiation Cool tip part (710) equippe d in the top-end part of the main body part (100), and the Cool tip cover (720) equipped i n the top-end part outer side surface of the main body part (100).

Here, the main body part (100) has the heating plate (130) which is faced with each other and is heated by the electric supply in the inner side of at least any one among the upper side body (110) and lower side body (120) or both the back-end comprises the upper side body (110) and the hinged lower side body (120).

Moreover, the heat radiation Cool tip part (710) is equipped among the upper side body (1 10) and lower side body (120) in the top-end part of at least any one or the both. The mul tiple grooves (711) and rib (712) are repeated and this heat radiation Cool tip part (710) i s made of the pattern (grill pattern) in which the heat transmission is minimized in the fing er contact and which draws and it is possible to be integrally formed with bodies (110,120) and it as shown in FIG. 7 is the other embodiment of the invention and it is possible that t he separate heat radiation Cool tip part (710) member is separably assembled by the faste ning means including the bolt etc. in the top-end part of bodies (110,120).

And as shown in FIG. 2, in the inner side top-end part of bodies (110,120), the separate s pace part (730) of the arched shape is formed between the heating plate (130) and heat r adiation Cool tip part (710). While the heat delivered from the heating plate (130) the hea t radiation Cool tip part (710) passes through the separate space part (730) it is air-cooled with the air layer of the separate space part (730) and the user is absorbed in the waste p aper into finger and the lingering fever of the trace amount delivered through the either si de connection part of the separate space part (730) to the heat radiation Cool tip part (71 0) is dispersed. Therefore the user does not feel that the user is hot and the heat radiation Cool tip part (710) is gripped.



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In the meantime, it is incised and formed so that the separate space part (730) passes thr ough bodies (110,120) and it is possible to be connected with the spacing groove part (74 2) formed according to the outer rim of the cool tip cover (720) which will be described lat er.

Moreover, in case of the other embodiment of the invention illustrated in Figure 7, the fixe d interval is put between the top-end part of bodies (110,120) and heat radiation Cool tip part (710) member and it assembles. In that way this gap is naturally comprised the separ ate space part (730).

The Cool tip cover (720) is equipped among the upper side body (110) and lower side bod y (120) in the top-end part outer side surface of at least any one or the both. The heat rad iation protrusion (721) of the desired pattern is formed in the outer side surface of this Co ol tip cover (720) and the bottom surface separates from the upper side of bodies (110,12 0) and the Cool tip cover (720) is positioned.

At this time, it is possible that the Cool tip cover (720) is integrally formed with bodies (11 0,120) and preferably the separate Cool tip cover (720) is combined in bodies (110,120). The mounting portion (740) is low it is muddy with stepped pulley and it is formed in the t op-end part outer side surface one side of bodies (110,120) and the Cool tip cover (720) is combined in order to cover the interspace of this mounting portion (740).

Here, in order that the display in which the cool tip cover (720) illustrated in Figure 2 is co mbined in the mounting portion (740) is well shown up it announces one part being cut ou t in a longitudinal direction and showing.

Figure 3 is a main body part of the hair iron and disassembled perspective view of the Cool tip cover according to a preferred embodiment of the present invention. Fig. 4 is the side v iew of fig. 2. Figure 5 is a A-A direction side view of fig. 4.

As shown in FIG. figures 3 through 5, the Cool tip cover (720) according to a preferred em bodiment of the present invention is inserted and coupled into the mounting portion (740) of the body (110,120) top-end part outside. It each other separates in a longitudinal direct ion from one side and the other side in the bottom surface of the mounting portion (740) o f the mounting portion (740) and the joint groove (741) is formed respectively and the uni on projection (722) separating each other from the bottom surface of the Cool tip cover (7 20) and is protruded is combined respectively in the joint groove (741).

Then, one among a pair of union projections (722) is composed of the jamming protrusion which is inserted into the joint groove (741) and in which the separation is prevented. And after the combination of the be desirable, the Cool tip cover (720) is accomplished to consi st of the snap protrusion inserted and coupled into the joint groove (741) remaindering in the flexibly the separate space is comprised the spacing groove part (742) for the edge of the mounting portion (740) and edge of the Cool tip cover (720).

Moreover, the side of circumference of the Cool tip cover (720) it is comprised the spacing (723) in which the bottom surface of the Cool tip cover (720) and upper surface intervenin g space of the mounting portion (740) form the heat exhaustion pipe furnace the bottom s urface of the Cool tip cover (720) spaces gap from the upper surface of the mounting porti on (740) the predetermined and it is positioned may be provided with the side direction op ening (724) the outlet role about the heat accumulated with the thermal radiation in the s pacing (723).

Therefore, as to the heat, delivered from the heating plate (130) through bodies (110,12 0) to the direction of framework of the Cool tip cover (720) the heat transmission is preve nted with the spacing groove part (742) and after the heat delivered with radiation to the bottom surface of the Cool tip cover (720) is induced to the side direction opening (724) a ccording to the heat exhaustion pipe loin spacing (723) the heat is ejected to the outside. Therefore the temperature of the Cool tip cover (720) surface does not rise to the extent which feels that the user burns.

Then, as the user strongly presses the Cool tip cover (720) and the user grips in order that the bottom surface of the Cool tip cover (720) prevents the heat transmission from being made in contact with the bottom surface of the mounting portion (740) although the press



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ure is applied the Cool tip cover (720) maintains the point contact against the bottom surf ace of the mounting portion (740) and in this case, the heat transmission is minimally limit ed the be desirable that at least one muricate (725) for the interval holding is formed in th e bottom surface of the Cool tip cover (720).

Moreover, the heat radiation protrusion (721) of the Cool tip cover (720) feels the sensuou sness to the user due to the formation pattern and it effectively makes radiated to the airb orne and delivered to the Cool tip cover (720) to the trace amount by minimizing the cont act area when griping with finger the user feels heat. It serves to prevent slip due to the s weat or moisture.

Figure 6 is a plane view of the body of the lower part and upper body according to a prefer red embodiment of the present invention.

As shown in FIG. 6, it separates each other at the form in which the pattern in which on th e whole, the top-end part is opened and the back-end is closed of the 'U' person shape is magnified in the end part middle of the Cool tip cover (720) to the outside direction and th e heat radiation protrusion (721) of the Cool tip cover (720) can be manifoldly formed.

At this time, the pressurization the user grips the Cool tip cover (720) from the securely a nd while power is added as the width direction in a longitudinal direction it is free the main body part (100) is rotated with the movement and the hair can be set. Finger is rubbed wit h both side wall (721a) of the 'U' shape of a character heat radiation protrusion (721) whe n adding power through the width direction of the Cool tip cover (720) and when adding p ower of the Cool tip cover (720) in a longitudinal direction it is rubbed with the rear end cl osing side (721b) of the 'U' shape of a character heat radiation protrusion (721) and finger does not slide down.

Moreover, the outer periphery of the Cool tip cover (720) combined in the mounting portio n (740) spaces gap the edge and predetermined of the mounting portion (740) and it is po sitioned. In that way the spacing groove part (742) is formed between the edge of the Coo l tip cover (720) and edge of the mounting portion (740) and this spacing groove part (74 2) is the same like the separate space part (730) and in which we describe in the above to be connectable.

Figure 8 is a cross-sectional view showing the attitude in which the discolor red skeins rec on is equipped according to another preferred embodiment in one side of the Cool tip cove r of the invention.

Here, it is the be desirable that the discolor red skeins recon (750) is locally equipped in th e central part or the edge of the Cool tip cover (720) and it is the be desirable to do to exp ose to the outside through silicone insertion hole of the upper end portion Cool tip cover (7 20) surface of the discolor red skeins recon (750) inserted in the spacing (723).

At this time, while it discolors into orange if it has white in for example, the normal times and the discolor red skeins recon (750) receives heat as of the material in which the color i s changed as heat is applied the use time or heating acceptance and rejection of the hair ir on are informed.

## Brief explanation of the drawing

Fig. 1 is the perspective view of the conventional hair iron.

Figure 2 is a perspective view of the hair iron according to a preferred embodiment of the present invention.

Figure 3 is a main body part of the hair iron and disassembled perspective view of the Cool tip cover according to a preferred embodiment of the present invention.

Fig. 4 is the side view of fig. 2.

Fig. 5 is the A-A direction side view of fig. 4.



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Figure 6 is an upper body of the hair iron and plane view of the body of the lower part acc ording to a preferred embodiment of the present invention.

Figure 7 is a heat radiation Cool tip part assembly drawing of the hair iron according to the other embodiment of the invention.

The cross-sectional view which fig. 8 shows the appearance in which the discolor red skein s recon is equipped according to another preferred embodiment of the invention in one sid e of the Cool tip cover.

## Disclaimer

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(12) 공개특허공보(A)

(11) 공개번호 10-2012-0095206
(43) 공개일자 2012년08월28일

(51) 국제특허분류(Int. Cl.)
*A45D 1/04* (2006.01) *A45D 1/28* (2006.01)
(21) 출원번호 10-2011-0014733
(22) 출원일자 2011년02월18일
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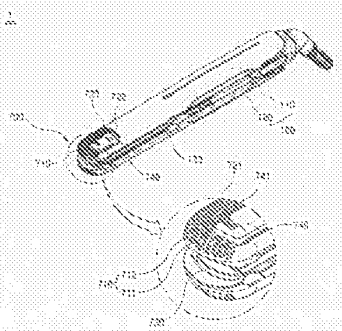
전체 청구항 수 : 총 9 항

(54) 발명의 명칭 헤어 아이론의 방열 구조

(57) 요 약

본 발명은 사용자가 용이하게 파지할 수 있도록, 헤어 아이론의 선단부에 물림부가 구비되는 헤어 아이론에 관한 것으로, 본 발명의 일실시예에 의하면, 후단부가 서로 힌지 결합되는 한 쌍의 바디와, 바디의 내측에 구비되는 히팅 플레이트를 포함하는 헤어 아이론에 있어서, 바디의 선단부에 다수의 요홈과 리브가 반복되는 그릴 패턴의 방열 물림부가 구비되는 것을 특징으로 하는 헤어 아이론의 방열 구조가 제공된다.

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## 청구범위

### 청구항 1

후단부가 서로 반지 결합되는 한 쌍의 바디와, 상기 바디의 내측에 구비되는 히팅 플레이트를 포함하는 헤어 아이론에 있어서,

상기 바디의 선단부에 다수의 요홈과 리브가 반복되는 그릴 패턴의 방열 돌림부가 구비되는 것을 특징으로 하는 헤어 아이론의 방열 구조.

### 청구항 2

청구항 1에 있어서,

상기 바디의 선단부에 상기 방열 돌림부가 체결수단에 의해 조립되는 것을 특징으로 하는 헤어 아이론의 방열 구조.

### 청구항 3

청구항 1에 있어서,

상기 히팅 플레이트와 상기 방열 돌림부 사이에 이격공간부가 형성되어, 상기 히팅 플레이트로부터 상기 방열 돌림부로 열전달이 차단되는 것을 특징으로 하는 헤어 아이론의 방열 구조.

### 청구항 4

청구항 1에 있어서,

상기 바디의 선단부 일측에 소정 패턴의 방열돌기가 외측면에 형성된 돌림커버가 상기 바디의 상측으로 이격하여 구비되는 것을 특징으로 하는 헤어 아이론의 방열 구조.

### 청구항 5

청구항 4에 있어서,

상기 바디의 선단부 일측에 상기 돌림커버가 결합하되, 상기 바디의 선단부 일측에는 한 쌍의 체결홈이 형성되고, 상기 돌림커버에는 상기 체결홈에 대응 결합되는 한 쌍의 체결돌기가 형성되는 것을 특징으로 하는 헤어 아이론의 방열 구조.

### 청구항 6

청구항 4에 있어서,

상기 돌림커버의 테두리 일측에 측방개구부가 형성되는 것을 특징으로 하는 헤어 아이론의 방열 구조.

### 청구항 7

청구항 5에 있어서,

상기 돌림커버 결합시 상기 돌림커버의 테두리와 상기 바디 사이에 이격홈부가 형성되는 것을 특징으로 하는 헤어 아이론의 방열 구조.



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청구항 8

청구항 4에 있어서,

상기 플럼커버의 저면에는 적어도 하나 이상의 간격유지용 미세돌기가 형성되는 것을 특징으로 하는 헤어 아이론의 방열 구조.

청구항 9

청구항 4에 있어서,

상기 플럼커버의 일측에 온도에 따라 색상이 변환되는 변색실리콘이 구비되는 것을 특징으로 하는 헤어 아이론의 방열 구조.

## 발 명 의

### 기 술 분 야

[0001] 본 발명은 헤어 아이론에 관한 것으로, 더욱 상세하게는 내부의 히팅 플레이트에서 발생된 열이 방출되도록 하며, 사용자가 헤어 아이론의 선단부를 용이하게 파지할 수 있게 하는 헤어 아이론의 방열 구조에 관한 것이다.

### 배 경 기 술

[0002] 일반적으로 헤어 아이론은 히팅 플레이트의 가열에 의해, 모발을 권취하여 머리결을 웨이브 세팅하거나, 웨이브진 머리결을 펴쳐서 스트레이트 세팅하는데 사용되고 있다

[0003] 이러한 헤어 아이론은, 한 쌍의 바디로 이루어지는 본체부와, 바디의 내측에 구비되는 히팅 플레이트를 포함하여 이루어지며, 스프링에 의해 벌어져 있는 상태에서 본체부의 히팅 플레이트 사이에 모발을 위치시킨 후 적당한 힘으로 가압하며 원하는 형태로 헤어 세팅하게 된다.

[0004] 이때, 사용자는 한 손으로 본체부의 후단을 파지한 상태에서 본체부를 열고 닫는 조작을 하게 되며, 히팅 플레이트 사이에 모발을 위치시킨 후에 헤어 아이론을 회전시키면서 모발을 세팅하게 되는데, 헤어 아이론을 원하는 방향으로 정확하게 회전시키거나, 모발에 더욱 큰 가압력을 부여하여 히팅 플레이트의 열이 모발에 적절히 전달되도록 하기 위해서는, 다른 한 손으로 본체부의 선단부를 파지하여야 할 필요가 있다.

[0005] 그런데, 일반적으로 히팅 플레이트는 본체부의 내측 선단부에 배치되므로, 본체부의 선단부에는 히팅 플레이트로부터 많은 열이 전달되고, 이에 따라, 본체부 외측의 선단부 온도가 상승하게 되는데, 장시간 시술하는 경우에는 온도가 너무 높이 상승하게 되므로 본체부의 선단부를 파지한 상태에서 시술할 수 없을 뿐만 아니라, 화상의 위험도 있다.

[0006] 이를 해결하기 위한 선행기술로서 도 1에 도시된 바와 같이, 한국공개특허 제10-2009-0116434호(헤어 아이론)에서는, 서로 힌지 결합되는 한 쌍의 바디(11,12)와, 한 쌍의 바디(11,12)의 내측면에 결합되며 전기 공급에 의해 열이 발생되는 전열판(13)과, 한 쌍의 바디(11,12)에 결합되어 전열판(13)에서 발생된 열의 외부 전달을 방지하는 단열 부재(14)를 포함하는 헤어 아이론이 개시되고 있다.

[0007] 그런데, 상기 선행기술에 의하면, 바디(11,12)에 결합된 단열 부재(14)의 하부면가 바디(11,12)와 밀착되므로, 이를 통한 열전달에 의해 단열 부재(14)의 온도 상승이 불가피하며, 전열판(13)으로부터 바디(11,12)의 상측과 단열 부재(14)의 하측 사이 공간으로 복사된 열이 외부로 빠져나가지 못하고 축적됨으로써 단열 부재(14)의 온도가 상승하게 되는 문제점이 있다.

[0008] 또한, 사용자가 단열부재(14)를 강하게 눌러서 파지하는 경우, 단열부재(14)의 저면이 바디(11,12)의 상측면에 접촉되면서 열전달이 이루어지게 되며, 전열판(13)으로부터 바디(11,12)의 선단부로 열전달이 이루어짐에



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따라 바디(11,12)의 선단부 온도가 상승하게 된다.

## 발명의 내용

### 해결하려는 과제

[0009] 본 발명은 상술한 바와 같은 문제를 해결하기 위한 것으로, 본 발명의 일실시예는, 후단부가 서로 힌지 결합되는 한 쌍의 바디와, 바디의 내측에 구비되는 히팅 플레이트를 포함하는 헤어 아이론에 있어서, 바디의 선단부에 다수의 요홈과 리브가 반복되는 그릴 패턴의 방열 몰딩부가 구비되는 것을 특징으로 하는 헤어 아이론의 방열 구조와 관련된다.

### 과제의 해결 수단

[0010] 본 발명의 바람직한 일실시예에 의하면, 후단부가 서로 힌지 결합되는 한 쌍의 바디와, 바디의 내측에 구비되는 히팅 플레이트를 포함하는 헤어 아이론에 있어서, 바디의 선단부에 다수의 요홈과 리브가 반복되는 그릴 패턴의 방열 몰딩부가 구비되는 것을 특징으로 하는 헤어 아이론의 방열 구조가 제공된다.

[0011] 여기서, 바디의 선단부에 방열 몰딩부가 체결수단에 의해 조립될 수 있다.

[0012] 또한, 히팅 플레이트와 방열 몰딩부 사이에 이격공간부가 형성되어, 히팅 플레이트로부터 방열 몰딩부로 열전달이 방지되는 것이 바람직하다.

[0013] 또한, 바디의 선단부 일측에 소정 패턴의 방열돌기가 외측면에 형성된 몰딩커버가 바디의 상측으로 이격하여 구비된다.

[0014] 이때, 바디의 선단부 일측에 몰딩커버가 결합할 수 있으며, 바디의 선단부 일측에는 한 쌍의 체결홈이 형성되고, 몰딩커버에는 체결홈에 대응 결합되는 한 쌍의 체결돌기가 형성되는 것이 바람직하다.

[0015] 또한, 몰딩커버의 테두리 일측에 측방개구부가 형성되는 것이 바람직하다.

[0016] 또한, 몰딩커버 결합시 몰딩커버의 테두리와 바디 사이에 이격홈부가 형성되는 것이 바람직하다.

[0017] 또한, 몰딩커버의 저면에는 적어도 하나 이상의 간격유지용 미세돌기가 형성되는 것이 바람직하다.

[0018] 아울러, 몰딩커버의 일측에는 온도에 따라 색상이 변화되는 변색실리콘이 구비될 수 있다.

### 발명의 효과

[0019] 본 발명의 바람직한 일실시예에 의하면, 헤어 아이론의 선단부에 몰딩부가 구비됨으로써, 사용자는 헤어 아이론의 선단부를 안전하게 파지하여 모발을 세팅할 수 있다.

[0020] 이때, 헤어 아이론 본체부의 선단부에는 다수의 요홈과 리브가 반복되는 그릴 패턴의 방열 몰딩부가 구비되어, 사용자가 파지시 열전달을 최소화하게 된다.

[0021] 또한, 바디의 선단부 내측면에는 히팅 플레이트와 방열 몰딩부 사이에 이격공간부가 형성되므로, 히팅 플레이트의 열이 방열 몰딩부로 전달되는 것을 방지할 수 있다.

[0022] 한편, 본체부를 구성하는 바디의 선단부 일측에 몰딩커버가 결합되는데, 이때 몰딩커버의 테두리과 바디 사이에 이격홈부가 형성되어, 바디의 열이 몰딩커버로 전달되는 것을 방지할 수 있다.

[0023] 또한, 몰딩커버의 테두리 일측에는 측방개구부가 형성되므로, 몰딩커버의 하부에 히팅 플레이트의 열이 축적되지 않고, 측방개구부를 통해 외부로 방출된다.

[0024] 또한, 몰딩커버의 저면에는 간격유지용 미세돌기가 다수 형성되므로, 사용자가 몰딩커버를 강하게 파지하더라도, 몰딩커버와 바디는 소정 간격을 유지하여, 접촉에 의한 열전달이 방지된다.

[0025] 아울러, 몰딩커버의 일측에 구비되는 변색실리콘에 의해, 사용자는 몰딩커버의 온도변화를 용이하게 인식할



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수 있다.

## 도면의 간단한 설명

[0026] 도 1은 종래의 헤어 아이론의 사시도,

도 2는 본 발명의 일실시예에 따른 헤어 아이론의 사시도,

도 3은 본 발명의 일실시예에 따른 헤어 아이론의 본체부와 풀림커버의 분해 사시도,

도 4는 도 2의 측면도,

도 5는 도 4의 A-A 방향 단면도,

도 6은 본 발명의 일실시예에 따른 헤어 아이론의 상부바디와 하부바디의 평면도,

도 7은 본 발명의 다른 실시예에 따른 헤어 아이론의 방열 풀림부 조립도,

도 8은 본 발명의 또 다른 실시예에 따라 풀림커버의 일측에 온세실리콘이 구비된 모습을 보인 단면도.

## 발명을 실시하기 위한 구체적인 내용

[0027] 이하, 본 발명의 일실시예에 따른 헤어 아이론의 방열 구조의 바람직한 실시예를 첨부된 도면을 참조하여 설명하기로 한다. 이 과정에서 도면에 도시된 선들의 두께나 구성요소의 크기 등은 설명의 명료성과 편의상 과장되게 도시되어 있을 수 있다.

[0028] 또한, 후술되는 용어들은 본 발명에서의 기능을 고려하여 정의된 용어들로서 이는 사용자, 운용자의 의도 또는 관례에 따라 달라질 수 있다. 그러므로, 이러한 용어들에 대한 정의는 본 명세서 전반에 걸친 내용을 토대로 하여 내려져야 할 것이다.

[0029] 아울러, 아래의 실시예는 본 발명의 권리범위를 한정하는 것이 아니라 본 발명의 청구범위에 제시된 구성요소의 예시적인 사항에 불과하며, 본 발명의 명세서 전반에 걸친 기술사상에 포함되고 청구범위의 구성요소에서 균등물로서 치환 가능한 구성요소를 포함하는 실시예는 본 발명의 권리범위에 포함될 수 있다.

[0030] 실시예

[0031] 도 2는 본 발명의 일실시예에 따른 헤어 아이론의 사시도이다.

[0032] 도 2에 도시된 바와 같이, 본 발명의 일실시예에 따른 헤어 아이론(1)은, 사용자가 한 손으로 파지하여 개폐 조작하는 본체부(100)와, 사용자가 다른 한 손으로 파지하여 가압할 수 있도록, 본체부(100)의 선단부에 마련되는 풀림부(700)를 포함하며, 본체부(100) 내측에 구비되는 히팅 플레이트(130)로부터 풀림부(700)로 고온의 열이 전달되는 것을 방지함으로써, 사용자는 화상의 위험없이 안전하게 풀림부(700)를 파지할 수 있다.

[0033] 이때, 풀림부(700)는 본체부(100)의 선단부에 구비되는 방열 풀림부(710)와, 본체부(100)의 선단부 외측면에 구비되는 풀림커버(720)를 포함한다.

[0034] 여기서, 본체부(100)는 후단부가 탄성적으로 서로 힌지 결합되는 상측바디(110)와 하측바디(120)를 포함하여 이루어지고, 상측바디(110)와 하측바디(120) 중 적어도 어느 하나, 또는 둘 모두의 내측에 서로 대향하여, 전기 공급에 의해 가열되는 히팅 플레이트(130)가 구비된다.

[0035] 또한, 상측바디(110)와 하측바디(120) 중 적어도 어느 하나, 또는 둘 모두의 선단부에 방열 풀림부(710)가 구비되는데, 이 방열 풀림부(710)는 다수의 요홈(711)과 리브(712)가 반복되어 손가락 접촉시 열전달이 최소화되는 그릴 패턴(grill pattern)으로 이루어지며, 바디(110,120)와 일체로 형성되는 것도 가능하고, 도 7에 도시된 바와 같이 본 발명의 다른 실시예로서, 별도의 방열 풀림부(710) 부재가 용접 등의 체결수단에 의해 바디(110,120)의 선단부에 분리 가능하게 조립되는 것도 가능하다.



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[0036] 아울러, 도 2에 도시된 바와 같이, 바디(110,120)의 내측면 선단부에는 히팅 플레이트(130)의 방열 플럼부(710) 사이에 원호 형상의 이격공간부(730)가 형성되는데, 히팅 플레이트(130)로부터 방열 플럼부(710) 방향으로 전달되는 열은 이격공간부(730)를 거치면서 이격공간부(730)의 공기층에 의해 공냉되며, 이격공간부(730)의 양측 연결부를 통해 방열 플럼부(710)에까지 전달되는 미량의 잔열은 사용자가 파지시 손가락에 흡수되어 분산되므로, 사용자는 뜨거움을 느끼지 않고 안전하게 방열 플럼부(710)를 파지할 수 있게 되는 것이다.

[0037] 한편, 이격공간부(730)는 바디(110,120)를 관통하도록 절개 형성되어, 후술하는 플럼커버(720)의 외측 테두리를 따라 형성되는 이격홈부(742)와 연통되는 것도 가능하다.

[0038] 또한, 도 7에 도시된 본 발명의 다른 실시예의 경우, 방열 플럼부(710) 부재와 바디(110,120)의 선단부 사이에 소정 간격을 두고 조립함으로써, 이 간격이 자연스럽게 이격공간부(730)를 이루게 할 수 있다.

[0039] 상측바디(110)와 하측바디(120) 중 적어도 어느 하나, 또는 둘 모두의 선단부 외측면에 플럼커버(720)가 구비되는데, 이 플럼커버(720)의 외측면에는 소정 패턴의 방열돌기(721)가 형성되고, 플럼커버(720)는 지면이 바디(110,120)의 상측에 이격하여 위치하게 된다.

[0040] 이때, 플럼커버(720)는 바디(110,120)와 일체로 형성되는 것도 가능하고, 바람직하게는 별도의 플럼커버(720)가 바디(110,120)에 결합되는데, 바디(110,120)의 선단부 외측면 일측에 안착부(740)가 낮게 단차져서 형성되고, 이 안착부(740)의 내부영역을 커버하도록 플럼커버(720)가 결합된다.

[0041] 여기서, 도 2에 도시된 플럼커버(720)는 안착부(740)에 결합된 모습이 잘 나타나도록, 길이방향으로 일부분을 절개하여 도시한 것임을 밝혀둔다.

[0042] 도 3은 본 발명의 일실시예에 따른 히어 아이론의 분해부와 플럼커버의 분해 사시도이고, 도 4는 도 2의 측면도이며, 도 5는 도 4의 A-A 방향 단면도이다.

[0043] 도 3 내지 도 5에 도시된 바와 같이, 본 발명의 일실시예에 따른 플럼커버(720)는, 바디(110,120) 선단부 외측의 안착부(740)에 끼움 결합되는데, 안착부(740)의 바닥면에는 안착부(740)의 길이방향으로 일측과 타측에 서로 이격하여 체결홈(741)이 각각 형성되고, 플럼커버(720)의 저면에 서로 이격하여 돌출 형성되는 체결돌기(722)가 체결홈(741)에 각각 결합된다.

[0044] 이때, 한 쌍의 체결돌기(722) 중 하나는 체결홈(741)에 삽입되어 이탈이 방지되는 힘힘돌기로 이루어지고, 나머지 하나는 체결홈(741)에 탄력적으로 끼움 결합되는 스냅돌기로 구성되는 것이 바람직하며, 플럼커버(720)의 결합이 이루어진 후, 안착부(740)의 테두리와 플럼커버(720)의 테두리 사이 이격공간은 이격홈부(742)를 이루게 된다.

[0045] 또한, 플럼커버(720)의 저면이 안착부(740)의 상측면으로부터 소정 간격 이격하여 위치함에 따라, 플럼커버(720)의 저면과 안착부(740)의 상측면 사이 공간은 열패출판로를 형성하는 간격부(723)를 이루게 되고, 플럼커버(720)의 테두리 일측에는 열팩사에 의해 간격부(723)에 축적되는 열에 대해 배출구 역할을 하는 측방개구부(724)가 형성된다.

[0046] 따라서, 히팅 플레이트(130)로부터 바디(110,120)를 통해 플럼커버(720)의 테두리 방향으로 전달되는 열은 이격홈부(742)에 의해 열전달이 방지되고, 복사에 의해 플럼커버(720)의 저면으로 전달되는 열은 열패출판로인 간격부(723)를 따라 측방개구부(724)로 유도된 후 외부로 배출되므로, 플럼커버(720) 표면의 온도는 사용자가 뜨거움을 느낄 정도까지 상승하지 않게 된다.

[0047] 이때, 사용자가 플럼커버(720)를 강하게 눌러서 파지할에 따라, 플럼커버(720)의 저면이 안착부(740)의 바닥면과 접촉하여 열전달이 이루어지는 것을 방지하기 위해, 플럼커버(720)의 저면에는 적어도 하나 이상의 간격유지용 미세돌기(725)가 형성되는 것이 바람직하며, 이 경우 플럼커버(720)는 가압력이 가해지더라도 안착부(740)의 바닥면에 대하여 점 접촉을 유지하게 되고 열전달은 최소한으로 제한된다.

[0048] 또한, 플럼커버(720)의 방열돌기(721)는, 그 형성패턴으로 인하여 사용자로 하여금 미감을 느끼게 하고, 플럼커버(720)에 미량으로 전달되는 열이 대기중으로 효과적으로 방출되게 하는 역할을 하며, 손가락으로 파지할 때 접촉면적을 최소화함으로써 열을 덜 느낄 수 있게 하는 한편, 땀이나 물기로 인한 미끄러짐을 방지하는 역



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할을 한다.

[0049] 도 6은 본 발명의 일실시예에 따른 상부바디와 하부바디의 평면도이다.

[0050] 또 6에 도시된 바와 같이, 물텀커버(720)의 방열돌기(721)는 예를 들어, 전체적으로 선단부가 개방되고 후단부가 폐쇄된 'U'자 형상의 패턴이 물텀커버(720)의 선단부 중앙에서 좌측방향으로 확대되는 형태로 서로 이격하여 다수개 형성될 수 있다.

[0051] 이때, 사용자는 물텀커버(720)를 견고하게 가압 파지하여, 폭 방향 또는 길이 방향으로 힘을 가하면서 자유롭게 본체부(100)를 이동 및 회전시켜 모발을 세팅할 수 있는데, 물텀커버(720)의 폭 방향으로 힘을 가할 때는 손가락이 'U'자형 방열돌기(721)의 양쪽 측벽(721a)과 마찰되고, 물텀커버(720)의 길이 방향으로 힘을 가할 때는 손가락이 'U'자형 방열돌기(721)의 후단 폐쇄부(721b)와 마찰되어 미끄러지지 않게 되는 것이다.

[0052] 또한, 안착부(740)에 결합된 물텀커버(720)의 좌우면이, 안착부(740)의 테두리와 소정 간격 이격하여 위치함으로써, 물텀커버(720)의 테두리와 안착부(740)의 테두리 사이에 이격홈부(742)가 형성되고, 이 이격홈부(742)가 이격공간부(730)와 연결 가능함은 전술한 바와 같다.

[0053] 도 8은 본 발명의 또 다른 실시예에 따라 물텀커버의 일측에 변색실리콘이 구비된 모습을 보인 단면도이다.

[0054] 여기서, 변색실리콘(750)은 물텀커버(720)의 중앙부 또는 가장자리에 국부적으로 구비되는 것이 바람직하고, 간격부(723)에 끼워진 변색실리콘(750)의 상단부가 물텀커버(720) 표면의 실리콘 삽입홈을 통해 외부로 노출되게끔 하는 것이 바람직하다.

[0055] 이때, 변색실리콘(750)은 열이 가해짐에 따라 그 색상이 변하는 재질의 것으로, 예를 들어 평상시에는 흰색을 띠다가 열을 받으면 오렌지색으로 변색되면서 헤어 아이론의 사용시기 또는 가열여부를 알려주게 된다.

## 부호의 설명

[0056] 1 : 헤어 아이론

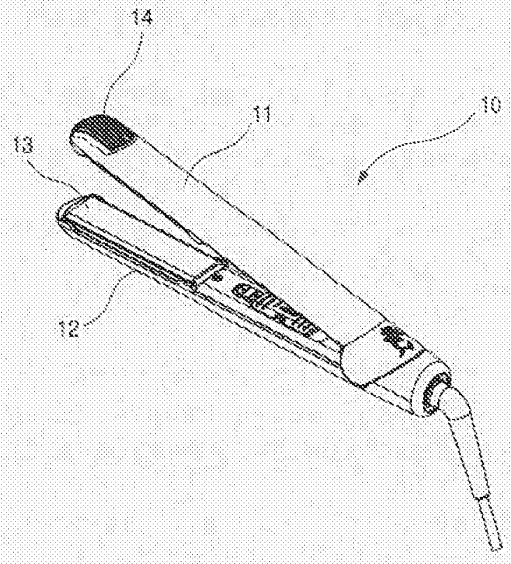
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|---|---|
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| 120 : 하측바디 | 130 : 히팅 플레이트 |
| 700 : 물텀부 | 710 : 방열 물텀부 |
| 720 : 물텀커버 | 721 : 방열돌기 |
| 722 : 체결돌기 | 723 : 간격부 |
| 724 : 측방개구부 | 725 : 간격유지용 이세돌기 |
| 730 : 이격공간부 | 740 : 안착부 |
| 741 : 체결홈 | 742: 이격홈부 |
| 750 : 변색실리콘 | |



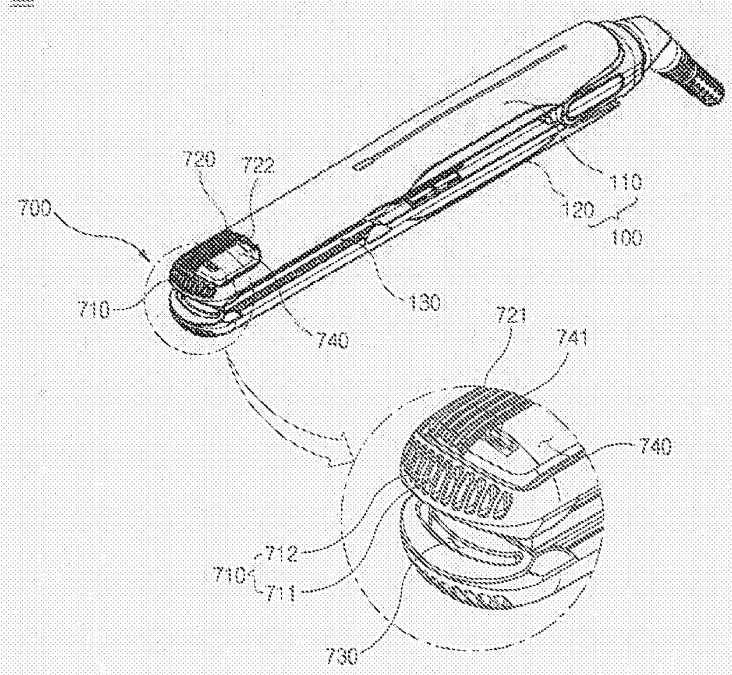
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도면

도면1



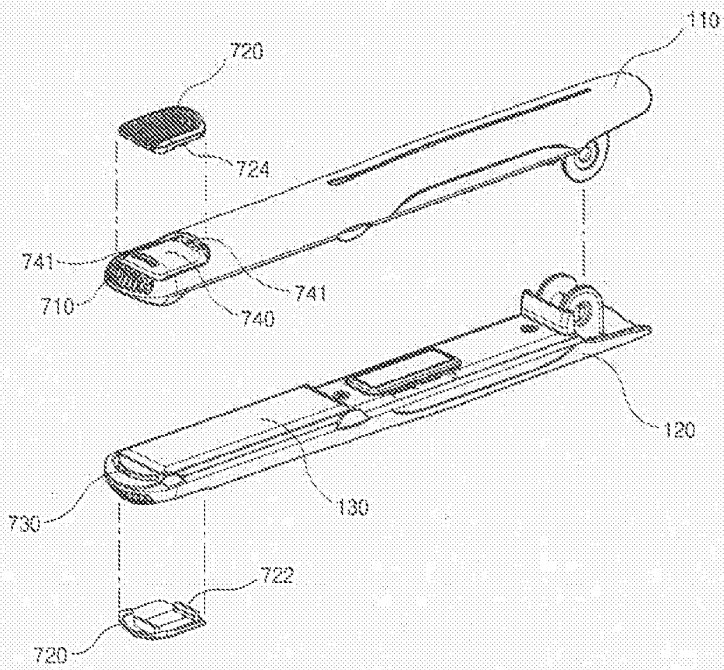

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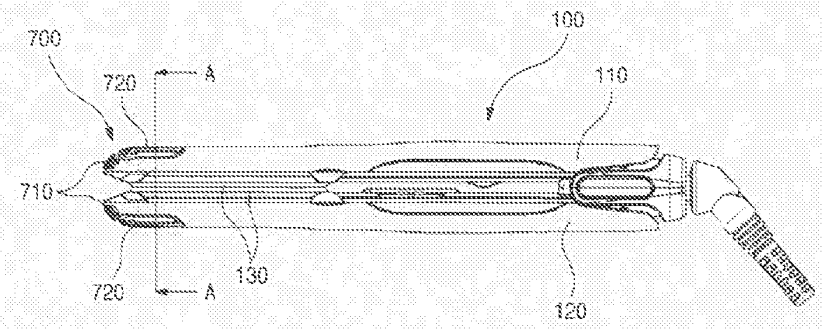



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도면3



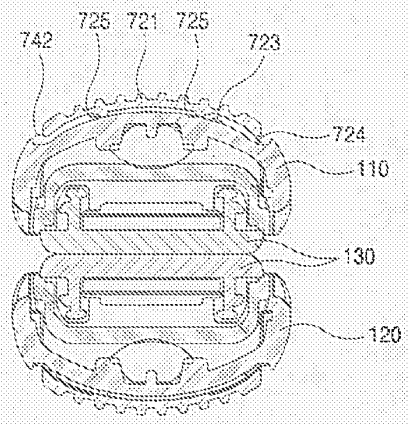

도면4



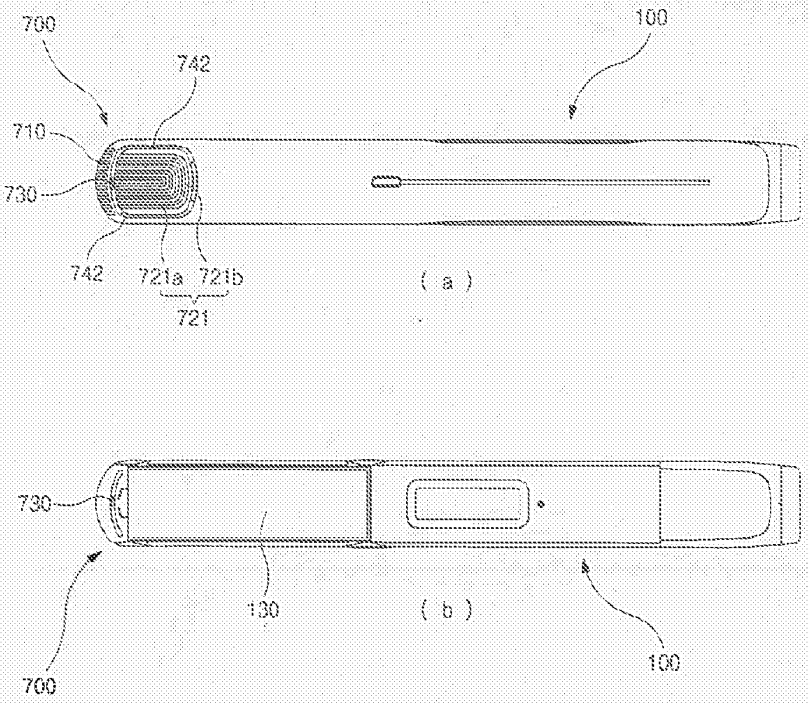



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도면5



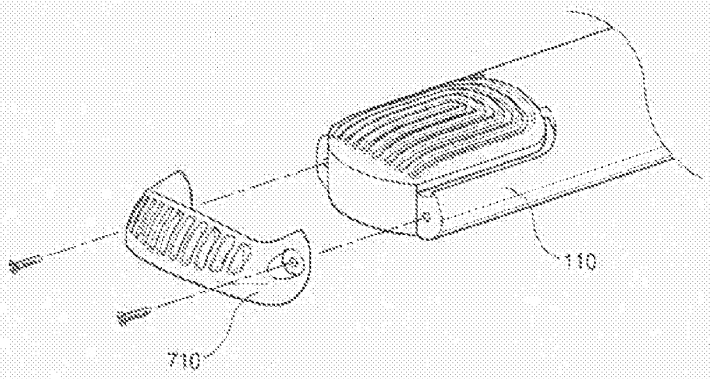

도면6



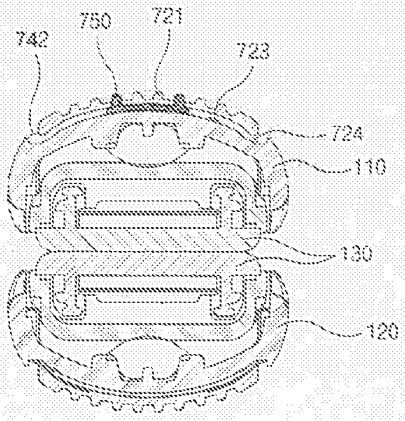



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도면7




도면8






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## Rotary warm-air comb air guiding structure

| | |
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| **Page bookmark** | CN203106087 (U) - Rotary warm-air comb air guiding structure |
| **Inventor(s):** | ZHOU YANFEN ± |
| **Applicant(s):** | ZHEJIANG FINE & BRUIDGE ELECTRICS CO LTD ± |
| **Classification:** | - international: ***A45D20/50*** |
| | - cooperative: |
| **Application number:** | CN20122726451U 20121225 |
| **Priority number(s):** | CN20122726451U 20121225 |

## Abstract of CN203106087 (U)

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The utility model relates to a rotary warm-air comb air guiding structure, which aims to solve the technical problems that the air guiding effect of the existing like product is poorer, the air volume is not uniform, and the air temperature phase difference of air vents of an aluminum barrel is large. A rotary warm-air comb comprises a machine body and a comb head, wherein a motor of the comb head is erected in a liner; the outer diameter of the liner is provided with a hair brush frame and an aluminum barrel in sequence; comb hair on the outer diameter of the hair brush frame extends out of the air vents of the aluminum barrel; the two ends of the hair brush frame are fixedly arranged on the outer diameter of the liner through a ring sleeve, and the two ends of the aluminum barrel are fixedly arranged on the outer diameter of the liner through an end cover; a motor frame is internally provided with a deceleration motor and a gear case; the main points of the rotary warm-air comb air guiding structure are as follow: the outer diameter of the liner is provided with ring-shaped air guiding ribs; each ring-shaped air guiding rib inclines from a ring sleeve end to an end cover end, and outwards to be in a cone ring shape; the end cover is provided with a through hole; and an outer ring opening edge of each air guiding rib of the liner is provided with semicircular groove openings. The rotary warm-air comb air guiding structure is suitable for being used as a hair head air guiding structure of the like warm-air comb, and improvement of the structure of the same like product.

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DESCRIPTION CN203106087

The utility model relates to a rotary hot air guide comb structure is aimed at solving existing products like wind less effective, non-uniform air flow aluminum cylinder vents air temperature difference big technical problems and design. The rotating body includes a hot comb and comb the hair sreot motor placed in the lining, the lining of the outer diameter in turn has a brush holder, aluminum cylinder. carding brush holder diameter aluminum cylinder extending ventilation hole, brush holder and aluminum cylinder ends respectively through the trap, cover fixed to the outer diameter of the liner; the motor mount equipped with geared motors and gear boxes; the point is that the lining has an outer diameter circle shaped air guide ribs, rib by a wind trap end cap to end and is tapered outwardly inclined ring-shaped; the cap is provided with a through hole; the lining of the air guide ribs outer rim with a semicircular shaped notch. Suitable as hot comb hair similar air guide structure, and improve the structure of similar products.

Rotating hot air guide comb structure

TECHNICAL FIELD

The utility model relates to a hot comb lining, it is a rotary hot air guide comb structure.

Background technique

Hot comb is a hot air dryer principle, the wind deflector is set in a drum circle aluminum comb, the comb body blew hot air for drying and styling the hair. Some hot comb to facilitate winding hair and blow dry, comb it clockwise or counter-clockwise rotation of the control of such hot comb or hot comb called rotation. As one of the tools is a hair comb, hair is increasingly becoming an essential product. But hot air existing similar products from hot comb outlet blowing wind, difficult to exclude from the vents outside of the aluminum cylinder; at the same time, the aluminum cylinder vents air temperature difference between the larger, air flow more uniform.

SUMMARY

To overcome these shortcomings, the utility model is intended to provide to the art a rotary hot air guide comb structure to address existing products like wind less effective, non-uniform air flow, air temperature aluminum cylinder vents large difference technical problem. The aim is achieved by the following technical solutions

A rotary hot air guide comb structure, which includes a main body and a rotating hot comb hair, the hair sreot motor placed in the lining, the lining of the outer diameter in turn has a brush holder, aluminum tube, brush the outer frame ventilation aperture extending carding aluminum cylinder, brush holder and aluminum cylinder ends respectively through the trap, cover fixed to the inner lining of the outer diameter; hot air through the duct liner and brush between frame and aluminum from vents blowing tube. The motor mount equipped with geared motors and gear box; its design elements are provided with an outer diameter of the inner lining of the ring-shaped air guide ribs, rib by a wind trap end cap to end and is tapered outwardly inclined ring shape, the cap is provided with through holes. With the above arrangement and shape of the ribs so that wind through the hot air duct between the lining and the brush holder when the wind blows bars blocking the ventilation holes slotted aluminum tube, aluminum tube through the ventilation holes and blowing hair.

The outer diameter of the liner are provided a first and a second air guide rib air guide ribs. Two wind guide structure disposed ribs, hot air is conducive to full export vents aluminum cylinder; at the same time, depending on the length of hair, may also be provided two or more air guide ribs.

The outer lining of the ai guide rib bead has a semi-circular notches, to facilitate the hot air through a portion of the slot Export to the next or front one air guide rib cap was.

The utility model structure design, hot air exclusion better, aluminum cylinder vents air temperature difference is small, air flow is more uniform; the same as the structure for hot air guide comb the hair structure, and similar products improved.

BRIEF DESCRIPTION

Figure 1 is the use of state utility model hair partially cutaway schematic structure, as shown by an arrow direction.

Figure 2 is the working principle of the utility model structure diagram, as shown by an arrow direction.

Figure 3 is a utility model of the motor frame structure diagram

Reference number and name: 1, motor mount, 2, share, 3, carding, 4, geared motor, 5, lined, 501, the first air guide rib 502, the second air guide ribs 511, notch, 6, the gear box 7, into an aluminum cartridge 8, the end cap 801, the through hole 9, a brush holder.

detailed description

Now the drawings, the structure of the utility model as described further below. Figure 1, Figure 2, which includes a main body and a rotary hot air comb hair, the hair of a motor mount disposed within the liner 5, the outer diameter of the liner in turn has a brush holder 9, an aluminum cylinder 7, ventilation holes carding brush holder diameter aluminum cylinder 3 extends, brush holder and aluminum cylinder ends by the trap 2, the cover 8 is fixed to the outer diameter of the liner, respectively, cover with a through hole 801; the motor mount equipped with gear motor and gearbox 4 5. The outer diameter of the liner are provided with a first air guide rib 501 and the second air guide rib

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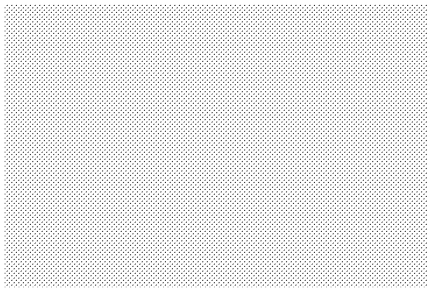
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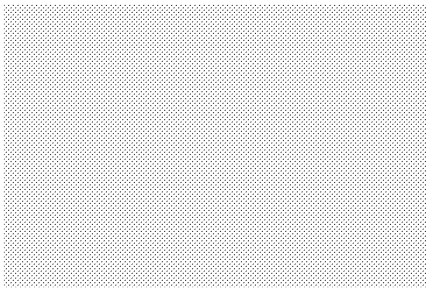
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502, first and second air guide ribs are ring-shaped bore, the first and second air guide ribs end towards the trap by and the end cap is tapered outwardly inclined ring-shaped outer bezel has a semicircular notch 511; export an air guide bars or cover through hole to the next part of the hot air to facilitate export through the slots.

In use, the hot comb blowing hot air through the duct liner and brush between frame and hot air vents to the transverse aluminum cylinder by increasing the export of the lining two air guide ribs; and the wind guide ribs increase semicircular notch settings, so that part of the first hot air guide rib from the slot through a portion of the hot air is exported, continue to move forward blow; when the wind blows the second ribs, hot air once again through the slots export remaining excess hot air through the second air guide rib notch derived from the through hole on the end cap. Thus the hot air was uniformly discharged from the ventilation holes on the aluminum cylinder, to avoid uneven ventilation holes on the aluminum cylinder outlet temperature difference between the larger, vents air flow problems in order to achieve better dry hair, hair styling purposes .

Meanwhile, according to the above-described structural features fixing, brush motor frame or rack can be provided any kind of shape, any number of the air guide structure.



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## CLAIMS CN203106087

1.

A rotary hot air guide comb structure, which includes a main body and a rotating hot comb hair, the hair of the motor frame (1) provided on the inner lining (5), lining the outer diameter of the brush holder has sequentially (9 ), aluminum cylinder (7), the outer diameter of the carding brush holder (3) extending vents of the aluminum cylinder, and a brush holder by trapping both ends of the aluminum cylinder (2), the end cap (8) is fixed to the inner liner an outer diameter; the motor mount equipped with gear motor (4) and gearbox (6); characterized in that the liner (5) has an outer diameter of the ring-shaped air guide ribs, rib by a wind trap (2) to the end cap (8) is tapered side and outwardly inclined ring-shaped; the cap (8) provided with through holes (801).

[2]

2. Rotary hot air according to claim 1, wherein the air guide comb structure, characterized in that said lining (5) are respectively provided with a first outer diameter of the air guide rib (501) and a second air guide rib (502).

[3]

3. Rotary hot air according to claim 1, wherein the air guide comb structure, characterized in that said lining (5) of the air guide ribs semicircular outer bead has a notch (511).

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(19)中华人民共和国国家知识产权局

(12)实用新型专利

(10)授权公告号 CN 203106087 U
(45)授权公告日 2013.08.07

(21)申请号 201220726451.X

(22)申请日 2012.12.25

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(51)Int.Cl.
*A45D 20/50*(2006.01)

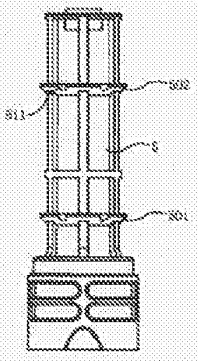
权利要求书1页 说明书2页 附图2页

(54)实用新型名称

旋转热风梳导风结构

(57)摘要

本实用新型涉及一种旋转热风梳导风结构，是针对解决现有同类产品导风效果较差，风量不均匀，铝筒通风孔风温相差大的技术问题而设计。该旋转热风梳包括机身和梳头，所述梳头的电机架设置于内衬内，内衬的外径依次设有毛刷架、铝筒，毛刷架外径的梳毛伸出铝筒的通风孔，毛刷架和铝筒两端分别通过圈套、端盖固定于内衬的外径；所述电机架内设有减速电机和齿轮箱；其要点是所述内衬的外径设有圈形的导风筋，导风筋由圈套端向端盖端和向外倾斜呈锥圈形；所述端盖设有通孔；所述内衬的导风筋外圈口沿设有半圆形的槽口。其适合作为同类热风梳的梳头导风结构，及其同类产品的结构改进。



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1. 一种旋转热风梳导风结构，该旋转热风梳包括机身和梳头，所述梳头的电机架（1）设置于内衬（5）内，内衬的外径依次设有毛刷架（9）、铝筒（7），毛刷架外径的梳毛（3）伸出铝筒的通风孔，毛刷架和铝筒两端分别通过圈套（2）、端盖（8）固定于内衬的外径；所述电机架内设有减速电机（4）和齿轮箱（6），其特征在于所述内衬（5）的外径设有圈形的导风筋，导风筋由圈套（2）端向端盖（8）端和向外倾斜呈锥圈形；所述端盖（8）设有通孔（801）。

2. 根据权利要求 1 所述的旋转热风梳导风结构，其特征在于所述内衬（5）的外径分别设有第一导风筋（501）和第二导风筋（502）。

3. 根据权利要求 1 所述的旋转热风梳导风结构，其特征在于所述内衬（5）的导风筋外圈沿口设有半圆形的槽口（511）。



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# 旋转热风梳导风结构

## 技术领域

[0001] 本实用新型涉及热风梳的内衬，是一种旋转热风梳导风结构。

## 背景技术

[0002] 热风梳是一种利用电吹风的热风原理，在滚筒式的圆铝梳中设置导风装置，热风吹出梳体用于头发干燥和定型的梳子。其中一些热风梳为便于头发的缠绕和吹干，其梳头可逆时针或顺时针方向控制旋转，此类热风梳或称为旋转热风梳。其作为是一种梳理头发的工具之一，越来越成为美发的必备品。但现有同类产品的热风从热风梳出风口吹出的风，较难从外部铝筒的通风孔排除；同时，铝筒的通风孔风温相差较大，风量较为不均匀。

## 发明内容

[0003] 为克服上述不足，本实用新型的目的是向本领域提供一种旋转热风梳导风结构，使其解决现有同类产品导风效果较差，风量不均匀，铝筒通风孔风温相差大的技术问题。其目的是通过如下技术方案实现的。

[0004] 一种旋转热风梳导风结构，该旋转热风梳包括机身和梳头，所述梳头的电机架设置于内衬内，内衬的外径依次设有毛刷架、铝筒，毛刷架外径的梳毛伸出铝筒的通风孔，毛刷架和铝筒两端分别通过圈套、端盖固定于内衬的外径；热风通过内衬与毛刷架之间的风道，并从铝筒的通风孔吹出。所述电机架内设有减速电机和齿轮箱；其设计要点是所述内衬的外径设有圈形的导风筋，导风筋由圈套端向端盖端和向外倾斜呈锥圈形；所述端盖设有通孔。通过上述结构和形状的导风筋使热风通过内衬与毛刷架之间的风道时，由导风筋阻挡折返吹向铝筒的通风孔，并通过铝筒的通风孔吹出梳头。

[0005] 所述内衬的外径分别设有第一导风筋和第二导风筋。两道导风筋的结构设置，有利于热风充分导出铝筒的通风孔；同时，根据梳头的长度，亦可设置两道以上的导风筋。

[0006] 所述内衬的导风筋外圈沿口设有半圆形的槽口，便于一部分的热风通过槽口导出至下一道导风筋或从端盖的通孔导出。

[0007] 本实用新型结构设计合理，热风排除效果较好，铝筒通风孔的风温相差较小，风量较为均匀；适合作为同类热风梳的梳头导风结构，及其同类产品的结构改进。

## 附图说明

[0008] 图 1 是本实用新型的梳头使用状态部分剖视结构示意图，图中箭头为风向。

[0009] 图 2 是本实用新型的工作原理结构示意图，图中箭头为风向。

[0010] 图 3 是本实用新型的电机架结构示意图。

[0011] 附图序号及名称：1、电机架，2、圈套，3、梳毛，4、减速电机，5、内衬，501、第一导风筋，502、第二导风筋，511、槽口，6、齿轮箱，7、铝筒，8、端盖，801、通孔，9、毛刷架。

## 具体实施方式



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[0012] 现结合附图，对本实用新型结构作进一步描述。如图 1、图 2 所示，该旋转热风梳包括机身和梳头，所述梳头的电机架 1 设置于内衬 5 内，内衬的外径依次设有毛刷架 9、铝筒 7，毛刷架外径的梳毛 3 伸出铝筒的通风孔，毛刷架和铝筒两端分别通过圈套 2、端盖 8 固定于内衬的外径，端盖设有通孔 801；所述电机架内设有减速电机 4 和齿轮箱 6。所述内衬的外径分别设有第一导风筋 501 和第二导风筋 502，第一、第二导风筋分别呈圈形，第一、第二导风筋均由圈套端向端盖端和向外倾斜呈锥圈形，外圈沿口设有半圆形的槽口 511；便于一部分的热风通过槽口导出至下一道导风筋或端盖的通孔导出。

[0013] 使用时，热风梳吹出的热风经过内衬与毛刷架之间的风道，并通过内衬上增加的两道导风筋将热风横向的往铝筒的通风孔导出；而导风筋上增加设置的半圆形槽口，使一部分热风从第一导风筋的槽口通过时，一部分热风被导出，继续往前吹；吹到第二导风筋时，再一次通过槽口将热风导出，余下多余的热风将通过第二导风筋的槽口，从端盖上的通孔导出。因而使热风从铝筒上的通风孔上均匀的排出，避免了铝筒上的通风孔出风温度相差较大，通风孔的出风量不均匀的问题，从而达到更好的干发、美发目的。

[0014] 同时，根据上述结构特征内衬、电机架或者毛刷架可设置任何一种形状，任何一种数量的导风结构。



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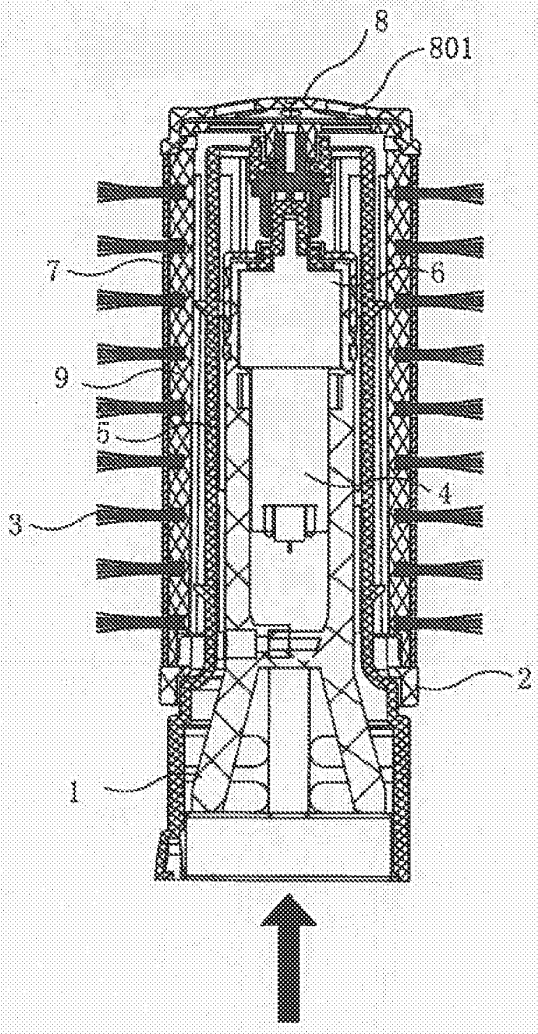



图 1



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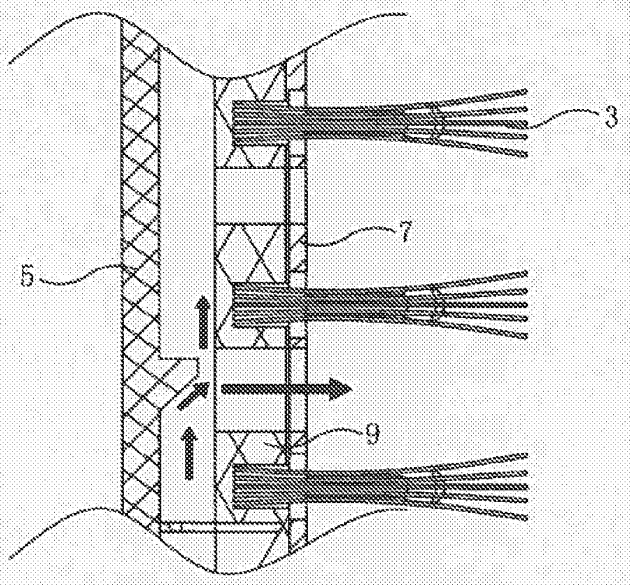



图 2

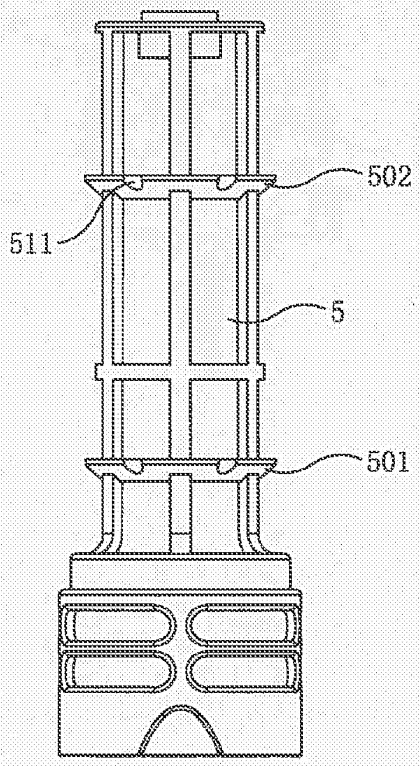



图 3



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(12) UK Patent Application (19) GB (11) 2524304 (13) A

(43) Date of A Publication 23.09.2015

(21) Application No: 1404982.9

(22) Date of Filing: 20.03.2014

(51) INT CL:
*A45D 20/52* (2006.01) *A45D 1/16* (2006.01)
*A45D 2/36* (2006.01) *A45D 20/20* (2006.01)

(56) Documents Cited:
EP 0482906 A1 US 4214597 A

(58) Field of Search:
INT CL A45D, F24H
Other: EPODOC, WPI

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(72) Inventor(s):
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(74) Agent and/or Address for Service:
**Dyson Technology Limited**
**Intellectual Property Department, Tetbury Hill, MALMESBURY, Wiltshire, SN16 0RP, United Kingdom**

(54) Title of the Invention: **Attachment for a hand held appliance**
Abstract Title: **Attachment for a hair curling appliance**

(57) An attachment 30 for a hot air brush (10, figure 1) comprises an inlet 32; an outlet 100; and a fluid flow path between the inlet and the outlet, wherein the outlet comprises at least one slot extending from near an inlet end of the attachment towards a distal end 36 of the attachment and wherein the outlet is at least partially defined by an external surface (112, figure 5b) of the attachment wherein fluid emitted from the outlet is blown along the external surface. The outlet may comprise a plurality of radially spaced slots. Fluid emitted from the outlet is attracted to and flows around the external surface of the attachment. The direction of flow of the fluid (122, figure 5b) from the outlet is tangential (130, figure 5b) to the external surface of the attachment. The attachment has a longitudinal axis extending from the first end to the distal end and the at least one slot may be parallel to the longitudinal axis, alternatively the at least one slot (282, figure 7c) is non-parallel to the longitudinal axis. The attachment may further comprise a flow directing element (420, figure 15c) between the inlet and the outlet. Also disclosed is an appliance including such as attachment.

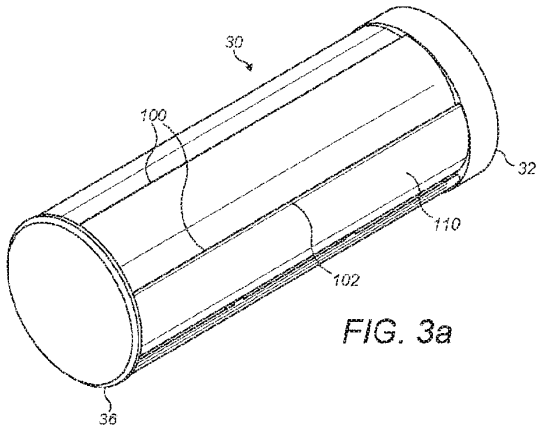



FIG. 3a

GB 2524304 A

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

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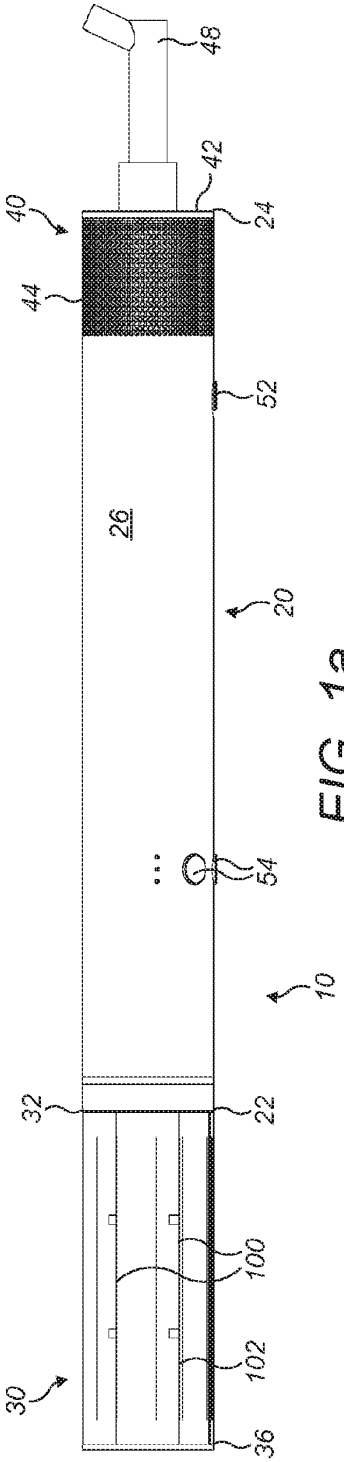



FIG. 1a

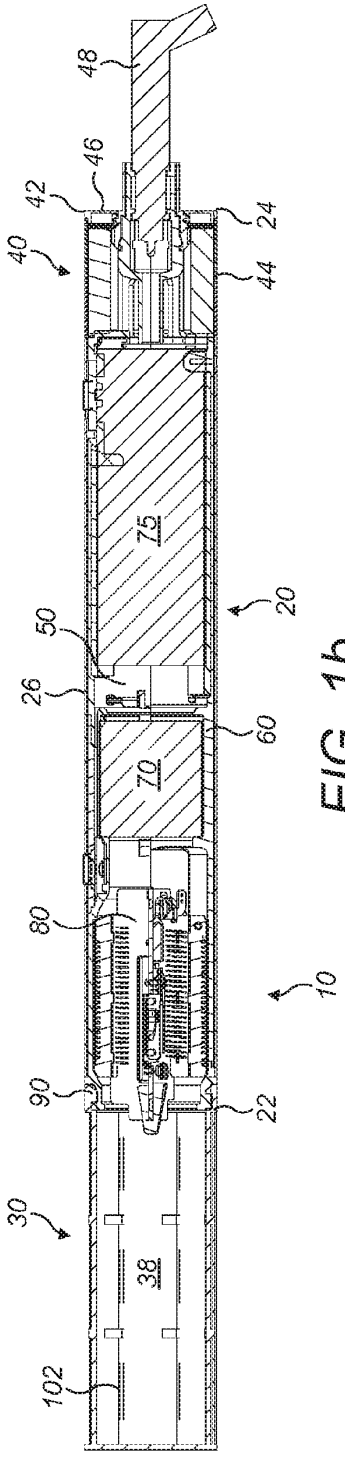



FIG. 1b

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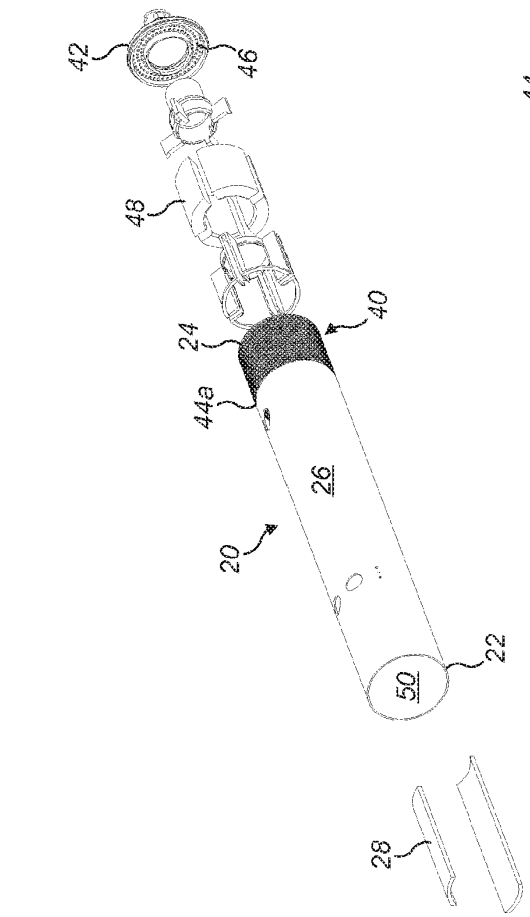



FIG. 2a

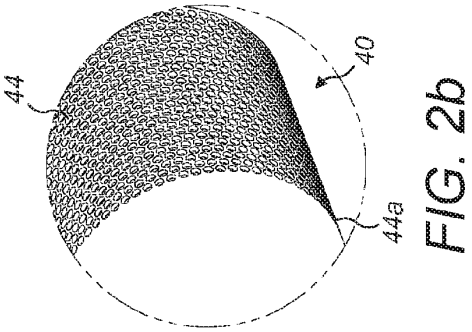
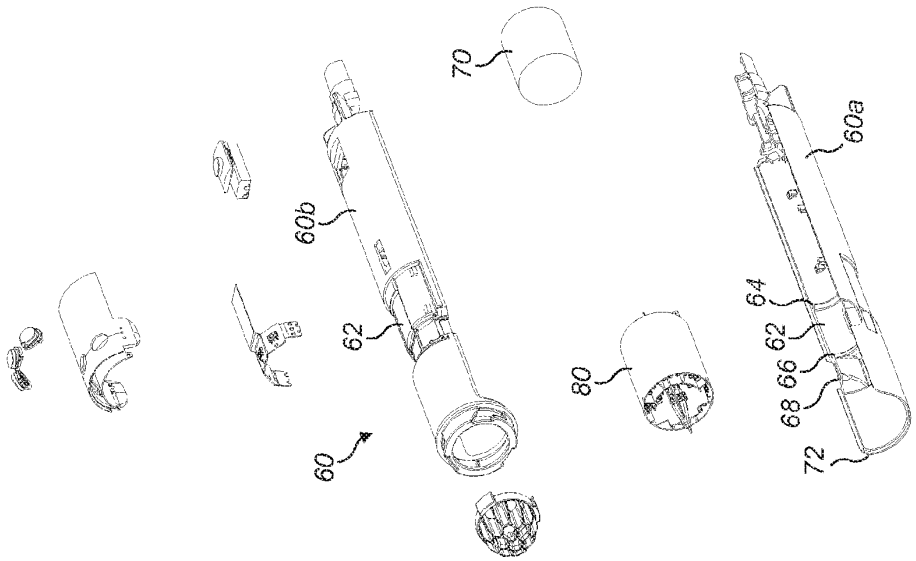



FIG. 2b



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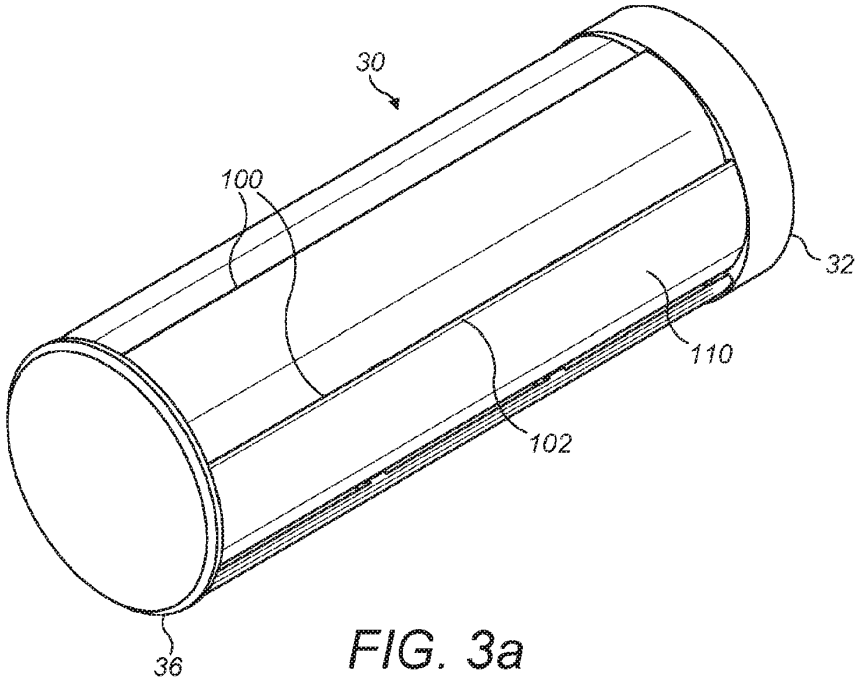



FIG. 3a

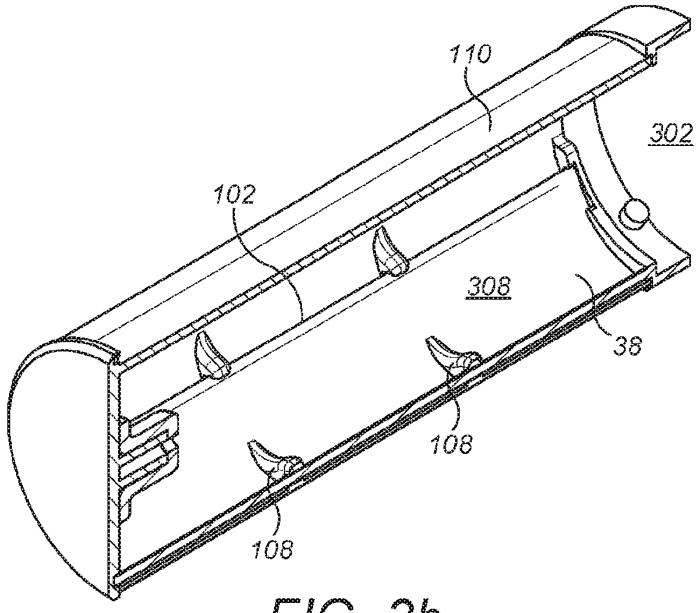



FIG. 3b

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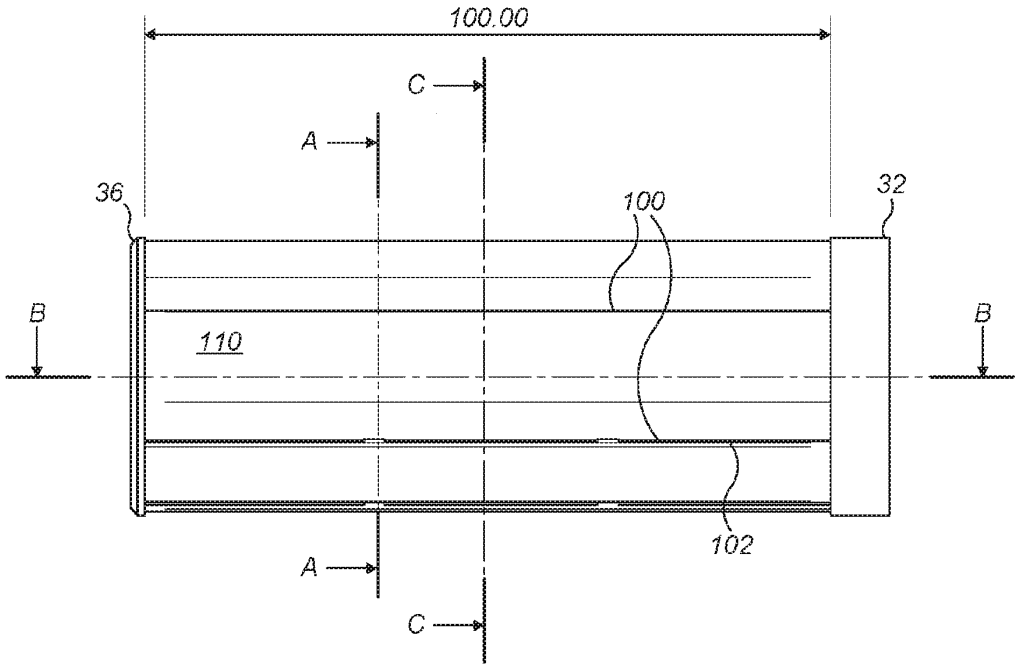



FIG. 4a

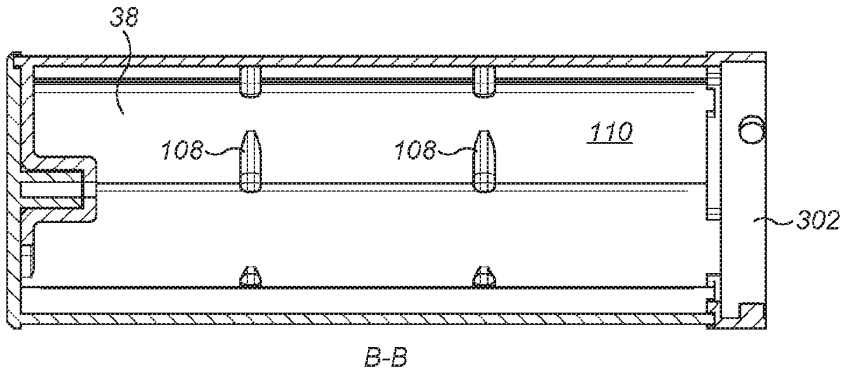



FIG. 4b

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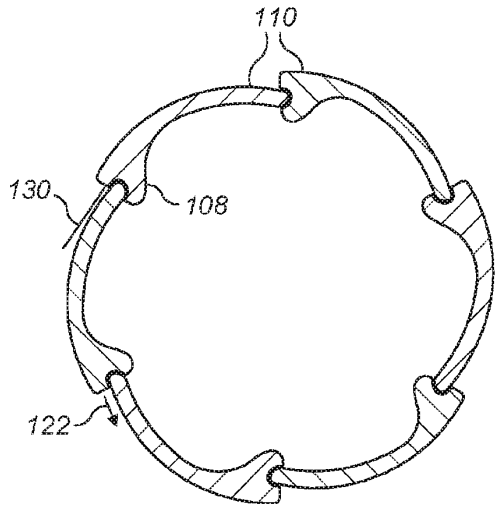



FIG. 5a

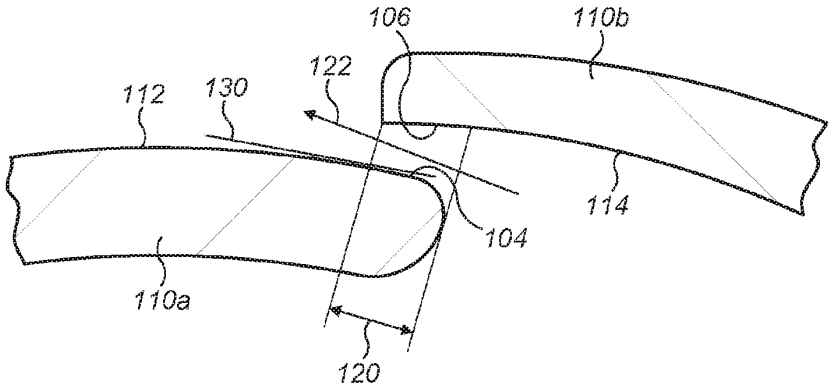



FIG. 5b

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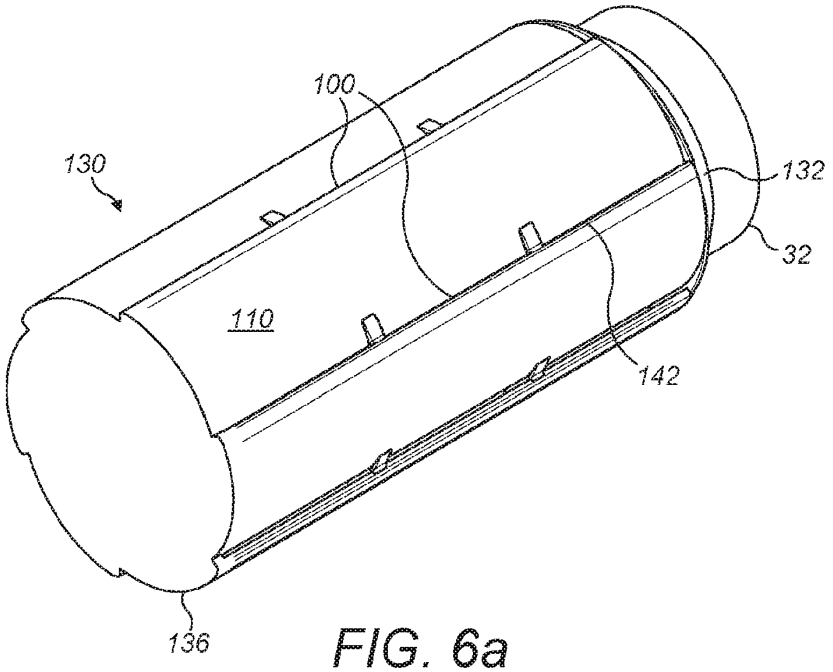



FIG. 6a

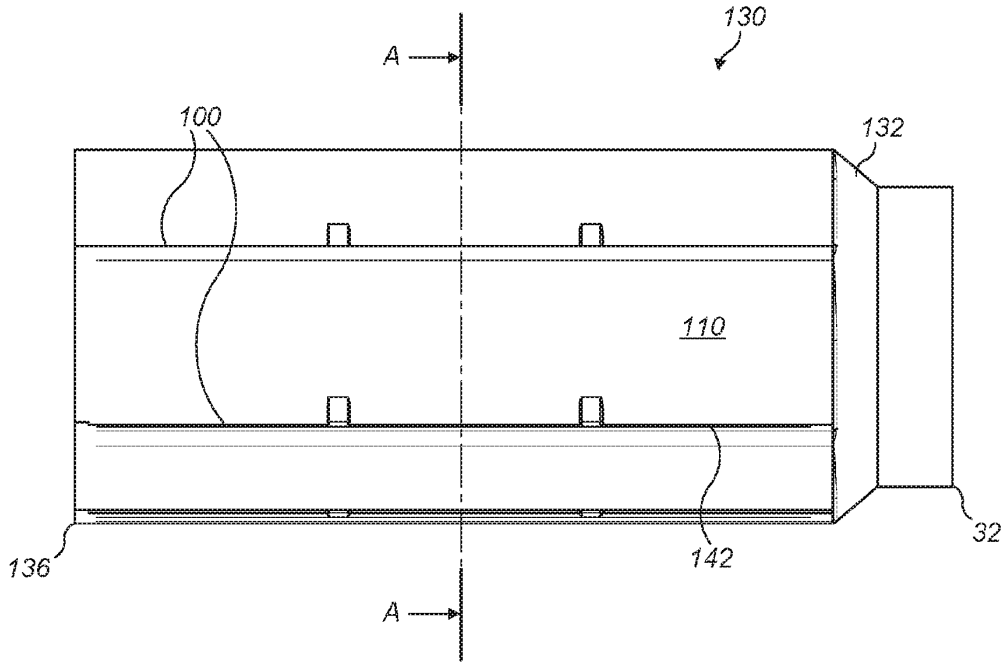



FIG. 6b

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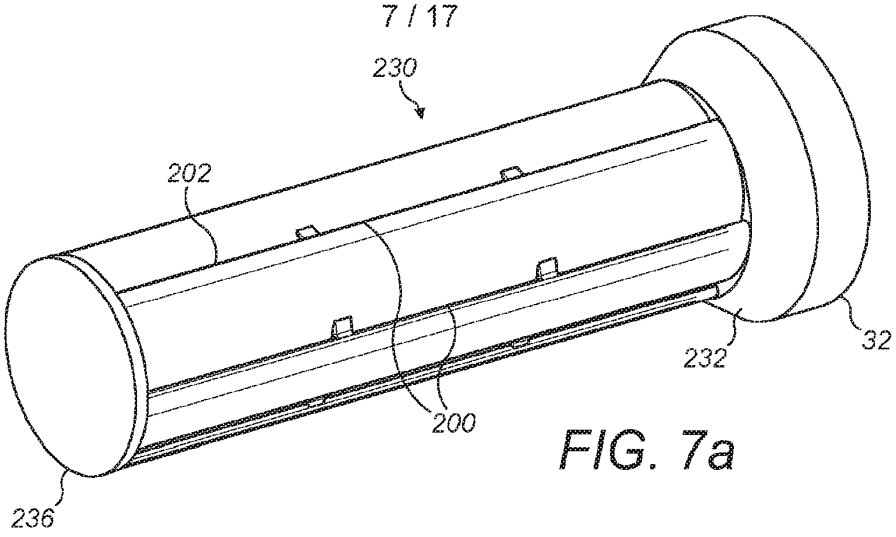



FIG. 7a

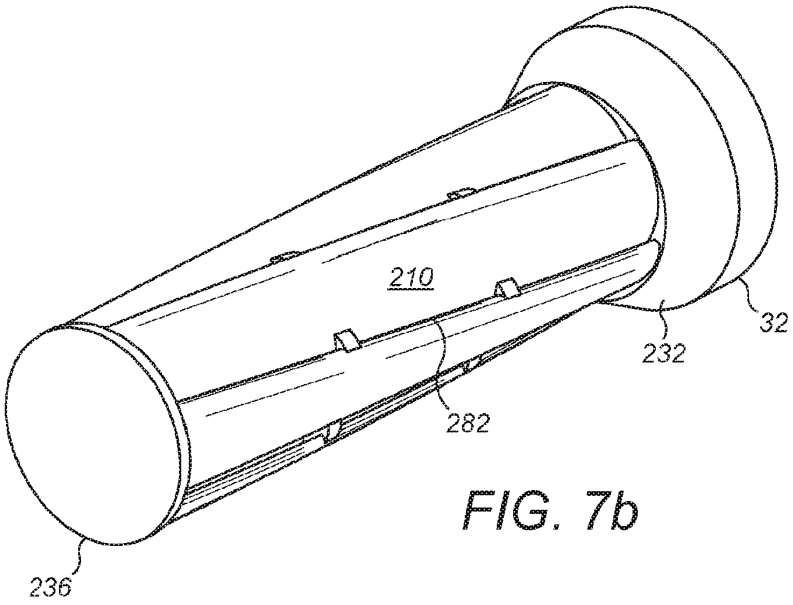



FIG. 7b

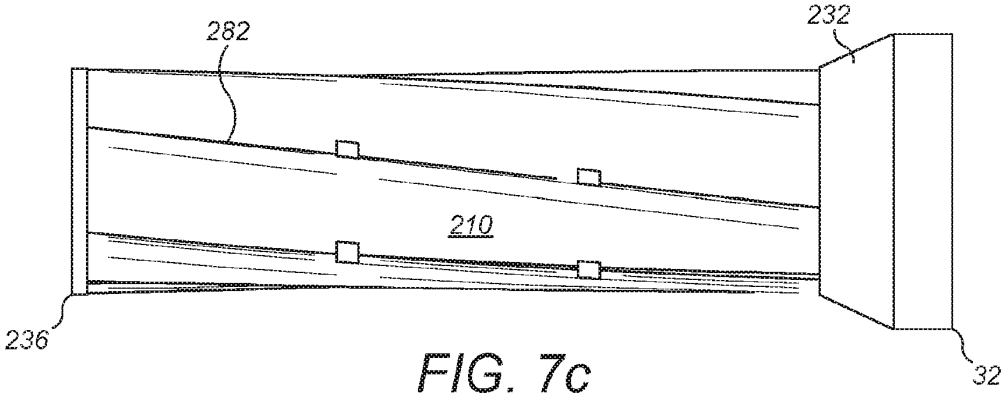



FIG. 7c

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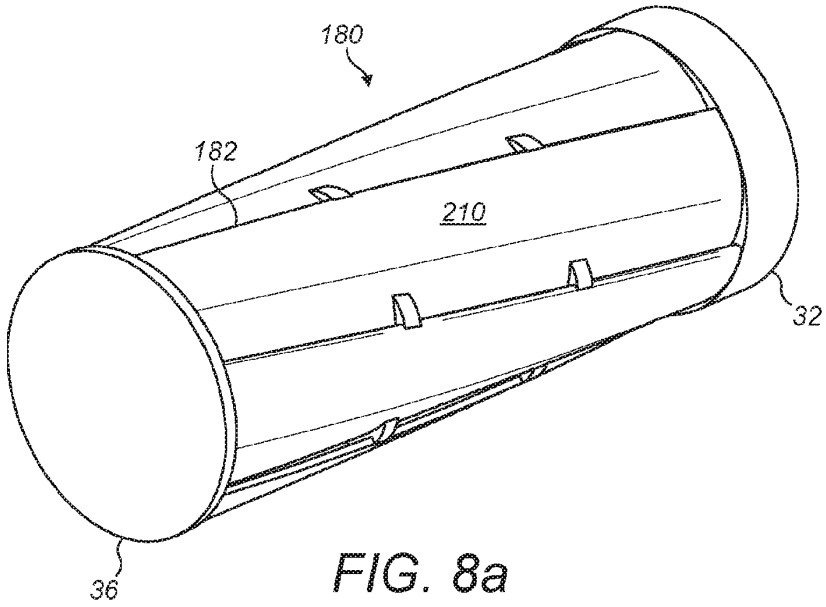



FIG. 8a

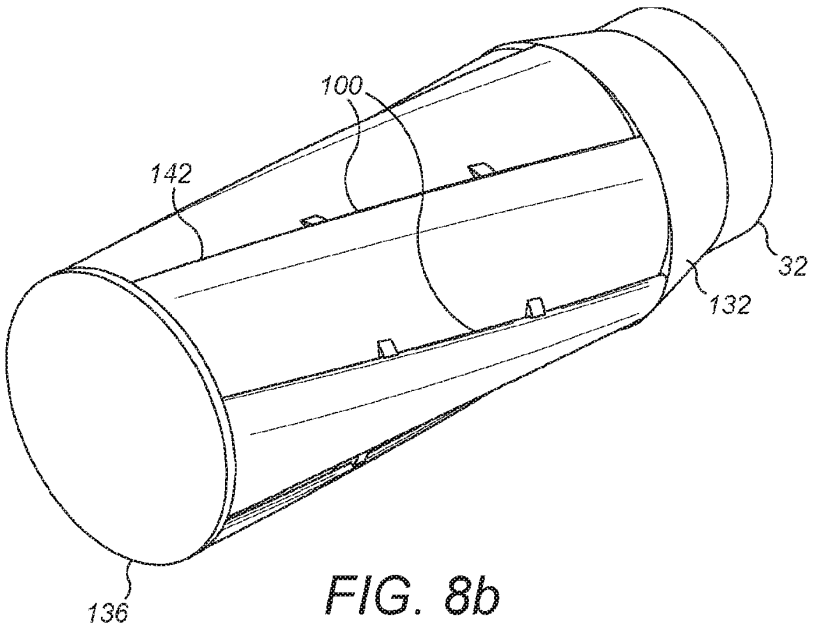



FIG. 8b

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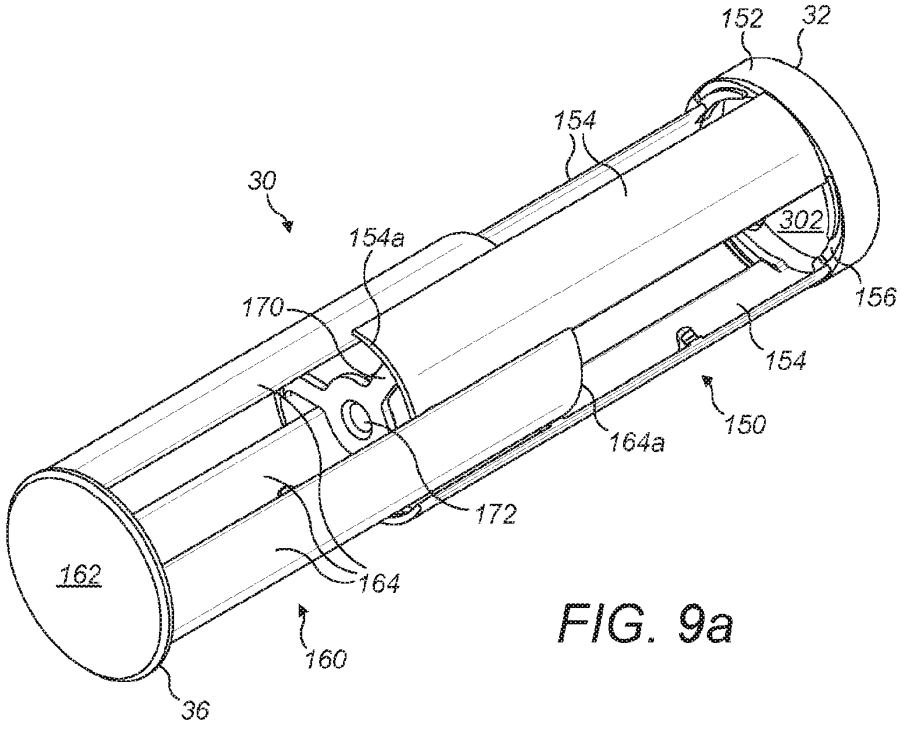



FIG. 9a

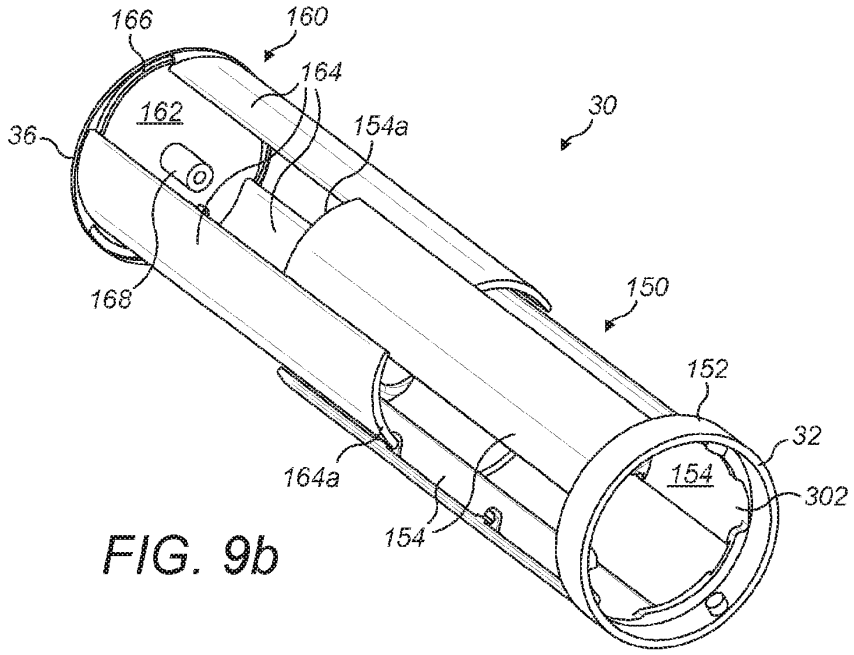



FIG. 9b

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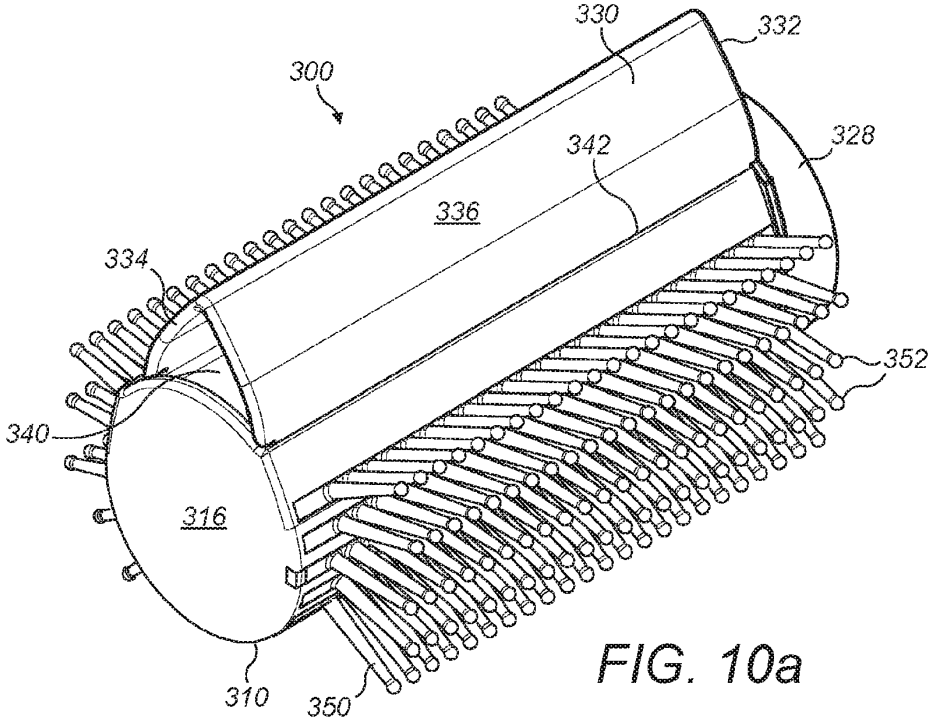



FIG. 10a

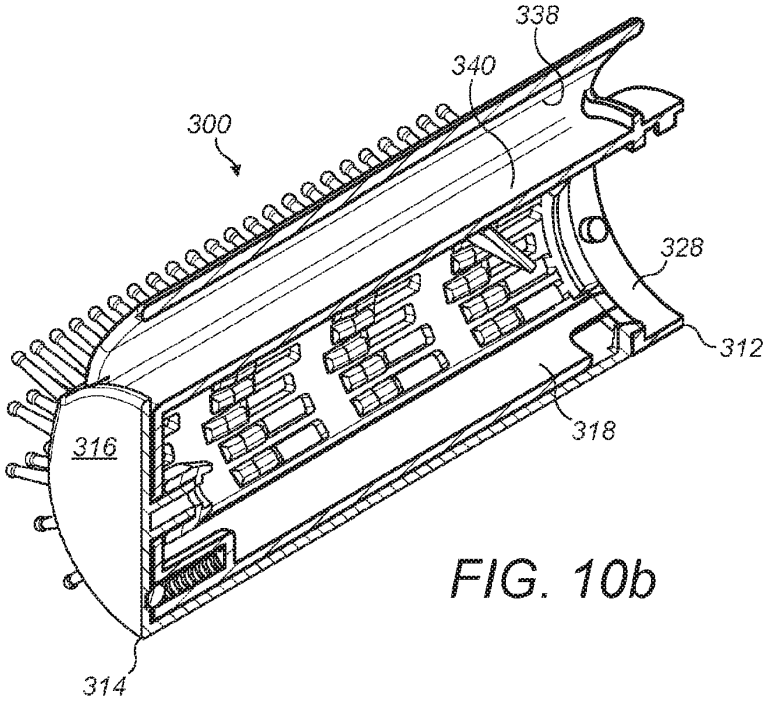



FIG. 10b

05 06 15

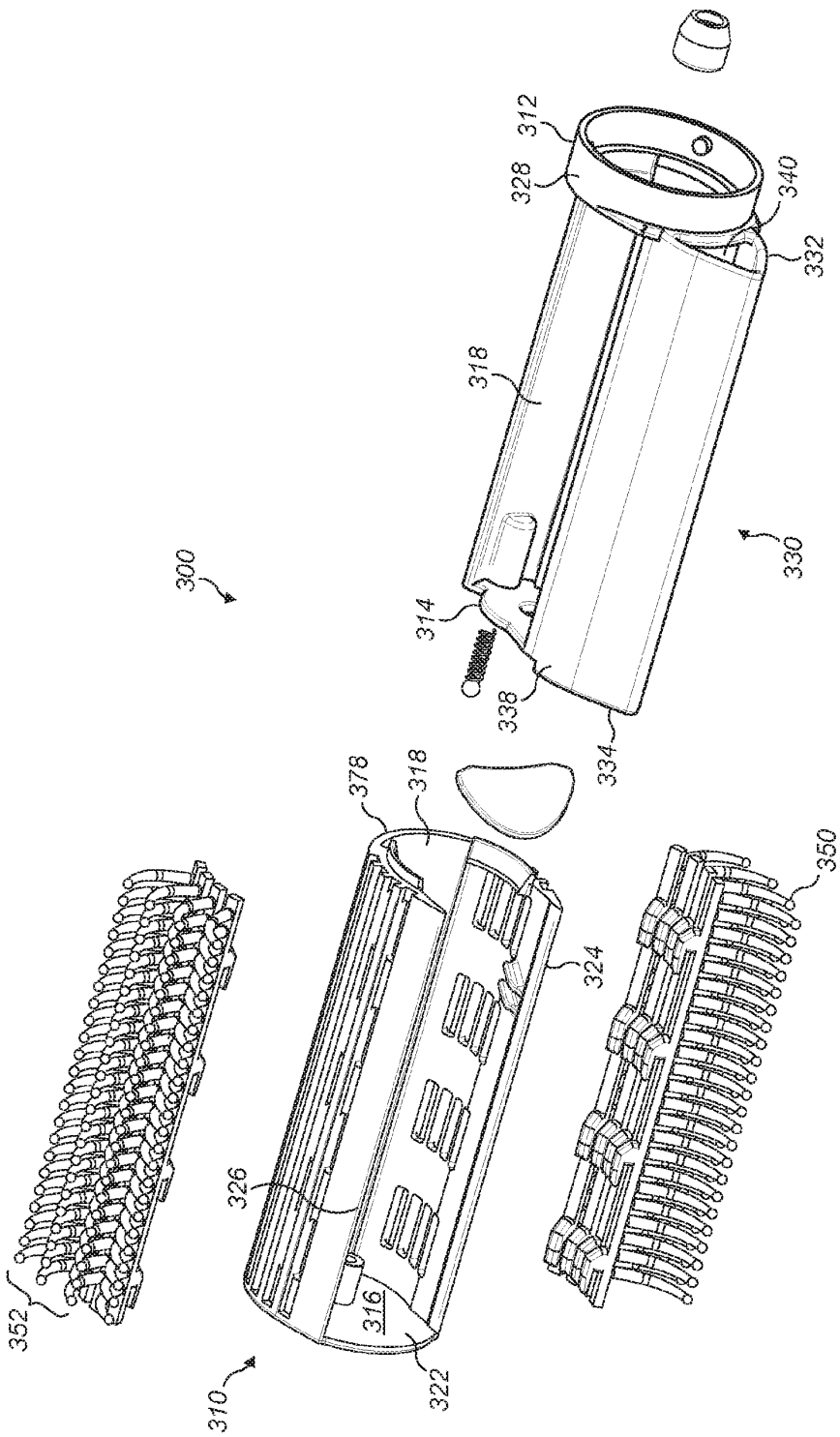



FIG. 11a

05 06 15

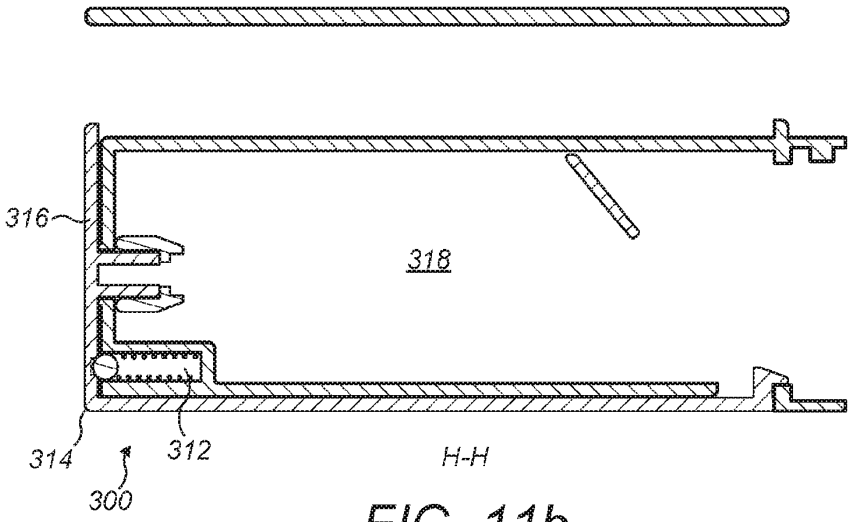



FIG. 11b

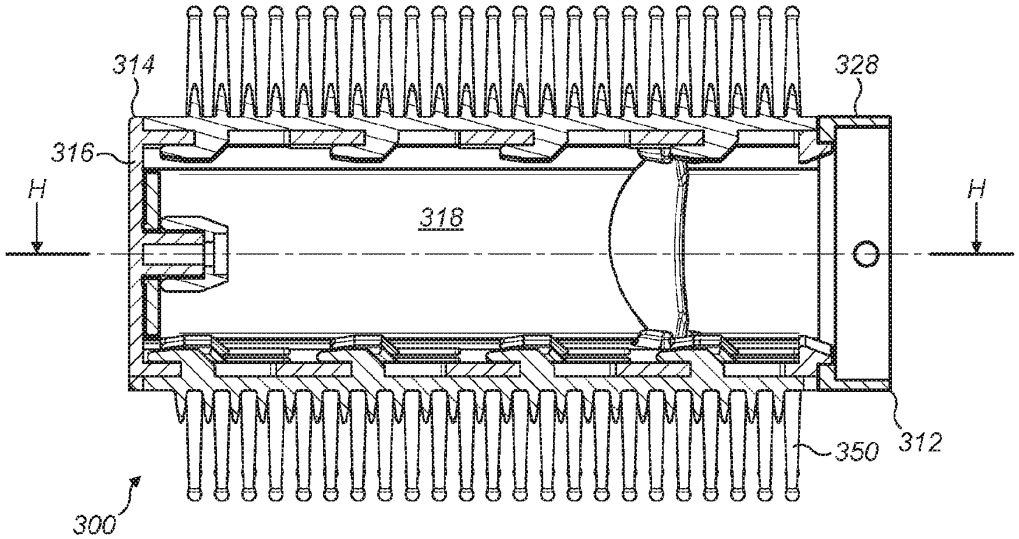



FIG. 11c

05 06 15

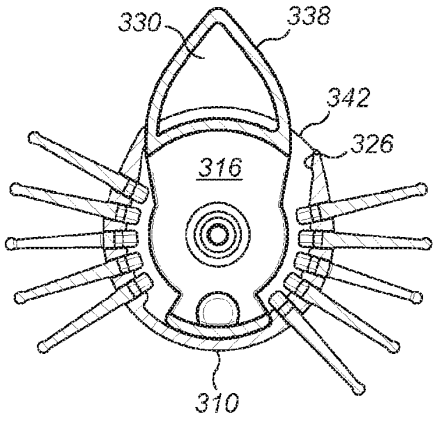



FIG. 12a

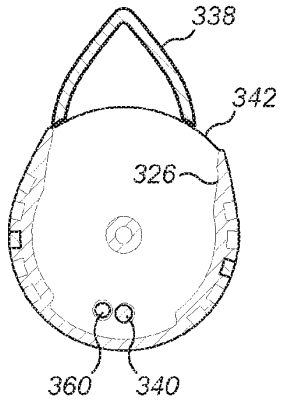



FIG. 12b

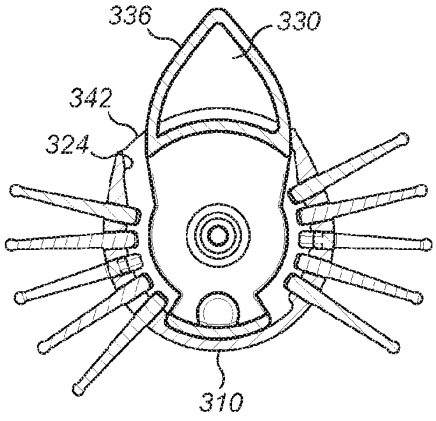



FIG. 13a

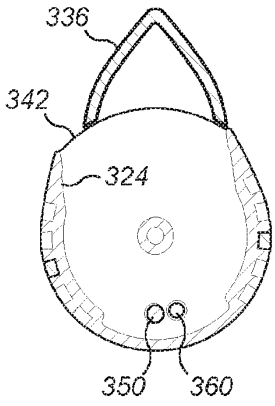



FIG. 13b

05 06 15

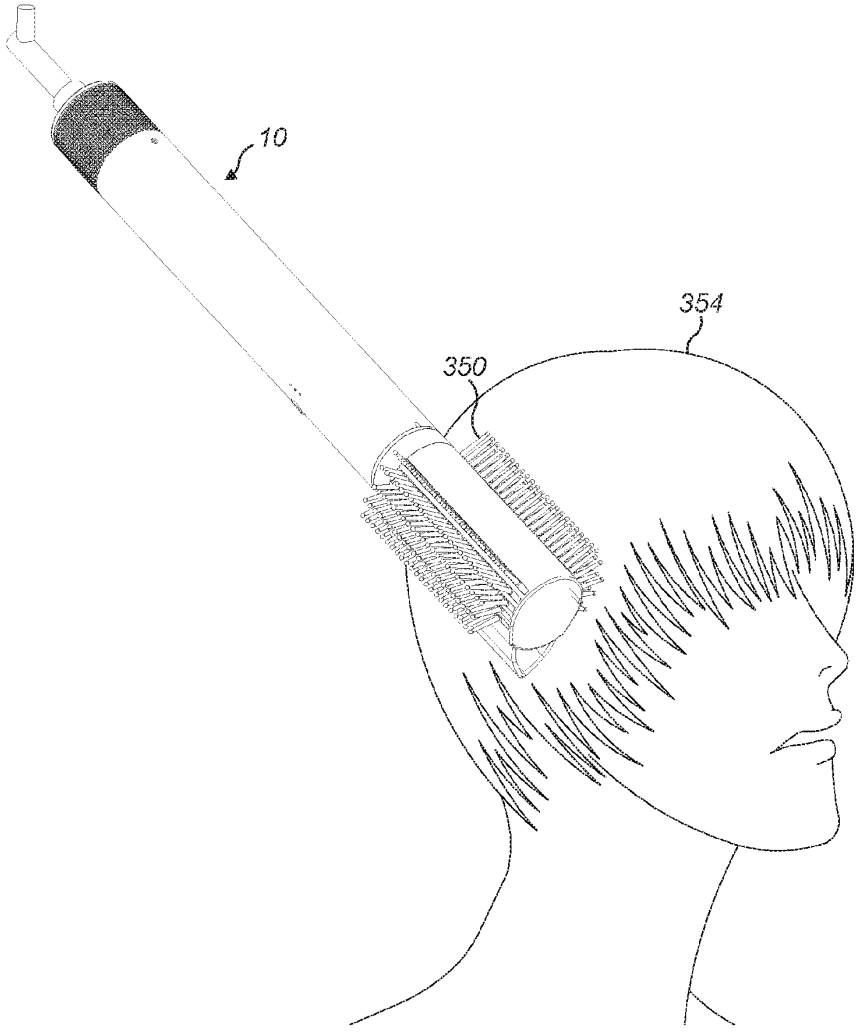



FIG. 14

05 06 15

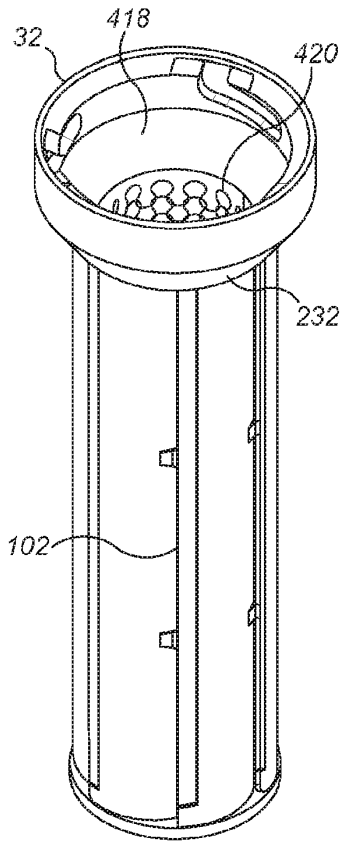



FIG. 15a

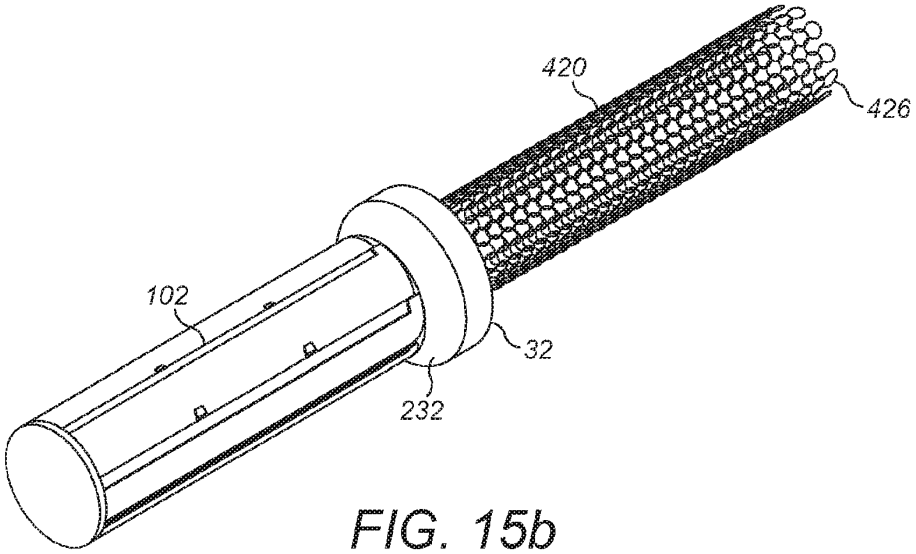



FIG. 15b

05 06 15

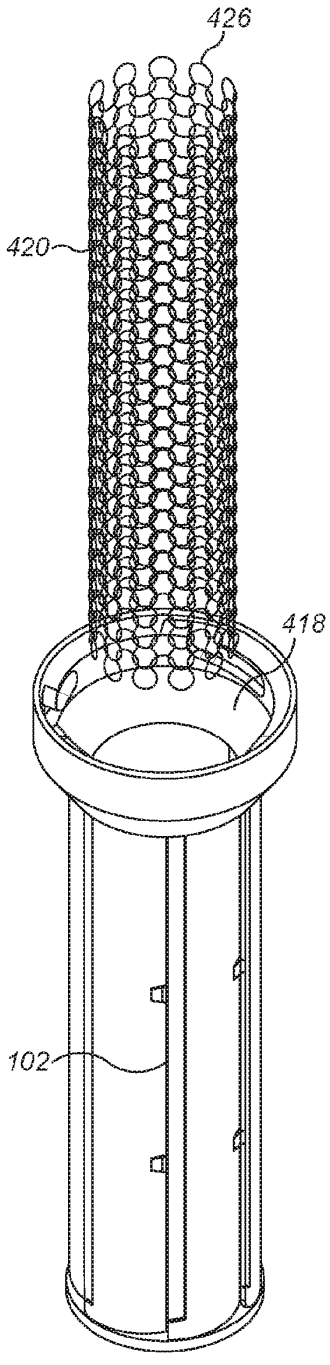



FIG. 15c

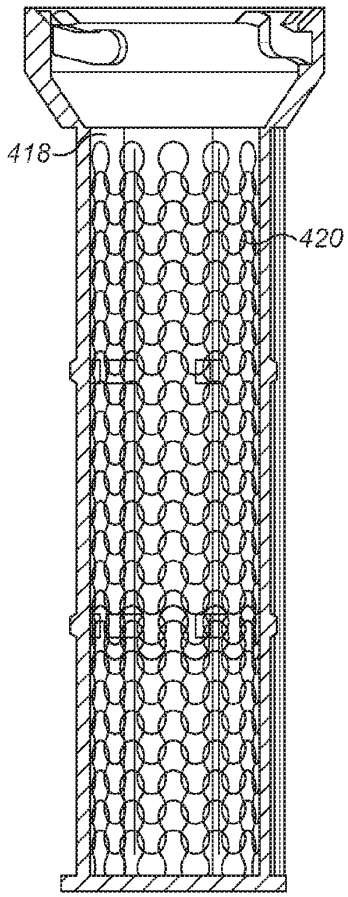



FIG. 15d

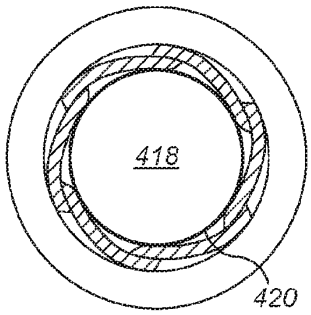



FIG. 15e

05 06 15

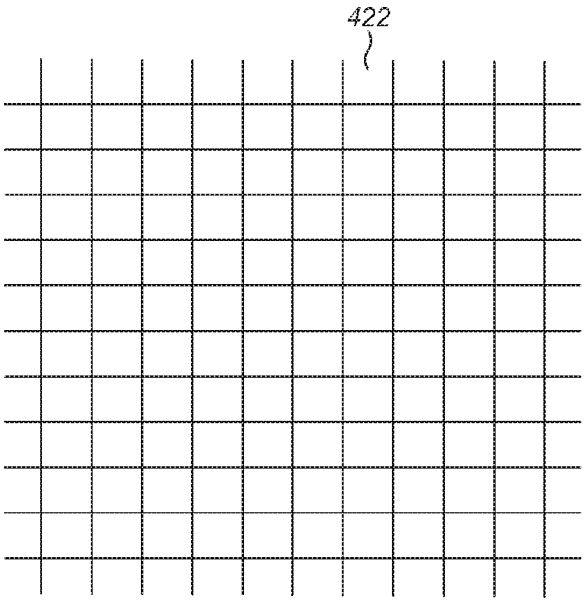



FIG. 16a

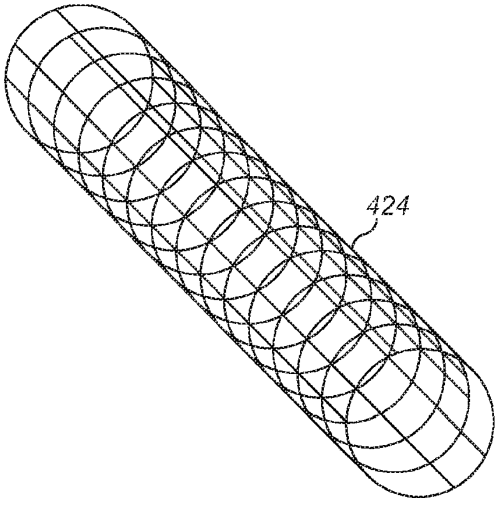



FIG. 16b

# Attachment for a Hand Held Appliance

This invention relates to an attachment for a hand held appliance, in particular a hair care appliance such as a hot styling brush.

In a conventional hot styling brush, air is sucked into an inlet by a fan unit and directed towards the hair by an attachment or head. Depending on the style desired, the air may or may not be heated The head or attachment often includes bristles onto which hair is wrapped and held for styling. The air is generally blown out of the head or attachment normal to the surface of the head.

The present invention provides an attachment for a hand held appliance comprising an inlet; an outlet; and a fluid flow path between the inlet and the outlet, wherein the outlet comprises at least one slot extending from near an inlet end of the attachment towards a distal end of the attachment and wherein the outlet is at least partially defined by an external surface of the attachment wherein fluid emitted from the outlet is blown along the external surface.

Preferably, the slot extends substantially along the length of the attachment.

It is preferred that the outlet comprises a plurality of slots radially spaced around the attachment.

Preferably, fluid emitted from the outlet flows around the external surface of the attachment. It is preferred that the fluid emitted from the outlet is tangential to the external surface of the attachment. Preferably, the fluid emitted from the outlet is attracted to the surface of the attachment.

By having the fluid exiting the fluid outlet travelling around the outer surface of the head hair is attracted to the surface and easily wraps around to create the style.

It is preferred that the attachment is generally cylindrical.

Preferably, the outlet comprises two slots.

It is preferred that the attachment has a longitudinal axis extending from the first end to the distal end and the at least one slot is parallel to the longitudinal axis.

Alternatively, the attachment has a longitudinal axis extending from the first end to the distal end and the at least one slot is non-parallel to the longitudinal axis. It is preferred that the at least one slot is helical with respect to the longitudinal axis.

A curved slot changes the direction that fluid flows out from the fluid outlet tending to give a flow that is more normal to the surface of the attachment and this improves the hold of the hair around the attachment.

Preferably, the attachment further comprises a flow directing element between the inlet and the outlet. The flow directing element also changes the direction that fluid flows out from the fluid outlet tending to give a flow that is more normal to the surface of the attachment and this improves the hold of the hair around the attachment. In addition, the flow directing element reduces the velocity of the fluid within the attachment which in turn reduces the noise produced by the attachment.

It is preferred that the flow directing element comprises a perforated layer. Preferably, the perforated layer is formed from a mesh or weave of an elongate material. It is preferred that the elongate material is a wire. Preferably, the flow directing element extends substantially along the length of the at least one slot. It is preferred that the flow directing element extends substantially around an inner circumference of the attachment.

According to a second aspect, the invention provides a hand held appliance comprising a handle having a fluid flow path from an inlet to an outlet and a fan unit for drawing fluid into the fluid inlet and an attachment for attaching to the handle, the attachment comprising an inlet; an outlet; and a fluid flow path between the inlet and the outlet, wherein the outlet comprises at least one slot extending from near an inlet end of the attachment towards a distal end of the attachment and wherein the outlet is at least partially defined by an external surface of the attachment and fluid emitted from the outlet is blown along the external surface.

In one embodiment the appliance is a hair care appliance.

In another embodiment the appliance is a hot styling brush.

The invention will now be described by example, with reference to the accompanying drawings, of which:

Figure 1a shows an example of an appliance according to the invention;

Figure 1b shows a cross section through the appliance shown in Figure 1a;

Figure 2a shows an exploded view of some of the handle components of the device of Figure 1a;

Figure 2b shows an enlarged section of the fluid inlet;

Figures 3a and 3b show an isometric view and an isometric cross section through a first attachment according to the invention;

Figures 4a and 4b show a side view and a side view cross section through the first attachment;

Figures 5a and 5b show cross sections through the first attachment;

Figures 6a and 6b show an isometric view and a side view through a second attachment;

Figure 7a shows an isometric view through another attachment;

Figures 7b and 7c show an isometric view and a side view through a further attachment;

Figure 8a shows an isometric view of a fifth attachment;

Figure 8b shows an isometric view of a sixth attachment;

Figure 9 shows a two part assembly for an attachment;

Figures 10a and 10b show an isometric view and an isometric cross section through a further attachment according to the invention;

Figures 11a, 11b and 11c show a side view and a side view cross sections through the further attachment;

Figures 12a and 12b show cross sections through the further attachment in a first position;

Figures 13a and 13b show cross sections through the further attachment in a second position;

Figure 14 shows schematically the further attachment in use; and

Figure 15a shows an isometric view of another attachment;

Figure 15b shows different component parts of the other attachment;

Figure 15c shows the different component parts from the inlet end;

Figure 15d shows a cross section through the side of the other attachment;

Figure 15e shows a cross section through the other attachment; and

Figures 16a and 16b show an alternative sock for the other attachment.

Figures 1a and 1b shows a hot styling brush 10 with a handle 20 and a detachable head or attachment 30 which is attaches at the distal end 22 of the handle 20 to the fluid inlet 40.

The handle 20 has an outer wall 26 which is generally tubular and includes the fluid inlet 40 at and adjacent one end 24. The fluid inlet 40 comprises a first set of apertures 44 which extend radially around the handle 20 and along the outer wall 26 of the handle from the handle end 24. The handle end 24 is covered by an end wall 42 which is also perforated with a second set of apertures 46 that extend through the end wall 42 of the handle. Thus, the fluid inlet 40 extends around, along and across the handle 20. The end wall 42 is orthogonal to the outer wall 26 and an inner wall 60 of the handle.

The handle 20 also includes a fan unit 70 which comprises a fan and a motor which drives the fan and in use, draws fluid in through the fluid inlet 40, along a fluid flow path 50 which extends through the length of the handle 20. The fluid is optionally heater by a heater 80 before entering an inner cavity 38 of the head 30.

The head 30 includes a fluid outlet 100 which in this example comprises parallel slots 102 each extending towards a second end 36 of the head and radially around the head 30. This arrangement enables fluid to exit the head all the way around the head and for

the majority of the length of the head 30 maximising a hair styling region of the product.

In use, hair is wrapped around the head 30 whilst air or fluid exits through the slots 102 drying the hair and/or styling the hair into curls or waves. The hair wraps automatically due to the flow of air around the surface of the head 30. The air or fluid can be heated but this is not essential.

Power is provided to the appliance via a power cable 48 which preferably extends from a plug or other power source through the end wall 42 of the handle 20. The handle 20 also houses a PCB 75 which is electrically connected to the cable 48, the fan unit 70 and the heater 80 by internal wiring (not shown). An on/off switch 52 and control buttons 54 are provided and connected to the PCB 75 to allow the user to select one of a range of temperature and flow settings.

Figure 2a shows an exploded view of various parts of the handle 20 in more detail. The handle 20 is tubular and the outer wall 26 of the handle 20 is a cylindrical sleeve made from for example an extruded tube or rolled sheet of metal such as aluminium, an aluminium alloy or a steel. The handle connects to a head 30 at a first end 22 and at the distal, second end 24 a fluid inlet 40 is provided. The fluid inlet 40 is a first means of filtering fluid that enters the fluid flow path 50.

The fluid inlet 40 comprises a plurality of apertures extending around, along and across the handle 20. Having an inlet that extends in three dimensions has advantages particularly when used with hair grooming appliances. Firstly, if the appliance is placed on a surface whilst switched on only a small part of the inlet surface area will be blocked or have restricted flow of fluid into the appliance. This protects the fan unit and particularly the motor of the fan unit from running with too low a flow rate as this can cause overheating of the motor and cause damage to the motor.

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Secondly, often hair care appliances are used with a styling product such as a mousse, gel or spray. These products are typically either applied by a hand or directly to the hair as a mist. After application by a hand, some of the product will be retained on the skin which is then transferred to the appliance when held. This can block at least some of the apertures 44 that extend around and along the handle 20. However, the apertures 46 that extend under the handle and across the end wall 42 of the handle will be unaffected. When a product is applied as a mist, it can settle on the appliance and again block or restrict at least some of the apertures of the fluid inlet 40. However, by having apertures that extend around, along and across the handle 20 the risk of blocking the fluid inlet 40 is reduced.

The apertures are preferably circular with a diameter of 0.2 to 1.6 mm. The diameter of the apertures can vary along, around and across the handle 20. It is advantageous to space the apertures regularly around, along and across the fluid inlet 40. Not only is this visually pleasing but it also has the technical advantage that there is no weak region of the fluid inlet 40 where blockage of a portion is more likely or would have more impact on the flow into the fluid inlet 40. The inlet is designed so that the flow into the inlet is even at least around the circumference of the handle 20.

A foam block 48 is provided which in use is inserted into the second end 24 of the handle 20. The foam block 48 is a second means of filtering the fluid that passes through the primary fluid inlet 40 into the primary fluid flow path 50. It is advantageous that the foam block 48 extends beyond or further towards the first end 22 of the handle than the primary fluid inlet 40 as this ensures that fluid that has entered the primary fluid inlet 40 has passed through the foam block 48 so has had two stages of filtration. In other words, the foam block 48 extends from the second end 24 of the handle 20 past the downstream end 44a of the fluid inlet.

The foam block 48 shown is cylindrical and substantially fills the area within the handle 20 at the primary fluid inlet 40. This is to ensure that all fluid that enters the primary fluid inlet through first apertures 44 that extend around and along the handle and fluid

that enters through second apertures 46 that extend across and through the end wall 42 of the handle 20 passes through this second stage of filtration. The foam block 48 extends longitudinally from the second end 24 of the handle 20 further than the first apertures 42 of the primary fluid inlet 40.

The first apertures 44 that extend along and around the outer wall 26 are machined, punched or laser cut from the extruded tube or sheet metal that the outer wall 26 is formed from.

The handle 20 has an outer wall 26 and an inner wall 60, the outer wall 26 slides over the inner wall 60 to form the finished product. The inner wall 60 is a duct which surrounds and defines a fluid flow path 50 through the appliance. The outer wall 26 includes a grippable portion and in these examples, includes the fluid inlet 40 into the fluid flow path 50. An insulting layer of material 28 is provided within the inner wall 60. The insulating layer is a foam or a felt and insulates the handle from noise produced by the fan unit 70, heat produced by the operation of the appliance, vibrations caused by the fan unit and noise produced within the appliance by the flow of fluid through the fluid flow path 50. The insulating layer absorbs energy including airborne noise.

The inner wall 60 provides a housing 62 in which a fan unit 70 is disposed. The housing 62 is cylindrical and has an inwardly protruding ledge 64,66 disposed one at each end of the housing 62 which maintain the position of the fan unit 70 within the handle 20. The inner wall 60 is made from two parts a first part 60a and a second part 60b which is moulded separately. This enables easier assembly of the fan unit 70 within the handle 20 than a one piece inner wall. A similar pair of inwardly protruding ledges 68, 72 maintains the position of the heater 80 within the handle 20.

Although the outer wall 26 of the handle 20 has been described as being made from an extruded tube or a rolled sheet of metal, alternatives methods of manufacture and materials could be used; these include, but are not limited to, a plastic extrusion/moulded tube or a composite tube such as carbon fibre reinforced plastic.

The fluid outlet 100 of the head 30 will now be described in more detail, referring in particular to Figures 3a, 3b, 4a, 4b, 5a and 5b. The head 30 is essentially cylindrical and has a first end 32 for connection to a handle 20 and a second end 36 distal to the first end 32. The head 30 extends longitudinally from the first end 32 to the second end 26 continuing a line described by the handle 20 (Figure 1a) so is approximately the same diameter as the handle. Within the head 30 is an inner cavity 38 and fluid that has been drawn into the fluid flow path 50 within the handle 20 by the fan unit 70 enters the inner cavity 38 via an aperture 302 in the first end 32 of the head 30.

The fluid outlet 100 is formed from a number of parallel slots 102 which extend along the length of the head 30 from the first end 32 to the second end 36. The slots 102 are formed from an overlap 120 (Figure 5b) formed between adjacent plates 110 which results in fluid being directed between a radially inner surface 104 formed from the outer surface 112 of a first plate 110a and a radially outer surface 106 formed from the inner surface 114 of a second plate 110b. The fluid 122 flowing out of the slot 102 is tangential 130 to the outer surface 112 of the plate 110a and joins with the fluid flowing out of the other slots of the fluid outlet 100 forming a fluid flow around the circumference of the head 30. Thus, the fluid 122 is blown out along the external surface of the head and this encourages hair to wrap around the head 30 automatically.

The fluid 122 exiting the slots 102 is attracted to the curved surface of the head 30 by the Coanda effect. This in turn causes hair that is presented to the head 30 to automatically wrap around the surface and then styled into curls. As air is blown down the length of the hair, wet hair is dried more quickly than conventionally and as the wrapping process occurs without the use of bristles, the hair can slide off the head 30 once it is dry or styled so there is no tangling.

To maintain the size of each slot 102, spacers 108 are provided. In this example, a pair of spacers 108 is provided to maintain each slot 102 size. Each one of the pair of

spacers 108 is longitudinally spaced along the slot 102 and the plate 110. The spacers 108 join adjacent plates 110 together.

Advantageously, each plate 110 is lined with a felt like material 308 such as Kevlar or wool (see Figure 3b). The material 308 does not extend over each slot 102 so the fluid exiting the fluid outlet 100 does not pass through the layer of material 308. This layer serves to absorb some of the noise produced by the fluid flowing through the head 30 from the inlet to the head 30 at aperture 302 to the fluid outlet 100. Such a layer of material 308 is as applicable for other heads herein described such as heads 130, 180 and 230.

Figures 6a and 6b show an alternative head 130, all features identical to those previously described have the same reference numerals. The head 130 has a larger diameter than the handle 20 so is used to create larger curls. The head 130 has a first end 32 for connection to the handle 20 and this is the same diameter as the handle 20, within a collar 132 of the head 130, the diameter of the head 130 increases to the larger diameter prior to the fluid outlet 100 formed by slots 142 and then continues at a constant diameter to the second end 136. An inner fluid cavity (not shown) is larger than for the head 30 of Figure 3a. In this example the number of plates 110 and slots 102 is the same i.e. six as for the head described with respect to Figure 3a. Alternatively, a larger or smaller number of plates 110 and slots 142 could be used.

Figure 7a shows a further head 230. This head 230 has a reduced diameter compared with the handle 20. The first end 32 is substantially the same diameter as the handle 20 for connection thereto, and then within a collar 232 the diameter of the head 230 decreases to the reduced diameter prior to the fluid outlet 200 formed by slots 202 and continues at a constant diameter to the second end 236. This head 230 is used to create tighter curls.

The slots 202 for this head extend longitudinally straight from the first end 32 to the second end 236 as was the case for slots 102 in heads 30, 130.

In another embodiment, as shown in Figures 7b and 7c, a further head 280 has slots 282 which curve around the head 280 forming a spiral or helical pattern around the head 230. The slots 282 curve by an angle $\alpha$ of 45° from the longitudinal axis A-A of the handle 20 and head 280. In this example the slots 282 curve in a clockwise direction from the first end 34 of the head 280 towards the second end 236 of the head. The slots 282 are formed as before between adjacent overlapping plates 210 however, in order to form the curved slots 282, the plates 210 do not extend along the longitudinal axis of the head 280 but also curve by an angle of 45°. Using angled slots changes the profile of the fluid exiting from the head. The airflow exiting from the slots is more normal to the slot when angled slots are used. This has benefits including enabling more hair to be wrapped around the head also, the hair is retained on the head more easily leading to a potentially quicker styling process.

The slots can be curved in a clockwise or and anticlockwise direction from the longitudinal axis A-A of the handle 20. Whilst an angle of 45° has been illustrated, improved wrapping is seen even at an angle of 1°.

Figure 8a shows a head 180 which is substantially the same diameter as the handle 20. The slots 182 are curved or spiral around the head 180 in the same manner as head 280.

Figure 8b shows a head 380 which has a larger diameter than the handle, and is similar to head 130 except it has curved or spiralling slots 382 around the head 380.

Figures 9a and 9b show a way of assembling head 30. A first part 150 is formed from the first end 32 and has a collar 152 and a first set of plates 154 which are joined to or formed integrally with the collar 152. A second part 160 is formed from the second end 36 and has an end wall 162 and a second set of plates 164 which are joined to or formed integrally with the end wall 162. The first set of plates 154 and second set of plates 164 each comprise non-adjacent plates 110 enabling the first part 150 and the second part 160 to be slotted together to form the head 30. Between each of the first set of plates

154, a recess 156 is provided in the connecting ring 152 adapted to accommodate the distal end 164a of the second set of plates 164 from the end wall 162. A similar set of recesses 166 is provided in the end wall 162 and is adapted to accommodate the distal end 154a of the first set of plates from the collar 32.

In order to retain the first part 150 and the second part 160 of the head 30 in the assembled condition, a protruding screw hole 168 is provided. Near the distal end 154a of the first set of plates 154 a support scaffold 170 is provided and this has two functions. A first function is to support the first set of plates 154 and maintain their relative positions towards the distal end 154a and a second function is to provide part of the fixing mechanism. In this example, the support scaffold 170 has a central aperture 172 through which the protruding screw hole 168 passes on assembly of the head 30a and a screw, for example can be inserted to fix the two parts 150, 160 of the head together.

Figures 15a, 15b, 15c, 15d and 15e show a head 400 all features identical to those previously described have the same reference numerals. This head 400 has a reduced diameter compared with the handle 20. The slots 102 extend longitudinally from the first end 32 to the second end 236, however the slots could be curved as described with respect to Figures 7a and 7b.

Internal of the head 400, within the cavity 418 formed within the head 400, an internal sock 420 is provided. This sock 420 is a mesh formed from a metal wire. The sock 420 can be in the knitted form 426 shown in Figure 15b. Alternatively as shown in Figures 16a and 16b the sock 420 is a tube 424 formed from a woven mesh 422 having generally square apertures.

The sock 420 diffuses the fluid flowing in the cavity 418 within the head 400 and slows down the longitudinal velocity of the flow. This results in more even wrapping of hair around the head 400 as the direction of fluid exiting the head 400 is more normal to the slots 102. The sock 420 extends along the length of the slots 102 within the head 400.

The size of the apertures in the mesh is important; if they are too small the flow becomes too restricted and there is an increased chance of them clogging over time. An aperture size of around 1.6mm has been found to provide the benefit without undue restriction.

Figures 10a, 10b, 11a-11c and 12 show various views of another head 300 which has a directed fluid flow. The head 300 has a first cylindrical part 310 and a second triangular part 330 that together form the fluid outlet 320.

The second triangular part 330 has a first end 312 for connection to a handle 20 via a collar 328 and extends longitudinally to a second end 314 The first cylindrical part 310 has an aperture 322 extending from a first end 378 to a second end which is defined by end wall 316. The aperture 322 is defined by a first edge 324 and a second edge 326. . An inner cavity 318 is formed within the head 300 when the second triangular part 330 is slid into the first cylindrical part 310. The first end 278 of the first cylindrical part 310 abuts a downstream end of the collar 328 and the second end 314 of the second triangular part 330 abuts the end wall 316 when the attachment is formed.

The second triangular part 330 has a first end 332 and a second end 334 and is formed from a first side 336, a second side 338 and an internal wall 340. The second triangular part 330 fits within the aperture 322 and extends outwardly beyond the first cylindrical part 310.

The second triangular part 330 is movable relative to the first cylindrical part 310. In this example, the second triangular part 330 is fixed with respect to the handle 20 and the first cylindrical part 310 is moveable relative to both the second triangular part 330 and the handle 20. This enables the outlet slot 342 to be partially defined by one or the other of the first edge 324 and the second edge 326.

In one position, referring now to Figures 12a and 12b, the first edge 324 along with a first side 336 of the second triangular part 330 define the limits of the outlet slot 342.

The second triangular part 330 moves with respect to the first cylindrical part 310 so the outlet slot 342 is alternatively defined by the second edge 326 and the second side 338 as shown in Figures 13a and 13b.

The second triangular part 330 rotates with respect to the first cylindrical part 310 in order to change the position of the outlet slot 342. The first cylindrical part 310 is temporarily retained in a position by the use of a detent mechanism.

The end wall 316 of the first cylindrical part 310 includes a first recess 340 and a second recess 350 each of which adapted to partially accommodate a ball bearing 360. The ball bearing 360 is biased towards the end wall 316 by a spring 362 (see Figure 11b). There are a number of suitable alternatives that could be used instead of this method of retaining one part with respect to the other part such as a plastic bump feature or a piece of sprung metal.

Referring now to Figures 12a and 12b, when the second triangular part 330 is in a first position with respect to the first cylindrical part 310, the outlet slot 342 is formed from first side 336 and first edge 324 and the ball bearing 360 is accommodated by the first recess. By manually rotating the second triangular part 330 with respect to the first cylindrical part 310 the force of the spring 362 retaining the ball bearing 360 within the first recess 340 is overcome and the second triangular part 330 can be rotated with respect to the first cylindrical part 310 to move the ball bearing 360 into the second recess 350 and changing the position of the outlet slot 328 so it is now formed from the second edge 326 and the second side 338.

The first cylindrical part 310 includes bristles 350 arranged in this example in parallel rows 352 on either side of the aperture 322. The rows 352 of bristles 350 extend from near the outlet slot 342 around the head 300 but in this example the bristles 350 do not extend all the way around the head 300, there is a gap in the rows 352 diametrically opposite the outlet slot 320.

Referring now to Figure 14, when hair 354 is being styled, the action of drawing the bristles 350 down through the hair 354 opens the outlet slot 342 on the side next to the hair 354. The position of the outlet slot 342 is movable by hand or by the friction or force of combing through the hair.

The use of a combination of a directed outlet slot 342 and bristles 350 means that the hair is dried and/or styled more quickly than conventionally as the fluid exiting from the outlet slot 342 is blown down the hair 354. The fluid exiting the outlet slot 342 is attracted to the surface of the second triangular part 330 which in turn attracts the hair 354 to the second triangular part 330. The bristles 350 separate and detangle individual strands of the hair 354 and this combination gives fast drying and a smother result.

In use as shown in Figure 14, this head is designed to be pulled through the hair with the slot 328 adjacent the hair 354. Fluid is blown out of the slot 328 as the appliance is moved along the hair 354 so the hair is both heated and brushed. Having the slot 328 on either side of the head 356 means that the same head 300 can be used for both sides of the head and both the underside and the topside of the hair 354.

In each of the examples given, the head 30, 130, 180, 230, 300 in connected to handle 20 via a collar and a twist lock joint. Referring to Figure 7b, three protrusions 234 are provided on the internal surface of the collar 232 (one not shown). The protrusions 234 are adapted to engage a slot 90 (see Figure 1b) or three separate slots provided near the distal end 22 of the handle 20. The slot 90 extends at least partially around an outer surface of the inner wall 60 and is helical so both a rotational and longitudinal movement is required to attach or remove the head from the handle 20. This is one example of a fixing mechanism, it will be apparent to the skilled person that other equally acceptable alternative mechanisms could be used.

The heads 30, 130, 180 and 230 described with respect to Figures 3a to 9 could be provided with bristles. For these heads 30, 130, 180 and 230 as the slots are arranged all the way around the head, any bristles would be arranged all the way around the head.

An example would be to have one or more rows of bristles at least located on every other plate 110, 210.

The invention has been described in detail with respect to a hot styling brush however, it is applicable to any appliance that draws in a fluid and directs the outflow of that fluid from the appliance including a hairdryer.

The appliance can be used with or without a heater; the action of the outflow of fluid at high velocity has a drying effect.

The heads have been described as being manufactured by attaching a first part to the second part using a screw however, as the skilled person will be aware, a number of different fixing methods can be used such as, but not limited to gluing or using ultrasonic welding.

The fluid that flows through the appliance is generally air, but may be a different combination of gases or gas and can include additives to improve performance of the appliance or the impact the appliance has on an object the output is directed at for example, hair and the styling of that hair. Such additives include but are not limited to hairspray and serums for example.

The heads 30, 130, 230 are all generally cylindrical in shape, however as the skilled person would realise, alternative shapes could be used such as ovals.

The invention is not limited to the detailed description given above. Variations will be apparent to the person skilled in the art.

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**CLAIMS**

1. An attachment for a hand held appliance comprising an inlet; an outlet; and a fluid flow path between the inlet and the outlet, wherein the outlet comprises at least one slot extending from near an inlet end of the attachment towards a distal end of the attachment and wherein the outlet is at least partially defined by an external surface of the attachment wherein fluid emitted from the outlet is blown along the external surface.

2. An attachment according to claim 1, wherein the slot extends substantially along the length of the attachment.

3. An attachment according to claim 1 or claim 2, wherein the outlet comprises a plurality of slots radially spaced around the attachment.

4. An attachment according to any preceding claim, wherein fluid emitted from the outlet flows around the external surface of the attachment.

5. An attachment according to claim 4, wherein the fluid emitted from the outlet is tangential to the external surface of the attachment.

6. An attachment according to claim 4 or claim 5, wherein the fluid emitted from the outlet is attracted to the surface of the attachment.

7 An attachment according to any preceding claim, wherein the attachment is generally cylindrical.

8. An attachment according to any preceding claim, wherein the outlet comprises two slots.

9. An attachment according to any preceding claim, wherein the attachment has a longitudinal axis extending from the first end to the distal end and the at least one slot is parallel to the longitudinal axis.

10. An attachment according to any of claims 1 to 8, wherein the attachment has a longitudinal axis extending from the first end to the distal end and the at least one slot is non-parallel to the longitudinal axis.

11. An attachment according to claim 10, wherein the at least one slot is helical with respect to the longitudinal axis.

12. An attachment according to any preceding claim, further comprising a flow directing element between the inlet and the outlet.

13. An attachment according to claim 12, wherein the flow directing element comprises a perforated layer.

14. An attachment according to claim 13, wherein the perforated layer is formed from a mesh or weave of an elongate material.

15. An attachment according to claim 14, wherein the elongate material is a wire

16. An attachment according to any of claims 12 to 15, wherein the flow directing element extends substantially along the length of the at least one slot.

17. An attachment according to any of claims 12 to 16, wherein the flow directing element extends substantially around an inner circumference of the attachment.

18. A hand held appliance comprising a handle having a fluid flow path from an inlet to an outlet and a fan unit for drawing fluid into the fluid inlet and an attachment for attaching to the handle, the attachment comprising an inlet; an outlet; and a fluid

flow path between the inlet and the outlet, wherein the outlet comprises at least one slot extending from near an inlet end of the attachment towards a distal end of the attachment and wherein the outlet is at least partially defined by an external surface of the attachment and fluid emitted from the outlet is blown along the external surface.

19. An appliance according to claim 18, wherein the slot extends substantially along the length of the attachment.

20. An appliance according to claim 18 or claim 19, wherein the outlet comprises a plurality of slots radially spaced around the attachment.

21. An appliance according to any of claims 18 to 20, wherein fluid emitted from the outlet flows around the external surface of the attachment.

22. An appliance according to claim 21, wherein the fluid emitted from the outlet is tangential to the external surface of the attachment.

23. An appliance according to claim 21 or claim 22, wherein the fluid emitted from the outlet is attracted to the surface of the attachment.

24. An appliance according to any of claims 18 to 23, wherein the attachment is generally cylindrical.

25. An appliance according to any of claims 18 to 24, wherein the outlet comprises two slots.

26. An appliance according to any of claims 18 to 25, wherein the attachment has a longitudinal axis extending from the first end to the distal end and the at least one slot is parallel to the longitudinal axis.

27. An appliance according to any of claims 18 to 26, wherein the attachment has a longitudinal axis extending from the first end to the distal end and the at least one slot is non-parallel to the longitudinal axis.

28. An appliance according to claim 27, wherein the at least one slot is helical with respect to the longitudinal axis.

29. An appliance according to any of claims 18 to 28, further comprising a flow directing element between the inlet and the outlet.

30. An appliance according to claim 29, wherein the flow directing element comprises a perforated layer.

31. An appliance according to claim 30, wherein the perforated layer is formed from a mesh or weave of an elongate material.

32. An appliance according to claim 31, wherein the elongate material is a wire.

33. An appliance according to any of claims 29 to 32, wherein the flow directing element extends substantially along the length of the at least one slot.

34. An appliance according to any of claims 29 to 33, wherein the flow directing element extends substantially around an inner circumference of the attachment.

35. An appliance according to any of claims 18 to 34, wherein the appliance is a hair care appliance.

36. An appliance according to any of claims 18 to 34, wherein the appliance is a hot styling brush.

37. An appliance as substantially herein described with reference to the drawings.

Intellectual Property Office

| | | | |
|---|---|---|---|
| **Application No:** | GB1404982.9 | **Examiner:** | Mr David McWhirter |
| **Claims searched:** | 1-37 | **Date of search:** | 12 September 2014 |

## Patents Act 1977: Search Report under Section 17

**Documents considered to be relevant:**

| Category | Relevant to claims | Identity of document and passage or figure of particular relevance |
|---|---|---|
| X | 1-9, 18-26 & 35-36 | EP 0482906 A1 (CHINA PACIFIC TRADE LTD) see figures 5a and paragraph 11 |
| X | 1-9, 18-26 & 35-36 | US 4214597 A (GLASSMAN) see whole document, particularly figures 1-3 & 6 and column 2 line 28 - column 3 line 20 |

Categories:

| | | | |
|---|---|---|---|
| X | Document indicating lack of novelty or inventive step | A | Document indicating technological background and/or state of the art. |
| Y | Document indicating lack of inventive step if combined with one or more other documents of same category. | P | Document published on or after the declared priority date but before the filing date of this invention. |
| & | Member of the same patent family | E | Patent document published on or after, but with priority date earlier than, the filing date of this application. |

**Field of Search:**

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC$^{X}$ :

Worldwide search of patent documents classified in the following areas of the IPC

A45D; F24H

The following online and other databases have been used in the preparation of this search report

EPODOC, WPI

**International Classification:**

| Subclass | Subgroup | Valid From |
|---|---|---|
| None | | |



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(12) UK Patent Application (19) GB (11) 2526049 (13) A

(43) Date of A Publication 18.11.2015

(21) Application No: 1404983.7

(22) Date of Filing: 20.03.2014

(51) INT CL:
*A45D 20/52* (2006.01) *A45D 1/16* (2006.01)
*A45D 2/36* (2006.01) *A45D 20/12* (2006.01)

(56) Documents Cited:
EP 0482906 A1 US 4214597 A

(58) Field of Search:
INT CL A45D, F24H
Other: EPODOC, WPI

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(72) Inventor(s):
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**Robert Lawrence Tweedie**

(74) Agent and/or Address for Service:
**Dyson Technology Limited**
**Intellectual Property Department, Tetbury Hill, MALMESBURY, Wiltshire, SN16 0RP, United Kingdom**

(54) Title of the Invention: **Attachment for a hand held appliance**
Abstract Title: **Attachment for a hair curling appliance**

(57) An attachment 30 for a hot styling brush 10 comprises a body having a wall 110, a fluid inlet 32 at one end of the wall and a fluid outlet 100 through the wall wherein the fluid outlet comprises at least one slot extending along the wall and wherein the slot is formed by an overlap of a first end 110a and a second end 110b of the wall. The wall may be formed from at least two plates. A first one of the at least two plates may comprise the first end of the wall defining a radially inner surface 104 of the slot and a second one of the at least two plates may comprise the second end of the wall defining a radially outer surface 106 of the slot. The slot may be tangential to the wall. In use, fluid 122 exiting the slot may flow along the outer surface of the inner plate 110a, joining with fluid flowing out of other slots in the attachment and encouraging hair to wrap around the attachment automatically. The attachment may comprise an inner surface provided with a material for absorbing sounds and/or vibrations.

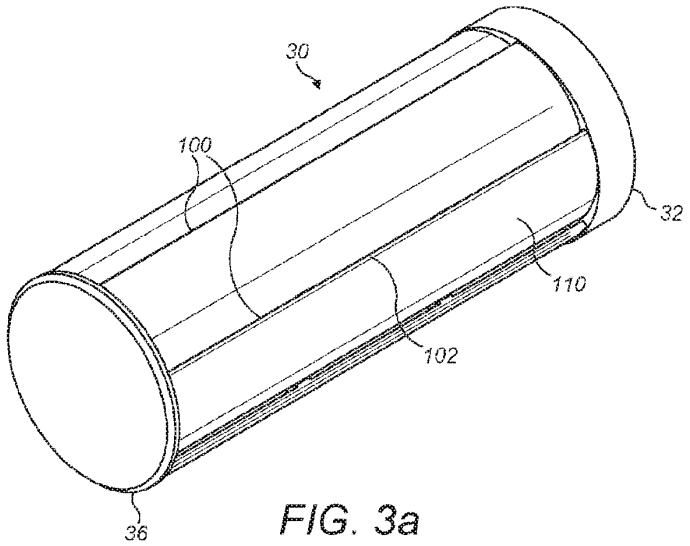



FIG. 3a

GB 2526049 A

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

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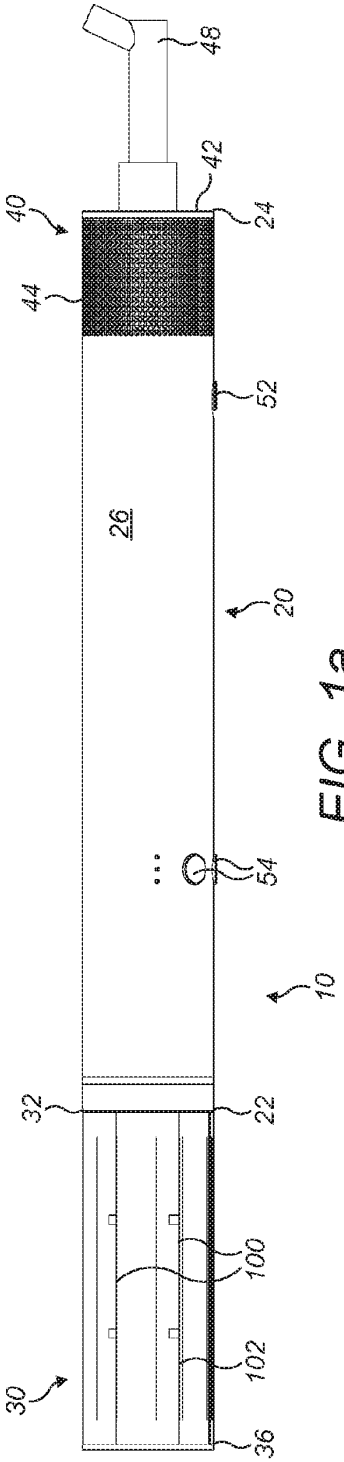



FIG. 1a

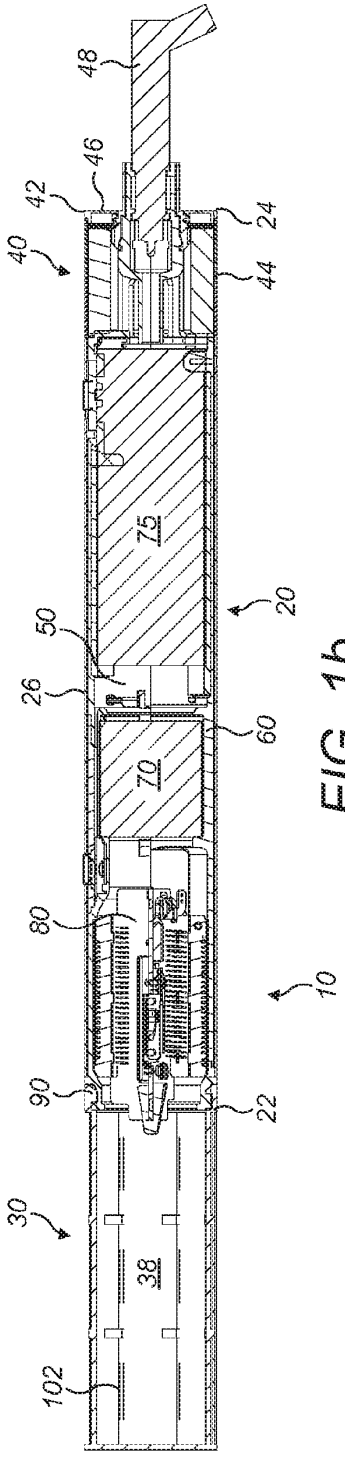



FIG. 1b

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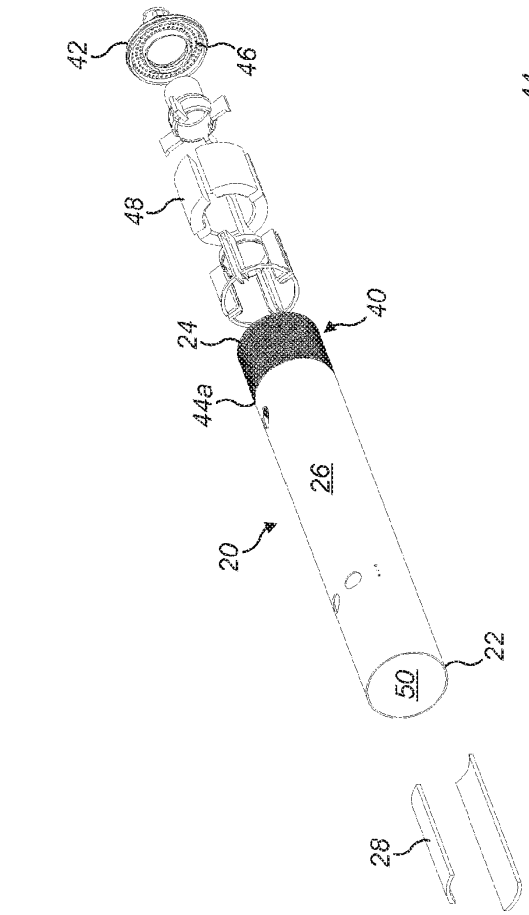



FIG. 2a

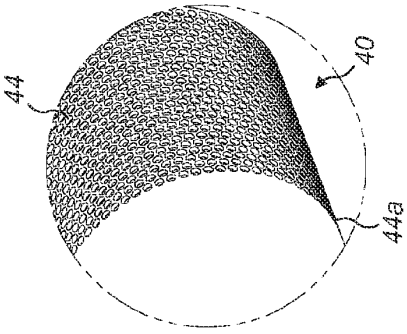
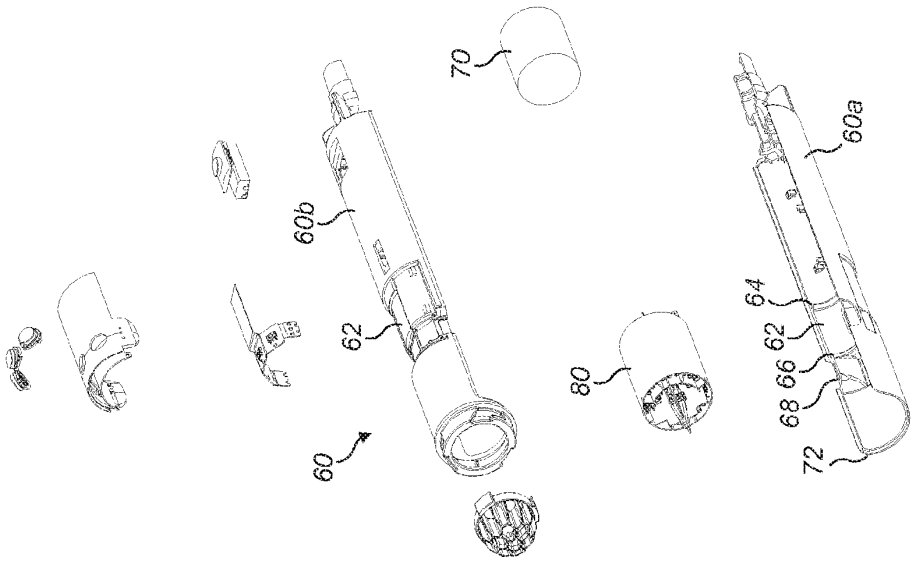



FIG. 2b



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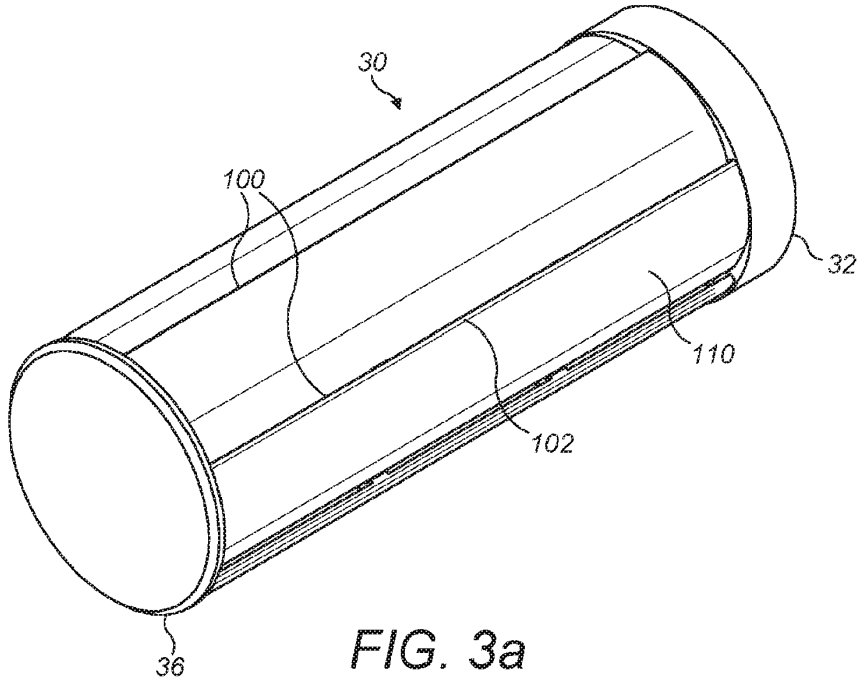



FIG. 3a

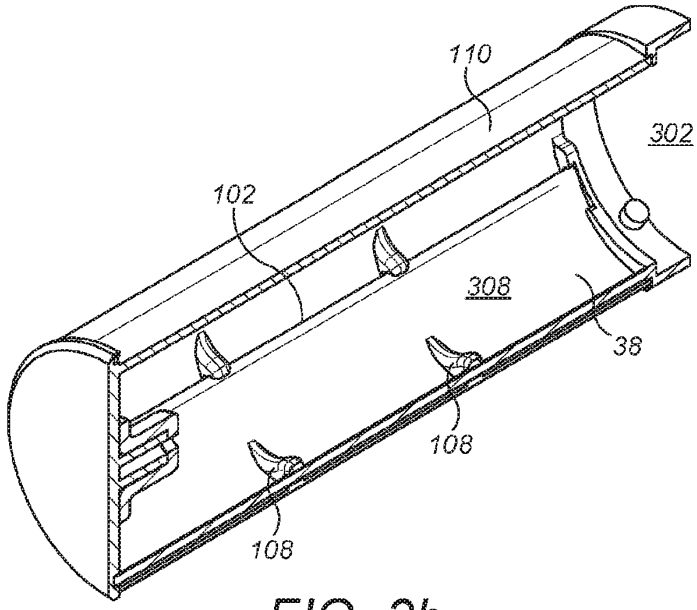



FIG. 3b

05 06 15

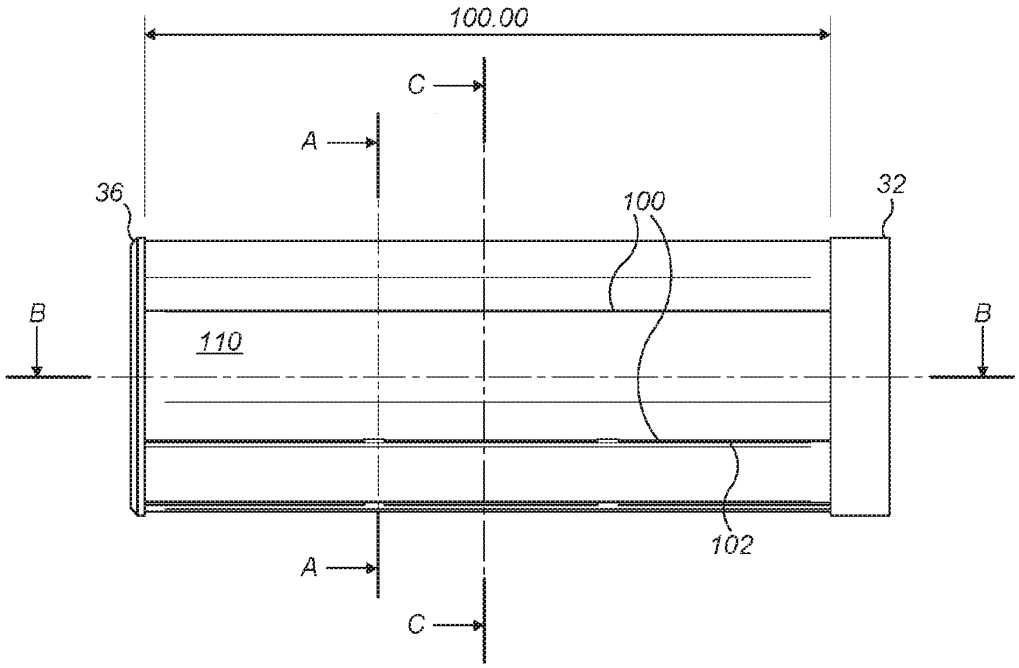



FIG. 4a

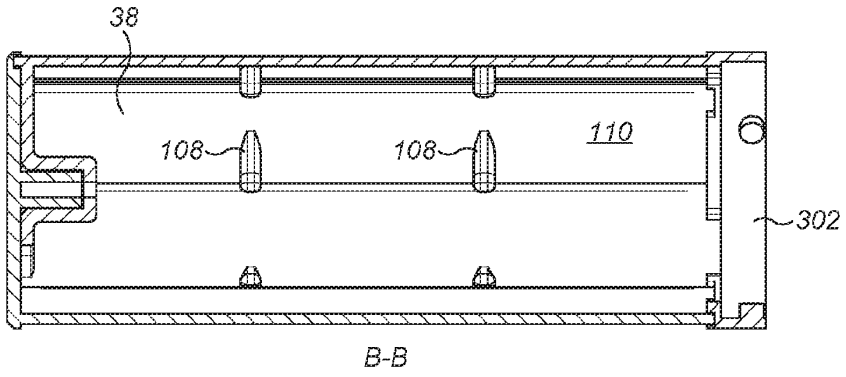



FIG. 4b

05 06 15

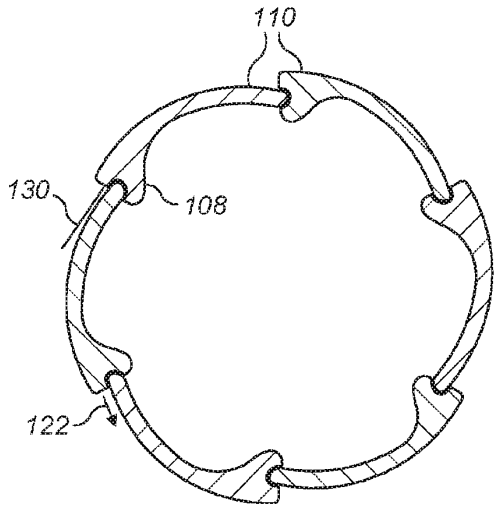



FIG. 5a

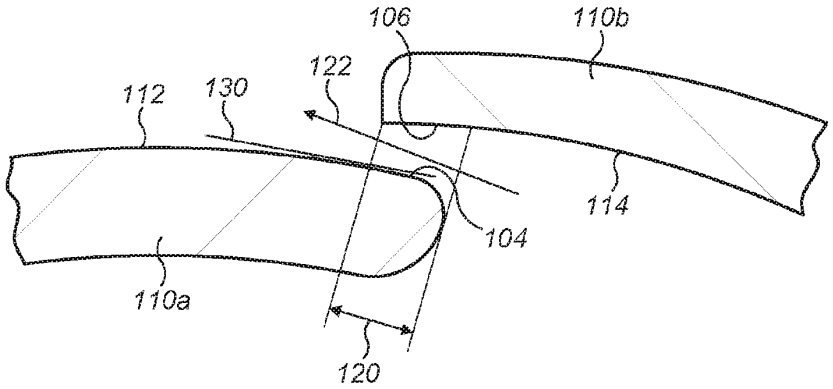



FIG. 5b

05 06 15

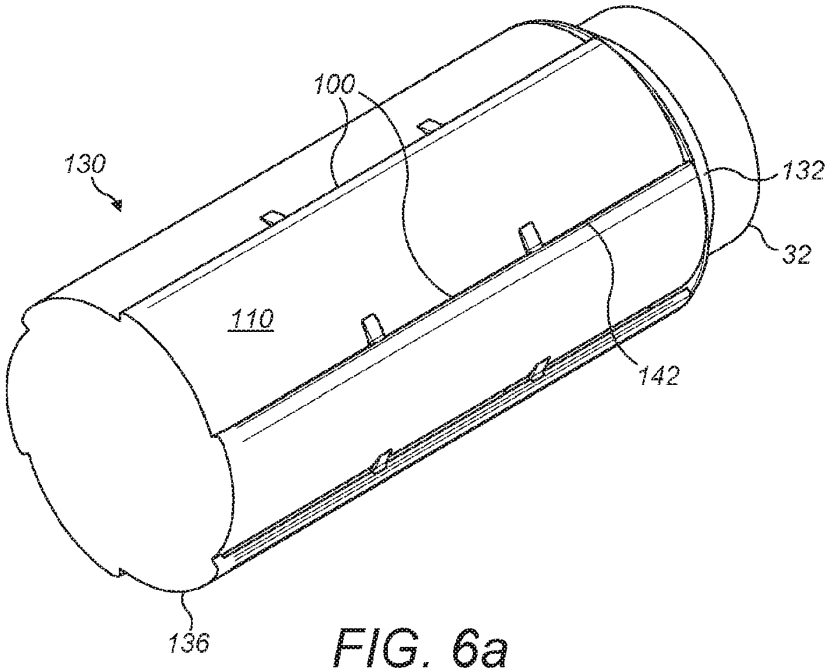



FIG. 6a

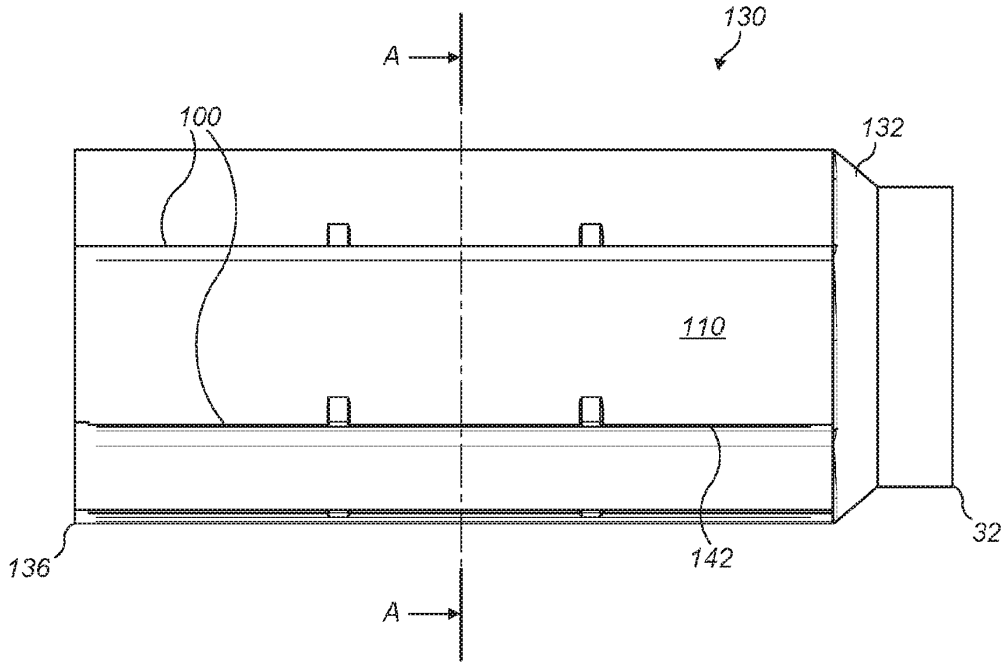



FIG. 6b

05 06 15

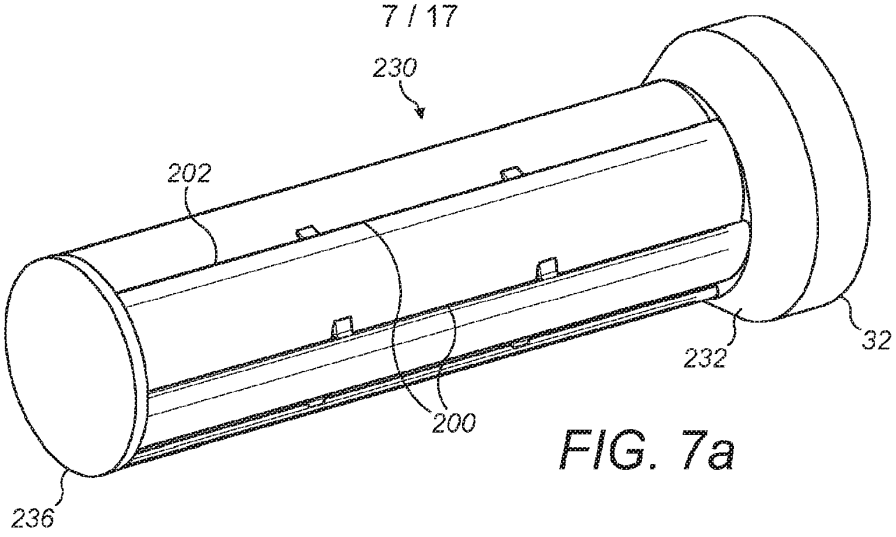



FIG. 7a

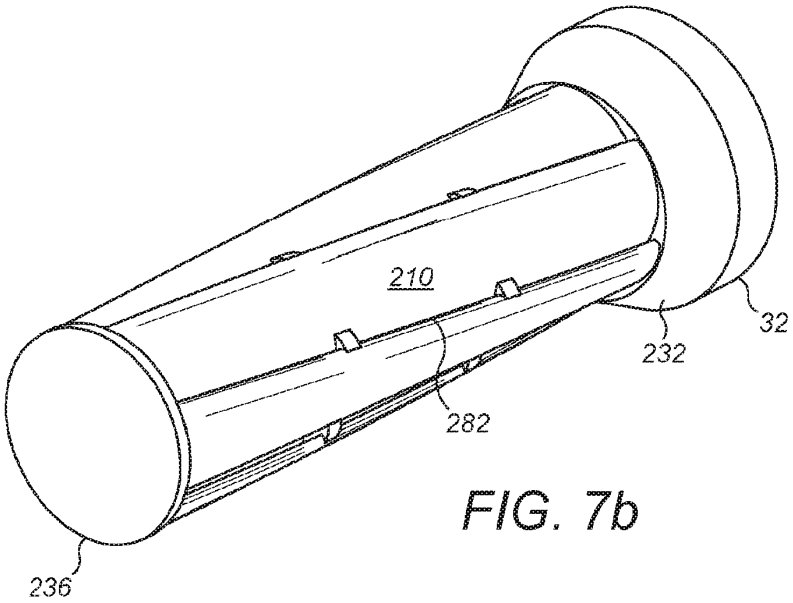



FIG. 7b

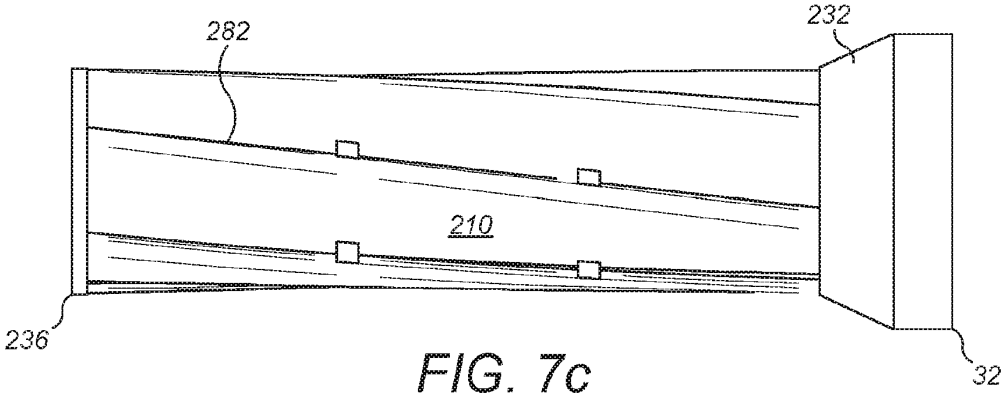



FIG. 7c

05 06 15

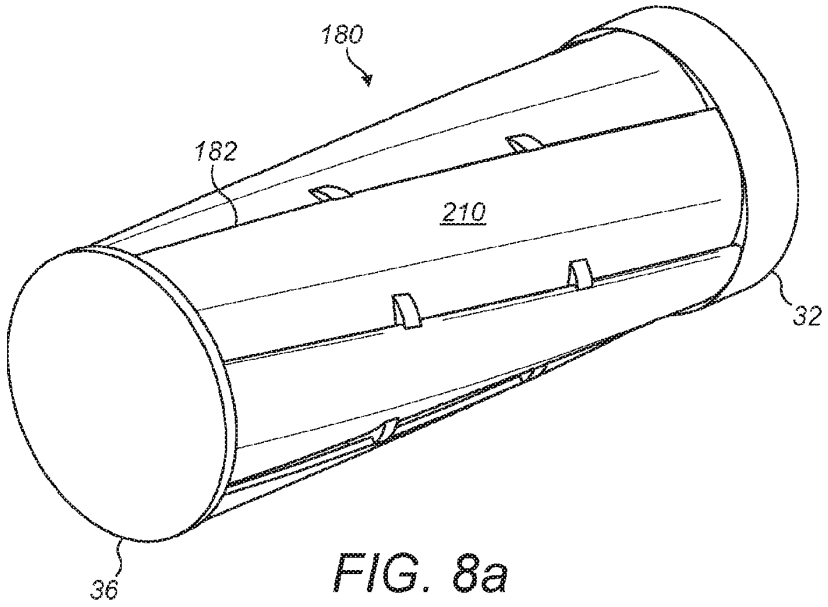



FIG. 8a

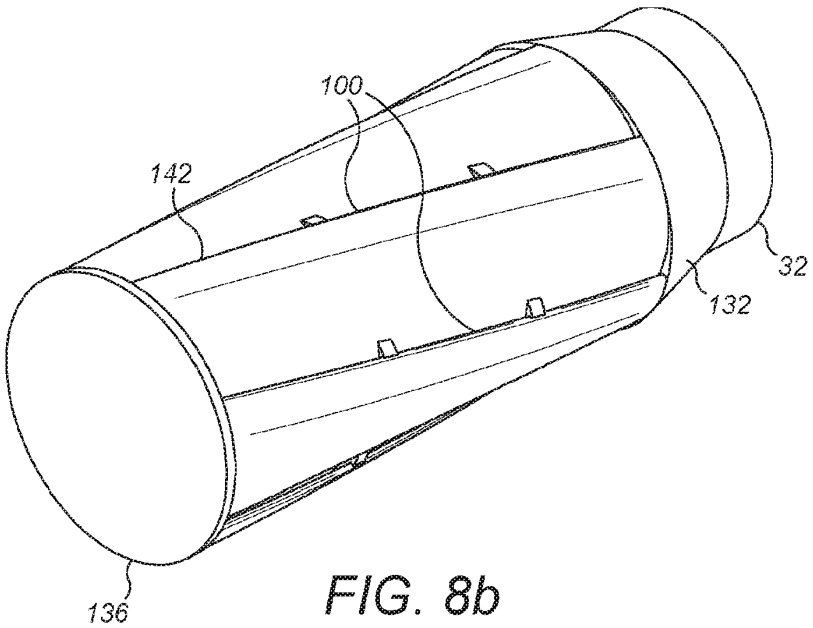



FIG. 8b

05 06 15

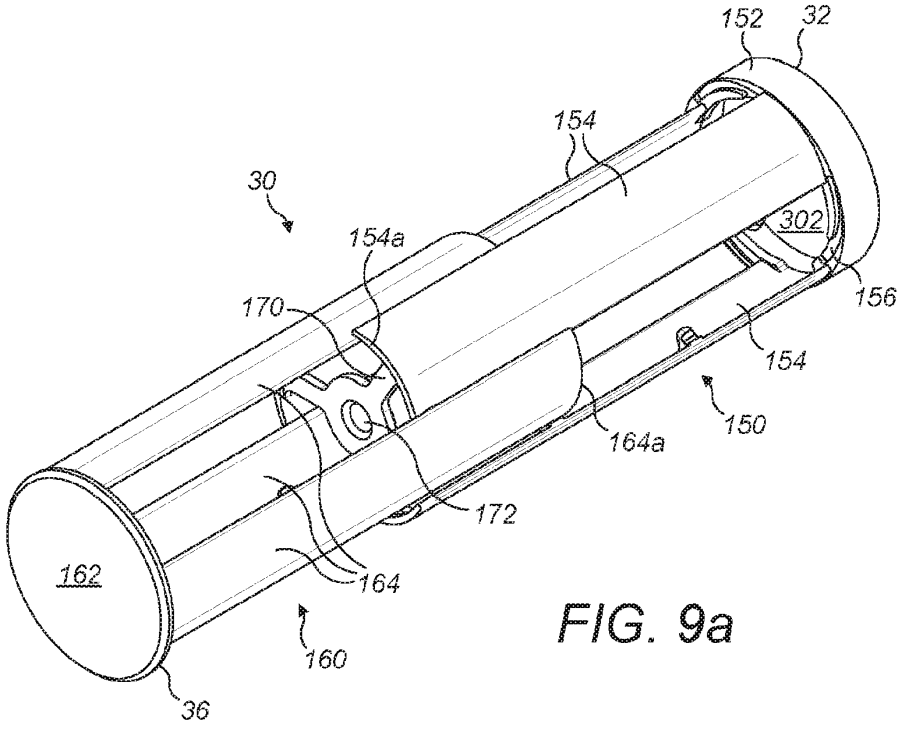



FIG. 9a

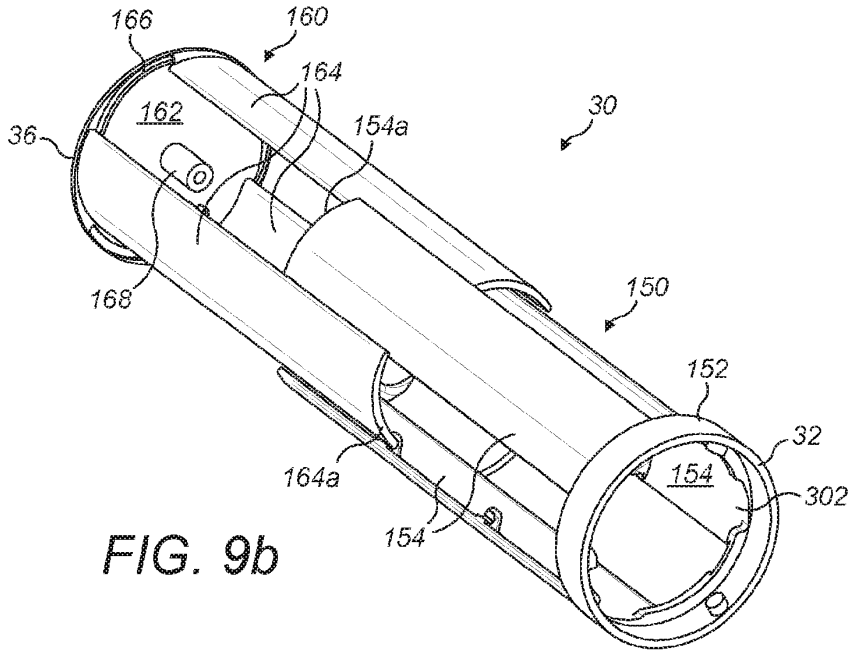



FIG. 9b

05 06 15

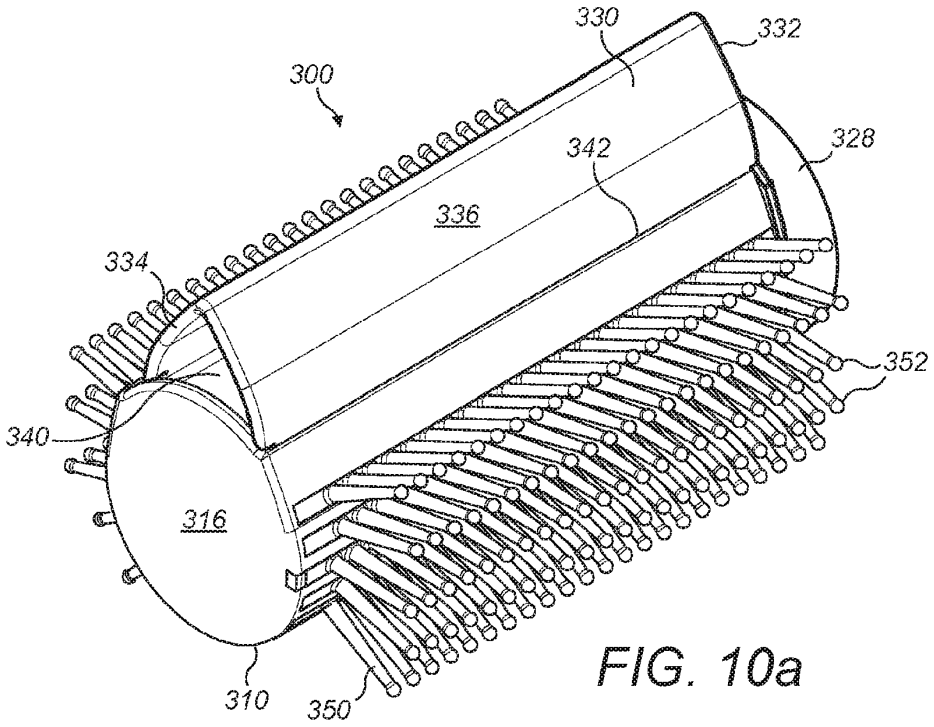



FIG. 10a

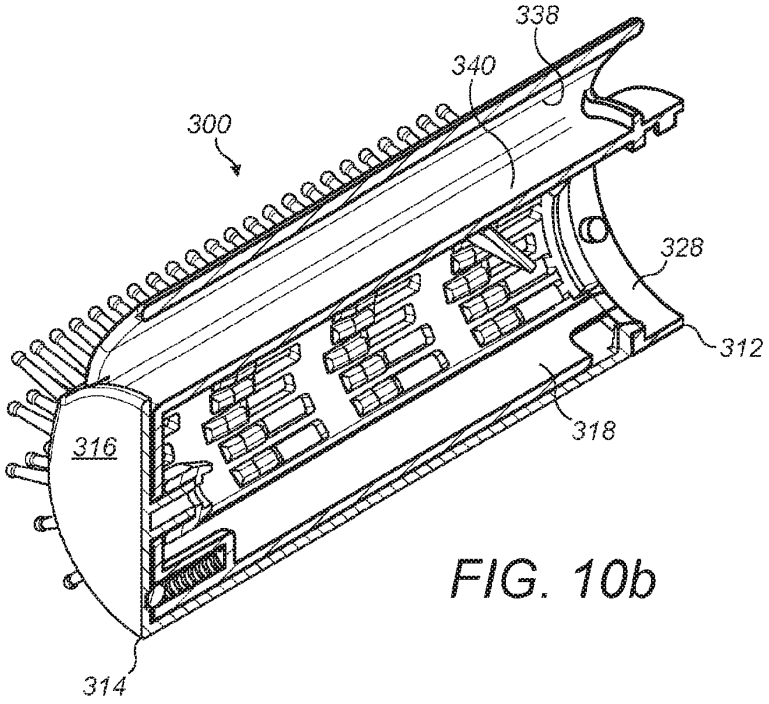



FIG. 10b

05 06 15

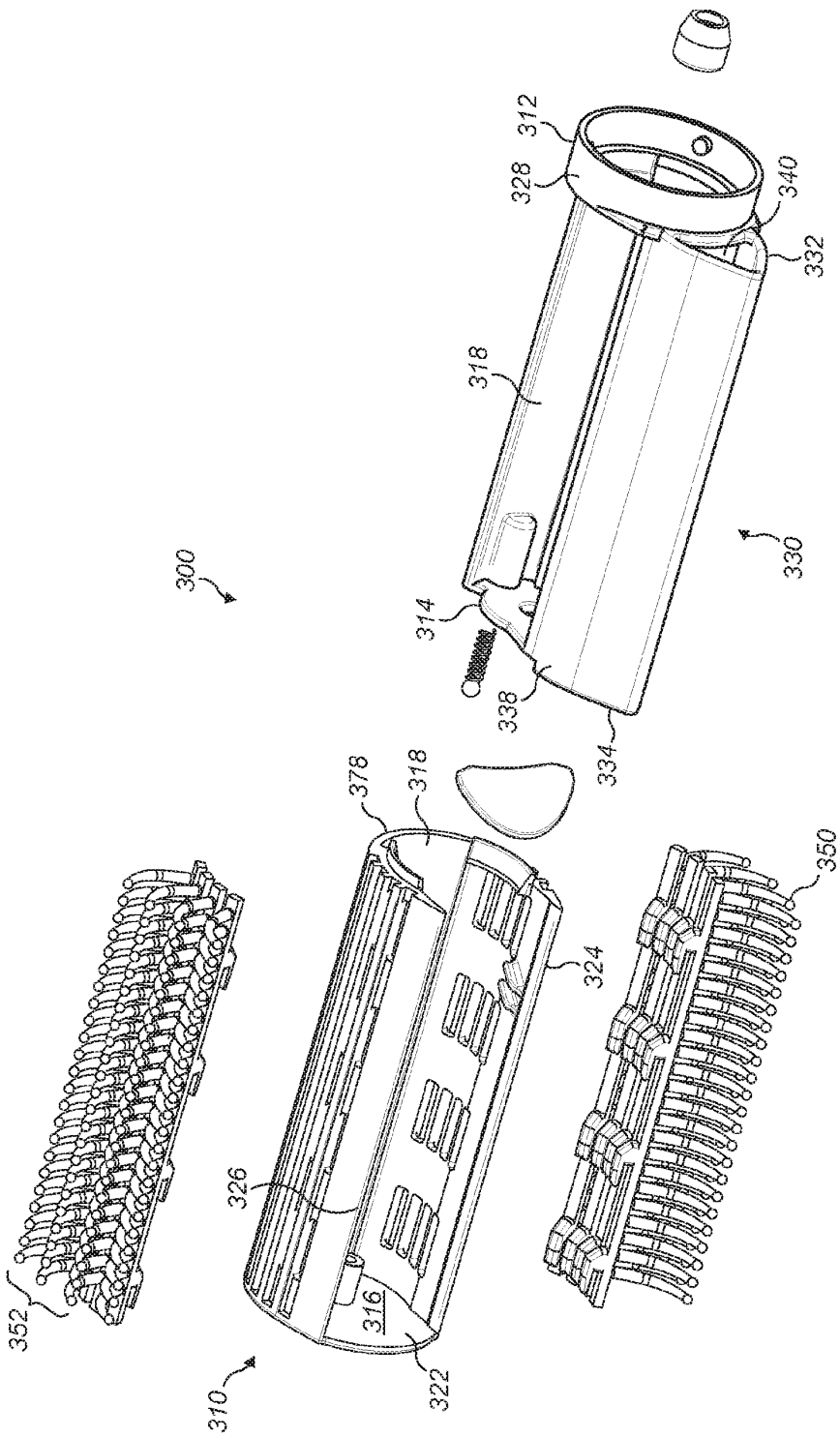



FIG. 11a

05 06 15

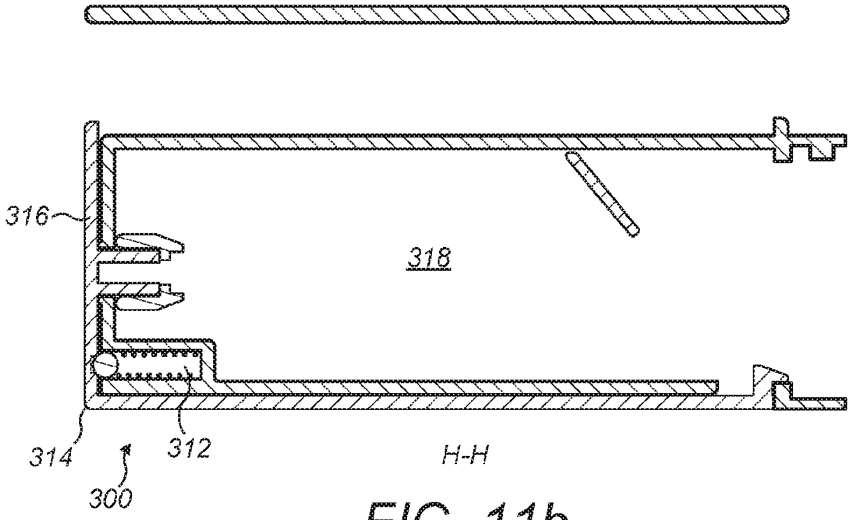



FIG. 11b

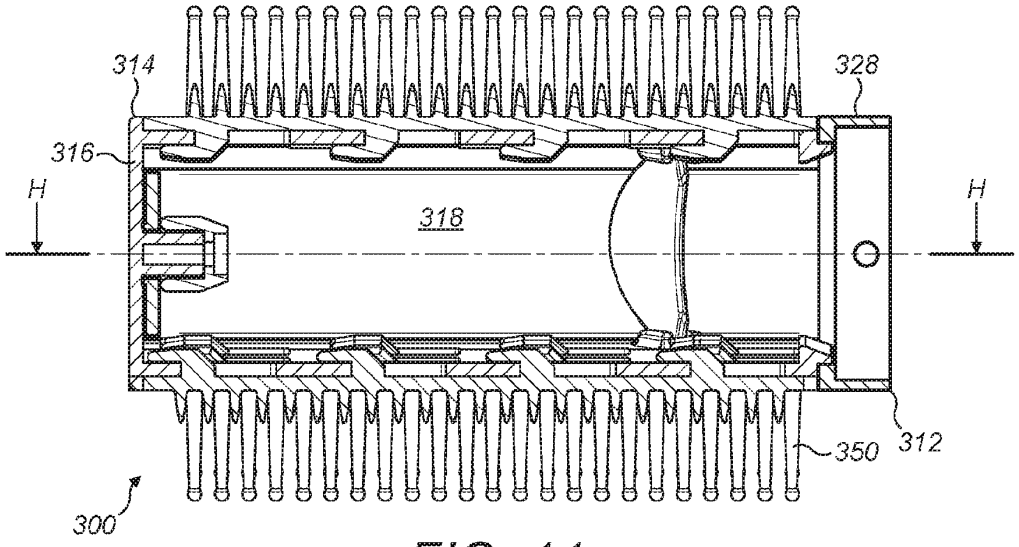



FIG. 11c

05 06 15

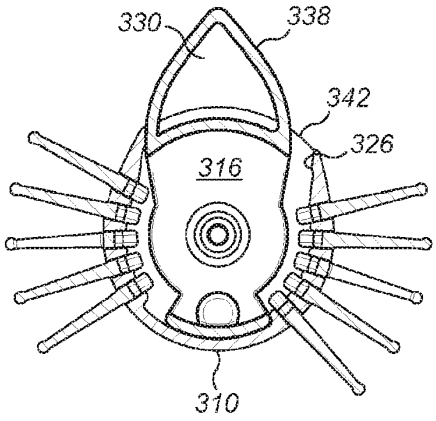



FIG. 12a

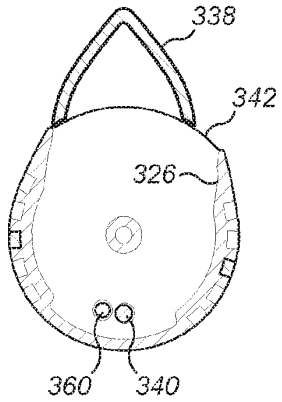



FIG. 12b

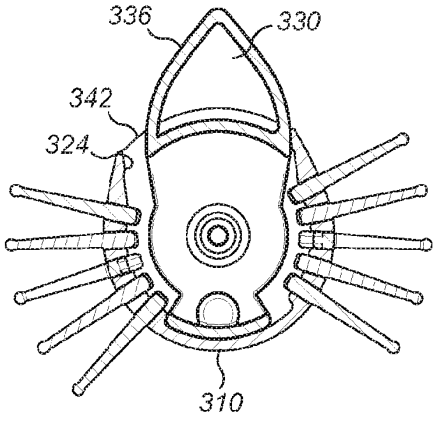



FIG. 13a

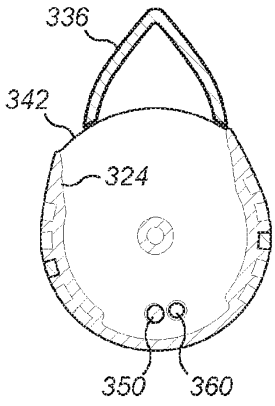



FIG. 13b

05 06 15

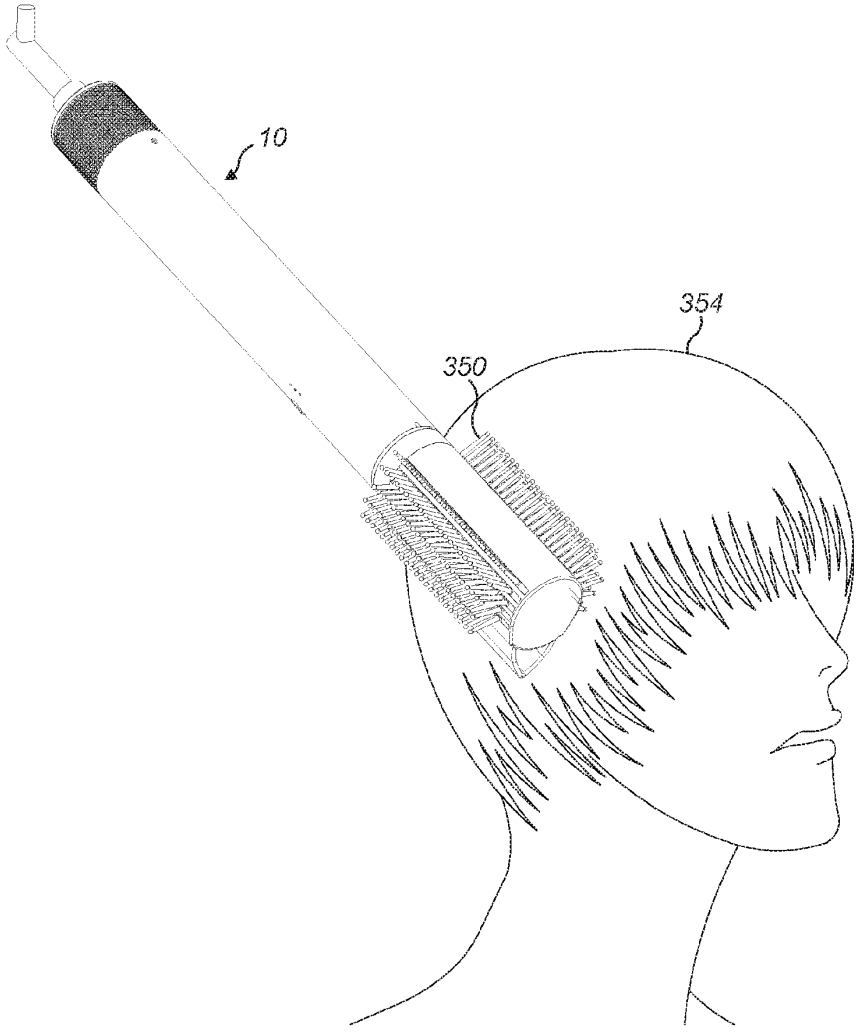



FIG. 14

05 06 15

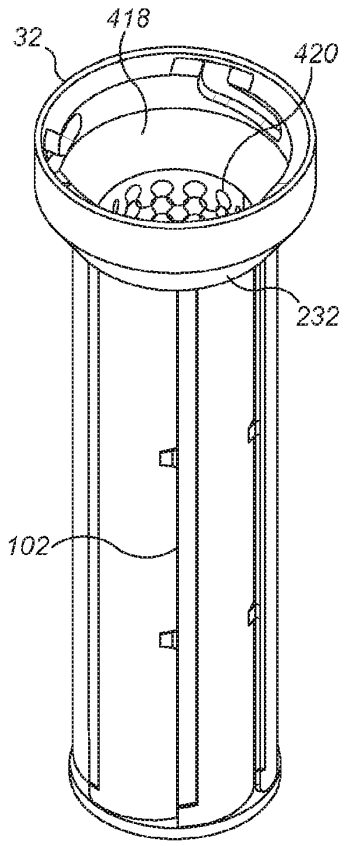



FIG. 15a

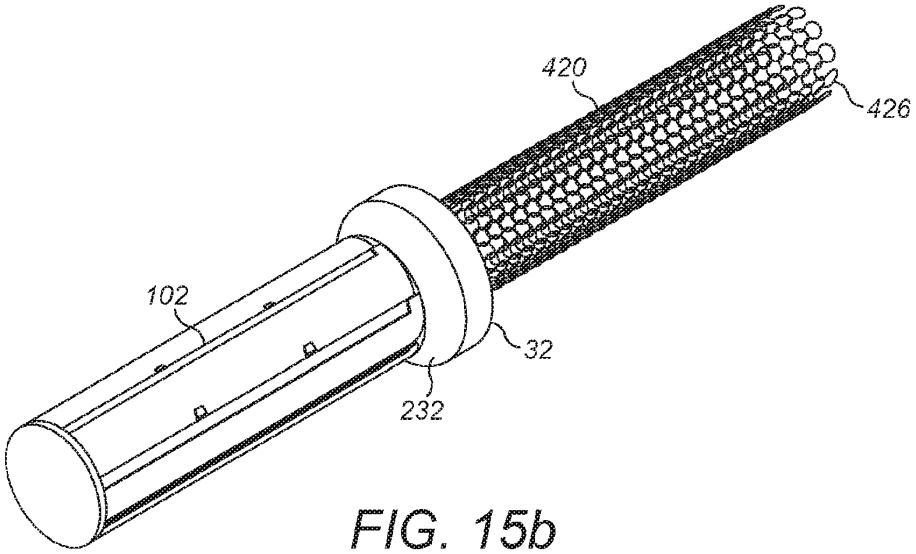



FIG. 15b

05 06 15

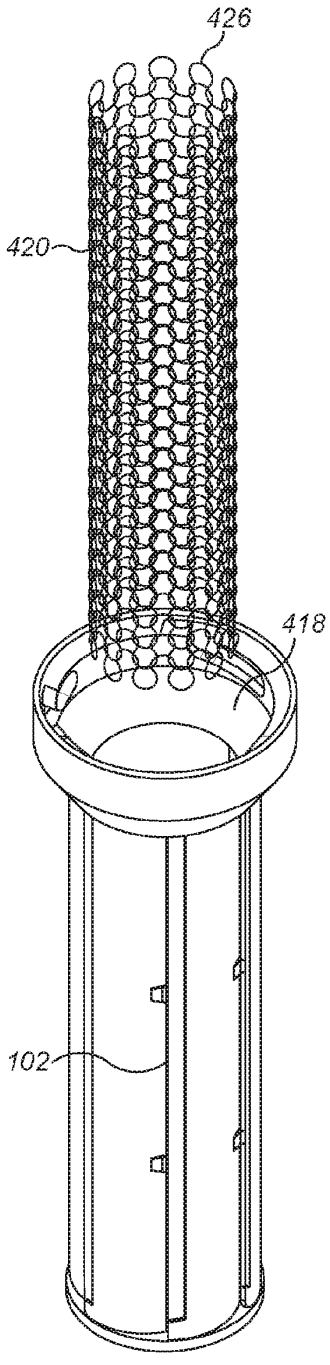



FIG. 15c

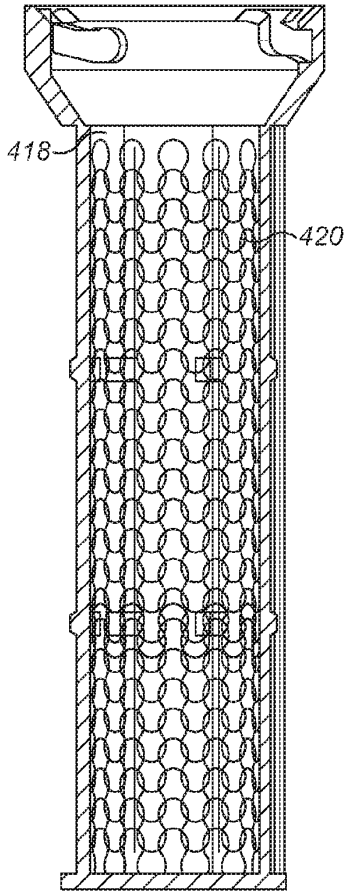



FIG. 15d

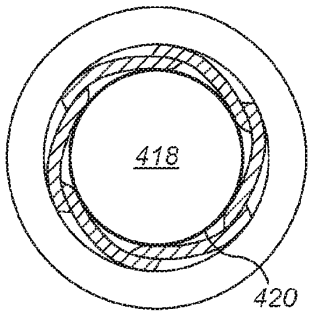



FIG. 15e

05 06 15

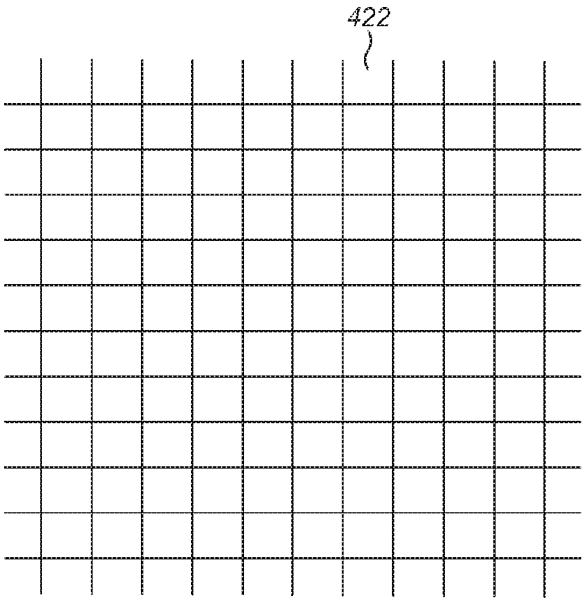



FIG. 16a

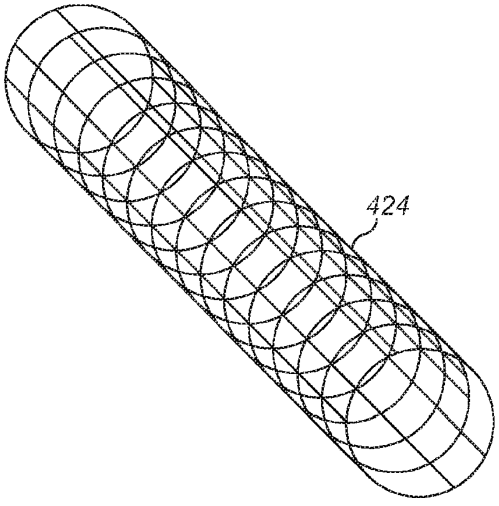



FIG. 16b

# Attachment for a Hand Held Appliance

This invention relates to an attachment for a hand held appliance, in particular a hair care appliance such as a hot styling brush.

In a conventional hot styling brush, air is sucked into an inlet by a fan unit and directed towards the hair by an attachment or head. Depending on the style desired, the air may or may not be heated The head or attachment often includes bristles onto which hair is wrapped and held for styling. The air is generally blown out of the head or attachment normal to the surface of the head.

The present invention provides an attachment for a hand held appliance comprising a body having a wall, a fluid inlet at one end of the wall and a fluid outlet through the wall wherein the fluid outlet comprises at least one slot extending along the wall and wherein the at least one slot is formed by an overlap of a first end of the wall and a second end of the wall.

Preferably, the fluid emitted from the fluid outlet is attracted to an external surface of the wall. Preferably, fluid emitted from the fluid outlet flows around the external surface of the wall.

Preferably, the wall is formed from at least two plates. It is preferred that a first one of the at least two plates comprises the first end of the wall. Preferably, a second one of the at least two plates comprises the second end of the wall. It is preferred that the first of the at least two plates defines a radially inner surface of the slot. Preferably, the second one of the at least two plates defines a radially outer surface of the slot.

Preferably, the attachment is generally tubular with the at least two plates extending longitudinally along the tube and radially around the tube. Preferably the slot extends longitudinally along the tube.

It is preferred that the slot is tangential to the wall. Preferably, fluid exiting the fluid outlet flows along a radially inner surface of the slot. The radially inner surface of the slot becomes the external surface of the attachment when a downstream end of the overlap between the first end of the wall and the second end of the wall is reached. The fluid flows around the attachment combining with fluid that exits from any further slots which form a part of the fluid outlet. The fluid exiting the fluid outlet is encouraged to follow the line of the radially inner surface creating a flow around the attachment which pulls hair towards the attachment and wraps the hair around the attachment in the direction of fluid flow.

Preferably, the attachment comprises n slots and n plates.

It is preferred that one of the first end and second end of the wall includes a spacer which defines a thickness of the slot.

Preferably, the second end of the wall comprises the spacer.

It is preferred that a pair of spacers are provided longitudinally spaced along the wall.

Any spacers maintain the gap between the two parts forming the slot or thickness of the slot. It is advantageous for these to all be substantially equal is this creates an even flow around the attachment.

Preferably, the at least one slot is formed as a spiral around the wall. It is preferred that the spiral is clockwise in the direction of fluid flow. Alternatively, the spiral is anticlockwise in the direction of fluid flow. Preferably, the slot is disposed at an angle of 1-89° to a longitudinal direction of the attachment. It is preferred that the slot is

disposed at an angle of 10-70° to a longitudinal direction of the attachment. Preferably, the slot is disposed at an angle of 30-60° to a longitudinal direction of the attachment. More preferably, the slot is disposed at an angle of 45° to a longitudinal direction of the attachment.

A curved slot changes the direction that fluid flows out from the fluid outlet tending to give a flow that is more normal to the surface of the attachment and this improves the hold of the hair around the attachment.

Preferably, the at least one plate is lined with a material. It is preferred that the material absorbs sounds and/or vibrations. Preferably, the material is Kevlar or wool.

It is preferred that the attachment further comprises a flow directing element between the fluid inlet and the fluid outlet. The flow directing element also changes the direction that fluid flows out from the fluid outlet tending to give a flow that is more normal to the surface of the attachment and this improves the hold of the hair around the attachment. In addition, the flow directing element reduces the velocity of the fluid within the attachment which in turn reduces the noise produced by the attachment.

Preferably, the flow directing element comprises a perforated layer. It is preferred that the perforated layer is formed from a mesh or weave of an elongate material. Preferably, the elongate material is a wire. It is preferred that the flow directing element extends substantially along the length of the at least one slot. Preferably, the flow directing element extends substantially around an inner circumference of the attachment.

According to a second aspect, the invention provides a hand held appliance comprising a handle having a fluid flow path from a fluid inlet to a fluid outlet and a fan unit for drawing fluid into the fluid inlet and an attachment for attaching to the handle, the attachment comprising a body having a wall, a fluid inlet at one end of the wall which, when the attachment is attached to the handle is in fluid communication with the fluid

outlet of the handle and a fluid outlet through the wall wherein the fluid outlet comprises at least one slot extending along the wall and wherein the at least one slot is formed by an overlap of a first end of the wall and a second end of the wall.

Preferably, the body of the attachment is substantially the same diameter as handle.

Alternatively, the body of the attachment is a different diameter to that of the handle.

Preferably, the attachment has a smaller diameter to handle.

Alternatively, the attachment has a greater diameter to handle.

In one embodiment, the appliance is a hair care appliance.

In one embodiment, the appliance is a hot styling brush.

The invention will now be described by example, with reference to the accompanying drawings, of which:

Figure 1a shows an example of an appliance according to the invention;

Figure 1b shows a cross section through the appliance shown in Figure 1a;

Figure 2a shows an exploded view of some of the handle components of the device of Figure 1a;

Figure 2b shows an enlarged section of the fluid inlet;

Figures 3a and 3b show an isometric view and an isometric cross section through a first attachment according to the invention;

Figures 4a and 4b show a side view and a side view cross section through the first attachment;

Figures 5a and 5b show cross sections through the first attachment;

Figures 6a and 6b show an isometric view and a side view through a second attachment;

Figure 7a shows an isometric view through another attachment;

Figures 7b and 7c show an isometric view and a side view through a further attachment;

Figure 8a shows an isometric view of a fifth attachment;

Figure 8b shows an isometric view of a sixth attachment;

Figure 9 shows a two part assembly for an attachment;

Figures 10a and 10b show an isometric view and an isometric cross section through a further attachment according to the invention;

Figures 11a, 11b and 11c show a side view and a side view cross sections through the further attachment;

Figures 12a and 12b show cross sections through the further attachment in a first position;

Figures 13a and 13b show cross sections through the further attachment in a second position;

Figure 14 shows schematically the further attachment in use; and