(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
19 July 2012 (19.07.2012)

WIPO | PCT

(10) International Publication Number
WO 2012/095513 A1

(51) International Patent Classification:
A46B 5/00 (2006.01) *A45D 2/02* (2006.01)

(21) International Application Number:
PCT/EP2012/050486

(22) International Filing Date:
13 January 2012 (13.01.2012)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
1100571.7 13 January 2011 (13.01.2011) GB

(72) Inventor; and
(71) Applicant : **STOCKLEY, Martyn** [GB/GB]; 46 Newport Drive, Alcester Warwickshire B49 5BL (GB).

(74) Agent: **RICHARDSON, Julie**; Reddie & Grose LLP, 16 Theobalds Road, London Greater London WC1X 8PL (GB).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

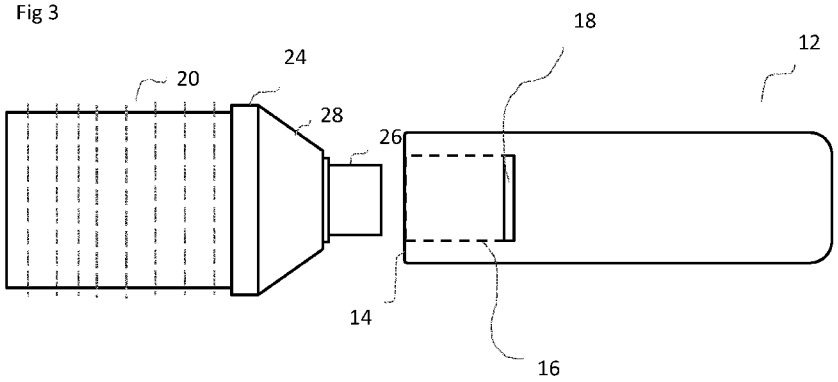
— *with international search report (Art. 21(3))*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

WO 2012/095513 A1

(54) Title: HAIRBRUSH WITH REMOVABLE ROLLER HEAD

Fig 3



(57) Abstract: A hairbrush with a detachable handle is described which may be used to brush hair and then remove the handle to leave the head of the hairbrush in a section of hair as a roller. The head and handle are magnetically connected with rotation of the head relative to the handle being prevented by mating locating means such as a peg and hole arrangement.

HAIRBRUSH WITH REMOVABLE ROLLER HEAD

FIELD OF THE INVENTION

The present invention relates to a hairbrush with a removable handle. In particular, the head of the hairbrush may, upon removal of the handle, be left in a section of hair as a roller.

BACKGROUND OF THE INVENTION

When hair is blow dried, the hot air applied using a hairdryer evaporates the moisture in the hair but it is only as the hair cools that the shape of the hair is set. The shape achieved in the hair depends on the shaping tool selected and how the shaping tool is used.

There are a number of tools that can be used to style the hair in conjunction with the drying process. A wide variety of brushes and combs are available. Also available are setting rolls or rollers which are rolled into the wet hair and left in the hair whilst it dries and cools and subsequently removed from the cooled hair. A particular type of roller which is inexpensive uses the hook portion of hook and loop fasteners (of which Velcro™ is an example) on the outside of the roller.

One type of hairbrush commonly used in a styling, blow-drying situation is a thermal heat retaining bristle brush. These brushes combine a metal or ceramic barrel handle with a cylindrical head of bristles which are applied to the hair. This type of brush holds lots of heat which allows the hair to be smoothed whilst creating shape. However, it is very time consuming to allow the hair to dry and then cool whilst the brush is wound in the hair. If a number of hairbrushes are used to allow a brush to be left in each section of hair until it has cooled and yet move on to drying the next section, around 20 brushes are required. This requires a hairdressing salon, or individual in a domestic situation, to carry a large number of brushes per user and the weight and forces on the head of the hair being styled can be excessive. The handles of the multiple brushes obstruct styling of further sections of hair. The brushes are not designed with their centre of gravity at, or close to, the mid portion of the brushhead and hence the handle hangs downwardly, pulling the hair down at an angle, making it uncomfortable for the client and reducing volume when the hair cools.

US 6,230,716 describes a hairbrush with removable handle and hairbrush system utilizing the same. One mechanism for detachably fastening the handle to the head uses a sleeve inserted inside the head of the brush. A ball detent type mechanism on one end of the handle is inserted into the sleeve and fixes the handle to the head. A spring loaded button

for detaching the handle from the sleeve is also described. Also described is an alternative detachable fastening with the opening in the head provided with a keyway dimensioned to fit a fixed ball mounted in the rod of the brush handle. This fastening arrangement requires a complex shape of keyway and retainer in the opening of the head as acknowledged in US 6,230,716.

US 2008/0105274 teaches a hairbrush/roller combination with a removable roller which requires positive operation of an activating member to release a separate securing member to allow removal of the handle from the roller.

SUMMARY OF THE INVENTION

We have appreciated that a suitable hairbrush with a removable head may be obtained by combining a magnetic coupling of the head and handle with mateable locating portions on the head and handle which cooperate to prevent rotation of the head relative to the handle in the hairbrush configuration.

The invention is described in the claims, to which reference is now directed. Preferably the mateable locating means are a faceted peg and correspondingly shaped faceted hole and the first and second magnetic coupler portions are located on respective faces of the first and second locating means which abut when the handle and head are connected in a hairbrush configuration. This arrangement prevents the user from touching any metal portions of the magnetic coupler which could, when using the brush to dry hair with a hair dryer, become sufficiently hot to cause a burn. Peferably, the peg is provided on the head and the hole is provided in the handle

BRIEF DESCRIPTION OF THE FIGURES

Figure 1a is a side view handle of a handle according to one embodiment of the invention;

Figure 1b is a end view of the handle of figure 1a;

Figure 2a is a side view of a roller head for use with the handle of figure 1;

Figure 2b is a partial end view of the roller head of figure 2a showing the shape of the peg;

Figure 3 is an exploded view of the handle and head in alignment.

DESCRIPTION OF A PREFERRED EMBODIMENT

A preferred embodiment of the handle and a roller head for use with the handle are now described. Figures 1a and 1b show a preferred handle 12. The handle 12 is an elongate

member. One end 14 of the handle, the head end, is adapted to connect to one of any number of roller heads in a hairbrush configuration. The handle 12 is preferably solid and is preferably formed of plastics. The head end 14 of the handle 12 has locating means. Here, the face of the head end 14 of the handle is formed with a substantially rectangular hole 16 approximately 15-20mm deep which acts as the locating means of the handle 12. A circular steel plate 18 is fixed into the hole.

Figures 2a and 2b show schematic representations of the roller head 20. The roller head 20 is cylindrical with outwardly extending hair engagement portions, here bristles 22, arranged around its circumference. The roller head 20 is generally hollow. One end 24 of the roller head 20 is adapted for connection to the handle 12 and has locating means, which in the preferred embodiment is a shaped peg 26. The peg 26 protrudes longitudinally from the end 24 from the roller head 22. Multiple roller heads may be used sequentially with a single handle. To accommodate use of roller heads of different sizes, and particularly different diameters, with a single handle, a transition portion 28 on the roller head 22 may be provided to reduce the diameter of the roller head to a similar diameter of the head end 14 of the handle. The transition portion 28 shown in figure 2A is a frusto-conical member attached at its widest end to the end 24 of the roller 20. The peg 26 is attached to the narrowest portion of the transition portion 28. Thus, when the head 20 is connected to the handle 12, the overall appearance is substantially that of a one-piece hairbrush. The peg 26 is shaped to fit, or mate, with the hole 16 of the handle such that when the handle 12 and head 20 are connected, the peg and hole co-operate to prevent substantial rotation of the head 20 relative to the handle 12 under the usual twisting forces exerted when a hairbrush is wound into hair to style the hair. The peg 26 has a length which is substantially equal to the depth of the hole 16 of the handle 12.

The peg 26 is also provided with a magnetic coupling portion, here two magnets 30a and 30b. The magnets are chosen to provide a magnetic coupling strength which is strong enough to prevent accidental removal of the handle 12 from the roller head 22 in normal hairbrush operation but which requires minimal additional force to remove the handle 12 when desired. This may be once the hair has been dried but has not cooled. We have found that using two n703-rb neodymlum disc magnets each of approximately 4mm diameter in conjunction with a 10mm diameter steel plate set into the hole 16 of handle 12 provides a suitable coupling force. The handle is connected to the head by magnetism; the locating means exert no significant pressure on each other until the hairbrush is rotated and then only act to prevent substantial rotation of the head relative to the handle. Thus, the peg is marginally smaller than the hole such that the peg and hole are not a push fit. The magnets

are provided in or on the end face of the peg 26 which abuts the bottom of the hole 16 in the handle and the steel plate in the hole 16 of the handle 12 is located on or in the bottom face of the hole which abuts the end face of the peg 26 of the head 20 when the head and handle are connected in a hairbrush configuration.

Figure 3 shows an exploded side view of a roller head 20 in alignment with, and ready for connection to, a handle 12. One handle 12 and a plurality of roller heads 20 may be used to style one head of hair. One roller head 20 after another is rolled into a section of hair using the handle attachment during which time the section of hair may be blow dried and the handle 12 is then removed leaving the roller head 20 in the hair until the hair has cooled, with the handle free for use with an additional roller head 20. Different diameter roller heads 20 may be used in different sections of hair with the same handle 12 connecting in turn to each of the roller heads 20. Whilst the preferred embodiment described uses a roller head 20 with a circular cross-section, other cross-section roller heads may be used to achieve different effects. For example, an oval cross-section roller head may be used to produce an oval curl. More than one cross-section roller head may be used in styling a single head of hair.

It will be apparent to those skilled in the art that alternatively shaped peg and hole locating means may be used to prevent the rotation of the head relative to the handle. Whilst the preferred embodiment uses a peg on the roller head and a hole in the handle, the roller head may be provided with a hole and the handle with a peg. The magnetic coupling may be between one or more magnets and a magnetisable material or between two magnetic portions. Alternatively shaped transition portions may be provided and may be particularly preferable for non-circular roller heads.

The roller head 20 may combine a metal or ceramic barrel, for heat retention, with bristles. The combination of the heat retaining barrel and bristles allow the hair to be smoothed as well as creating shape in the hair.

CLAIMS

1. A hairbrush comprising:

   a handle having a first end for connecting to a head, the first end provided with a first magnetic coupler portion and provided with first locating means; and

   a head having at least one outwardly facing hair engagement portion, one end of the head having a second magnetic coupler portion and having second locating means, the second magnetic coupler portion being adapted for coupling to the first magnetic coupler portion to connect the head to the handle, the second locating means being adapted for mating with the first locating means to prevent substantial rotation of the head relative to the handle; and

   whereby in a first configuration the first and second locating means are mated and the head is magnetically connected to the handle for the handle and head to co-operate as a hairbrush, and in a second configuration the head is detached from the handle to operate as a roller; the hairbrush being moveable between the first and second configurations whilst the head is wound in hair.

2. A hairbrush according to claim 1, wherein the first and second locating means are one each of a faceted peg and a mating faceted hole and the first and second magnetic coupler portions are provided on or in the respective end face of the peg and the bottom face of the hole

3. A hairbrush according to claim 2, wherein the second locating means is a faceted peg and the first locating means is a mating faceted hole.

4. A roller adapted to be used with a handle to operate as a hairbrush in a hairbrush configuration and by itself in a roller configuration, one end of the roller having locating means adapted to mate with locating means on one end of a handle, the cooperation of the locating means of the roller and the locating means of the handle preventing rotation of the roller relative to the handle when the roller is in the hairbrush configuration, and the end of the roller having a magnetic coupler portion adapted to cooperate with a magnetic coupler portion on the end of the handle to connect the roller to the handle in the hairbrush configuration.

5. A roller according to claim 4 , wherein the locating means is a faceted peg protruding from one end of the roller and the magnetic coupler portion is provided on or in the end face of the peg.

6. A roller according to any of claims 4 or 5 having a substantially circular cross-section.

7. A handle adapted to be used with one or more roller heads, one end of the handle having locating means adapted to mate with locating means provided on one end of a roller head, the end of the handle having a magnetic coupler portion adapted to cooperate with a magnetic coupler portion on a roller head, whereby in a hairbrush configuration the handle is magnetically connectable to a roller head with the locating means of the handle and head co-operating to prevent substantial rotation of the head relative to the handle, and whereby the handle is removable from the roller head whilst the roller head is wound in hair.

8. A handle according to claim 7, wheren the locating means is a faceted hole formed in the end of the handle and the magnetic coupler portion is provided on or in the bottom face of the hole.

9. A hairbrush as substantially hereinbefore described with reference to the description.

10. A hairbrush as substantially hereinbefore shown in the accompanying drawings.

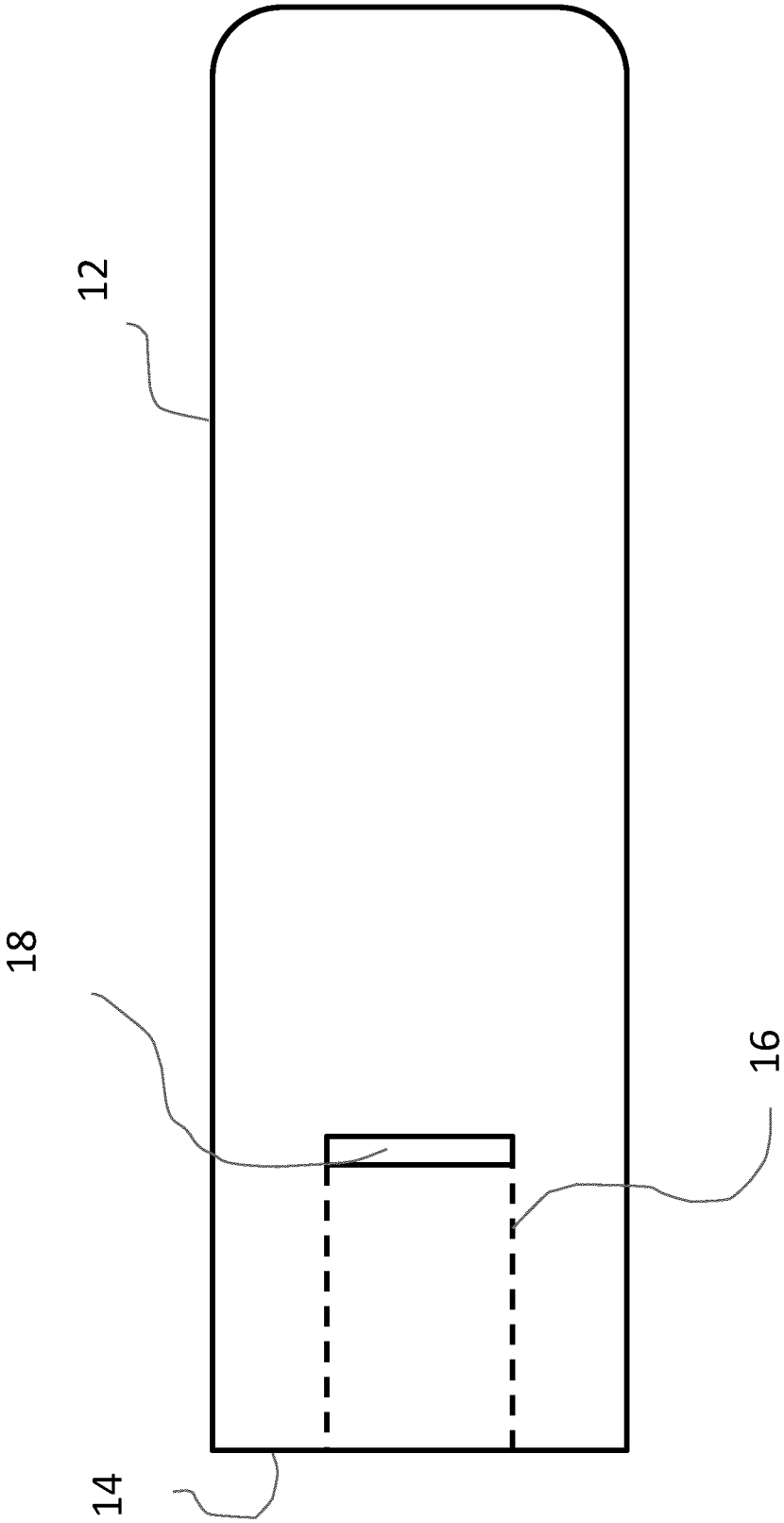


Fig 1a

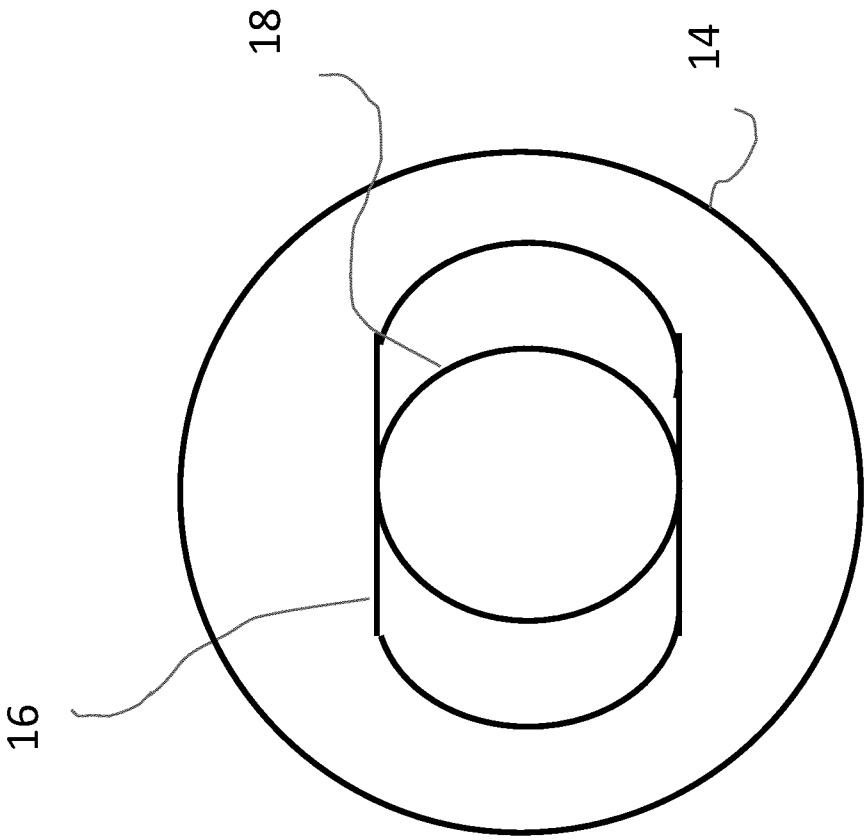


Fig 1b

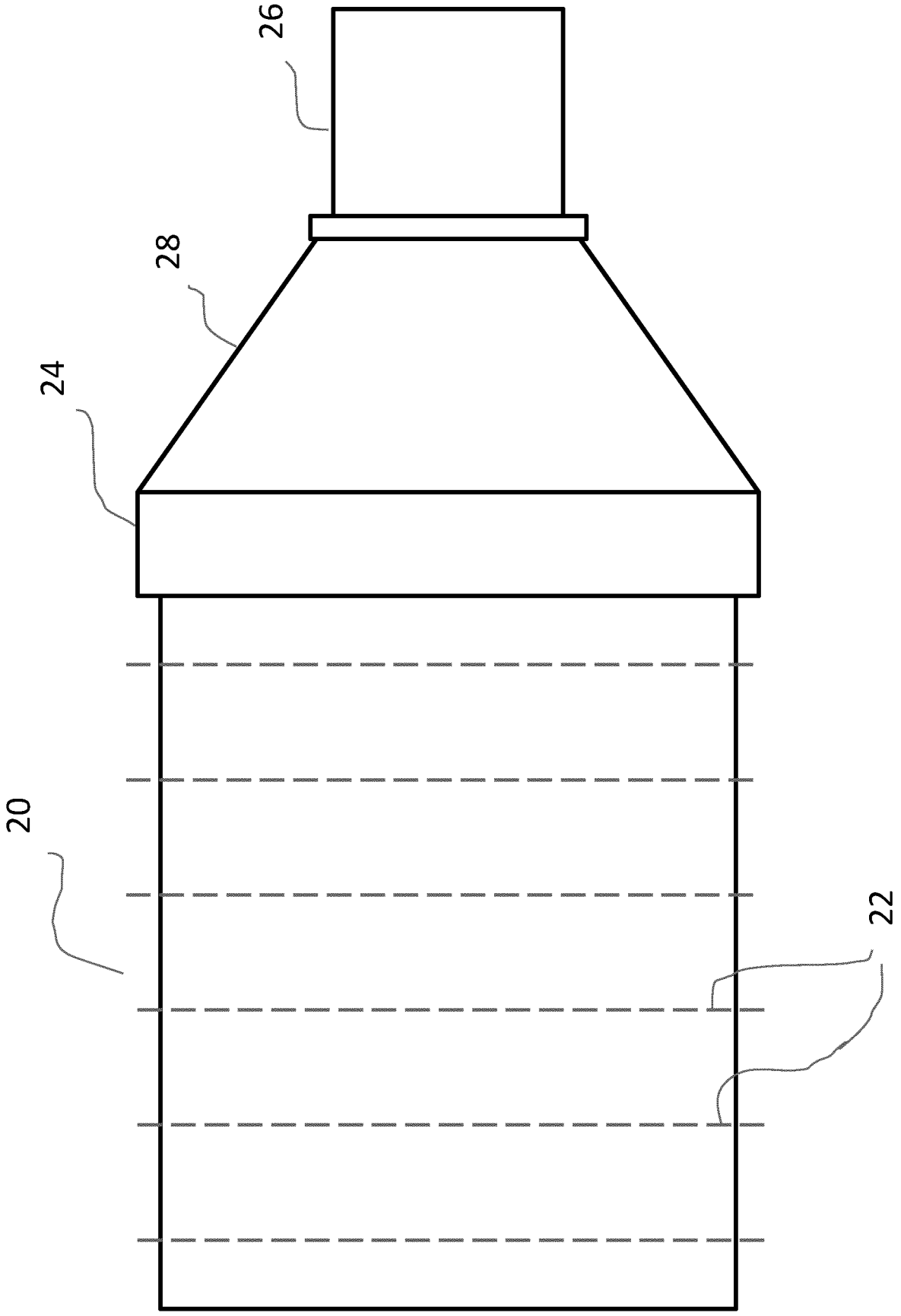


Fig 2a

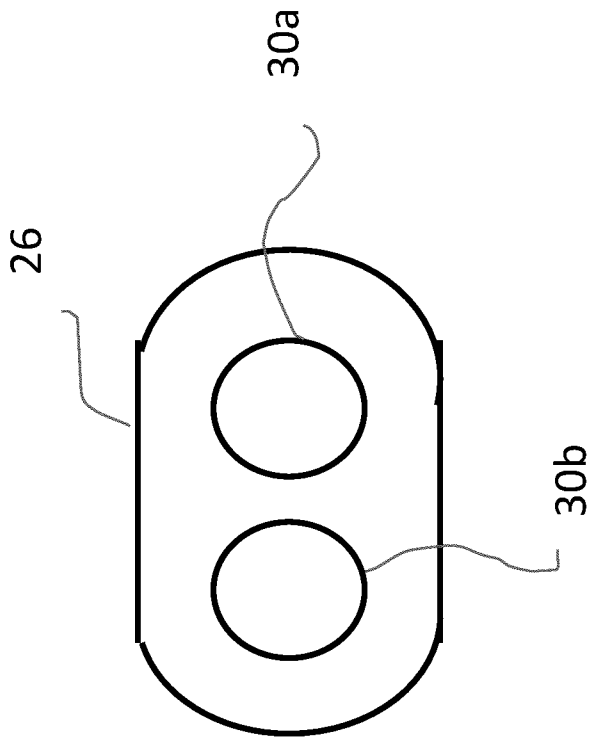


Fig 2b

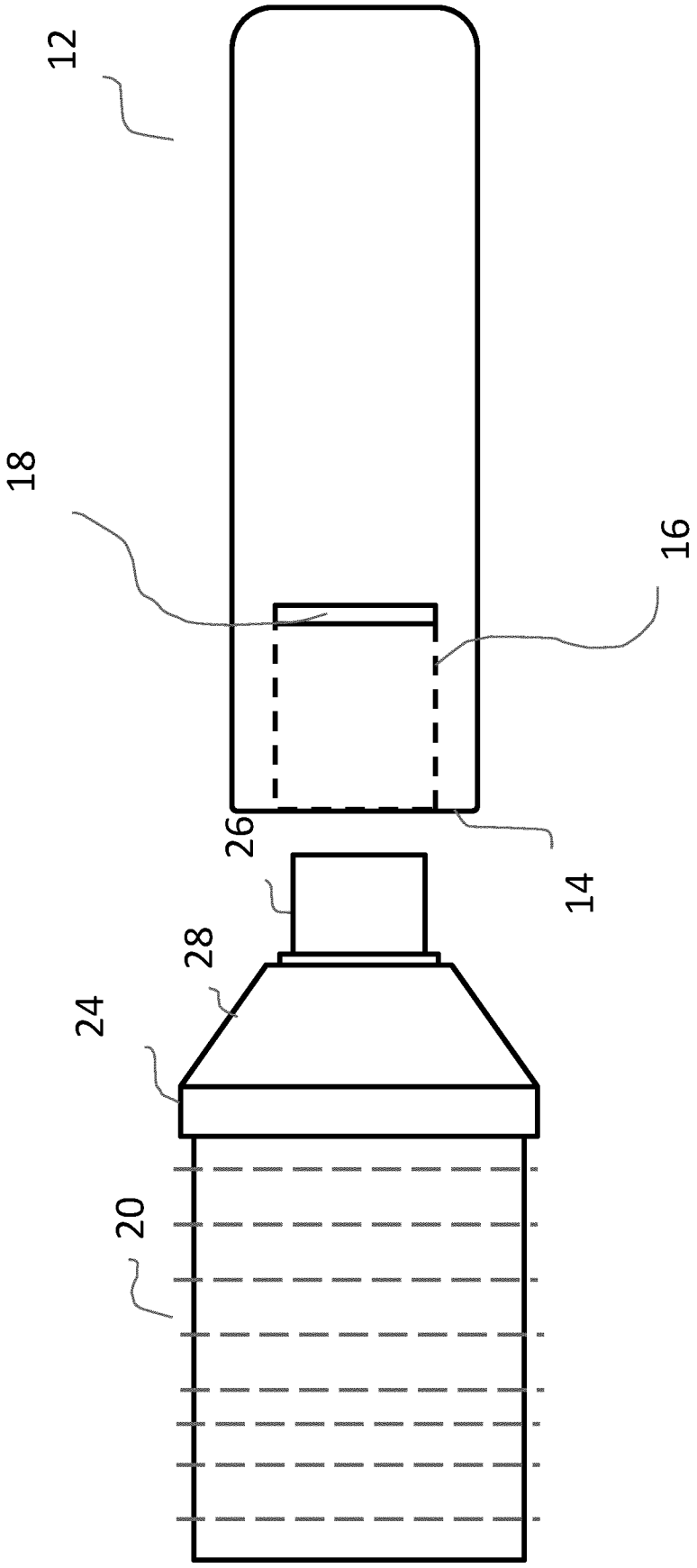


Fig 3

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2012/050486

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. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☒ Claims Nos.: 9, 10
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:

see FURTHER INFORMATION sheet PCT/ISA/210

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.

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2012/050486

A. CLASSIFICATION OF SUBJECT MATTER
INV. A46B5/00 A45D2/02
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)
A46B A45D

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,P	US 2011/114111 A1 (GUTHANS DEBRA E [US]) 19 May 2011 (2011-05-19) the whole document	1-8
X Y	US 6 138 685 A (O'BRIEN AIDEEN C [US] ET AL) 31 October 2000 (2000-10-31) column 4, lines 35-53; figure 6	1,3,6,7 2,5,8
X	DE 88 13 717 U1 (WELLA AG) 1 March 1990 (1990-03-01) page 2, lines 21-25 page 4, lines 11-28; figures 1,3	1,2,4,6, 7
X	US 2009/229624 A1 (PURVIS JONNA M [US] ET AL) 17 September 2009 (2009-09-17) paragraph [0056]; figure 2	1,4,6,7

-/--

[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
31 May 2012	11/06/2012

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	Roche, Olivier

1

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

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2012/050486

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2008/283083 A1 (PIAO XIANZHEN [CN]) 20 November 2008 (2008-11-20) paragraphs [0021], [0025], [0026]; figures 3,4 -----	2,5,8

1

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/EP2012/050486

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2011114111 A1	19-05-2011	NONE	
US 6138685 A	31-10-2000	US 5884635 A	23-03-1999
		US 6138685 A	31-10-2000
DE 8813717 U1	01-03-1990	NONE	
US 2009229624 A1	17-09-2009	US 2009229624 A1	17-09-2009
		US 2010300470 A1	02-12-2010
US 2008283083 A1	20-11-2008	AU 2008317477 A1	30-04-2009
		CA 2704225 A1	30-04-2009
		CN 201067174 Y	04-06-2008
		EP 2207454 A1	21-07-2010
		KR 20100084553 A	26-07-2010
		US 2008283083 A1	20-11-2008
		US 2012055505 A1	08-03-2012
		WO 2009054918 A1	30-04-2009

Continuation of Box II.2

Claims Nos.: 9, 10

Rule 6.2(a) PCT

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.2), should the problems which led to the Article 17(2) declaration be overcome.