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 and fluid emitted from the outlet flows around the external surface of the attachment.

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 the fluid emitted from the outlet is tangential to the external surface of the attachment.

5. An attachment according to any preceding claim, wherein the fluid emitted from the outlet is attracted to the surface of the attachment.

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

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

8. 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.

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9. An attachment according to any of claims 1 to 7, 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.

10. An attachment according to claim 9, wherein the at least one slot is helical with respect to the longitudinal axis.

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

12. An attachment according to claim 11, wherein the flow directing element comprises a perforated layer.

13. An attachment according to claim 12, wherein the perforated layer is formed from a mesh or weave of an elongate material.

14. An attachment according to claim 13, wherein the elongate material is a wire.

15. An attachment according to any of claims 11 to 14, wherein the flow directing element extends substantially along the length of the at least one slot.

16. An attachment according to any of claims 11 to 15, wherein the flow directing element extends substantially around an inner circumference of the attachment.

17. 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

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the attachment and fluid emitted from the outlet is blown along the external surface and fluid emitted from the outlet flows around the external surface of the attachment.

18. An appliance according to claim 17, wherein the slot extends substantially along the length of the attachment.

19. An appliance according to claim 17 or claim 19, wherein the outlet comprises a plurality of slots radially spaced around the attachment.

20. An appliance according to any of claims 17 to 19, wherein the fluid emitted from the outlet is tangential to the external surface of the attachment.

21. An appliance according to any of claims 17 to 20, wherein the fluid emitted from the outlet is attracted to the surface of the attachment.

22. An appliance according to any of claims 17 to 21, wherein the attachment is generally cylindrical.

23. An appliance according to any of claims 17 to 22, wherein the outlet comprises two slots.

24. An appliance according to any of claims 17 to 23, 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.

25. An appliance according to any of claims 17 to 24, 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.

26. An appliance according to claim 25, wherein the at least one slot is helical with respect to the longitudinal axis.

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27. An appliance according to any of claims 17 to 26, further comprising a flow directing element between the inlet and the outlet.

28. An appliance according to claim 27, wherein the flow directing element comprises a perforated layer.

29. An appliance according to claim 28, wherein the perforated layer is formed from a mesh or weave of an elongate material.

30. An appliance according to claim 29, wherein the elongate material is a wire.

31. An appliance according to any of claims 27 to 30, wherein the flow directing element extends substantially along the length of the at least one slot.

32. An appliance according to any of claims 27 to 31, wherein the flow directing element extends substantially around an inner circumference of the attachment.

33. An appliance according to any of claims 17 to 31, wherein the appliance is a hair care appliance.

34. An appliance according to any of claims 17 to 32, wherein the appliance is a hot styling appliance.

35. An appliance according to any of claims 17 to 32, wherein the appliance is a hot styling brush.

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

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Page 998 of 1998

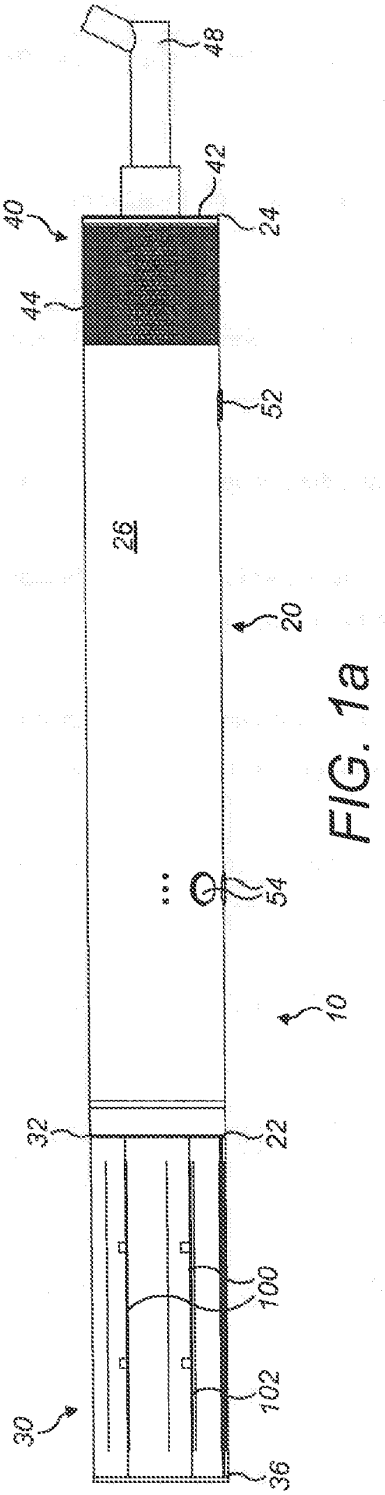


FIG. 1a

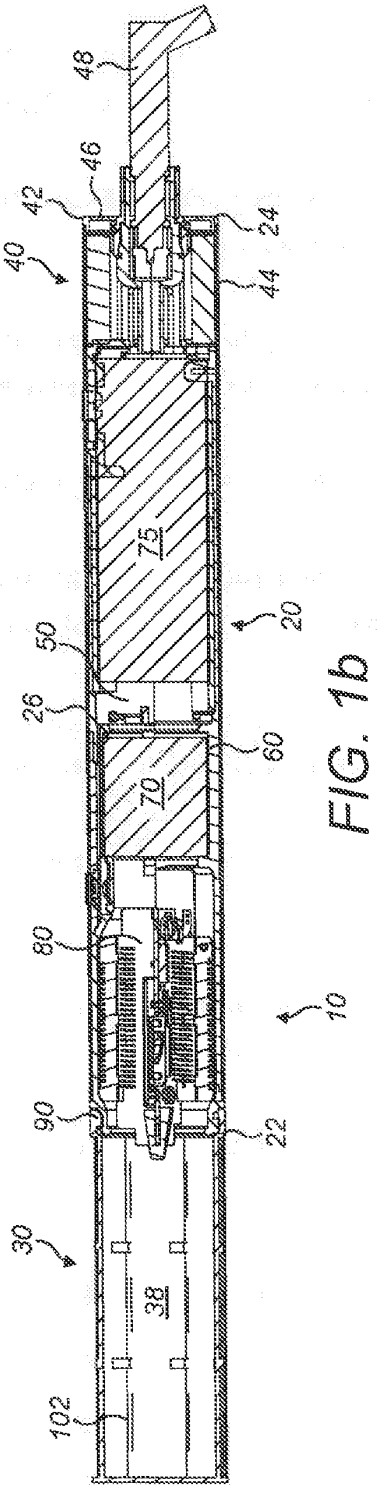


FIG. 1b

3NSDOCID: <WO_____2015140506A1_I_>

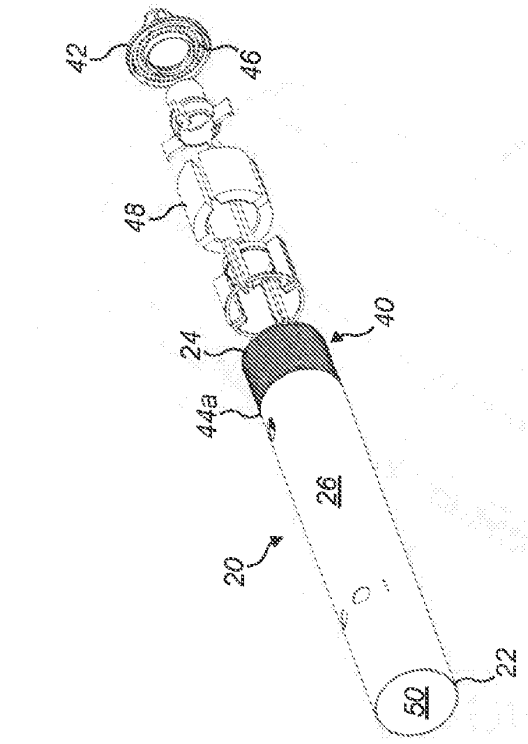


FIG. 2a

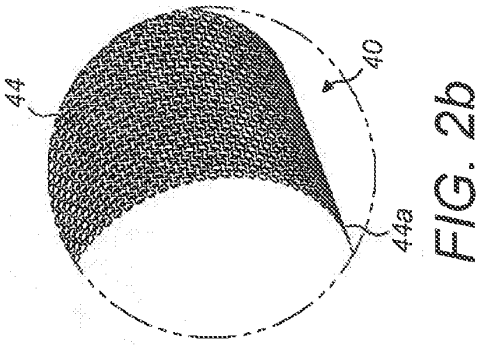
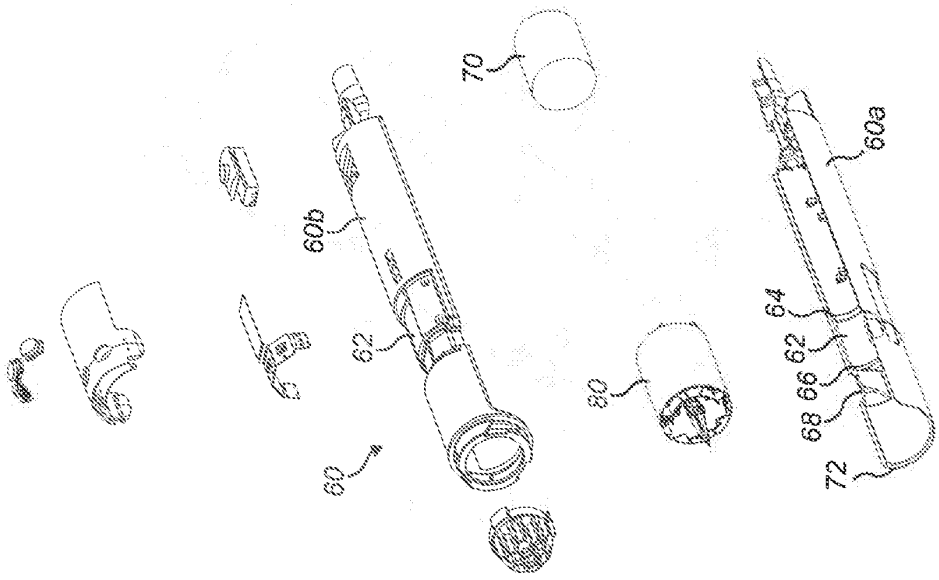


FIG. 2b



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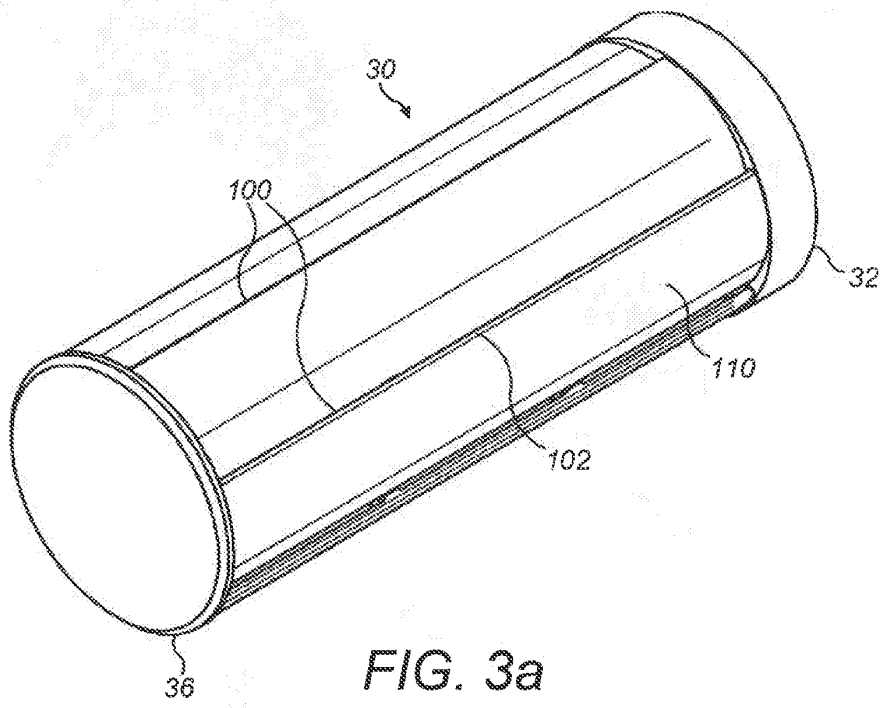


FIG. 3a

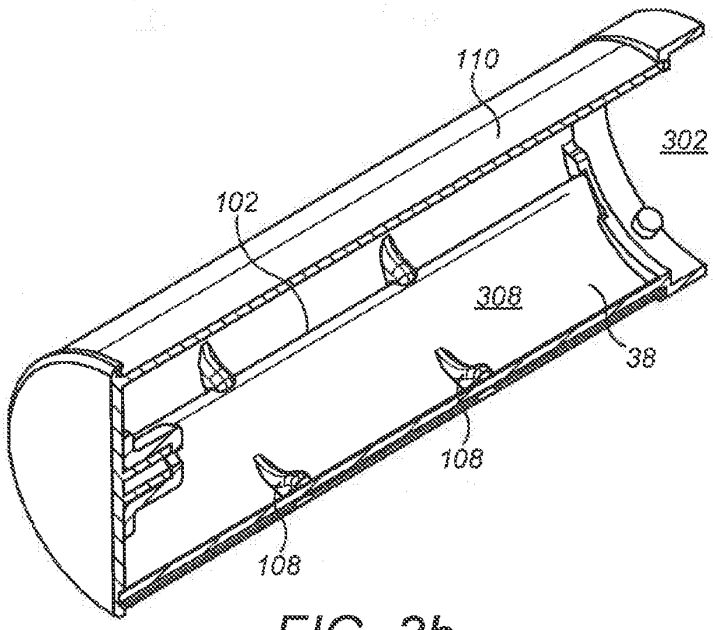


FIG. 3b

BNSDOCID: <WO_____2015140506A1_1_>

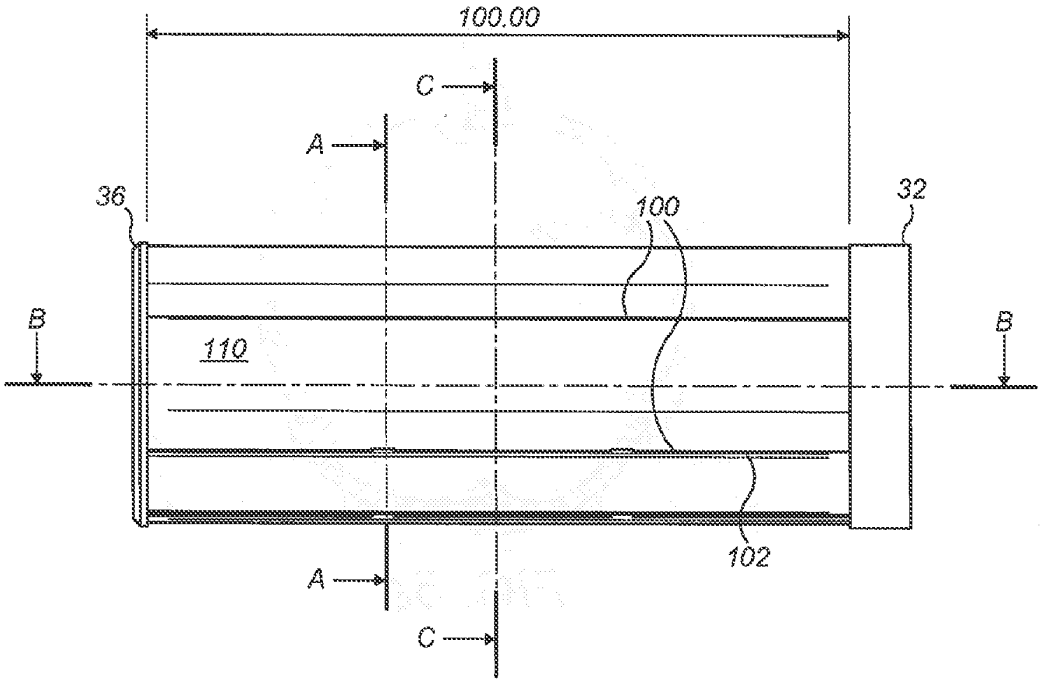


FIG. 4a

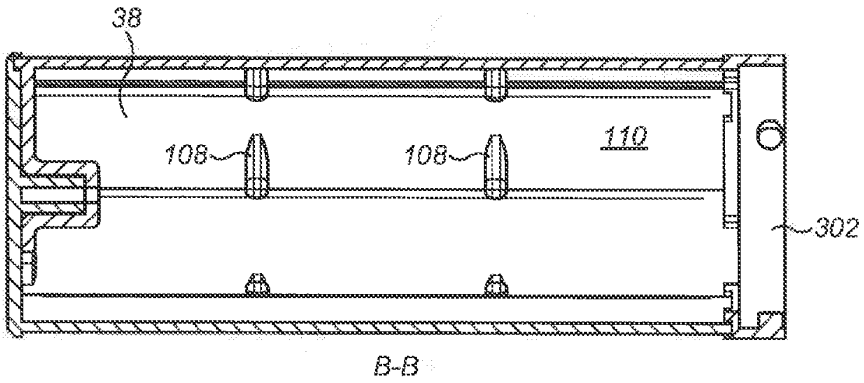


FIG. 4b

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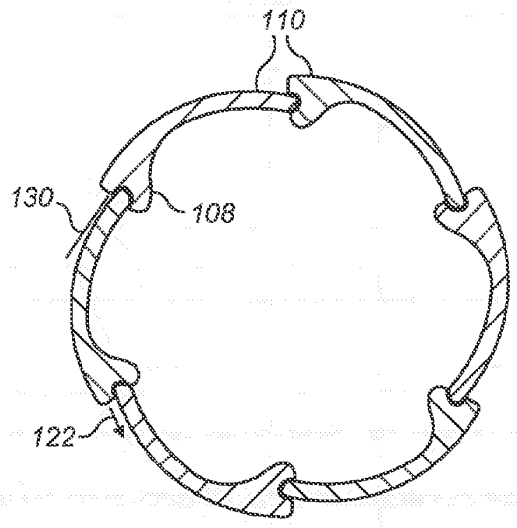


FIG. 5a

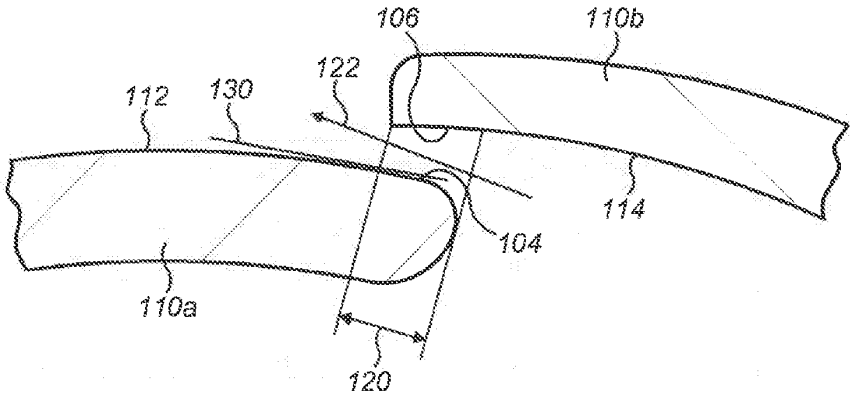


FIG. 5b

BNSDOCID: <WO_____2015140506A1_I_>

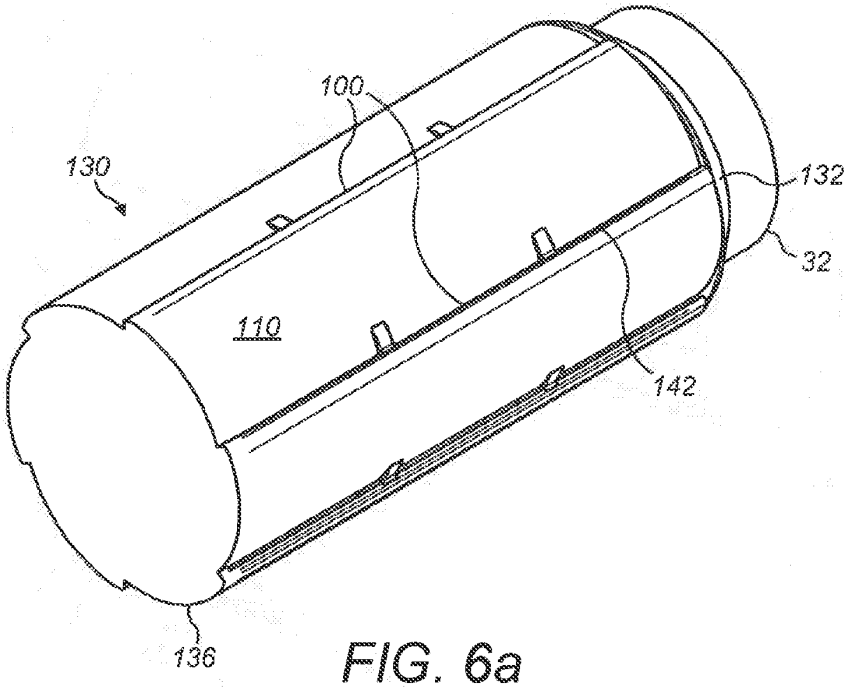


FIG. 6a

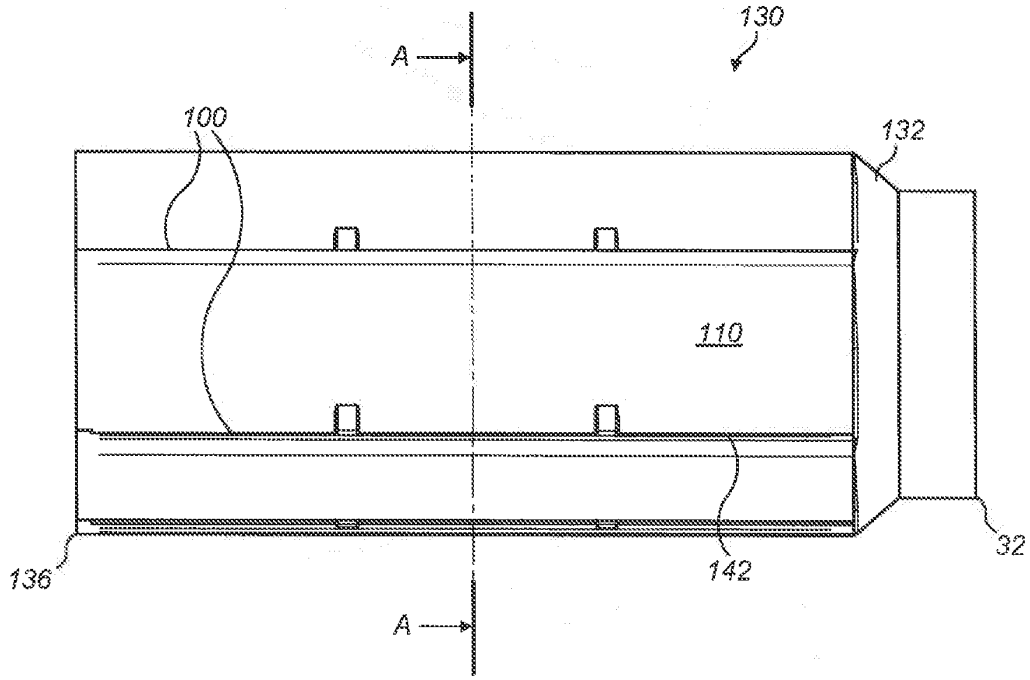


FIG. 6b

BNSDOCID: <WO_____2015140506A1_I_>

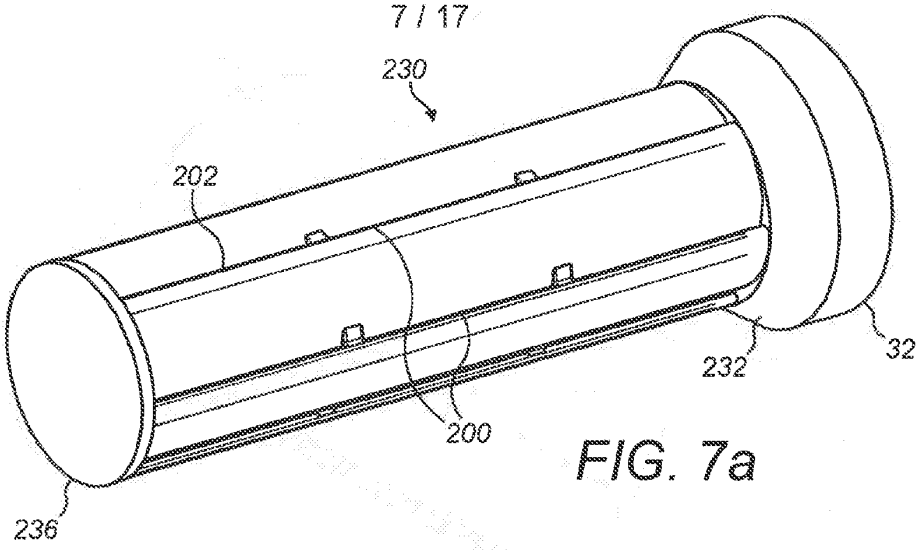


FIG. 7a

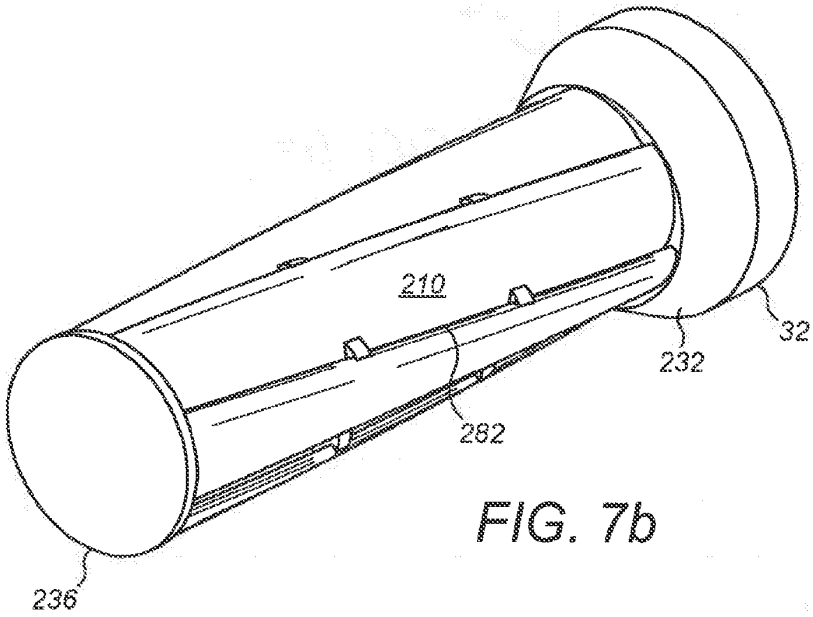


FIG. 7b

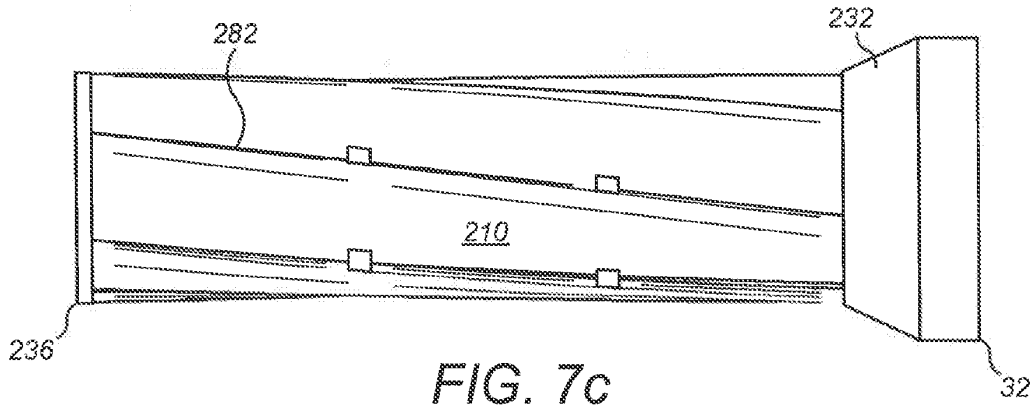


FIG. 7c

INSDOCID: <WO 2015140506A1_I_>

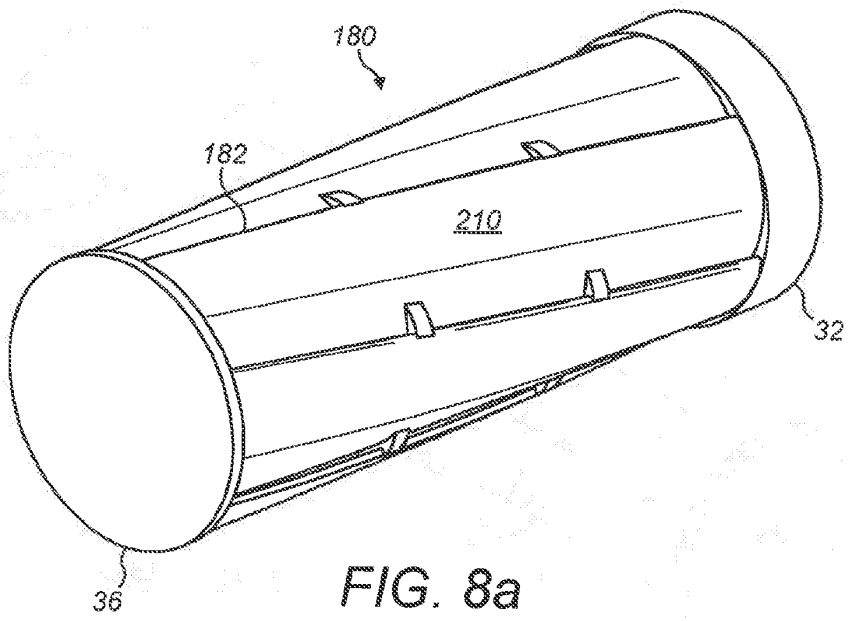


FIG. 8a

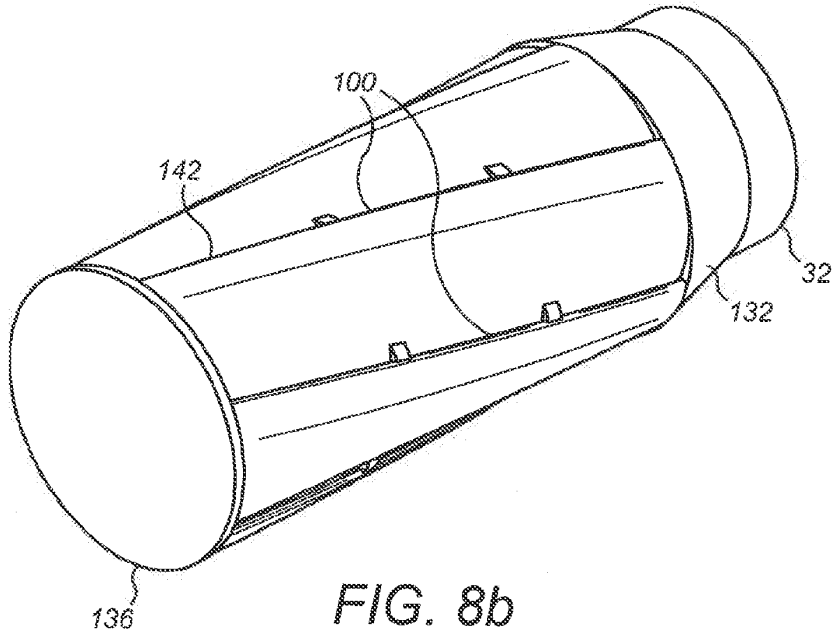


FIG. 8b

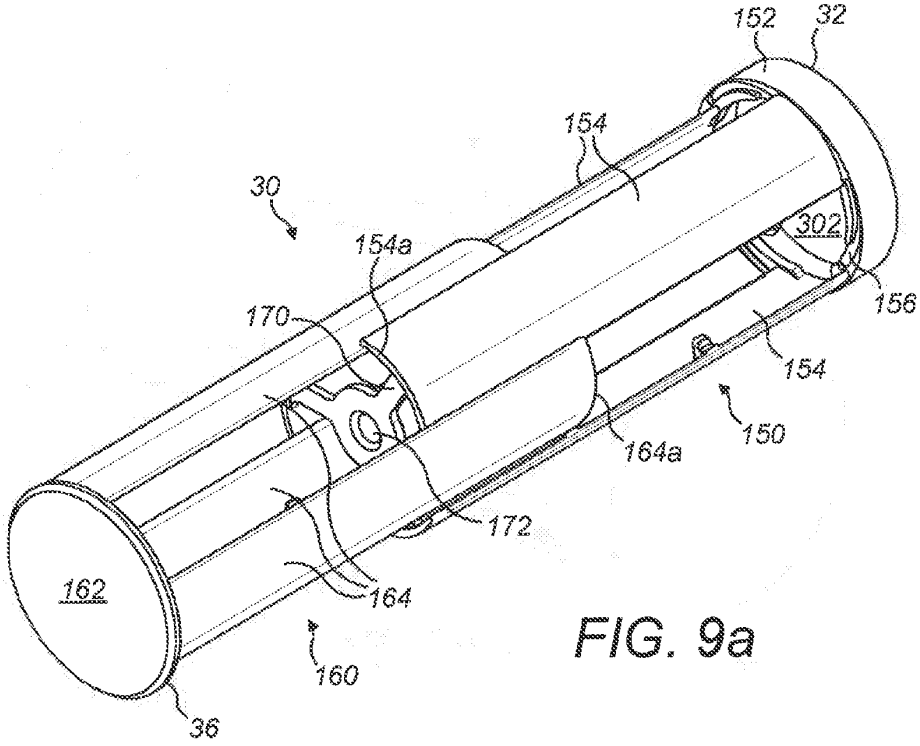

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FIG. 9a

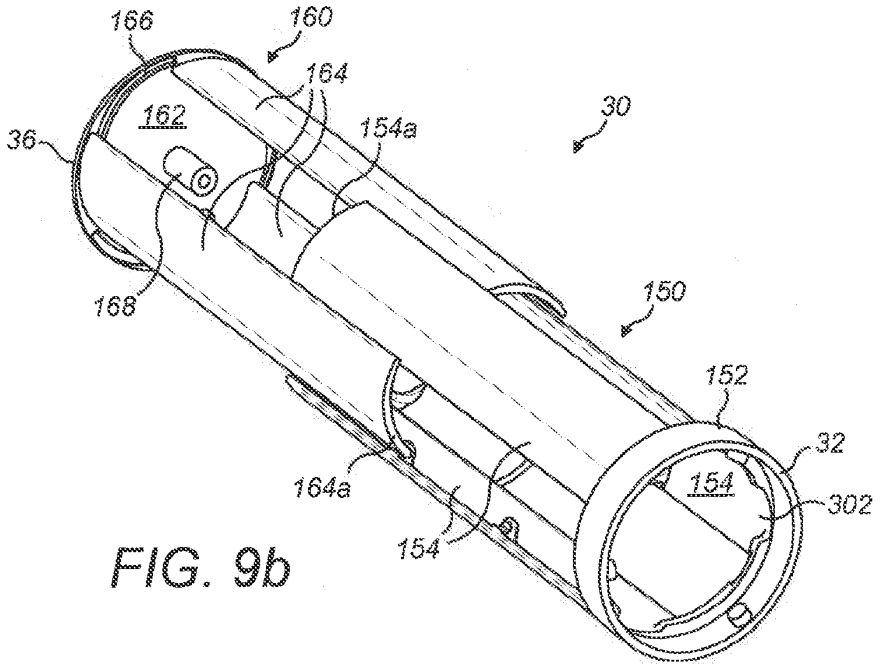

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FIG. 9b

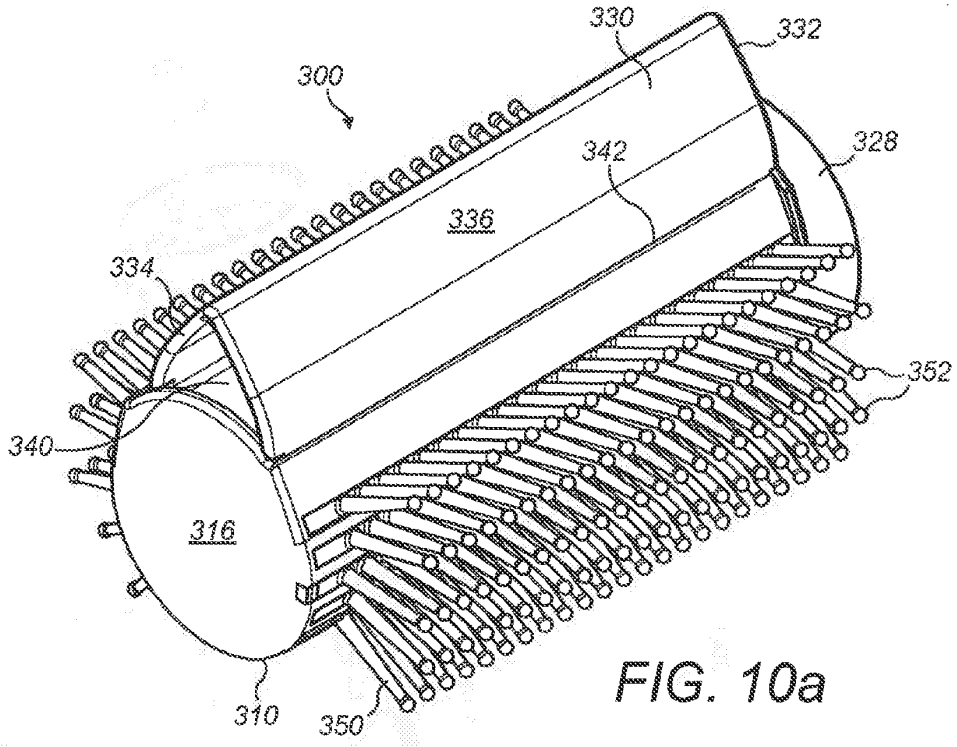


FIG. 10a

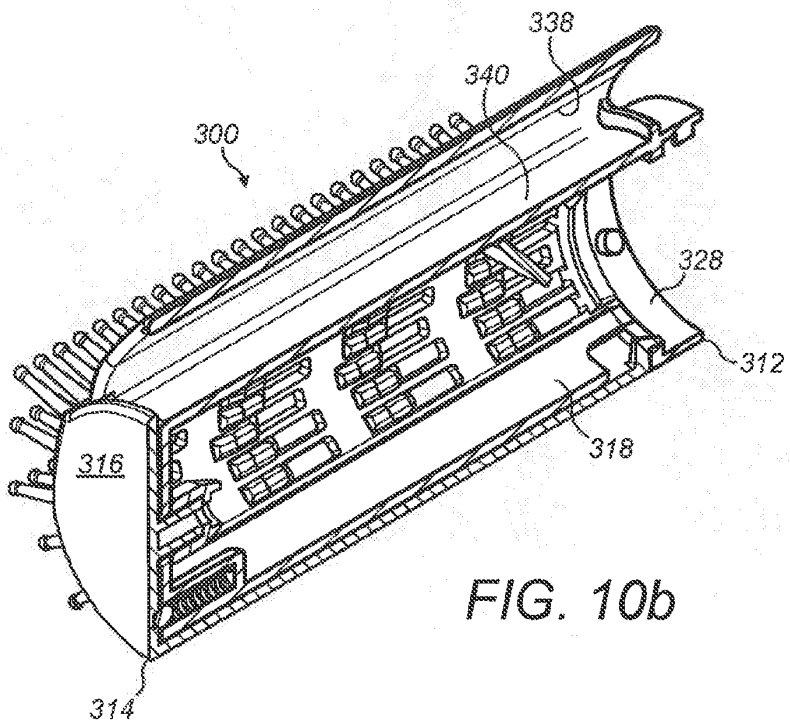


FIG. 10b

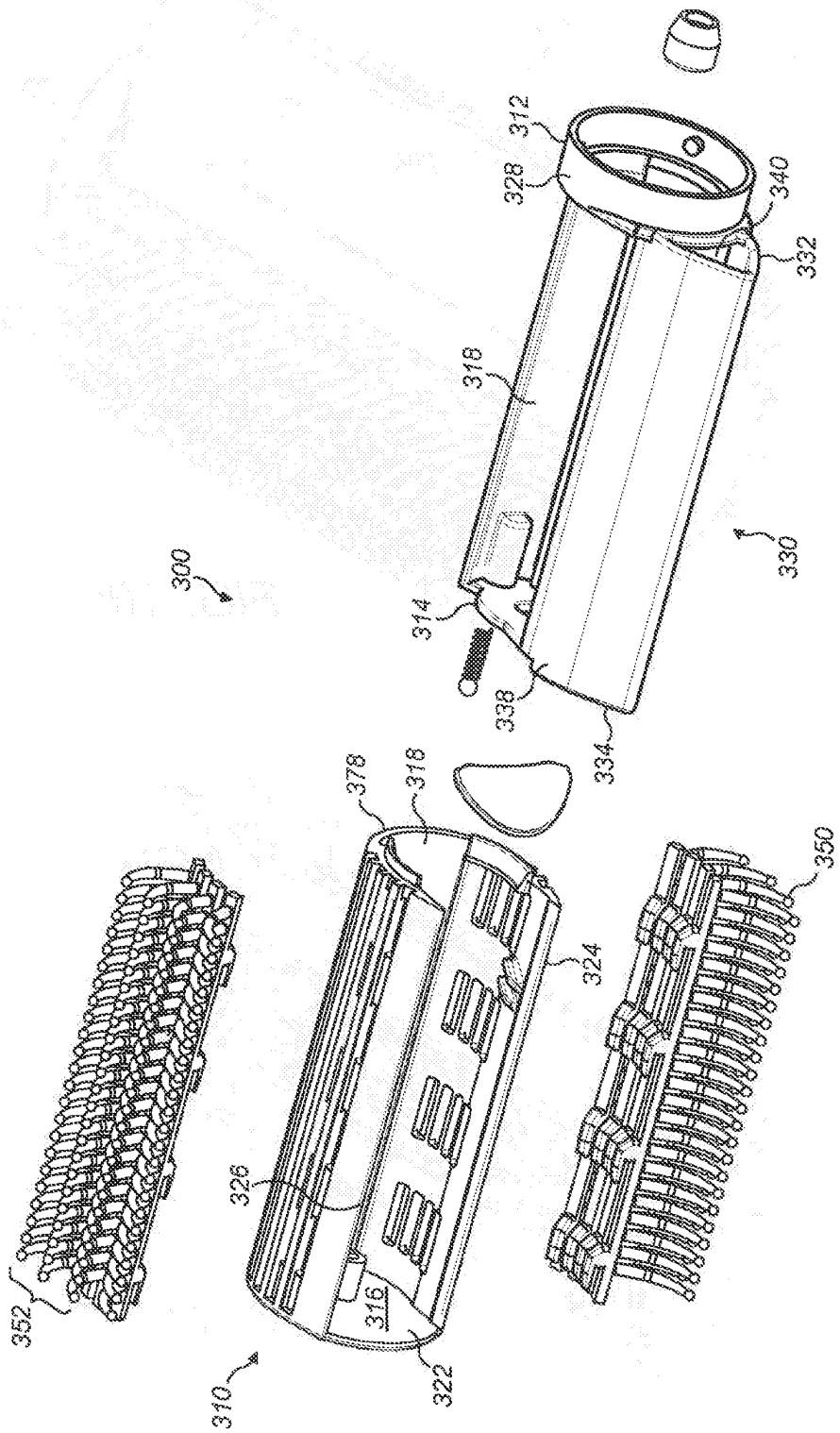


FIG. 11a

BNSDOCID: <WO_____2015140506A1_I_>

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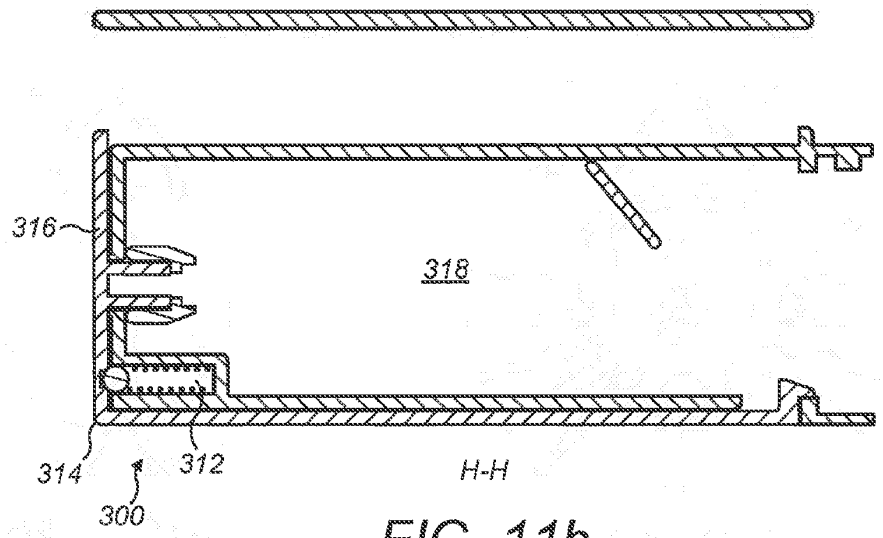


FIG. 11b

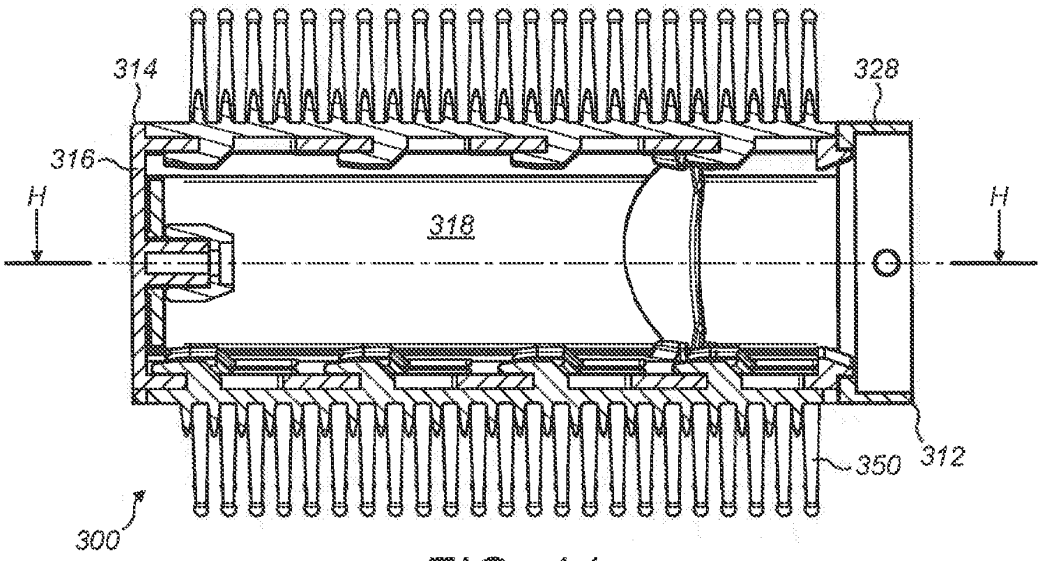


FIG. 11c

BNSDOCID: <WO_____2015140506A1_I_>

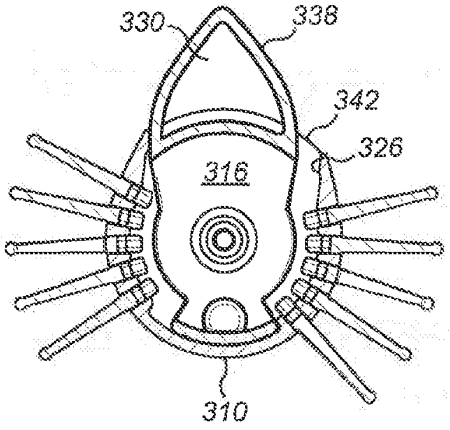


FIG. 12a

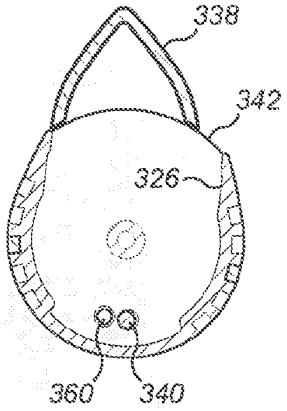


FIG. 12b

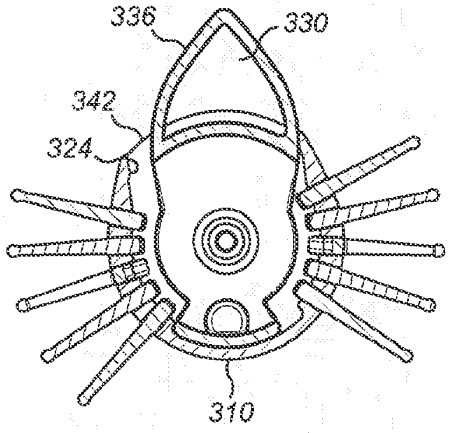


FIG. 13a

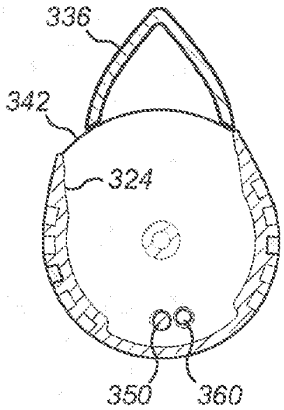


FIG. 13b

BNSDOCID: <WO_____2015140506A1_I_>

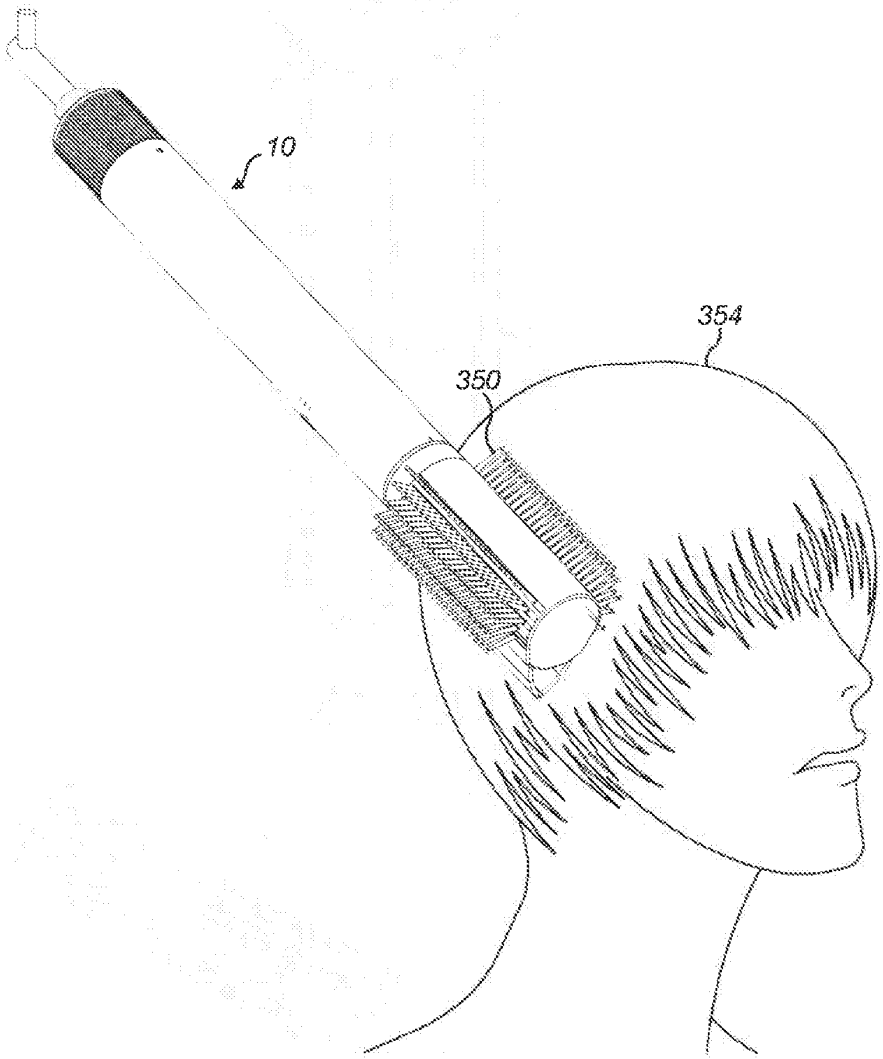


FIG. 14

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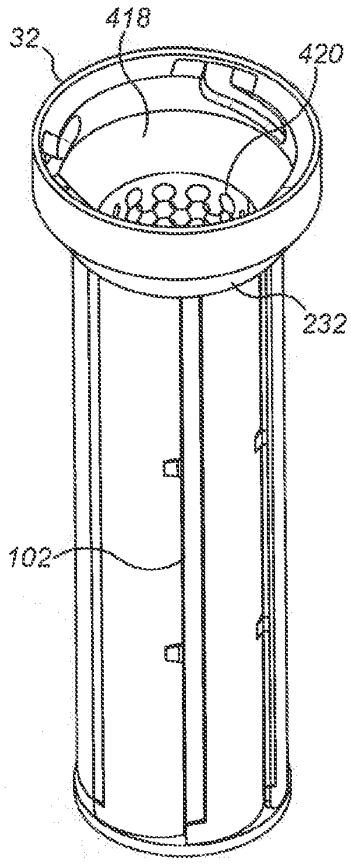


FIG. 15a

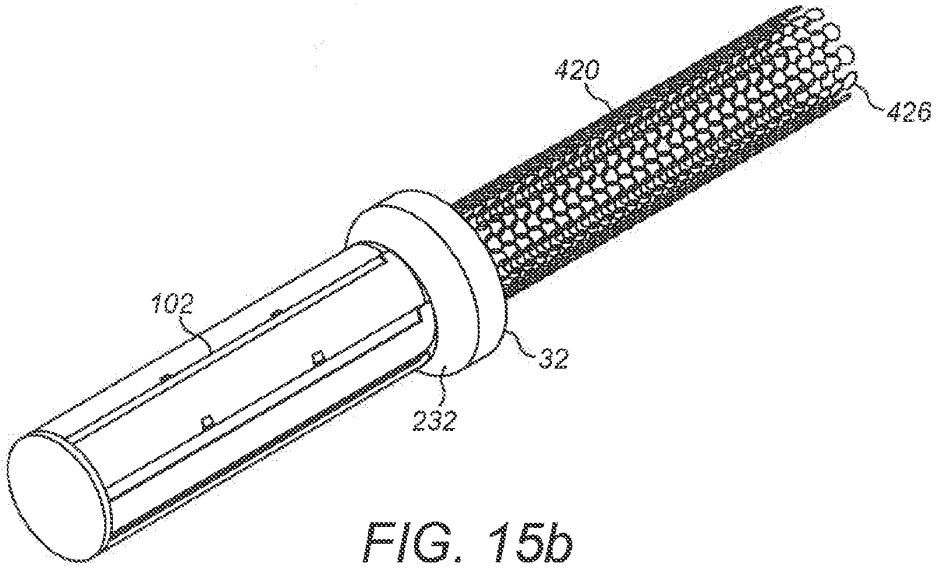


FIG. 15b

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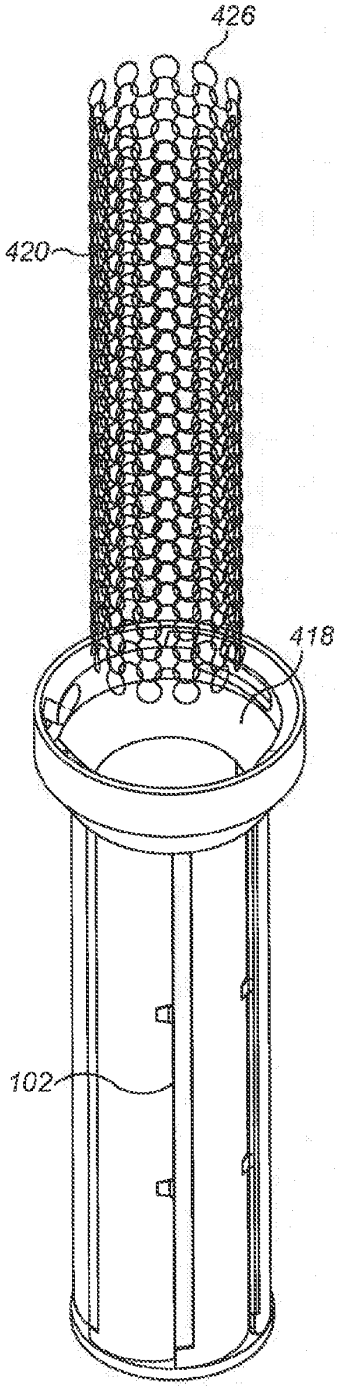


FIG. 15c

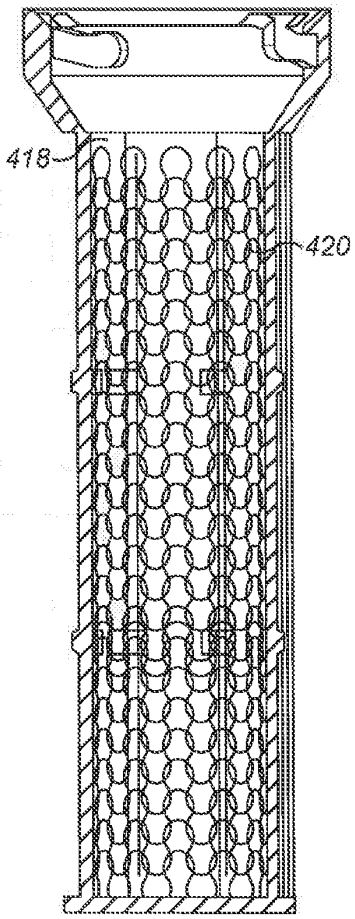


FIG. 15d

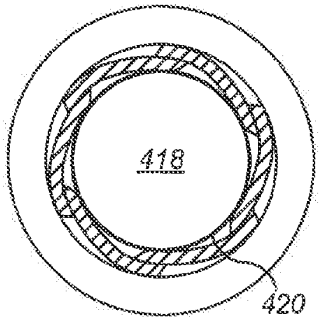


FIG. 15e

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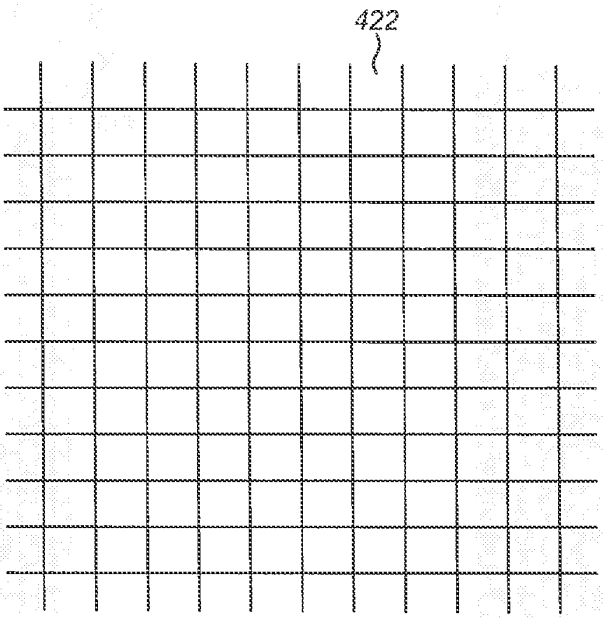


FIG. 16a

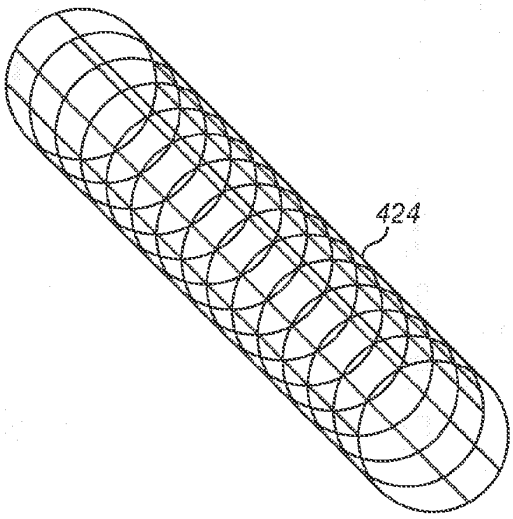


FIG. 16b

3NSDOCID: <WO_____2015140506A1_I_>

INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2015/050659

A. CLASSIFICATION OF SUBJECT MATTER
INV. A45D20/50 A45D20/12 A46B9/02
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A45D A46B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP S62 41606 A (MATSUSHITA ELECTRIC WORKS LTD) 23 February 1987 (1987-02-23)	1,3-9, 17, 19-25, 33-35
A	figures 3-5	10, 12-16, 26,28-32
X	US 3 981 313 A (BURKE FREDERICK A ET AL) 21 September 1976 (1976-09-21)	1,2,4-8, 17,18, 20-24, 33-35
	column 3, line 4 - column 5, line 59; figures 1-7	

-/--

[X] Further documents are listed in the continuation of Box C. [X] See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
30 April 2015	08/05/2015

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Ionescu, C

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Form PCT/ISA/210 (second sheet) (April 2005)

BNSDOCID: <WO_____2015140508A1_1_>

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Page 1016 of 1998

INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2015/050659

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/129289 A1 (HAFEMANN KLAUS [DE]) 8 July 2004 (2004-07-08) paragraphs [0010] - [0037]; figures 1-3	1,3-8, 11,17, 19-24, 27,33-35

1

Form PCT/ISA/210 (continuation of second sheet) (April 2005)

BNSDOCID: <WO_____2015140506A1_I_>

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2015/050659

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. [X] Claims Nos.: 36
because they relate to subject matter not required to be searched by this Authority, namely:

Rules 6.2(a) and 6.3(a) PCT

2. [ ] Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. [ ] Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. [ ] As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. [ ] As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. [ ] As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. [ ] No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

[ ] The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

[ ] The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

[ ] No protest accompanied the payment of additional search fees.

ISDOCID: <WO_____2015140505A1_I_>

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/GB2015/050659

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP S6241606 A	23-02-1987	NONE	
US 3981313 A	21-09-1976	CA 1062908 A1	25-09-1979
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SharkNinja Ex. 1002
Page 1019 of 1998

Electronic Patent Application Fee Transmittal

Application Number:	14656357
Filing Date:	12-Mar-2015
Title of Invention:	ATTACHMENT FOR A HAND HELD APPLIANCE
First Named Inventor/Applicant Name:	Alasdair Michael MACLAINE
Filer:	Christopher Elmose Gloria/Donna Bernecker
Attorney Docket Number:	424662093300

Filed as Large Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
		Total in USD ($)		**180**

Electronic Acknowledgement Receipt	
EFS ID:	29859508
Application Number:	14656357
International Application Number:	
Confirmation Number:	9085
Title of Invention:	ATTACHMENT FOR A HAND HELD APPLIANCE
First Named Inventor/Applicant Name:	Alasdair Michael MACLAINE
Customer Number:	25227
Filer:	Christopher Elmose Gloria/Donna Bernecker
Filer Authorized By:	Christopher Elmose Gloria
Attorney Docket Number:	424662093300
Receipt Date:	21-JUL-2017
Filing Date:	12-MAR-2015
Time Stamp:	17:09:15
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$180
RAM confirmation Number	072417INTEFSW00003617031952
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		IDS_424662093300.pdf	44603 ffbb557f426dfda33271f3ff9725f398d24f725b	yes	3
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Transmittal Letter		1	2	
	Information Disclosure Statement (IDS) Form (SB08)		3	3	
Warnings:					
Information:					
2	Foreign Reference	WO_2007_077040.pdf	1820921 6d43375f161fc8246688cf46f87b4101831c51dc	no	30
Warnings:					
Information:					
3	Foreign Reference	WO_2015_140506.pdf	3799783 9e467c98a8d29f76775f77d990f2144e7c7eb8c5	no	46
Warnings:					
Information:					
4	Non Patent Literature	14656375_May222017_424662093500.pdf	290705 3ccec37ff67850c9302465fcdd16c23b02f287ff	no	8
Warnings:					
Information:					
5	Fee Worksheet (SB06)	fee-info.pdf	30705 31771109f7e8a15aba5c5cf76110d2a227429360	no	2
Warnings:					
Information:					

Total Files Size (in bytes):	5986717

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

I hereby certify that this paper is being transmitted via the Office electronic filing system in accordance with 37 CFR § 1.6(a)(4).

Dated: July 21, 2017
Electronic Signature for Donna Bernecker: /dbernecker/

Patent
Docket No. 424662093300

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Alasdair Michael MACLAINE

Application No.: 14/656,357 | Confirmation No.: 9085

Filed: March 12, 2015 | Art Unit: 3776

For: ATTACHMENT FOR A HAND HELD APPLIANCE | Examiner: Jennifer Frances Gill

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97 & § 1.98

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Pursuant to 37 C.F.R. § 1.97 and § 1.98, Applicants submit for consideration in the above-identified application the documents listed on the attached Form PTO/SB/08a/b. Copies of the foreign documents and non-patent literature are submitted herewith. The Examiner is requested to make these documents of record.

This Information Disclosure Statement is submitted after receipt of a first Office Action on the merits but before mailing of a final Office Action or Notice of Allowance. The required fee is submitted herewith.

Applicants would appreciate the Examiner initialing and returning the Form PTO/SB/08a/b, indicating that the information has been considered and made of record herein.

va-499915

The information contained in this Information Disclosure Statement under 37 C.F.R. § 1.97 and § 1.98 is not to be construed as a representation that: (i) a complete search has been made; (ii) additional information material to the examination of this application does not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the above information constitutes prior art to the subject invention.

In the unlikely event that the transmittal form is separated from this document and the Patent and Trademark Office determines that an extension and/or other relief (such as payment of a fee under 37 C.F.R. § 1.17 (p)) is required, Applicants petition for any required relief including extensions of time and authorize the Commissioner to charge the cost of such petition and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing (424662093300). However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Dated: July 21, 2017

Respectfully submitted,

Electronic signature: /christopher gloria/
Christopher Gloria
Registration No.: 71,907
MORRISON & FOERSTER LLP
1650 Tysons Blvd, Suite 400
McLean, Virginia 22102
(703) 760-7389

va-499915

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/656,357	03/12/2015	Alasdair Michael MACLAINE	424662093300	9085

25227 7590 08/09/2017

MORRISON & FOERSTER LLP
1650 TYSONS BOULEVARD
SUITE 400
MCLEAN, VA 22102

EXAMINER
GILL, JENNIFER FRANCES

ART UNIT	PAPER NUMBER
3776	

NOTIFICATION DATE	DELIVERY MODE
08/09/2017	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

EOfficeVA@mofo.com
PatentDocket@mofo.com
pair_mofo@firsttofile.com

SharkNinja Ex. 1002
Page 1027 of 1998

Office Action Summary	Application No. 14/656,357	Applicant(s) MACLAINE, ALASDAIR MICHAEL	
	Examiner JENNIFER GILL	Art Unit 3776	AIA (First Inventor to File) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *5/15/17*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5)☒ Claim(s) *1-35* is/are pending in the application.

5a) Of the above claim(s) *17-35* is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-16* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☒ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on *5/15/15* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date *4/18/17 & 7/21/17*.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement(s) (IDS) submitted on 4/18/17 & 7/21/17 with the fees was/were filed in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement(s) has/have been considered by the examiner.

Drawings

The drawings were received on 5/15/17. These drawings are objected to.

The previous objections to Figures 1-2, and 4a-b is/are overcome with applicant's drawing changes submitted on 5/15/17.

Specification

The changes to the disclosure submitted on 5/15/17 are accepted and overcome the previous objection.

Claim Rejections - 35 USC § 102

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale or otherwise available to the public before the effective filing date of the claimed invention.

Claim(s) 1-5, 7, 9-10 is/are rejected under 35 U.S.C. 102(a)(1) as being anticipated by, or unpatentable over, Lindsey (USP 5868148).

Regarding the attachment being “configured to direct fluid flow emitted from the outlet along and around the external surface of the attachment” and "configured so that in use, the fluid emitted from the outlet is attracted to the surface of the attachment", the applicant is respectfully advised that it has been held by the courts that where a prior art apparatus is identical or substantially identical in structure, claimed properties or functional characteristics are presumed to be inherent, and a prima facie case of either anticipation or obviousness has been established. *In re Best*, 195 USPQ 430 (CCPA 1977). See MPEP § 2112.01. In this case, Lindsey discloses all the structural features of the claimed invention (as detailed above) and was therefore considered to anticipate the cited functional limitations.

Claim 1, Lindsey teaches an attachment (10) for a handheld appliance (15) comprising: an inlet (16); a series of outlets in the form of slots (G) extending from near an inlet end of the attachment towards a distal end of the attachment and wherein the outlets (G) are defined by an external surface of the attachment because they are gaps extending through the external surface of the attachment (see Figs 8-13). Fluid emitted from the outlet would be capable of being blown along and around the external surface and around the external surface of the attachment (see Figs 8-13); particularly since hair wrapped around the device in use would act as a baffle, helping to force the airflow to be "directed along and around the external surface of the attachment".

Claim 2, the slots (G) extend substantially along a length of the attachment (10; see Figs 8-13).

Claim 3, the outlet slots (G) are spaced radially around the attachment (10; see Figs 8-13).

Claim 4, the fluid can be emitted from the outlet tangential to the external surface of the attachment (see Fig 9).

Claim 5, the fluid emitted from the outlet appears to be capable of being directed towards, or around, the external surface of the attachment, which meets the claim limitation of "attracted to" the surface, as best understood (see Fig 9).

Claim 7, the outlet comprises at least two slots (G; see Figs 8-13).

Claims 9-10, the attachment (10) has a longitudinal axis extending from the inlet end to the distal end and the slots (G) are non-parallel to the longitudinal axis because the slots (G) are helical with respect to the longitudinal axis (see Fig 12).

Claims 11-13, the device further comprises a flow directing element (16) formed of a perforated (28 & 30) layer of elongate material; since Merriam-Webster defines mesh as “a web-like pattern or construction” and the flow directing element (16) has a series of spaced holes forming a “web-like pattern”, the perforated layer is formed from a mesh of elongate material as claimed (see Figs 8-13).

Claims 15-16, the flow directing element (16) extends substantially along a length of the slots (G) and it extends substantially around an inner circumference of the attachment (see Figs 8-13).

Claim(s) 1-8, 11-13, and 15-16 is/are rejected under 35 U.S.C. 102(a)(1) as being anticipated by, or unpatentable over, McDougall et al (USP 5212366).

Regarding the attachment being “configured to direct fluid flow emitted from the outlet along and around the external surface of the attachment” and "configured so that in use, the fluid emitted from the outlet is attracted to the surface of the attachment", the applicant is respectfully advised that it has been held by the courts that where a prior art apparatus is identical or substantially identical in structure, claimed properties or functional characteristics are presumed to be inherent, and a prima facie case of either anticipation or obviousness has been established. *In re Best*, 195 USPQ 430 (CCPA 1977). See MPEP § 2112.01. In this case, McDougall discloses all the structural features of the claimed invention (as detailed above) and was therefore considered to anticipate the cited functional limitations.

Claim 1, McDougall teaches an attachment (2) for a handheld appliance (1) comprising an inlet (17); an outlet in the form of slots between plates (3, see Fig 5a) and a fluid flow path between the inlet and outlet and the slot extends from near an inlet end of the attachment towards a distal end of the attachment and wherein the outlet slots are at least partially defined by an external surface of the attachment such that fluid emitted from the outlet is blown along and around an internal and external surface of the attachment (since it flows from the internal to the external surface in use) and fluid emitted from the outlet can flow around the external surface of the attachment (Col 3, 1-10; see Figs 1-5); particularly since hair wrapped around the device in use would act as

a baffle, helping to force the airflow to be "directed along and around the external surface of the attachment".

Claim 2, the slots between the plates (3) when in the expanded state extend substantially along a length of the attachment (see Figs 1-2).

Claim 3, the outlet comprises a plurality of slots between the plates (3; see Figs 1-2).

Claim 4, the fluid emitted from the outlet is capable of emitting from the outlet tangential to the external surface of the attachment depending on the expanded state of the plates (3; see Figs 1-5).

Claim 5, the heated fluid emitted from the outlet is attracted to the surface of the attachment by virtue of the metal reinforcement rods (3f) in each plate (3) because metal is a known heat conductor so the heat would be attracted to this surface thereby meeting the claim limitations, as best understood (see Figs 1-5).

Claim 6, the attachment is generally cylindrical (see Figs 1-2).

Claim 7, the outlet comprises at least two slots (see Fig 5a).

Claim 8, the attachment has a longitudinal axis extending from the inlet end to the distal end and the slots are parallel to the longitudinal axis (see Figs 1-5).

Claims 11-13, there is a flow directing element (3d & 3e & 5 & 12 &13) between the inlet and outlet and these elements constitute “flow directing elements” because in use the air flows over or through these elements, thereby causing a redirection of the airflow by their presence (see Figs 1-2). At least one of these flow directing elements is formed as a perforated (3d & 3e) layer (see Figs 1-5). Since Merriam-Webster defines

mesh as “a weblike pattern or construction” and the flow directing element has a series of spaced holes (3d & 3e) forming a “weblike pattern”, the perforated layer is formed from a mesh of elongate material as claimed (see Figs 1-5).

Claim 15-16, the flow directing element (3d & 3e & 5) extend substantially along a length of the at least one slot (see Figs 1-5).

Claim Rejections - 35 USC § 103

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-16 is/are rejected under 35 U.S.C. 103 as being unpatentable over Lindsey (USP 5868148) in view of Tomaro (USP 4295283).

Claims 11-16, Lindsey discloses the invention essentially as claimed except for the attachment comprising a wire mesh flow directing element extending along the length of slots and around an inner circumference of the attachment. Tomaro, however, teaches an attachment (14) for a handheld appliance (2) wherein the attachment comprises an internal screen (which constitutes a wire mesh) between the inlet and the

outlet and extending along a length of the attachment and around an inner circumference of the attachment in order to further deflect and dissipate air discharged from the housing and in order to prevent the hair of a user from accidentally being caught in the fan (Col 1, 65-Col 2, 5; see Fig 1). Therefore, it would have been obvious to one possessing ordinary skill in the art at the time of filing to modify the device of Lindsey to comprise a wire mesh screen extending along a length of the attachment and around an inner circumference of the attachment in view of Tomaro in order to prevent a user's hair from accidentally entering the device and becoming tangled.

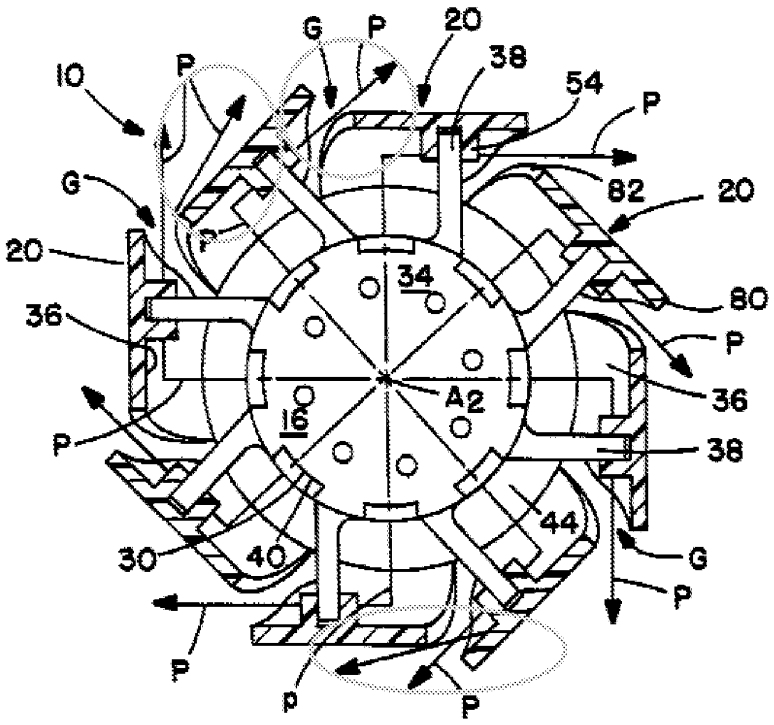
Response to Arguments

Applicant's arguments filed 5/15/17 have been fully considered but they are not persuasive.

The enablement rejection has been withdrawn in light of applicant's arguments. Since applicant argues that this "Coanda" effect is merely caused by the airflow being somewhat tangential to the surface of the attachment and the airflow of McDougall and Lindsey are able to emit air tangentially to the surface of their attachments, it appears the cited references teach this effect in as much as applicant does.

Applicant argues that Lindsey fails to teach this effect because Lindsey, in applicant's opinion, does not teach the airflow being directed tangentially to the attachment. The office copies the figure of Lindsey below, which illustrates the airflow (P) being directed tangentially to the surface of the plates (20) that form the attachment member (see Fig 1 & annotations). Since Lindsey teaches the air flowing tangentially, in as much as applicant does, Lindsey teaches the functional recitation. Applicant is

respectfully advised that it has been held by the courts that where a prior art apparatus is identical or substantially identical in structure, claimed properties or functional characteristics are presumed to be inherent, and a prima facie case of either anticipation or obviousness has been established. *In re Best*, 195 USPQ 430 (CCPA 1977). See MPEP § 2112.01. In this case, Lindsey discloses all the structural features of the claimed invention and is therefore considered to anticipate the cited functional limitations. Applicant argues that Lindsey teaches the flow paths direct air discharged from one vane over and through the prongs of the adjacent vanes; however, this does not preclude the airflow from exiting the device tangentially as illustrated by Lindsey.



Applicant then argues that McDougall fails to teach this functional recitation, as well; however, again McDougall teaches a series of overlapping plates that can emit air

between slots between these plates (see Figs 5a-5b) and applicant's disclosure and arguments state that this overlapping plate and slot arrangement causes applicant's attachment to "direct fluid flow emitted from the outlet along and around the external surface of the attachment". While applicant argues that the walls of McDougall would prevent applicant's fluid flow, this argument appears to be simply applicant's opinion and is not supported by any evidence. So since, McDougall appears to disclose all the structure necessary to achieve applicant's functional limitation, McDougall is interpreted to anticipate the claims. Applicant is respectfully advised that it has been held by the courts that where a prior art apparatus is identical or substantially identical in structure, claimed properties or functional characteristics are presumed to be inherent, and a prima facie case of either anticipation or obviousness has been established. *In re Best*, 195 USPQ 430 (CCPA 1977). See MPEP § 2112.01.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Gill whose telephone number is (571) 270-1797. The examiner can normally be reached on Monday-Thursday 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, ***please contact the examiner's supervisor, Todd Manahan, at* (571) 272-4713**. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

If there are any inquiries that are not being addressed by first contacting the Examiner or the Supervisor, you may send an email inquiry to TC3700_Workgroup_D_Inquiries@uspto.gov**.**

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. G./
Examiner, Art Unit 3776

/TODD E MANAHAN/

Supervisory Patent Examiner, Art Unit 3776

ALTERNATIVE TO PTO/SB/08A/B
(Based on PTO 08-08 version)

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	14/656,357
				Filing Date	March 12, 2015
				First Named Inventor	Alasdair Michael MACLAINE
				Art Unit	3776
(Use as many sheets as necessary)				Examiner Name	J. F. Gill
Sheet	1	of	2	Attorney Docket Number	424662093300

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1.	US-3,696,818	10-10-1972	Weber	
	2.	US-3,835,869	09-17-1974	Newman et al.	
	3.	US-4,430,808	02-14-1984	Toyomi et al.	
	4.	US-4,827,105	05-02-1989	Brown, Jr.	
	5.	US-5,091,630	02-25-1992	Djuric	
	6.	US-5,513,665	05-07-1996	Chan	
	7.	US-5,546,674	08-20-1996	Lange et al.	
	8.	US-5,842,286	12-01-1998	Cantor	
	9.	US-2002/0092196	07-18-2002	Tobin et al.	
	10.	US-7,124,763	10-24-2006	Hafemann	
	11.	US-2009/0145002	06-11-2009	Brewer et al.	
	12.	US-8,122,896	02-28-2012	Obermann	
	13.	US-2013/0160316	06-27-2013	Hadden	
	14.	US-2014/0144037	05-29-2014	Hadden	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]
	15.	DE-6928170	07-12-1969	Lebrecht Knipping	Partial Translation	X
	16.	GB-1 407 403	09-24-1975	Hoover Limited (Percival Keith HARRIS)		
	17.	WO-79/00374	06-28-1979	Remington Products, Inc. (Siegfried GODEL)		
	18.	DE-79 25 952	01-24-1980	Rowenta-Werke GmbH	Machine Translation	X
	19.	JP-60-100902	06-04-1985		Machine Translation	X
	20.	JP-60-134402	09-07-1985		Partial Translation	X
	21.	JP-10-42932	02-17-1998	Yodogawa Denki Seisakusho KK (Kadotaka FUKUYAMA)	Machine Translation	X
	22.	JP-2013-59580	04-04-2013	Izumi Prod Co. (Kenichi TANAKA)	Machine Translation	X
	23.	EP-2 823 726	01-14-2015	SEB S.A. (Martial MAISONNEUVE et al.)	Machine Translation	X

Examiner Signature	/JENNIFER F GILL/	Date Considered	08/03/2017

*EXAMINER: Initial if information considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

va-493728

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.F.G/

ALTERNATIVE TO PTO/SB/08A/B
(Based on PTO 08-08 version)

Substitute for form 1449/PTO **INFORMATION DISCLOSURE STATEMENT BY APPLICANT** *(Use as many sheets as necessary)*				***Complete if Known***	
				Application Number	14/656,357
				Filing Date	March 12, 2015
				First Named Inventor	Alasdair Michael MACLAINE
				Art Unit	3776
				Examiner Name	J. F. Gill
Sheet	2	of	2	Attorney Docket Number	424662093300

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	24.	MacLaine et al., U.S. Office Action mailed February 10, 2017, directed to U.S. Application No. 14/656,432; 18 pages	
	25.	MacLaine, Office Action mailed January 6, 2017, directed to U.S. Patent Application No. 14/656,375; 7 pages	

Examiner Signature	/JENNIFER F GILL/	Date Considered	08/03/2017

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1]Applicant's unique citation designation number (optional). [2]Applicant is to place a check mark here if English language Translation is attached.

va-493728

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.F.G/

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14656357	MACLAINE, ALASDAIR MICHAEL
	Examiner	Art Unit
	JENNIFER GILL	3776

CPC- SEARCHED		
Symbol	Date	Examiner
A45D 1/02, 2/06, 2/10, 2/125, 2/127, 2/14, 2/24, 2/2407, 2/2414, 2/2421, 2/245, 2/2457, 2/2485, 2/2492, 20/10, 20/122, 20/124, 20/50	1/25-2/3/17	JG
A46B 9/023, 15/003	1/25-2/3/17	JG

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

SEARCH NOTES		
Search Notes	Date	Examiner
132.CLAS (WITH TEXT SEE EAST HISTORY)	1/25-2/3/17	JG
USPC SEARCH WITH TEXT	1/25-2/3/17	JG
CPC SEARCH	1/25-2/3/17	JG
INVENTOR SEARCH	1/25-2/3/17	JG
ASSIGNEE SEARCH	1/25-2/3/17	JG
TEXT SEARCH (SEE EAST HISTORY)	1/25-2/3/17	JG
NPL SEARCH	1/25-2/3/17	JG
CONSULT WITH KIM SANG OF USPC 242	1/25-2/3/17	JG
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updated search notes	7/31-8/3/17	jg

/JENNIFER GILL/ Examiner.Art Unit 3776	

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

/JENNIFER GILL/ Examiner.Art Unit 3776	

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	31	(("3696818") or ("3835869") or ("4430808") or ("4827105") or ("5091630") or ("5513665") or ("5546674") or ("5842286") or ("20020092196") or ("7124763") or ("20090145002") or ("8122896") or ("20130160316") or ("20140144037")).PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2017/08/03 11:31
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S3	15	(("TWEEDIE") near3 ("Robert")).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2016/12/01 12:45
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S9	6	("2014/0083446").URPN.	USPAT	OR	ON	2016/12/02 10:31
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S12	0	("2009/0293901").URPN.	USPAT	OR	ON	2016/12/02 11:09
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S26	2	("2007/0137060").URPN.	USPAT	OR	ON	2017/01/30 14:43
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S30	2	("2008656").URPN.	USPAT	OR	ON	2017/01/30 18:10
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EAST Search History (Interference)

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ALTERNATIVE TO PTO/SB/08A/B
(Based on PTO 08-08 version)

Substitute for form 1449/PTO				*Complete if Known*	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				**Application Number**	14/656,357
				Filing Date	March 12, 2015
				First Named Inventor	Alasdair Michael MACLAINE
				Art Unit	3776
(Use as many sheets as necessary)				Examiner Name	J. F. Gill
Sheet	1	of	1	Attorney Docket Number	424662093300

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]
	1.	WO-2007/077040	07-12-2007	Leopoldo Matteo BAZZICALUPO; Raffaella MANGIAROTTI		
	2.	WO-2015/140506	09-24-2015	Dyson Technology Limited (Alasdair MACLAINE)		

Examiner Signature	/JENNIFER F GILL/	Date Considered	08/03/2017

*EXAMINER: Initial if information considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	3.	MacLaine, Office Action mailed May 22, 2017, directed to U.S. Patent Application No. 14/656,375; 8 pages	

Examiner Signature	/JENNIFER F GILL/	Date Considered	08/03/2017

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1]Applicant's unique citation designation number (optional). [2]Applicant is to place a check mark here if English language Translation is attached.

va-499909

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.F.G/

Doc Code: A.NE.AFCP
Document Description: After Final Consideration Pilot Program Request

PTO/SB/434 (05-13)

CERTIFICATION AND REQUEST FOR CONSIDERATION UNDER THE AFTER FINAL CONSIDERATION PILOT PROGRAM 2.0

Practitioner Docket No.:	Application No.:	Filing Date:
424662093300	14/656,357	March 12, 2015

First Named Inventor:	Title:
Alasdair Michael MACLAINE	ATTACHMENT FOR A HAND HELD APPLIANCE

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS CONSIDERATION UNDER THE AFTER FINAL CONSIDERATION PILOT PROGRAM 2.0 (AFCP 2.0) OF THE ACCOMPANYING RESPONSE UNDER 37 CFR 1.116.

1. The above-identified application is (i) an original utility, plant, or design nonprovisional application filed under 35 U.S.C. 111(a) [a continuing application (*e.g.*, a continuation or divisional application) is filed under 35 U.S.C. 111(a) and is eligible under (i)], or (ii) an international application that has entered the national stage in compliance with 35 U.S.C. 371(c).

2. The above-identified application contains an outstanding final rejection.

3. Submitted herewith is a response under 37 CFR 1.116 to the outstanding final rejection. The response includes an amendment to at least one independent claim, and the amendment does not broaden the scope of the independent claim in any aspect.

4. This certification and request for consideration under AFCP 2.0 is the only AFCP 2.0 certification and request filed in response to the outstanding final rejection.

5. Applicant is willing and available to participate in any interview requested by the examiner concerning the present response.

6. This certification and request is being filed electronically using the Office's electronic filing system (EFS-Web).

7. Any fees that would be necessary consistent with current practice concerning responses after final rejection under 37 CFR 1.116, *e.g.*, extension of time fees, are being concurrently filed herewith. [There is no additional fee required to request consideration under AFCP 2.0.]

8. By filing this certification and request, applicant acknowledges the following:

- Reissue applications and reexamination proceedings are not eligible to participate in AFCP 2.0.
- The examiner will verify that the AFCP 2.0 submission is compliant, *i.e.*, that the requirements of the program have been met (see items 1 to 7 above). For compliant submissions:
  - The examiner will review the response under 37 CFR 1.116 to determine if additional search and/or consideration (i) is necessitated by the amendment and (ii) could be completed within the time allotted under AFCP 2.0. If additional search and/or consideration is required but cannot be completed within the allotted time, the examiner will process the submission consistent with current practice concerning responses after final rejection under 37 CFR 1.116, *e.g.*, by mailing an advisory action.
  - If the examiner determines that the amendment does not necessitate additional search and/or consideration, or if the examiner determines that additional search and/or consideration is required and could be completed within the allotted time, then the examiner will consider whether the amendment places the application in condition for allowance (after completing the additional search and/or consideration, if required). If the examiner determines that the amendment does not place the application in condition for allowance, then the examiner will contact the applicant and request an interview.
    - The interview will be conducted by the examiner, and if the examiner does not have negotiation authority, a primary examiner and/or supervisory patent examiner will also participate.
    - If the applicant declines the interview, or if the interview cannot be scheduled within ten (10) calendar days from the date that the examiner first contacts the applicant, then the examiner will proceed consistent with current practice concerning responses after final rejection under 37 CFR 1.116.

Signature	/christopher gloria/	Date	November 9, 2017
Name (Print/Typed)	Christopher Gloria	Practitioner Registration No.	71,907

***Note**: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.*

☐ * Total of 1 forms are submitted.

va-506654

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REMARKS

Claims 1 and 17 have been amended. Support for the amendment is found throughout the specification, including in paragraph [0092], and in the drawings. No new matter has been added.

Claims 1 and 17 are independent claims, and the amendments set forth above do not broaden the scope of the claims in any aspect. Accordingly, this after final Amendment is eligible for the After Final Consideration Pilot Program 2.0. Applicant respectfully requests the Examiner to consider this after final Amendment under the pilot program. A Certification and Request for Consideration Under the After Final Consideration Pilot Program 2.0 is submitted with this amendment.

With respect to all claim amendments, Applicant has not dedicated to the public or abandoned any unclaimed subject matter. These amendments have been made only in the interest of progressing the prosecution of this application, and do not indicate that these amendments are necessary for patentability. Moreover, Applicant has not acquiesced to any rejections and/or objections made by the Patent Office. Applicant reserves the right to pursue prosecution of any presently excluded claim embodiments in a future continuation and/or divisional application.

Claims 1-5, 7, 9-13, and 15-16 are rejected under 35 USC 102(a)(1) on Lindsey (US 5,868,148). Claims 1-8, 11-13, and 15-16 are rejected under 35 USC 102(a)(1) on McDougall (US 5,212,366). Claims 11-16 are rejected under 35 USC 103 over Lindsey in view of Tomaro (US 4,295,283). These rejections are respectfully traversed.

Claim 1 has been amended to recite that "the external surface of the attachment is free of bristles." Thus, amended claim 1 is directed to an attachment for a hand held appliance that includes an outlet that "is configured to direct fluid flow emitted from the outlet along and around

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the external surface of the attachment" so that hair is wrapped around the attachment during use without the use of bristles. The references fail to disclose or suggest that the external surface of the attachment is free of bristles. Further, modifying any of the references to be free of bristles would not have been obvious because the devices would not be operable for their intended purposes.

In view of the above, early action allowing claims 1-35 is solicited.

In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, Applicants petition for any required relief, including extensions of time, and authorize the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket no. **424662093300**.

Dated: November 9, 2017

Respectfully submitted,

Electronic signature: /christopher gloria/
Christopher Gloria
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va-505038

APPENDIX

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AMENDMENTS TO THE CLAIMS

1. (Currently Amended) 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 and is configured to direct fluid flow emitted from the outlet along and around the external surface of the attachment, and wherein the external surface of the attachment is free of bristles.

2. (Previously Presented) The attachment of claim 1, wherein the at least one slot extends substantially along a length of the attachment.

3. (Original) The attachment of claim 1, wherein the outlet comprises a plurality of slots radially spaced around the attachment.

4. (Original) The attachment of claim 1, wherein the fluid emitted from the outlet is tangential to the external surface of the attachment.

5. (Previously Presented) The attachment of claim 1, wherein the attachment is configured so that, in use, the fluid emitted from the outlet is attracted to the surface of the attachment.

6. (Original) The attachment of claim 1, wherein the attachment is generally cylindrical.

7. (Original) The attachment of claim 1, wherein the outlet comprises two slots.

8. (Previously Presented) The attachment of claim 1, wherein the attachment has a longitudinal axis extending from the inlet end to the distal end and the at least one slot is parallel to the longitudinal axis.

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9. (Previously Presented) The attachment of claim 1, wherein the attachment has a longitudinal axis extending from the inlet end to the distal end and the at least one slot is non-parallel to the longitudinal axis.

10. (Original) The attachment of claim 9, wherein the at least one slot is helical with respect to the longitudinal axis.

11. (Original) The attachment of claim 1, further comprising a flow directing element between the inlet and the outlet.

12. (Original) The attachment of claim 11, wherein the flow directing element comprises a perforated layer.

13. (Original) The attachment of claim 12, wherein the perforated layer is formed from a mesh or weave of an elongate material.

14. (Original) The attachment of claim 13, wherein the elongate material is a wire.

15. (Previously Presented) The attachment of claim 12, wherein the flow directing element extends substantially along a length of the at least one slot.

16. (Original) The attachment of claim 12, wherein the flow directing element extends substantially around an inner circumference of the attachment.

17. (Withdrawn-Currently Amended) A hand held appliance comprising a handle having a fluid flow path from handle inlet to a handle outlet, a fan unit for drawing fluid into the handle 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 is configured to direct

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fluid flow emitted from the outlet along and around the external surface of the attachment, and wherein the external surface of the attachment is free of bristles.

18. (Withdrawn-Previously Presented) The appliance of claim 17, wherein the at least one slot extends substantially along a length of the attachment.

19. (Withdrawn) The appliance of claim 17, wherein the outlet comprises a plurality of slots radially spaced around the attachment.

20. (Withdrawn) The appliance of claim 17, wherein the fluid emitted from the outlet is tangential to the external surface of the attachment.

21. (Withdrawn-Previously Presented) The appliance of claim 17, wherein the attachment is configured so that, in use, the fluid emitted from the outlet is attracted to the surface of the attachment.

22. (Withdrawn) The appliance of claim 17, wherein the attachment is generally cylindrical.

23. (Withdrawn) The appliance of claim 17, wherein the outlet comprises two slots.

24. (Withdrawn-Previously Presented) The appliance of claim 17, wherein the attachment has a longitudinal axis extending from the inlet end to the distal end and the at least one slot is parallel to the longitudinal axis.

25. (Withdrawn-Previously Presented) The appliance of claim 17, wherein the attachment has a longitudinal axis extending from the inlet end to the distal end and the at least one slot is non-parallel to the longitudinal axis.

26. (Withdrawn) The appliance of claim 25, wherein the at least one slot is helical with respect to the longitudinal axis.

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27. (Withdrawn) The appliance of claim 17, further comprising a flow directing element between the inlet and the outlet.

28. (Withdrawn) The appliance of claim 27, wherein the flow directing element comprises a perforated layer.

29. (Withdrawn) The appliance of claim 28, wherein the perforated layer is formed from a mesh or weave of an elongate material.

30. (Withdrawn) The appliance of claim 29, wherein the elongate material is a wire.

31. (Withdrawn-Previously Presented) The appliance of claim 27, wherein the flow directing element extends substantially along a length of the at least one slot.

32. (Withdrawn) The appliance of claim 27, wherein the flow directing element extends substantially around an inner circumference of the attachment.

33. (Withdrawn) The appliance of claim 17, wherein the appliance is a hair care appliance.

34. (Withdrawn) The appliance of claim 17, wherein the appliance is a hot styling appliance.

35. (Withdrawn) The appliance of claim 17, wherein the appliance is a hot styling brush.

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Docket No.: 424662093300
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Alasdair Michael MACLAINE

Application No.: 14/656,357 | Confirmation No.: 9085

Filed: March 12, 2015 | Art Unit: 3776

For: ATTACHMENT FOR A HAND HELD APPLIANCE | Examiner: Jennifer Frances Gill

AMENDMENT UNDER 37 C.F.R. 1.116

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the Office Action mailed August 9, 2017, please amend this application as follows.

Amendments to the claims begin on page 2.

Remarks begin on page 6 of this paper.

An Appendix includes a Certification and Request for Consideration Under the After Final Consideration Pilot Program 2.0.

va-505038

Electronic Acknowledgement Receipt	
EFS ID:	30902630
Application Number:	14656357
International Application Number:	
Confirmation Number:	9085
Title of Invention:	ATTACHMENT FOR A HAND HELD APPLIANCE
First Named Inventor/Applicant Name:	Alasdair Michael MACLAINE
Customer Number:	25227
Filer:	Christopher Elmose Gloria/Donna Bernecker
Filer Authorized By:	Christopher Elmose Gloria
Attorney Docket Number:	424662093300
Receipt Date:	09-NOV-2017
Filing Date:	12-MAR-2015
Time Stamp:	17:23:48
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		AmendAF_424662093300.pdf	67442 1a1522b40a0e4d0a6030d0281dda6763998bde13	yes	9

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	After Final Consideration Program Request	9	9
	Applicant Arguments/Remarks Made in an Amendment	6	8
	Claims	2	5
	Response After Final Action	1	1
Warnings:			
Information:			
	Total Files Size (in bytes):	67442	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 14/656,357	Filing Date 03/12/2015	☐ To be Mailed

ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT

11/09/2017	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 35	Minus	** 35	= 0	X $80 =	0
Independent (37 CFR 1.16(h))	* 2	Minus	***3	= 0	X $420 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
ANGELONA JONES

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/656,357	03/12/2015	Alasdair Michael MACLAINE	424662093300	9085

25227 7590 11/22/2017

MORRISON & FOERSTER LLP
1650 TYSONS BOULEVARD
SUITE 400
MCLEAN, VA 22102

EXAMINER	
GILL, JENNIFER FRANCES	

ART UNIT	PAPER NUMBER
3776	

NOTIFICATION DATE	DELIVERY MODE
11/22/2017	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

EOfficeVA@mofo.com
PatentDocket@mofo.com
pair_mofo@firsttofile.com

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Applicant-Initiated Interview Summary	Application No.	Applicant(s)	
	14/656,357	MACLAINE, ALASDAIR MICHAEL	
	Examiner	Art Unit	
	JENNIFER GILL	3776	

All participants (applicant, applicant's representative, PTO personnel):

(1) *JENNIFER GILL*. (3)_____.

(2) *CHRISTOPHER GLORIA*. (4)_____.

Date of Interview: *15 November 2017*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☒112 ☒102 ☐103 ☒Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *1*.

Identification of prior art discussed: *Lindsey (USP 5868148) & McDougall (USP 5212366)*.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

The office indicated that applicant's proposed claim amendment requiring "the external surface of the attachment is free of bristles" would constitute new matter because applicant's disclosure at [0120] states that the attachment can comprise bristles, such that this new limitation would constitute new matter. The office indicated that the after final amendment would not be entered because the of new matter issue. The office suggested instead attempting to claim that each wall comprises two ends with a first end forming a protrusion and an opposed second end carrying an internal rib with a concave recess joined thereto and wherein the first end protrusion fits into and mates with the concave recess of an adjacent wall around an entire circumference of the device. Applicant's representative asked about a limitation requiring the attachment be cylindrical and it was discussed that while the Lindsey reference teaches away from a cylindrical attachment (Col 1, 50-Col 2, 10), the McDougall reference does not and suggested that the concave recess language would appear to overcome the McDougall reference, as well .

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☒ Attachment

/JENNIFER GILL/ Examiner, Art Unit 3776	

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Advisory Action Before the Filing of an Appeal Brief	**Application No.** 14/656,357	**Applicant(s)** MACLAINE, ALASDAIR MICHAEL	
	Examiner JENNIFER GILL	**Art Unit** 3776	**AIA (First Inventor to File) Status** Yes

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 09 November 2017 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

NO NOTICE OF APPEAL FILED

1. ☒ The reply was filed after a final rejection. No Notice of Appeal has been filed. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114 if this is a utility or plant application. Note that RCEs are not permitted in design applications. The reply must be filed within one of the following time periods:
   a) ☐ The period for reply expires _____months from the mailing date of the final rejection.
   b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action; or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
   c) ☐ A prior Advisory Action was mailed more than 3 months after the mailing date of the final rejection in response to a first after-final reply filed within 2 months of the mailing date of the final rejection. The current period for reply expires months from the mailing date of *the prior Advisory Action* or SIX MONTHS from the mailing date of the final rejection, whichever is earlier.

   Examiner Note: If box 1 is checked, check either box (a), (b) or (c). ONLY CHECK BOX (b) WHEN THIS ADVISORY ACTION IS THE FIRST RESPONSE TO APPLICANT'S FIRST AFTER-FINAL REPLY WHICH WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. ONLY CHECK BOX (c) IN THE LIMITED SITUATION SET FORTH UNDER BOX (c). See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) or (c) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☒ The proposed amendments filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);
   b) ☒ They raise the issue of new matter (see NOTE below);
   c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: *See Continuation Sheet*. (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): (a) ☒ will not be entered, or (b) ☐ will be entered, and an explanation of how the new or amended claims would be rejected is provided below or appended.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
9. ☐ The affidavit or other evidence filed after final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
10. ☐ The affidavit or other evidence filed after the date of filing the Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
11. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

12. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.
13. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____
14. ☒ Other: interview summary & PTO 2323.

STATUS OF CLAIMS

15. The status of the claim(s) is (or will be) as follows:
    Claim(s) allowed: .
    Claim(s) objected to: .
    Claim(s) rejected: 1-16.
    Claim(s) withdrawn from consideration: 17-35.

/TODD E MANAHAN/ Supervisory Patent Examiner, Art Unit 3776	/JENNIFER GILL/ Examiner, Art Unit 3776

Continuation of 3. NOTE: the proposed amendment adds a new negative limitation requiring "the external surface of the attachment is free of bristles"; however, applicant's specification at [0120] explicitly states that the elected attachment embodiment (30) can comprise bristles in one row, multiple rows, and/or on every other wall of the attachment, such that this new negative limitation would constitute new matter. .

Continuation of 12. does NOT place the application in condition for allowance because: Since the proposed amendment adds a new negative limitation that constitutes new matter, this would require additional search and consideration and it does not materially reduce or simplify the issues for appeal because it creates the new issue of new matter. Therefore, the after final amendment will not be entered.

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Page 1071 of 1998

Applicant-Initiated Interview Summary	Application No.	Applicant(s)	
	14/656,357	MACLAINE, ALASDAIR MICHAEL	
	Examiner	Art Unit	
	JENNIFER GILL	3776	

All participants (applicant, applicant's representative, PTO personnel):

(1) *JENNIFER GILL*. (3)_____.

(2) *CHRISTOPHER GLORIA*. (4)_____.

Date of Interview: *15 November 2017*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☒112 ☒102 ☐103 ☒Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *1*.

Identification of prior art discussed: *Lindsey (USP 5868148) & McDougall (USP 5212366)*.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

The office indicated that applicant's proposed claim amendment requiring "the external surface of the attachment is free of bristles" would constitute new matter because applicant's disclosure at [0120] states that the attachment can comprise bristles, such that this new limitation would constitute new matter. The office indicated that the after final amendment would not be entered because the of new matter issue. The office suggested instead attempting to claim that each wall comprises two ends with a first end forming a protrusion and an opposed second end carrying an internal rib with a concave recess joined thereto and wherein the first end protrusion fits into and mates with the concave recess of an adjacent wall around an entire circumference of the device. Applicant's representative asked about a limitation requiring the attachment be cylindrical and it was discussed that while the Lindsey reference teaches away from a cylindrical attachment (Col 1, 50-Col 2, 10), the McDougall reference does not and suggested that the concave recess language would appear to overcome the McDougall reference, as well .

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☒ Attachment

/JENNIFER GILL/ Examiner, Art Unit 3776	

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
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Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Do not enter
/jg/
11/15/17

Docket No.: 424662093300
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Alasdair Michael MACLAINE

Application No.: 14/656,357 Confirmation No.: 9085

Filed: March 12, 2015 Art Unit: 3776

For: ATTACHMENT FOR A HAND HELD APPLIANCE Examiner: Jennifer Frances Gill

AMENDMENT UNDER 37 C.F.R. 1.116

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the Office Action mailed August 9, 2017, please amend this application as follows.

Amendments to the claims begin on page 2.

Remarks begin on page 6 of this paper.

An Appendix includes a Certification and Request for Consideration Under the After Final Consideration Pilot Program 2.0.

va-505038

AFCP 2.0 Decision	Application No.	Applicant(s)
	14/656,357	MACLAINE, ALASDAIR MICHAEL
	Examiner	Art Unit
	JENNIFER GILL	3776

This is in response to the After Final Consideration Pilot request filed 09 November 2017.

1. **Improper Request** – The AFCP 2.0 request is improper for the following reason(s) and the after final amendment submitted with the request will be treated under pre-pilot procedure.

   ☐ An AFCP 2.0 request form PTO/SB/434 (or equivalent document) was not submitted.

   ☐ A non-broadening amendment to at least one independent claim was not submitted.

   ☐ A proper AFCP 2.0 request was submitted in response to the most recent final rejection.

   ☐ Other:

2. **Proper Request**

   A. After final amendment submitted with the request will not be treated under AFCP 2.0.
   The after final amendment cannot be reviewed and a search conducted within the guidelines of the pilot program.

   ☐ The after final amendment will be treated under pre-pilot procedure.

   B. Updated search and/or completed additional consideration.
   The examiner performed an updated search and/or completed additional consideration of the after final amendment within the time authorized for the pilot program. The result(s) of the updated search and/or completed additional consideration are:

   ☐ 1. All of the rejections in the most recent final Office action are overcome and a Notice of Allowance is issued herewith.

   ☐ 2. The after final amendment would not overcome all of the rejections in the most recent final Office action. See attached interview summary for further details.

   ☒ 3. The after final amendment was reviewed, and it raises a new issue(s). See attached interview summary for further details.

   ☐ 4. The after final amendment raises new issues, but would overcome all of the rejections in the most recent final Office action. A decision on determining allowability could not be made within the guidelines of the pilot. See attached interview summary for further details, including any newly discovered prior art.

   ☐ 5. Other:

   Examiner Note: Please attach an interview summary when necessary as described above.

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Doc code: RCEX
Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (07-14)
Approved for use through 07/31/2016. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	14656357	Filing Date	2015-03-12	Docket Number (if applicable)	424662093300	Art Unit	3776
First Named Inventor	Alasdair Michael MACLAINE			Examiner Name	J. F. Gill		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, to any international application that does not comply with the requirements of 35 U.S.C. 371, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV.

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☒ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

☒ Other Please do not enter the after-final amendment filed November 9, 2017.

☒ Enclosed

☒ Amendment/Reply

☒ Information Disclosure Statement (IDS)

☐ Affidavit(s)/ Declaration(s)

☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____ (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

☒ **The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**
The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No 03-1952

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

Applicant Signature

PTO/SB/30EFS (07-14)
Approved for use through 07/31/2016. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Signature of Registered U.S. Patent Practitioner			
Signature	/christopher gloria/	Date (YYYY-MM-DD)	2017-12-11
Name	Christopher Gloria	Registration Number	71907

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Docket No.: 424662093300
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Alasdair Michael MACLAINE

Application No.: 14/656,357 | Confirmation No.: 9085

Filed: March 12, 2015 | Art Unit: 3776

For: ATTACHMENT FOR A HAND HELD APPLIANCE | Examiner: Jennifer Frances Gill

AMENDMENT UNDER 37 C.F.R. 1.111

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the Office Action mailed August 9, 2017, the period for response having been extended one (1) month to December 11, 2017, and pursuant to action on the Request for Continued Examination filed concurrently herewith, please amend this application as follows.

Amendments to the claims begin on page 2 of this paper.

Remarks begin on page 6 of this paper.

va-508510

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) 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 and is configured to direct fluid flow emitted from the outlet along and around the external surface of the attachment, and wherein the external surface of the attachment forms an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot.

2. (Canceled)

3. (Original) The attachment of claim 1, wherein the outlet comprises a plurality of slots radially spaced around the attachment.

4. (Original) The attachment of claim 1, wherein the fluid emitted from the outlet is tangential to the external surface of the attachment.

5. (Previously Presented) The attachment of claim 1, wherein the attachment is configured so that, in use, the fluid emitted from the outlet is attracted to the surface of the attachment.

6. (Original) The attachment of claim 1, wherein the attachment is generally cylindrical.

7. (Original) The attachment of claim 1, wherein the outlet comprises two slots.

8. (Previously Presented) The attachment of claim 1, wherein the attachment has a longitudinal axis extending from the inlet end to the distal end and the at least one slot is parallel to the longitudinal axis.

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9. (Previously Presented) The attachment of claim 1, wherein the attachment has a longitudinal axis extending from the inlet end to the distal end and the at least one slot is non-parallel to the longitudinal axis.

10. (Original) The attachment of claim 9, wherein the at least one slot is helical with respect to the longitudinal axis.

11. (Original) The attachment of claim 1, further comprising a flow directing element between the inlet and the outlet.

12. (Original) The attachment of claim 11, wherein the flow directing element comprises a perforated layer.

13. (Original) The attachment of claim 12, wherein the perforated layer is formed from a mesh or weave of an elongate material.

14. (Original) The attachment of claim 13, wherein the elongate material is a wire.

15. (Previously Presented) The attachment of claim 12, wherein the flow directing element extends substantially along a length of the at least one slot.

16. (Original) The attachment of claim 12, wherein the flow directing element extends substantially around an inner circumference of the attachment.

17. (Withdrawn-Currently Amended) A hand held appliance comprising a handle having a fluid flow path from handle inlet to a handle outlet, a fan unit for drawing fluid into the handle 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 is configured to direct

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fluid flow emitted from the outlet along and around the external surface of the attachment, and wherein the external surface of the attachment forms an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot.

18. (Canceled)

19. (Withdrawn) The appliance of claim 17, wherein the outlet comprises a plurality of slots radially spaced around the attachment.

20. (Withdrawn) The appliance of claim 17, wherein the fluid emitted from the outlet is tangential to the external surface of the attachment.

21. (Withdrawn-Previously Presented) The appliance of claim 17, wherein the attachment is configured so that, in use, the fluid emitted from the outlet is attracted to the surface of the attachment.

22. (Withdrawn) The appliance of claim 17, wherein the attachment is generally cylindrical.

23. (Withdrawn) The appliance of claim 17, wherein the outlet comprises two slots.

24. (Withdrawn-Previously Presented) The appliance of claim 17, wherein the attachment has a longitudinal axis extending from the inlet end to the distal end and the at least one slot is parallel to the longitudinal axis.

25. (Withdrawn-Previously Presented) The appliance of claim 17, wherein the attachment has a longitudinal axis extending from the inlet end to the distal end and the at least one slot is non-parallel to the longitudinal axis.

26. (Withdrawn) The appliance of claim 25, wherein the at least one slot is helical with respect to the longitudinal axis.

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27. (Withdrawn) The appliance of claim 17, further comprising a flow directing element between the inlet and the outlet.

28. (Withdrawn) The appliance of claim 27, wherein the flow directing element comprises a perforated layer.

29. (Withdrawn) The appliance of claim 28, wherein the perforated layer is formed from a mesh or weave of an elongate material.

30. (Withdrawn) The appliance of claim 29, wherein the elongate material is a wire.

31. (Withdrawn-Previously Presented) The appliance of claim 27, wherein the flow directing element extends substantially along a length of the at least one slot.

32. (Withdrawn) The appliance of claim 27, wherein the flow directing element extends substantially around an inner circumference of the attachment.

33. (Withdrawn) The appliance of claim 17, wherein the appliance is a hair care appliance.

34. (Withdrawn) The appliance of claim 17, wherein the appliance is a hot styling appliance.

35. (Withdrawn) The appliance of claim 17, wherein the appliance is a hot styling brush.

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REMARKS

Claims 1 and 17 have been amended. Support for the amendment is found throughout the specification, including in FIGs. 1a to 9b. Claims 2 and 18 have been canceled. No new matter has been added.

With respect to all claim amendments, Applicant has not dedicated to the public or abandoned any unclaimed subject matter. These amendments have been made only in the interest of progressing the prosecution of this application, and do not indicate that these amendments are necessary for patentability. Moreover, Applicant has not acquiesced to any rejections and/or objections made by the Patent Office. Applicant reserves the right to pursue prosecution of any presently excluded claim embodiments in a future continuation and/or divisional application.

Applicant's representative, Christopher Gloria, thanks Examiner Gill for the courtesy of the telephonic interview of November 15, 2017. During the interview, participants discussed the AFCP 2.0 Amendment filed November 9, 2017. The Examiner asserted that the amendment would constitute new matter since the specification describes embodiments that include bristles. As an alternative, the Examiner suggested amending the claims to include the rib structure that joins adjacent walls together in some embodiments. Participants also discussed Lindsey's teaching away from a cylindrical shape for the attachment.

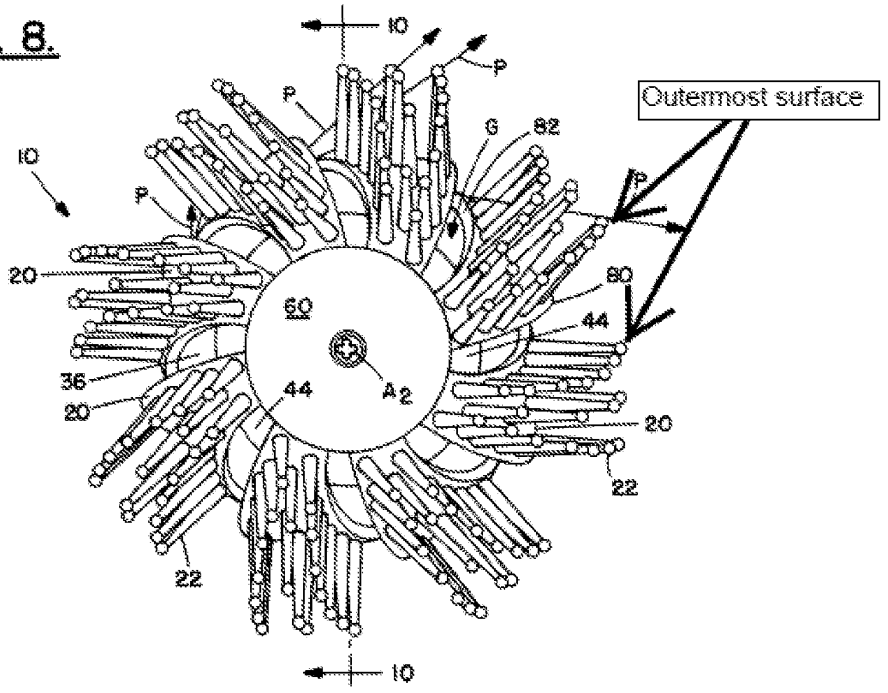
Claims 1-5, 7, 9-13, and 15-16 are rejected under 35 USC 102(a)(1) on Lindsey (US 5,868,148). Claims 1-8, 11-13, and 15-16 are rejected under 35 USC 102(a)(1) on McDougall (US 5,212,366). Claims 11-16 are rejected under 35 USC 103 over Lindsey in view of Tomaro (US 4,295,283). These rejections are respectfully traversed.

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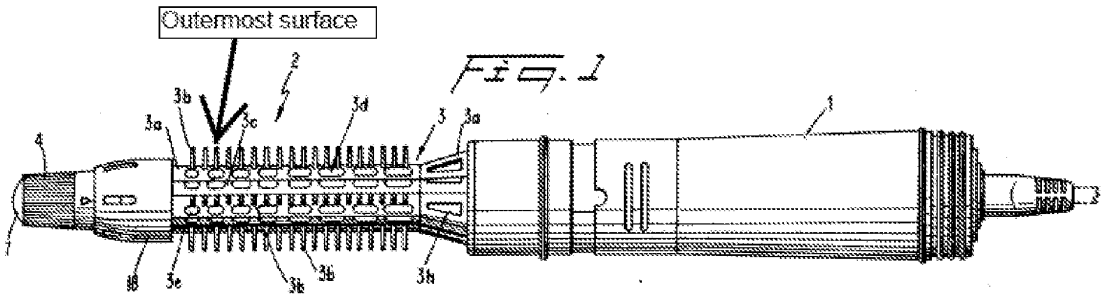
Amended claim 1 has been amended to recite that "the external surface of the attachment forms an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot." Thus, the external surface—the surface that the outlet is configured to direct fluid flow along and around—forms the outermost surface of the attachment at least for the length of the attachment along which the at least one slot extends.

The references fail to disclose or suggest that "the external surface of the attachment forms an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot," as recited in amended claim 1. For example, as illustrated in the below annotation of Lindsey's FIG. 8, the outermost surface of Lindsey's attachment from the beginning of the gaps to the end of the gaps is formed by the prongs 22, not by the surface of the vanes 20 that the Examiner equates with the external surface recited in the claims.

FIG. 8.



McDougall suffers from a similar deficiency in that the teeth 3b form the outermost surface of the attachment, not the surface that the Examiner equates with the external surface recited in the claims, as illustrated in the below annotation of FIG. 1 of McDougall.



Thus, the references fail to disclose or suggest that "the external surface of the attachment forms an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot," as recited in amended claim 1.

Accordingly, the rejection of claim 1, as amended, should be withdrawn. The rejection of dependent claims 3-16 should be withdrawn at least for the respective dependencies of the claims.

In view of the above, early action allowing claims 1, 3-17, and 19-35 is solicited.

In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, Applicants petition for any required relief, including extensions of time, and authorize the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket no. **424662093300**.

Dated: December 11, 2017

Respectfully submitted,

Electronic signature: /christopher gloria/
Christopher Gloria
Registration No.: 71,907
MORRISON & FOERSTER LLP
1650 Tysons Blvd, Suite 400
McLean, Virginia 22102
(703) 760-7389

va-508510

Patent
Docket No. 424662093300

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Alasdair Michael MACLAINE

Application No.: 14/656,357 | Confirmation No.: 9085

Filed: March 12, 2015 | Art Unit: 3776

For: ATTACHMENT FOR A HAND HELD APPLIANCE | Examiner: Jennifer Frances Gill

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97 & § 1.98

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Pursuant to 37 C.F.R. § 1.97 and § 1.98, Applicants submit for consideration in the above-identified application the documents listed on the attached Form PTO/SB/08a/b. Copies of the foreign documents and non-patent literature are submitted herewith. The Examiner is requested to make these documents of record.

This Information Disclosure Statement is submitted with the filing of a Request for Continued Examination under 37 C.F.R. § 1.114; accordingly, no fee or separate requirements are required.

Applicants would appreciate the Examiner initialing and returning the Form PTO/SB/08a/b, indicating that the information has been considered and made of record herein.

va-508534

The information contained in this Information Disclosure Statement under 37 C.F.R. § 1.97 and § 1.98 is not to be construed as a representation that: (i) a complete search has been made; (ii) additional information material to the examination of this application does not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the above information constitutes prior art to the subject invention.

In the unlikely event that the transmittal form is separated from this document and the Patent and Trademark Office determines that an extension and/or other relief (such as payment of a fee under 37 C.F.R. § 1.17 (p)) is required, Applicants petition for any required relief including extensions of time and authorize the Commissioner to charge the cost of such petition and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing (424662093300). However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Dated: December 11, 2017

Respectfully submitted,

Electronic signature: /christopher gloria/
Christopher Gloria
Registration No.: 71,907
MORRISON & FOERSTER LLP
1650 Tysons Blvd, Suite 400
McLean, Virginia 22102
(703) 760-7389

va-508534

ALTERNATIVE TO PTO/SB/08A/B
(Based on PTO 08-08 version)

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	14/656,357
				Filing Date	March 12, 2015
				First Named Inventor	Alasdair Michael MACLAINE
				Art Unit	3776
(Use as many sheets as necessary)				Examiner Name	J. F. Gill
Sheet	1	of	1	Attorney Docket Number	424662093300

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1.	US-4,197,448	04-08-1980	Harigai	
	2.	US-6,038,782	03-21-2000	Schepisi	
	3.	US-8,353,303	01-15-2013	Kim	
	4.	US-2017/0273421	09-28-2017	Heffer et al.	
	5.	US-2017/0273422	09-28-2017	Heffer et al.	
	6.	US-2017/0273423	09-28-2017	Mason et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]
	7.	GB-2515812	01-07-2015	Dyson Technology Limited (Patrick Joseph William MOLONEY et al.)		

Examiner Signature		Date Considered	

*EXAMINER: Initial if information considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	8.	MacLaine et al., U.S. Office Action mailed August 16, 2017, directed to U.S. Application No. 14/656,432; 14 pages	
	9.	MacLaine, Office Action mailed December 8, 2017, directed to U.S. Patent Application No. 14/656,375; 7 pages	

Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1]Applicant's unique citation designation number (optional). [2]Applicant is to place a check mark here if English language Translation is attached.

va-508529

(12) UK Patent Application (19) GB (11) 2515812 (13) A

(43) Date of A Publication 07.01.2015

(21) Application No: 1312069.6

(22) Date of Filing: 05.07.2013

(51) INT CL:
A45D 20/12 (2006.01) *A45D 20/52* (2006.01)
H05K 7/00 (2006.01)

(56) Documents Cited:
GB 1446385 A EP 0306765 A

(58) Field of Search:
INT CL A45D, H05K
Other: EPODOC, WPI

(71) Applicant(s):
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(72) Inventor(s):
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Paul Anthony Andrew Grant
Anthony Thomas Gosnay
Peter David Gammack

(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: **A handheld appliance**
Abstract Title: **A hair care appliance**

(57) A hair care appliance comprises a body (30, fig.3) a fluid flow path (300, fig.3) extending through the body (30, fig.3) from a fluid inlet to a fluid outlet and a PCB 75 extending about the fluid flow path. The PCB 75 may be annular, and is preferably isolated from the fluid flow path (300, fig.3). The PCB 75 may comprise a first layer 75a and a second layer 75b. The first layer 75a may extend substantially continuously about the fluid flow path (300, fig.3) and the second layer 75b may extend partially about the fluid flow path (300, fig.3). The second layer 75b may be adjacent and downstream of the first layer 75a. The body (30, fig.3) may comprise a duct (310, fig.3) and the fluid flow path (300, fig.3) extends through the duct. The PCB 75 may extend about the duct (310, fig.3). The body (30, fig.3) may also comprise a primary fluid flow path (400, fig.3) extending about the duct (310, fig.3) which may be in fluid communication with the PCB 75.

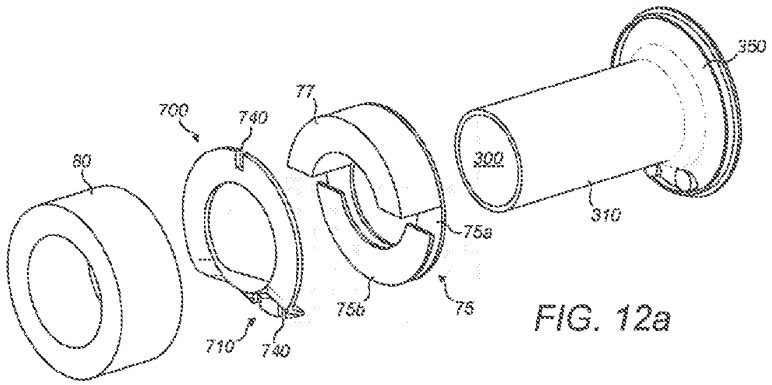


FIG. 12a

GB 2515812 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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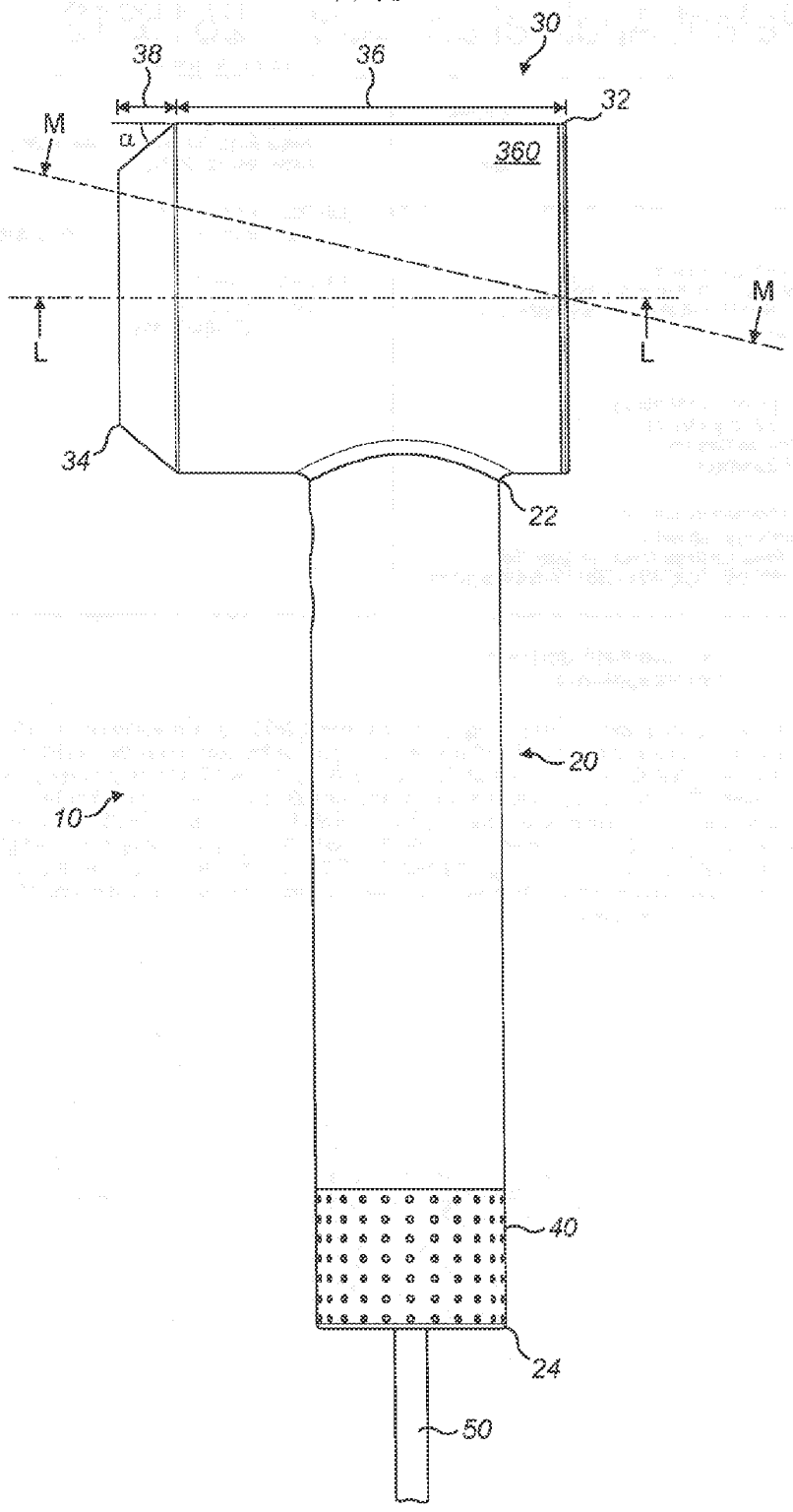


FIG. 1

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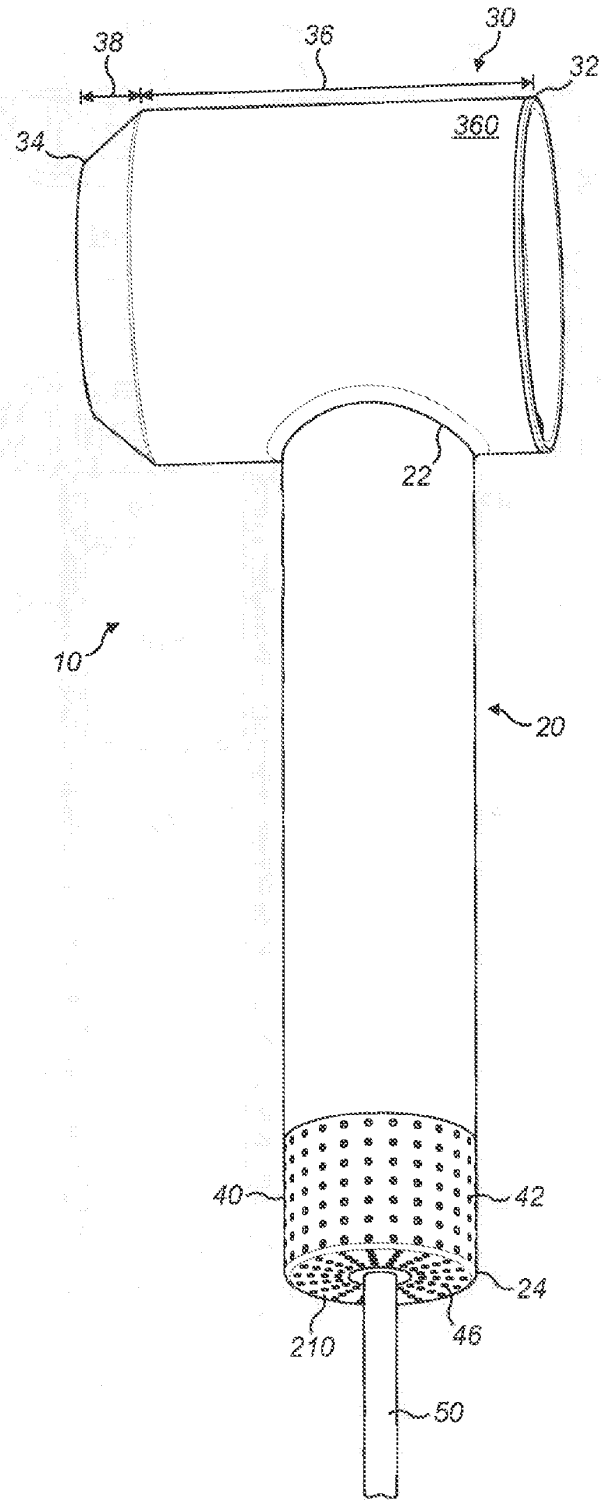


FIG. 2

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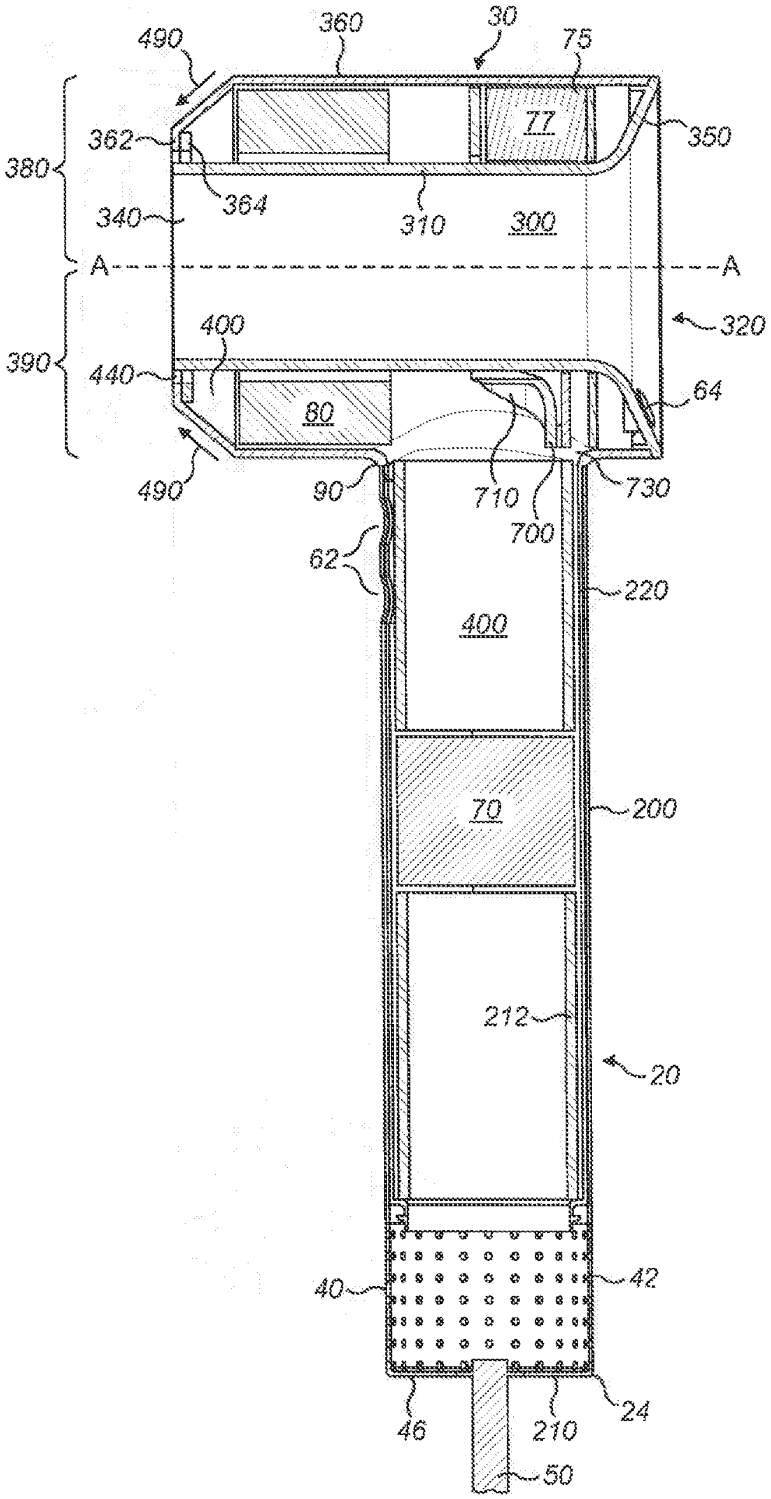

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FIG. 3

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FIG. 4b

FIG. 4a

SNSDOCID: <GB_____2515812A__1_>

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30 09 14

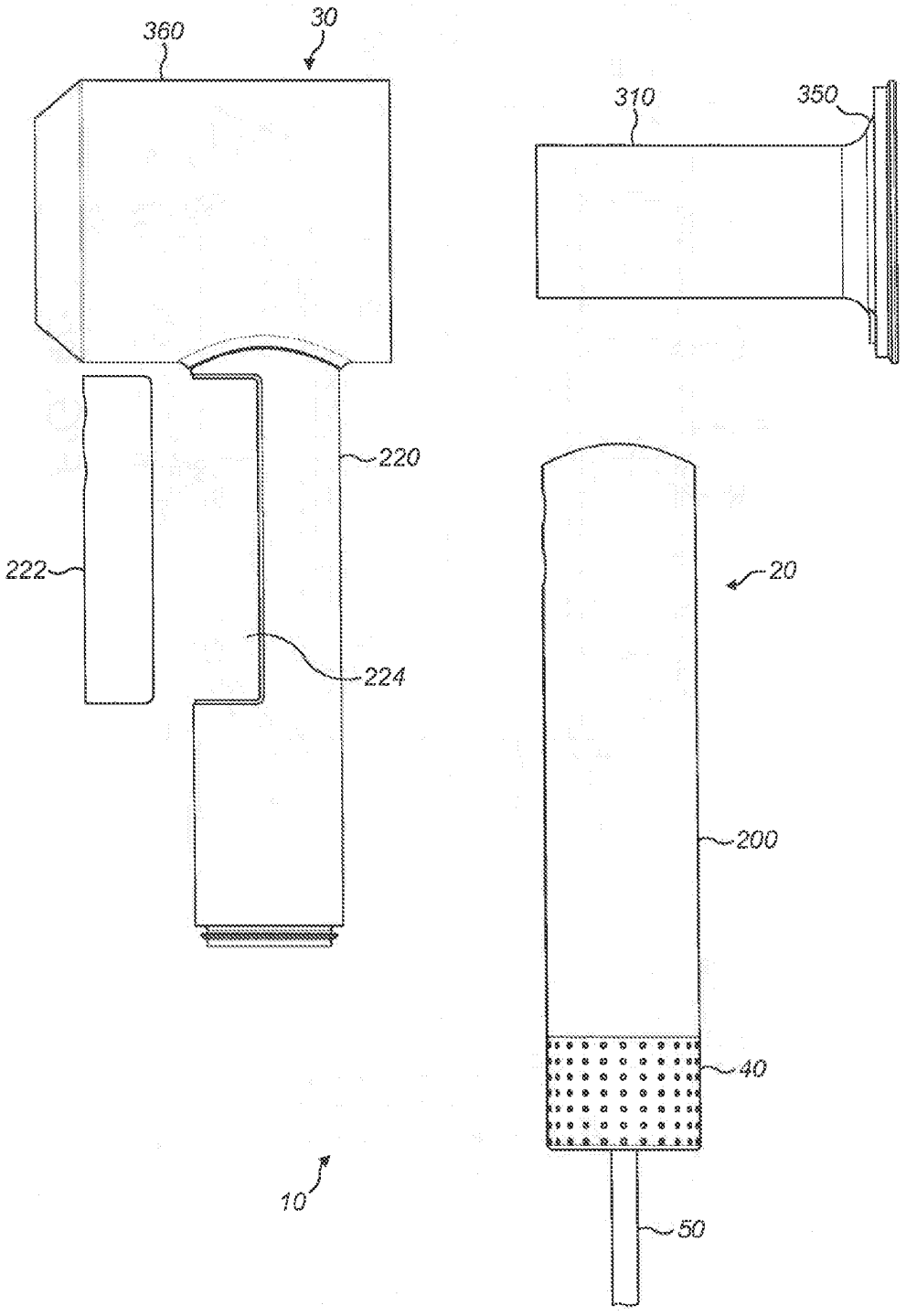


FIG. 5

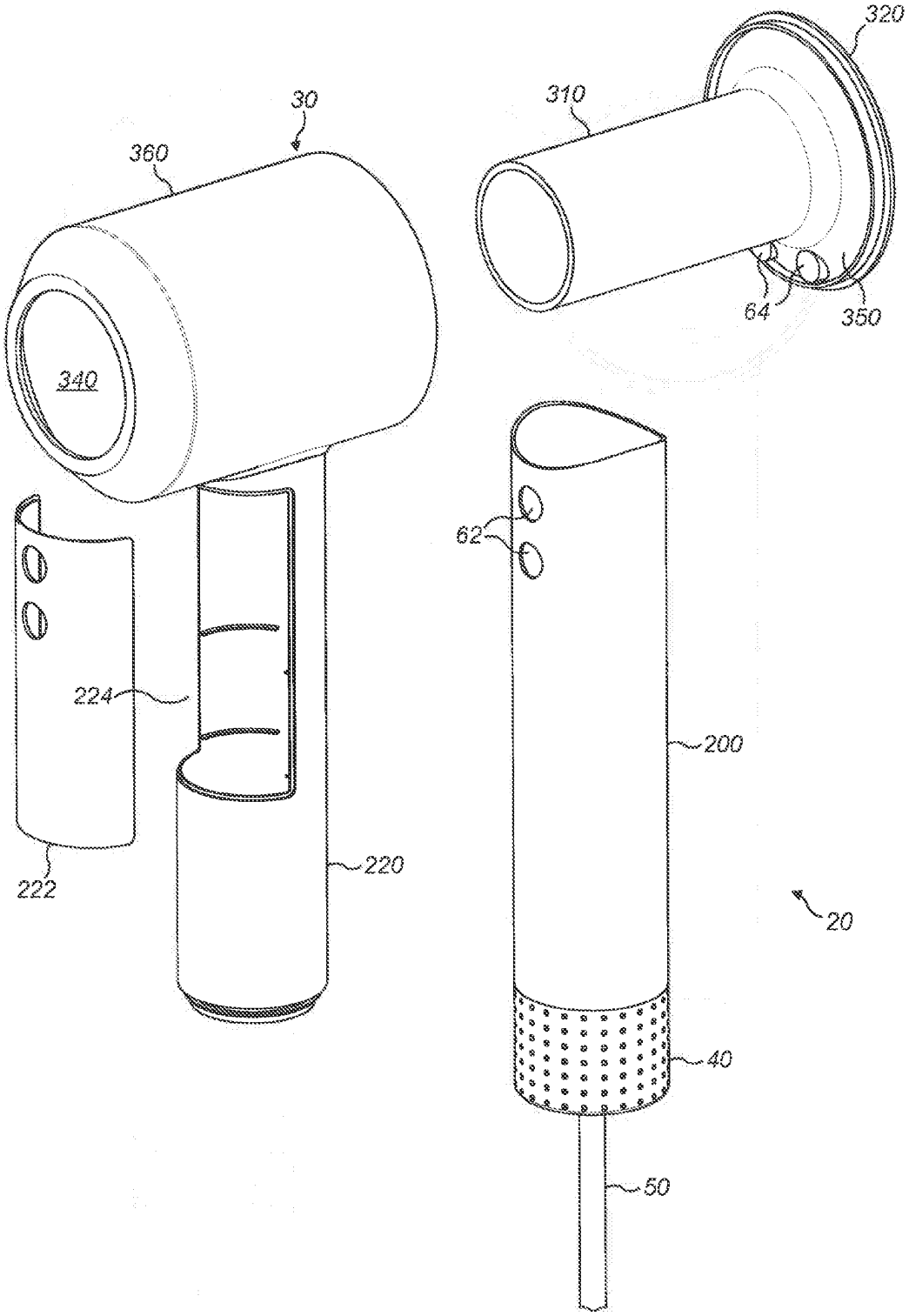


FIG. 6

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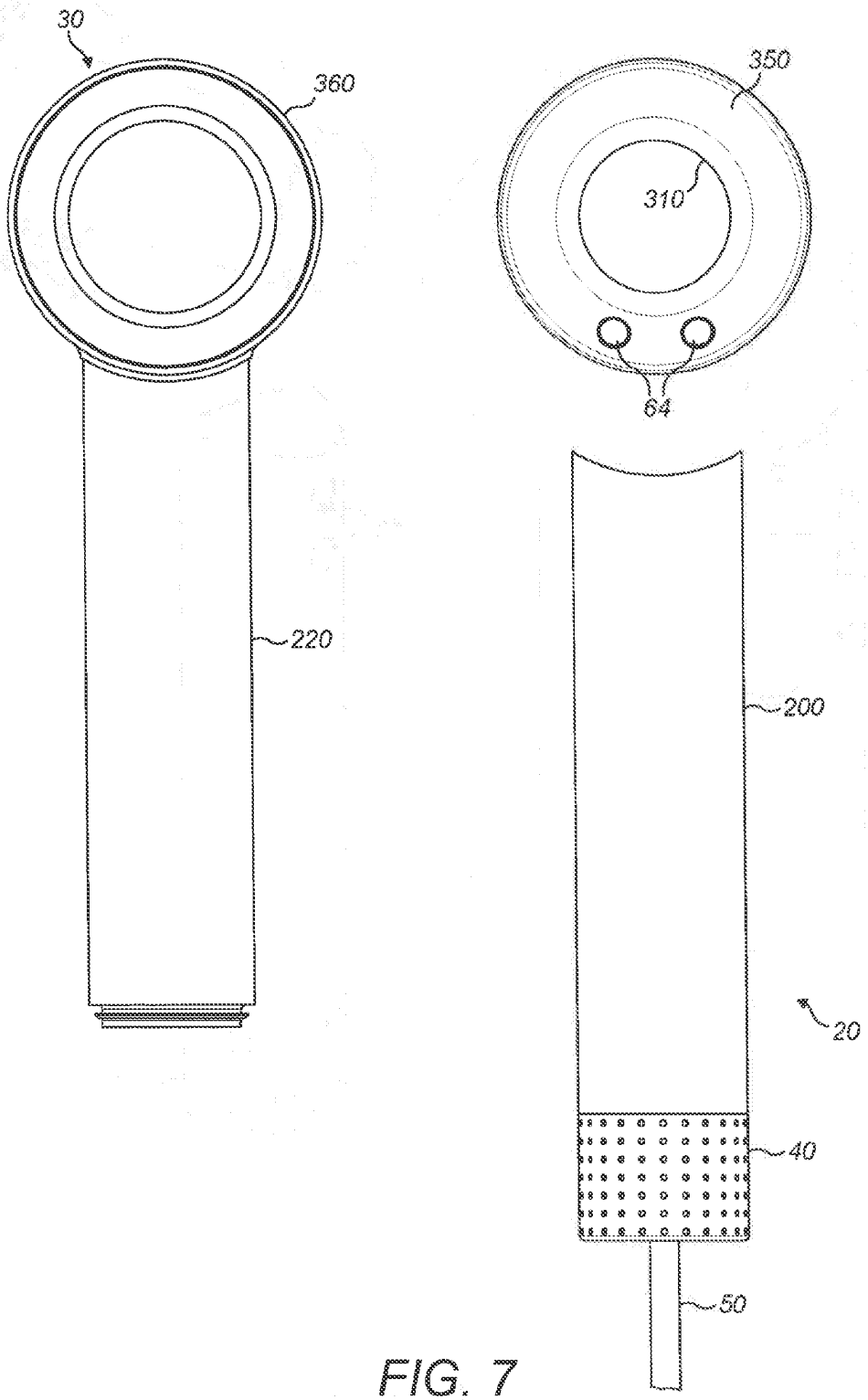


FIG. 7

3NSDOCID: <GB 2515812A_I_>

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FIG. 8a

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30 09 14

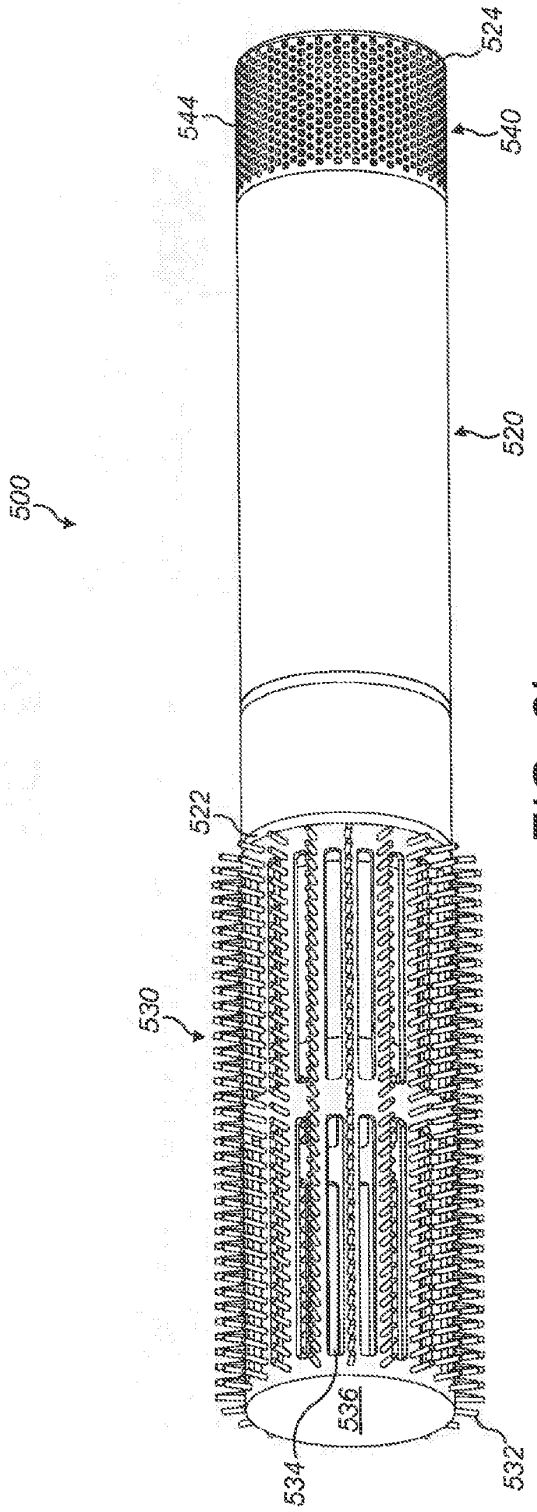


FIG. 8b

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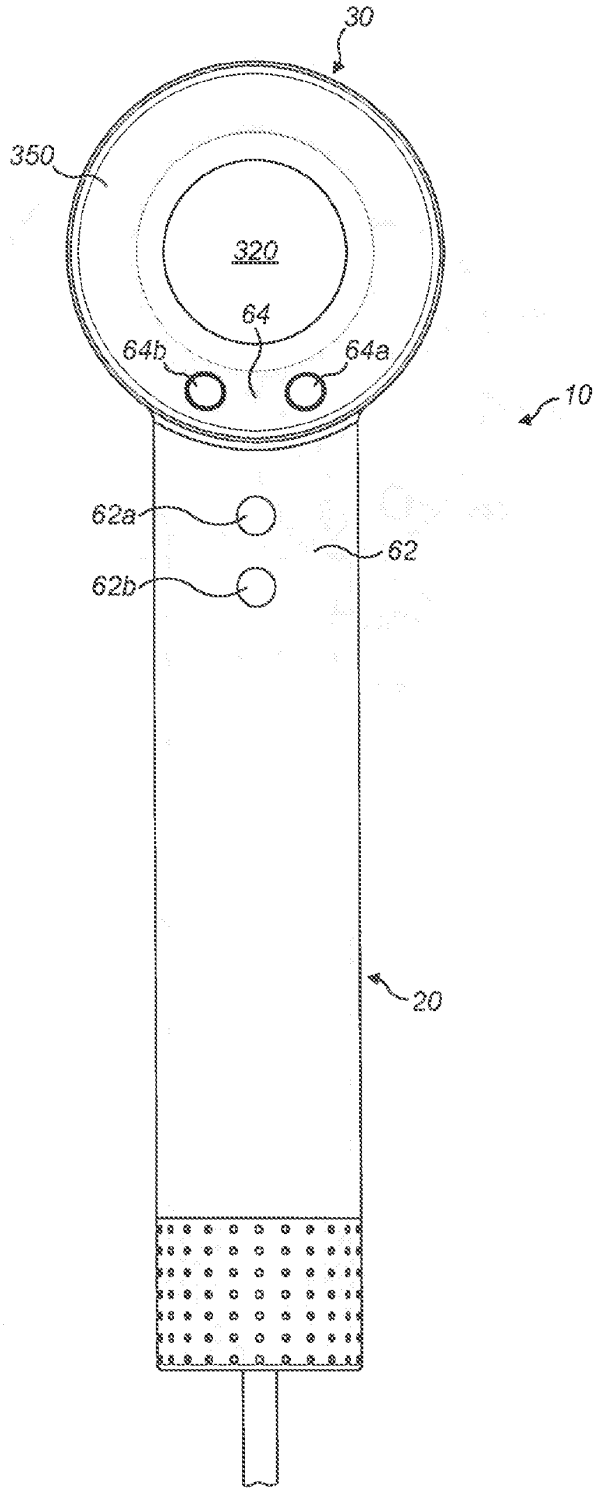


FIG. 9

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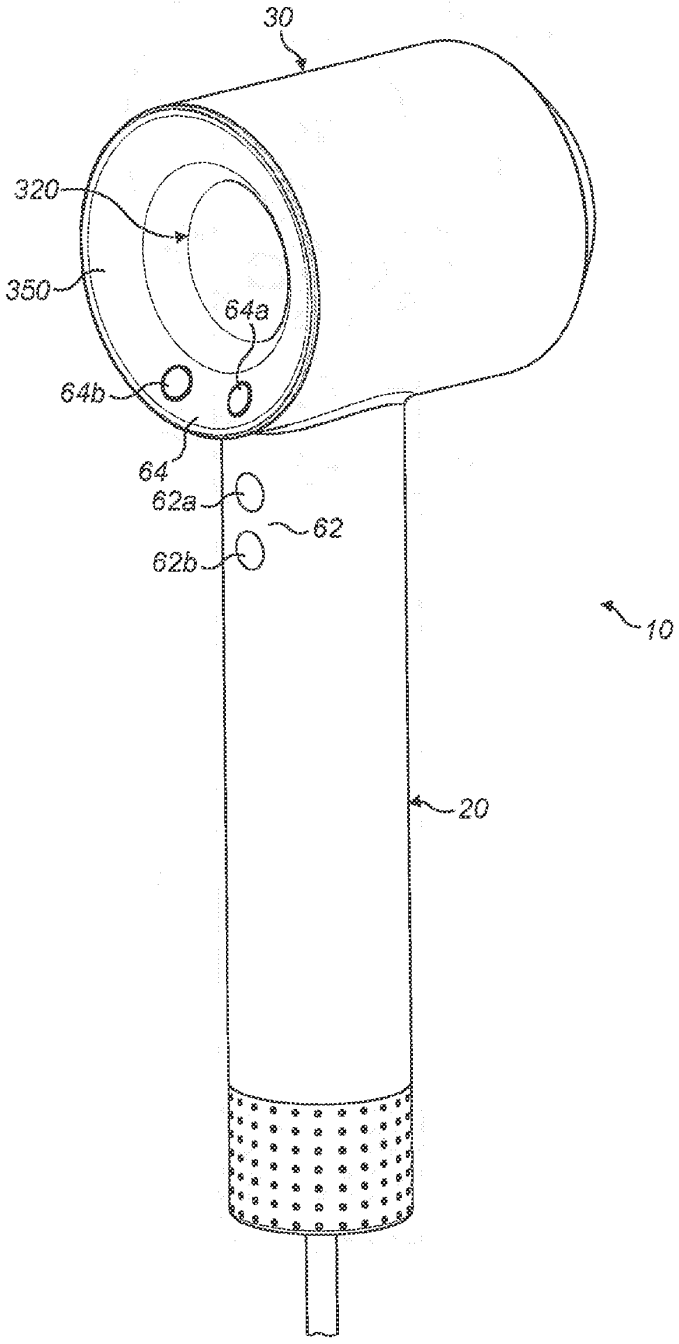


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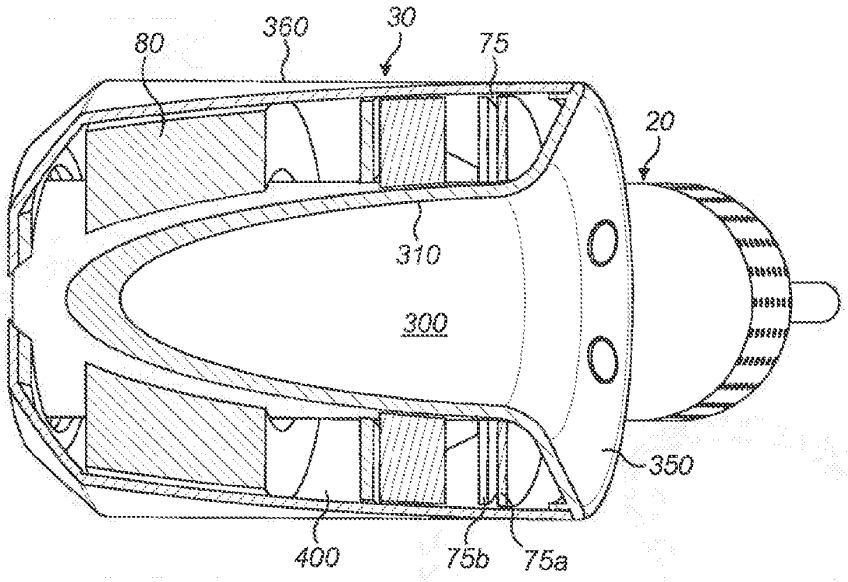


FIG. 11a

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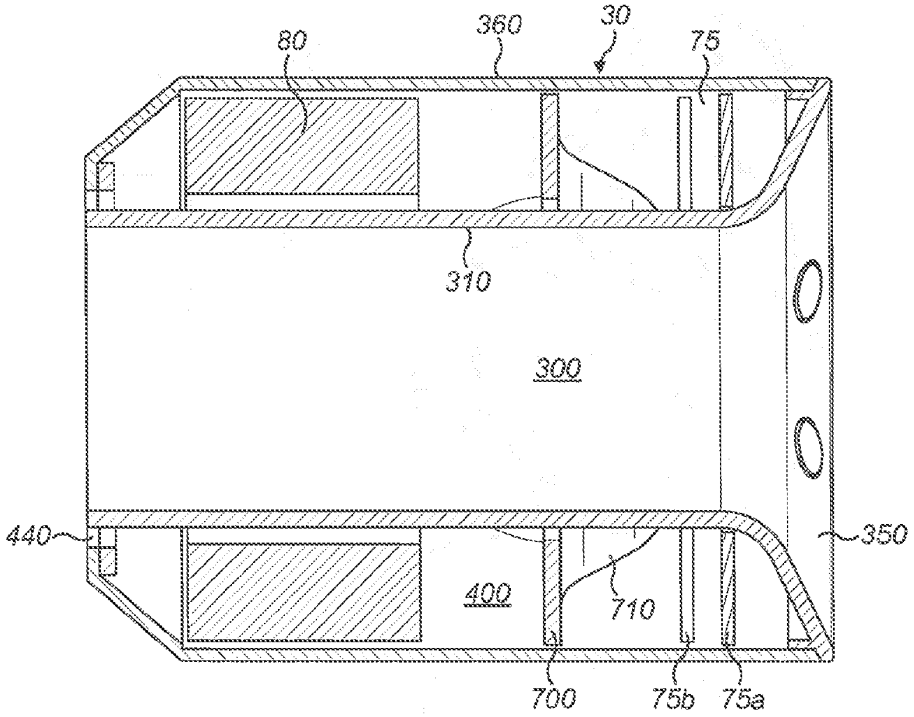


FIG. 11b

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30 09 14

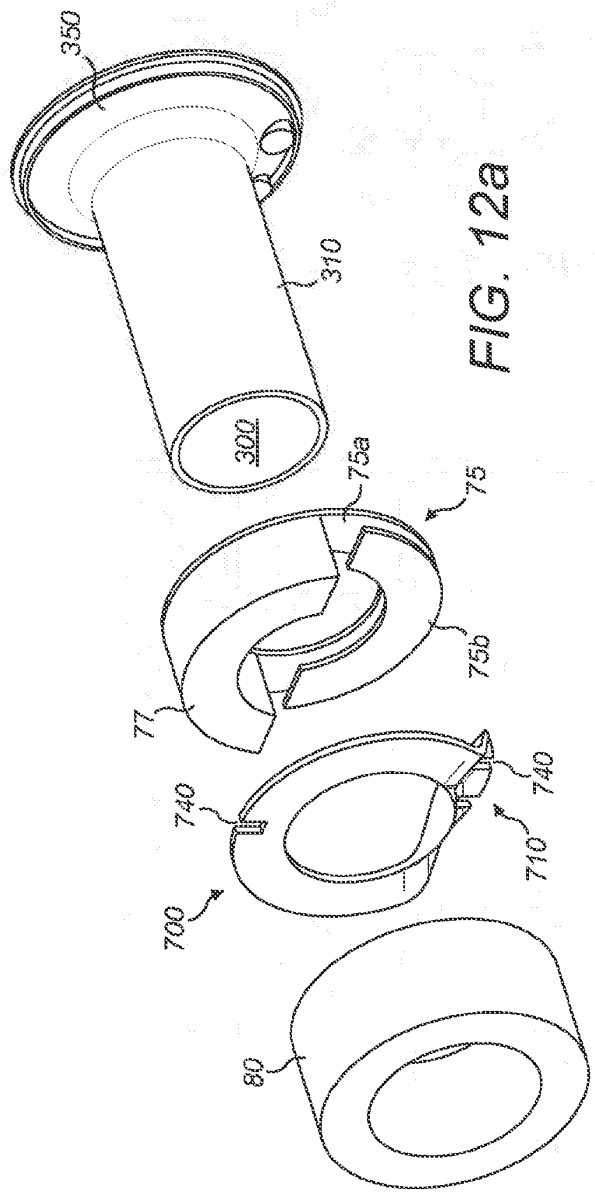


FIG. 12a

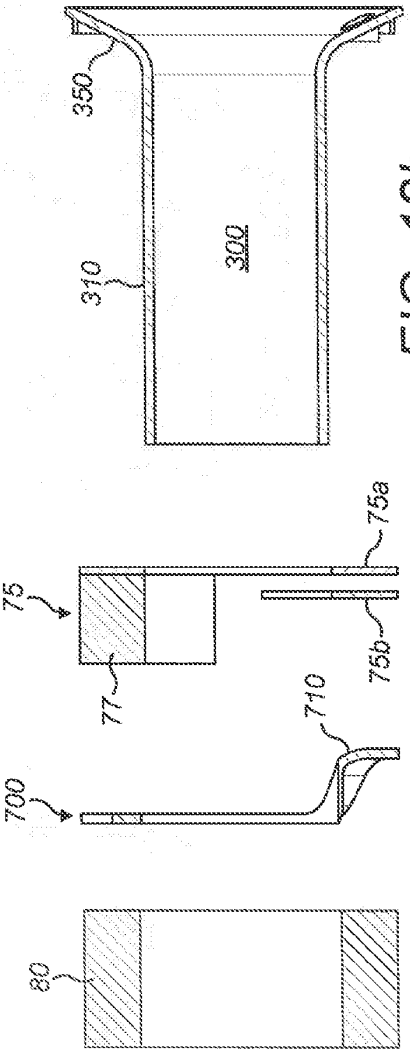


FIG. 12b

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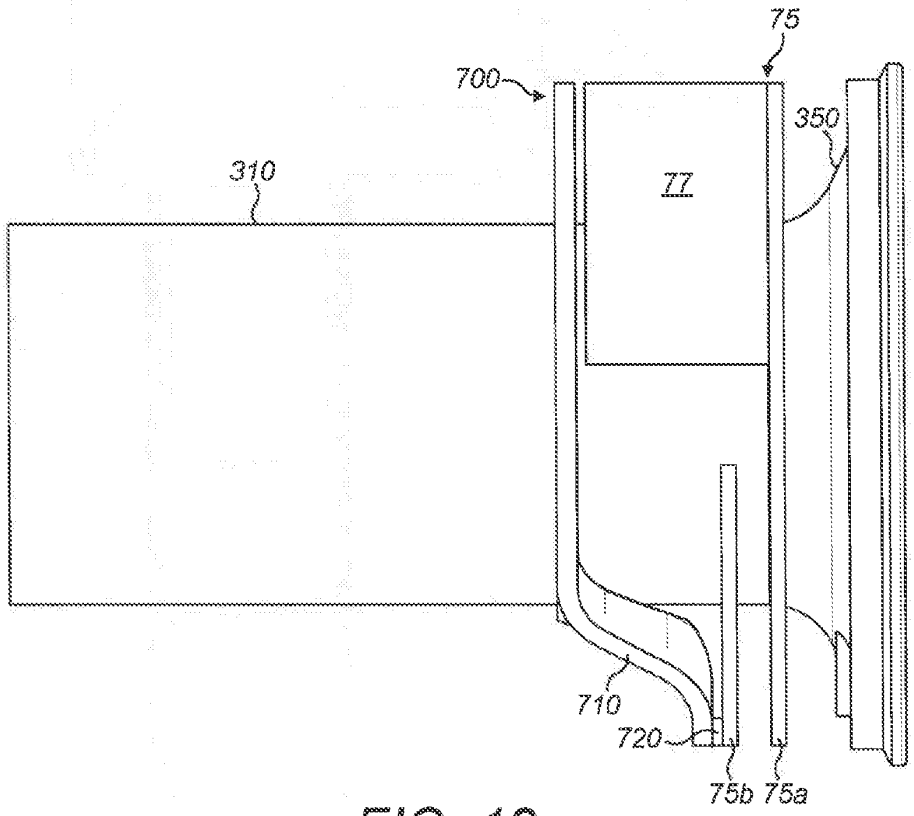


FIG. 12c

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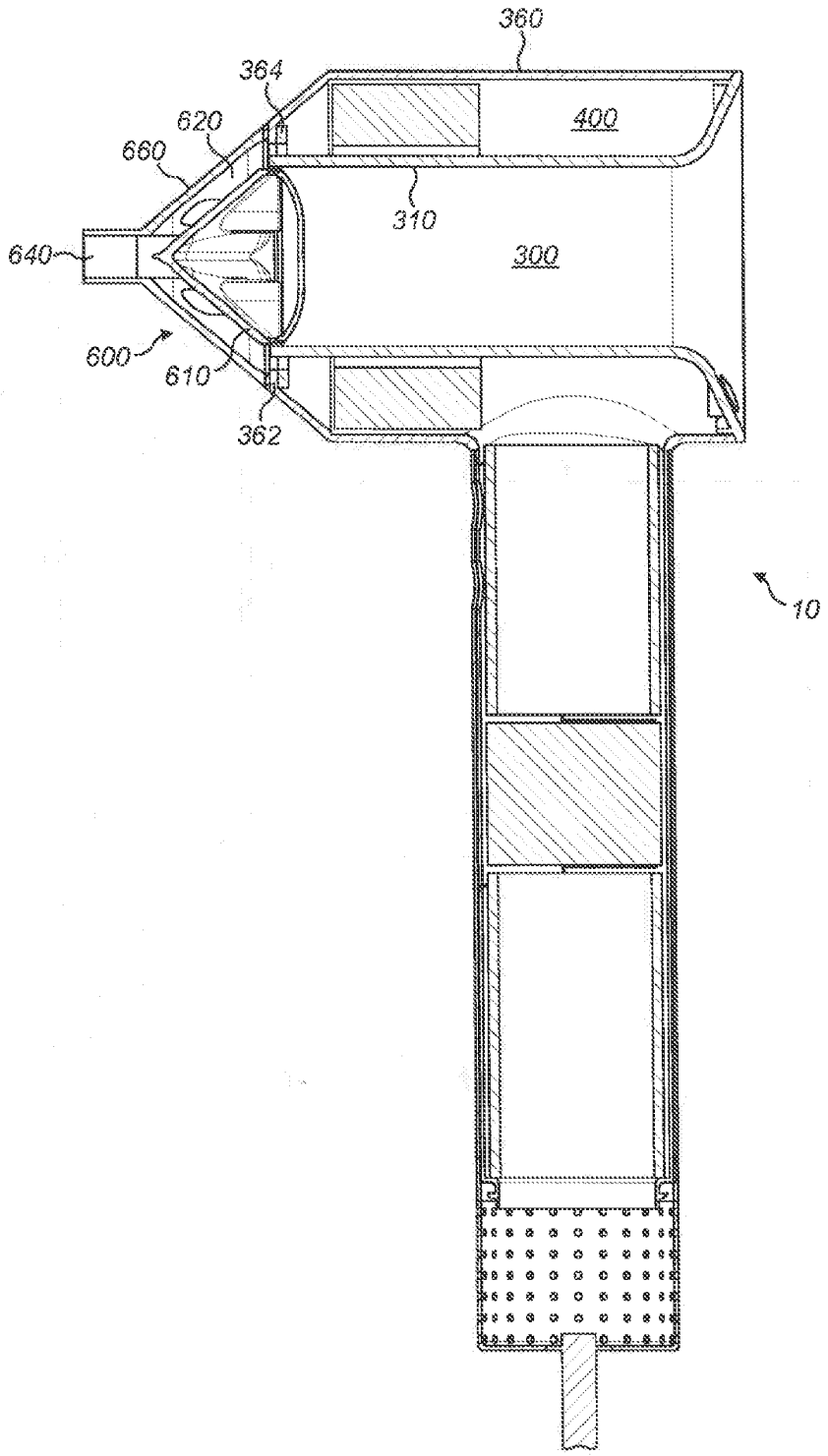


FIG. 13

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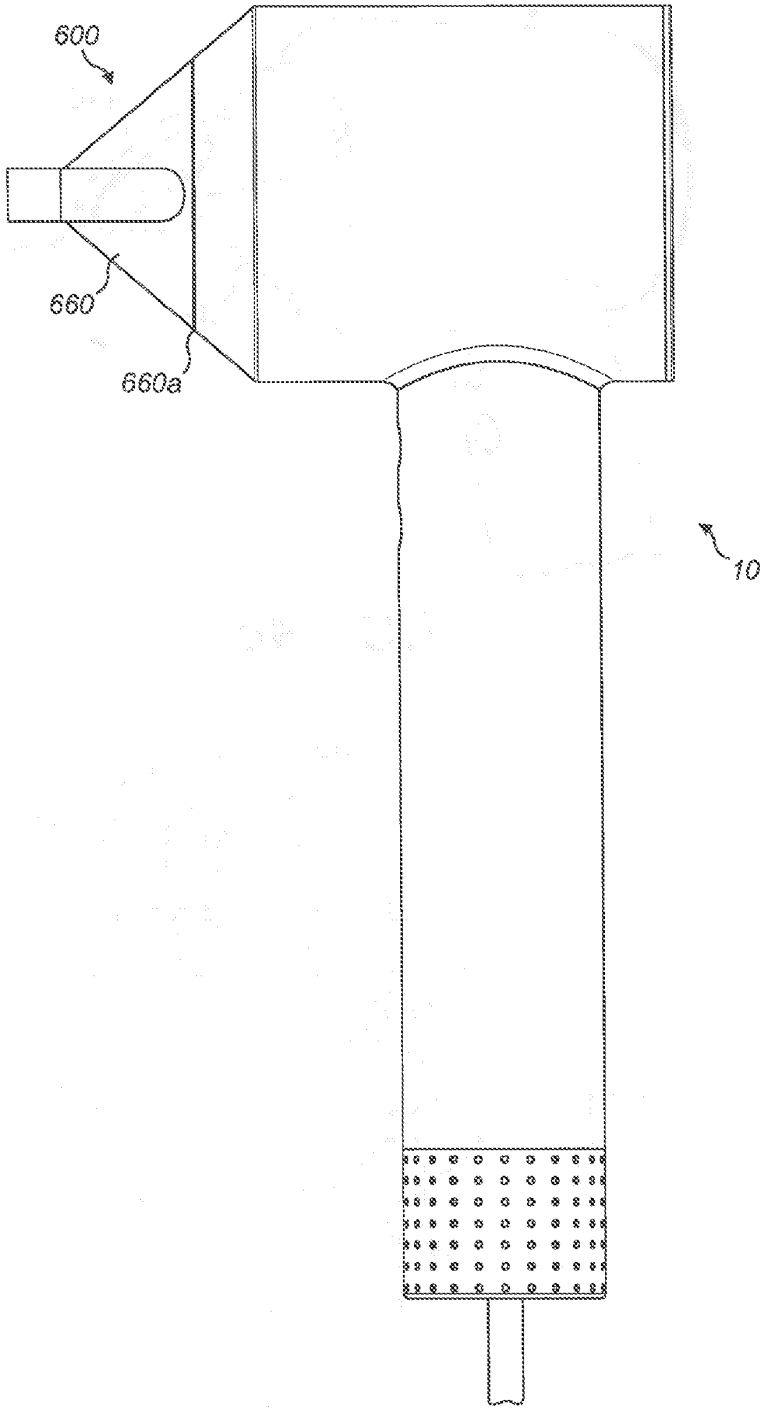


FIG. 14a

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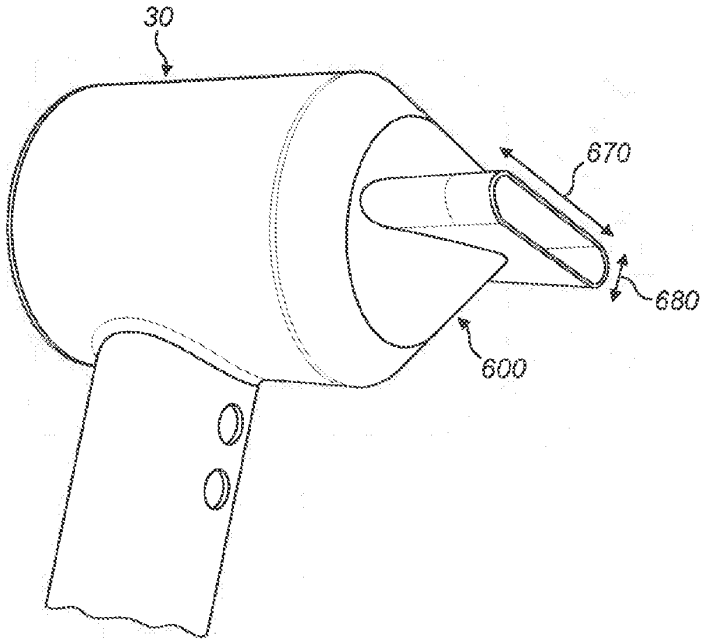


FIG. 14b

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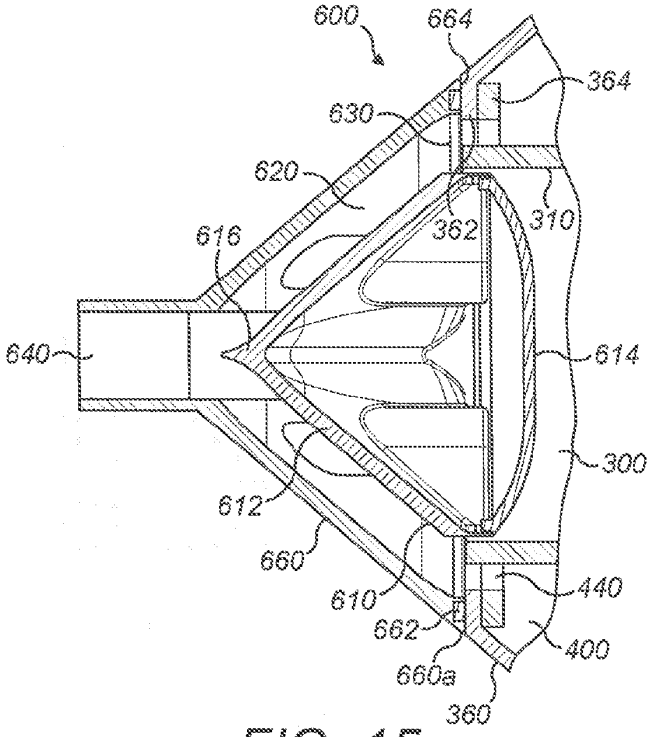


FIG. 15

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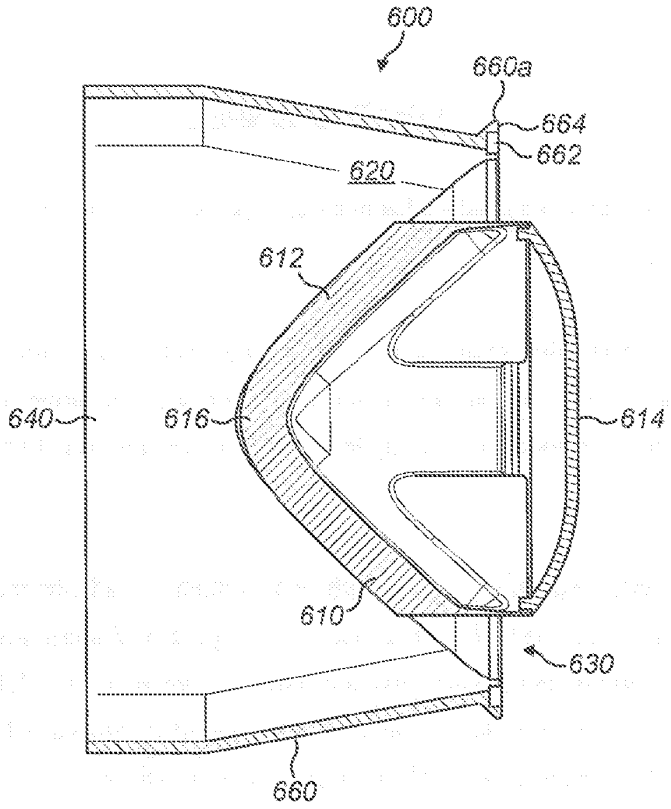


FIG. 16

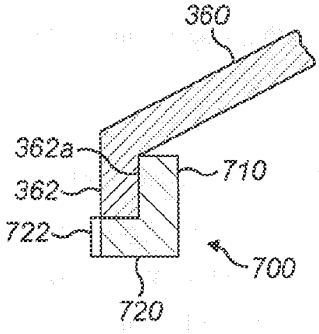


FIG. 17a

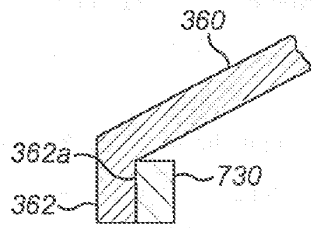


FIG. 17b

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A Handheld Appliance

This invention relates to a hand held appliance, in particular a hair care appliance such as a hairdryer.

Blowers and in particular hot air blowers are used for a variety of applications such as drying substances such as paint or hair and cleaning or stripping surface layers. In addition, hot air blowers such as hot styling brushes are used to style hair from a wet or dry condition.

Generally, a motor and fan are provided which draw fluid into a body; the fluid may be heated prior to exiting the body. The motor is susceptible to damage from foreign objects such as dirt or hair so conventionally a filter is provided at the fluid intake end of the blower. Conventionally such appliances are provided with a nozzle which can be attached and detached from the appliance and changes the shape and velocity of fluid flow that exits the appliance. Such nozzles can be used to focus the outflow of the appliance or to diffuse the outflow depending on the requirements of the user at that time.

According to a first aspect, the invention provides a hair care appliance comprising: a body comprising an outer wall; and a handle comprising an outer wall and a wall disposed within the outer wall wherein, the outer wall of the body and the wall of the handle are formed as a single unit.

Forming the body and the wall of the handle as a single unit has a number of advantages. Firstly the access to at least some of the components of the appliance is made more difficult. In convention hairdryers, a clam shell construction is used and the two parts are usually screwed together. A user can relatively easily remove the screws and access the heater and fan unit. In the present invention, as there are no joins or

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screws that can be removed, it is made more difficult for a user to take the product apart. Secondly, the product is visually cleaner. There are no join lines running along the length of the body and no recesses or extensions in the body that would be required in order to connect the two parts.

Preferably, the wall comprises an access aperture extending at least partially along and around the wall.

It is preferred that the wall comprises a hatch for closing the access aperture.

Preferably, the handle comprises a primary fluid inlet disposed at and/or near the distal end of the handle from the body. Preferably, the primary fluid inlet extends at least partially around and along the handle. Preferably, the primary fluid inlet comprises at least one aperture extending around the outer wall. It is preferred that the primary fluid inlet comprises at least one aperture extending along the outer wall. Preferably, the primary fluid inlet comprises at least one aperture extending across the outer wall.

Preferably, the handle comprises a primary fluid flow path flowing from the primary fluid inlet along the handle and into the body. It is preferred that the primary fluid flow path flows from the primary fluid inlet within the wall to the body.

Preferably, the handle comprises a fan unit wherein the fan unit draws fluid into the primary fluid flow path.

It is preferred that the body comprises a primary fluid outlet for the primary fluid flow path. Preferably, the primary fluid outlet is in fluid communication with the primary fluid inlet and the primary fluid flow path.

Preferably, the body comprises a first end and a second end and the primary fluid outlet is at the second end.

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Preferably, the body comprises a fluid flow path. Preferably, the fluid flow path extends from a fluid inlet in the body to a fluid outlet.

It is preferred that the body comprises a duct extending within the outer wall of the body and the duct extends from the first end.

Preferably, the primary fluid flow path extends between the outer wall of the body and the duct. Preferably, the primary fluid flow path extends to a primary fluid outlet. Preferably, the primary fluid flow path extends about the duct. Preferably, the primary fluid flow path extends at least partially along the duct. Preferably, the duct extends at least partially along the body.

It is preferred that the duct defines a fluid flow path extending through the body. Preferably, the fluid flow path extends from a fluid inlet to a fluid outlet. Preferably, the fluid flow path extends within the duct. Preferably, the fluid flow path extends from a fluid inlet in the body through the duct to a fluid outlet from the body.

Preferably, the duct extends about the fluid flow path. Preferably, the fluid flow path extends through the duct. Preferably, the fluid flow path is defined by a duct extending through the body. Preferably, the fluid flow path exits the body by the fluid outlet. Preferably, the fluid flow path is provided through the duct.

It is preferred that the fluid inlet is at the first end of the body.

Preferably, the fluid flow path merges with the primary fluid flow path within the body.

Alternatively, the primary fluid flow path surrounds the fluid flow path at the second end of the body. Fluid in the primary fluid flow path exits the body by the primary fluid outlet.

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Preferably, the duct is connected to the outer wall of the body by a side wall extending between the duct and the outer wall. It is preferred that the side wall is angled to both the outer wall of the body and the duct. Preferably, the side wall is disposed at the first end of the body. It is preferred that the duct and side wall are formed as a single unit. Preferably, the duct and side wall are formed from a plastic material. It is preferred that the side wall at least partially defines the fluid inlet into the fluid flow path

Preferably, the outer wall of the handle extends about the wall and partially along the wall.

It is preferred that the outer wall of the handle extends over an access hatch into the wall.

Preferably, the outer wall of the handle extends about the wall for substantially the whole length of the wall. It is preferred that the wall of the handle comprises a primary fluid inlet. Preferably, the primary fluid inlet of the outer wall of the handle is in fluid communication with the primary fluid inlet of the wall of the handle.

It is preferred that the outer wall of the body and wall of the handle are made from a plastic material.

Preferably, the outer wall of the handle is made from a different material to the wall of the handle and the outer wall of the body. Preferably, the outer wall is formed from a metal. Preferably, the outer wall of the handle is made from aluminium or an aluminium alloy.

It is preferred that the body comprises a heater. The heater is for heating fluid in the primary fluid flow path. Preferably, the heater is provided between the outer wall and the duct. It is preferred that the primary fluid flow path extends through the heater. Preferably, the heater extends along the body. It is preferred that the heater extends at least partially around the body. Alternatively, the heater extends around the body. It is preferred that the heater extends at least partially around and about the duct.

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Alternatively, the heater extends around about the duct. Preferably, the heater extends at least partially along the duct. Preferably, the heater is annular.

Also provided is a hand held appliance comprising: a body comprising an outer wall; and a handle comprising an outer wall and a wall disposed within the outer wall wherein, the outer wall of the body and the wall of the handle are formed as a single unit.

According to a second aspect, the invention provides a hair care appliance comprising: a body having a duct, an outer wall extending about the duct and a side wall extending between the duct and the outer wall, wherein a control switch is provided on the side wall and wherein the outer wall, side wall and the duct are all external walls of the appliance.

Preferably, the body has an inlet end and an outlet end and the side wall is at the inlet end.

It is preferred that the duct at least partially defines a fluid flow path through the body. Preferably, duct is recessed within the outer wall at the inlet end.

It is preferred that the handle is connected to the body at a first end. Preferably, a second control switch is provided on the handle. It is preferred that the second control switch is located on the handle adjacent to the inlet end of the body.

Preferably, both the first control switch and the second control switch are accessible by a single digit.

It is preferred that the second control switch comprises two buttons.

Preferably, the handle is generally tubular and at a distal end to the body the handle comprises a primary fluid inlet. It is preferred that the handle comprises a wall and at

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the distal end, the handle comprises an end wall extending across the wall. Preferably, the primary fluid inlet extends at least partially across the end wall.

It is preferred that the appliance comprises a power cable connectable to a power source at one end and extending into substantially the centre of the end wall of the handle at the other end.

Preferably, the handle comprises an outer wall and the outer wall extends at least partially along and around the wall.

Preferably, a lining material is provided between the outer wall and the wall. Preferably, the lining material is an insulating layer. Preferably, the lining material or insulating layer extends substantially continuously along and/or around the wall.

Preferably, the primary fluid outlet is at least partially defined by the duct. It is preferred that the primary fluid outlet is defined by the body and the duct.

Preferably, within the body, the primary fluid flow path and fluid flow path merge.

Preferably, the primary fluid outlet extends about the fluid flow path. Preferably, the body comprises a fluid outlet for the fluid flow path and the primary fluid outlet extends about the fluid outlet.

Preferably, the primary fluid outlet is at the outlet end of the body.

Preferably, the body decreases in diameter towards the outlet end.

Preferably, the first control switch comprises two buttons.

Also provided is a hand held appliance comprising: a body having a duct, an outer wall extending about the duct and a side wall extending between the duct and the outer wall,

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wherein a control switch is provided on the side wall and wherein the outer wall, side wall and the duct are all external walls of the hand held appliance.

According to a third aspect, the invention provides a hair care appliance comprising a body, and a handle having a first end in fluid communication with the body and a second end comprising a primary fluid inlet into the appliance wherein the primary fluid inlet comprises a first aperture extending at least partially around the handle and a second aperture extending through the second end of the handle.

Having the primary fluid inlet disposed one more than one surface of the appliance is advantageous. In conventional hairdryers, the primary fluid inlet is generally located on the back end of the hairdryer and in an attempt to prevent blockage, the end is often convex. If the back end of the hairdryer is placed down on a hard surface, it will roll onto a side.

However, on a soft surface such as bedding or a long pile carpet, the inlet can still be at least partially covered or blocked. This can lead to overheating of the motor. By having the inlet on more than one surface, there is less chance of any blockage being sufficient to cause damage to the motor.

Preferably, the handle comprises an end wall at the second end and the second aperture extends through the end wall.

It is preferred that the end wall is substantially orthogonal to the handle.

Preferably, the first aperture is adjacent the second end of the handle.

It is preferred that the fan unit is upstream of the primary fluid inlet.

Preferably, the first aperture comprises a plurality of apertures extending at least partially around the handle.

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It is preferred that the first aperture comprises a plurality of apertures extending at least partially along the handle.

Preferably, the second aperture comprises a plurality of apertures extending through the end of the handle.

Preferably, a power cable for supplying power to the fan unit is provided, the power cable extending through the end of the handle. It is preferred that the power cable extends substantially centrally thorough the handle at the primary fluid inlet. It is preferred that the second aperture extends at least partially around the power cable.

Preferably, a primary fluid flow path is provided from the primary fluid inlet through the handle and into the body to a primary fluid outlet.

It is preferred that the handle comprises a wall and the primary fluid flow path extends within the wall. It is preferred that the handle comprises an outer wall wherein said outer wall extends around the wall and at least partially along the wall. It is preferred that the handle comprises a layer of insulating material between the outer wall and the wall.

Preferably, the primary fluid outlet comprises a plurality of apertures extending at least partially along and around the body.

It is preferred that the primary fluid flow path is substantially linear through the handle and into the body

Alternatively, the handle is substantially orthogonal to the body.

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It is preferred that the within the body the primary fluid flow path surrounds the fluid flow path.

It is preferred that the primary fluid outlet extends about the fluid flow path.

Also provided is a hand held hand held appliance comprising a body, and a handle having a first end in fluid communication with the body and a second end comprising a primary fluid inlet into the hand held appliance wherein the primary fluid inlet comprises a first aperture extending at least partially around the handle and a second aperture extending through the second end of the handle.

According to a fourth aspect, the invention provides hair care appliance comprising a handle, the handle comprising a wall and an outer wall wherein the wall defines a primary fluid flow path that extends from a primary fluid inlet into the appliance and the outer wall is an external surface of the appliance.

The provision of a double layered wall reduces the transmission of vibration and noise from within the handle. It isolates internal components of the handle from the outer wall.

Preferably, the outer wall extends substantially continuously around the wall. It is preferred that the outer wall extends substantially along the wall.

Preferably, the insulating layer mitigates one or more of noise, vibration and heat produced by the appliance. It is preferred that the insulating material is a foam or a felt.

It is preferred that the handle comprises a first end and a second end wherein the primary fluid inlet is at or near the second end.

Preferably, the handle includes a heater for heating fluid drawn into the primary fluid inlet.

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Preferably, the heater is downstream of the fan unit. The heater is preferably, disposed adjacent the first end of the handle.

Preferably, the appliance comprises a head attachable to the handle, the head comprising a primary fluid outlet for the appliance. Preferably, the primary fluid outlet comprises a plurality of apertures extending at least partially along and around the head. Preferably, the primary fluid flow path is substantially linear through the handle and into the head.

Alternatively, the primary fluid flow path from the primary fluid inlet to the primary fluid outlet is non linear. It is preferred that the primary fluid flows within the handle in a first direction and within the body in a second direction. Preferably, the primary fluid flow in the body is substantially orthogonal to the primary fluid flow in the handle.

It is preferred that fluid in the fluid flow path is entrained into the body by the action of a fan unit in the primary fluid flow path.

Also provided is a hand held appliance comprising a handle, the handle comprising a wall and an outer wall wherein the wall defines a primary fluid flow path that extends from a primary fluid inlet into the hand held appliance and the outer wall is an external surface of the hand held appliance.

According to a fifth aspect, the invention provides a hair care appliance comprising a body, a fluid flow path extending through the body from a fluid inlet to a fluid outlet and a PCB extending about the fluid flow path.

Preferably, the PCB is annular. It is preferred that the PCB is isolated from the fluid flow path.

Preferably, the PCB comprises a first layer and a second layer. It is preferred that the first layer extends substantially continuously about the fluid flow path. Preferably, the second layer extends partially about the fluid flow path.

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It is preferred that the second layer is adjacent the first layer. Preferably, the second layer is downstream of the first layer.

It is preferred that the PCB extends at least partially around extends about the duct.

Preferably, the primary fluid flow path is in fluid communication with the PCB.

It is preferred that the heater is downstream of the PCB.

Preferably, a thermal barrier is provided between the PCB and the heater. The thermal barrier is located fluidly between the PCB and the heater.

Preferably, comprising a handle wherein the handle attached to and extending from the body and the primary fluid inlet is in the handle is connected to the body at a first end.

It is preferred that the handle comprises a fan unit for drawing fluid into the primary fluid flow path.

Preferably, the handle comprises a second end distal to the first end, the second end comprising a primary fluid inlet,

It is preferred that the primary fluid flow path extends along the handle and into the body to a primary fluid outlet.

Preferably, the primary fluid flow path is non-linear.

It is preferred that within the handle the primary fluid flow path is generally circular.

Preferably, within the body the primary fluid flow path is generally annular.

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It is preferred that where the primary fluid flow path enters the body a flow plate is provided. Preferably, the body comprises a flow plate for directing flow from the handle into the body.

Preferably, the flow plate deflects the primary flow around the duct from a circular to an annular flow.

It is preferred that the primary fluid flows through the handle in a first direction and in the body in a second direction. Preferably, the flow plate directs primary flow from the first direction to the second direction.

Preferably, the flow plate is provided in the primary fluid flow path to direct flow from a circular flow in the handle to an annular flow in the body18. Preferably, the flow plate is adjacent to the PCB.

Preferably, the flow plate is shaped around components on the PCB.

Preferably, the flow plate deflects the primary flow from a first direction of flow within the handle to a second direction of flow within the body.

Preferably, the fan unit is upstream of the PCB.

According to a sixth aspect, the invention provides a hair care appliance comprising: a body, a heater, a PCB and a primary fluid flow path extending from a primary fluid inlet into the appliance to a primary fluid outlet out of the body wherein the PCB and heater are in fluid communication with the primary fluid flow path and the PCB is upstream of the heater.

Preferably, a fan unit is provided and the fan unit is upstream of the heater.

Alternatively, a fan unit is provided and the fan unit is downstream of the PCB.

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It is preferred that the thermal barrier is in thermal communication with the PCB and functions as a heat sink for the PCB. Preferably, the thermal barrier is aluminium or an alloy of aluminium.

It is preferred that the body includes a handle portion upstream of the heater. Preferably, the primary fluid inlet is in the handle portion. It is preferred that the primary fluid flow path extends linearly through the body.

Preferably, the flow plate comprises at least one aperture. It is preferred that the at least one aperture enables fluid to flow through the flow plate to the PCB.

Preferably, the flow plate is connected to the PCB. The flow plate acts as a heat sink for the PCB. It is preferred that the flow plate additionally directs primary fluid flow around the PCB.

Preferably, the flow plate is additionally one or more of a thermal barrier, heat sink and deflector plate for the PCB.

It is preferred that where the primary flow enters the body there is a region of relatively high velocity flow.

Preferably, the PCB comprises components extending outwards from a board by different amounts and the components are arranged such that components that extend further out from the board are positioned radially away from the region of relatively high velocity flow. It is preferred that at least some of the components that extend further out from the board are capacitors.

Preferably, components that extend less distance from the board are positioned in the region of relatively high velocity flow.

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It is preferred that the thermal barrier is additionally a deflector plate for deflecting debris from the PCB away from the primary fluid flow path and the primary fluid outlet.

According to a seventh aspect, the invention provides a hair care appliance comprising: a body, a PCB having electrical components mounted thereon and a primary fluid flow path extending at least partially through the body and passed the PCB, wherein the primary fluid flow path has a region of relatively high velocity and a region of relatively low velocity and components mounted on the PCB are arranged so that larger components are in the region of relatively low velocity.

Preferably, the appliance comprises a handle connected to the body at a first end wherein the primary fluid flow path flows through the handle into the body.

It is preferred that the primary fluid flow path extends in a first direction within the handle and a second direction within the body.

Preferably, the body is generally tubular and has an upper half and a lower half and the handle is connected to the lower half. It is preferred that the region of relatively high velocity is in the lower half of the body. Preferably, the region of relatively low velocity is in the upper half of the body.

It is preferred that larger components of the PCB are located in the upper half of the body. Preferably, smaller components of the PCB are located in the lower half of the body. It is preferred that larger components of the PCB are components which extend the furthest from a circuit board on which they are mounted.

According to an eighth aspect, the invention provides, a hair care appliance comprising a body; a fluid flow path extending through the body from a fluid inlet through which a fluid flow enters the appliance to a fluid outlet for emitting the fluid flow from a front end of the body; ; and an attachment for adjusting at least one parameter of fluid emitted from the appliance, the attachment comprising an upstream end for attaching to the

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appliance, wherein one or both of the front end of the body and the upstream end of the attachment comprises at least one magnet.

Preferably, the front end of the body comprises an end wall extending radially inwards of the body and the end wall comprises at least one magnet.

It is preferred that end wall comprises a plurality of magnets radially spaced about the end wall.

Preferably, the end wall comprises a ring of magnetic material extending around the end wall.

Preferably, the end wall comprises an outer face and an inner face, the outer face being an external surface of the appliance, wherein the at least one magnet is adjacent the inner face.
It is preferred that the at least one magnet is embedded in the end face.

Preferably, the upstream end of the attachment comprises an end face and a plurality of magnets radially spaced about the end face.

It is preferred that the upstream end of the attachment comprises a ring of magnetic material extending around the end face.

Preferably, the magnet or magnetic material is made from a polymer containing magnetic flakes.

It is preferred that an external surface of the magnet or magnetic material is coated with an anti scratch coating.

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Preferably, the appliance comprises a primary fluid flow path extending at least partially through the body from a primary fluid inlet through which a primary fluid flow enters the appliance to a primary fluid outlet.

It is preferred that the appliance comprises a handle wherein the primary fluid inlet is in the handle.

Preferably, fluid flow is drawn through the fluid flow path by fluid emitted from the primary fluid outlet.

It is preferred that the primary fluid flow extends about the duct.

Preferably, the attachment is configured to inhibit emission of the fluid flow from the appliance. It is preferred that the attachment includes means to inhibit generation of a fluid flow along the fluid flow path to the fluid outlet. Preferably, the means to inhibit the generation of a fluid flow comprises a barrier which blocks the duct when the attachment is attached to the appliance.

It is preferred that the attachment is in the form of a nozzle defining a nozzle fluid flow path extending from a nozzle fluid inlet through which the primary fluid flow enters the nozzle to a nozzle fluid outlet for emitting the primary fluid flow.

Preferably, the attachment has an outer wall that substantially continues the profile of the body at the front end of the body.

It is preferred that the body reduces in diameter towards the front end of the body. Preferably, the reduction in diameter has a constant gradient.

It is preferred that the appliance comprises a body; a fluid flow path extending through the body from a fluid inlet through which a fluid flow enters the appliance to a fluid

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outlet for emitting the fluid flow from a front end of the body wherein the front end of the body comprises at least one magnet.

Preferably, the front end of the body comprises an end wall extending radially inwards of the body and the end wall comprises at least one magnet.

It is preferred that the end wall comprises a plurality of magnets radially spaced about the end wall.

Preferably, the end wall comprises a ring of magnetic material extending around the end wall.

The invention also provides an attachment for adjusting at least one parameter of fluid emitted from the appliance comprising an upstream end for attaching to the appliance, wherein the upstream end of the attachment comprises at least one magnet.

According to a ninth aspect, the invention provides a hair care appliance having a handle, and a body, the body having an outer wall and a duct wherein the outer wall extends about the duct and the outer wall converges towards the duct.

Preferably, the outer wall has a first part and a second part and the first part is tubular.

It is preferred that the first part is of substantially uniform diameter.

Preferably, the second part is cone shaped.

It is preferred that the second part of the outer wall converges towards the duct at an angle of between 1 and 89°.

Preferably, the second part of the outer wall converges towards the duct at an angle of between 30 and 60°.

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Preferably, the appliance comprises a fan unit for drawing fluid into the primary fluid flow path from a primary fluid inlet to a primary fluid outlet.

It is preferred that the body comprises the primary fluid outlet at one end and wherein the outer wall converges towards the duct towards the primary fluid outlet.

Preferably, the body has a first end and a second end and the outer wall converges towards the duct at the second end of the body.

Preferably, the appliance comprises a handle having a primary fluid inlet in fluid communication with the primary fluid flow path.

It is preferred that fluid is entrained into the fluid flow path by the action of a fan unit drawing fluid into the primary fluid flow path.

Preferably, the primary fluid flow path extends about the fluid flow path.

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

Figures 1 and 2 show different aspects of a hairdryer according to the invention;

Figure 3 shows a cross section though a hairdryer according to the invention;

Figures 4a and 4b show enlarged views of portions of the cross section of Figure 3;

Figures 5, 6 and 7 show different views of parts of a hairdryer according to the invention;

Figures 8a and 8b show respectively a cross section through and a perspective of alternate hair care appliance;

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Figures 9 and 10 show different views of a hairdryer according to the invention;

Figure 11a shows a top sectional view along line M-M of Figure 1;

Figure 11b shows a top sectional view along line L-L of Figure 1;

Figures 12a, 12b and 12c show views of various internal components of the body of a hairdryer according to an invention; and

Figures 13 to 16 show various views of a hairdryer 10 having an attachment 600 for changing a parameter of fluid output from the hairdryer.

Figures 1 and 2 show a hairdryer 10 with a handle 20 and a body 30. The handle has a first end 22 which is connected to the body 30 and a second end 24 distal from the body 30 and which includes a primary inlet 40. Power is supplied to the hairdryer 10 via a cable 50.

The body 30 has a first end 32 and a second end 34 and can be considered to have two parts. A first part 36 which extends from the first end 32 which is tubular and of a generally consistent diameter and a second part 38 which extends from the second end 34 to join the first part 36. The second part 38 is cone shaped and varies in diameter along its length from the diameter of the first part 36 of the body 30 to a smaller diameter at the second end 34 of the body. In this example, the second part 38 has a constant gradient and the angle α subtended from the outer wall 360 of the first part 36 of the body 30 is around 40°.

Referring now to Figures 2, 3, 4An and 4b in particular the handle 20 has an outer wall 200 which extends from the body 30 to a distal end 24 of the handle. At the distal end 24 of the handle an end wall 210 extends across the outer wall 200. The cable 50 enters the hairdryer through this end wall 210. The primary inlet 40 in the handle 20 includes

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first apertures that extend around and along 42 the outer wall 200 of the handle and second apertures that extend across 46 and through the end wall 210 of the handle 20. The cable 50 is located approximately in the middle of the end wall 210 so extends from the centre of the handle 20. The end wall 210 is orthogonal to the outer wall 200 and inner wall 220 of the handle.

It is preferred that the cable 50 extends centrally from the handle 20 as this means the hairdryer is balanced regardless of the orientation of the handle 20 in a users' hand. Also, if the user moves the position of their hand on the handle 20 there will be no tugging from the cable 50 as it does not change position with respect to the hand when the hand is moved. If the cable were offset and nearer one side of the handle then the weight distribution of the hairdryer would change with orientation which is distracting for the user.

Upstream of the primary inlet 40, a fan unit 70 is provided. The fan unit 70 includes a fan and a motor. The fan unit 70 draws fluid through the primary inlet 40 towards the body 30 through a fluid flow path 400 that extends from the primary inlet 40 and into the body 30 where the handle 20 and the body 30 are joined 90. The fluid flow path 400 continues through the body 30 towards the second end 34 of the body, around a heater 80 and to a primary fluid outlet 440 where fluid that is drawn in by the fan unit exits the primary fluid flow path 400. The primary fluid flow path 400 is non linear and flows through the handle 20 in a first direction and through the body 30 in a second direction which is orthogonal to the first direction.

The body 30 includes an outer wall 360 and an inner duct 310. The primary fluid flow path 400 extends along the body from the junction 90 of the handle 20 and the body 30 between the outer wall 360 and the duct 310 towards the primary fluid outlet 440 at the second end of the body 30.

Another fluid flow path is provided within the body; this flow is not directly processed by the fan unit or the heater but is drawn into the hairdryer by the action of the fan unit

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producing the primary flow through the hairdryer. This fluid flow is entrained into the hairdryer by the fluid flowing through the primary fluid flow path 400.

The first end 32 of the body includes a fluid inlet 320 and the second end 34 of the body includes a fluid outlet 340. Both the fluid inlet 320 and the fluid outlet 340 are at least partially defined by the duct 310 which is an inner wall of the body 30 and extends within and along the body. A fluid flow path 300 extends within the duct from the fluid inlet 320 to the fluid outlet 340. At the first end 32 of the body 30, a side wall 350 extends between the outer wall 360 and the duct 310. This side wall 350 at least partially defines the fluid inlet 320. At the second end 34 of the body a gap 370 is provided between the outer wall 360 and the duct, this gap 370 defines the primary fluid outlet 440. The primary fluid outlet 440 is annular and surrounds the fluid flow path. The primary fluid outlet 440 may be internal so the primary fluid flow path 400 merges with the fluid flow path 300 within the body 30. Alternatively, the primary fluid outlet 440 is external and exits from the body 30 separately to the fluid from the fluid flow path 300 at the fluid outlet 340.

The outer wall 360 of the body converges towards the duct 310 and a centre line A-A of the body 30. Having an outer wall 360 that converges towards the duct 310 has the advantage that the primary flow exiting the primary fluid outlet 440 is directed towards the centre line A-A of the body 30. The fluid exiting the primary fluid outlet 440 will cause some external entrainment of fluid 490 from outside the hairdryer due to the movement of the fluid from the primary outlet 440. This effect is increased by the outer wall 360 converging towards the duct 310. Partly this is because the primary flow is focused rather than divergent and partly this is because of the slope of the outer wall 360 of the body 30 towards the second end 34 of the hairdryer.

The duct 310 is an internal wall of the hairdryer that can be accessed from outside the hairdryer. Thus, the duct 310 is an external wall of the hairdryer. The duct 310 is recessed within the body 30 so the side wall 350 that connects between the outer wall

360 and the duct 310 is angled with respect to the outer wall 360. The angle β is around 115° from a line subtended by the outer wall 360 of the body 30 (Figure 4b).

A PCB 75 including the control electronics for the hairdryer is located in the body 30 near the side wall 350 and fluid inlet 320. The PCB 75 is ring shaped and extends round the duct 310 between the duct 310 and the outer wall 360. The PCB 75 is in fluid communication with the primary fluid flow path 400. The PCB 75 extends about the fluid flow path 300 and is isolated from the fluid flow path 300 by the duct 310.

The PCB 75 controls such parameters as the temperature of the heater 80 and the speed of rotation of the fan unit 70. Internal wiring (not shown) electrically connects the PCB 75 to the heater 80 and the fan unit 70 and the cable 50. Control buttons 62, 64 are provided and connected to the PCB 75 to enable a user to select from a range of temperature settings and flow rates for example.

In use, fluid is drawn into the primary fluid flow path 400 by the action of the fan unit 70, is optionally heated by the heater 80 and exits from the primary fluid outlet 440. This processed flow causes fluid to be entrained into the fluid flow path 300 at the fluid inlet 320. The fluid combines with the processed flow at the second end 34 of the body. In the example shown in Figure 3, the processed flow exits the primary fluid outlet 440 and the hairdryer as an annular flow which surrounds the entrained flow that exits from the hairdryer via the fluid outlet 340. Thus fluid that is processed by the fan unit and heater is augmented by the entrained flow.

Figures 5 to 7 all show exploded views of the different parts that the hairdryer 10 is formed from. Instead of a conventional clamshell hairdryer having two outer parts which require external fixings such as screws this hairdryer is made without such external fixings.

A first piece is the outer wall 200 of the handle 20 including the primary inlet 40 and cable 50. A second piece comprises the duct 310 and side wall 350 of the body 30. A

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third piece is the outer wall 360 of the body 30 and an inner wall 220 of the handle 20. The second and third pieces are manufactured as single units. This has two advantages; a first is that it enables tight tolerances to be reproduced between the duct 310 and the outer wall 360 of the body 30 and the second is that there are no unseemly joins in the body 30. By manufacturing the hairdryer out of these three main components, both the function and the form of the hairdryer are easily maintained. In addition, there is a safety aspect as an end user would find is difficult to dissemble the hairdryer using normal household tools.

The third piece comprising outer wall 360 of the body 30 and inner wall 220 of the handle 20 are moulded as a one piece unit from a plastic material. The second piece comprising the duct 310 and the side wall 350 is also moulded from a plastic material. Suitable plastic materials include polycarbonate, glass-filled PPA (Polyphthalamide), PPS (Polyphenylene Sulphide), LCAP (Liquid Crystal Aromatic Polymer) or PEEK (Polyether ether ketone) and the skilled person will appreciate that this list is not exhaustive. The outer wall 200 of the handle 20 can be made from any of a number of suitable materials but is preferably made from aluminium, an alloy of aluminium a steel or a stainless steel.

In order to assembly internal components of the hairdryer an access hatch 222 is provided in the inner wall 220 of the handle 20. This enables the fan unit 70 to be positioned and wiring that connects the fan unit 70, the heater 80, control buttons 62, 64 and PCB 75 to the cable 50 to be connected simply and with relative speed. The heater 80 and PCB 75 are located around the duct 310 which is inserted into the body 30, the wiring is connected and the access hatch 222 is placed over the corresponding hole 224 in the inner wall 220 of the handle 20. The side wall 350 seals the first end 32 of the body 30. This stops both two things, fluid being entrained into the primary fluid flow path 400 at the first end 32 of the body and fluid that has been processed by the fan unit 70 from exiting the body 30 at the first end 32.

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In the example shown with respect to Figures 5, 6 and 7 the control buttons 62 on the handle are on the side of the handle that faces the fluid outlet 340.

The hatch 222 needs to be of a size large enough to enable wiring connections to be made to the electrical components and can be at any location around the handle. The hatch may extend for the whole length of the inner wall 220 and is locatable at any orientation around the inner wall 220.

Referring now particular for Figures 3, 4An and 5 to 7, the construction of the handle will be discussed. The handle 20 has an outer wall 200 and an inner wall 220. The inner wall 220 is a duct which surrounds and defines a primary fluid flow path 400 through the hairdryer. The outer wall 200 includes a grippable portion and in this example, includes the primary inlet 40 into the primary fluid flow path 400. Within the inner 220 wall, an insulting layer of material 212 is provided. 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 hairdryer, vibrations caused by the fan unit and noise produced within the hairdryer by the flow of fluid through the primary fluid flow path 400.

Alternatively or additionally, insulating layer of material 212 is provided between the outer wall 210 and inner wall 220. This is described in relation to Figure 8a.

As a minimum, the insulating material 212 is positioned around the fan unit 70 and preferably around the access hatch 222. However, it is preferred that the insulating material 212 is substantially continuous around the inner 220 wall and extends for the length of the inner wall 220 of the handle as this has the most impact on insulating the handle. The insulating material 212 may also extend around the primary inlet 40 to reduce any noise produced directly by fluid being drawn into the primary fluid flow path 400.

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In this example, the outer wall 200 includes the primary fluid inlet 40; however it is not essential that the outer wall extends over the entire length of the inner wall 20. The outer wall 200 should extend over the access hatch 222 and the region of the handle 20 that contains the fan unit 70 for insulation purposes and for aesthetic and safety reasons to both hide and prevent access to the access hatch 222 by a user. In the event that the outer wall 200 does not extend the entire length of the inner wall 220, then either the inner wall 220 would comprise the inlet 40 at its' distal end from the junction 90 with the body 30 or a separate inlet body attachable to the outer wall 200 and/or inner wall 220 could be provided.

The outer wall 200 is positioned with respect to the inner wall 220 and then secured in place. The outer wall 200 is for example, secured by plasma welding as this prevents user removal and thus access to sensitive components and also provides a clean join.

Figures 8An and 8b show an alternate hair care appliance having a similar primary inlet 540. In this example, the hair care appliance is a hot styling brush 500 and it has a handle 520 and a detachable head 530 which is attachable at the distal end 522 of the handle 520 to the primary inlet 540.

The handle 520 has an outer wall 526 which is generally tubular and includes the primary inlet 540 at and adjacent one end 524. The primary inlet 540 comprises a first set of apertures 544 which extend radially around the handle 520 and along the outer wall 526 of the handle from the handle end 524. The handle end 524 is covered by an end wall 510 which is also perforated with a second set of apertures 546 that extend through the end wall 510 of the handle. Thus, the primary inlet 540 extends around, along and across the handle 520. The end wall 510 is orthogonal to the outer wall 526 and inner wall 560 of the handle.

The handle 520 also includes a fan unit 570 which comprises a fan and a motor which drives the fan and in use, draws fluid in through the primary inlet 540, along a fluid

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flow path 550 which extends through the length of the handle 520. The fluid is optionally heater by a heater 580 before entering an inner cavity 538 of the head 530.

The head 530 includes a fluid outlet which in this example comprises two sets of parallel slots 534 each extending towards an end 536 of the head and radially around the head 530 with one set of slots 534a being upstream of a second set of slots 534b. This arrangement enables fluid to exit the head all the way around the head and for the majority of the length of the head 530 maximising a hair styling region of the product.

The head 530 also includes bristles 532 which extend radially away from the head 530. The bristles 532 are formed as parallel lines which extend radially around the head. Each set of bristles is located between two adjacent slots 534 but bristles need not be provided between every pair of slots.

In use, hair is wrapped around the head 530. The bristles 534 retain the hair whilst hot air or fluid exits through the slots drying the hair and styling the hair into curls or waves.

Power is provided to the appliance via a power cable 548 which preferably extends from a plug or other power source through the end wall 510 of the handle 520. The handle 520 also houses a PCB 575 which is electrically connected to the cable 548, the fan unit 570 and the heater 580 by internal wiring (not shown). Control buttons 555 are provided and connected to the PCB 575 to allow the user to select one of a range of temperature and flow settings. The control buttons 555 are push buttons or slide buttons, for example.

The handle 520 has an outer wall 526 and an inner wall 560. The inner wall 560 is a duct which surrounds and defines a fluid flow path 550 through the appliance. The outer wall 526 includes a grippable portion and in these examples, includes the primary inlet 540 into the fluid flow path 550. Inbetween the outer 526 and inner 560 walls, an insulting layer of material 528 is provided. The insulating layer is a foam or a felt and

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insulates the handle from noise produced by the fan unit 570, 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 550.

As a minimum, insulating material is positioned around the fan unit 570. However, it is preferred that the insulating material 528 is substantially continuous between the outer 526 and inner 560 handles and extends for the length of the inner wall 560 of the handle as this has the most impact on insulating the handle. The insulating material 528 may also extend around the primary inlet 540 to reduce any noise produced directly by fluid being drawn into the fluid flow path 550.

The primary inlet 40, 540 comprises a plurality of apertures extending around, along and across the handle 20, 520. 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.

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 42, 544 that extend around and along the handle 20, 520. However, the apertures 44. 546 that extend under the handle and across the end wall 210, 510 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 primary inlet 40, 540. However, by having apertures that extend around along and across the handle 20, 520 the risk of blocking the primary inlet 40, 540 is reduced.

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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, 520. It is advantageous to space the apertures regularly around, along and across the primary inlet 40, 540. Not only is this visually pleasing but it also has the technical advantage that there is no weak region of the primary inlet 40, 540 where blockage of a portion is more likely or would have more impact on the flow into the primary inlet 40, 540. The inlet is designed so that the flow into the inlet is even at least around the circumference of the handle 20, 520.

It is preferred that the handle is made from a metallic material so any styling product that sticks to the handle and does block the primary inlet 40, 540 is easily removed and only temporarily blocks any apertures.

Referring now to Figures 9 and 10, the hairdryer 10 includes two sets of control buttons 62, 64. A first set 62 is provided on the handle 20 and a second set 64 on the body 30. Conveniently, the two sets of buttons 62, 64 are located so they can all be accessed by one digit. In normal use this digit is the thumb, but if the hairdryer is held differently it may be a finger. The first set 62 are provided on the handle 20 on the same side of the handle 20 as the body inlet 320. The second set 64 are provided on the side wall 350 of the body 30. An as example, the first set 62 can include an on button 62An and a cold shot button 62b and the second set 64 can include a heater control button 64An and a flow control button 64b.

One advantage of having the buttons located on one side or end of the hairdryer is that all the control buttons 62, 64 can be seen by a user at the same time making use of the hairdryer and changes to parameters such as flow rate and temperature simplified.

Another advantage is that the control electronics are in one region of the handle 20. This is particularly advantageous when the primary flow path 400 is through the handle as there are is no wiring to be routed around the handle to the front face i.e. that side of the handle 20 that faces the outlets 340, 440 of the hairdryer.

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A third advantage is that the second set of control buttons 64 is mounted directly onto the PCB 75. This not only simplifies the production of the hairdryer but also improves reliability as there are fewer electrical connections within the hairdryer.

The control buttons 62, 64 can be depressible buttons or slidable controls or a mixture of differently actuated controls. It is preferred that the control buttons 62, 64 stand proud of the surface in which they are located as this enables a user to find the required button by feel alone.

The PCB 75 will now be discussed in particular with reference to Figures 3, 4b, 11a, 11b, 12a 12b, and 12c. The PCB 75 is annular or ring shaped and extends around the duct 310 and between the duct 310 and the outer wall 360. In this example, the PCB has two boards, a first board 75a which extends all the way round the duct 310 and a second board 75b adjacent of and downstream of the first board 75a. The second board 75b extends only partially around the duct 310 and about the fluid flow path 300.

The PCB 75 houses a number of different components each of which extend away from the board on which it is mounted by a different amount. Referring in particular to Figures 3, 4b, 12a 12b, and 12c, large components 77 such as capacitors, are positioned on the first board 75a radially away from the second board 75b. This has a number of advantages such as the PCB 75 is made as compact as possible as the smaller components or those which extend least away from the board on which they are mounted are double stacked whereas the larger components or those that extend the furthest from the board on which they are mounted are single stacked.

Another advantage to this arrangement on the PCB 75 in is flow management of fluid in the primary fluid flow path 400 as the primary fluid flow path moves from the handle 20 into the body 30. Referring to Figures 3, 4b 12b, and 12c, the handle 20 is generally tubular and the primary fluid flow path 400 is generally circular as it enters the junction 90 between the handle 20 and the body 30. At this point the primary fluid flow path

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400 changes direction by 90° and from a circular flow to an annular flow around the duct 310 between the duct 310 and the outer wall 360 of the body 30. These changes affect the velocity of flow in the primary fluid flow path 400.

If we consider that the body 30 is generally symmetrical about a centre line A-A which extends along the length of the body 30, the duct 310 and outer wall 360 are concentric as is the heater 80 located between the duct 310 and the outer wall 360. When the fluid in the primary fluid flow path 400 reaches the junction 90 between the body 30 and the handle 20, the fluid must change both direction and shape. This creates a region of high velocity flow in the body 30 by the junction 90 and a region of lower velocity flow radially spaced within the body 30 from the junction 90. If we consider the body 30 to have an upper half 380 and a lower half 390 where the upper half 380 is radially spaced away from the handle 20 and the lower half 390 includes the junction 90 between the body 30 and the handle 20 then the lower half 390 has flow at a relatively higher velocity than the upper half 380.

The PCB 75 is orientated so that larger components 77 are located in the upper half 380 in the relative lower velocity flow radially away from the region of relatively high velocity so that their impact on the velocity of flow within the hairdryer is reduced. The double layer 75a, 75b PCB is located in the lower half 390 as this part of the PCB 75 extends less into the primary fluid flow path 400.

In addition, a flow plate 700 is provided to curve or direct the flow within the primary fluid flow path 400 over and around the PCB 75 to further minimise any pressure losses due to the location of the PCB and due to the change of direction of the primary fluid flow path 400 as it enters the body 30. The flow plate 700 is annular with a curved section 710 (Figures 3, 4b, 11a, 11b, 12a 12b, and 12c) that provides a smooth change in orientation or direction for the primary fluid flow path 400. By providing a curved surface 710 flow is directed around the corner reducing noise produced by the orthogonal change in direction and reducing any pressure loss or loss of velocity of the fluid. The entire flow plate 700 could be curved however, the benefits are seen by

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merely having the part of the flow plate 700 that is located in the lower half 390 of the body 30 having a curved surface 710.

The flow plate 700 is adjacent the PCB 75 and advantageously, the flow plate 700 is connected to the PCB 75 via a connecting bridge 720. The flow plate 700 is made from a conducting material preferably a metallic material such as aluminium or an alloy thereof so this bridge 720 provides a heat sink for the PCB 75 drawing heat from the components of the PCB and conducting that heat into the fluid flowing through the fluid flow path as it passes the flow plate 700.

In addition, the flow plate 700 serves as a thermal barrier for the PCB 75 and temperature sensitive components mounted thereon. A heater 80 is located within the body 30 downstream of the junction 90 between the body 30 and the handle 20 and the PCB 75 and when fluid is flowing through the primary fluid flow path 400 i.e. when the hairdryer is switched on the majority if not all of the heat produced by the heater 80 will be taken to the primary fluid outlet 440. However, when the hairdryer is turned off or onto stand-by, the heater will emit residual heat which will radiate both upstream and downstream so the flow plate ideally also acts as a thermal barrier for the PCB 75.

The flow plate 700 does not seal the PCB 75 against fluid in the fluid flow path 400 rather it enables fluid to flow around the PCB 75 either through openings 730 (Figure 4b in particular) between the flow plate 700 and the body 30 or slots 740 within the flow plate (Figure 12a).

The flow plate 700 has another function. In the event of a failure of one or more components such as a capacitor on the PCB 75, the flow plate 700 acts as a deflector plate which deflects any debris and/or electrolyte from a component failure back towards the side wall 350 and protects against the debris and/or electrolyte from entering the primary fluid flow path 400 where it would encounter the heater 80 and the primary fluid outlet 440.

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Figures 13 to 16 show various views of a hairdryer 10 having an attachment 600 for changing a parameter of fluid output from the hairdryer. The attachment 600 comprises a bung 610 and an outer wall 660. Between the bung 610 and outer wall 660 an attachment fluid flow path 620 extends from an attachment fluid inlet 630 to an attachment fluid outlet 640. At the upstream end 660a of the outer wall 660 a ring of magnetic material 662 is provided. The ring of magnetic material 662 is recessed into or embedded in an upstream face 664 of the upstream end 660a of the outer wall 660.

The hairdryer 10 includes a number of magnets 364 radially spaced around an end wall 362 at the second end 34 of the hairdryer 10 (Figures 3 and 4a). The end wall 362 extends radially inwards of the outer wall 360 of the body 30. These magnets 364 couple with the ring of magnetic material 662 when the attachment 600 is attached to the hairdryer 10.

Alternatively, the end wall 362 of the hairdryer 10 can include a ring of magnetic material and the attachment can include point magnets radially spaced around or another ring of magnetic material. Only one part of the magnetic connection needs to be magnetised, the other merely needs to be magnetically attracted to the magnetised part.

The use of a magnetic connection between the hairdryer and an attachment has a number of advantages, particularly when used with this type of hairdryer 10 i.e. one having an inner bore 300 defined by a duct 310 and components 77, 80 which extend around the bore. The spacing and maintaining the spacing between the duct 310 and the outer wall 360 of the hairdryer 10 along the length of the body 30 is important. If the duct 310 were pushed to one side within the body 30, the heater 80 could become damaged, fluid flow compromised and hot spots could appear on the outer wall 360. Thus, when an attachment is attached and removed, it is important not to introduce extra stress or strain on the hairdryer 10. Traditional push and snap fit and friction fit methods of attachment could do this. However, magnetic attachment provides consistent positioning at a known force. In addition if the product is dropped or

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knocked the magnetic force attracting the two parts can be set at a level which allows the attachment to snap off.

The force between the magnets can be manipulated in a number of ways. The use of discrete or point magnets is one way. A ring of magnetic material is an alternative. This could be a solid ring of a magnetic material such as iron or could comprise flakes of magnetic material moulded within a suitable substrate such as an epoxy resin. The ring of material can be fully exposed, partially exposed or concealed behind the end wall of the hairdryer. Referring now to Figures 17An and 17b two alternative constructions are discussed. Both options have the end wall 362 extending radially inwards of the outer wall 360 of the body. Figure 17a shows an L-shaped ring of magnetic material 700 having a first leg 710 which engages the inner surface 362a of the front face 362of the outer wall and a second leg 720 which extends from the first leg 710 towards the outer surface of the end wall 362. The second leg 720 may be flush with the outer surface. Figure 17b shows an alternate construction where the ring of magnetic material 730 is positioned against the inner surface 362a of the end wall 362 and is completely concealed behind the end wall 362.

The ring of magnetic material 662 on the attachment 600 may also be fully exposed, partially concealed or fully concealed at the upstream face 664. When partially or fully exposed magnetic parts are used, both parts of the magnetic attachment 700, 662 are preferably flush with the respective end wall 362 and upstream face 664. Alternatively the two parts of the magnet are shaped to engage mechanically as well as magnetically. For example by the provision of one recessed magnet and one proud of the respective end wall and upstream face or a stepped surface to the magnets.

For the embodiments where the magnet is exposed, it is preferably covered in an anti scratch coating 722 (Figure 17a) such as PTFE. This is advantageous as it allows for the attachment to be rotated with respect to the body of the appliance without damage to mating surfaces.

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In the embodiments shown and referring to Figures 13, 14a and 14b in particular, the attachment 600 is a concentrator nozzle i.e. it concentrates the flow into a smaller area. The primary fluid flow path 400 of the hairdryer has an annular primary fluid outlet 440 and this provides a relatively large cross sectional area of heated fluid. The attachment 600 has an attachment fluid outlet 640 which is generally rectangular with its' long side 670 being similar to the diameter of the primary fluid outlet 440 (it may be bigger or smaller) and the short side 680 being significantly smaller than the diameter of the primary fluid outlet 440 and the long side 670 . A concentrator nozzle 600 concentrates the flow over a smaller area providing a user with a directed flow. As the attachment 600 is rotatable with respect to the body 30 and can be positioned in any orientation with respect to the body 30, the flow from the attachment can be orientated horizontally or vertically or at any angle inbetween enabling the user to have fine control over drying.

Referring to Figures 13 to 16, when the attachment 600 is attached to a hairdryer 10, the outer wall 660 forms a continuation of the hairdryer outer wall 360. The bung 610 has two parts a cone 612 and a base 614. The cone 612 extends within the attachment 600 forming a point 616 towards the attachment fluid outlet 640 and directs flow from the primary fluid outlet 440 of the hairdryer towards the attachment fluid outlet 640. The cone 612 defines with the outer wall 660 the limits of the attachment fluid flow path 620. The base 614 is upstream of the cone 612 and limits flow from the fluid flow path 300 by extending into the end of the duct 310 forming a loose bung. The attachment fluid flow path 620 is in fluid communication with the primary fluid flow path 400 of the hairdryer 10 so fluid from the primary fluid flow path 400 is emitted from the attachment fluid outlet 640.

The invention has been described in detail with respect to a hairdryer and 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.

8NSDOCID: <GB 2516812A_I_>

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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 attachment described has been a concentrating attachment however, magnetic attachment of any nozzle shape, size or with any function is possible.

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.

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

BNSDOCID: <GB 2515812A 1 >

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CLAIMS

1. A hair care appliance comprising a body, a fluid flow path extending through the body from a fluid inlet to a fluid outlet and a PCB extending about the fluid flow path.

2. An appliance according to claim 1, wherein the PCB is annular.

3. An appliance according to claim 1 or claim 2, wherein the PCB is isolated from the fluid flow path.

4. An appliance according to any preceding claim, wherein the PCB comprises a first layer and a second layer.

5. An appliance according to claim 4, wherein the first layer extends substantially continuously about the fluid flow path.

6. An appliance according to claim 4 or claim 5, wherein the second layer extends partially about the fluid flow path.

7. An appliance according to any of claims 4 to 6, wherein the second layer is adjacent the first layer.

8. An appliance according to any of claims 6 to 9, wherein the second layer is downstream of the first layer.

9. An appliance according to any preceding claim, wherein the body comprises a duct and the fluid flow path extends through the duct.

10. An appliance according to claim 9, wherein the PCB extends about the duct.

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11. An appliance according to claim 9 or claim 10, wherein the body comprises a primary fluid flow path extending about the duct.

12. An appliance according to claim 11, wherein the primary fluid flow path is in fluid communication with the PCB.

13. An appliance according to claim 11 of claim 12, wherein the body comprises a heater and the heater extends at least partially around and long the duct.

14. An appliance according to claim 13, wherein the heater is downstream of the PCB.

15. An appliance according to claim 14, comprising a thermal barrier located fluidly between the PCB and the heater.

16. An appliance according to any of claims 11 to 15, comprising a handle wherein the handle is connected to the body at a first end.

17. An appliance according to claim 16, wherein the handle comprises a fan unit for drawing fluid into the primary fluid flow path.

18. An appliance according to claims 16 or 17, wherein the handle comprises a second end distal to the first end, the second end comprising a primary fluid inlet, wherein the primary fluid flow path extends along the handle and into the body to a primary fluid outlet.

19. An appliance according to claim 18, wherein the primary fluid flow path is non-linear.

20. An appliance according to claim 18 or claim 19, wherein within the handle the primary fluid flow path is generally circular.

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21. An appliance according to any of claims 18 to 20, wherein within the body the primary fluid flow path is generally annular.

22. An appliance according to any of claims 19 to 21, wherein where the primary fluid flow path enters the body a flow plate is provided.

23. An appliance according to claim 22, wherein the flow plate deflects the primary flow around the duct from a circular to an annular flow.

24. An appliance according to claim 22 or claim 23, wherein the flow plate deflects the primary flow from a first direction of flow within the handle to a second direction of flow within the body.

25. An appliance according to any of claims 17 to 24, wherein the fan unit is upstream of the PCB.

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Intellectual Property Office

Application No:	GB1312069.6	**Examiner:**	Emma Tonner
Claims searched:	1-25	**Date of search:**	21 November 2013

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, 2, 4, 6, 7, 9, 16	GB1446385 A (PHILIPS) see page 1, lines 84-96
A	1	EP0306765 A (ROBERT KRUPS STIFTUNG & CO.) see annular PCB 43

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; H05K

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

EPODOC, WPI

International Classification:

Subclass	Subgroup	Valid From
A45D	0020/12	01/01/2006
A45D	0020/52	01/01/2006
H05K	0007/00	01/01/2006

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Electronic Patent Application Fee Transmittal

Application Number:	14656357
Filing Date:	12-Mar-2015
Title of Invention:	ATTACHMENT FOR A HAND HELD APPLIANCE
First Named Inventor/Applicant Name:	Alasdair Michael MACLAINE
Filer:	Christopher Elmose Gloria/Donna Bernecker
Attorney Docket Number:	424662093300

Filed as Large Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension - 1 month with $0 paid	1251	1	200	200
Miscellaneous:				
RCE- 1st Request	1801	1	1200	1200
		Total in USD ($)		**1400**

Electronic Acknowledgement Receipt	
EFS ID:	31184449
Application Number:	14656357
International Application Number:	
Confirmation Number:	9085
Title of Invention:	ATTACHMENT FOR A HAND HELD APPLIANCE
First Named Inventor/Applicant Name:	Alasdair Michael MACLAINE
Customer Number:	25227
Filer:	Christopher Elmose Gloria/Donna Bernecker
Filer Authorized By:	Christopher Elmose Gloria
Attorney Docket Number:	424662093300
Receipt Date:	11-DEC-2017
Filing Date:	12-MAR-2015
Time Stamp:	16:03:46
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$1400
RAM confirmation Number	121217INTEFSW00003048031952
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Continued Examination (RCE)	RCE_424662093300.PDF	1349857 e073cd84ad6a57f2faeda91aa67aae1478db d253	no	3
Warnings:					
Information:					
2		Amend_424662093300.pdf	103575 4c94a7abcda6269dd19b27a65935e219c91 fdf03	yes	9

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment Submitted/Entered with Filing of CPA/RCE	1	1
	Claims	2	5
	Applicant Arguments/Remarks Made in an Amendment	6	9

Warnings:					
Information:					
3	Transmittal Letter	IDS_424662093300.pdf	19715 ae7e102322bc52a347d8799ab676a44f569 8f5a0	no	2
Warnings:					
Information:					
4	Information Disclosure Statement (IDS) Form (SB08)	SB08_424662093300.pdf	28011 f2009fff213d8ca05a9c9504545d0f9ba9315 a3f	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					

5	Foreign Reference	GB_2515812.pdf	4497524 78fffa7ce43b83a64fbfc415b6061686497042af	no	58
Warnings:					
Information:					
6	Non Patent Literature	14656432_Aug162017_2093400.pdf	548865 aecf61aa4c28e005ff82788278b756de99ff61d7	no	14
Warnings:					
Information:					
7	Non Patent Literature	14656375_08Dec2017_2093500.pdf	601146 7dc4800fd18e53d8f9b75f78008ae726c4d53d21	no	7
Warnings:					
Information:					
8	Fee Worksheet (SB06)	fee-info.pdf	32372 bd3f9464c91f5dc9c009d094c42512c3fd0f6b00	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	7181065		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 14/656,357	Filing Date 03/12/2015	☐ To be Mailed

ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT **12/11/2017**

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 33	Minus	** 35	= 0	X $80 =	0
Independent (37 CFR 1.16(h))	* 2	Minus	***3	= 0	X $420 =	0
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	0

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))						
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
					TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
ERNEST MARFO

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/656,357	03/12/2015	Alasdair Michael MACLAINE	424662093300	9085

25227 7590 01/10/2018

MORRISON & FOERSTER LLP
1650 TYSONS BOULEVARD
SUITE 400
MCLEAN, VA 22102

EXAMINER	
GILL, JENNIFER FRANCES	

ART UNIT	PAPER NUMBER
3776	

NOTIFICATION DATE	DELIVERY MODE
01/10/2018	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

EOfficeVA@mofo.com
PatentDocket@mofo.com
pair_mofo@firsttofile.com

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Office Action Summary	Application No. 14/656,357	Applicant(s) MACLAINE, ALASDAIR MICHAEL	
	Examiner JENNIFER GILL	Art Unit 3776	AIA (First Inventor to File) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/11/17*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5)☒ Claim(s) *1,3-17 and 19-35* is/are pending in the application.

5a) Of the above claim(s) *17 and 19-35* is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1 and 3-16* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☒ The drawing(s) filed on *5/15/15* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date *12/11/17*.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/11/17 has been entered.

Information Disclosure Statement

The information disclosure statement(s) (IDS) submitted on 12/11/17 with the fees was/were filed in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement(s) has/have been considered by the examiner.

Claim Rejections - 35 USC § 102

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale or otherwise available to the public before the effective filing date of the claimed invention.

Claim(s) 1, 3-5, 7, 9-10 is/are rejected under 35 U.S.C. 102(a)(1) as being anticipated by, or unpatentable over, Lindsey (USP 5868148).

Regarding the attachment being “configured to direct fluid flow emitted from the outlet along and around the external surface of the attachment” and "configured so that in use, the fluid emitted from the outlet is attracted to the surface of the attachment", the applicant is respectfully advised that it has been held by the courts that where a prior art apparatus is identical or substantially identical in structure, claimed properties or functional characteristics are presumed to be inherent, and a prima facie case of either anticipation or obviousness has been established. *In re Best*, 195 USPQ 430 (CCPA 1977). See MPEP § 2112.01. In this case, Lindsey discloses all the structural features of the claimed invention (as detailed below) and was therefore considered to anticipate the cited functional limitations.

Claim 1, Lindsey teaches an attachment (10) for a handheld appliance (15) comprising: an inlet (16); a series of outlets in the form of slots (G) extending from near an inlet end of the attachment towards a distal end of the attachment and wherein the outlets (G) are defined by an external surface of the attachment because they are gaps extending through the external surface of the attachment (see Figs 8-13). Fluid emitted from the outlet would be capable of being blown along and around the external surface and around the external surface of the attachment (see Figs 8-13); particularly since hair wrapped around the device in use would act as a baffle, helping to force the airflow to be "directed along and around the external surface of the attachment". The external surface of the plates carry bristles (22) and the outward facing surface of the plates

combined with the bristles, together, form an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot and extending substantially along a length of the attachment (10; see Figs 8-13).

Claim 3, the outlet slots (G) are spaced radially around the attachment (10; see Figs 8-13).

Claim 4, the fluid can be emitted from the outlet tangential to the external surface of the attachment (see Fig 9).

Claim 5, the fluid emitted from the outlet appears to be capable of being directed towards, or around, the external surface of the attachment, which meets the claim limitation of "attracted to" the surface, as best understood (see Fig 9).

Claim 7, the outlet comprises at least two slots (G; see Figs 8-13).

Claims 9-10, the attachment (10) has a longitudinal axis extending from the inlet end to the distal end and the slots (G) are non-parallel to the longitudinal axis because the slots (G) are helical with respect to the longitudinal axis (see Fig 12).

Claims 11-13, the device further comprises a flow directing element (16) formed of a perforated (28 & 30) layer of elongate material; since Merriam-Webster defines mesh as “a web-like pattern or construction” and the flow directing element (16) has a series of spaced holes forming a “web-like pattern”, the perforated layer is formed from a mesh of elongate material as claimed (see Figs 8-13).

Claims 15-16, the flow directing element (16) extends substantially along a length of the slots (G) and it extends substantially around an inner circumference of the attachment (see Figs 8-13).

Claim(s) 1, 3-8, 11-13, and 15-16 is/are rejected under 35 U.S.C. 102(a)(1) as being anticipated by, or unpatentable over, McDougall et al (USP 5212366).

Regarding the attachment being “configured to direct fluid flow emitted from the outlet along and around the external surface of the attachment” and "configured so that in use, the fluid emitted from the outlet is attracted to the surface of the attachment", the applicant is respectfully advised that it has been held by the courts that where a prior art apparatus is identical or substantially identical in structure, claimed properties or functional characteristics are presumed to be inherent, and a prima facie case of either anticipation or obviousness has been established. *In re Best*, 195 USPQ 430 (CCPA 1977). See MPEP § 2112.01. In this case, McDougall discloses all the structural features of the claimed invention (as detailed below) and was therefore considered to anticipate the cited functional limitations.

Claim 1, McDougall teaches an attachment (2) for a handheld appliance (1) comprising an inlet (17); an outlet in the form of slots between plates (3, see Fig 5a) and a fluid flow path between the inlet and outlet and the slot extends from near an inlet end of the attachment towards a distal end of the attachment and wherein the outlet slots are at least partially defined by an external surface of the attachment such that fluid emitted from the outlet is blown along and around an internal and external surface of the attachment (since it flows from the internal to the external surface in use) and fluid

emitted from the outlet can flow around the external surface of the attachment (Col 3, 1-10; see Figs 1-5); particularly since hair wrapped around the device in use would act as a baffle, helping to force the airflow to be "directed along and around the external surface of the attachment". The external surface of the plates carry bristles (3b) and the outward facing surface of the plates combined with the bristles, together, form an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot and the slots between the plates (3) when in the expanded state extend substantially along a length of the attachment (see Figs 1-2).

Claim 3, the outlet comprises a plurality of slots between the plates (3; see Figs 1-2).

Claim 4, the fluid emitted from the outlet is capable of emitting from the outlet tangential to the external surface of the attachment depending on the expanded state of the plates (3; see Figs 1-5).

Claim 5, the heated fluid emitted from the outlet is attracted to the surface of the attachment by virtue of the metal reinforcement rods (3f) in each plate (3) because metal is a known heat conductor so the heat would be attracted to this surface thereby meeting the claim limitations, as best understood (see Figs 1-5).

Claim 6, the attachment is generally cylindrical (see Figs 1-2).

Claim 7, the outlet comprises at least two slots (see Fig 5a).

Claim 8, the attachment has a longitudinal axis extending from the inlet end to the distal end and the slots are parallel to the longitudinal axis (see Figs 1-5).

Claims 11-13, there is a flow directing element (3d & 3e & 5 & 12 &13) between the inlet and outlet and these elements constitute “flow directing elements” because in use the air flows over or through these elements, thereby causing a redirection of the airflow by their presence (see Figs 1-2). At least one of these flow directing elements is formed as a perforated (3d & 3e) layer (see Figs 1-5). Since Merriam-Webster defines mesh as “a weblike pattern or construction” and the flow directing element has a series of spaced holes (3d & 3e) forming a “weblike pattern”, the perforated layer is formed from a mesh of elongate material as claimed (see Figs 1-5).

Claim 15-16, the flow directing element (3d & 3e & 5) extend substantially along a length of the at least one slot (see Figs 1-5).

Claim Rejections - 35 USC § 103

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-16 is/are rejected under 35 U.S.C. 103 as being unpatentable over Lindsey (USP 5868148) in view of Tomaro (USP 4295283).

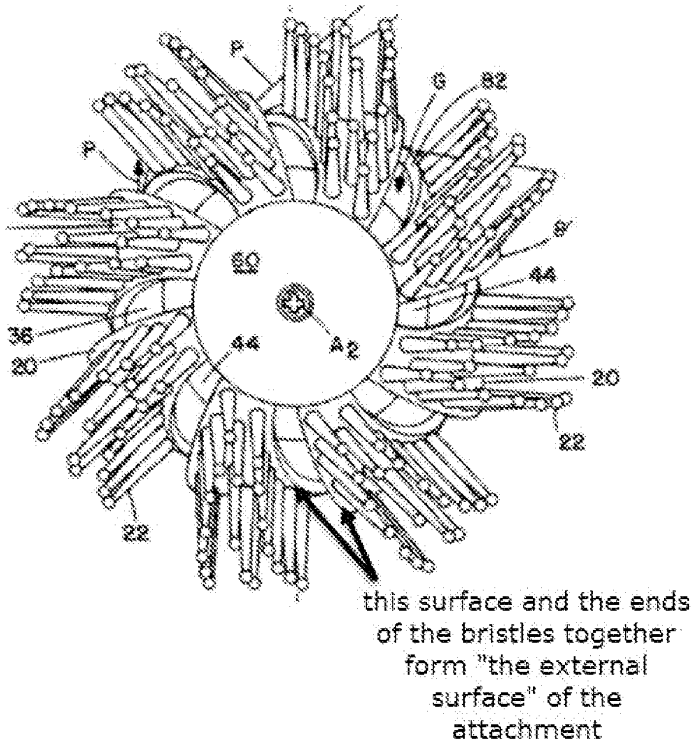
Claims 11-16, Lindsey discloses the invention essentially as claimed except for the attachment comprising a wire mesh flow directing element extending along the length of slots and around an inner circumference of the attachment. Tomaro, however, teaches an attachment (14) for a handheld appliance (2) wherein the attachment comprises an internal screen (which constitutes a wire mesh) between the inlet and the outlet and extending along a length of the attachment and around an inner circumference of the attachment in order to further deflect and dissipate air discharged from the housing and in order to prevent the hair of a user from accidentally being caught in the fan (Col 1, 65-Col 2, 5; see Fig 1). Therefore, it would have been obvious to one possessing ordinary skill in the art at the time of filing to modify the device of Lindsey to comprise a wire mesh screen extending along a length of the attachment and around an inner circumference of the attachment in view of Tomaro in order to prevent a user's hair from accidentally entering the device and becoming tangled.

Response to Arguments

Applicant's arguments filed 12/11/17 have been fully considered but they are not persuasive.

Applicant argues that Lindsey fails to teach "the external surface of the attachment forming an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot"; however, this argument is not persuasive because Lindsey teaches the external surface of the attachment being formed by the external surface of the plates, which form the

gaps between the plates as well, and the bristles carried on the plate surfaces and therefore teaches Lindsey the limitations as claimed.



Applicant argues this same reasoning with the McDougall reference; specifically, arguing that because the McDougall reference also comprises bristles, or teeth, this precludes the external plate surfaces from forming the outermost surface of the attachment along a length of the attachment and along the longitudinal slots formed between the plates; however, the external surface of the plates of McDougall in combination with the bristles form the external surface of the attachment as claimed.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Gill whose telephone number is (571) 270-1797. The examiner can normally be reached on Monday-Friday 10:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, ***please contact the examiner's supervisor, Todd Manahan, at* (571) 272-4713**. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. G./
Examiner, Art Unit 3776
/TODD E MANAHAN/
Supervisory Patent Examiner, Art Unit 3776

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
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EAST Search History (Interference)

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ALTERNATIVE TO PTO/SB/08A/B
(Based on PTO 08-08 version)

Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	14/656,357
				Filing Date	March 12, 2015
				First Named Inventor	Alasdair Michael MACLAINE
				Art Unit	3776
(Use as many sheets as necessary)				Examiner Name	J. F. Gill
Sheet	1	of	1	Attorney Docket Number	424662093300

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1.	US-4,197,448	04-08-1980	Harigai	
	2.	US-6,038,782	03-21-2000	Schepisi	
	3.	US-8,353,303	01-15-2013	Kim	
	4.	US-2017/0273421	09-28-2017	Heffer et al.	
	5.	US-2017/0273422	09-28-2017	Heffer et al.	
	6.	US-2017/0273423	09-28-2017	Mason et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3]-Number[4]-Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]
	7.	GB-2515812	01-07-2015	Dyson Technology Limited (Patrick Joseph William MOLONEY et al.)		

Examiner Signature	/JENNIFER F GILL/	Date Considered	01/02/2018

*EXAMINER: Initial if information considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1] Applicant's unique citation designation number (optional). [2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
	8.	MacLaine et al., U.S. Office Action mailed August 16, 2017, directed to U.S. Application No. 14/656,432; 14 pages	
	9.	MacLaine, Office Action mailed December 8, 2017, directed to U.S. Patent Application No. 14/656,375; 7 pages	

Examiner Signature	/JENNIFER F GILL/	Date Considered	01/02/2018

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1]Applicant's unique citation designation number (optional). [2]Applicant is to place a check mark here if English language Translation is attached.

va-508529

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.F.G/

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14656357	MACLAINE, ALASDAIR MICHAEL
	Examiner	Art Unit
	JENNIFER GILL	3776

CPC- SEARCHED		
Symbol	Date	Examiner
A45D 1/02, 2/06, 2/10, 2/125, 2/127, 2/14, 2/24, 2/2407, 2/2414, 2/2421, 2/245, 2/2457, 2/2485, 2/2492, 20/10, 20/122, 20/124, 20/50	1/25-2/3/17	JG
A46B 9/023, 15/003	1/25-2/3/17	JG

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

SEARCH NOTES		
Search Notes	Date	Examiner
132.CLAS (WITH TEXT SEE EAST HISTORY)	1/25-2/3/17	JG
USPC SEARCH WITH TEXT	1/25-2/3/17	JG
CPC SEARCH	1/25-2/3/17	JG
INVENTOR SEARCH	1/25-2/3/17	JG
ASSIGNEE SEARCH	1/25-2/3/17	JG
TEXT SEARCH (SEE EAST HISTORY)	1/25-2/3/17	JG
NPL SEARCH	1/25-2/3/17	JG
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A46B 9/023, 15/003	1/25-2/3/17	JG
updated search notes	7/31-8/3/17	jg

/JENNIFER GILL/ Examiner.Art Unit 3776	

SEARCH NOTES		
Search Notes	**Date**	**Examiner**
updated search notes	12/29/17-1/2/18	jg

INTERFERENCE SEARCH			
US Class/ CPC Symbol	**US Subclass / CPC Group**	**Date**	**Examiner**

/JENNIFER GILL/ Examiner.Art Unit 3776	

PTO/SB/08a (03-15)
Approved for use through 07/31/2016. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	14/656,357
	Filing Date	March 12, 2015
	First Named Inventor	Alasdair Michael MACLAINE
	Art Unit	3776
	Examiner Name	Jennifer Frances Gill
	Attorney Docket Number	42466-20933.00

U.S. PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

U.S. PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Country Code[2]	Foreign Document Number[3]	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1.	WO-97/23147			07-03-1997	Vital Hair Tools, LLC (Natale SCHEPISI)	Corresponds to JP-2000-516483 previously cited	
	2.	CN-1205617			01-20-1999	Vital Hair Tools, LLC (Natale SCHEPISI)	Machine Translation	X

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	14/656,357
	Filing Date	March 12, 2015
	First Named Inventor	Alasdair Michael MACLAINE
	Art Unit	3776
	Examiner Name	Jennifer Frances Gill
	Attorney Docket Number	42466-20933.00

NON-PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	3.	MacLaine et al., U.S. Office Action mailed January 12, 2018, directed to U.S. Application No. 14/656,432; 11 pages	

EXAMINER SIGNATURE			
Examiner Signature		Date Considered	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	14/656,357
	Filing Date	March 12, 2015
	First Named Inventor	Alasdair Michael MACLAINE
	Art Unit	3776
	Examiner Name	Jennifer Frances Gill
	Attorney Docket Number	42466-20933.00

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/christopher gloria/	Date (YYYY-MM-DD)	2018-03-08
Name/Print	Christopher Gloria	Registration Number	71,907

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

1 of 1 DOCUMENT

CN1205617A 1999-01-20 Hand-held blow dryer having airflow control means (en)

English Abstract:

The patent refers to the field of 'hairdressing or shaving equipment; manicuring or cosmetic treatment'. A hand-held blow dryer includes a barrel (3) with a plurality of holes (6, 7). A deflecting mechanism (16) can be positioned within or substantially within the barrel (3), and an actuating mechanism can be operationally associated with the deflecting mechanism (16). The hand-held blow dryer can be utilized in at least a first mode in which airflow is directed through the barrel opening of the barrel (3), and a second mode in which the actuating mechanism is actuated to move the deflecting mechanism (16) from at least a position in which the barrel opening is opened, to a position in which the barrel opening is substantially closed by the deflecting mechanism. Thus, in the second mode most of the air is deflected by the deflecting mechanism and forced through the holes (6, 7) of the barrel.

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English Description:

This application is a Patent application Serial number No. 08/576,592 continue to apply for the part.

TECHNICAL FIELD

The invention relates to the improvement of the professional hair blow dryer, more specifically, it is the improvement of blowing drier cylinder, the cylinder air flow can be changed and the energy is saved.

BACKGROUND ART

The traditional "pistol" hair using blow dryer through the air-blow drying machine a cylindrical duct or opening at the front end of the cylinder of the air flow in the single direction. Commercial can be mounted in a cylinder opening in order to change the air flow to annex will require two-hand operation.

United States Patent No. 4,097,722 described a through by means of a is composed of a trigger actuated diversion plate control cylinder and changing air flow opening area of the mechanism. However, this Patent did not disclose the air flow flowing out of the surface of the cylinder body itself.

United States Patent No. 4,232,454 by a button and screw actuated gate to control the air flow from the cylinder opening. Its shortcomings is that it still require two-hand operation.

United States Patent 5,157,757 described comprising an auxiliary outlet in the cylinder on the air flow change. However, this kind of device and other devices require two-hand operation like, because starting dependent on manual rotating an annular piece, manual setting, operating a flip-flop and the guiding board to change the opening of the cylinder body.

The use of blow dryer when the styling hair, hairdressers one hand to hold the air-blow drying machine, the alignment of the opening of the cylinder body to hair styling hair. On the other hand the use of a hairbrush or other tool. Furthermore, when the centering and when shaping hair blowing, hairdressers horizontal use of the cylinder body, the cylinder opening to leave the head of a person, in order to lift up the hair, then the other in a hand tool is inserted into the hair in the hair. In the course of this operation, the opening of the air flow is wasted, the drying/to the hairstyle is not play any role.

Therefore, the traditional blowing drying device does not provide a through blowing on the surface of the cylinder body of the drier drum structure of the air guide. Furthermore, traditional blowing drying device does not provide an effective mechanism, so that the user can discharge opening from the cylinder the air flow deflection, and at the same time by means of a simple one-handed operation can be through the air-blow drying machine the surface of the cylinder body to guide air flow.

DISCLOSURE

Therefore, this invention has offered a kind of blowing drier structure, the structure overcomes the shortcomings of the above-mentioned conventional structure.

Blow dryer of the present invention from the surface of the cylinder body by changing the structure of the air flow and increase the functionality of the blow dryer, the energy can be saved at the same time. This makes the blow dryer of this invention can be used for horizontal besides hair/drying/do hairdoes, and used as blanching hairdrier and diffuser.

Blow dryer of this invention can be used in some of the holes are arranged on the surface of the cylinder body and comprises a guide plate connected with the barrel body. By starting one actuating device, flow guide plate of the cylinder can be connected in different extent gradually closing most of the air flow. This, to a different extent, have LED to the located in the cylinder in the hole of the discharged air flow at the opening of the former and some airflow disperse.

Therefore, this invention has offered a kind of blowing drying machine, which comprises: a cylinder body with a cylinder opening of a machine body, the cylinder body is provided with a plurality of holes; a baffle in the tube body, the flow guide plate can be in the cylinder opening is in the open state at least one of an open position and substantially closing a cylinder opening movement between the inclined position; and a guide plate operatively connected to the actuating device, is used for making the guide plate in at least one of between an open position and a bias current position of the mobile.

This invention has offered a kind of blowing drier, comprising: a containing and having a cylinder opening of the body of the cylinder, the cylinder comprising concentric inner, outer cylinder, the inner, outer cylinder is provided with a plurality of holes; one is operatively connected to the inner cylinder or an outer cylinder on the one of the actuating device, is used for the inner cylinder or an outer cylinder with respect to the another one of the inner cylinder or an outer cylinder the position of at least one of the 1st and 2nd is movable between a position, in the 1st position, the inner, the holes on an outer cylinder are mutually staggered, in the 2nd position, the inner, the holes on an outer cylinder are mutually aligned.

This invention has offered a kind of blowing drier, comprising: a containing has many 1st hole and a cylinder opening of the body of the cylinder body; a can be movably mounted on the cylinder and has a plurality of 2nd cylinder of the hole; and in the cylinder a and can be located in at least an open position and a bias current between the positions of the splitter plate, in the open position, the opening of the cylinder is open, the position of the bias current, the opening of the cylinder body is substantially closed.

This invention has offered a kind of blowing drier, comprising: a containing is provided with an opening of the cylinder body, the cylinder is provided with a plurality of holes to define both the 1st and 2nd concentric circular cylinders; a baffle in the tube body, the flow guide plate can be in at least one open position and a bias current mobile between a position, in the open position, the opening of the cylinder is open, the position of the bias current, the opening of the guide plate is substantially closed; a and operatively connected to the 1st or 2nd cylinder and operable on one of the guide plates is connected with the actuating device, is used for making the guide plate and one of the 1st or 2nd cylinders in at least one of position and a 1st 2nd mobile between a position, the position in the 1st, the 2nd 1st cylinder and the pin hole on the circular cylinder is to stagger and the guide plates are in the open position, the position is 2nd, 1st cylinder 2nd cylinder and the hole is aligned and the position of the guide plates in the bias current.

This invention has offered a kind of blowing drier, comprising: a body of the cylinder, around the the the tube body circles having a plurality of holes; a and substantially located in the splitter plate of the cylinder body, the flow guide plate can be in the cylinder opening is in an open state of the at least one opening position substantially closing the opening of the cylinder movable between the inclined position; and a flow guide plate is connected to the operation of the actuating device, in order to at least one of the open position and the bias current mobile between a position of the guide plates.

This invention has offered a kind of blowing drier, comprising: a body of the cylinder body, the cylinder body defines each have a plurality of holes of the 1st and 2nd cylinder; a substantially located in the splitter plate of the cylinder body, the flow guide plate can be in the cylinder body is in the open state of the opening of the at least one open position and one of the opening is of the guide plates substantially closing movement between the total bias current position; and with a 1st or 2nd cylinder and is operably connected with one of the guide plates is connected with the actuating device, this device is used for at least one of a position and a 1st 2nd mobile between a position of the guide plates and the one of the 1st or 2nd cylinder, the position in the 1st, 2nd and 1st of the circular cylinder is to stagger of holes, and the guide plates are in the open position, in the 2nd position, 2nd 1st cylinder and the pin hole on the cylinder body are mutually aligned, and the guide plate is in a fully blocked position.

The invention also provides an air-blow drying machine, which comprises a containing body of the cylinder body, the body is provided with a plurality of holes around its periphery; a substantially located in the splitter plate of the cylinder body, the flow guide plate can be in the cylinder opening is in the state of opening the opening position and at least one cylinder opening is in a partly closed state of the bias current in the middle position, the opening of the cylinder is substantially closed and is mobile between a position of the bias current; and a flow

guide plate is connected to the operation of the actuating device, is used for making the the guide plates in the open position, at least one intermediate bias current position and a fully inclined moving between the positions.

This invention has offered a kind of blowing drier, comprising: a body of the cylinder body, the cylinder body are respectively provided with a plurality of holes defining a the 1st and 2nd concentric circular cylinders; a substantially located in the splitter plate of the cylinder body, the flow guide plate can be in the said opening is in the state of opening the at least one open position and the opening of the closing plate part is at least one intermediate bias current position and the opening is substantially closed by the guide plate to move between the full bias current position; and with one of the 1st or 2nd cylinder and is connected to one of the flow guide plate can be operatively associated with the actuating device, this device is used for the guide plate and one of the 1st or 2nd cylinder at least one of the 1st position, at least one intermediate 2nd 3rd position and movable between a position, in the 1st position, the 1st and 2nd cylinders are stagger of holes, and the guide plates are in the open position, in the middle position is 2nd, 1st and 2nd is the upper part of the hole, and the guide plates is in the intermediate bias current position, at the 3rd position, the 1st and 2nd cylinders is completely aligned with the hole, and the guide plates in the fully inclined position.

In conjuction with a detailed description and reference of the following geographic xie Ben invention is more in-depth, will be very easily brought about by this invention and the many of the advantages of the more complete evaluation made, wherein:

Figure 1 is view of a blow dryer of the present invention and the barrel assembly is in the 1st position, at the position of the inner cylinder, an outer cylinder is to stagger the holes on the;

Figure 2 is a front view of Figure 1 is shown the blow dryer when the cylinder opening is in the 1st position, provides in an opening position the flap or diversion mechanism;

Figure 3 is view of the blow dryer of the inner cylinder, the outer cylinder is in the 2nd position, the in this position, the hole on the outer cylinder are mutually aligned;

Figure 4 is a front view of when the as shown in Figure 3 the inner, an outer cylinder on the holes on the opening of the cylinder to each other, at this time the movable plate or guide mechanism substantially closing the opening of the cylinder body;

Figure 5 is a perspective view of the Figure 1 and Figure 2 the position of the shown in the 1st cylinder, the outer cylinder and the movable plate or guide mechanism;

Figure 6 is a perspective view of in Figure 5 shown in an open position of the flap;

Figure 7 is a perspective view of in Figure 3 and Figure 4 the 2nd position of the flap and the inner, outer cylinder;

Figure 8 a flap is separately expressed;

Figure 9 (a), 9 (b) and 9 (c) said inner cylinder respectively, the movable plate and a cover of the cylinder body;

Figure 10 represents an outer cylinder of the present invention;

Figure 11 (a), 11 (b) and 11 (c) said flap with a different view;

Figure 12 represents a different blow dryer embodiment of the machine body;

Figure 13 of the present invention for controlling the temperature of the blow dryer circuit arrangement;

Figure 14 is the invention of a modified of the outer cylinder;

Fig. 15 is expressed by the other blow dryer of the present invention a modified;

Fig. 16 is expressed by the air-blow drying machine of the present invention another variant of the cylinder body;

Fig. 17 is expressed by the air-blow drying machine of the present invention another embodiment, wherein the air-blow drying machine body includes a plurality of holes of the cylinder and a guide plate;

Figure 18 shows the fig. 17 blowing in another variant of the drier, wherein the air-blow drying machine includes a is composed of a screen mesh around the cylinder;

Figure 19 is a front view of the invention air-blow drying machine, wherein the guide plate is disposed in an open position;

Figure 20 is a front view of the invention air-blow drying machine, wherein the guide plate is disposed in the final closed position;

Fig. 21 is diagram 18 of the blow dryer in another variation of the cylinder body, wherein a sponge-like screen around the cylinder;

Figure 22 is expressed by another kind of deformation of the cylinder, wherein the cylinder body on the assembly of the plurality of holes is inclined;

Figure 23 is expressed by another kind of deformation of the cylinder body, wherein the screen is arranged in the main body in a radial direction;

Figure 24 is the invention of another kind of deformation of the cylinder body, wherein the hole is provided with the holes in the screen;

Figure 25 (a) and 25 (b) of the present invention is a blow dryer a side view of the embodiment, in order to by the mechanism actuating guide mechanism;

Figure 26 is another view of 1st embodiment of a cylinder body;

Figure 27 is a side view of in order to explain another variation of the cylinder body; and

Figure 28 is a front view of a chart-based 19 and 20 of the cylinder.

MODE FOR INVENTION

Now with reference to the attached drawing, wherein similar grade display picture, in particular in Figure 1 and Figure 5 identical or corresponding parts, Figure 1 is 1st view, and Figure 5 is a perspective view of a blow dryer assembly of the present invention. In Figure 1 and 5 in, air-blow drying machine comprises a body 1, which has a cylinder body 3. The cylinder 3 can include an inner cylinder 4 and a and the inner cylinder 4 concentric outer cylinder 5. The outer cylinder 5 is slidably mounted to the inner cylinder 4 is. The inner, the outer cylinder (4, 5) which contains many located on the holes on the same (6, 7), (hole 6 is located in the inner cylinder 4 is, hole 7 is positioned in the outside cylinder 5 on).

Such as in Figure 1 and 6, as in the further description, blowing dryer assembly can also include one of the pivotable flap mechanism 16 of the covering 8. Sleeve cover 8 and can rotate around a pivot the flap mechanism 16 is located in the opening of the cylinder 8a is. Figure 6 of the sleeve in the 8 shows a cut-off of the opening, however, should be aware of cover 8 can be fully cover includes a pivotable flap mechanism 16 located at the front end of the cylinder body, all of the movement mechanism. However, the applicant noted that, for this invention can not cover 8 and use, and the cover 8 on the consideration of design-dependent.

Figure 1, 5 and 6 that the outer cylinder 5 relative to the inner cylinder 4 of the 1st position, the outer cylinder in the 5 of the hole 7 in the cylinder 4 of the hole 6 alignment, at the same

time the flap can rotate around a pivot mechanism 16 is in an open position. Therefore, through the cylinder 3 from the cylinder all of the air flow opening 8a to flow out. The inner, the outer cylinder 4, 5 are mutually staggered on the holes 6 and 7 through the cylinder any the barrier 3 of the surface of the air flow.

In Figure 3 and 7 the position of the shown in the, inner, outer cylinder mutual alignment, so that the respectively located at the inner, the outer cylinder 4, 5 of the holes 6, 7 is aimed at each other. In Figure 3 and 7 is shown in the position, the movable plate mechanism 16 is located in Figure 4 and 7 on the position shown in the. That is to say, the movable plate mechanism 16 the position of the opening of the cylinder body so that it is substantially 8a covers, as shown in Figure 4 and 7, of the.

It should be noted that, the inner, the outer cylinder 4, 5 with the relative movement of the movable plate mechanism 16 with the movement of the, so that the flap mechanism 16 is in the position of the noted above. In this position (i.e., Figure 7 the position of the shown), the movable plate mechanism most of the air flow will be deflected, so as to guide the air flow, the outer cylinder 4, 5 the mutual alignment of the holes 6 and 7. In this way, air flow through the cylinder 3 surface discharge. Therefore, by starting an actuating device 12, the user can be gradually, controllable or continuously the movable plate mechanism 16 from an open position toward a substantially closed position, for example, Image 7, as shown in. As another option, through the starting actuating device 12, the user can be gradually, controllably or continuously the movable plate mechanism 16 from the open position toward the one or more intermediate bias current position (an intermediate bias current position of the example shown in Figure 26 and 28 in), can be in the middle position of the cylinder opening 8a partially closes according to the need, the final basic closed position to, for example, Image 7, as shown.

The movement of the actuating device with the, outer cylinder 5 A along the direction of movement, so that the inner, the outer cylinder 4, 5 of the holes 6, 7 in Figure 5 shown in a fully staggered position of the, for example, as shown in Figure 7 to the hole 6, 7 are totally aligned final position. As another option, the position of the complete staggered (Figure 5) and the complete alignment (Figure 7) the position of the between, the outer cylinder 5 can be with the actuating device to move with the motion of the one or more intermediate position, in this position, holes 6, 7 is partially staggered (see Figure 26).

Actuating device 12 can be continuously moving, thus can be controlled by users, or may be provided as an actuating device for one or more of the above-mentioned stop point corresponding to the position of.

Furthermore, fig. 26 is also shown along the counterclockwise movement of the flap on the 16 [...] movement along a clockwise direction and the lower flap 16 the [...]. It should be noted that, as disclosed herein is not limited to a mode of motion of the rotary motion of the movable plate. As can be seen, according to the movable plate mechanism 16 in the cylinder 3 the position of the in, the movable plate can be clockwise movement can also be anti-clockwise movement, to achieve the required opening of the cylinder body of an opened state and a closed state. The same manner is also applicable to Figure 28 of the case, the diagram shows a the guide plate 109 of the examples of a middle position. It can be seen, the direction of rotation of the guide plate is based on design considerations.

As another embodiment, the applicant noted, actuating device 12 can be first of all lead to the start of the outer or inner cylinder 5, 4 the movement of the one, and then to the flap mechanism 16 a is delay of the arrival of the movement of the basic closed position. This kind of method can be some dispersion of the air escaping through the inner opening.

Used for realizing the will now be described, the outer cylinder 4, 5 and the movable plate mechanism 16, the motion of one example of the mechanism. As shown in Figure 5-8 and Figure 9 (b) and 11 (a)-11 (c) is shown, can rotate around the pivotal movement of the flap

mechanism 16 includes installing the shaft 16b and a mounting pin extending from the shaft 16c of the 1st and 2nd flap 16 the and [...] the 16 [...]. As shown in Figure 8, mounting pin 16c in order to bias the actuating device an oval 16a on. The invention can also be in the mounting pin 16c make use of washer 16d (Figure 9 and 11 (a)-11 (c)) in order to smooth the operation. With installation pin 16c of the flap mechanism can rotate around the pintle 16 are installed on the main body of the way 3 in, or substantially in the cylinder 3 the inner, or the opening of the cylinder 8 (a) is: the mounting shaft 16b and mounting pin 16c is installed to be inserted into the inner cylinder 4 is of the long and narrow groove 17 inner and outer cylinder 5 is of the long and narrow trough 11 inner (see Figure 6, Figure 9 (a) and Figure 10). The outer cylinder 5 is of the long and narrow trough 11 is positioned in the outside cylinder 5 a projecting portion 5a is. Therefore, the outer cylinder 5 in the direction of the arrow A the movement (Figure 1 and Figure 7) will cause the flap can rotate around a pivot mechanism 16 from at least as shown in Figure 5 shown in the opening of the cylinder 8a is opened toward the position of Figure 7 shown in an opening of the cylinder 8a substantially closed position. This is because the outer cylinder 5 A along the direction will result in the movement of the flap can rotate around a pivot mechanism 16 pin 16c and the elliptical actuating device 16a to rotate together, thereby causing the flap can rotate around a pivot mechanism 16 to the substantially closed position to rotate.

The outer cylinder 5 can include actuating device, for example the flip-flop 12, the flip-flop for causing the outer cylinder 5 relative to the inner cylinder 4 the sliding. Actuating device or flip-flop 12 includes a by a pin 14 located in the outer cylinder guide 5 in the groove 15 of the spring 13 (Figure 1, 3, 10). Spring 13 A the direction opposite to the direction of the outer cylinder 5. Starting actuating device, such as along the direction A pulling the trigger 12, will lead to the outer cylinder 5 mobile A along the direction, thereby causing the flap can rotate around a pivot mechanism 16 from at least as shown in Figure 5 to the position shown in Figure 7 is shown in a substantially closed position. Figure 1, 3 and 10 show the one is located in the cylinder assembly 3 of the lower part of the single spring 13. However, it should be noted that, the cylinder assembly may also include two in the cylinder assembly 3 along the diameter direction of the relative part of the spring 13, in order to increase the cylinder (4, 5) the stability of the movement.

At the same time or nearly at the same time, the outer cylinder 5 A along the direction of the will also lead to the movement of, the outer cylinder 4, 5 of the 6, 7 becomes as shown in Figure 7, as of mutual alignment.

Therefore, in Figure 1 and 5 shown in the 1st (1st state) at the position, the flap can rotate around a pivot mechanism 16 in Figure 5 the position shown, opening to allow gas flow through the cylinder 8a, and the inner, the outer cylinder 4, 5 of the holes are not aligned (Figure 1 and 5), thus blocking air flow from the cylinder 3 through the surface of the. This makes the user can usually use of the air-blow drying machine.

When the hairdresser would like to the air-blow drying machine used as a hair curler, diffuser, and so on, used in the horizontal besides hair/drying, the styling hair, hairdressers starting actuating device, for example, can pull the trigger A along the direction 12, according to the as shown in Figure 3 and Figure 7 manner relative to the inner cylinder 4 provided with an external cylinder 5 position (2nd or final state). This will lead to the inner, the outer cylinder 4, 5 of the holes 6, 7 is aimed at each other, and lead to the flap mechanism 16 the flap 16 the [...] , the 16 gradually [...] rotate around the pivot to the Figure 7 position shown, so as to substantially close the opening of the cylinder 8a. In this position, the movable plate 16 the [...] , 16 the air will be deflected [...] on the barrel to expose the aligned holes 6, 7, and some divergence of the air flows through the cylinder opening 8a. In another feature of the invention in, a user can the actuating device 12 into the intermediate position, this will lead to the flap mechanism 16 controlled through a number of intermediate bias current position (one of the

position shown in Figure 26 in), at the same time that the inner, the outer cylinder 4, 5 toward the one of the holes 6, 7 the middle position of the part (Figure 26), so as to make the required part of the flow through the holes 6, 7. Therefore, utilizing the actuation device 12 can be the intermediate position of the flap mechanism enables the user to control the amount of deflection and fine holes 6, 7 the degree of alignment.

As can be seen, the invention is not limited to the described for mobile of the cylinder and the arrangement of the flap mechanism, any mechanism can be used, for example, can achieve the required movement of the above-mentioned gear.

The outer cylinder 5 relative to the inner cylinder 4 can be the amount of movement of the determined through the following way, in other words, as shown in Figure 1, 3, 9 (a) and 10 illustrated, the outer cylinder 5 is provided with a long and narrow groove 10 and the inner cylinder 4 is provided with a pin 9. When the as shown in Figure 7, the opening of the cylinder 8a is the movable plate 16 the [...] , the 16 [...] substantially closed, the opening of the cylinder 8a is not flap 16 the [...] , 16 the strict seal [...] , thereby allowing some air diverging from the cylinder opening.

This invention can also provide a as shown in Figure 6 and 9 (c) of the sleeve shown in 8, is used for shielding the flap mechanism 16. Sleeve cover 8 demonstrate a part of the cut, in order to show the movable plate mechanism 16 side. It should be noted, sleeve cover 8 can completely around the periphery of the front part of the cylinder body. Sleeve cover 8 can also include a number of stop pin 80 (Figure 9 (c)), in order to make the cover 8 is sleeved on the outer cylinder 5 and includes corresponding holes in order to allow the movable plate mechanism 16 of the shaft 16b and pin 16c is inserted therein to.

Blow dryer of this invention can also be used for the structure as shown in Figure 12 of the motor cover is provided with a a belly-shaped curve 60 of the air-blow drying machine 1a or any other type of the fuselage on the blow dryer. In the case of the fuselage of the amplifying, actuating device or flip-flop 12 with the hood should match the curve of the curve. This embodiment with the above-mentioned embodiment will operates in the same manner.

Furthermore, the invention of the actuating device or flip-flop 12 can be operably and a control mechanism 50 (fig. 13) associated with, the flip-flop of the control mechanism 12 of the starting and the blow dryer combined the temperature of the. For example, the traditional air-blow drying machine may include a low-temperature, mild in the high-temperature shift. The trigger mechanism of the present invention 12 as shown in Figure 13 can be operable with a control mechanism 50 is associated, so that when the trigger is at the start of the high-temperature air-blow drying machine can be reduced to a level lower than the temperature of the high temperature files gear.

As shown in Figure 13, when the actuating device or flip-flop 12 positioned in the holes 6, 7 are staggered and of air from the front opening of the cylinder 8a of the 1st position (Figure 1 and 5) at the time, the temperature of the air blower can be gear set in the high-temperature blow dryer gear (R1). When the actuating device or flip-flop 12 to the holes 6, 7 are mutually aligned and front opening 8a substantially closed 2nd or last position (Figure 3 and 7) at the time, the setting of air-blow drying machine can be in a position of the blow dryer the temperature of the low temperature of the high-temperature shift gear (R2). The actuating device or flip-flop is completely at the time of start is in a high temperature blow dryer shelf situation described. It should be noted that, the control mechanism 50 can be designed to be of the flip-flop 12 of the temperature is not reduced, and when starting, can be set in a blow dryer in or injecting the low-temperature shift. However, when the start-up flip-flop 12 reduced when the temperature of the blow dryer is based on design considerations, and based on the starting actuating device or flip-flop 12 would be the ideal temperature of the optimum temperature. It should be further seen, the air-blow drying machine may include an auxiliary actuation device

or triggering mechanism, the actuating device or flip-flop 12 linkage, in order to allow a user to selectively from the high-temperature the temperature is reduced to a temperature below the temperature of the high temperature.

Figure 14 the cylinder body 3 of the outer cylinder 5 of another embodiment, in this embodiment, the outer cylinder 5 along the outer cylinder 5 in the length direction are arranged at intervals, is fixed to the outer cylinder 5 and around on the periphery of the outer cylinder 5 extends the circumference of the ring 200. Ring 200 assembly stick for when the barrel body to the hair a hair guide. The ring 200 is arranged such, in order to make it will not hinder the hole (6, 7) of the air flow. These ring 200 can be used for the above-disclosed any one embodiment.

Figure 15 is protruding, such as bristles or tines 300, and in hole 7 extending between the rows, as shown in Figure of the cylinder 3 of another embodiment, wherein the cylinder body 3 of the outer cylinder 5 may include some of the cylinder 7 is provided between the interval, as shown in the of. The bristles or tines 300 can rotate around the cylinder 3 of the outer cylinder 5 extending around the perimeter of, and can be used for guiding hair and further improve the function of the styling hair. And the ring 200 the same, protrusion 300 can be used in disclosed embodiment of any one of the.

Figure 1 is shown operatively connected to the cylinder of the actuator unit on the outer cylinder, so that the outer cylinder can be relative to the inner cylinder by sliding. However, the invention is not limited to this kind of structure, the applicant noted that, as another embodiment, the inner cylinder 4 in the outer cylinder can be 5 (Figure 16) slide within. In this embodiment, the outer cylinder 4 will be fixed at the body 1 or on the main body 1 are integrated. As to the structure, the inner cylinder can be 4 operatively connected to the actuating device 12 is, in order to make the can relative to the outer cylinder 5 sliding. The other features of this invention, with the structure of the face on a 1st embodiment of operation of the similar manner.

Figure 17 that the blow dryer of the present invention and one embodiment. In Figure 17 in, the body 100 may be similar to the embodiment of the front of a machine body 1. Figure 17 embodiment comprises a cylinder 103, the cylinder 103 is fixed to the body 100 or made into a whole with it, and a plurality of holes 105. A guide plate 109 can be positioned in cylinder 103 or substantially located in the cylinder 103 the inner. As shown in Figure 19 and 20, as an example, the guide plate 109 can be set up in the cylinder 103 of the opening 107 is. Baffle 109 can be like the front of the embodiment is provided, may also be as shown in Figure 19 and 20 is a vertically disposed guide plate. However, the applicant noted that, the guide plate 109 is not limited to the illustrated orientation of the horizontal or vertical arrangement, but can be in the cylinder 103 the orientation in any way.

Figure 19 and 20 in plate 109 includes a movable plate 109a, 109b, and a plate-shaped member 111 and the spring structure 115 (Figure 25 (a), 25 (b)), the structure is used in order to keep the guide plate 109 in Figure 19 and 25 (a) as shown in the open position. A bowl 103 extends to the cylinder 103 or fuselage 100 actuating device on 119 of connector 117 is connected to the plate-shaped member 111 on. Although as shown in Figure 27, provided in the connecting member 117 is located in cylinder 103 the external, it should be noted, connector 117 can be included in cylinder 103 within.

Actuating device 119 to along the direction of the plate-like member of the starting B 111 C along the direction (Figure 25 (b)) motion, in order to make the movable plate 109a, 109b around the fulcrum 800 gradually pivot or rotate. This will lead to the diversion plate mechanism 109 from at least as shown in Figure 19 and 25 (a) is moved to the open position shown in Figure 20 and 25 (b) is shown in a substantially closed position. As mentioned above, should be further seen, can be an actuating device to be 119 is modified, according to the desired gas

flow and design considerations the guide plate 109 to move between an open position and a substantially closed position in the middle position of the difference between the bias current (one such position shown in Figure 28 in).

Although in the Figure the plate-shaped member 111 and the spring structure 115 in the cylinder 103 the part of the expansion of the 400 inner, however, this is only by way of illustration and clarity and so as to display the structure. It should be seen, plate-shaped member 111, spring 115 and the connecting piece 117 may be disposed or contained in cylinder 103 the inner, in order to provide a as shown in Figure 1, 16 and 28 of the continuous vertical is shown.

uses the chart 17 of the embodiment shown in, the usual blow dryer in operation, the guide plate 109 is in the open position (Figure 19), air through the cylinder 103 the opening 107 output. The bowl 103 is provided with a hole 105 will allow a certain amount of air through the hole 105 outflow, but not enough to interfere with the traditional or conventional blow dryer operation.

When the additional the hope will be used for horizontal blow dryer besides hair/drying, styling hair, such as hair curler made, the diffuser and the like, additional starting B the actuating device along the direction 119, in order to use the splitter plate 109 gradually substantially closing the opening of the cylinder 107. Therefore, the guide plate 109 will be deflected through the cylinder and ultimately forced most 103 of air from the cylinder 103 the hole on the 105 to flow out, so that the air-blow drying machine can be used for horizontal besides/drying, and so on. The guide plate 109 is started in order to reach the substantially closed position, according to the taste of a user, can also be further in and the opening position of the guide plate is interposed between the basic closed position intermediate between the bias current position to deflect air can be changed. In this embodiment, actuating device 119 can be improved to provide several corresponding to the guide plate 109 of the middle position of the stop position. However, the actuator 119 is also free to continuously moving, in order to allow users to control the amount of deflection.

Now back to fig. 17, the guide plate 109 is in the open position (Figure 19) the blow dryer in the normal operation, if the user hopes that even smaller number of air through the cylinder 103 the hole on the 105 from escaping, and of this invention as one embodiment, cylinder 103 can include a circles the tube body 103 into a cylindrical set up screen 121 (Figure 18). Screen 121 used to in fig. 19 under the drying state of the block or impede the passage of the hole 105 part of the air. However, in the variable bias current position map and 20 of the guide plate shown in 109 substantially close the cylinder opening 107 bias current position, there is sufficient air forced through the hole 105, so as to be capable of horizontal besides hair/drying, etc. operation. Figure 18 with illustrated in screen 121 of the cylinder 103 the implementation instantiates around the cylinder 103 the screen. However, as another option, can be as shown in Figure 23, as of the screen 121 is cylindrical in the cylinder 103 the inner, or as shown in Figure 24 the screen 121 in the holder, with the hole as a whole.

As an option, the cylinder may include a covering screen 121 or cylinder 103 spongy coating piece (Figure 21), in order to in fig. 19 is shown of the usual or conventional drying operation further barrier or obstruction in some of the through holes 105 of the air. However, sponge-like covering member 123 is porous, so that when the guide plate 109 is located in the opening and a substantially closed position in the middle between the bias current position or substantially the position of the blocking (Figure 20) is, to allow the blocking of the air forced through the holes 105, to escape from the surface of the cylinder body, thus the user can be used for horizontal blow dryer besides hair/drying, and so on.

Screen 121 can be made of any type of material, so long as these materials can withstand the blowing drying operation, the temperature of the usually used and can be bent into a cy-

lindrical structure, in order to the cylinder 103-phase matching. For example, screen 121 can be a metal screen the framework of the grid. Spongy structure 123 can also be used of any material, as long as it can tolerate the drying operation and the temperature of the can be a kind of the cylinder can be easily slide 103 from its off or on the elastic member. Screen and the spongy structure of the material is such, that is, when the air-blow drying machine is in the bias current position (Figure 20), , is forced to through holes 105 of the air can be discharged through these materials, in order to be used for horizontal blow dryer besides hair/drying, and so on.

As the another feature of the invention, the cylinder 103 the hole on the 105 can be tilted (Figure 22), the bias current is in the position (Figure 20), the, order to change the direction of the airflow, at the same time open the baffle when the 109 used under normal operating state when the blow dryer by applying appropriate the air barrier. Although Figure 22 the hole 105 is inclined along one direction, it should be noted, can be from the perspective of design of the hole 105 is inclined along the various directions.

Furthermore, although Figure 17 gives a blow dryer abdomen shape is a kind of the fuselage, but actuating device 119 can be relative to the air-blow drying machine component is arranged in any position, depending on the cylinder body and the blow dryer for type of the fuselage. The above-mentioned embodiment of the air-blow drying machine can also adopt the one as shown in Figure 13 the control mechanism 50. Furthermore, blowing of the embodiment of the drier can include the cylinder as shown in Figure 14 and 15 of the ring indicated in 200 and wirehaired or tooth 300 aspects of the improved.

Therefore, through the air-blow drying machine of the present invention many functions in one tool on the maximum capacity of the blow dryer. Therefore, through the use of a single tool for operation by a single hand for hairdressers or hairstylists provides a very wide range of available air flow. That is to say, by simply starting an actuating device, for example by pulling the trigger 12, can be changed by additional air flow of the cylinder body. Any necessary fittings like the existing blow dryer is as on a cylinder body of the present invention, and regardless of manipulation of the actuation device can be used. Blow dryer of this invention also can be used as a large marceling device, at the same time, when the manipulation of the actuation device, it also has some from the capacity of the cylinder-opening, if the blowing of the drier is set to be a relatively low speed of the motor, it also has the capacity of the proliferation of the surface of the cylinder body as a whole.

Obviously, according to the above explanation, it is possible to the invention to make various modification or modification. Therefore, it is necessary to understand the within the scope of the attached claims, the invention can be different from the implementation of the special described manner.

Number of Claims: 29

ENGLISH CLAIMS:

1. a kind of air-blow drying machine, including:

Including a opening of a cylinder body of the cylinder, the cylinder comprises a plurality of holes;

One is arranged in the cylinder body, the flow guide plate can be in the cylinder opening is opened at least one open position and the cylinder is substantially closed opening movement between the inclined position; and

One is operatively connected to the guide plate and is used for at least the open position and the bias current states the air deflector mobile between the position of the actuating device.

2. air-blow drying machine according to Claim 1, also includes a surrounding the cylinder body in order to partially obstruct the air flow through the plurality of holes of the screen.

3. air-blow drying machine according to Claim 2, also includes a barrel around the is located on the rim of the spongy material of the screen, in order to increase the air flow through the plurality of holes of the barrier.

4. air-blow drying machine according to Claim 1, also comprises a part around the cylinder in order to prevent air flow through the plurality of holes of a detachable sponge-like material.

5. air-blow drying machine according to Claim 3, characterized in that the spongy material is resilient.

6. air-blow drying machine according to Claim 4, characterized in that the spongy material is resilient.

7. air-blow drying machine according to Claim 1, also includes a barrel to be a cylindrical shape disposed in the interior of the screen, in order to partially block the air flow through the plurality of holes.

8. air-blow drying machine according to Claim 1, also includes a kind of loading each one of said plurality of holes and with the screen as a whole, in order to partially block the air flow through the plurality of holes.

9. air-blow drying machine according to Claim 1, characterized in that said baffle includes is movably mounted in the cylinder is provided with a 1st and 2nd opening of the movable plate.

10. air-blow drying machine according to Claim 1, characterized in that the actuation device can be movably mounted on the on the body.

11. air-blow drying machine according to Claim 10, also includes a is located on the barrel, the guide plate is used for at least the open position to the spring piece, a and extending between the spring element and the connecting piece between the the actuation device, wherein the movement of the actuation device to the movement of the said connecting piece, to the spring member to the guide plate, and the guide plate is moved to the position of the at least substantially closed.

12. air-blow drying machine according to Claim 1, characterized in that in the cylinder of said hole is inclined.

13. a kind of air-blow drying machine, including:

A cylinder including a body of cylinder opening, the cylinder comprises a concentric inner, cylinder, each one of the inner, the outer cylinder has a plurality of holes; and

One is operatively connected to the inner, on one of an outer cylinder of the actuating device, for located in the inner, an outer cylinder of the holes of at least one of the mutually staggered 1st position and arranged on the inner, an outer cylinder of the mutual alignment of the holes on one of the inner between the 2nd position, one of an outer cylinder relative to the other one of the inner, outer cylinder movement.

14. a kind of air-blow drying machine, including:

Many have a cylinder hole and 1st opening of the body of the cylinder body;

A valve is movably mounted in the cylinder and is provided with many 2nd cylinder of the hole; and

One is arranged in the cylinder body and the cylinder opening is opened at least one of the opening of the cylinder is in the opened position and closed substantially movement between a bias current position of the guide plate.

15. a kind of air-blow drying machine, including:

Including a body of an opening of the cylinder, the cylinder having a plurality of holes to define the respective 1st and 2nd of concentric circular cylinders;

One is arranged in the cylinder body, the flow guide plate can be in at least one opening is in the open state a and the opening position of the opening of the guide plates is substantially a bias current for the movement between the closed position; and

An actuating device, the actuating device is operatively connected to the 1st or 2nd on one of the circular column and is operatively associated with the guide plate, in order to at least one of the 1st position and a 2nd position to move the guide plate and between the one of the 1st and 2nd cylinders, at least one of in the 1st position, the 1st and 2nd cylinders are staggered on the holes of the guide plate is in the open position, in the 2nd position, the 1st and 2nd is located in the hole on the cylinder at the position of the guide plate is disposed in the bias current.

16. a kind of air-blow drying machine, including:

A body containing a cylinder, the cylinder comprising a plurality of holes around its periphery;

A is essentially arranged in the capsule body guide plate, the guide plate can be in at least one of the cylinder opening is in an open state with a the opening position of the opening of the cylinder is substantially closed by a bias current for the movement between the positions; and

The guide plate and operably associated with the actuating device, in order to at least the open position and the bias current mobile between a position of the guide plates.

17. a kind of air-blow drying machine, including:

A containing a cylinder body, said cylinder body having a plurality of holes to define the respective 1st and 2nd of concentric circular cylinders;

A is essentially arranged in the capsule body guide plate, the guide plate can be in at least one opening is in the open state of a open position and a substantially closed opening is a guide plate for movement between the full bias current position; and

One is operatively connected to the 1st or 2nd cylinder and operable on one of the guide plates and the associated actuating device, for at least one of the 1st position and a 2nd states the air deflector mobile between the position, in the 1st position, the 1st and 2nd is located in the hole on the cylinder body are mutually staggered the guide plate is in the open position, in the 2nd position, the 1st and 2nd is located in the hole on the circular cylinder mutual alignment the guide plate is in the blocking position.

18. air-blow drying machine according to Claim 14, characterized in that the cylinder includes the configuration of the interval between holes 2nd protruding.

19. air-blow drying machine according to Claim 18, characterized in that the bulge is wire-haired.

20. air-blow drying machine according to Claim 18, characterized in that said projections are teeth.

21. a kind of air-blow drying machine, including:

A body comprising a cylinder, the cylinder comprising a plurality of holes disposed about its circumference;

In the cylinder a are arranged substantially within the splitter plate, the guide plate can be in one of the cylinder body the opening position of the opening is opened, is closed to the opening portion at least one of the bias current in the middle position of the cylinder and the opening is substantially closed between the total bias current position; and

A and of the guide plates is operatively associated an actuating device, in the open position, the at least one middle position of the bias current of the bias current and movable between the position of the guide plates.

22. a kind of air-blow drying machine, including:

A containing a cylinder body, said cylinder body having a plurality of holes to define the respective 1st and 2nd of concentric circular cylinders;

A is essentially arranged in the capsule body guide plate, the guide plate can be opened in the opening of the at least one open position, the opening is the guide plate portions, at least one intermediate closed position and the bias current by the opening of the guide plates basic closed movable between the full bias current position; and

A can be operatively connected with the 1st or 2nd cylinder and is operably connected with one of the guide plates associated with the actuating device, is used for at least one of the 1st position, at least one intermediate 2nd position, and is movable between a position of the 3rd states the air deflector and the 1st or 2nd one of the circular column body, in said at least one of the 1st position, the 1st and 2nd is located at the upper location of the holes of the guide plates are in the open position, in the 2nd position, the 1st and the 2nd cylinder and partially aligned with the holes of the guide plates is located in the intermediate bias current position, in the 3rd position, the 1st and 2nd is located on the circular cylinder the complete alignment of the holes, and the guide plates in the fully inclined position.

23. a hand-held air-blow drying machine, including:

A cylinder body with a cylinder opening of a machine body, the cylinder is provided with a plurality of holes comprising each of the inner, outer cylinder, the outer cylinder can be slidably mounted in the inner cylinder;

The opening of the barrel is pivotable bias mechanism, the bias mechanism can be in the cylinder opening is opened one of the open position and the one of the cylinder opening is substantially closed the bias current of said bias current mechanism to pivot between the positions; and

Operably and the outer cylinder is connected and associated with said bias mechanism of the actuating device, for located in the inner, outer cylinder of said holes and mutually staggered pivot states may circle of the bias mechanism is in the open position one of the 1st position and arranged on the inner, an outer cylinder of the holes on the mutual alignment and pivot states may circle of the bias current of the bias current of the mechanism is located at a position between the 2nd position moving said bias mechanism and the outer cylinder.

24. a hand-held air-blow drying machine, including:

With a a for the air guide to be done of the hair style of the opening of the cylinder body of the cylinder body, the cylinder including an inner cylinder and the inner cylinder and is concentric with and slidably mounted on the inner cylinder of the outer cylinder, the inner, the outer surface of an outer cylinder are provided with many holes;

Mounted in the cylinder opening of the flap mechanism pivotable, the pivotable flap mechanism can be in the state of opening is in an open position and movable plate 1st opening of

the cylinder is substantially closed between the 2nd position of the movable plate to rotate around the pivot; and

Operably and the outer cylinder and is operably connected with the pivotable flap mechanism associated with the actuating mechanism, for causing the relative to the outer cylinder and the inner cylinder by sliding the pivot states may circle the flap mechanism to rotate around the pivot, characterized in that the movement of the actuation mechanism to the movement of the outer cylinder and the pivotable around the pivot of the flap mechanism of the rotation, this motion and rotating in a 1st position and one between 2nd position, in the 1st position, is located in the holes on the inner cylinder and the outer cylinder is located in the hole on the alignment, the pivot states may circle at the same time the flap mechanism is in the 1st position of the movable plate, in the 2nd position, is located in the inner cylinder is located in the hole and the holes on the outer cylinder and the aligned pivot states may circle the flap mechanism is in a position of the movable plate of the 2nd, to substantially close the cylinder opening.

25. air-blow drying machine according to Claim 24, characterized in that the inner cylinder comprises a projecting stop member, with the outer cylinder of the one of the identified on the outer cylinder relative to the inner cylinder with the slippage of the groove.

26. air-blow drying machine according to Claim 24, characterized in that the pivotable flap mechanism includes 1st and 2nd flap, the 1st and 2nd has sells includes the movable plate is arranged inside the elliptical actuating device, through the pin in the inner, outer cylinder on the corresponding of the long and narrow groove, so that the 1st and 2nd movable plate can be pivotally mounted in the opening of the barrel, wherein the outer cylinder from the 2nd position to the 1st position of the long and narrow along the inner cylinder to move the pull the 1st and 2nd the pin on the movable plate, so as to rotate movable plate 1st and 2nd, to substantially close the cylinder opening.

27. air-blow drying machine according to Claim 24, characterized in that the actuation mechanism is one to be set up in flip-flop on the outer cylinder, the trigger includes at least one is arranged in the outer cylinder in a groove of the spring, to the 1st position of the spring push the outer cylinder, and the trigger against the spring permitting the outer cylinder the thrust slides to states 2nd position.

28. air-blow drying machine according to Claim 24, further comprises a can be operatively connected with the actuation mechanism is connected to the mechanism, the actuation mechanism for the movement of the in the blow dryer high temperature files the high-temperature and lower than the temperature of the shift between gears.

29. air-blow drying machine according to Claim 24, characterized in that the outer cylinder along the length of the outer cylinder is arranged at intervals around the exterior of the cylinder and of the circumferentially extending ring, for guiding to the hair, the ring is set up to will not hinder the air flow through the hole.

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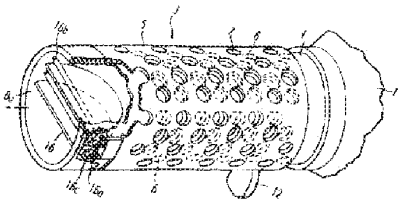
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[54]发明名称 一种具有气流控制装置的手持式吹风干燥机

[57]摘要

一种手持式吹风干燥机,它设有一个具有许多孔洞(6,7)的筒体(3)。一种偏流机构(16)被设置在或基本上设置在筒体(3)内,一个致动机构 可操作地与偏流机构(16)相关联。该手持式吹风干燥机可以在至少一个第一种状态下,即,气流直接通过筒体(3)的开口的状态下,以及一个第二种 状态下使用;在第二状态下致动装置被起动,将偏流机构(16)从筒体开口 被打开的至少一个位置移向筒体开口被偏流机构基本上关闭的位置。因而,在 第二种状态下,绝大部分空气被偏流机构所偏转并被迫通过筒体上的孔洞(6 ,7)。



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权 利 要 求 书

1.一种吹风干燥机，包括：

一个包含具有一个筒体开口的筒体的机身，所述筒体包含许多孔洞；

一个设置在所述筒体内的导流板，所述导流板可以在所述筒体开口被打开的至少一个打开位置与所述筒体开口基本上被关闭的偏流位置之间运动；以及

一个可操作地连接到所述导流板上用于在至少所述打开位置和所述偏流位置之间移动所述导流板的致动装置。

2.如权利要求1所述的吹风干燥机，还包括一个围绕所述筒体以便部分地阻碍通过许多孔洞的空气流的筛网。

3.如权利要求2所述的吹风干燥机，还包括一种围绕着位于所述筒体上的所述筛网的可拆卸的海绵状材料，用以增加对通过所述许多孔洞的空气流的阻挡。

4.如权利要求1所述的吹风干燥机，还包括一种围绕着所述筒体以便部分地阻挡通过许多孔洞的空气流的可拆卸的海绵状材料。

5.如权利要求3所述的吹风干燥机，其特征在于，所述海绵状材料是有弹性的。

6.如权利要求4所述的吹风干燥机，其特征在于，所述海绵状材料是有弹性的。

7.如权利要求1所述的吹风干燥机，还包括一个成圆筒形地设置在所述筒体内部的筛网，以便部分地阻挡通过所述许多孔洞的空气流。

8.如权利要求1所述的吹风干燥机，还包括一种装入每一个所述许多孔洞中并与之成为一个整体的筛网，以便部分地阻挡通过所述许多孔洞的空气流。

9.如权利要求1所述的吹风干燥机，其特征在于，所述导流板包括可运动地安装在所述筒体开口处的第一和第二活板。

10.如权利要求1所述的吹风干燥机，其特征在于，所述致动装置可移动地安装在所述机身上。

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11.如权利要求10所述的吹风干燥机，还包括一个位于所述筒体上、用于将所述导流板推向至少所述打开位置的弹簧件，以及一个延伸于所述弹簧件和所述致动装置之间的连接件，其中，所述致动装置的运动导致所述连接件的运动，以将导流板推向弹簧件，并将导流板移动到至少基本关闭的位置。

12.如权利要求1所述的吹风干燥机，其特征在于，位于所述筒体上的所述孔洞是倾斜的。

13.一种吹风干燥机，包括：

一个包含具有一筒体开口的筒体的机身，所述筒体包含同心的内、圆柱体，每一个所述内、外圆柱体均具有许多孔洞；以及

一个可操作地连接到所述内、外圆柱体之一上的致动装置，用于在位于所述内、外圆柱体上的所述孔洞相互错开的至少一个第一位置和位于所述内、外圆柱体上的所述孔洞相互对准的一个第二位置之间使所述内、外圆柱体之一相对于另一个所述内、外圆柱体运动。

14.一种吹风干燥机，包括：

一个包括具有许多第一孔洞和一个筒体开口的筒体的机身；

一个可移动地安装在所述筒体上并具有许多第二孔洞的圆柱体；以及

一个设置在所述筒体内并且可在所述筒体开口被打开的至少一个打开位置与所述筒体开口基本上关闭的一个偏流位置之间运动的导流板。

15.一种吹风干燥机，包括：

一个包含具有一开口的筒体的机身，所述筒体限定出各自具有许多孔洞的第一和第二同心圆柱体；

一个设置在所述筒体内的导流板，所述导流板可在至少一个开口处于打开状态的打开位置和一个开口基本上被所述导流板关闭的偏流位置之间运动；以及

一个致动装置，所述致动装置可操作地连接到所述第一或第二圆柱体之一上并可操作地与所述导流板相关联，以便在至少一个第一位置与一个第二位置之间移动该导流板和所述第一和第二圆柱体之一，在所述的至少一个第一位置，位于第一和第二圆柱体上的所述孔洞相互错开且导流板处

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于打开位置，在所述第二位置，所述的位于第一和第二圆柱体上的孔洞对准且导流板处于偏流位置。

16.一种吹风干燥机，包括：

一个含有一筒体的机身，所述筒体包含许多绕其周边设置的孔洞；

一个基本上设置在所述筒体内的导流板，所述导流板可在至少一个所述筒体开口处于打开状态的打开位置与一个所述筒体开口基本上被关闭的偏流位置之间运动；以及

一个与所述导流板可操作地相关联的致动装置，以便在至少所述的打开位置与所述偏流位置之间移动所述导流板。

17.一种吹风干燥机，包括：

一个含有一筒体的机身，所述筒体限定出各自具有许多孔洞的第一和第二同心圆柱体；

一个基本上设置在所述筒体内的导流板，所述导流板可在至少一个开口处于打开状态的打开位置与一个开口被导流板基本上关闭的完全偏流位置之间运动；以及

一个可操作地连接到所述第一或第二圆柱体之一上并可操作地与所述导流板关联的致动装置，用于在至少一个第一位置与一个第二位置之间移动所述导流板，在所述第一位置，所述的位于第一和第二圆柱体上的孔洞相互错开且导流板处于打开位置，在所述第二位置，所述的位于第一和第二圆柱体上的孔洞相互对准且导流板处于阻挡位置。

18.如权利要求14所述的吹风干燥机，其特征在于，圆柱体包括在第二孔洞之间间隔配置的凸起。

19.如权利要求18所述的吹风干燥机，其特征在于，所述凸起是硬毛。

20.如权利要求18所述的吹风干燥机，其特征在于，所述凸起是齿状物。

21.一种吹风干燥机，包括：

一个包含一个筒体的机身，所述筒体包含许多绕其圆周设置的孔洞；

一个基本上设置于所述筒体之内的导流板，所述导流板可在一个所述筒体开口被打开的打开位置，所述开口部分地被关闭的至少一个中间偏流位置以及所述筒体开口基本上被关闭的完全偏流位置之间运动；以及

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一个与所述导流板可操作地关联的致动装置，用于在所述打开位置，所述的至少一个中间偏流位置以及所述完全偏流位置之间移动所述导流板。

22.一种吹风干燥机，包括：

一个含有一筒体的机身，所述筒体限定出各自具有许多孔洞的第一和第二同心圆柱体；

一个基本上设置在所述筒体内的导流板，所述导流板可在所述开口被打开的至少一个打开位置，所述开口被所述导流板部分关闭的至少一个中间偏流位置以及所述开口被所述导流板基本关闭的完全偏流位置之间移动；以及

一个可操作地与所述第一或第二圆柱体之一连接并可操作地与所述导流板关联的致动装置，用于在至少一个第一位置，至少一个中间第二位置，以及一个第三位置之间移动所述导流板和所述第一或第二圆柱体之一，在所述至少一个第一位置，所述的位于第一和第二圆柱体上的孔洞不对准且所述导流板处于打开位置，在所述第二位置，所述第一和第二圆柱体上的孔洞部分地对准且所述导流板位于所述中间偏流位置，在所述第三位置，所述的位于第一和第二圆柱体上的孔洞完全对准，且所述导流板处于完全偏流位置处。

23.一种手持式吹风干燥机，包括：

一个包含带有一筒体开口的筒体的机身，所述筒体包含各自带有许多孔洞的内、外圆柱体，所述外圆柱体可滑动地安装在所述内圆柱体上；

设置在所述筒体开口处的可绕枢轴转动的偏流机构，所述偏流机构可在所述筒体开口被打开的一个打开位置与一个所述筒体开口基本上被所述偏流机构关闭的偏流位置之间绕枢轴转动；以及

可操作地与所述外圆柱体连接并可操作地与所述偏流机构关联的致动装置，用于在位于所述内、外圆柱体上的所述孔洞相互错开且所述可绕枢轴转动的偏流机构处于所述打开位置的一个第一位置与位于所述内、外圆柱体上的所述孔洞相互对准且所述可绕枢轴转动的偏流机构位于所述偏流位置的一个第二位置之间移动所述偏流机构和所述外圆柱体。

24.一种手持式吹风干燥机，包括：

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一个包含带有一用于将空气导向待做发型的头发的筒体开口的筒体的机身，所述筒体包括一个内圆柱体和一个与所述内圆柱体同心并可滑动地安装在所述内圆柱体上的外圆柱体，所述内、外圆柱体的外表面均设有许多孔洞；

安装在所述筒体开口处的可绕枢轴转动的活板机构，所述可绕枢轴转动的活板机构可在所述筒体开口处于打开状态的第一活板位置与所述筒体开口基本上被关闭的第二活板位置之间绕枢轴转动；以及

可操作地与所述外圆柱体连接并可操作地与所述可绕枢轴转动的活板机构关联的致动机构，用于导致所述外圆柱体相对于所述内圆柱体滑动以及所述可绕枢轴转动的活板机构绕枢轴转动，其特征在于，所述致动机构的运动导致所述外圆柱体的运动和所述可绕枢轴转动的活板机构的绕枢轴的转动，这一运动和转动在一个第一位置和一个第二位置之间进行，在所述第一位置，位于所述内圆柱体上的孔洞不与位于所述外圆柱体上的孔洞对准，同时所述可绕枢轴转动的活板机构处于所述第一活板位置，在所述第二位置，位于所述内圆柱体上的孔洞与位于所述外圆柱体上的孔洞对准且所述可绕枢轴转动的活板机构处于所述第二活板位置，以基本上关闭所述筒体开口。

25.如权利要求24所述的吹风干燥机，其特征在于，所述内圆柱体包括一个凸出的止动件，它与所述外圆柱体上的一个确定了所述外圆柱体相对于所述内圆柱体的滑动量的槽相配合。

26.如权利要求24所述的吹风干燥机，其特征在于，所述可绕枢轴转动的活板机构包括第一和第二活板，所述第一和第二活板都包含里面设置有销的椭圆致动装置，所述销通过在所述内、外圆柱体上的相应的狭长槽延伸，从而将第一和第二活板可绕枢轴转动地安装在所述筒体开口处，其中，所述外圆柱体从所述第一位置向所述第二位置的移动沿着内圆柱体的狭长槽拉动所述第一和第二活板上的销，从而使第一和第二活板转动，以基本上关闭所述筒体开口。

27.如权利要求24所述的吹风干燥机，其特征在于，所述致动机构是一个设置在所述外圆柱体上的触发器，所述触发器包括至少一个设置在位于所述外圆柱体上的一个槽内的弹簧，所述弹簧向所述第一位置推动所述外

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圆柱体，而所述触发器允许所述外圆柱体反抗弹簧的推力滑至所述第二位置。

28.如权利要求24所述的吹风干燥机，进一步包括一个可操作地与所述致动机构连接的机构，用于随着所述致动机构的运动在所述吹风干燥机的高温档和低于高温档的温度档之间换档。

29.如权利要求24所述的吹风干燥机，其特征在于，所述外圆柱体设有沿所述外圆柱体的长度间隔设置并围绕所述外圆柱体的圆周延伸的环，用于对头发进行导向，所述环被设置成不会妨碍通过所述孔洞的气流。

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说　　明　　书

一种具有气流控制装置的手持式吹风干燥机

本申请是专利申请序列号No. 08/576,592的部分继续申请。

本发明是对专业美发吹风干燥机的改进，更具体地说，它是对吹风干燥机筒体的改进，该筒体能够改变气流并节省能量。

传统的“手枪式”美发吹风干燥机利用通过该吹风干燥机圆柱形管道或筒体的前端开口的单一方向的气流。市售的可用于装在筒体开口上以改变气流的附件则要求双手操作。

美国专利No. 4,097,722描述了一种通过借助于一个由触发器致动的导流板控制筒体开口面积而改变气流的机构。但是，该专利没有公开由筒体表面本身流出的气流。

美国专利No. 4,232,454利用由一个按钮和螺钉致动的闸门来控制来自筒体开口的气流。其缺点在于它还是需要双手操作。

美国专利5,157,757描述了在筒体上包含辅助出口的气流变化。但是，这种装置和其它装置一样要求双手操作，因为完全起动要依赖于手工转动一个环状件，手工设定，以及操纵一个触发器的导流板来改变筒体的开口。

在利用吹风干燥机做发型时，美发师用一个手拿着吹风干燥机，将其筒体的开口对准要做发型的头发。另一只手则利用发刷或其它做发型的工具。此外，当对中长发和长发吹风定型时，美发师水平地使用筒体，使筒体开口离开人的头部，以便撩起头发，接着将另一只手中的美发工具插到头发中。在这一操作过程中，从筒体开口出来的气流被浪费掉，筒体本身对干燥/做发型不起任何作用。

因此，传统的吹风干燥装置中没有提供一种通过吹风干燥机的筒体表面对空气进行导向的筒体结构。此外，传统的吹风干燥装置没有提供一种有效的机构，以使得使用者能够使从筒体开口排出的气流偏转，并同时借助于一个简单的单手操作就可以对通过吹风干燥机筒体表面的空气流进行导向。

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因此，本发明提供了一种吹风干燥机结构，该结构克服了上述传统结构的缺点。

本发明的吹风干燥机结构通过改变来自于筒体表面的气流而增加了吹风干燥机的功能性，同时可节省能量。这就使得本发明的吹风干燥机可被用于水平撩起头发/干燥/做发型，以及用做热烫发器和扩散器。

本发明的吹风干燥机可在筒体表面上设有一些孔洞并包括一个与筒体相连的导流板。通过起动一个致动装置，与筒体相联的导流板可在不同程度上逐渐关闭绝大部分气流。这就在不同程度上导致从位于筒体上的孔洞内排出气流以及从前开口处发散出一些气流。

因此，本发明提供了一种吹风干燥机，它包括：一个含有带一筒体开口的筒体的机身，该筒体上设有许多孔洞；一个位于筒体内的导流板，该导流板可以在筒体开口处于打开状态的至少一个打开位置和一个筒体开口基本上关闭的偏流位置之间运动；以及一个可操作地连接到导流板上的致动装置，用于使导流板在至少一个打开位置和偏流位置之间移动。

本发明还提供了一种吹风干燥机，它包括：一个含有具有一筒体开口的筒体的机身，该筒体包含同心的内、外圆柱体，该内、外圆柱体上具有许多孔洞；一个可操作地连接到内圆柱体或外圆柱体之一上的致动装置，用于使内圆柱体或外圆柱体之一相对于另外一个内圆柱体或外圆柱体在至少一个第一位置和一个第二位置之间移动，在所述第一位置处，内、外圆柱体上的孔洞是相互错开的，在所述第二位置处，内、外圆柱体上的孔洞是相互对准的。

本发明还提供了一种吹风干燥机，它包括：一个含有具有许多第一孔洞和一个筒体开口的筒体的机身；一个可移动地安装在筒体上并具有许多第二孔洞的圆柱体；以及一个位于筒体内并可以在至少一个打开位置和一个偏流位置之间移动的导流板，在打开位置处，筒体的开口是打开的，在偏流位置处，筒体的开口是基本上关闭的。

本发明还提供了一种吹风干燥机，它包括：一个含有带有一个开口的筒体的机身，该筒体限定出均设有许多孔洞的第一和第二同心圆柱体；一个位于筒体内的导流板，该导流板可以在至少一个打开位置和一个偏流位置之间移动，在打开位置处，筒体开口是打开的，在偏流位置处，该开口

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基本上被该导流板关闭；以及一个可操作地连接到第一或第二圆柱体之一上并可操作地与所述导流板相联的致动装置，用于使导流板和第一或第二圆柱体之一在至少一个第一位置和一第二位置之间移动，在第一位置处，在第一圆柱体和第二圆柱体上的孔洞是错开的并且所述导流板处于打开位置，在第二位置处，第一圆柱体和第二圆柱体上的孔洞是对准的并且所述导流板处于偏流位置。

本发明还提供了一种吹风干燥机，它包括：一个含有筒体的机身，该筒体绕其周围具有许多孔洞；以及一个基本上位于所述筒体内的导流板，该导流板可在筒体开口处于打开状态的至少一个打开位置与筒体开口基本上关闭的偏流位置之间移动；以及一个可操作地与导流板相联的致动装置，以便在至少一个打开位置和偏流位置之间移动所述导流板。

本发明还提供了一种吹风干燥机，它包括：一个含有筒体的机身，该筒体限定出每一个均具有许多孔洞的第一和第二圆柱体；一个基本上位于筒体内的导流板，该导流板可在筒体开口处于打开状态的至少一个打开位置与一个该开口被所述导流板基本上关闭的完全偏流位置之间运动；以及一个可操作地与第一或第二圆柱体之一连接并可操作地与所述导流板相联的致动装置，该装置用于在至少一个第一位置和一个第二位置之间移动所述导流板和第一或第二圆柱体之一，在所述第一位置处，第一圆柱体和第二圆柱体上的孔洞是错开的，且所述导流板处于打开位置，在第二位置处，第一圆柱体和第二圆柱体上的孔洞是相互对准的，且所述导流板处于完全阻挡的位置。

本发明还提供了一种吹风干燥机，它包括一个含有筒体的机身，该机身绕其周围设有许多孔洞；一个基本上位于筒体内的导流板，该导流板可在筒体开口处于打开状态的打开位置与至少一个筒体开口处于部分关闭状态的中间偏流位置，以及筒体开口被基本关闭的完全偏流位置之间移动；以及一个可操作地与导流板相联的致动装置，用于使所述导流板在打开位置、至少一个中间偏流位置和完全偏流位置之间移动。

本发明还提供了一种吹风干燥机，它包括：一个含有筒体的机身，该筒体限定出分别具有许多孔洞的第一和第二同心圆柱体；一个基本上位于所述筒体内的导流板，该导流板可以在所述开口处于打开状态的至少一个

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打开位置和所述开口被导流板部分关闭的至少一个中间偏流位置和所述开口被导流板基本关闭的完全偏流位置之间移动；以及一个可操作地与所述第一或第二圆柱体之一连接并与所述导流板可操作地相联的致动装置，该装置用于使导流板和第一或第二圆柱体之一在至少一个第一位置，至少一个中间第二位置以及一个第三位置之间移动，在第一位置处，第一和第二圆柱体上的孔洞是错开的，且所述导流板处于打开位置，在中间第二位置处，第一和第二圆柱体上的孔洞是部分对准的，且所述导流板处于中间偏流位置，在第三位置处，第一和第二圆柱体上的孔洞是完全对准的，且所述导流板处于完全偏流位置。

在结合附图并参考下面的详细说明更深入地理解本发明时，将很容易地对本发明及其所带来的许多优点做出更为完全的评价，其中：

图1是本发明的吹风干燥机及筒体组件处于第一位置时的视图，在该位置处筒体的内、外圆柱体上的孔洞是错开的；

图2是图1所示吹风干燥机的筒体开口处于第一位置时的前视图，给出了处于一个打开位置处的活板或导流机构；

图3是所述吹风干燥机筒体的内、外圆柱体处于第二位置时的视图，在该位置处内、外圆柱体上的孔洞是相互对准的；

图4是当如图3所示内、外圆柱体上的孔洞相互对准时筒体开口的前视图，这时活板或导流机构将筒体开口基本上关闭；

图5是处于图1和图2所示的第一位置的筒体内、外圆柱体及活板或导流机构的透视图；

图6是处于图5所示的一个打开位置的活板的透视图；

图7是处于图3和图4所示的第二位置的活板及内、外圆柱体的透视图；

图8表示的是单独的活板；

图9（a）、9（b）和9（c）分别表示内圆柱体、活板和一个用于筒体的套盖；

图10表示本发明的外圆柱体；

图11（a）、11（b）和11（c）表示活板的不同的视图；

图12表示一个不同的吹风干燥机机身的实施例；

图13表示用于控制本发明吹风干燥机的温度设定的电路布置；

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图14表示的是本发明外圆柱体的一种改型；

图15表示的是本发明吹风干燥机的另一种改型；

图16表示的是本发明吹风干燥机筒体的另一种改型；

图17表示的是本发明吹风干燥机的另一个实施例，其中吹风干燥机机身包括一具有许多孔洞的筒体和导流板；

图18示出了图17中吹风干燥机的另一种变型，其中吹风干燥机包括一个由筛网围绕着的筒体；

图19是本发明吹风干燥机的前视图，其中导流板处于一个打开位置；

图20是本发明吹风干燥机的前视图，其中导流板处于最后关闭的位置；

图21是图18中吹风干燥机的筒体的又一种变型，其中一海绵状的筛网围绕着筒体；

图22表示的是筒体的又一种变型，其中筒体组件上的许多孔洞是倾斜的；

图23表示的是筒体的又一种变型，其中筛网沿径向设置在筒体内；

图24是本发明筒体的又一种变型，其中筒体的孔洞中具有与孔洞制成一体的筛网；

图25（a）和25（b）是本发明吹风干燥机一个实施例的侧视图，用以说明一个致动导流机构的机构；

图26是第一个实施例的筒体的另一个视图；

图27是用以说明筒体的又一个变型的侧视图；以及

图28是一个基于图19和20的筒体的前视图。

现参照附图，其中类似的标号表示图中特别是在图1和图5中相同或相应的部分，图1是本发明的吹风干燥机组件的第一个视图，而图5是一个透视图。在图1和5中，吹风干燥机包括一个机身1，它具有一个筒体3。筒体3可包括一个内圆柱体4和一个与内圆柱体4同心的外圆柱体5。外圆柱体5可滑动地安装在内圆柱体4上。内、外圆柱体（4、5）上均包含许多位于其上的孔洞（6、7），（孔洞6位于内圆柱体4上，孔洞7位于外圆柱体5上）。

如在图1和6中进一步地说明的那样，吹风干燥机组件也可包括一个将可绕枢轴转动的活板机构16罩住的套盖8。套盖8和可绕枢轴转动的活板机

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构16位于筒体开口8a处。图6中的套盖8示出了一个切断的开口，但应当知道套盖8可以完全罩住包括可绕枢轴转动的活板机构16在内的位于筒体前端的所有运动机构。但申请人指出，本发明可以不用套盖8而照样使用，而且套盖8的采用取决于设计上的考虑。

图1、5和6表示外圈柱体5相对于内圈柱体4的第一位置，在该处外圈柱体5上的孔洞7不与内圈柱体4上的孔洞6对准，同时可绕枢轴转动的活板机构16处于打开的位置。因此，通过筒体3的所有气流将从筒体开口8a流出。内、外圈柱体4、5上的相互错开的孔洞6和7将阻挡任何通过筒体3的表面的气流。

在图3和7中所示的位置，内、外圈柱体相互对准，因而使得分别位于内、外圈柱体4、5上的孔洞6、7相互对准。在图3和7中所示的位置，活板机构16位于图4和7所示的位置上。就是说，活板机构16所处的位置使得它基本上将筒体开口8a盖住，如图4和7所示的那样。

应当指出的是，内、外圈柱体4、5的相对运动是与活板机构16的运动配合的，从而使得活板机构16处于上面指出的位置。在这个位置处（即，图7所示的位置），活板机构将偏转绝大部分气流，从而将气流导向内、外圈柱体4、5上的相互对准的孔洞6和7。这样，气流将通过筒体3的表面排出。所以，通过起动一个致动装置12，使用者就可以逐渐地、可控或连续地使活板机构16从一个打开位置移向一个基本上关闭的位置，例如，像图7中所示的那样。作为另一种选择，通过起动致动装置12，使用者可以逐渐地、可控地或连续地使活板机构16从打开位置移向一个或多个中间偏流位置（一个中间偏流位置的例子示于图26和28中），在所述中间位置处可将筒体开口8a按需要部分地关闭，最后移到最终基本关闭的位置处，例如像图7所示的那样。

随着致动装置的运动，外圈柱体5可沿方向A运动，使得内、外圈柱体4、5上的孔洞6、7从图5所示的完全错开的位置移到例如如图7所示的那样孔洞6、7完全相互对准的最终位置。做为另外一个选择，在完全错开的位置（图5）和完全对准的位置（图7）之间，外圈柱体5可以与致动装置的运动配合地移动到一个或多个中间位置，在该位置处，孔洞6、7部分地错开（见图26）。

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致动装置12是可以连续移动的，从而可被使用者控制，或者可以为致动装置提供一个或多个与上面提到的位置相对应的停止点。

此外，图26还示出了沿逆时针方向运动的上活板16'和沿顺时针方向运动的下活板16"。应当指出，这里所公开的运动方式并不局限于活板的旋转运动。可以看出，根据活板机构16在筒体3内的位置，活板可以顺时针运动也可以逆时针运动，以达到所需要的筒体开口的打开状态和关闭状态。同样的方式也适用于图28的情形，该图示出了导流板109的一个中间位置的例子。因此可以看出，导流板的转动方向是基于设计上的考虑。

做为另一个实施例，申请人指出，致动装置12的起动可首先导致外或内圆柱体5、4之一的运动，然后导致活板机构16的一个被延迟的到达基本关闭位置的运动。这种方法可以令一些分散的空气通过筒体开口逸出。

现将描述用于实现内、外圆柱体4、5和活板机构16的上述运动的机构的一个例子。如图5—8以及图9（b）和11（a）—11（c）所示，可绕枢轴运动的活板机构16包括具有安装轴16b和由安装轴延伸出来的安装销16c的第一和第二活板16'和16''。如图8所示，安装销16c以偏置的方式安装在一个椭圆形致动装置16a上。本发明还可在安装销16c处利用垫圈16d（图9和11（a）—11（c））以便进行顺滑的操作。具有安装销16c的可绕枢轴转动的活板机构16以如下所述的方式安装在筒体3内，或基本上在筒体3内，或在筒体开口8（a）处：安装轴16b和安装销16c被安装成可插入内圆柱体4上的狭长槽17内和外圆柱体5上的狭长槽11内（见图6，图9（a）和图10）。外圆柱体5上的狭长槽11位于外圆柱体5的一个凸出部分5a上。因此，外圆柱体5沿箭头A的方向的运动（图1和图7）将导致可绕枢轴转动的活板机构16从至少如图5中所示的筒体开口8a打开的位置移向图7中所示的筒体开口8a基本上关闭的位置。这是由于外圆柱体5沿方向A的运动将导致可绕枢轴转动的活板机构16的销16c与椭圆致动装置16a一起转动，从而导致可绕枢轴转动的活板机构16向基本上关闭的位置转动。

外圆柱体5可以包括致动装置，例如触发器12，该触发器用于导致外圆柱体5相对于内圆柱体4的滑动。致动装置或触发器12包括一个由销14导向的位于外圆柱体5中的槽15内的弹簧13（图1、3、10）。弹簧13沿与方向A相反的方向推动外圆柱体5。起动致动装置，例如沿方向A拉动触发器12，

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将导致外圆柱体5沿方向A移动，从而导致可绕枢轴转动的活板机构16从至少如图5中所示的位置向图7中所示的基本上关闭的位置运动。图1、3和10示出了一个位于筒体组件3下部的单一弹簧13。但应当指出的是，筒体组件也可以包括两个位于筒体组件3的沿直径方向相对的部分上的弹簧13，以增加圆柱体（4、5）运动的稳定性。

与此同时或几乎与此同时，外圆柱体5沿方向A的运动也将导致内、外圆柱体4、5上的孔洞6、7变成如图7所示的那样相互对准。

因此，在图1和5中所示的第一位置（第一状态）处，可绕枢轴转动的活板机构16处于图5所示的位置上，允许气流通过筒体开口8a，而在内、外圆柱体4、5上的孔洞则没有对准（图1和5），从而阻挡气流从筒体3的表面通过。这使得使用者可以通常的方式使用该吹风干燥机。

当美发师想把该吹风干燥机用做烫发器，扩散器等等，用于水平撩起头发/干燥、做发型时，美发师起动致动装置，例如，可沿方向A拉动触发器12，按如图3和图7所示的方式相对于内圆柱体4设置外圆柱体5的位置（第二或最终状态）。这将导致内、外圆柱体4、5上的孔洞6、7相互对准，并导致活板机构16的活板16'，16''逐渐绕枢轴转动到图7所示的位置，以便基本上关闭筒体开口8a。在这个位置，活板16'，16''将把空气偏转向暴露在筒体上的对准的孔洞6、7，而有些发散的空气将流过筒体开口8a。在本发明的另一个特征中，使用者可将致动装置12移到中间位置，这将导致活板机构16受控地通过一些中间偏流位置（其中一个位置示于图26中），同时导致内、外圆柱体4、5之一移向孔洞6、7部分对准的中间位置（图26），从而令所需要的气流流过部分对准的孔洞6、7。因此，利用致动装置12的中间位置可使得使用者能由活板机构精细地控制偏转量以及孔洞6、7的对准程度。

可以看出，本发明并不局限于所描述的用于移动活板机构和圆柱体的布置，可以利用任何机构，例如可以达到上述所要求的运动的齿轮。

外圆柱体5相对于内圆柱体4的移动量可通过如下方式来决定，即，如图1、3、9（a）和10所示，在外圆柱体5上设置一个狭长槽10并在内圆柱体4上设置一个销9。当如图7所示，筒体开口8a被活板16'、16''基本上关闭时，

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筒体开口8a不被活板16'、16''严格密封，从而允许一些空气从筒体开口发散出来。

本发明还可提供一个如图6和9（c）所示的套盖8，用以遮盖活板机构16。套盖8显示出一个切去的部分，用以示出活板机构16的侧面。应该看到，套盖8可完全地围绕筒体前部的周围。套盖8也可包括一些止动销80（图9（c）），以使套盖8套装在外圈柱体5上并包括相应的孔以便容许活板机构16的轴16b和销16c插入其中。

本发明的吹风干燥机结构也可用于如图12所示的在电机罩上有一腹形曲线60的吹风干燥机1a或任何其它类型机身的吹风干燥机上。在腹形机身的情况下，致动装置或触发器12应具有与机罩的曲线相匹配的曲线。这一实施例将以与上述实施例相同的方式操作。

此外，本发明的致动装置或触发器12能够可操作地与一个控制机构50（图13）相关联，该控制机构将触发器12的起动与吹风干燥机的温度设定结合起来。例如，传统的吹风干燥机可包括低温、中温和高温档。本发明的触发机构12能够可操作的与如图13所示的一个控制机构50相关联，以便当触发器被起动时能够把吹风干燥机的高温档降低到一个低于高温档的温度档。

如图13所示，当致动装置或触发器12定位在孔洞6、7相互错开并且气流从筒体的前开口8a流出的第一位置（图1和5）时，可令吹风机的温度档设定在吹风干燥机的高温档（R1）。当致动装置或触发器12运动到孔洞6、7相互对准并且前开口8a基本上关闭的第二或最后位置（图3和7）时，可将吹风干燥机的设定档定位在一个比吹风干燥机的高温档温度低的温度档（R2）。上面对致动装置或触发器被完全起动时吹风干燥机处于高温档时的情况进行了描述。应当看到，控制机构50可以被设计成在触发器12的起动时并不降低温度，可将吹风干燥机设定在中温档或低温档。但是，当起动触发器12时降低吹风干燥机的温度档是基于设计上的考虑，并基于当起动致动装置或触发器12时将是最佳温度的理想温度。应当进一步看到，该吹风干燥机可包括一个辅助致动装置或触发机构，它不与致动装置或触发器12联动，以便允许使用者有选择性地把温度从高温降低到一个低于高温的温度。

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图14表示出筒体3的外圈柱体5的另一个实施例，在该实施例中，外圈柱体5包括沿着外圈柱体5的长度方向有间隔地排列、固定到外圈柱体5的周边上并围绕外圈柱体5的圈周延伸的环200。环200用于当筒体组件贴着头发时对头发进行导向。将环200如此排列，以使之不会阻碍由孔洞（6、7）流出的气流。这些环200可用于上面所公开的任何一个实施例中。

图15示出了筒体3的又一个实施例，其中筒体3的外圈柱体5可包括一些在筒体的孔洞7之间间隔设置的凸起，如硬毛或齿300，并在孔洞7之间延伸成行，如图中所示的那样。硬毛或齿300可绕筒体3的外圈柱体5的周边延伸，并可用于导向头发及进一步地提高做发型的功能。和环200一样，凸起300可用于所公开的任何一个实施例。

图1示出了可操作地连接到筒体外圈柱体上的致动装置，以使得外圈柱体可相对于内圈柱体滑动。但是，本发明并不局限于这种结构，申请人指出，做为又一个实施例，内圈柱体4可在外圈柱体5内滑动（图16）。在该实施例中，外圈柱体4将固定在机身1上或与机身1是一体的。对于这种结构，可将内圈柱体4可操作地连接到致动装置12上，以便使之可相对于外圈柱体5滑动。对于本发明的其它特征，本结构将以与上面对第一个实施例所述的类似方式运作。

图17表示了本发明的吹风干燥机的又一个实施例。在图17中，机身100可类似于前面各实施例的机身1。图17的实施例包括筒体103，该筒体103被固定到机身100上或与之做成一体，并且有许多孔洞105。一个导流板109可位于筒体103内或基本上位于筒体103内。如图19和20所示，作为一个例子，导流板109可设置在筒体103的开口107处。导流板109可像前面的实施例所述的那样设置，也可以如图19和20所示的那样是一个竖直设置的导流板。但是，申请人指出，导流板109的取向并不局限于图示的水平或竖直排列，而是可在筒体103内以任何方式取向。

图19和20中的导流板109包括活板109a，109b，以及一个板状构件111和弹簧结构115（图25（a），25（b））,所述结构用以保持导流板109处于图19和25（a）所示的打开位置。一个沿筒体103延伸到位于筒体103上或机身100上的致动装置119的连接件117连接到板状构件111上。尽管如图27所

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示，各图中给出的连接件117位于筒体103的外部，但应当看到，连接件117可以包含在筒体103之内。

致动装置119沿方向B的起动导致板状构件111沿方向C（图25（b））运动，以使活板109a，109b绕支点800逐渐地枢转或转动。这将导致导流板机构109从至少如图19和25（a）所示的打开位置移至图20和25（b）所示的基本上关闭的位置。如前所述，应进一步地看到，可将致动装置119进行修改，以便根据所需气流及设计上的考虑将导流板109移动到介于打开位置和基本关闭的位置之间的不同中间偏流位置（其中一个这样的位置示于图28中）。

尽管在图中板状构件111和弹簧结构115在筒体103的一个扩充的部分400内，但这只是为了进行说明和清楚起见而这样显示该结构。应当看到，板状构件111，弹簧115及连接件117可设置或包含在筒体103内，以提供一种如图1、16和28所示的连续的直筒体。

采用图17所示的实施例，在通常的吹风干燥机操作中，导流板109处于打开位置（图19），空气通过筒体103的开口107输出。沿筒体103设置的孔洞105会允许一定量的空气通过孔洞105流出，但不足以干扰传统的或通常的吹风干燥机操作。

当美发师希望将该吹风干燥机用于水平撩起头发/干燥，做发型，如用做烫发器，扩散器等时，美发师沿方向B起动致动装置119，以使用导流板109逐渐地基本上关闭筒体开口107。因此，导流板109将偏转并最终强迫绝大部分流经筒体103的空气从筒体103上的孔洞105流出，从而该吹风干燥机可被用于水平撩起/干燥，等等。在导流板109被起动以到达基本上关闭的位置时，根据使用者的喜好，还可以进一步地在介于导流板的打开位置和基本关闭的位置之间的中间偏流位置处可变化地偏转空气。在此实施例中，致动装置119可被改进成提供几个对应于导流板109的中间位置的停止位置。但是，致动装置119也可以自由地连续移动，以允许使用者控制偏转量。

现回到图17，在导流板109处于打开位置（图19）的吹风干燥机的正常操作中，如果使用者希望更少一些的空气通过筒体103上的孔洞105逸出，做为本发明的又一个实施例，筒体103可包括一个绕筒体103成圆柱形地设置的筛网121（图18）。筛网121用来在图19的吹风干燥状态下阻挡或阻碍

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通过孔洞105的部分空气。但是，在可变的偏流位置以及图20所示的导流板109基本上关闭筒体开口107的偏流位置，有足够的空气被迫通过孔洞105，从而可进行水平撩起头发/干燥等等操作。图18中说明的带有筛网121的筒体103的实施例示出了绕着筒体103的筛网。但是，作为另一种选择，可以如图23所示的那样使筛网121呈圆筒形地设置在筒体103内，或者如图24所示将筛网121设入孔洞内，使之与孔洞成为一个整体。

作为又一种选择，筒体可包括一个覆盖筛网121或筒体103的海绵状包覆件（图21），以便在图19所示的通常的或传统的吹风干燥操作中进一步地阻挡或阻碍某些通过孔洞105的空气。但是，海绵状包覆件123是多孔的，以便当导流板109位于在打开和基本上关闭的位置之间的中间偏流位置或基本上阻挡的位置时（图20），允许被阻挡的空气被迫通过孔洞105，从筒体表面逸出，从而使用者可将吹风干燥机用于水平撩起头发/干燥等等。

筛网121可用任何类型的材料制成，只要这些材料能够耐受在吹风干燥操作中通常所用的温度并可被弯曲成圆柱形结构，以便与筒体103相匹配。例如，筛网121可以是金属丝网的构架网格。海绵状结构123也可以用任何材料制成，只要它能够耐受吹风干燥操作时的温度并且可以是一种可以很容易地滑到筒体103上或从其上取下的弹性构件。筛网和海绵状结构的材料是这样的，即，当吹风干燥机处于偏流位置（图20）时，被迫通过孔洞105排出的空气可以通过这些材料，以便将吹风干燥机用于水平撩起头发/干燥等等。

做为本发明的又一个特征，筒体103上的孔洞105可以是倾斜的（图22），从而能在偏流位置（图20）时，令气流的方向改变，同时当在打开导流板109的常用操作状态下使用吹风干燥机时对空气施以适当的阻挡。尽管图22表示的孔洞105是沿一个方向倾斜的，但应当看到，可从设计的角度出发使孔洞105沿各种方向倾斜。

此外，尽管图17所给出的吹风干燥机表示的是一种腹状机身，但致动装置119可相对于吹风干燥机组件设置在任何部位，视所用筒体和吹风干燥机机身的类型而定。上述实施例的吹风干燥机也可采用一个如图13所示的控制机构50。此外，这些实施例的吹风干燥机的筒体可包括如图14和15中所表示的在环200及硬毛或齿状物300方面的改进。

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因而，本发明的吹风干燥机通过将许多功能集中在一个工具上而最大限度的发挥了吹风干燥机的能力。因此，通过利用一个由单手操作的单一工具为美发师或发型师提供了很宽范围的可用气流。也就是说，通过简单地起动一个致动装置，例如拉动触发器12，美发师便可改变通过筒体的气流。任何所需的附件可以就像现有的吹风干燥机一样地套装在本发明的筒体上，而且不管是否操作致动装置均可使用。本发明的吹风干燥机还可用做一个大的烫发器，同时，当操作致动装置时，它还具有一些从筒体开口扩散的能力，如果把吹风干燥机的电机速度设置得较低，它还具有从整个筒体表面扩散的能力。

显然，根据上面的讲解，有可能对本发明做出各种改型或变型。因此，必须理解在所附权利要求的范围内，本发明能够以不同于这里所特别描述的方式加以实施。

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说 明 书 附 图

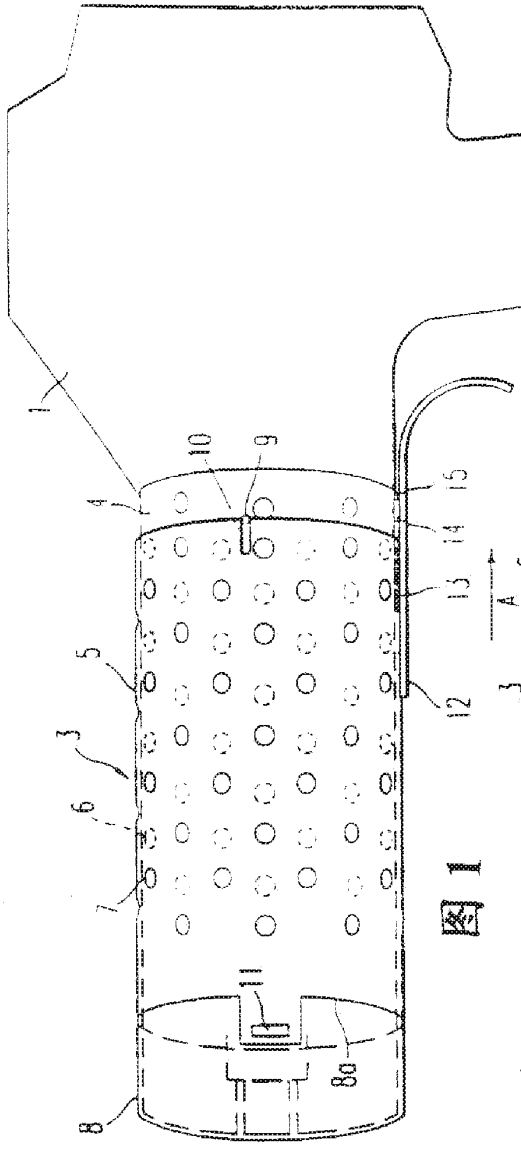


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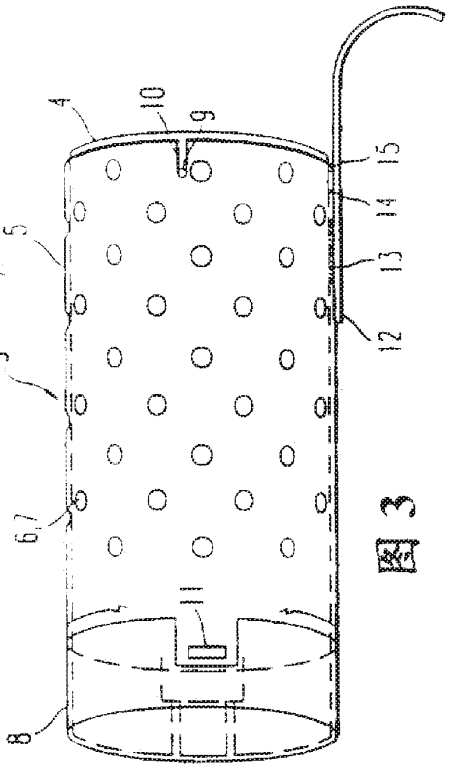


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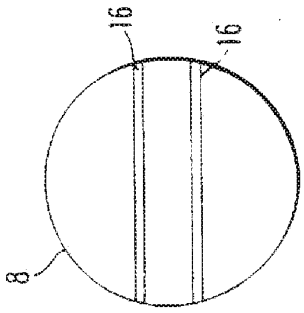


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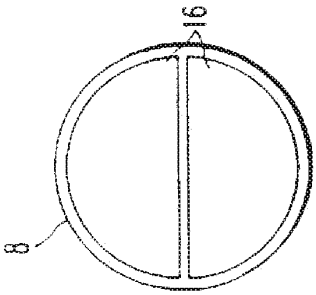


图 4

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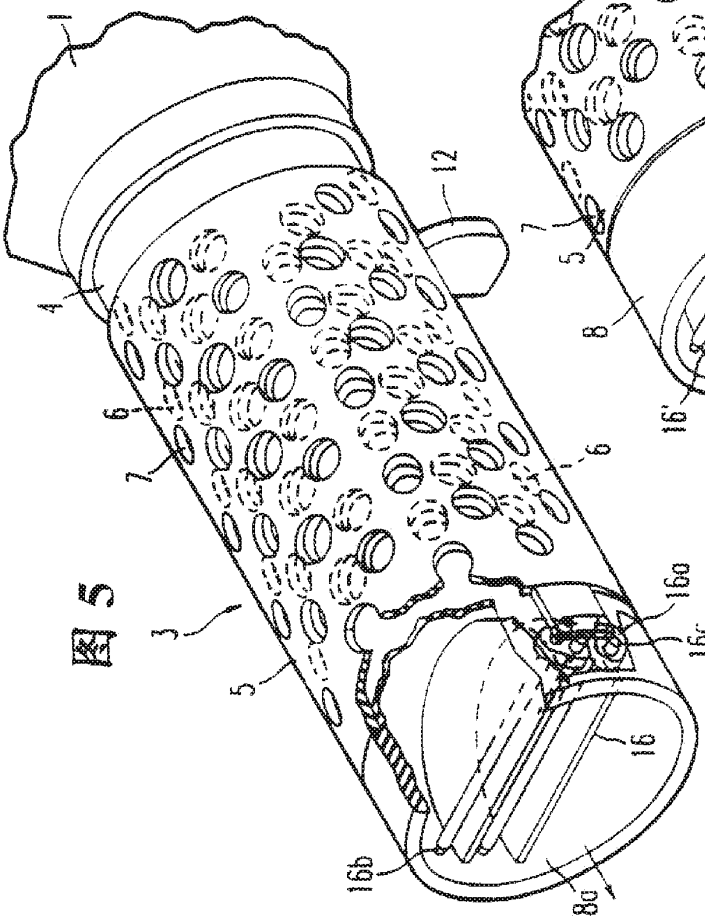


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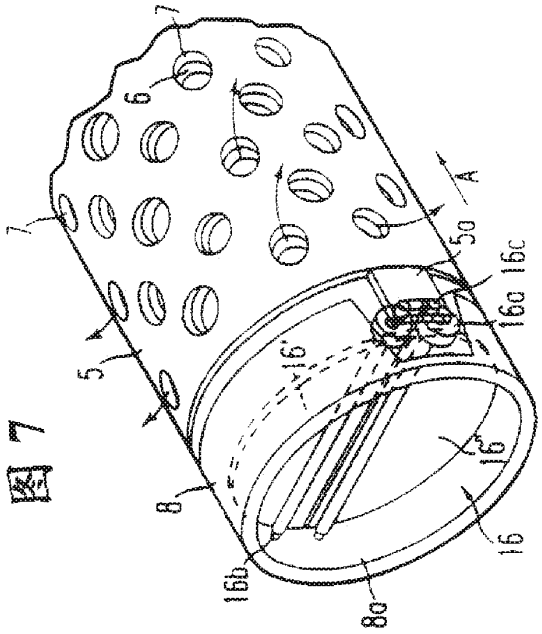


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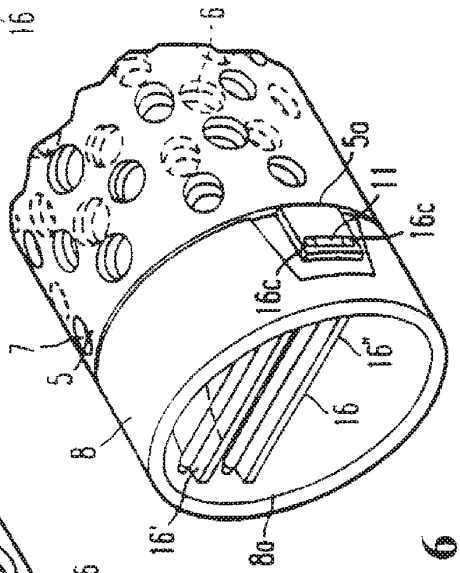


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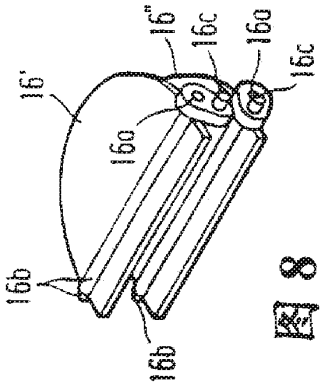


图 8

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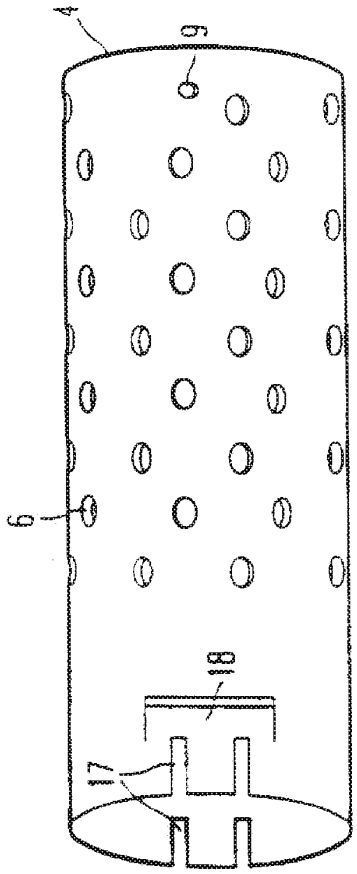


图 9a

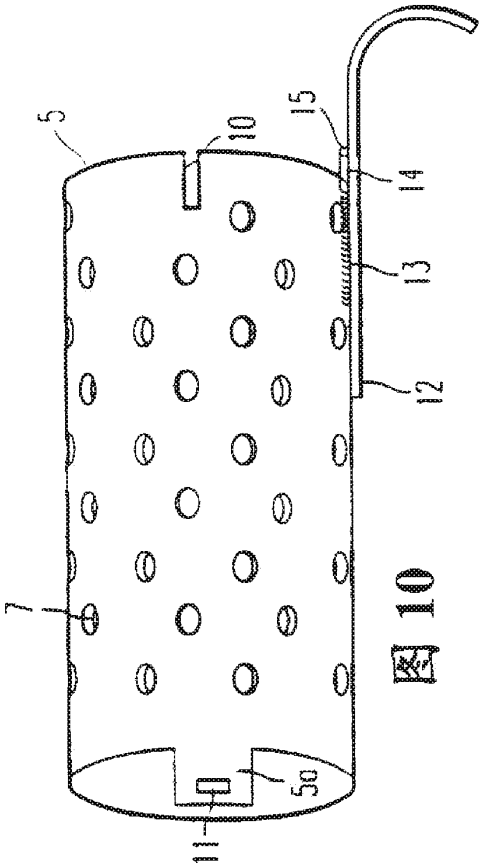


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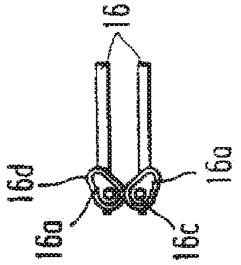


图 9b

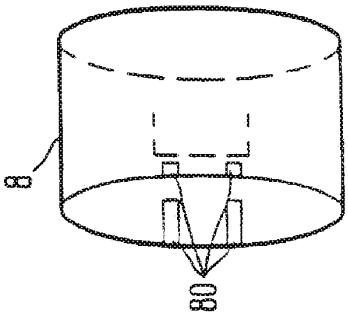


图 9c

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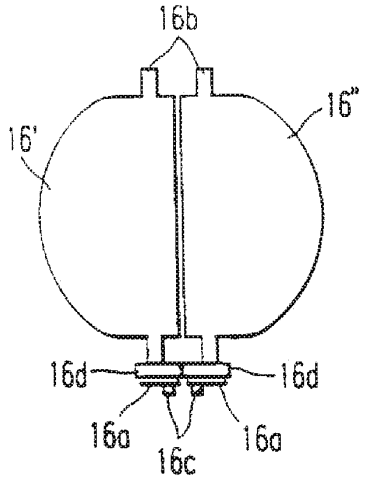


图 11a

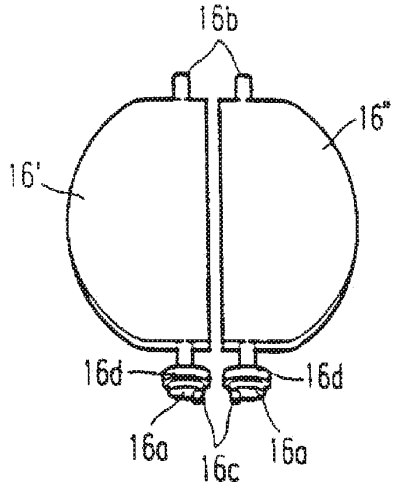


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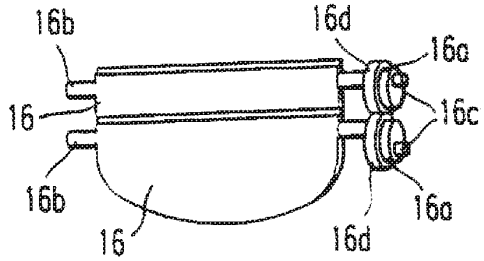


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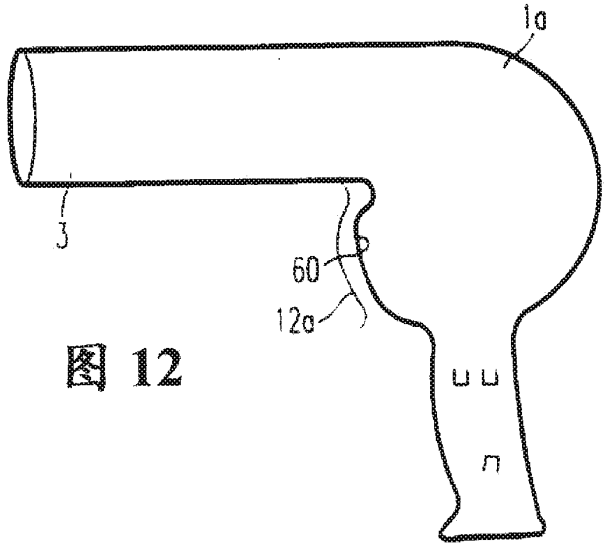


图 12

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图 13

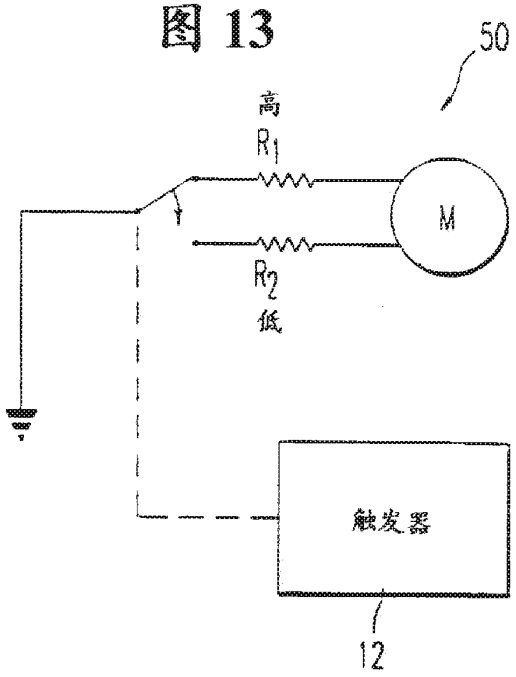
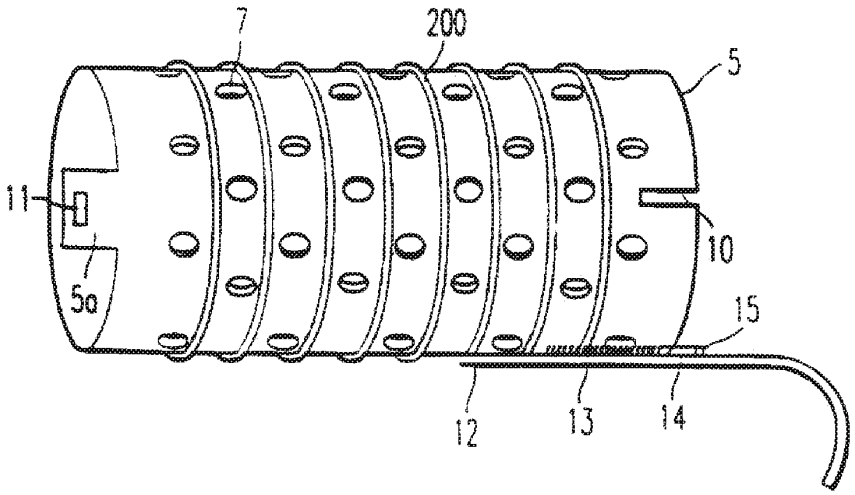
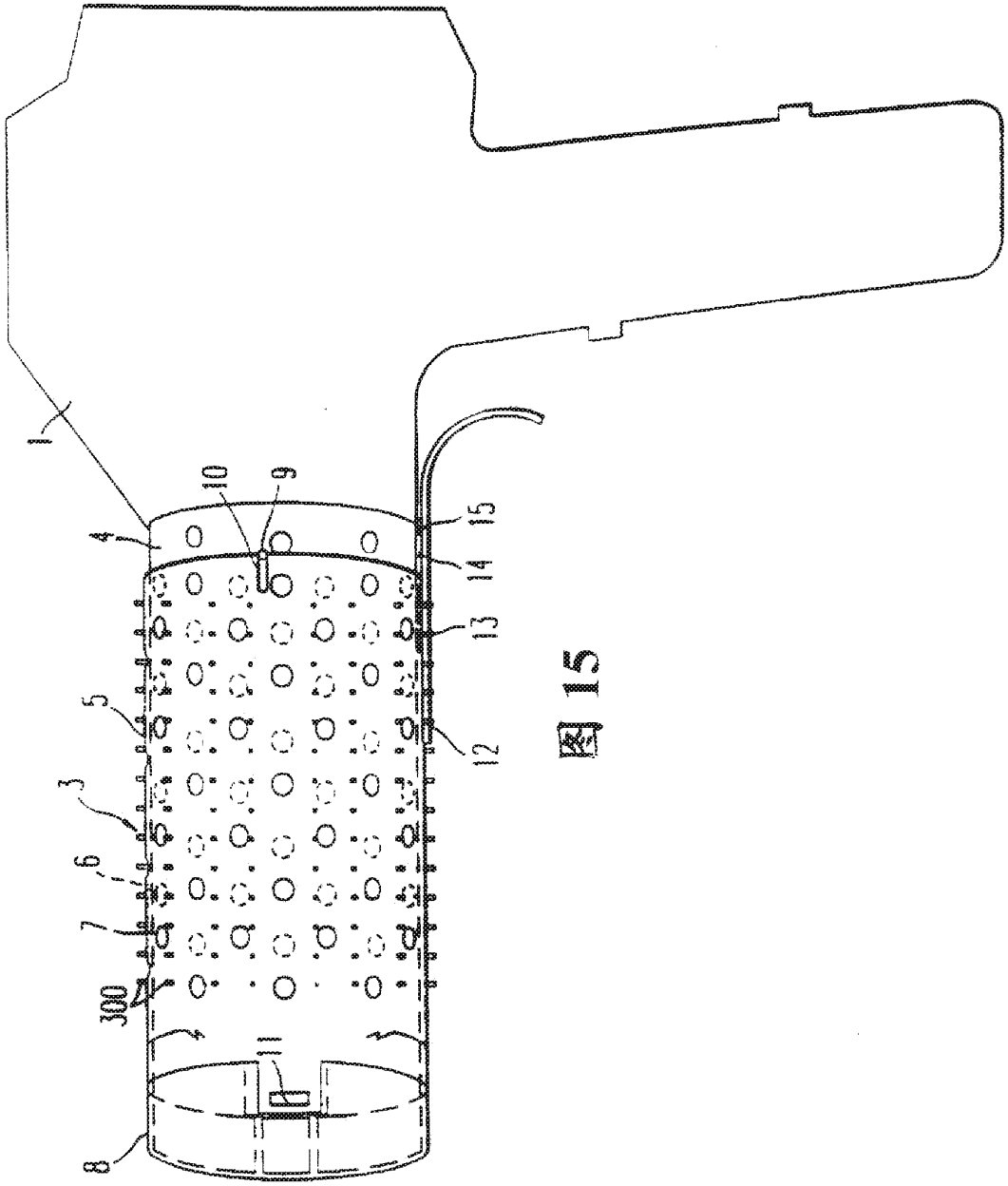


图 14



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Фиг. 15

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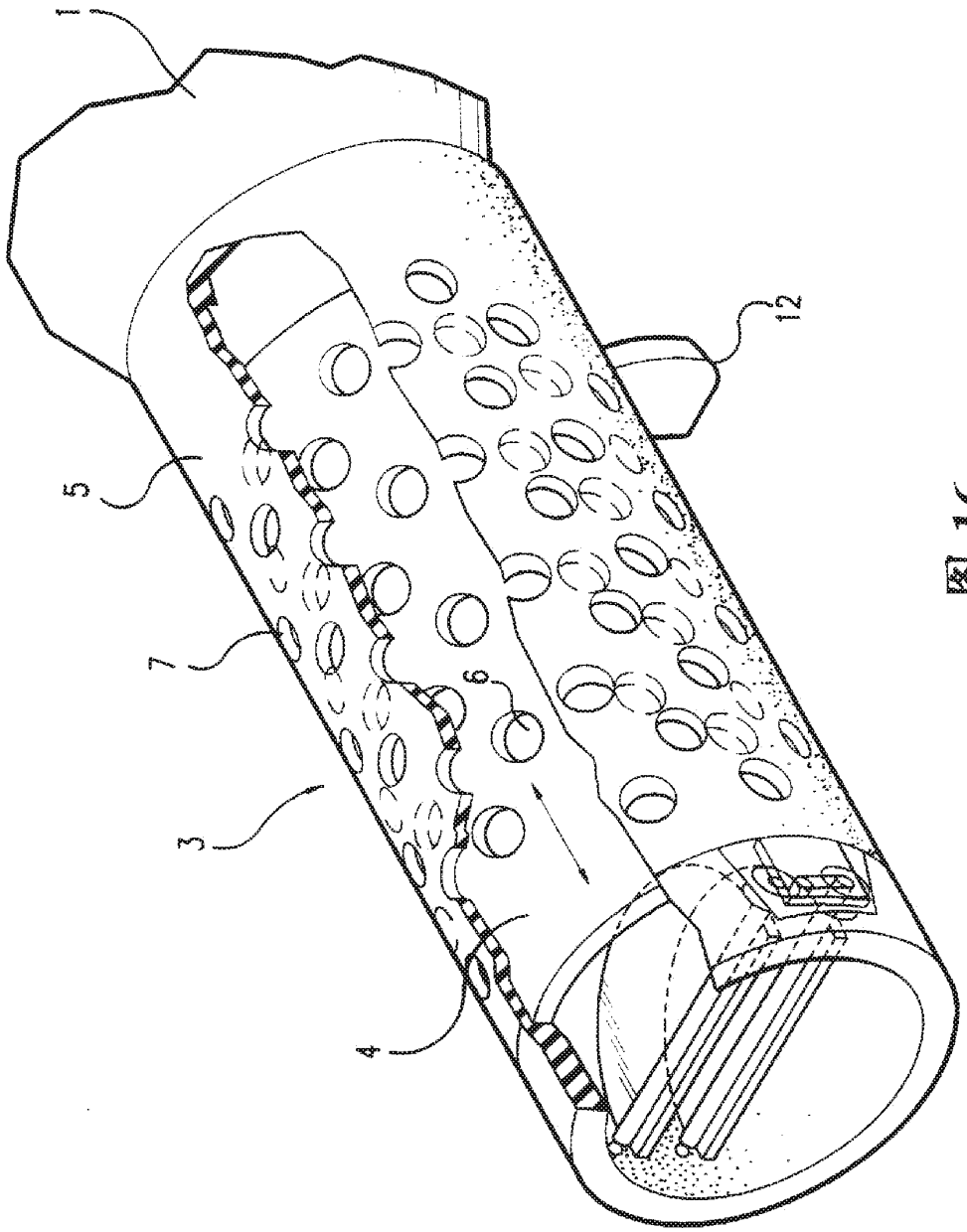


图 16

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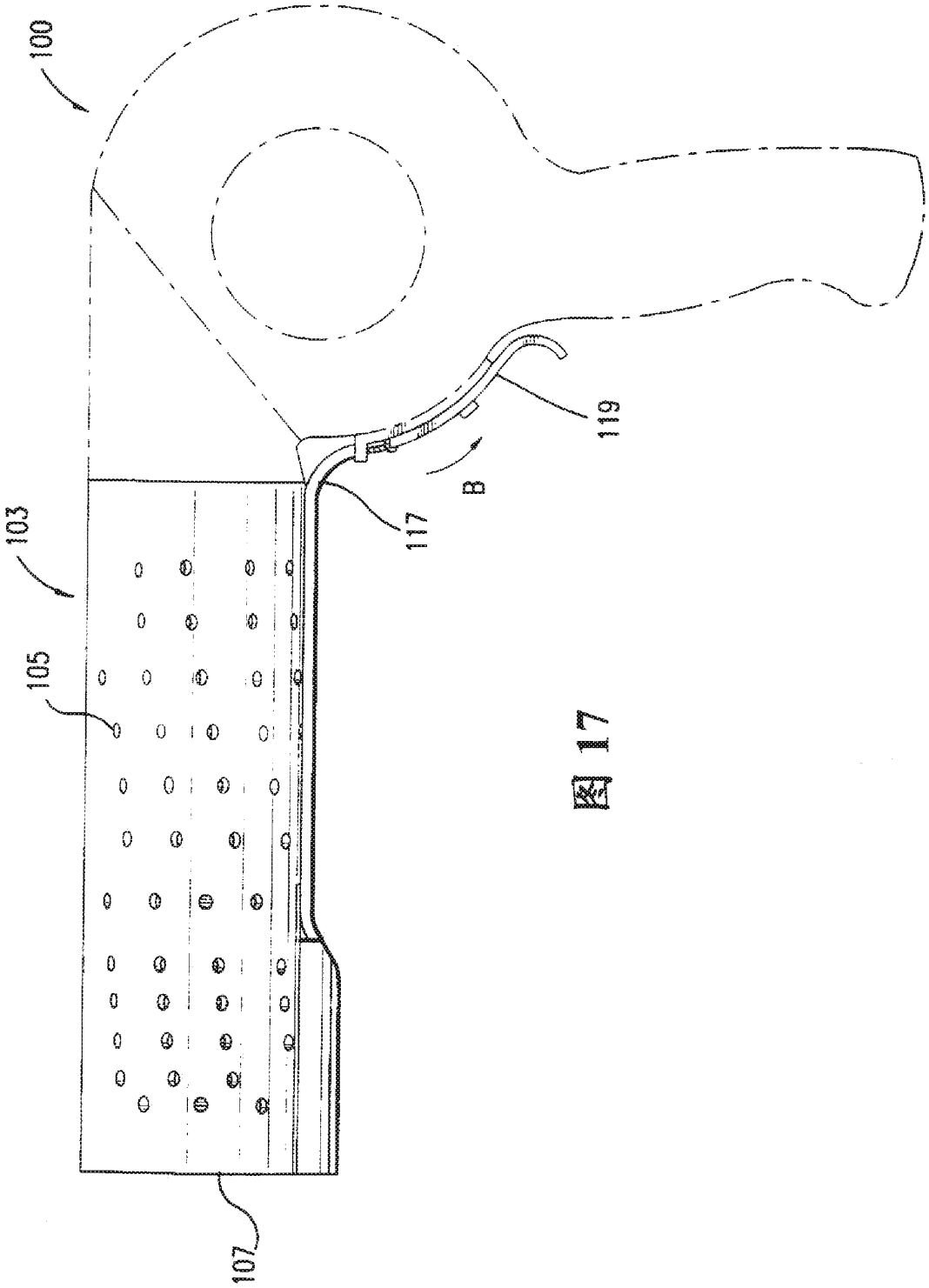


Fig 17

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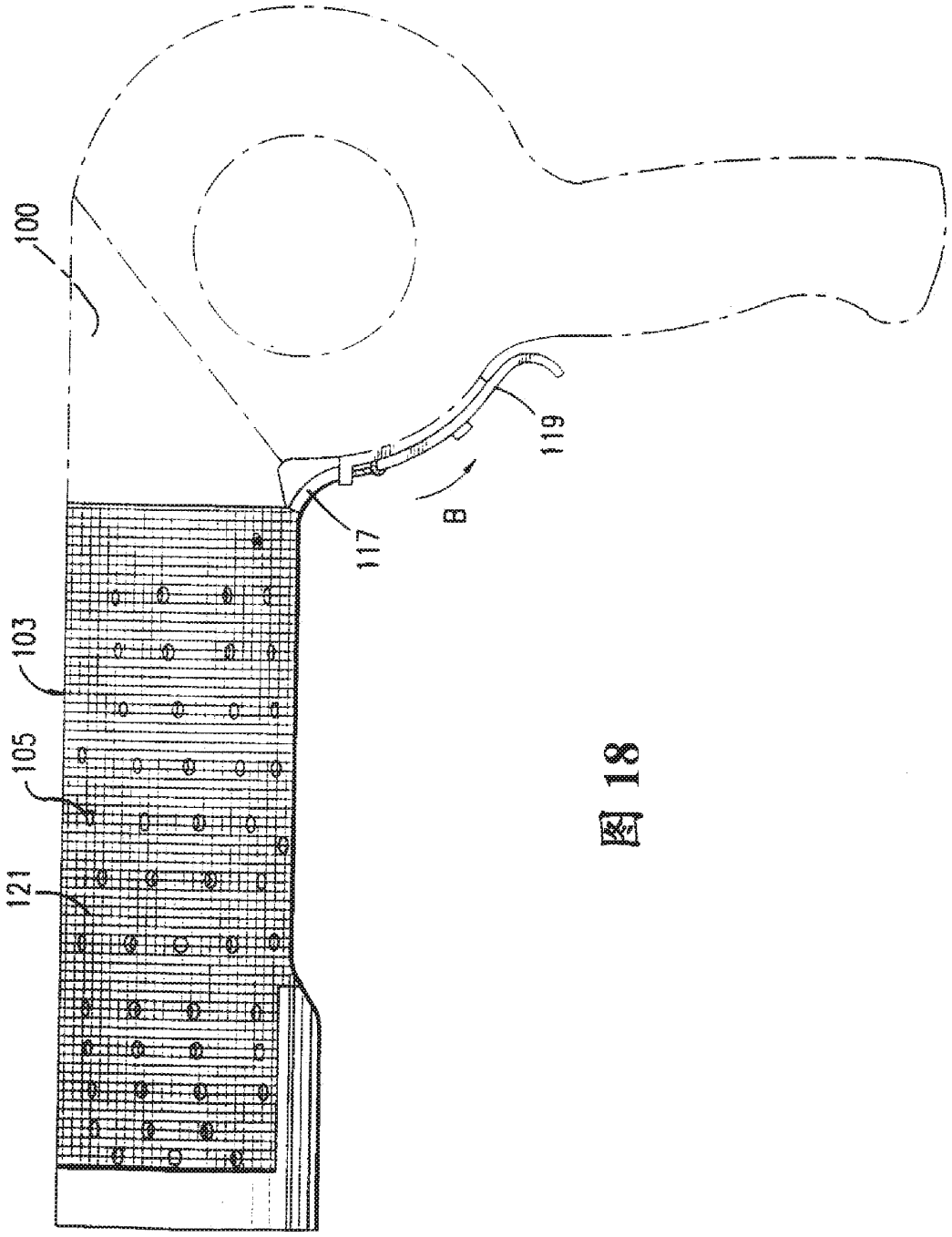


Fig 18

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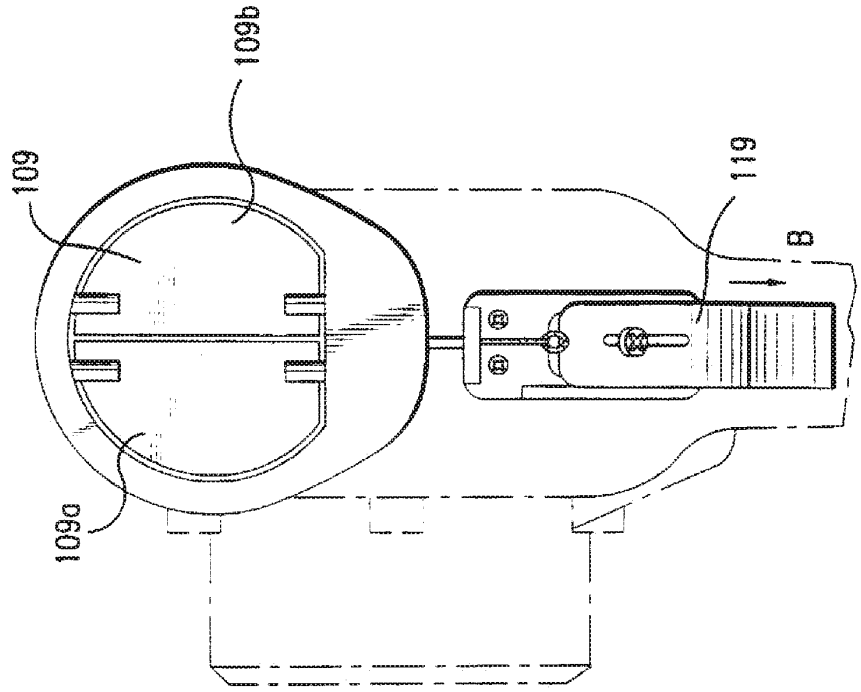


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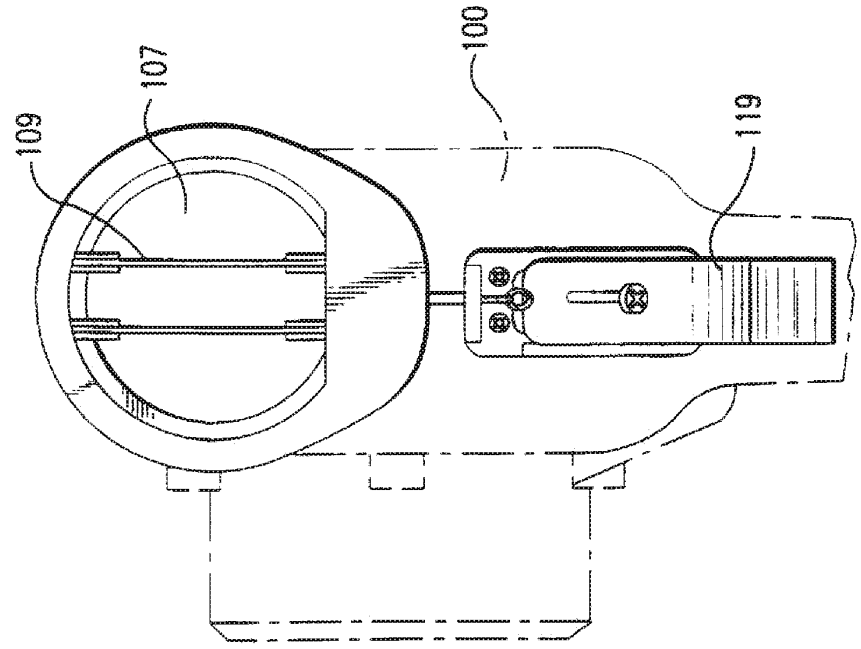


図 19

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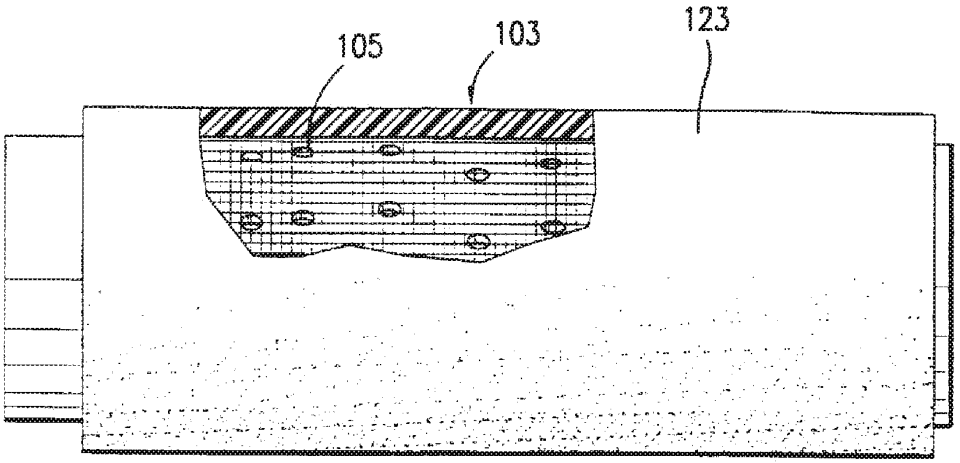


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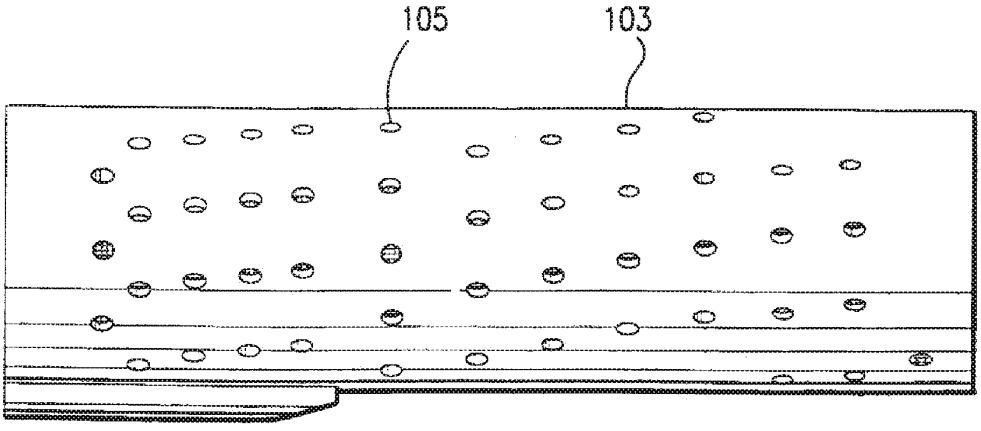


图 22

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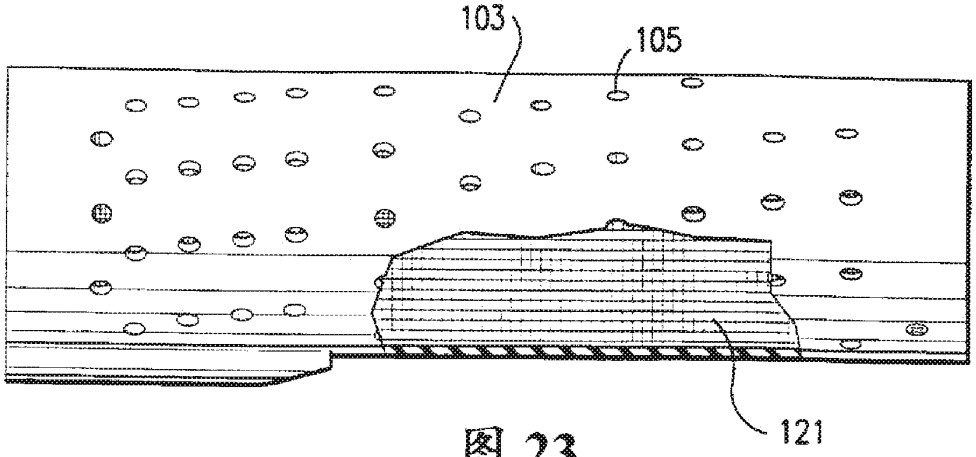


图 23

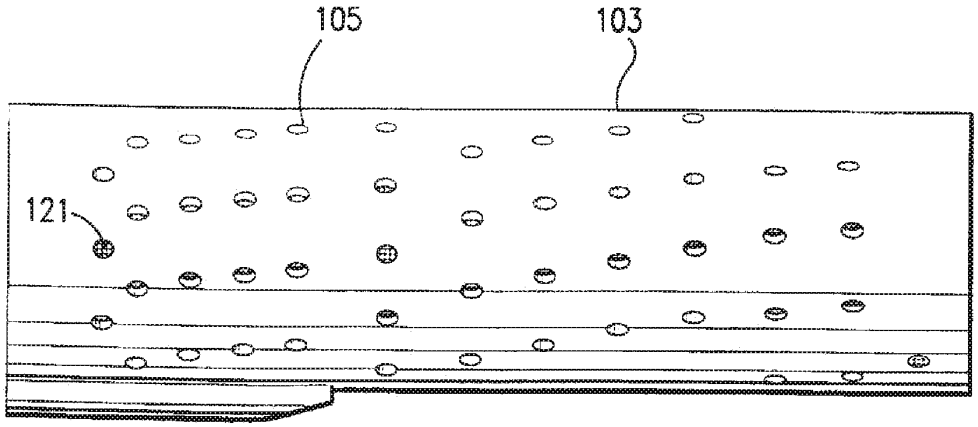


图 24

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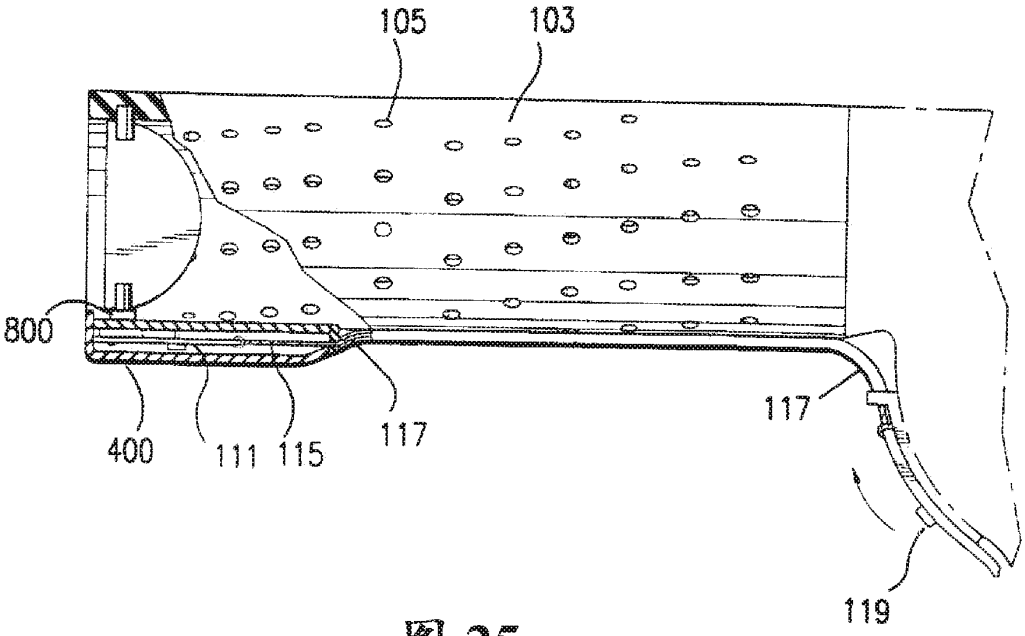


图 25a

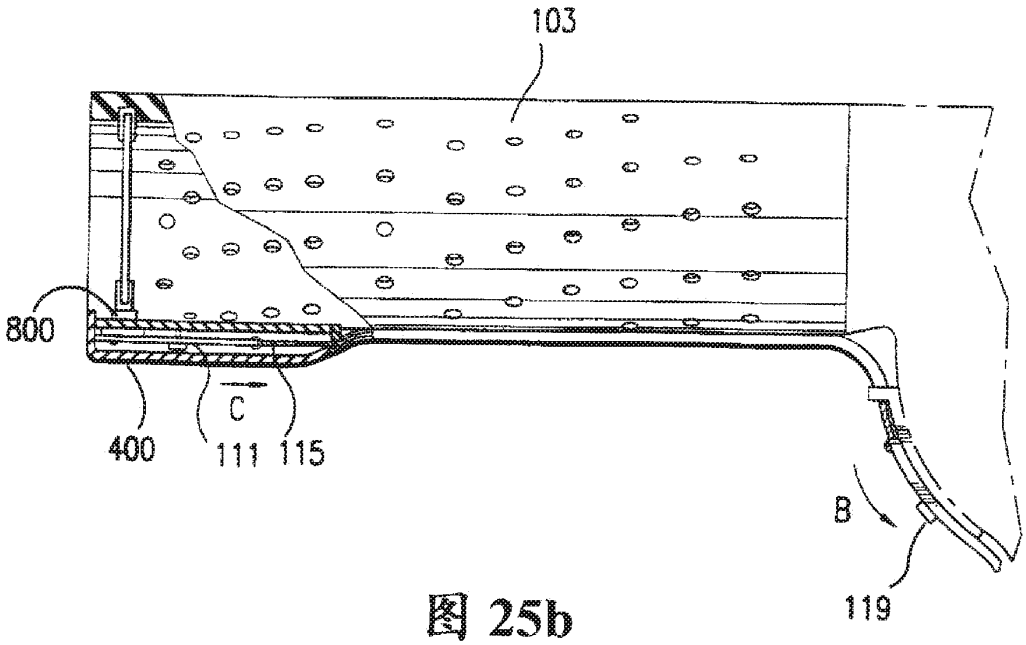


图 25b

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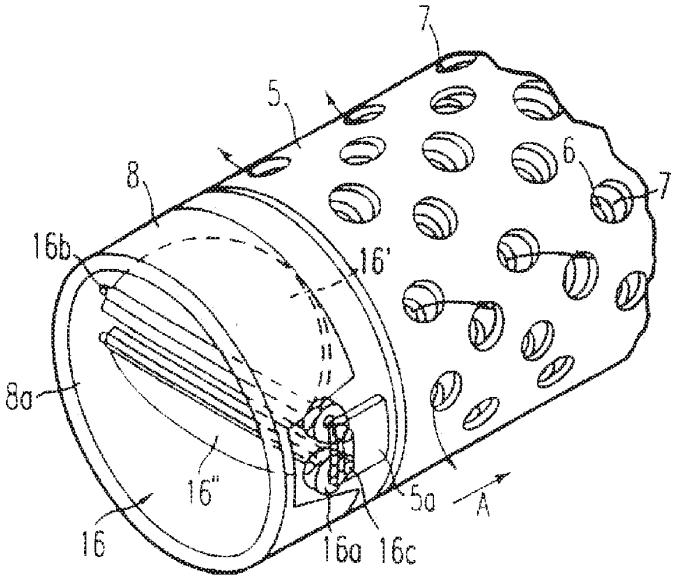


图 26

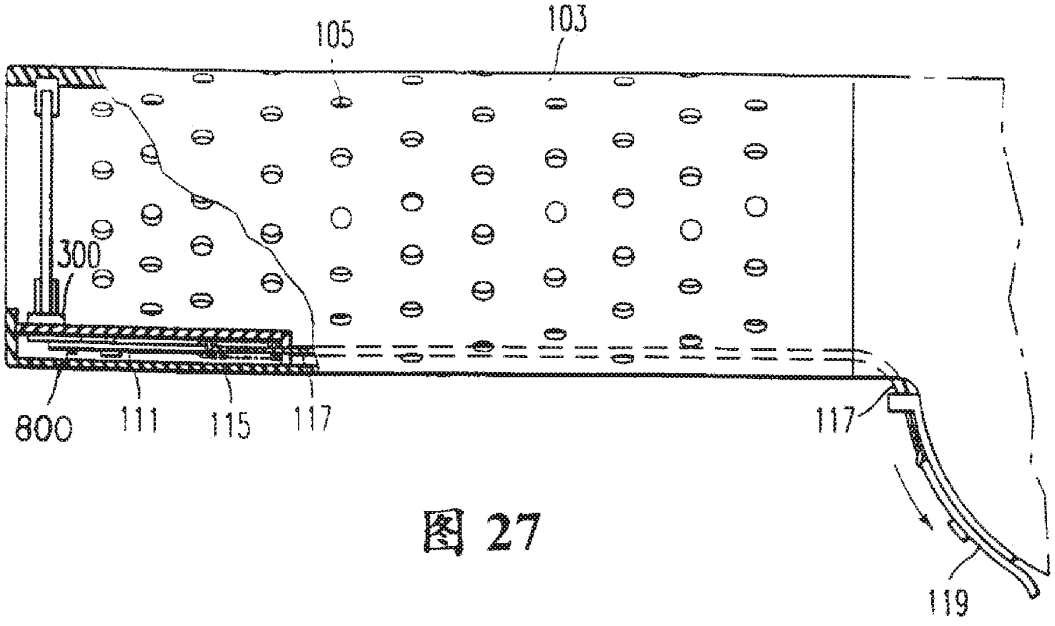


图 27

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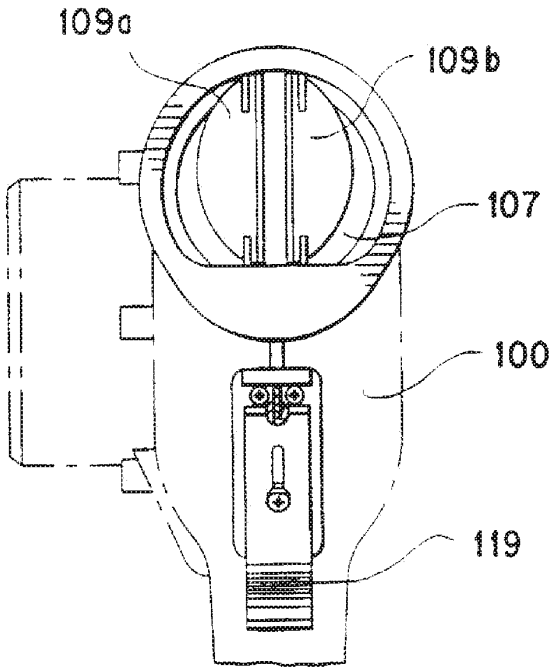


图 28

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(71) Applicant: VITAL HAIR TOOLS, LLC [US/US]; Suite 200, 1214 West Boston Post Road, Mamaroneck, NY 10543 (US).

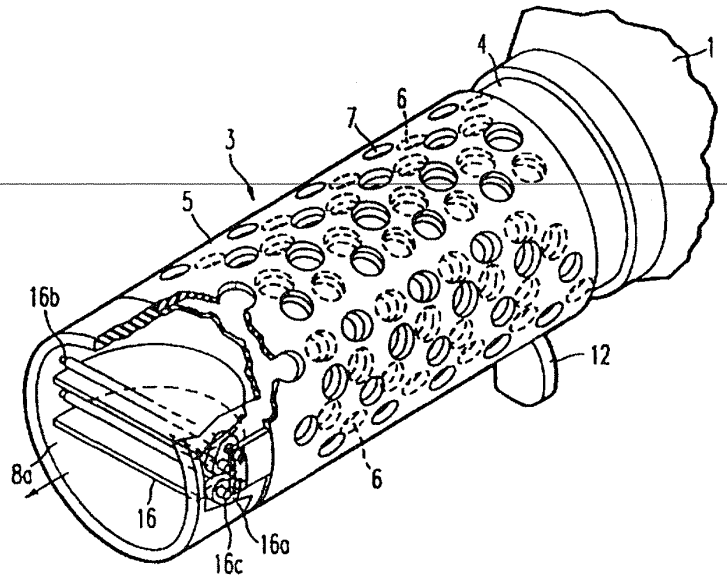
(72) Inventor: SCHEPISI, Natale; 22 Tulip Tree Lane, Mamaroneck, NY 10543 (US).

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With international search report.

(54) Title: HAND-HELD BLOW DRYER HAVING AIRFLOW CONTROL MEANS



(57) Abstract

A hand-held blow dryer includes a barrel (3) with a plurality of holes (6, 7). A deflecting mechanism (16) can be positioned within or substantially within the barrel (3), and an actuating mechanism can be operationally associated with the deflecting mechanism (16). The hand-held blow dryer can be utilized in at least a first mode in which airflow is directed through the barrel opening of the barrel (3), and a second mode in which the actuating mechanism is actuated to move the deflecting mechanism (16) from at least a position in which the barrel opening is opened, to a position in which the barrel opening is substantially closed by the deflecting mechanism. Thus, in the second mode most of the air is deflected by the deflecting mechanism and forced through the holes (6, 7) of the barrel.

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Hand Held Blow Dryer Having Airflow Control Means

The present application is a continuation-in-part application of parent application Serial No. 08/576,592.

Technical Field

The present invention provides for an enhancement to a professional hair dressing blow dryer, more specifically to the blow dryer's barrel which permits variable airflow and saves energy.

Background Art

Conventional hair dressing "pistol-type" blow dryers utilize a one-directional airflow through a front opening of a cylindrical conduit or barrel of the blow dryer. Commercial attachments which are available to fit over the barrel opening to vary airflow require a two-handed operation.

U.S. Patent No. 4,097,722 describes a mechanism for varying airflow by controlling an area of the barrel opening by a deflector which is activated by the trigger. However, this patent does not disclose airflow from the barrel surface itself.

U.S. Patent No. 4,232,454 controls airflow from the barrel opening by the use of trap doors activated by a knob and a screw. This has a drawback in that it also requires a two-handed operation.

U.S. Patent No. 5,157,757 describes variations of airflow, including secondary outlets on a barrel. However, this device like the remaining devices requires a two-handed operation, since full activation depends upon manual rotation of a collar, manual settings, as well as a trigger-operated baffle to vary the barrel opening.

During hair styling utilizing a blow dryer, hair dressers use the blow dryer in one hand and point the barrel opening at

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the hair to be styled. A brush or other styling tool is utilized in the other hand. Additionally, when blow styling medium to long length hair, hair dressers use the barrel horizontally with the barrel opening pointed away from the head, to lift hair for the subsequent insertion of the tool in the other hand. During this function, air flow from the barrel opening is wasted, and the barrel itself affords no benefit of any drying/styling capability.

Thus, conventional blow dryer devices do not provide for a barrel arrangement in which air can be directed through the barrel surface of the blow dryer. Additionally, conventional blow dryer devices do not provide for an efficient mechanism which permits a user to deflect air flow from the opening of the barrel, and simultaneously direct air flow through the barrel surface of the blow dryer by using a simple one-handed operation.

Disclosure of the Invention

The present invention therefore provides for a blow dryer arrangement which overcomes the drawbacks of conventional arrangements discussed above.

The blow dryer arrangement of the present invention adds functionality to the blow dryer by varying airflow from the barrel surface, while conserving energy use. This permits the blow dryer of the present invention to be utilized for horizontal lifting/drying/styling, as well as a hot roller and diffuser.

The blow dryer arrangement of the present invention can incorporate holes on the barrel surface and include a deflector associated with the barrel. By actuation of an actuator, the deflector associated with the barrel can gradually close down most of the airflow in varying degrees. This effects airflow from holes on the barrel in varying degrees, as well as some diffused air from the front opening.

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The present invention therefore provides for a blow dryer which comprises a body including a barrel having a barrel opening, with the barrel including a plurality of holes; a deflector positioned within the barrel, the deflector being movable between at least an open position in which the barrel opening is opened, and a deflecting position in which the barrel opening is substantially closed; and an actuator operationally connected to the deflector for moving the deflector between at least the open position and the deflecting position.

The present invention also provides for a blow dryer which comprises a body including a barrel having a barrel opening with the barrel comprising concentric inner and outer cylinders each having a plurality of holes; and an actuator operationally connected to one of the inner or outer cylinders for moving the one of the inner or outer cylinders with respect to the other one of the inner or outer cylinders between at least a first position in which the holes on the inner and outer cylinders are not aligned and a second position in which the holes on the inner and outer cylinders are aligned.

The present invention also provides for a blow dryer which comprises a body including a barrel with a plurality of first holes and a barrel opening; a cylinder movably mounted on the barrel and having a plurality of second holes; and a deflector positioned within the barrel and movable between at least an open position in which the barrel opening is opened and a deflecting position in which the barrel opening is substantially closed.

The present invention also provides for a blow dryer which comprises a body including a barrel having an opening, the barrel defining first and second concentric cylinders each having a plurality of holes; a deflector positioned within the barrel, the deflector being movable between at least an open

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position in which the opening is opened, and a deflecting position in which the opening is substantially closed by the deflector; and an actuator operationally connected to one of the first or second cylinders and operationally associated with the deflector for moving the deflector and the one of the first or second cylinders between at least a first position in which the holes on the first and second cylinders are not aligned and the deflector is in the open position, and a second position in which the holes on the first and second cylinders are aligned and the deflector is in the deflecting position.

The present invention also provides for a blow dryer which comprises a body including a barrel, with the barrel comprising a plurality of holes around its circumference; and a deflector positioned substantially within the barrel, the deflector being movable between at least an open position in which the barrel opening is opened, and a deflecting position in which the barrel opening is substantially closed; and an actuator operationally associated with the deflector for moving the deflector between at least the open position and the deflecting position.

The present invention also provides for a blow dryer which comprises a body including a barrel, with the barrel defining first and second concentric cylinders each having a plurality of holes; a deflector positioned substantially within the barrel, the deflector being movable between at least an open position in which the opening is opened and a fully deflecting position in which the opening is substantially closed by the deflector; and an actuator operationally connected to one of the first or second cylinders and operationally associated with the deflector for moving the deflector and the one of the first or second cylinders between at least a first position in which the holes on the first and second cylinders are not aligned and the

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deflector is in the open position, and a second position in which the holes on the first and second cylinders are aligned and the deflector is in the fully deflecting position.

The present invention also provides for a blow dryer which comprises a body including a barrel, with the body comprising a plurality of holes around its circumference; a deflector position substantially within the barrel, the deflector being movable between an open position in which the barrel opening is opened, at least one intermediate deflecting position in which the opening is partially closed, and a fully deflecting position in which the barrel opening is substantially closed; and an actuator operationally associated with the deflector for moving the deflector between the open position, the at least one intermediate deflecting position and the fully deflecting position.

The present invention also provides for a blow dryer which comprises a body including a barrel, with the barrel defining first and second concentric cylinders each having a plurality of holes; a deflector position substantially within the barrel, the deflector being movable between at least an open position in which the opening is open, at least one intermediate deflecting position in which the opening is partially closed by the deflector and a fully deflecting position in which the opening is substantially closed by the deflector; and an actuator operationally connected to one of the first or second cylinders and operationally associated with the deflector for moving the deflector and the one of the first or second cylinders between at least a first position in which the holes on the first and second cylinders are not aligned and the deflector is in the open position, at least one intermediate second position in which the holes on the first and second cylinders are partially aligned and the deflector is in the intermediate deflecting position, and a third position in which the holes on the first and second

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cylinders are fully aligned and the deflector is in the fully deflecting position.

Brief Description of the Drawings

A more complete appreciation of the invention and many of the attendant advantages thereof will be readily obtained as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings, wherein:

Figure 1 is a view of the blow dryer and barrel assembly of the present invention in a first position in which the holes of the inner and outer cylinders of the barrel are not aligned;

Figure 2 is a front view of the barrel opening of the blow dryer of Figure 1 in the first position showing the flaps or deflecting means in an opened position;

Figure 3 is a view of the inner and outer cylinders of the barrel of the blow dryer in a second position in which the holes of the inner and outer cylinders are aligned;

Figure 4 is a front view of the barrel opening when the inner and outer cylinders are aligned as shown in Figure 3, in which the flaps or deflecting means substantially close the barrel opening;

Figure 5 is a perspective view of the inner and outer cylinders of the barrel and the flaps or deflecting means in the first position of Figures 1 and 2;

Figure 6 is a perspective view of the flaps in an opened position as illustrated in Figure 5;

Figure 7 is a perspective view of the flaps and the inner and outer cylinders in the second position of Figures 3 and 4;

Figure 8 shows the flaps in isolation;

Figures 9(a), 9(b) and 9(c) respectively show the inner cylinder, flaps, and a cover for the barrel;

Figure 10 shows the outer cylinder of the present

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invention;

Figure 11(a), 11(b) and 11(c) show different views of the flaps;

Figure 12 shows a different blow dryer body embodiment;

Figure 13 shows a circuit arrangement for controlling temperature settings for the blow dryer of the present invention;

Figure 14 shows a modification of the outer cylinder of the present invention;

Figure 15 shows a further modification of the blow dryer of the present invention;

Figure 16 is a further modification of the barrel of the blow dryer of the present invention;

Figure 17 shows a further embodiment of the blow dryer of the present invention in which the body of the blow dryer includes a barrel with a plurality of holes and deflector;

Figure 18 illustrates a further variation of the blow dryer of Figure 17 in which the blow dryer includes a mesh-type screen surrounding the barrel;

Figure 19 is a front view of the blow dryer of the present invention in which deflector is in an open position;

Figure 20 is a front view of the blow dryer of the present invention in which the deflector is in a final closed position;

Figure 21 is a further variation of the barrel of the blow dryer of Figure 18 in which a foam-type mesh surrounds the barrel;

Figure 22 shows a further variation of the barrel in which the plurality of holes on the barrel assembly are slanted;

Figure 23 shows a further variation of the barrel in which the mesh-type screen is positioned radially within the barrel;

Figure 24 is a further variation of the barrel of the

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present invention in which the holes of the barrel are integrated with a mesh-type screen within the holes;

Figures 25(a) and 25(b) are side views of an embodiment of the blow dryer of the present invention illustrating a mechanism for actuating the deflector mechanism;

Figure 26 is a further view of the barrel of the first embodiment;

Figure 27 is a side view illustrating a further variation of the barrel; and

Figure 28 is a front view of the barrel based on Figures 19 and 20.

Best Mode for Carrying Out the Invention

Referring now to the drawings, wherein like reference numerals designate identical or corresponding parts throughout the several views, and more particularly to Figures 1 and 5 thereof, Figure 1 is a first view of the blow dryer assembly of the present invention while Figure 5 is a perspective view. In Figures 1 and 5, the blow dryer includes a body 1 having a barrel 3. The barrel 3 can include an inner cylinder 4 and an outer cylinder 5 concentric with the inner cylinder 4. The outer cylinder 5 is slidably mounted on the inner cylinder 4. Each of the inner and outer cylinders (4, 5) includes a plurality of holes (6, 7) thereon (holes 6 on inner cylinder 4 and holes 7 on outer cylinder 5).

As further illustrated in Figures 1 and 6, the blow dryer assembly can also include a cap 8 which covers a pivotable flap mechanism 16. The cap 8 and pivotable flap mechanism 16 are positioned at the barrel opening 8a. The cap 8 in Figure 6 shows a cut-out opening, however, it is recognized that the cap 8 can completely cover all the moving mechanisms including the pivotable flap mechanism 16 at the front of the barrel. Applicant notes, however, that the present invention can be used without the cap 8 and the use of the cap 8 depends on

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design considerations.

Figures 1, 5 and 6 illustrate a first position of the outer cylinder 5 with respect to inner cylinder 4 in which the holes 7 on the outer cylinder 5 are not aligned with the holes 6 of the inner cylinder 4 and the pivotable flap mechanism 16 is in an opened position. Therefore, any air flow through the barrel 3 will flow out of the barrel opening 8a. The non-aligned holes 6 and 7 of the inner and outer cylinders 4, 5 will block any air flow through the surface of the barrel 3.

In the position illustrated in Figures 3 and 7 the inner and outer cylinders 4, 5 are aligned so as to align the respective holes 6, 7 of the inner and outer cylinders 4, 5. In the position illustrated in Figures 3 and 7, the flap mechanism 16 is positioned as illustrated in Figures 4 and 7. That is, the flap mechanism 16 is positioned so as to substantially cover the barrel opening 8a as illustrated in Figures 4 and 7.

It is noted that the movement of the inner and outer cylinders 4, 5 with respect to each other is coordinated with the movement of the flap mechanism 16 so as to achieve the positioning of the flap mechanism 16 as noted above. In this position (i.e., Figure 7), the flap mechanism 16 will deflect most of the air flow so as to direct air flow to the aligned holes 6 and 7 of the inner and outer cylinders 4, 5. Thus, air will be discharged through the surface of the barrel 3. Therefore, by actuation of an actuator 12, a user can gradually, controllably or continuously cause the flap mechanism 16 to move from an open position to a substantially closed position illustrated in, for example, Figure 7. As a further option, by actuation of the actuator 12, the user can gradually, controllably or continuously cause the flap mechanism 16 to move from the open position, to one or a plurality of intermediate deflecting positions (an example of an intermediate deflecting position is shown in Figures 26 and

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28) which permit a desired partial closing of the barrel opening 8a, to the final substantially closed position illustrated in, for example, Figure 7.

In coordination with the moving of the actuator the outer cylinder 5 can move in the direction A to cause the holes 6, 7 of the inner and outer cylinders 4, 5 to go from the fully non-aligned position of Figure 5, to a final position in which the holes 6, 7 become fully aligned with each other as illustrated in, for example, Figure 7. As a further option, between the fully non-aligned position (Figure 5) and the fully aligned position (Figure 7), in coordination with the movement of the actuator, the outer cylinder 5 can be moved to one or a plurality of intermediate positions in which the holes 6, 7 are partially misaligned (see Figure 26).

The actuator 12 can be continuously movable so as to be controllable by the user, or one or a plurality of stops for the actuator which correspond(s) to the above noted positions can be provided.

Also, Figure 26 shows the upper flap 16' moving in a counter clockwise direction and the lower flap 16'' moving in a clockwise direction. It is noted that the rotational movement of the flaps is not limited to the disclosed movements. It is recognized that based on the position of the flap mechanism 16 within barrel 3, the flaps can move either clockwise or counter-clockwise to achieve the desired opening and closing of the barrel opening. The same applies to Figure 28 which shows an example of an intermediate position of the deflector 109. It is therefore recognized that the direction of rotation of the deflector is based on design considerations.

As a further embodiment, Applicant notes that actuation of the actuator 12 can first cause a movement of one of the outer or inner cylinders 5, 4, and thereafter a delayed movement of the flap mechanism 16 to the substantially closed

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position. This approach will permit some diffused air to escape through the barrel opening.

An example of a mechanism for achieving the above-noted movement of the inner and outer cylinders 4, 5 and the flap mechanism 16 will now be described. As illustrated in Figures 5-8, as well as Figures 9(b) and 11(a)-11(c), the pivotable flap mechanism 16 includes first and second flaps 16', 16'' having mounting axles 16b and mounting pins 16c extending therefrom. The mounting pins 16c are mounted in an offset manner on an oval activator 16a as illustrated in Figure 8. The present invention can also utilize washers 16d (Figure (9) and 11(a) - 11(c)) at the mounting pins 16c to permit a smooth operation. The pivotable flap mechanism 16 with the mounting pins 16c are mounted within the barrel 3, substantially within the barrel 3, or at the barrel opening 8(a) as follows: the mounting axles 16b and pins 16c are mounted so as to be inserted into elongated slots 17 on the inner cylinder 4 and elongated slot 11 on the outer cylinder 5 (see Figure 6, Figure 9(a) and Figure 10). The slot 11 on the outer cylinder 5 is positioned on a protruding portion 5a of the outer cylinder 5. Thus, a movement of the outer cylinder 5 in the direction of the arrow A (Figures 1 and 7) will cause a movement of the pivotable flap mechanism 16 from at least the position illustrated in Figure 5 in which the barrel opening 8a is opened, to a position illustrated in Figure 7 in which the barrel opening 8a is substantially closed. This is due to the fact that the movement of the outer cylinder 5 in the direction A will cause the pins 16c of the pivotable flap mechanism 16 to rotate with the oval actuator 16a, which will thereby cause the pivotable flap mechanism 16 to rotate to the substantially closed position.

The outer cylinder 5 can include the actuator such as, for example, the trigger 12 which is utilized to cause the sliding movement of the outer cylinder 5 with respect to the

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inner cylinder 4. The actuator or trigger 12 includes a spring 13 positioned in a slot 15 in the outer cylinder 5 which is guided by a pin 14 (Figures 1, 3, 10). The spring 13 urges the outer cylinder 5 in a direction opposite to direction A. Actuation of the actuator, such as, for example, pulling the trigger 12 in the direction A will cause the outer cylinder 5 to move in direction A which thereby causes the movement of the pivotable flap mechanism 16 from at least the position illustrated in Figure 5 to the substantially closed position illustrated in Figure 7. Figures 1, 3 and 10 show a single spring 13 positioned on a lower portion of the barrel assembly 3. It is noted, however, that the barrel assembly can also include two springs 13 positioned on diametrically opposed portions of the barrel assembly 3 to add stability to movement of the cylinders (4, 5).

At the same time or approximately at the same time, movement of the outer cylinder 5 in the direction A will also cause the holes 6, 7 of the inner and outer cylinders 4, 5 to become aligned with each other as illustrated in Figure 7.

Therefore, in a first position (first mode) illustrated in Figures 1 and 5, the pivotable flap mechanism 16 is in the position illustrated in Figure 5 to permit airflow through the barrel opening 8a and the holes on the inner and outer cylinders 4, 5 are not aligned (Figures 1 and 5) so as to block airflow through the surface of the barrel 3. This permits the user to use the blow dryer in a normal manner.

When the hair dresser desires to utilize the blow dryer for horizontal lifting/drying, styling, as a hot roller, as a diffuser, etc., the hair dresser actuates the actuator, for example, pulls the trigger 12 in the direction A to position the outer cylinder 5 with respect to inner cylinder 4 in the manner illustrated in Figures 3 and 7 (second or final mode). This will cause the holes 6, 7 on the inner and outer cylinders 4, 5 to become aligned, and will cause the flaps

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16', 16'' of the flap mechanism 16 to gradually pivot to the position illustrated in Figure 7 to substantially close the barrel opening 8a. In this position, the flaps 16', 16'' will deflect air towards the aligned holes 6, 7 exposed on the barrel, and some diffused air will flow through the barrel opening 8a. In a further feature of the present invention, the user can move the actuator 12 to intermediate positions which causes the flap mechanism 16 to controllably move through intermediate deflecting positions (one is shown in Figure 26), and also causes the movement of one of the inner or outer cylinders 4, 5 to intermediate positions in which the holes 6, 7 are partially aligned (Figure 26) so that a partial deflection will cause a desired air flow through the partially aligned holes 6, 7. Therefore, the use of intermediate positions of the actuator 12 can permit the user to finely control the amount of deflection by the flap mechanism 16 as well as the aligning positioning of the holes 6, 7.

It is recognized that the present invention is not limited to described arrangement for movement of the flap mechanism and cylinders, and any device such as, for example, gears which can achieve the desired movements noted above can be utilized.

The amount of movement of the outer cylinder 5 with respect to the inner cylinder 4 can be determined by providing for an elongated slot 10 on the outer cylinder 5 and a pin 9 on the inner cylinder 4 as illustrated in Figures 1, 3, 9(a) and 10. When the barrel opening 8a is substantially closed by the flaps 16', 16'' as illustrated in Figure 7, the barrel opening 8a is not sealed tightly by the flaps 16', 16'' so as to permit some air to be diffused from the barrel opening.

The present invention can also provide for the cap 8 illustrated in Figures 6 and 9(c) which can be utilized to cover the flap mechanism 16. The cap 8 shows a cut-away portion to illustrate the side of the flap mechanism 16. It

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is recognized that the cap 8 can completely surround the circumferential front of the barrel. The cap 8 also can include stops 80 (Figure 9(c)) such that the cap 8 fits over the outer cylinder 5 and includes cooperating holes which permit the insertion of the axles 16b and pins 16c of the flap mechanism 16.

The blow dryer arrangement of the present invention can also be utilized on a blow dryer 1a having a belly type curve 60 in the motor housing as illustrated in Figure 12 or any other type of body. In the case of a belly type body, the actuator or trigger 12a would have a curve which matches the curve of the housing. This embodiment would operate in the same manner as the embodiment discussed above.

Additionally, the actuator or trigger 12 of the present invention can be operationally associated with a control mechanism 50 (Figure 13) which coordinates the actuation of the trigger 12 with temperature settings of a blow dryer. For example, a conventional blow dryer can include low, medium and high settings. The trigger mechanism 12 of the present invention can be operationally associated with a control mechanism 50 such as illustrated in Figure 13 to lower a high temperature setting of a blow dryer to a temperature setting which is lower than the high temperature setting when the trigger 12 is actuated.

As illustrated in Figure 13, the positioning of the actuator or trigger 12 in the first position (Figures 1 and 5) in which the holes 6, 7 are not aligned and the air flow is through the front opening 8a of the barrel can permit the hair dryer setting to be set at the high temperature setting (R_1) of a blow dryer. Movement of the actuator or trigger 12 to the second or final position (Figures 3 and 7) in which the holes 6, 7 are aligned and the front opening 8a is substantially closed, can cause the dryer setting to be positioned in a temperature setting (R_2) which is lower than the high

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temperature setting of a blow dryer. The explanation given above has been given for the situation when the blow dryer is in the high temperature setting when the actuator or trigger is fully actuated. It is recognized that the control mechanism 50 can be designed so as to not lower the temperature if upon the actuation of the trigger 12, the blow dryer is set at the medium or low temperature settings. However, the lowering of the temperature setting of the blow dryer when the trigger 12 is actuated, is based on design considerations and the desired temperature which would be preferable when the actuator or trigger 12 is actuated. It is further recognized that the blow dryer could include an additional actuator or trigger mechanism which is not associated with the actuation of the actuator or trigger 12 so as to permit the user to selectively lower the temperature from a high temperature to a temperature lower than the high temperature.

Figure 14 shows a further embodiment of the outer cylinder 5 of the barrel 3 in which the outer cylinder 5 includes rings 200 that are spaced along the length of the outer cylinder 5, are affixed to the periphery of the outer cylinder 5 and extend around the circumference of the outer cylinder 5. The rings 200 serve to guide hair when the barrel assembly is positioned against hair. The rings 200 are aligned so as to not obstruct air flow from the holes (6, 7). These rings 200 can be utilized on any of the disclosed embodiments.

Figure 15 shows a further embodiment of the barrel 3 in which the outer cylinder 5 of the barrel 3 can include projections such as bristles or teeth 300 spaced between the holes 7 of the barrel as illustrated in the figure, so as to extend in a row between the holes 7. The bristles or teeth 300 can extend around the periphery of the outer cylinder 5 of the barrel 3 and can be utilized to guide hair and for further

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styling enhancement. These projections 300 like the rings 200 can be utilized on any of the disclosed embodiments.

Figure 1 shows the actuator being operationally connected to the outer cylinder of the barrel such that the outer cylinder is slidable with respect to the inner cylinder. However, the invention is not limited to this arrangement and Applicant notes that as a further embodiment, the inner cylinder 4 can slidably move within the outer cylinder 5 (Fig. 16). In this embodiment, the outer cylinder 5 would be fixed or integral to the body 1. With this arrangement, the inner cylinder 4 can be operationally connected to the actuator 12 so as to be slidable with respect to the outer cylinder 5. With respect to the remaining features of the invention, this arrangement would work in a similar manner as described above with respect to the first embodiment.

Figure 17 illustrates a further embodiment of the blow dryer of the present invention. In Figure 17, the body 100 can be similar to the body 1 illustrated in the previous embodiments. The embodiment of Figure 17 includes a barrel 103 which is fixed or integral to the body 100 and has a plurality of holes 105. A deflector 109 can be positioned within the barrel 103 or substantially within the barrel 103. As an example, the deflector 109 can be positioned at an opening 107 of the barrel 103, as illustrated in Figures 19 and 20. The deflector 109 can be arranged as illustrated in the previous embodiments or can be a vertically arranged deflector as illustrated in Figures 19 and 20. Applicant notes, however, that the orientation of the deflector 109 is not limited to the horizontal or vertical arrangements shown, and can be oriented in any manner within the barrel 103.

The deflector 109 of Figures 19 and 20 includes flaps 109a, 109b, and a plate member 111 and spring arrangement 115 (Figures 25(a), 25(b)) which maintains the deflector 109 in the open position illustrated in Figures 19 and 25(a).

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Attached to the plate member 111 is a connecting member 117 which extends along the barrel 103 to an actuator 119 on the barrel 103 or on the body 100. Although the figures show the connecting member 117 outside the barrel 103, as shown in Figure 27, it is recognized that the connecting member 117 can be contained within the barrel 103.

Actuation of the actuator 119 in direction B causes the plate member 111 to move in direction C (Figure 25(b)) to cause a gradual pivoting or rotation of the flaps 109a, 109b about pivot point 800. This causes a movement of the deflector mechanism 109 from at least the open position illustrated in Figures 19 and 25(a) to the substantially closed position of Figures 20 and 25(b). As previously explained, it is further recognized that the actuator 119 can be adapted so as to move the deflector 109 to different intermediate deflecting positions (one is shown in Figure 28) between the open and substantially closed position depending on the desired air flow and design considerations.

Although the plate member 111 and spring arrangement 115 is shown in an expanded portion 400 of the barrel 103, this configuration is shown for illustrative purposes and clarity. It is recognized that the plate member 111, the spring 115 and the connecting member 117 can be arranged or contained within the barrel 103 so as to provide for a continuous and straight barrel as illustrated in Figures 1, 16 and 28.

With the embodiment illustrated in Figure 17, during a normal blow drying operation, the deflector 109 is in the open position (Fig. 19) and air travels through the opening 107 of the barrel 103. The provision of the holes 105 along the barrel 103 permit some amount of air to flow through the holes 105, but not enough to disrupt the conventional or normal blow drying operation.

When the hair dresser desires to utilize the blow dryer for horizontal lifting/drying, styling, as a hot roller, as a

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diffuser, etc., the hair dresser actuates the actuator 119 in the direction B to gradually and substantially close the barrel opening 107 with the deflector 109. The deflector 109 will therefore deflect and ultimately force most of the air flowing through the barrel 103 out of the holes 105 on the barrel 103 so that the blow dryer can be utilized for horizontal lifting/drying, etc. As the deflector 109 is being actuated to the substantially closed position, depending on the preference of the user it can further variably deflect air in intermediate deflecting positions between the open position and the substantially closed position of the deflector. In this embodiment, the actuator 119 can be modified to provide for several stop positions which correspond to the intermediate positions of the deflector 109. However, the actuator 119 can also be freely and continuously movable to permit the user to control the amount of deflection.

Going back to Figure 17, during the normal operation of the blow dryer in which the deflector 109 is in the open position (Fig. 19), if the user desires that less air escape through the holes 105 on the barrel 103, as a further embodiment of the invention, the barrel 103 can include a mesh-type screen 121 positioned cylindrically around the barrel 103 (Fig. 18). The mesh-type screen 121 serves to block or obstruct some air traveling through the holes 105 in the blow drying mode of Figure 19. However, in the variably deflecting positions as well as the deflecting position of Fig. 20 in which the deflector 109 substantially closes the barrel opening 107, enough air will be forced through the holes 105 so as to permit horizontal lifting/drying, etc. The embodiment of the barrel 103 with the mesh-type screen 121 illustrated in Figure 18 shows the mesh around the barrel 103. However, as a further option, the mesh-type screen 121 can be positioned cylindrically within the barrel 103 as illustrated in Figure 23 or the mesh-type screen 121 can be integrated

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into the holes as illustrated in Figure 24.

As a further option, the barrel can include a foam-type covering 123 over the mesh-type screen 121 or over the barrel 103 (Fig. 21) so as to further block or obstruct some air traveling through the holes 105 during the normal or conventional blow drying operation of Figure 19. However, the foam-type covering 123 is porous to permit deflected air forced through the holes 105 when the deflector 109 is in intermediate deflecting positions between the open and substantially closed position or in the substantially closed position (Fig. 20) to escape from the barrel surface, so that the user can utilize the blow dryer for horizontal lifting/drying, etc.

The mesh-type screen 121 can be made of any type of material which is capable of withstanding the temperatures which are prevalent in blow drying operations and is bendable into a cylindrical configuration to match the barrel 103. For example, the mesh-type screen 121 can be a frame grid of wire netting. The foam-type arrangement 123 can also be made of any material which is able to withstand the temperatures of a blow drying operation and can be an elastic type member which can be easily slipped on or off of the barrel 103. The material of the mesh and foam arrangements is such that in the deflecting positions of the blow dryer (Fig. 20), air forced out through the holes 105 can pass through the materials for the use of the blow dryer for horizontal lifting/drying, etc.

As a further feature of the present invention the holes 105 on the barrel 103 can be slanted (Fig. 22) so as to provide for a variation in the direction of air in the deflecting position (Fig. 20), and also provide for a desired obstruction of air when the blow dryer is used in a normal operation (Fig. 19) in which the deflector 109 is open. Although Figure 22 illustrates the holes 105 as slanted in one direction, it is recognized that the holes 105 can be slanted

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in various directions depending on design considerations.

Also, although the illustrated blow dryer of Fig. 17 shows a belly-type body, the actuator 119 can be positioned anywhere with respect to the blow dryer assembly depending on the type of barrel and blow dryer body utilized. The blow dryer of the above-noted embodiments can also use a control mechanism 50 as illustrated in Figure 13. Additionally, the barrel of the blow dryer of these embodiments can include the modifications with respect to the rings 200 and the bristles or teeth 300 illustrated in Figures 14 and 15.

Thus, the blow dryer of the present invention maximizes the blow dryer's capability by incorporating multiple functions in one tool. It thereby provides a hair dresser or stylist with a wide range of airflow use by utilizing a single tool that is operated by one hand. That is, by simply actuating an actuator such as pulling on the trigger 12, the hair dresser can vary the air flow through the barrel. Any desired attachments can be fitted over the barrel of the present invention just as with current blow dryers, and used whether or not the actuator is operated. The blow dryer of the present invention can also be used as a large hot roller, and it has some diffusing capabilities from the barrel opening when the actuator is operated and also from the entire barrel surface if the blow dryer motor speed is set lower.

Obviously, numerous modifications and variations of the present invention are possible in light of the above teachings. It is therefore to be understood that within the scope of the appended claims, the invention may be practiced otherwise than as specifically described herein.

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Claims

1. A blow dryer comprising:

a body including a barrel having a barrel opening, said barrel comprising a plurality of holes;

a deflector positioned within said barrel, said deflector being movable between at least an open position in which said barrel opening is opened, and a deflecting position in which said barrel opening is substantially closed; and

an actuator operationally connected to said deflector for moving said deflector between at least said open position and said deflecting position.

2. A blow dryer according to claim 1, further comprising a mesh-type screen surrounding said barrel so as to partially obstruct an air flow through the plurality of holes.

3. A blow dryer according to claim 2, further comprising a removable foam-type material surrounding said mesh-type screen on said barrel so as to increase the obstruction of air flow through said plurality of holes.

4. A blow dryer according to claim 1, further comprising a removable foam-type material surrounding said barrel so as to partially obstruct an air flow through the plurality of holes.

5. A blow dryer according to claim 3, wherein said foam-type material is elastic.

6. A blow dryer according to claim 4, wherein said foam-type material is elastic.

7. A blow dryer according to claim 1, further comprising

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a mesh-type screen positioned cylindrically inside of said barrel so as to partially obstruct an air flow through said plurality of holes.

8. A blow dryer according to claim 1, further comprising a mesh-type screen integrated into each said plurality of holes so as to partially obstruct an air flow through said plurality of holes.

9. A blow dryer according to claim 1, wherein said deflector comprises first and second flaps movably mounted at said barrel opening.

10. A blow dryer according to claim 1, wherein said actuator is movably mounted on said body.

11. A blow dryer according to claim 10, further comprising a spring member on said barrel for urging said deflector to at least the open position, and a connector member extending between said spring member and said actuator, wherein a movement of said actuator causes a movement of said connector member to urge the deflector against the spring member and move the deflector to at least the substantially closed position.

12. A blow dryer according to Claim 1, wherein said holes in said barrel are slanted.

13. A blow dryer comprising:

a body including a barrel having a barrel opening, said barrel comprising concentric inner and outer cylinders, each of said inner and outer cylinders having a plurality of holes; and

an actuator operationally connected to one of said inner

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or outer cylinders for moving said one of said inner or outer cylinders with respect to the other of said inner or outer cylinders between at least a first position in which said holes on said inner and outer cylinders are not aligned and a second position in which said holes on said inner and outer cylinders are aligned.

14. A blow dryer comprising:

a body including a barrel with a plurality of first holes and a barrel opening;

a cylinder movably mounted on said barrel and having a plurality of second holes; and

a deflector positioned within said barrel and movable between at least an open position in which said barrel opening is opened and a deflecting position in which said barrel opening is substantially closed.

15. A blow dryer comprising:

a body including a barrel having an opening, said barrel defining first and second concentric cylinders each having a plurality of holes;

a deflector positioned within said barrel, said deflector being movable between at least an open position in which the opening is opened, and a deflecting position in which the opening is substantially closed by the deflector; and

an actuator operationally connected to one of said first or second cylinders and operationally associated with said deflector for moving the deflector and said one of said first or second cylinders between at least a first position in which said holes on the first and second cylinders are not aligned and the deflector is in the open position, and a second position in which said holes on the first and second cylinders are aligned and the deflector is in the deflecting position.

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16. A blow dryer comprising:

a body including a barrel, said barrel comprising a plurality of holes around its circumference;

a deflector positioned substantially within said barrel, said deflector being movable between at least an open position in which said barrel opening is opened, and a deflecting position in which said barrel opening is substantially closed; and

an actuator operationally associated with said deflector for moving said deflector between at least said open position and said deflecting position.

17. A blow dryer comprising:

a body including a barrel, said barrel defining first and second concentric cylinders each having a plurality of holes;

a deflector positioned substantially within said barrel, said deflector being movable between at least an open position in which the opening is opened, and a fully deflecting position in which the opening is substantially closed by the deflector; and

an actuator operationally connected to one of said first or second cylinders and operationally associated with said deflector for moving the deflector and said one of said first or second cylinders between at least a first position in which said holes on the first and second cylinders are not aligned and the deflector is in the open position, and a second position in which said holes on the first and second cylinders are aligned and the deflector is in the deflecting position.

18. A blow dryer according to claim 14, wherein the cylinder includes projections which are spaced between the second holes.

19. A blow dryer according to claim 18, wherein said

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projections are bristles.

20. A blow dryer according to claim 18, wherein said projections are teeth.

21. A blow dryer comprising:

a body including a barrel, said barrel comprising a plurality of holes around its circumference;

a deflector positioned substantially within said barrel, said deflector being movable between an open position in which said barrel opening is opened, at least one intermediate deflecting position in which said opening is partially closed, and a fully deflecting position in which said barrel opening is substantially closed; and

an actuator operationally associated with said deflector for moving said deflector between said open position, said at least one intermediate deflecting position and said fully deflecting position.

22. A blow dryer comprising:

a body including a barrel, said barrel defining first and second concentric cylinders each having a plurality of holes;

a deflector positioned substantially within said barrel, said deflector being movable between at least an open position in which the opening is opened, at least one intermediate deflecting position in which said opening is partially closed by said deflector and a fully deflecting position in which the opening is substantially closed by the deflector; and

an actuator operationally connected to one of said first or second cylinders and operationally associated with said deflector for moving the deflector and said one of said first or second cylinders between at least a first position in which said holes on the first and second cylinders are not aligned and the deflector is in the open position, at least one

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intermediate second position in which said holes on said first and second cylinders are partially aligned and the deflector is in the intermediate deflecting position, and a third position in which said holes on the first and second cylinders are fully aligned and the deflector is in the fully deflecting position.

23. A hand held blow dryer comprising:

a body comprising a barrel having a barrel opening, said barrel comprising inner and outer cylinders each having a plurality of holes, said outer cylinder being slidably mounted on said inner cylinder;

pivotable deflecting means positioned at said barrel opening which is pivotable between an opened position in which said barrel opening is opened, and a deflecting position in which said barrel opening is substantially closed by the deflecting means; and

actuation means operationally connected to said outer cylinder and operationally associated with said deflecting means for moving said deflecting means and outer cylinder between a first position in which said holes on said inner and outer cylinders are not aligned and said pivotable deflecting means is in said open position, and a second position in which said holes on said inner and outer cylinders are aligned and said pivotable deflecting means is in said deflecting position.

24. A hand held blow dryer comprising:

a body comprising a barrel having a barrel opening for directing air towards hair to be styled, said barrel comprising an inner cylinder and an outer cylinder concentric to said inner cylinder and slidably mounted on said inner cylinder, an outer surface of each of said inner and outer cylinders comprising a plurality of holes;

pivotable flap means mounted at said barrel opening, said pivotable flap means being pivotable between a first flap

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position in which said barrel opening is opened, and a second flap position in which said barrel opening is substantially closed; and

actuation means operationally connected with said outer cylinder and operationally associated with said pivotable flap means for causing a sliding movement of said outer cylinder with respect to said inner cylinder and a pivoting of said pivotable flap means, wherein a movement of said actuation moans causes a movement of said outer cylinder and a pivoting of said pivotable flap means between a first position in which the holes on said inner cylinder are not aligned with the holes on the outer cylinder and said pivotable flap means is in said first flap position, and a second position in which the holes an the inner cylinder are aligned with the holes on the outer cylinder and the pivotable flap means is in said second flap position to substantially close said barrel opening.

25. A dryer according to Claim 24, wherein said inner cylinder comprises a protruding stop which cooperates with a slot in said outer cylinder which defines an amount of sliding movement of the outer cylinder with respect to said inner cylinder.

26. A dryer according to Claim 24, wherein said pivotable flap means comprise first and second flaps, each of said first and second flaps comprise oval activators with pins positioned therein, said pins extending through corresponding elongated slots in said inner and outer cylinders so as to pivotally mount the first and second flaps at said barrel opening, wherein movement of the outer cylinder from said first position to said second position pulls the pins of said first and second flaps along the elongated slot of the inner cylinder to cause a rotation of the pins and the oval activators and thereby cause a rotation of the first and second flaps to substantially close said barrel opening.

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27. A dryer according to Claim 24, wherein said actuation means is a trigger positioned on said outer cylinder, said trigger comprising at least one spring positioned in a slot on said outer cylinder, said spring urging said outer cylinder to said first position and said trigger permitting a sliding movement of said outer cylinder to said second position against an urging force of the spring.

28. A dryer according to Claim 24, further comprising means operationally connected to said actuation means for changing between a high temperature setting of said dryer and a temperature setting lower than the high temperature setting in response to a movement of said actuation means.

29. A dryer according to Claim 24, wherein said outer cylinder comprises rings which are spaced along a length of said outer cylinder and extend around a circumference of said outer cylinder for guiding hair, said rings being positioned so as to not obstruct air flow through said holes.

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Page 1261 of 1998

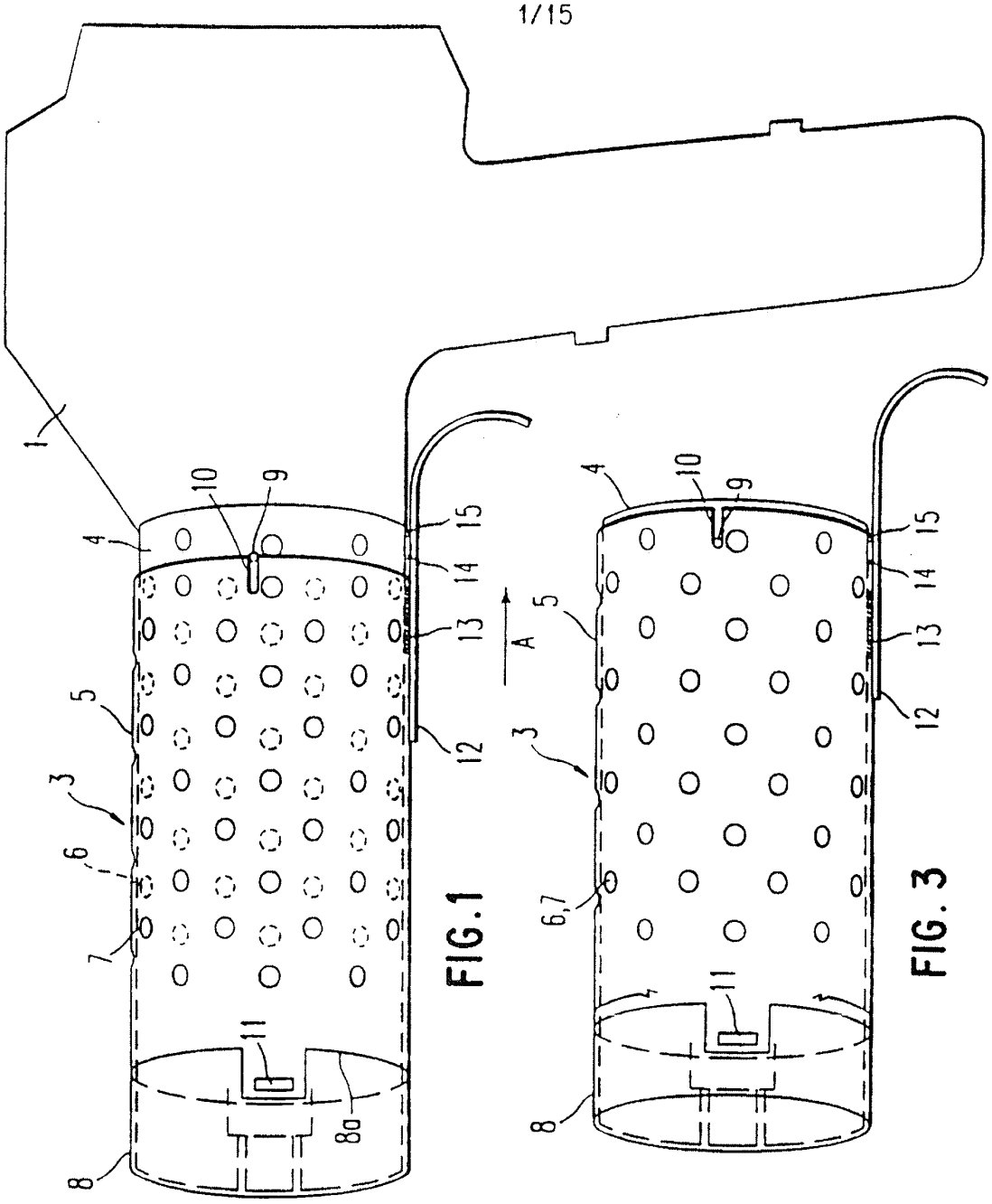


FIG. 1

FIG. 3

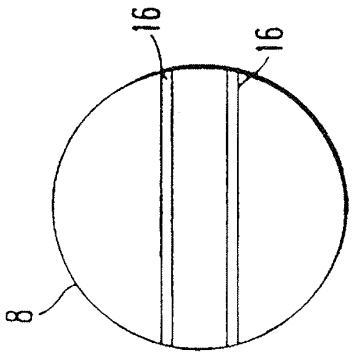


FIG. 2

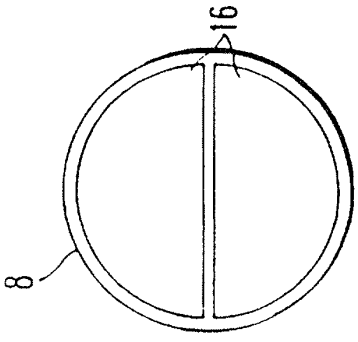


FIG. 4

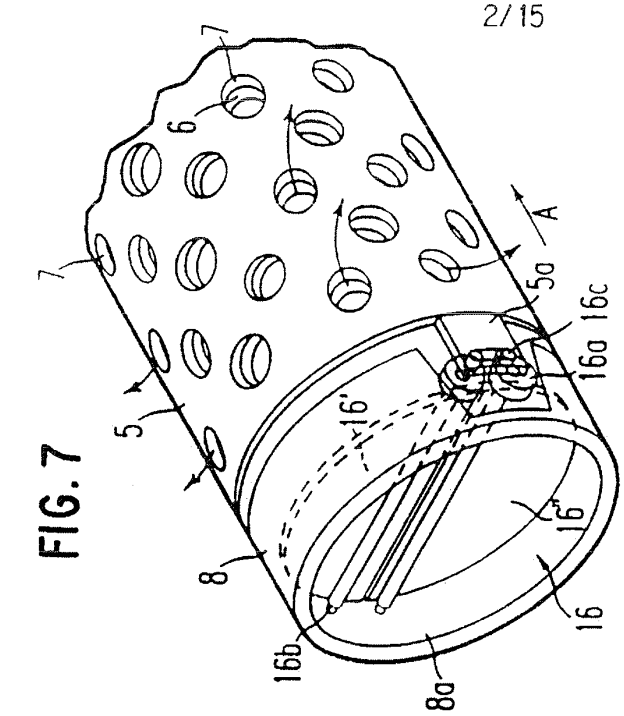


FIG. 7

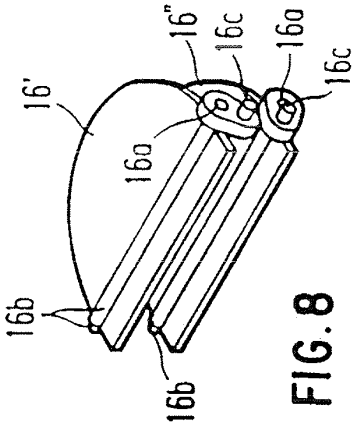


FIG. 8

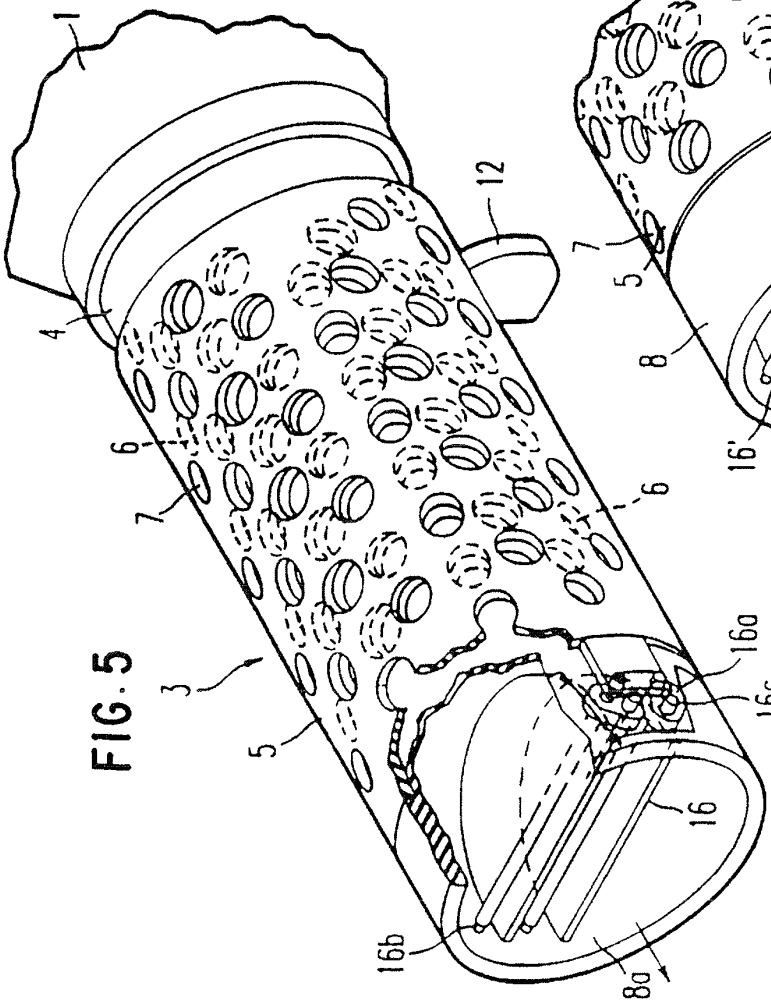


FIG. 5

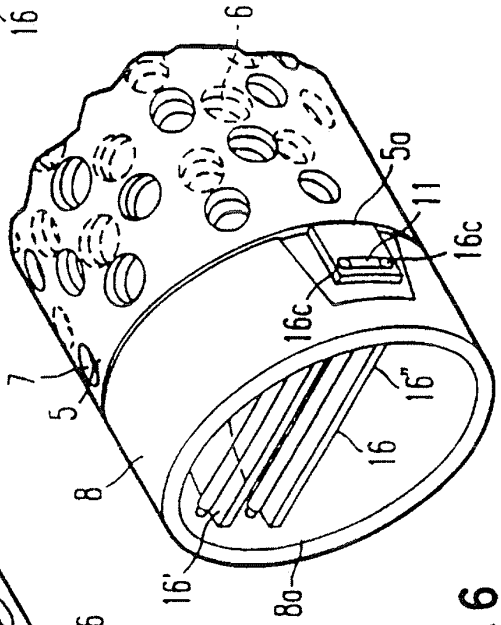


FIG. 6

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Page 1263 of 1998

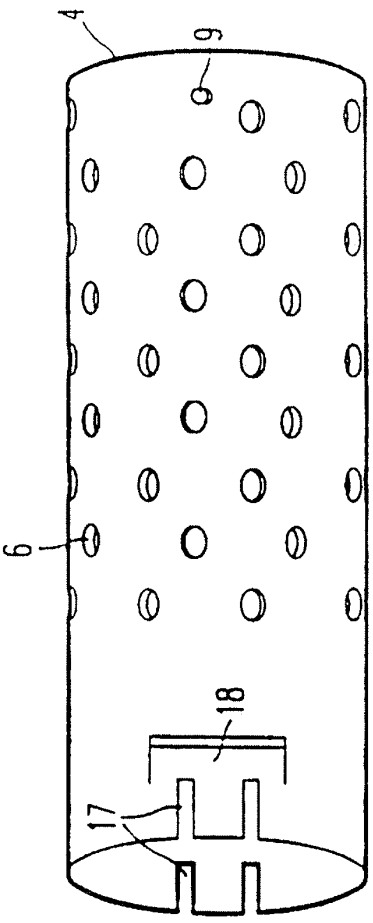


FIG. 9a

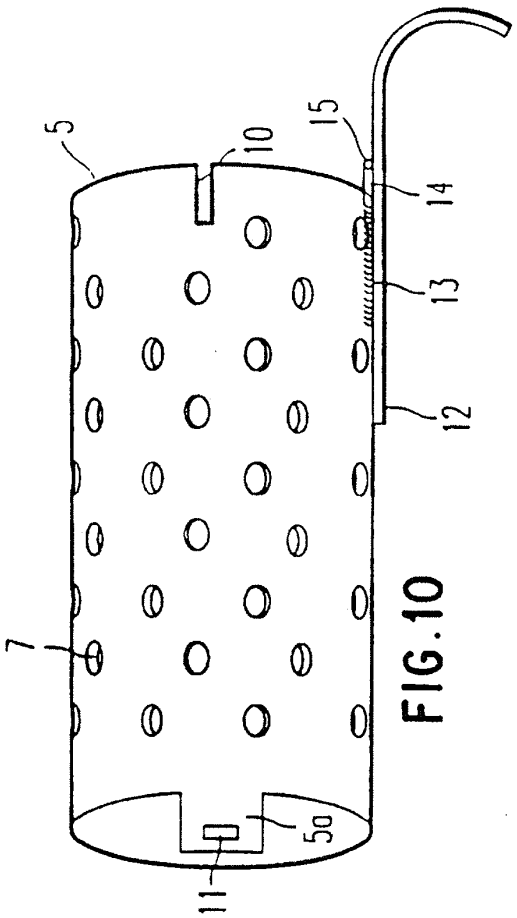


FIG. 10

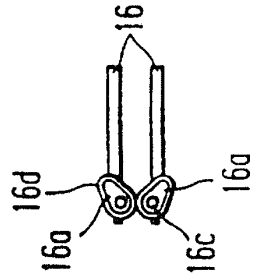


FIG. 9b

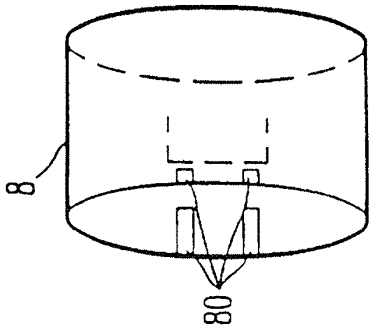


FIG. 9c

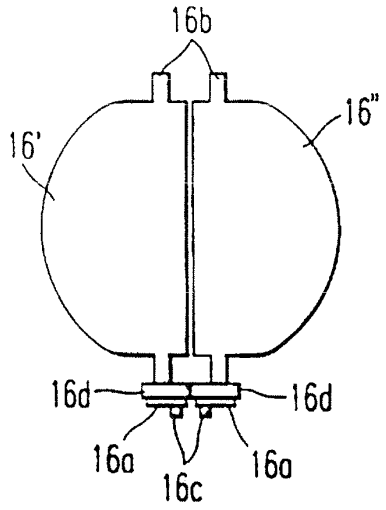


FIG.11a

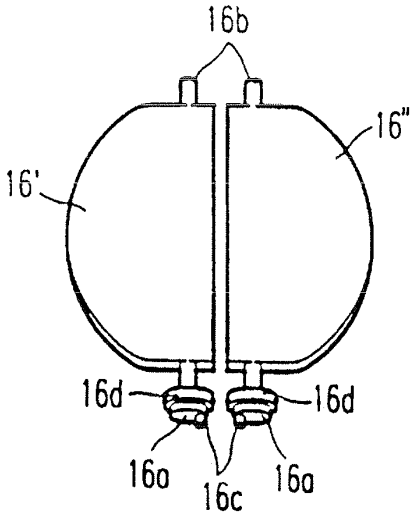


FIG.11b

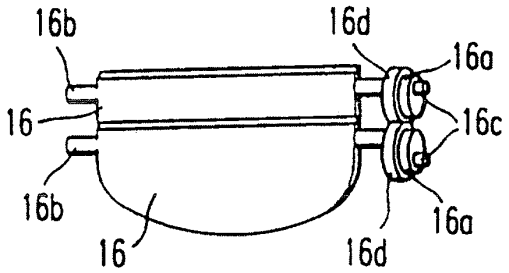


FIG. 11c

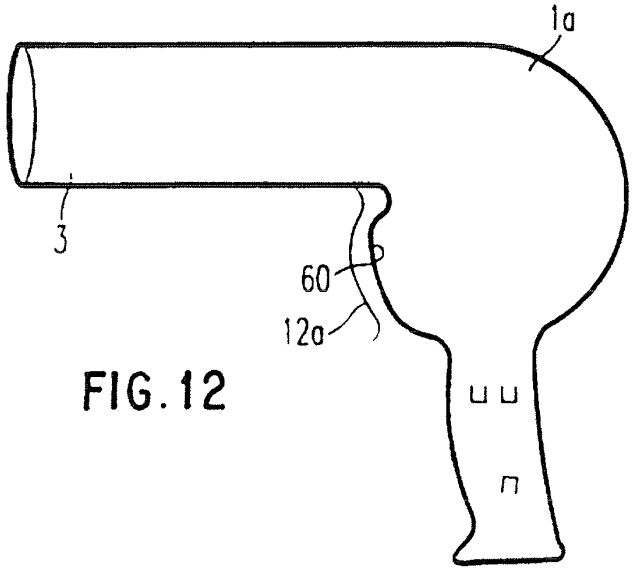


FIG.12

FIG.13

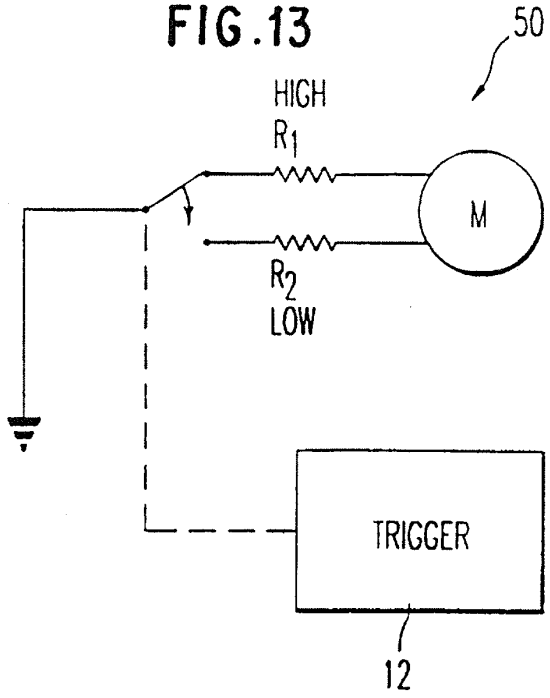
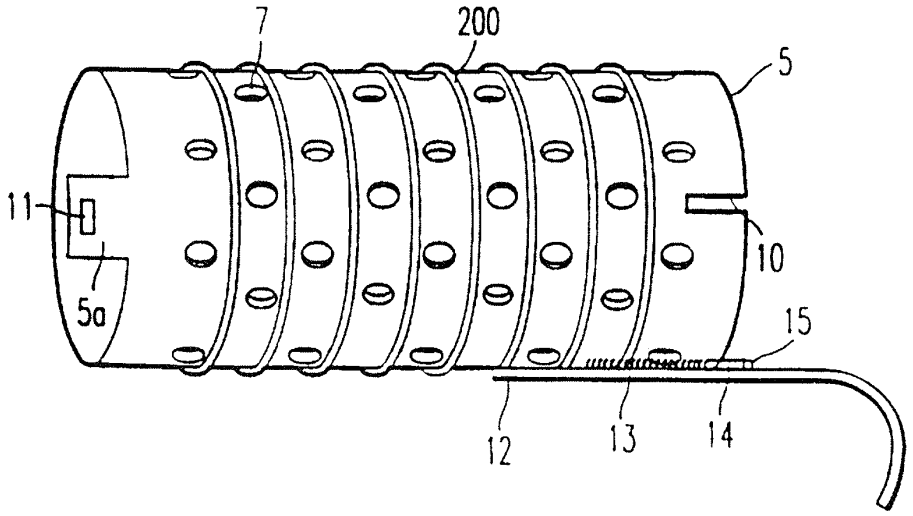


FIG.14



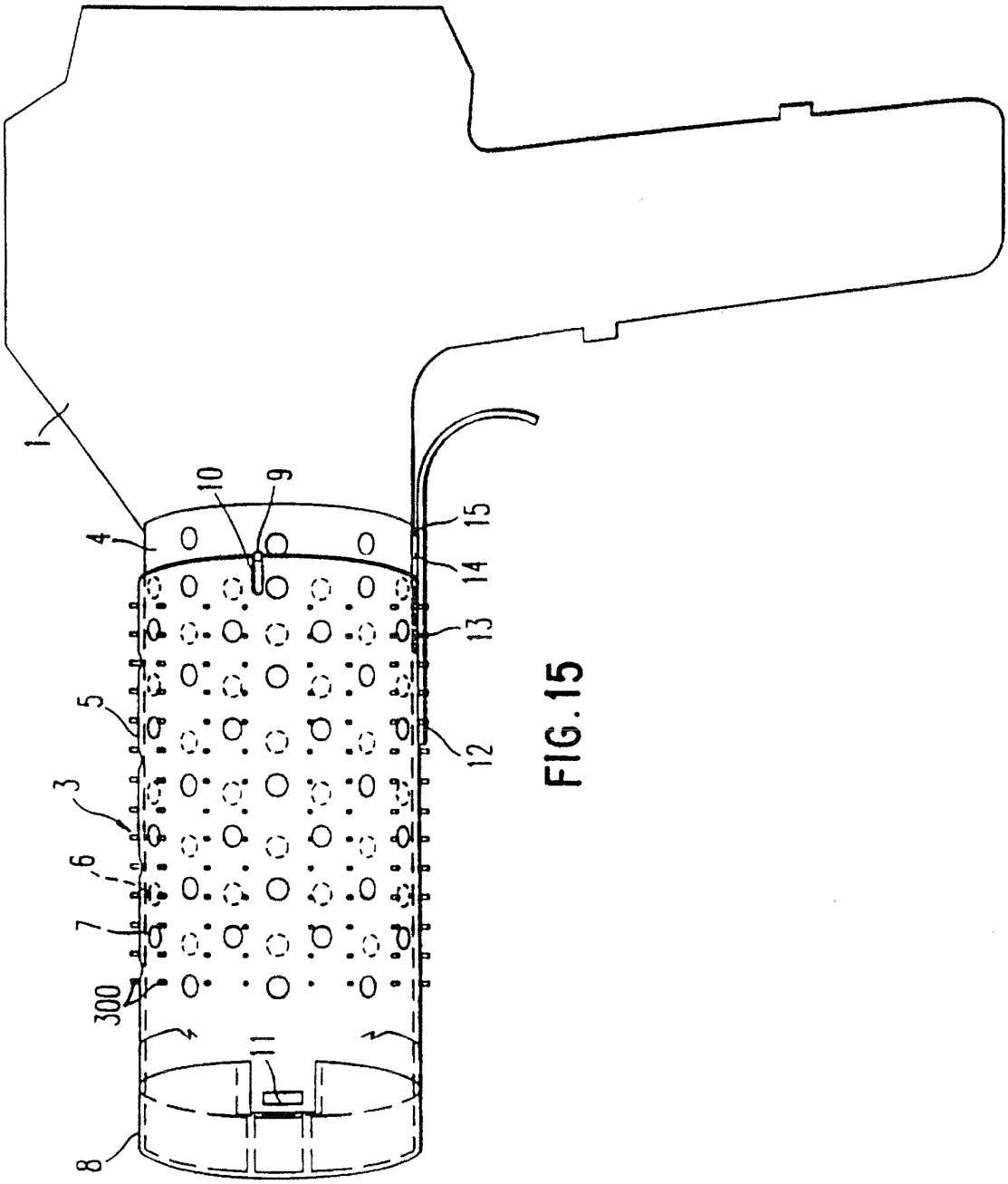


FIG. 15

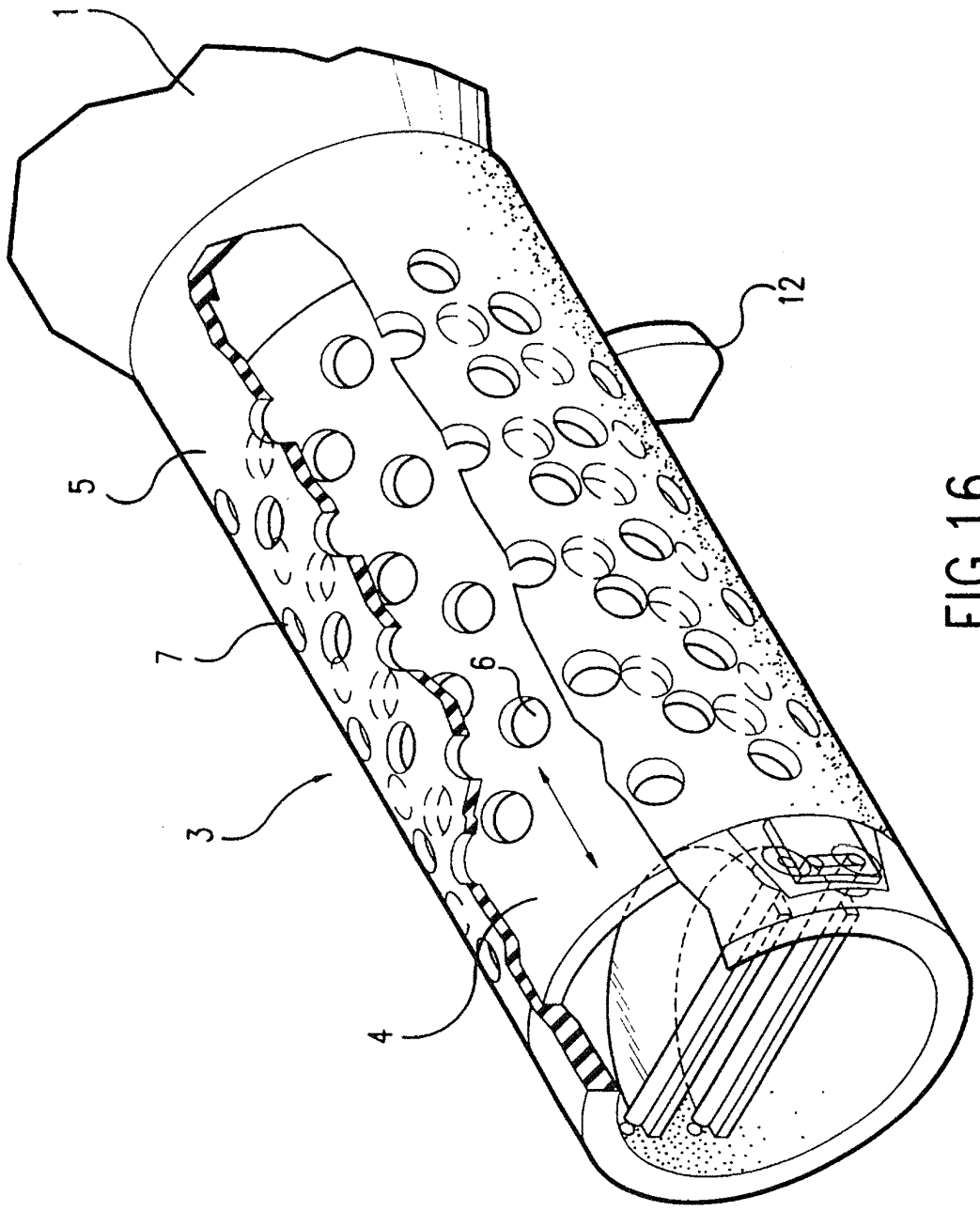


FIG.16

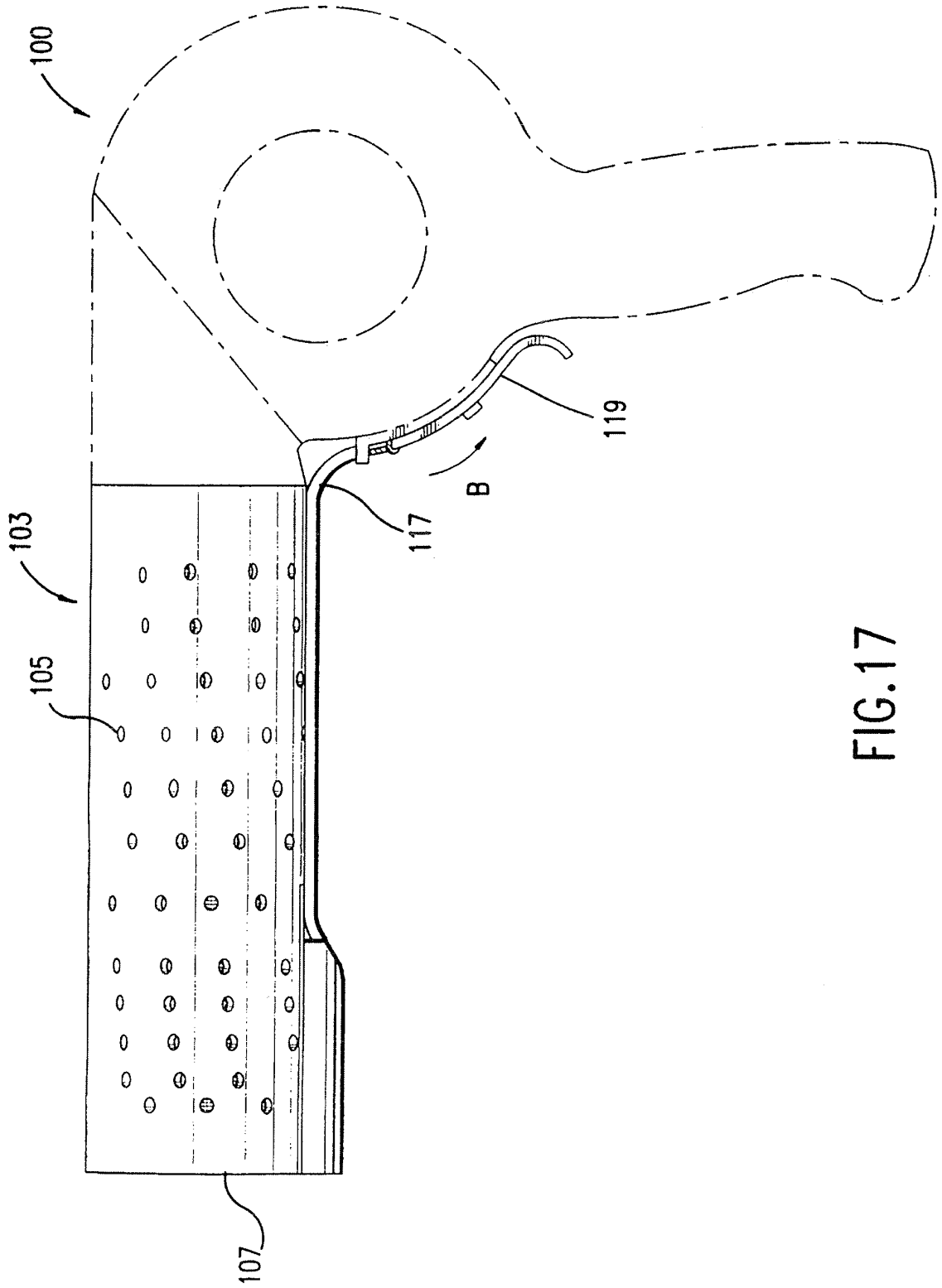


FIG. 17

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Page 1269 of 1998

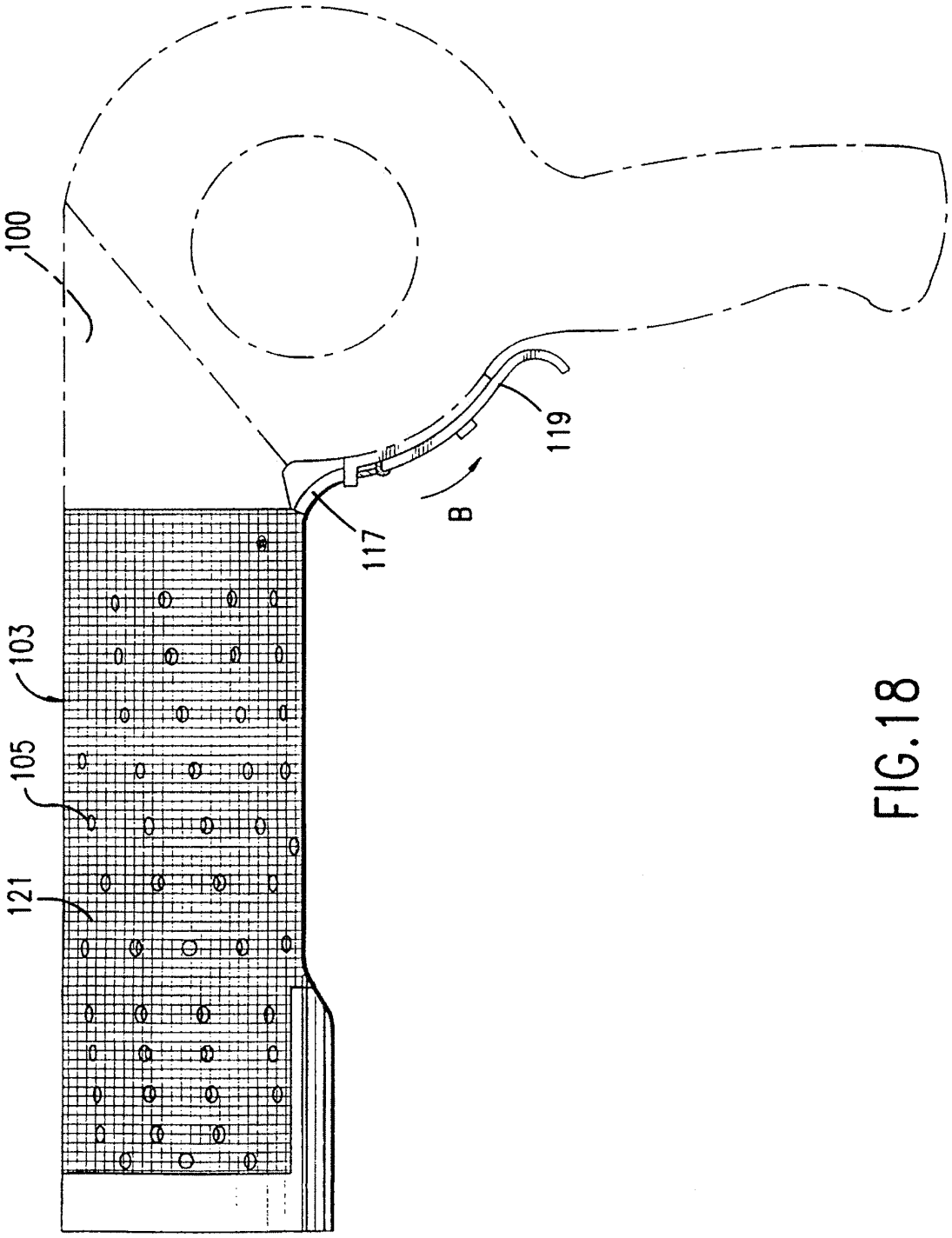


FIG.18

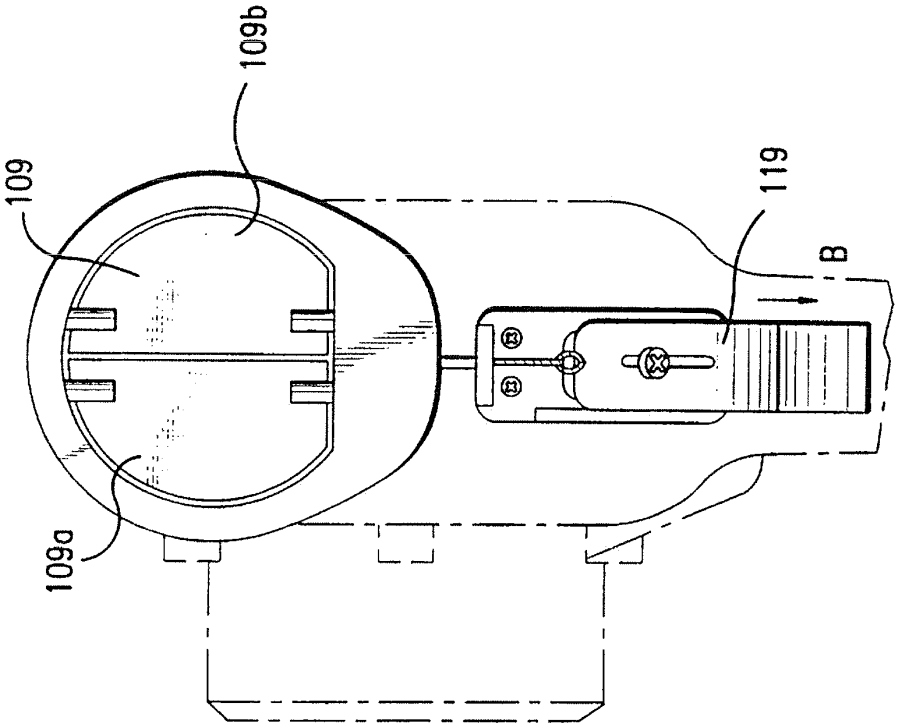


FIG.20

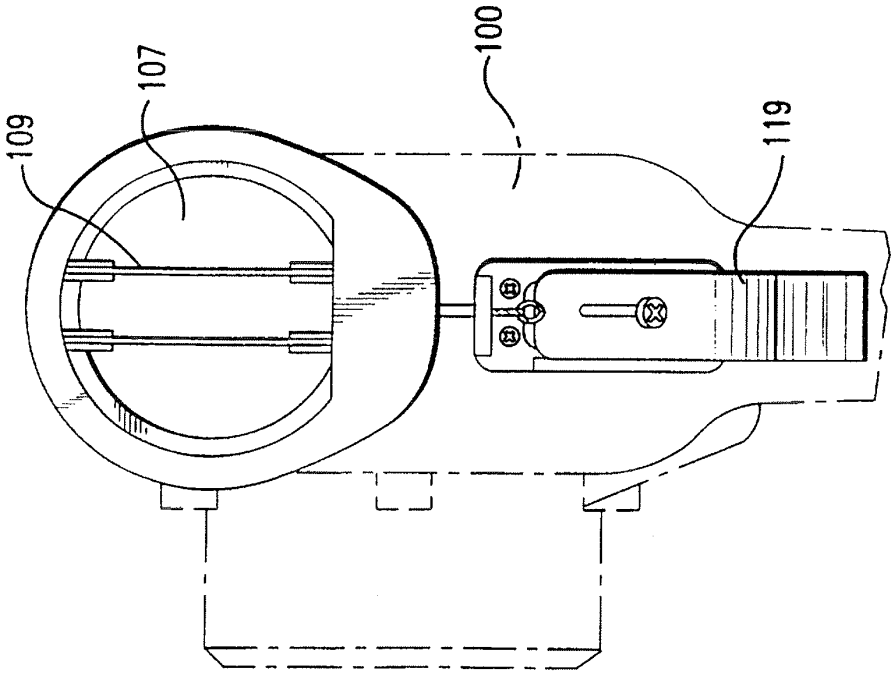


FIG.19

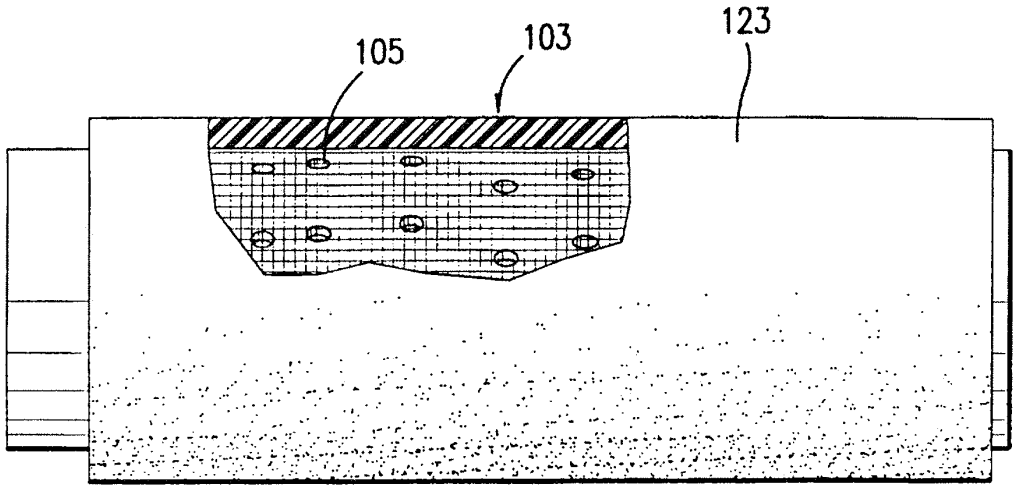


FIG.21

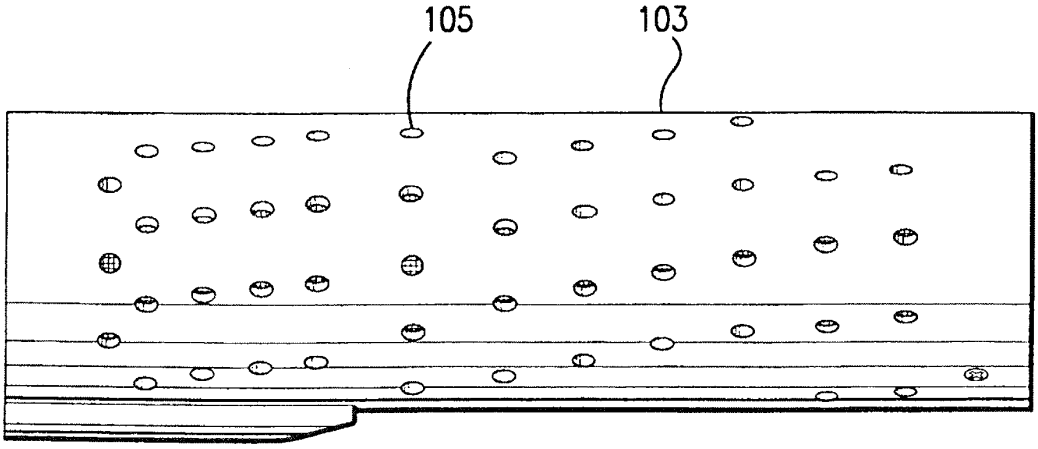


FIG.22

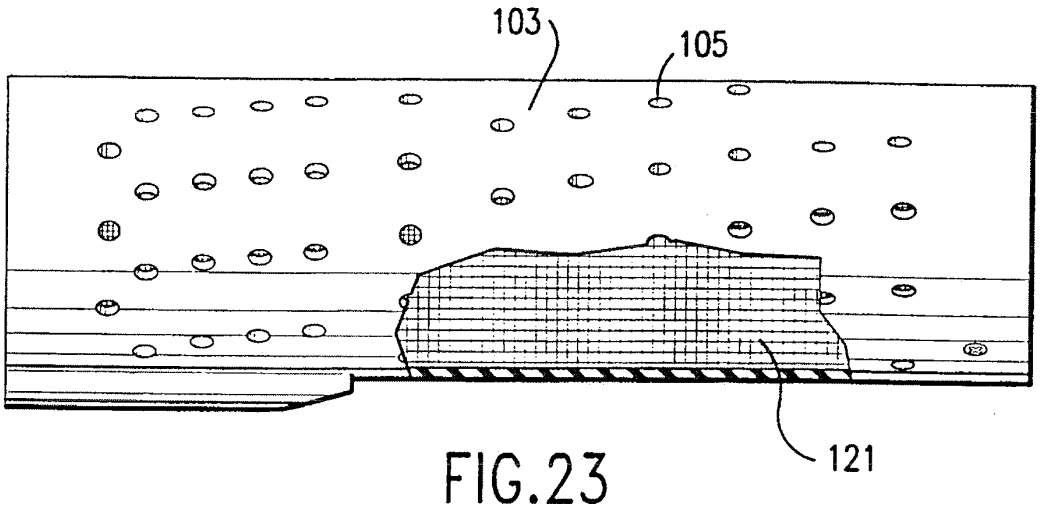


FIG.23

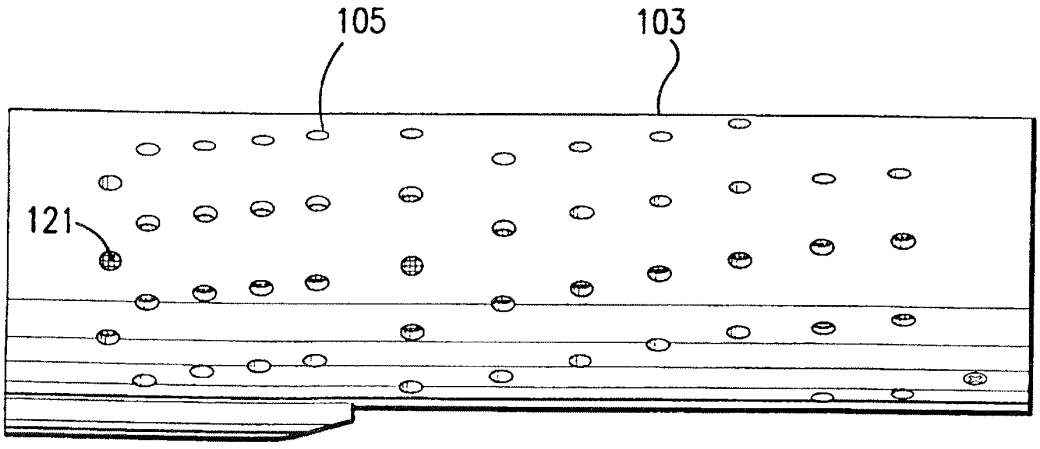


FIG.24

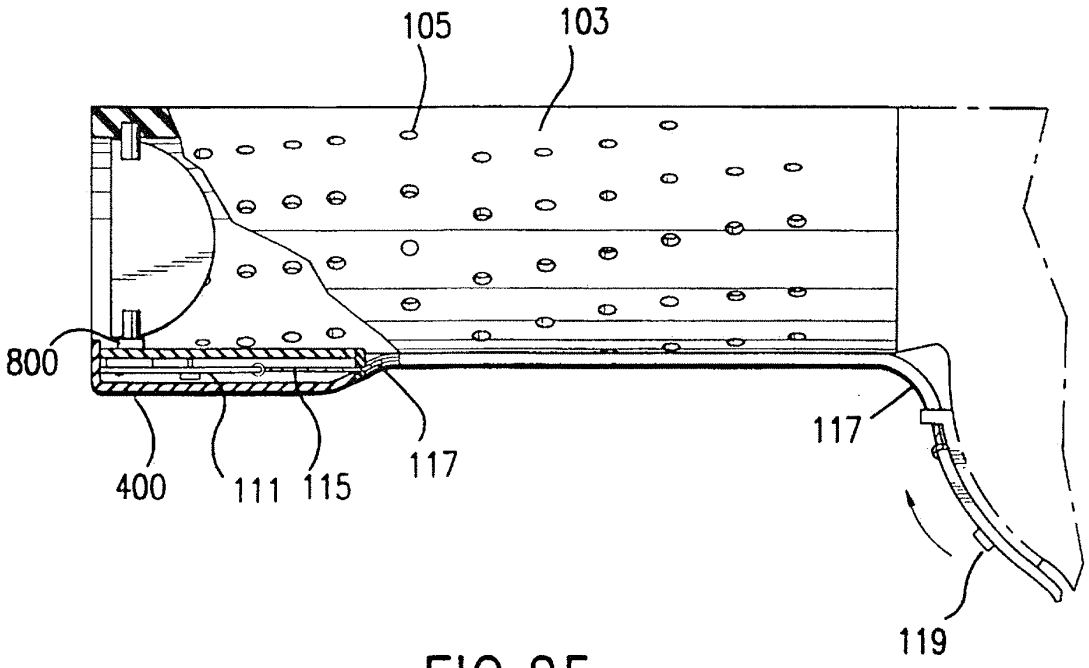


FIG.25a

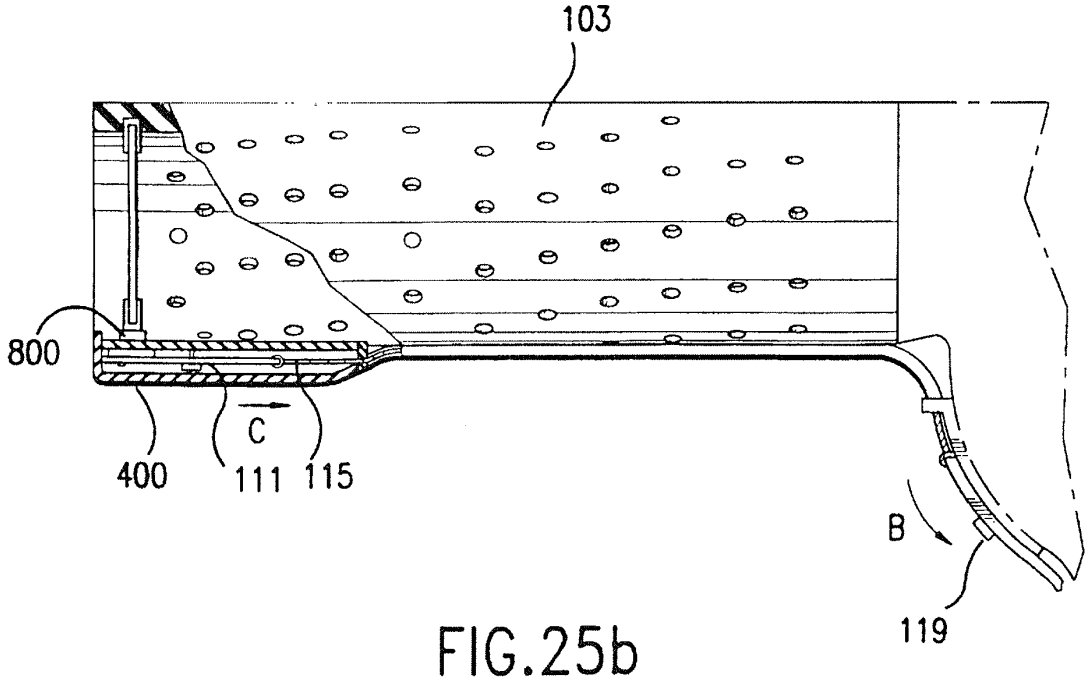


FIG.25b

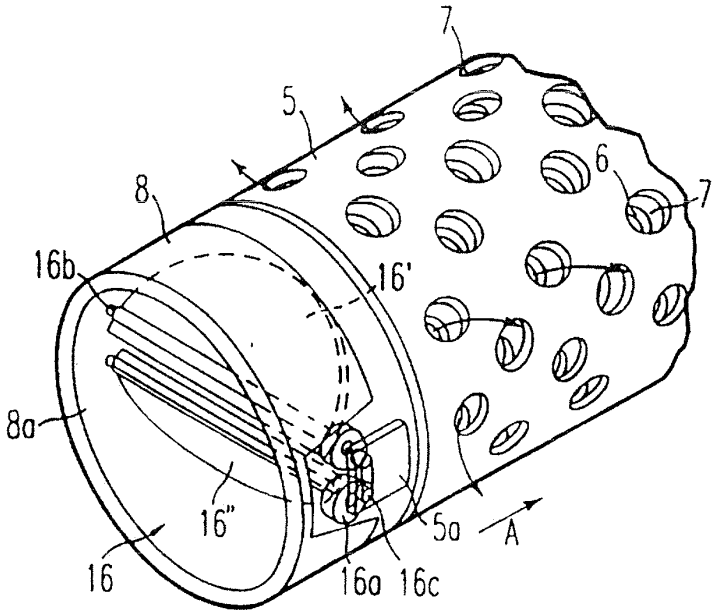


FIG. 26

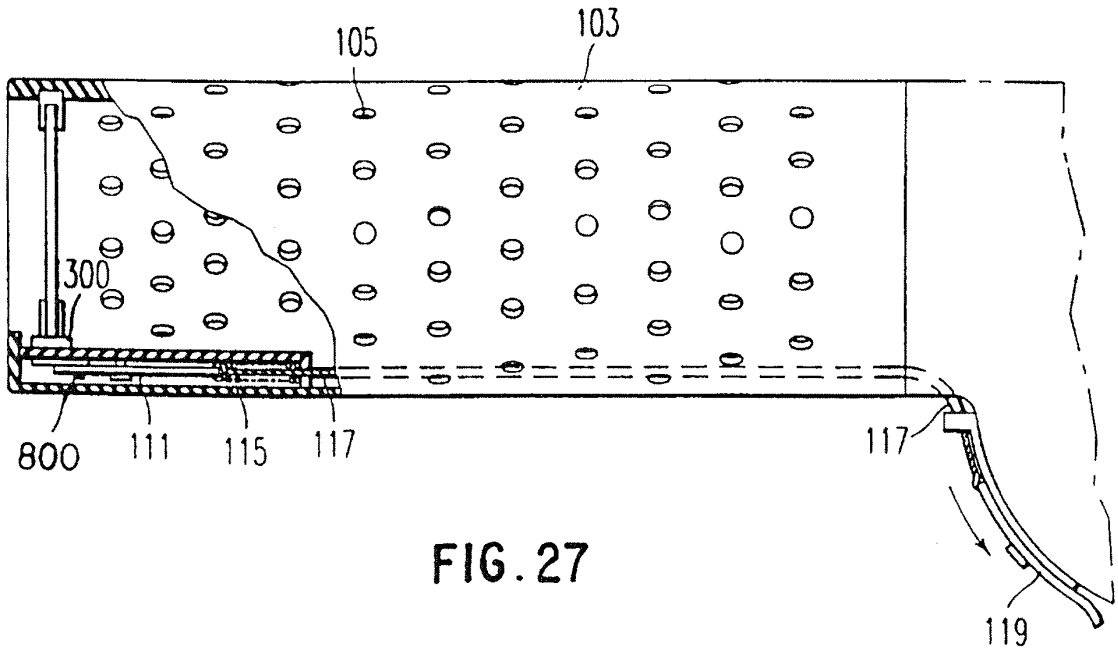


FIG. 27

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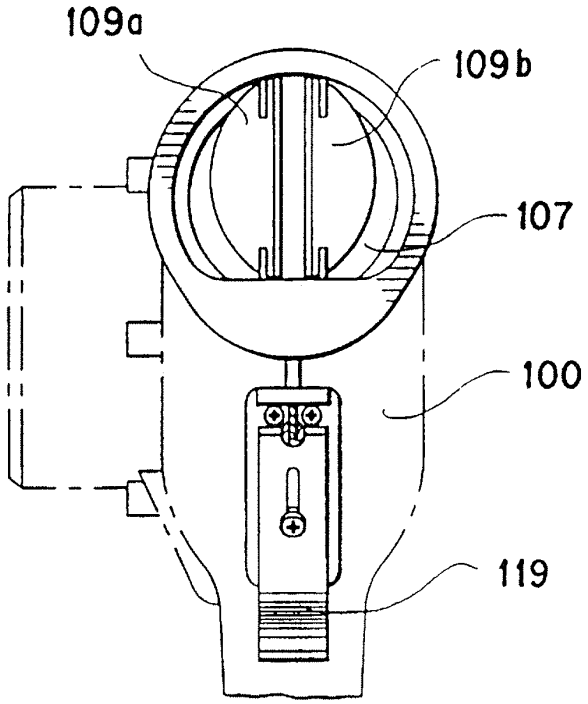


FIG. 28

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US96/14834

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :A45D 20/00
US CL :34/96, 97

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 34/96, 97

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

NONE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US,A, 4,097,722 (SOLER ET AL.) 27 JUNE 1978, see entire documents.	1-22
A	US,A, 4,218,608 (MARONEY) 19 AUGUST 1980, see entire document.	1-22
A	US,A, 4,232,454 (SPRINGER) 11 NOVEMBER 1980, see entire document.	1-22
A	US,A, 4,525,623 (DA SILVA) 25 JUNE 1985, see entire document.	1-22
A	US,A, 5,148,512 (OWENS) 15 SEPTEMBER 1992, see entire document.	1-29
X	US,A, 5,157,757 (McDOUGALL) 20 OCTOBER 1992, see entire document.	1, 16, 21

[X] Further documents are listed in the continuation of Box C. [ ] See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
27 OCTOBER 1996	15 NOV 1996

Name and mailing address of the ISA/US	Authorized officer
Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231	DINNATIA DOSTER
Facsimile No. (703) 305-3230	Telephone No. (703) 308-7569

Form PCT/ISA/210 (second sheet)(July 1992)*

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Page 1277 of 1998

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US96/14834

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US,A, 5,467,540 (BASTIEN) 21 NOVEMBER 1995, see entire document.	1-29
A, P	US,A, 5,507,103 (MERRITT) 16 APRIL 1996, see entire document.	1-22

Form PCT/ISA/210 (continuation of second sheet)(July 1992)*

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Page 1278 of 1998

Electronic Patent Application Fee Transmittal

Application Number:	14656357
Filing Date:	12-Mar-2015
Title of Invention:	ATTACHMENT FOR A HAND HELD APPLIANCE
First Named Inventor/Applicant Name:	Alasdair Michael MACLAINE
Filer:	Christopher Elmose Gloria/Donna Bernecker
Attorney Docket Number:	424662093300

Filed as Large Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	240	240
		Total in USD ($)		**240**

Electronic Acknowledgement Receipt	
EFS ID:	32000334
Application Number:	14656357
International Application Number:	
Confirmation Number:	9085
Title of Invention:	ATTACHMENT FOR A HAND HELD APPLIANCE
First Named Inventor/Applicant Name:	Alasdair Michael MACLAINE
Customer Number:	25227
Filer:	Christopher Elmose Gloria/Donna Bernecker
Filer Authorized By:	Christopher Elmose Gloria
Attorney Docket Number:	424662093300
Receipt Date:	08-MAR-2018
Filing Date:	12-MAR-2015
Time Stamp:	17:16:39
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$240
RAM confirmation Number	030918INTEFSW00004417031952
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	SB08_424662093300.pdf	169537 40da130eb9c16379570bda00290ecb04d9d58a9b	no	3
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
2	Foreign Reference	CN_1205617.pdf	24962180 233d735576b979daba3bfb753006977e47fdfce7	no	50
Warnings:					
Information:					
3	Non Patent Literature	14656432_2093400_Jan122018.pdf	10007493 ca57b590c94ef8f216bdfdb157a74ac172114bcf	no	11
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Information:					
4	Foreign Reference	WO_97_23147.pdf	2014483 2de4d6164f0ad61937959f0dc60cbe92eb46d830	no	47
Warnings:					
Information:					
5	Fee Worksheet (SB06)	fee-info.pdf	30701 676b79afa1556370a3686031e3f43ae11010d43a	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	37184394		

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Docket No.: 42466-20933.00
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Alasdair Michael MACLAINE

Application No.: 14/656,357 | Confirmation No.: 9085

Filed: March 12, 2015 | Art Unit: 3776

For: ATTACHMENT FOR A HAND HELD APPLIANCE | Examiner: Jennifer Frances Gill

AMENDMENT UNDER 37 C.F.R. 1.111

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the Office Action mailed January 10, 2018, the period for response having been extended one (1) month to May 10, 2018, please amend this application as follows.

Amendments to the claims begin on page 2 of this paper.

Remarks begin on page 6 of this paper.

va-515400

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) 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, wherein the outlet is at least partially defined by an external surface of a wall of the attachment and is configured to direct fluid flow emitted from the outlet along and around the external surface of the ~~attachment~~ wall, and wherein the external surface of the ~~attachment forms~~ wall is an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot.

2. (Canceled)

3. (Original) The attachment of claim 1, wherein the outlet comprises a plurality of slots radially spaced around the attachment.

4. (Original) The attachment of claim 1, wherein the fluid emitted from the outlet is tangential to the external surface of the attachment.

5. (Previously Presented) The attachment of claim 1, wherein the attachment is configured so that, in use, the fluid emitted from the outlet is attracted to the surface of the attachment.

6. (Original) The attachment of claim 1, wherein the attachment is generally cylindrical.

7. (Original) The attachment of claim 1, wherein the outlet comprises two slots.

8. (Previously Presented) The attachment of claim 1, wherein the attachment has a longitudinal axis extending from the inlet end to the distal end and the at least one slot is parallel to the longitudinal axis.

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9. (Previously Presented) The attachment of claim 1, wherein the attachment has a longitudinal axis extending from the inlet end to the distal end and the at least one slot is non-parallel to the longitudinal axis.

10. (Original) The attachment of claim 9, wherein the at least one slot is helical with respect to the longitudinal axis.

11. (Original) The attachment of claim 1, further comprising a flow directing element between the inlet and the outlet.

12. (Original) The attachment of claim 11, wherein the flow directing element comprises a perforated layer.

13. (Original) The attachment of claim 12, wherein the perforated layer is formed from a mesh or weave of an elongate material.

14. (Original) The attachment of claim 13, wherein the elongate material is a wire.

15. (Previously Presented) The attachment of claim 12, wherein the flow directing element extends substantially along a length of the at least one slot.

16. (Original) The attachment of claim 12, wherein the flow directing element extends substantially around an inner circumference of the attachment.

17. (Withdrawn-Currently Amended) A hand held appliance comprising a handle having a fluid flow path from handle inlet to a handle outlet, a fan unit for drawing fluid into the handle 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, wherein the outlet is at least partially defined by an external surface of a wall of the attachment and is configured to

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direct fluid flow emitted from the outlet along and around the external surface of the ~~attachment~~ wall, and wherein the external surface of the ~~attachment forms~~ wall is an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot.

18. (Canceled)

19. (Withdrawn) The appliance of claim 17, wherein the outlet comprises a plurality of slots radially spaced around the attachment.

20. (Withdrawn) The appliance of claim 17, wherein the fluid emitted from the outlet is tangential to the external surface of the attachment.

21. (Withdrawn-Previously Presented) The appliance of claim 17, wherein the attachment is configured so that, in use, the fluid emitted from the outlet is attracted to the surface of the attachment.

22. (Withdrawn) The appliance of claim 17, wherein the attachment is generally cylindrical.

23. (Withdrawn) The appliance of claim 17, wherein the outlet comprises two slots.

24. (Withdrawn-Previously Presented) The appliance of claim 17, wherein the attachment has a longitudinal axis extending from the inlet end to the distal end and the at least one slot is parallel to the longitudinal axis.

25. (Withdrawn-Previously Presented) The appliance of claim 17, wherein the attachment has a longitudinal axis extending from the inlet end to the distal end and the at least one slot is non-parallel to the longitudinal axis.

26. (Withdrawn) The appliance of claim 25, wherein the at least one slot is helical with respect to the longitudinal axis.

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27. (Withdrawn) The appliance of claim 17, further comprising a flow directing element between the inlet and the outlet.

28. (Withdrawn) The appliance of claim 27, wherein the flow directing element comprises a perforated layer.

29. (Withdrawn) The appliance of claim 28, wherein the perforated layer is formed from a mesh or weave of an elongate material.

30. (Withdrawn) The appliance of claim 29, wherein the elongate material is a wire.

31. (Withdrawn-Previously Presented) The appliance of claim 27, wherein the flow directing element extends substantially along a length of the at least one slot.

32. (Withdrawn) The appliance of claim 27, wherein the flow directing element extends substantially around an inner circumference of the attachment.

33. (Withdrawn) The appliance of claim 17, wherein the appliance is a hair care appliance.

34. (Withdrawn) The appliance of claim 17, wherein the appliance is a hot styling appliance.

35. (Withdrawn) The appliance of claim 17, wherein the appliance is a hot styling brush.

36. (New) The appliance of claim 1, wherein the wall comprises a plurality of plates.

37. (New) The appliance of claim 1, wherein the at least one slot is formed by a gap between adjacent wall sections that are joined by at least one spacer disposed between the beginning of the at least one slot and the end of the at least one slot to maintain the gap.

38. (New) The appliance of claim 37, wherein the at least one spacer extends from an edge of a first wall section to an edge of a second wall section.

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REMARKS

Claims 1 and 17 have been amended. New claims 36, 37, and 38 have been added. Support for the amendments and new claims is found throughout the specification and drawings, including in FIGs. 3a-9b and paragraph [0093] of the published application. No new matter has been added. After entry of this amendment, claims 1, 3-17, and 19-38 will be pending. Claims 17 and 19-35 are withdrawn.

With respect to all claim amendments, Applicant has not dedicated to the public or abandoned any unclaimed subject matter. These amendments have been made only in the interest of progressing the prosecution of this application, and do not indicate that these amendments are necessary for patentability. Moreover, Applicant has not acquiesced to any rejections and/or objections made by the Patent Office. Applicant reserves the right to pursue prosecution of any presently excluded claim embodiments in a future continuation and/or divisional application.

Claims 1, 3-5, 7, and 9-10 are rejected under 35 USC 102(a)(1) on Lindsey (US 5,868,148). Claims 1, 3-8, 11-13 and 15-16 are rejected under 35 USC 102(a)(1) on McDougall (US 5,212,366). Claims 11-16 are rejected under 35 USC 103 over Lindsey in view of Tomaro (US 4,295,283). These rejections are respectfully traversed.

Claim 1 has been amended to recite, *inter alia*, that "the outlet is at least partially defined by an external surface of a wall of the attachment and is configured to direct fluid flow emitted from the outlet along and around the external surface of the wall, and wherein the external surface of the wall is an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot." Thus, amended claim 1 requires that the wall that at least partially defines the outlet form the outermost surface of the attachment.

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The references fail to disclose or suggest that "the external surface of the wall [that at least partially defines the outlet] is an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot," as recited in amended claim 1. In both Lindsay and McDougall, the outermost surface of the attachment along the outlet is formed by the ends of the bristles. The walls from which these bristles extend—the walls forming the outlets—do not form the outermost surface of the attachment, as required by amended claim 1. Tomaro fails to cure this deficiency.

Accordingly, the rejections of claim 1, as amended, should be withdrawn. The rejections of dependent claims 3-17 should be withdrawn at least for the respective dependencies of the claims.

In view of the above, early action allowing claims 1, 3-17, and 19-38 is solicited.

In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, Applicants petition for any required relief, including extensions of time, and authorize the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket no. **42466-20933.00**.

Dated: May 10, 2018

Respectfully submitted,

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va-515400

Electronic Patent Application Fee Transmittal

Application Number:	14656357
Filing Date:	12-Mar-2015
Title of Invention:	ATTACHMENT FOR A HAND HELD APPLIANCE
First Named Inventor/Applicant Name:	Alasdair Michael MACLAINE
Filer:	Christopher Elmose Gloria/Donna Bernecker
Attorney Docket Number:	424662093300

Filed as Large Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	1202	1	100	100
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Extension - 1 month with $0 paid	1251	1	200	200
Miscellaneous:				
		Total in USD ($)		**300**

Electronic Acknowledgement Receipt	
EFS ID:	32590847
Application Number:	14656357
International Application Number:	
Confirmation Number:	9085
Title of Invention:	ATTACHMENT FOR A HAND HELD APPLIANCE
First Named Inventor/Applicant Name:	Alasdair Michael MACLAINE
Customer Number:	25227
Filer:	Christopher Elmose Gloria/Donna Bernecker
Filer Authorized By:	Christopher Elmose Gloria
Attorney Docket Number:	424662093300
Receipt Date:	10-MAY-2018
Filing Date:	12-MAR-2015
Time Stamp:	15:54:43
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$300
RAM confirmation Number	051118INTEFSW00002376031952
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		Amend_424662093300.pdf	105036 6b0486dd9ab98e2cfc926780c971ec9155e498e4	yes	7
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Amendment/Req. Reconsideration-After Non-Final Reject		1	1	
	Claims		2	5	
	Applicant Arguments/Remarks Made in an Amendment		6	7	
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	32187 ea5fd86590e29d564b49115f77fe89b311920585	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	137223		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 14/656,357	Filing Date 03/12/2015	☐ To be Mailed

ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	05/10/2018	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 36	Minus	** 35	= 1	X $100 =	100
	Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $460 =	0
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	**100**

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

SLIE
KIMBERLY WHITE

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/656,357	03/12/2015	Alasdair Michael MACLAINE	424662093300	9085

25227 7590 06/27/2018

MORRISON & FOERSTER LLP
1650 TYSONS BOULEVARD
SUITE 400
MCLEAN, VA 22102

EXAMINER	
GILL, JENNIFER FRANCES	

ART UNIT	PAPER NUMBER
3732	

NOTIFICATION DATE	DELIVERY MODE
06/27/2018	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

EOfficeVA@mofo.com
PatentDocket@mofo.com
pair_mofo@firsttofile.com

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Office Action Summary	Application No. 14/656,357	Applicant(s) MACLAINE, ALASDAIR MICHAEL	
	Examiner JENNIFER GILL	Art Unit 3732	AIA (First Inventor to File) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *5/10/18*.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5)☒ Claim(s) *1,3-17 and 19-38* is/are pending in the application.

5a) Of the above claim(s) *17 and 19-35* is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1,3-16 and 36-38* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date *3/8/18*.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

4) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement(s) (IDS) submitted on 3/8/18 with the fees was/were filed in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement(s) has/have been considered by the examiner.

Claim Rejections - 35 USC § 102

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale or otherwise available to the public before the effective filing date of the claimed invention.

Claim(s) 1, 3-5, 7, 9-10 and 36-38 is/are rejected under 35 U.S.C. 102(a)(1) as being anticipated by, or unpatentable over, Lindsey (USP 5868148).

Regarding the attachment being “configured to direct fluid flow emitted from the outlet along and around the external surface of the attachment” and "configured so that in use, the fluid emitted from the outlet is attracted to the surface of the attachment", the applicant is respectfully advised that it has been held by the courts that where a prior art apparatus is identical or substantially identical in structure, claimed properties or

functional characteristics are presumed to be inherent, and a prima facie case of either anticipation or obviousness has been established. See MPEP § 2112.01. In this case, Lindsey discloses all the structural features of the claimed invention (as detailed below) and was therefore considered to anticipate the cited functional limitations.

Claims 1 and 36, Lindsey teaches an attachment (10) for a handheld appliance (15) comprising: an inlet (16); a series of outlets in the form of slots (G) extending from near an inlet end of the attachment towards a distal end of the attachment and wherein the outlets (G) are defined by an external surface of a wall of the attachment because they are gaps extending through the external surface of the attachment and between the external edges of each of the walls (see Figs 8-13). Fluid emitted from the outlet would be capable of being blown along and around the external surface and around the external surface of the attachment (see Figs 8-13); particularly since hair wrapped around the device in use would act as a baffle, helping to force the airflow to be "directed along and around the external surface of the attachment". The external surface of the plates, or wall portions, carry bristles (22) and an outward facing surface of the walls combined with the bristles, together, form an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot and extending substantially along a length of the attachment (10; see Figs 8-13). The wall comprises a plurality of plates (20, see Figs 5-9).

Claim 3, Lindsey teaches the outlet slots (G) are spaced radially around the attachment (10; see Figs 8-13).

Claim 4, Lindsey teaches the fluid can be emitted from the outlet tangential to the external surface of the attachment (see Fig 9).

Claim 5, Lindsey teaches the fluid emitted from the outlet appears to be capable of being directed towards, or around, the external surface of the attachment, which meets the claim limitation of "attracted to" the surface, as best understood (see Fig 9).

Claim 7, Lindsey teaches the outlet comprises at least two slots (G; see Figs 8-13).

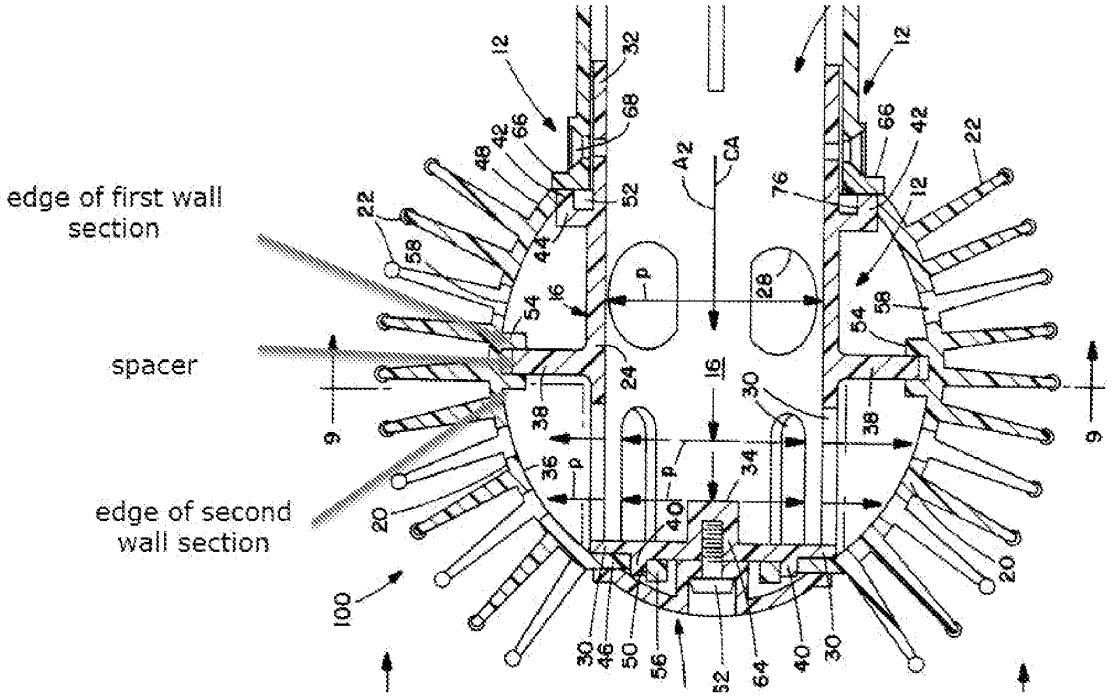
Claims 9-10, Lindsey teaches the attachment (10) has a longitudinal axis extending from the inlet end to the distal end and the slots (G) are non-parallel to the longitudinal axis because the slots (G) are helical with respect to the longitudinal axis (see Fig 12).

Claims 11-13, Lindsey teaches the device further comprises a flow directing element (16) formed of a perforated (28 & 30) layer of elongate material; since Merriam-Webster defines mesh as “a web-like pattern or construction” and the flow directing element (16) has a series of spaced holes forming a “web-like pattern”, the perforated layer is formed from a mesh of elongate material as claimed (see Figs 8-13).

Claims 15-16, Lindsey teaches the flow directing element (16) extends substantially along a length of the slots (G) and it extends substantially around an inner circumference of the attachment (see Figs 8-13).

Claims 37-38, Lindsey teaches the at least one slot is formed by a gap between the plates, or adjacent wall sections (see Figs 8-13) and these wall sections are joined together to a central body by a series of spacers (38, Fig 9) disposed between the

beginning of the at least one slot and the end of the at least one slot to maintain the size of the slot (see Fig 9). These spacers (38, Fig 10) extend from a first an edge of a first wall section to an edge of a second wall section (see Fig 10 & annotations).



Claim(s) 1, 3-8, 11-13, and 15-16 is/are rejected under 35 U.S.C. 102(a)(1) as being anticipated by, or unpatentable over, McDougall et al (USP 5212366).

Regarding the attachment being “configured to direct fluid flow emitted from the outlet along and around the external surface of the attachment” and "configured so that in use, the fluid emitted from the outlet is attracted to the surface of the attachment", the applicant is respectfully advised that it has been held by the courts that where a prior art apparatus is identical or substantially identical in structure, claimed properties or functional characteristics are presumed to be inherent, and a prima facie case of either anticipation or obviousness has been established. *In re Best*, 195 USPQ 430 (CCPA

1977). See MPEP § 2112.01. In this case, McDougall discloses all the structural features of the claimed invention (as detailed below) and was therefore considered to anticipate the cited functional limitations.

Claim 1, McDougall teaches an attachment (2) for a handheld appliance (1) comprising an inlet (17); an outlet in the form of slots between plates (3, see Fig 5a) and a fluid flow path between the inlet and outlet and the slot extends from near an inlet end of the attachment towards a distal end of the attachment and wherein the outlet slots are at least partially defined by an external surface of the attachment such that fluid emitted from the outlet is blown along and around an internal and external surface of the attachment (since it flows from the internal to the external surface in use) and fluid emitted from the outlet can flow around the external surface of the attachment (Col 3, 1-10; see Figs 1-5); particularly since hair wrapped around the device in use would act as a baffle, helping to force the airflow to be "directed along and around the external surface of the attachment". The external surface of the plates carry bristles (3b) and the outward facing surface of the plates combined with the bristles, together, form an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot and the slots between the plates (3) when in the expanded state extend substantially along a length of the attachment (see Figs 1-2).

Claim 3, McDougall teaches the outlet comprises a plurality of slots between the plates (3; see Figs 1-2).

Claim 4, McDougall teaches the fluid emitted from the outlet is capable of emitting from the outlet tangential to the external surface of the attachment depending on the expanded state of the plates (3; see Figs 1-5).

Claim 5, McDougall teaches the heated fluid emitted from the outlet is attracted to the surface of the attachment by virtue of the metal reinforcement rods (3f) in each plate (3) because metal is a known heat conductor so the heat would be attracted to this surface thereby meeting the claim limitations, as best understood (see Figs 1-5).

Claim 6, McDougall teaches the attachment is generally cylindrical (see Figs 1-2).

Claim 7, McDougall teaches the outlet comprises at least two slots (see Fig 5a).

Claim 8, McDougall teaches the attachment has a longitudinal axis extending from the inlet end to the distal end and the slots are parallel to the longitudinal axis (see Figs 1-5).

Claims 11-13, McDougall teaches there is a flow directing element (3d & 3e & 5 & 12 &13) between the inlet and outlet and these elements constitute “flow directing elements” because in use the air flows over or through these elements, thereby causing a redirection of the airflow by their presence (see Figs 1-2). At least one of these flow directing elements is formed as a perforated (3d & 3e) layer (see Figs 1-5). Since Merriam-Webster defines mesh as “a weblike pattern or construction” and the flow directing element has a series of spaced holes (3d & 3e) forming a “weblike pattern”, the perforated layer is formed from a mesh of elongate material as claimed (see Figs 1-5).

Claim 15-16, McDougall teaches the flow directing element (3d & 3e & 5) extend substantially along a length of the at least one slot (see Figs 1-5).

Claim Rejections - 35 USC § 103

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-16 is/are rejected under 35 U.S.C. 103 as being unpatentable over Lindsey (USP 5868148) in view of Tomaro (USP 4295283).

Claims 11-16, Lindsey discloses the invention essentially as claimed except for the attachment comprising a wire mesh flow directing element extending along the length of slots and around an inner circumference of the attachment. Tomaro, however, teaches an attachment (14) for a handheld appliance (2) wherein the attachment comprises an internal screen (which constitutes a wire mesh) between the inlet and the outlet and extending along a length of the attachment and around an inner circumference of the attachment in order to further deflect and dissipate air discharged from the housing and in order to prevent the hair of a user from accidentally being

caught in the fan (Col 1, 65-Col 2, 5; see Fig 1). Therefore, it would have been obvious to one possessing ordinary skill in the art at the time of filing to modify the device of Lindsey to comprise a wire mesh screen extending along a length of the attachment and around an inner circumference of the attachment in view of Tomaro in order to prevent a user's hair from accidentally entering the device and becoming tangled.

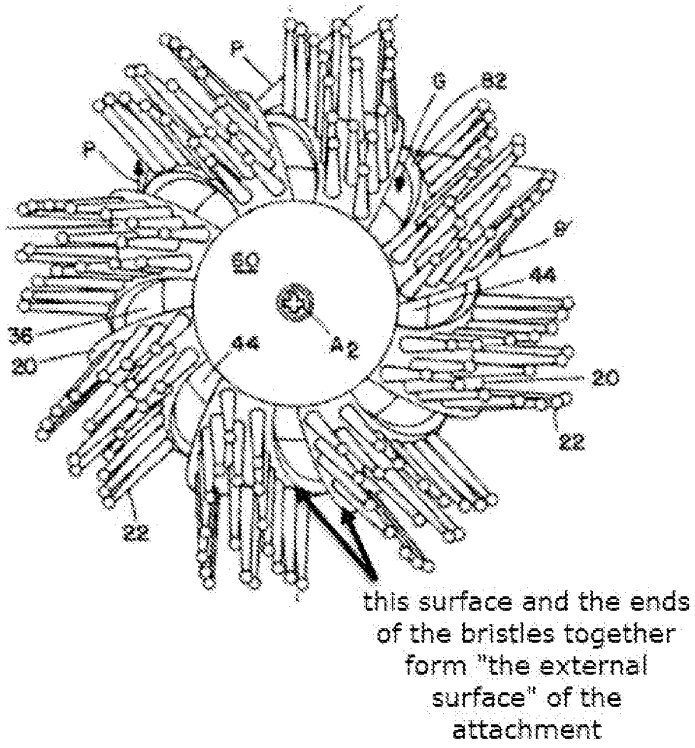
Response to Arguments

Applicant's arguments filed 5/10/18 have been fully considered but they are not persuasive.

Applicant argues that Lindsey fails to teach "the external surface of the attachment forming an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot"; however, this argument is not persuasive because Lindsey teaches the external surface of the attachment being formed by the external surface of the plates, which form the gaps between the plates as well, and the bristles carried on the plate surfaces and therefore Lindsey teaches the limitations as claimed because the claims do not require that the outermost surface be free from bristles and other components, but rather only require that "the outlet is ***at least partially defined by an external surface of a wall of the attachment…***wherein the external surface of the wall is ***an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot"***. An outermost surface of the attachment can be defined as the outermost surface of the plate portions that form the wall (see Fig 9) and this outermost surface of the attachment walls extends along a length of the

attachment from a beginning of the at least one slot to an end of the at least one slot.

Applicant's claims do not require that the attachment walls be absent any bristles.



Applicant argues this same reasoning with the McDougall reference; specifically, arguing that because the McDougall reference also comprises bristles, or teeth, this precludes the external plate surfaces from forming an outermost surface of the attachment along a length of the attachment and along the longitudinal slots formed between the plates; however, the external surface of the plates of McDougall in combination with the bristles form the external surface of the attachment as claimed.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Gill whose telephone number is (571) 270-1797. The examiner can normally be reached on Monday-Thursday 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, ***please contact the examiner's supervisor, Cris Rodriguez, at* (571) 272-4964**. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

If there are any inquiries that are not being addressed by first contacting the Examiner or the Supervisor, you may send an email inquiry to TC3700_Workgroup_D_Inquiries@uspto.gov**.**

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JENNIFER GILL/
Examiner, Art Unit 3732

/TATIANA NOBREGA/
Primary Examiner, Art Unit 3732

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	14656357	MACLAINE, ALASDAIR MICHAEL
	Examiner	Art Unit
	JENNIFER GILL	3776

CPC- SEARCHED		
Symbol	Date	Examiner
A45D 1/02, 2/06, 2/10, 2/125, 2/127, 2/14, 2/24, 2/2407, 2/2414, 2/2421, 2/245, 2/2457, 2/2485, 2/2492, 20/10, 20/122, 20/124, 20/50	1/25-2/3/17	JG
A46B 9/023, 15/003	1/25-2/3/17	JG

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

SEARCH NOTES		
Search Notes	Date	Examiner
132.CLAS (WITH TEXT SEE EAST HISTORY)	1/25-2/3/17	JG
USPC SEARCH WITH TEXT	1/25-2/3/17	JG
CPC SEARCH	1/25-2/3/17	JG
INVENTOR SEARCH	1/25-2/3/17	JG
ASSIGNEE SEARCH	1/25-2/3/17	JG
TEXT SEARCH (SEE EAST HISTORY)	1/25-2/3/17	JG
NPL SEARCH	1/25-2/3/17	JG
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A46B 9/023, 15/003	1/25-2/3/17	JG
updated search notes	7/31-8/3/17	jg
updated search notes	12/29/17-1/2/18	jg

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

EAST Search History

EAST Search History (Prior Art)

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S61	31	("4214597" | "20150265022" | "20150265023" | "20130111777" | "5868910" | "3857016" | "20070137060" | "3981313" | "4471791" | "20110198421" | "20080041406" | "20040129289" | "5661910" | "3814898" | "3800810").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	ON	2017/01/31 11:01
S62	6	(("MACLAINE") near3 ("Alasdair")).INV.	US-PGPUB;	OR	ON	2017/01/31 11:01

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			USPAT; USOCR			
S63	15	(("TWEEDIE") near3 ("Robert")).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2017/01/31 11:01
S64	1	("20130319450").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2017/01/31 11:01
S65	3	("4214597").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2017/01/31 11:01
S66	23	("1385797" | "1526480" | "2624350" | "3265075" | "3586820" | "3680565" | "4003389").PN. OR ("4214597").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2017/01/31 11:01
S67	26	("4163143" | "2589510" | "3926200" | "20120272994" | "8132573" | "20140144458" | "20130319450" | "5983903").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	ON	2017/01/31 11:01
S68	6	("2014/0083446").URPN.	USPAT	OR	ON	2017/01/31 11:01
S69	1	("2010/0269847").URPN.	USPAT	OR	ON	2017/01/31 11:01
S70	38	("1892107" | "1894431" | "1926987" | "1957049" | "2720207" | "3108603" | "3232300" | "3523542" | "3590829" | "3871388" | "4022225" | "4022226" | "4270555" | "4456020" | "4524788" | "4584462" | "4714820" | "4856542" | "4911186" | "5000200" | "5020552" | "5024244" | "5186187" | "5293884" | "5294777" | "5411040").PN. OR ("5890496").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2017/01/31 11:01
S71	32	("0056531" | "0720169" | "1115057" | "2335179" | "2557510" | "2781047" | "3105503" | "3123079" | "3326495" | "3623491" | "3683940" | "3712310" | "4141370").PN. OR ("4456020").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2017/01/31 11:01
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S73	18	("2430766" | "2750948" | "2769449" | "2781047").PN. OR ("4291714").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2017/01/31 11:01
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S75	31	("4023578").PN. OR ("5212366").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2017/01/31 11:01
S76	51	a45d20/50.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75)	US-PGPUB; USPAT; USOCR; FPRS	OR	ON	2017/01/31 11:01
S77	15	a45d20/10.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76)	US-PGPUB; USPAT; USOCR; FPRS	OR	ON	2017/01/31 11:01
S78	10	a45d20/122.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77)	US-PGPUB; USPAT; USOCR; FPRS	OR	ON	2017/01/31 11:01
S79	53	a46b9/023.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78)	US-PGPUB; USPAT; USOCR; FPRS	OR	ON	2017/01/31 11:01
S80	6	a46b15/003.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79)	US-PGPUB; USPAT; USOCR; FPRS	OR	ON	2017/01/31 11:01
S81	104	a45d2/10.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80)	US-PGPUB; USPAT; USOCR; FPRS	OR	ON	2017/01/31 11:04
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S83	33	a45d2/12.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82)	US-PGPUB; USPAT; USOCR; FPRS	OR	ON	2017/01/31 11:27
S84	32	a45d2/22.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82 S83)	US-PGPUB; USPAT; USOCR; FPRS	OR	ON	2017/01/31 11:48

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S85	93	a45d2/24.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82 S83 S84)	US-PGPUB; USPAT; USOCR; FPRS	OR	ON	2017/01/31 11:54
S86	0	("2500456").URPN.	USPAT	OR	ON	2017/01/31 12:07
S87	53	a45d2/2407.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82 S83 S84 S85)	US-PGPUB; USPAT; USOCR; FPRS	OR	ON	2017/01/31 12:08
S88	11	a45d2/245.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82 S83 S84 S85 S87)	US-PGPUB; USPAT; USOCR; FPRS	OR	ON	2017/01/31 12:14
S89	10	a45d20/122.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82 S83 S84 S85 S87 S88)	US-PGPUB; USPAT; USOCR; FPRS	OR	ON	2017/01/31 12:30
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S91	1	a45d20/124.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82 S83 S84 S85 S87 S88 S89)	US-PGPUB; USPAT; USOCR; FPRS	OR	ON	2017/01/31 12:34
S92	19	a45d1/02.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82 S83 S84 S85 S87 S88 S89 S90 S91)	US-PGPUB; USPAT; USOCR; FPRS	OR	ON	2017/01/31 12:40
S93	34	132/268.ccls. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82 S83 S84 S85 S87 S88 S89 S90 S91 S92)	US-PGPUB; USPAT; USOCR; FPRS	OR	ON	2017/01/31 12:42
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S98	34	a45d2/2421.cpc. and (S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82 S83 S84 S85 S87 S88 S89 S90 S91 S92 S93 S94 S95 S96 S97)	US-PGPUB; USPAT; USOCR; FPRS	OR	ON	2017/01/31 12:58
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S103	26	("4214597" | "20150265022" | "20150265023" | "20130111777" | "5868910" | "3857016" | "20070137060" | "3981313" | "4471791" | "20110198421" | "20080041406" | "20040129289" | "5661910" | "3814898").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	ON	2017/02/01 10:18
S104	3	("3583409").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2017/02/01 15:52
S105	10	("1442260" | "2592764").PN. OR ("3583409").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2017/02/01 15:53
S106	2	("4295283").PN.	US-PGPUB; USPAT; USOCR;	OR	OFF	2017/02/01 18:57

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			FPRS; EPO; JPO			
S107	0	DE8206841	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	ON	2017/02/02 16:21
S108	2	("5868148").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2017/02/03 11:52
S109	3	("2015005659").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2018/01/04 14:04
S110	3	("2014005659").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2018/01/04 14:04
S111	1	("20150335141").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO	OR	OFF	2018/01/04 14:05

6/18/2018 11:34:57 AM
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Page 1321 of 1998

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Field

PTO/SB/08a (03-15)
Approved for use through 07/31/2016. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	14/656,357
	Filing Date	March 12, 2015
	First Named Inventor	Alasdair Michael MACLAINE
	Art Unit	3776
	Examiner Name	Jennifer Frances Gill
	Attorney Docket Number	42466-20933.00

U.S. PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

U.S. PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Country Code[2]	Foreign Document Number[3]	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1.	WO-97/23147			07-03-1997	Vital Hair Tools, LLC (Natale SCHEPISI)	Corresponds to JP-2000-516483 previously cited	
	2.	CN-1205617			01-20-1999	Vital Hair Tools, LLC (Natale SCHEPISI)	Machine Translation	X

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.F.G/

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Field

PTO/SB/08a (03-15)
Approved for use through 07/31/2016. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	14/656,357
	Filing Date	March 12, 2015
	First Named Inventor	Alasdair Michael MACLAINE
	Art Unit	3776
	Examiner Name	Jennifer Frances Gill
	Attorney Docket Number	42466-20933.00

NON-PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	3.	MacLaine et al., U.S. Office Action mailed January 12, 2018, directed to U.S. Application No. 14/656,432; 11 pages	

EXAMINER SIGNATURE			
Examiner Signature	/JENNIFER F GILL/	Date Considered	06/18/2018

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.F.G/

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Field

PTO/SB/08a (03-15)
Approved for use through 07/31/2016. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	14/656,357
	Filing Date	March 12, 2015
	First Named Inventor	Alasdair Michael MACLAINE
	Art Unit	3776
	Examiner Name	Jennifer Frances Gill
	Attorney Docket Number	42466-20933.00

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e) (2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/christopher gloria/	Date (YYYY-MM-DD)	2018-03-08
Name/Print	Christopher Gloria	Registration Number	71,907

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /J.F.G/

Docket No.: 42466-20933.00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Alasdair Michael MACLAINE

Application No.: 14/656,357 | Confirmation No.: 9085

Filed: March 12, 2015 | Art Unit: 3772

For: ATTACHMENT FOR A HAND HELD APPLIANCE | Examiner: Jennifer Frances Gill

AMENDMENT UNDER 37 C.F.R. 1.116

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

In response to the final Office Action mailed June 27, 2018, the period for response having been extended one (1) month to October 27, 2018, please amend this application as follows.

Amendments to the claims begin on page 2.

Remarks begin on page 7.

va-524631

Electronic Patent Application Fee Transmittal

Application Number:	14656357
Filing Date:	12-Mar-2015
Title of Invention:	ATTACHMENT FOR A HAND HELD APPLIANCE
First Named Inventor/Applicant Name:	Alasdair Michael MACLAINE
Filer:	Christopher Elmose Gloria/Donna Bernecker
Attorney Docket Number:	424662093300

Filed as Large Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension - 1 month with $0 paid	1251	1	200	200
Miscellaneous:				
		Total in USD ($)		**200**

Electronic Acknowledgement Receipt	
EFS ID:	34151763
Application Number:	14656357
International Application Number:	
Confirmation Number:	9085
Title of Invention:	ATTACHMENT FOR A HAND HELD APPLIANCE
First Named Inventor/Applicant Name:	Alasdair Michael MACLAINE
Customer Number:	25227
Filer:	Christopher Elmose Gloria/Donna Bernecker
Filer Authorized By:	Christopher Elmose Gloria
Attorney Docket Number:	424662093300
Receipt Date:	29-OCT-2018
Filing Date:	12-MAR-2015
Time Stamp:	20:06:14
Application Type:	Utility under 35 USC 111(a)

Payment information:

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Payment Type	DA
Payment was successfully received in RAM	$200
RAM confirmation Number	103018INTEFSW00007118031952
Deposit Account	
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		AmendAF_424662093300.pdf	64160 20125a54e0e2068c0f62e63a9a393e12e634aa02	yes	11
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Applicant Arguments/Remarks Made in an Amendment		7	11	
	Claims		2	6	
	Response After Final Action		1	1	
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30538 8844a2403b302b9adc19835b80c62f33c62257cb	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	94698		

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

REMARKS

Claims 1 and 17 have been amended, in part, by incorporating subject matter of claims 6 and 22, respectively. Claims 6 and 22 have been canceled. No new matter has been added. After entry of this amendment, claims 1, 3-5, 7-17, 19-21, and 23-38 will be pending.

Claims 1 and 17 have been amended by incorporating subject matter of claims 6 and 22, respectively, which were not rejected as anticipated by Lindsey, thus reducing the number of rejections at issue. Accordingly, the amendment should be entered. (37 C.F.R. 1.116.)

With respect to any claim amendments and/or cancellations made herein, Applicant has not dedicated to the public or abandoned any unclaimed subject matter. Any amendments and/or cancellations have been made only in the interest of progressing the prosecution of this application and do not indicate that any amendments and/or cancellations are necessary for patentability. Moreover, Applicant has not acquiesced to any rejections and/or objections made by the Patent Office. Applicant reserves the right to pursue prosecution of any presently excluded claim embodiments in a future continuation and/or divisional application.

Claims 1, 3-5, 7, 9-10, and 36-38 are rejected under 35 USC 102(a)(1) on Lindsey (US 5,868,148). Claims 11-16 are rejected under 35 USC 103 over Lindsey in view of Tomaro (US 4,295,283). These rejections are respectfully traversed.

Claim 1 has been amended, in part by incorporating aspects of claim 6, to recite that "the outlet in the cylindrical second portion of the attachment comprises at least one slot extending from near an inlet end of the attachment towards a distal end of the attachment." Lindsey fails to disclose or suggest this feature (claim 6 was not rejected as anticipated by Lindsey).

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Accordingly, this rejection should be withdrawn. The rejections of dependent claims 3-5, 7, 9-10, and 36-38 should be withdrawn at least for the respective dependencies of the claims.

Claims 1, 3-8, 11-13 and 15-16 are rejected under 35 USC 102(a)(1) on McDougall (US 5,212,366). This rejection is respectfully traversed.

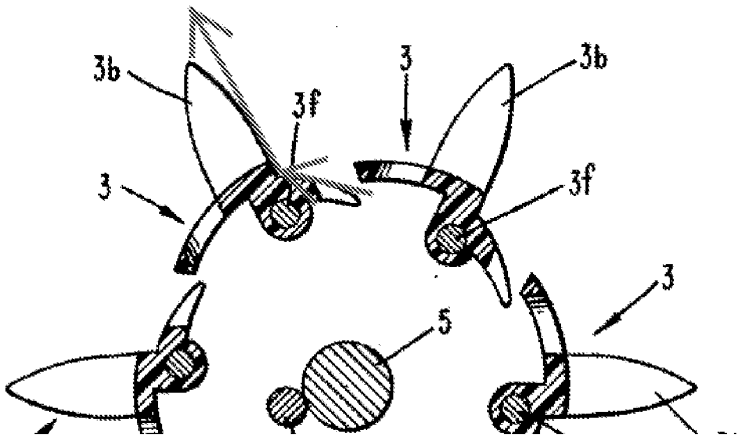
McDougall fail to disclose or suggest that "the outlet . . . is configured to direct fluid flow emitted from the outlet along and around the external surface of the-wall," as recited in claim 1. As explained further below, McDougall's outlet is configured to direct airflow radially outward, not "along and around the external surface of the-wall."

McDougall discloses a hair curling appliance having a cylindrical barrel which can be adjusted in diameter. The barrel is composed of several elongate barrel elements in a parallel radial arrangement which can be moved to expand or contract the diameter of the barrel. McDougall explains that "the barrel elements mutually combin[e] to form a substantially closed barrel when in the fully expanded state and a substantially closed barrel with overlapping barrel elements in the contracted state." (McDougall, column 2, lines 11-14.) McDougall illustrates the fully expanded state in FIG. 5a, which "shows the barrel 2 in the fully expanded state with gaps between the bases 3a, these gaps being closed by the lateral projections 3c. Closure of the gaps ensures that the barrel 2 is substantially closed so that warm air flowing down the barrel escapes only through the apertures 3d . . . and also through the indentations 3e." (McDougall, column 3, lines 1-16.) Thus, McDougall's device is designed such that in the expanded state of FIG. 5a the gaps between bases 3a are closed by lateral projections 3c so that the barrel is substantially closed and air flows outward only through the apertures 3d and the indentations 3e. The gaps between bases 3a are not, therefore, "configured to direct fluid flow emitted from the outlet along and around the external surface of the

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wall," as required by claim 1. Instead, only the apertures 3d and the indentations 3e are configured to direct fluid flow, and they are configured to direct fluid flow radially outward, not "along and around the external surface of the-wall," are required by claim 1.

Moreover, should any airflow escape through the gaps between bases 3a, such airflow would not flow along and around the external surface of the barrel. In the areas of the indentations 3e, airflow would simply flow radially outward, since there is no feature to direct the airflow in any other way. In the areas outside from the indentations 3e, any airflow that may flow along projections 3c, would immediately encounter a radially extending wall that would turn the airflow radially outward, as illustrated in the annotated excerpt of FIG. 5a below.



As illustrated above, any airflow flowing in the gaps between bases 3a would be directed radially outward; it would not flow "along and around the external surface of the-wall," are required by claim 1. Thus, airflow exiting the outlet in McDougall's device, whether through the apertures 3d, the indentations 3e, or the gaps between bases 3a would be directed radially outward, not flow "along and around the external surface of the-wall," as required by claim 1.

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The Examiner argues that McDougall discloses the outlet recited in claim 1 because "hair wrapped around the device in use would act as a baffle, helping to force the airflow to be 'directed along and around the external surface of the attachment." (Action at 6.) Whether this hypothetical baffling effect would produce the effect asserted by the Examiner or not is irrelevant, however, because claim 1 requires *the outlet to be configured* such as to "direct fluid flow emitted from the outlet along and around the external surface of the-wall." McDougall's outlet is not configured in this way. Instead, McDougall's outlet is configured to direct airflow radially outward, as explained above. There is no outlet in McDougall's device that would direct airflow in any direction other than radially outward. Thus, McDougall fails to disclose or suggest that "the outlet . . . is configured to direct fluid flow emitted from the outlet along and around the external surface of the wall," as recited in claim 1.

Accordingly, the rejection of claim 1 should be withdrawn. The rejections of dependent claims 3-5, 7, 8, 11-13, and 15-16 should be withdrawn at least for the respective dependencies of the claims.

In view of the above, early action allowing claims 1, 3-5, 7-17, and 19-21, and 23-38 is solicited.

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In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, Applicants petition for any required relief, including extensions of time, and authorize the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket no. **42466-20933.00**. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Dated: October 29, 2018

Respectfully submitted,

Electronic signature: /christopher gloria/
Christopher Gloria
Registration No.: 71,907
MORRISON & FOERSTER LLP
1650 Tysons Blvd, Suite 400
McLean, Virginia 22102
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va-524631

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An attachment for a hand held appliance comprising an inlet in a first portion of the attachment; an outlet in a cylindrical second portion of the attachment; and a fluid flow path between the inlet and the outlet, wherein the outlet in the cylindrical second portion of the attachment comprises at least one slot extending from near an inlet end of the attachment towards a distal end of the attachment, wherein the outlet is at least partially defined by an external surface of a wall of the attachment and is configured to direct fluid flow emitted from the outlet along and around the external surface of the wall, and wherein the external surface of the wall is an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot.

2. (Canceled)

3. (Original) The attachment of claim 1, wherein the outlet comprises a plurality of slots radially spaced around the attachment.

4. (Original) The attachment of claim 1, wherein the fluid emitted from the outlet is tangential to the external surface of the attachment.

5. (Previously Presented) The attachment of claim 1, wherein the attachment is configured so that, in use, the fluid emitted from the outlet is attracted to the surface of the attachment.

6. (Canceled)

7. (Original) The attachment of claim 1, wherein the outlet comprises two slots.

8. (Previously Presented) The attachment of claim 1, wherein the attachment has a longitudinal axis extending from the inlet end to the distal end and the at least one slot is parallel to the longitudinal axis.

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9. (Previously Presented) The attachment of claim 1, wherein the attachment has a longitudinal axis extending from the inlet end to the distal end and the at least one slot is non-parallel to the longitudinal axis.

10. (Original) The attachment of claim 9, wherein the at least one slot is helical with respect to the longitudinal axis.

11. (Original) The attachment of claim 1, further comprising a flow directing element between the inlet and the outlet.

12. (Original) The attachment of claim 11, wherein the flow directing element comprises a perforated layer.

13. (Original) The attachment of claim 12, wherein the perforated layer is formed from a mesh or weave of an elongate material.

14. (Original) The attachment of claim 13, wherein the elongate material is a wire.

15. (Previously Presented) The attachment of claim 12, wherein the flow directing element extends substantially along a length of the at least one slot.

16. (Original) The attachment of claim 12, wherein the flow directing element extends substantially around an inner circumference of the attachment.

17. (Withdrawn-Currently Amended) A hand held appliance comprising a handle having a fluid flow path from handle inlet to a handle outlet, a fan unit for drawing fluid into the handle inlet, and an attachment for attaching to the handle, the attachment comprising an inlet in a first portion of the attachment; an outlet in a cylindrical second portion of the attachment; and a fluid flow path between the inlet and the outlet, wherein the outlet in the cylindrical second portion of the attachment comprises at least one slot extending from near an inlet end of the attachment towards a

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distal end of the attachment, wherein the outlet is at least partially defined by an external surface of a wall of the attachment and is configured to direct fluid flow emitted from the outlet along and around the external surface of the wall, and wherein the external surface of the wall is an outermost surface of the attachment along a length of the attachment from a beginning of the at least one slot to an end of the at least one slot.

18. (Canceled)

19. (Withdrawn) The appliance of claim 17, wherein the outlet comprises a plurality of slots radially spaced around the attachment.

20. (Withdrawn) The appliance of claim 17, wherein the fluid emitted from the outlet is tangential to the external surface of the attachment.

21. (Withdrawn-Previously Presented) The appliance of claim 17, wherein the attachment is configured so that, in use, the fluid emitted from the outlet is attracted to the surface of the attachment.

22. (Canceled)

23. (Withdrawn) The appliance of claim 17, wherein the outlet comprises two slots.

24. (Withdrawn-Previously Presented) The appliance of claim 17, wherein the attachment has a longitudinal axis extending from the inlet end to the distal end and the at least one slot is parallel to the longitudinal axis.

25. (Withdrawn-Previously Presented) The appliance of claim 17, wherein the attachment has a longitudinal axis extending from the inlet end to the distal end and the at least one slot is non-parallel to the longitudinal axis.

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26. (Withdrawn) The appliance of claim 25, wherein the at least one slot is helical with respect to the longitudinal axis.

27. (Withdrawn) The appliance of claim 17, further comprising a flow directing element between the inlet and the outlet.

28. (Withdrawn) The appliance of claim 27, wherein the flow directing element comprises a perforated layer.

29. (Withdrawn) The appliance of claim 28, wherein the perforated layer is formed from a mesh or weave of an elongate material.

30. (Withdrawn) The appliance of claim 29, wherein the elongate material is a wire.

31. (Withdrawn-Previously Presented) The appliance of claim 27, wherein the flow directing element extends substantially along a length of the at least one slot.

32. (Withdrawn) The appliance of claim 27, wherein the flow directing element extends substantially around an inner circumference of the attachment.

33. (Withdrawn) The appliance of claim 17, wherein the appliance is a hair care appliance.

34. (Withdrawn) The appliance of claim 17, wherein the appliance is a hot styling appliance.

35. (Withdrawn) The appliance of claim 17, wherein the appliance is a hot styling brush.

36. (Previously Presented) The appliance of claim 1, wherein the wall comprises a plurality of plates.

37. (Previously Presented) The appliance of claim 1, wherein the at least one slot is formed by a gap between adjacent wall sections that are joined by at least one spacer disposed between the beginning of the at least one slot and the end of the at least one slot to maintain the gap.

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38. (Previously Presented) The appliance of claim 37, wherein the at least one spacer extends from an edge of a first wall section to an edge of a second wall section.

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PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 14/656,357	Filing Date 03/12/2015	☐ To be Mailed

ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	10/29/2018	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 34	Minus	** 36	= 0	X $100 =	0
	Independent (37 CFR 1.16(h))	* 2	Minus	***3	= 0	X $460 =	0
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	**0**

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

LIE
ANTJUAN RIVERA

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/656,357	03/12/2015	Alasdair Michael MACLAINE	424662093300	9085

25227 7590 11/14/2018

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MCLEAN, VA 22102

EXAMINER	
GILL, JENNIFER FRANCES	

ART UNIT	PAPER NUMBER
3772	

NOTIFICATION DATE	DELIVERY MODE
11/14/2018	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

EOfficeVA@mofo.com
PatentDocket@mofo.com
pair_mofo@firsttofile.com

Advisory Action Before the Filing of an Appeal Brief	**Application No.** 14/656,357	**Applicant(s)** MACLAINE, Alasdair Michael	
	Examiner JENNIFER F GILL	**Art Unit** 3772	**AIA Status** Yes

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 29 October 2018 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

NO NOTICE OF APPEAL FILED

1. ☑ The reply was filed after a final rejection. No Notice of Appeal has been filed. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114 if this is a utility or plant application. Note that RCEs are not permitted in design applications. The reply must be filed within one of the following time periods:
   a) ☑ The period for reply expires 3 months from the mailing date of the final rejection.
   b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action; or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
   c) ☐ A prior Advisory Action was mailed more than 3 months after the mailing date of the final rejection in response to a first after-final reply filed within 2 months of the mailing date of the final rejection.The current period for reply expires ____ months from the mailing date of *the prior Advisory Action* or SIX MONTHS from the mailing date of the final rejection, whichever is earlier.
   Examiner Note: If box 1 is checked, check either box (a), (b) or (c). ONLY CHECK BOX (b) WHEN THIS ADVISORY ACTION IS THE FIRST RESPONSE TO APPLICANTS FIRST AFTER-FINAL REPLY WHICH WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. ONLY CHECK BOX (c) IN THE LIMITED SITUATION SET FORTH UNDER BOX (c). See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) or (c) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37CFR 41.37(a).

AMENDMENTS

3. ☑ The proposed amendments filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   a) ☑ They raise new issues that would require further consideration and/or search (see NOTE below);
   b) ☐ They raise the issue of new matter (see NOTE below);
   c) ☑ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.
   NOTE: See Continuation Sheet (See 37CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicants reply has overcome the following rejection(s): _____
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☑ For purposes of appeal, the proposed amendment(s):(a) ☑ will not be entered, or (b) ☐ will be entered, and an explanation of how the new or amended claims would be rejected is provided below or appended.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____
9. ☐ The affidavit or other evidence filed after final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
10. ☐ The affidavit or other evidence filed after the date of filing the Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
11. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

12. ☑ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.
13. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____
14. ☐ Other: _____.

STATUS OF CLAIMS

15. The status of the claim(s) is (or will be) as follows:
    Claim(s) allowed:_____.
    Claim(s) objected to:_____.
    Claim(s) rejected:1,3-16 and 36-38.
    Claim(s) withdrawn from consideration:17 and 19-35.

/JENNIFER F GILL/ EXAMINER, Art Unit 3772	/TATIANA L NOBREGA/ Primary Examiner, Art Unit 3772

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Continuation of 3. NOTE: The proposed amendment creates new issues; specifically it presents language "first portion of the attachment" and "second portion of the attachment" without antecedent basis in the specification which creates new issues requiring further search and consideration. Additionally it adds the language "cylindrical" which was not previously presented in prosecution and requires additional search and consideration. Therefore the proposed amendment requires additional search and consideration and does not place the application in condition for allowance or in better form for appeal.

Continuation of REQUEST FOR RECONSIDERATION/OTHER 12. The request for reconsideration has been considered but does NOT place the application in condition for allowance because: The proposed amendment will not be entered because it creates new issues; specifically it presents language "first portion of the attachment" and "second portion of the attachment" without antecedent basis in the specification which creates new issues requiring further search and consideration. Additionally it adds the language "cylindrical" which was not previously presented in prosecution and requires additional search and consideration. Therefore the proposed amendment requires additional search and consideration and does not place the application in condition for allowance or in better form for appeal.

DO NOT ENTER
/JG/
10/31/18

Docket No.: 42466-20933.00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Alasdair Michael MACLAINE

Application No.: 14/656,357 | Confirmation No.: 9085

Filed: March 12, 2015 | Art Unit: 3772

For: ATTACHMENT FOR A HAND HELD APPLIANCE | Examiner: Jennifer Frances Gill

AMENDMENT UNDER 37 C.F.R. 1.116

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

In response to the final Office Action mailed June 27, 2018, the period for response having been extended one (1) month to October 27, 2018, please amend this application as follows.

Amendments to the claims begin on page 2.

Remarks begin on page 7.

va-524631

Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	14/656,357	Filing Date	2015-03-12	Docket Number (if applicable)	42466-20933.00	Art Unit	3772
First Named Inventor	Alasdair Michael MACLAINE			Examiner Name	Jennifer Frances Gill		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☒ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

☒ Other Amendment filed 10-29-2018

☒ Enclosed

☐ Amendment/Reply

☒ Information Disclosure Statement (IDS)

☐ Affidavit(s)/ Declaration(s)

☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
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FEES

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☐ Applicant Signature

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Signature	/christopher gloria/	Date (YYYY-MM-DD)	2018-11-27
Name	Christopher Gloria	Registration Number	71907

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(Not for submission under 37 CFR 1.99)

Application Number	14656357
Filing Date	2015-03-12
First Named Inventor	Alasdair Michael MACLAINE
Art Unit	3772
Examiner Name	Jennifer Frances Gill
Attorney Docket Number	42466-20933.00

U.S.PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	3890984		1975-06-24	Lesetar	
	2	8407913		2013-04-02	Langley, et al.	
	3	9526310	B2	2016-12-27	Courtney, et al.	

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U.S.PATENT APPLICATION PUBLICATIONS

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20140083446	A1	2014-03-27	Julemont, et al.	
	2	20160000201	A1	2016-01-07	Doran	

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FOREIGN PATENT DOCUMENTS

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	14656357
	Filing Date	2015-03-12
	First Named Inventor	Alasdair Michael MACLAINE
	Art Unit	3772
	Examiner Name	Jennifer Frances Gill
	Attorney Docket Number	42466-20933.00

	1	101662969	CN		2010-03-03	SEB S.A.	Machine Translation	☒
	2	204838408	CN		2015-12-09	Tianyue Huang	Machine Translation	☒
	3	2004-222745	JP		2004-08-12	Matsushita Electric Works Ltd.	Machine Translation	☒
	4	2005-177155	JP		2005-07-07	Kyushu Hitachi Maxell Ltd.	Machine Translation	☒
	5	2010-201067	JP		2010-09-16	Sanyo Electric Co.; Sanyo Consumer Electronics Co.	Machine Translation	☒
	6	2016-16328	JP		2016-02-01	Dyson Technology Limited	Corresponds to GB-2527834 previously cited	☐
	7	3233749	JP		2001-11-26		Machine Translation	☒
	8	61-145248	JP		1986-09-08		Machine Translation	☒
	9	20-0388514	KR		2005-06-30	Jeong Ki Bock	Machine Translation	☒
	10	2417719	RU		2011-05-10	Marija Viktorovna Rehjnman	Machine Translation	☒
	11	2015/190217	WO		2015-12-17	Sharp Corp.	Machine Translation	☒

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	Art Unit	3772
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NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	MacLaine et al., U.S. Office Action mailed June 29, 2018, directed to U.S. Application No. 14/656,432; 14 pages	☐

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	Application Number	14656357
	Filing Date	2015-03-12
	First Named Inventor	Alasdair Michael MACLAINE
	Art Unit	3772
	Examiner Name	Jennifer Frances Gill
	Attorney Docket Number	42466-20933.00

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☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

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A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/christopher gloria/	Date (YYYY-MM-DD)	2018-11-27
Name/Print	Christopher Gloria	Registration Number	71907

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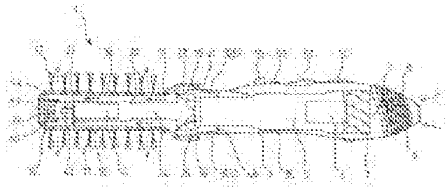
Electrical hairbrush

Page bookmark	CN101662969 (A) - Electrical hairbrush
Inventor(s):	CEDRIC BONTEMS ±
Applicant(s):	SEB SA ±
Classification:	- international: ***A45D20/50***
	- cooperative: **A45D20/50**; **A46B13/02**; A46B2200/104
Application number:	CN2008810213 20080404
Priority number(s):	FR20070002534 20070406 ; WO2008FR00466 20080404
Also published as:	CN101662969 (B) CN102197913 (A) CN102197913 (B) CN102197914 (A) CN102197914 (B) → more

Abstract of CN101662969 (A)

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The invention relates to an electrical hairbrush (1) including a longitudinal housing (2) defining a gripping handle (3), a heating member (5), a first motor (6) for driving a fan (7) for circulatingair from an air intake opening (9) located at one end of the handle towards an air outlet opening (10) located at the opposite end of the handle,and a second motor (14) for rotating a hairdressing accessory (11), characterised in that the fan (7), the first motor (6) and the heating member (5) are contained within the handle (3) and in that the second motor (14) is connected by at least one rod tothe outside of the handle (3) in the same direction thereof while being coaxial or parallel to the longitudinal axis of the handle, the base of the rod being attached to the handle (3) and having a front extension in the form of a holding portion for the second motor (14).



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DESCRIPTION CN101662969

The invention relates to an electric hair brush (1) comprising a longitudinal box body (2) constituting a grip handle (3), a heating element (5), a first driving motor (6) for driving the fan (7), the fan (7) circling the air from the air inlet (9) located at one of the ends of the grip handle toward the air outlet (10) at the opposite end of the grip handle; and rotating the hairdressing attachment (11) a second drive motor (14), characterized in that the fan (7), the first motor (6) and the heating element (5) are housed inside the handle (3), the a second motor (14) is coupled to the handle (3) by at least one rod, the bottom of the rod being fixed to the handle (3) on the extension of the handle by being coaxial or parallel with the longitudinal axis of the handle A support portion of the second motor (14) extends upwardly and forwardly.

Electric hair brush

Technical field

The present invention relates to a device for shaping hair, this type of device comprising a brush that is rotationally driven in a holder, the holder being disposed at the outlet of the casing, the casing blowing a stream of hot air to effect shaping of the hair.

Background technique

Document US Pat. No. 3,890,984 describes a hairdressing device comprising a casing constituting a handle, the casing being provided with a first motor for driving a fan, the fan sucking ambient air from one of the ends of the casing to heat the ambient air The element then sends ambient air into a reduced diameter central tube that travels along the box and protrudes at the other end. The inside of the casing is further provided with a second motor, which is arranged side by side with the first motor, thereby ensuring rotational driving of the brush provided at the end of the casing, while the brush is mounted to rotate around the pipe conveying the air. . While using the complicated technical solution of rotationally driving and guiding the brush around the air transfer tube, it is also noted that the air only comes out of the small slit on the side of the central tube before entering the inside of the rotating brush, thereby being harmful to The efficiency and consistency of hair styling. In addition, such a handle case with two motors inside proves to be heavy and difficult to handle.

The rotary brush described in the document EP 1 576 900 proposes a solution to solve the technical problem, the air blown by the motor fan is passed through a heating element of a handle supporting a hollow shaft of the rotating brush, the rotating brush being also subjected to The motor of the handle is driven. The air then passes through the interior of the hollow brush body, which is also equipped with an air outlet evenly distributed over the surface of the brush body, thereby enabling rapid shaping of the hair bundle that is grasped by the brush and wound. Such a device comprises two motors which are arranged one behind the other in the handle. The main disadvantage of such a device is that the passage of the air from a remote motor fan is prevented because of the location of the motor that drives the brush. Moreover, the device is not balanced because the entire weight is located in the handle, with the result that the device is not ergonomically sound.

Also known from the document DE 33 19 402 is an attachment comprising a tubular bottom which is extended with a portion constituting a brush, the portion constituting the brush being rotatably mounted on the bottom and comprising on one of its ends a rotary drive of the brush motor. The motor is disposed outside of the brush and supported by an inner rod supported on the tubular bottom of the attachment. When in operation, the accessory is mounted on the hair dryer end of the hair dryer. Such hair dryers generally have a gun shape, and such hair dryers prove to be difficult to control during use to effect winding of the hair bundle through their end attachments. Furthermore, the arrangement of the motor outside the brush and the guiding means of the rod of the motor on the bottom of the attachment make the attachment of a larger length and also makes it difficult to use the device containing the accessory.

Another technical solution is mentioned in the document WO 2005/018372, which describes a rotary brush comprising a gripping handle, on the upper part of which is provided a motor fan, which is connected by an intermediate part A support rod supporting the heating element, which must surround a very large diameter protective cylinder for reasons of standard and safety. The protective cylinder

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supports a drive electric motor of an accessory bracket that rotationally drives a rotating brush at an upper end, an attachment bracket of the rotating brush is mounted at an end of an output shaft of the motor, and the attachment encloses the cartridge. In order to better respond to the need for mass balance, the device always has the disadvantage of limiting the use of large diameter brushes, since on the one hand the blowing wheel is arranged on the upper part of the handle and on the other hand because of the safety cylinder surrounding the heating element. Large diameter. Furthermore, the proximity of the heating element and the motor that drives the brush on the one hand complicates the electrical connection of each of them, and on the other hand leads to the danger of heating the motor, so that the service life of the motor is shortened. Furthermore, the protective cylinder is located outside the handle, and for reasons of standardization and safety, air can only come out of the very thin gap of the protective cylinder, thus resulting in an uneven distribution of the air being blown in the attachment, thus An uneven distribution of air being blown in the treated hair bundle.

Summary of the invention

The object of the present invention is to solve the above disadvantages and to provide an electric hairbrush capable of transmitting a uniform and powerful air flow in the direction of the hair in order to improve the characteristics of the treated hair and reduce the processing time of the hair while being able to Suitable for different lengths of hair, even for short hair, and reliable.

Another object of the present invention is an electric hair brush which is capable of achieving uniform and long-term well-defined hair while being easily and quickly used during work.

Another object of the present invention is an electric hair brush which is efficient, simple in structure, compact and can be industrialized at low cost.

These objects are achieved by an electric hair brush comprising a longitudinal casing constituting a grip handle; a heating element; a first drive motor driving the fan, the fan implementing air from one of the ends of the grip handle a circulation of the air inlet toward the air outlet at the opposite end of the grip handle; and a second drive motor that rotationally drives the hairdressing attachment, wherein the fan, the first motor and the heating element are housed in Inside the handle, the second motor is coupled to the handle by at least one rod, and on the extension of the handle, the bottom of the rod is fixed to the handle by being coaxial or parallel with the longitudinal axis of the handle And a support portion of the second motor extends forward.

The device comprises a longitudinal box which thus has an elongated shape extending along the longitudinal axis of the device and thus has good ergonomic use when used with a rotating accessory, the rotating accessory being arranged The front end of the handle (the front end refers to the end that is directed toward the hair and opposite the grip end of the handle). Such a device achieves shaping of the hair by clamping and winding at least a portion of the hair bundle, which is a type of mandrel comprising bristles and an opening evenly distributed over the cylindrical surface, the attachment being passed through One of the motors of the device is rotated and the flow of hot air is blown by a fan that is driven by another motor of the device and exits the opening of the accessory.

According to the invention, the longitudinal body of the handle is housed with the fan, the drive motor of the fan and the heating element, thereby allowing a compact and well insulated blower and heating assembly that is closed and allows only air to pass The predetermined opening in the handle enters the longitudinal direction of the handle. According to the invention, the second drive motor of the rotary drive hairdressing attachment is itself attached to the outside of the handle by at least one rod, the rod being coaxial or parallel with the longitudinal axis of the handle in the direction of extension of the handle, the rod A bottom portion is fixed to the handle and a support portion supporting the second motor extends forward. This allows air flow from the longitudinal casing of the handle to reach the attachment without being blocked by the drive motor of the attachment, the drive motor being disposed outside of the handle.

At least one rod refers to a central support element or a plurality of support points distributed on the outer circumference of the handle to hold the second motor or a support shaft that is eccentric with respect to the longitudinal axis of the handle while being parallel to the longitudinal axis of the handle . The term electric motor can also refer to an electric supply deceleration motor.

Positioning the motor by means of a bracket that allows the air outlet to deviate from the handle, thus taking into account sufficient to emit a stream of hot air that is blown, the motor and its bracket having a diameter smaller than the diameter of the barrel, from the handle, Or an air flow disposed at an interval from the air outlet of the handle is inscribed in the cylinder. The motor is spaced from the handle air outlet to mean a longitudinally distant arrangement (a motor at the distal end of the longitudinal axis of the device) or a radially distal arrangement, the radial distal arrangement being thus opposite the longitudinal of the handle The shaft is split radially. Such spaced-apart motors allow the air outlet of the handle to be effectively unclogged along the longitudinal axis while reducing pressure loss for good drying efficiency without the need for pre-drying with a hair dryer.

This allows a hairdressing device that uses a high horsepower heating element to be obtained without being limited by the standard or limited in size, while enabling the motor driving device for shaping the hair to be suitable for the size and standard. The advantage provided by such a device is that it is used for good drying performance, thereby improving ergonomics and reducing the footprint.

Preferably, the hair brush includes a rod coaxial with the handle, the rod being coupled to the handle through a bottom thereof, and extending forwardly with a hollow support portion for receiving the second motor.

This solution has allowed the drive motor of the accessory to be spaced outside the handle, but on the extension of the longitudinal axis of the handle, while being supported by a single central rod. The arrangement allows to ensure that the attachment is rotationally driven about a central axis of the

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handle while the motor is supported by the front end of the single central rod to achieve good ergonomics of the device while allowing out of the handle The air flow reaches the attachment and exits from an evenly distributed orifice on the side surface of the attachment. In fact, the attachment is a hollow hollow shaft which is equipped with tufts on its outer circumference and is equipped with an air outlet between each tuft, the hot air flow coming out of the handle along the longitudinal axis of the handle Distributed in an annular space between the attachment and the central rod, the hot air flow exiting the orifice of the attachment without encountering an obstacle and without changing direction, so that there is virtually no pressure loss.

Since the central rod includes a hollow-shaped support portion that allows the second drive motor to be received internally, a good aerodynamic structure of the components constituting the rod is ensured. in fact, the motor is preferably selected from the shape of an elongated cylinder which can have a smaller diameter so as to be insertable into the interior of the support rod. This arrangement allows for a motor to be placed in the stream of hot air blown by the apparatus while being thermally isolated, e.g., in a rod made of an insulating plastic material.

Preferably, the end portion constituting the top of the rod supports a connecting member mounted on an output shaft of a second drive motor that drives the attachment.

Such a connecting member mounted on the end of the rod facilitates quick attachment and detachment of the detachable attachment relative to its rotary drive shaft by engagement with corresponding attachment members of the attachment.

Preferably, the attachment engages the connecting member at one of its ends and the opposite end is rotated by the cylindrical portion of the bottom of the rod.

Such a configuration allows for a good drive and good rotation to guide the cylindrical attachment, which surrounds the support rod, thereby allowing the support rod to be rotated with a larger rotational moment value applied to the attachment by the hair bundle.

Preferably, the bottom of the rod has a cylindrical portion having a first diameter, the first diameter being similar to the diameter of the handle, the bottom being connected to the intermediate portion of the perforation, the intermediate portion of the perforation extending with a support portion, The support portion has a second diameter that is less than the first diameter.

The bottom of the rod is thus integral with the handle and its cylindrical shape also allows for a rotational guidance of the attachment. The passage between the bottom fixed on the handle and the central portion supporting the rod is realized by an intermediate portion equipped with a passage opening for air flow from the handle. This configuration of the rod thus allows for the retention and transfer of hot and powerful air flow from the handle to the attachment.

Preferably, the intermediate portion is formed by a plurality of curved portions.

This allows the rigidity of the structure of the intermediate portion of the support rod to be strengthened while allowing air to pass therethrough.

Preferably, the intermediate portion of the perforation includes a plurality of inner walls and a support portion supporting the impact portion, the impact portion having a shape inclined in a direction of air flow.

The wall inclined in the direction of the air flow counteracts the passage of the air flow with very little resistance, thereby allowing the pressure loss to be reduced as the air flow enters the interior of the accessory. In one variation, it is contemplated to replace the inclined inner wall of the arcuate portion with a plurality of vertical walls of thin thickness that are connected to the transverse walls of the perforations of the intermediate portion.

Preferably, the heating element is disposed inside a sleeve coaxial with the handle, the air outlet end of the handle being in direct communication with the bottom of the rod.

Such a sleeve allows good heat dissipation of the air to the outlet of the handle, where the sleeve is connected to the bottom of the support rod, which allows air flow to be transmitted to the interior of the attachment without being used for good drying The pressure loss of efficiency.

Preferably, the first motor and the second motor are disposed substantially equally to the air outlet of the handle.

This allows for a good balance of weight and good balance within the device for good ergonomics, with the gripping area of the device facing the air outlet end of the handle.

Preferably, the value of the air passage cross-section inside the attachment gradually decreases in the direction toward the top of the rod when the attachment is mounted on the rod.

Such an air outflow profile that tapers from the opening at the bottom of the rod toward the top of the attachment allows for limited heating of the motor and pressure loss towards the end of the brush.

In a preferred embodiment of the invention, the rod is mounted detachable relative to the handle.

The detachable mounting of the lever relative to the handle allows the handle of the device to be used with other accessories, which are not necessarily motor driven, such as tubes, dry hair dryers, for crimping or making A concave iron core, a calender, a comb, and a device for dispensing cosmetic products on the hair.

Preferably, the bottom of the rod includes a fixed and guiding tubular portion having a handle.

Such a peripheral tubular portion is for example provided with a detent or threaded means relative to the handle, such a peripheral tubular portion leaving a large passage for air flow from the handle of the brush while having a guiding cylindrical portion to provide a right Good resistance to bending of the rod

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