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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
16 September 2004 (16.09.2004)

PCT

(10) International Publication Number
WO 2004/077987 A1

(51) International Patent Classification[7]: A45D 40/26, 2/48

(21) International Application Number:
PCT/IB2004/000794

(22) International Filing Date: 2 March 2004 (02.03.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
MI2003A000407 5 March 2003 (05.03.2003) IT
MI2003U000381 8 August 2003 (08.08.2003) IT

(71) Applicant *(for all designated States except US)*: **LALINE INTERNATIONAL SARL** [TN/TN]; Zone Industrielle, Sidi Abdel Hamid, 4000 Sousse (TN).

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: **GARGOUCH, Mohamed Ben Salah** [TN/TN]; c/o Laline International, Zone Industrielle, Sidi Abdel Hamid, 4000 Sousse (TN).

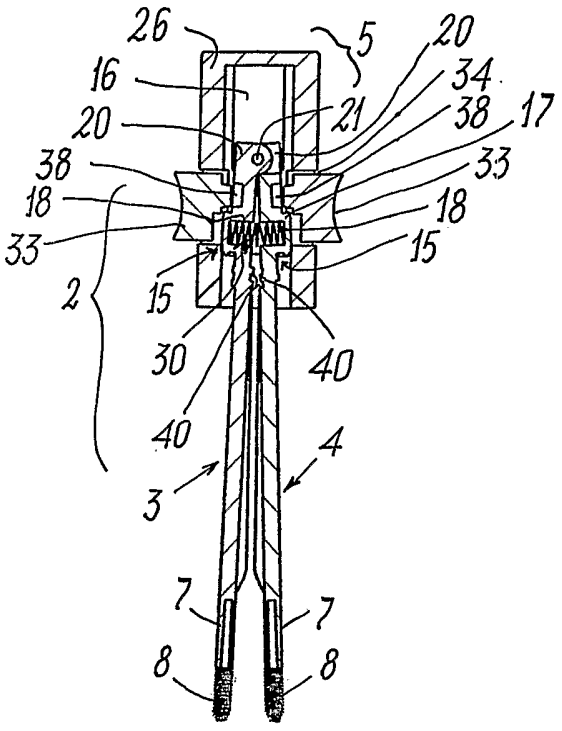
(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,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

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: MASCARA APPLICATOR WITH MOVABLE ARMS



(57) Abstract: A mascara applicator comprises a wand (2) presenting two side-by-side arms (3, 4) movable relative to each other, at least one of said arms (3, 4) carrying an element (8) for interacting with the eyelashes and a part for applying the mascara to the eyelashes. The arms (3, 4) are connected together and can be made to elastically approach each other, said arms being partially contained within a retaining member (5), this latter presenting members (6) for controlling the movement of said arms (3, 4), enabling them to be closed together so that they can interact with the eyelashes.

WO 2004/077987 A1

"MASCARA APPLICATOR WITH MOVABLE ARMS"

The present invention relates to a mascara applicator in accordance with the introduction to the main claim.

Mascara applicators substantially of tweezer form have been known for some time, they presenting two adjacent arms movable relative to each other, one of these arms carrying an element or brush for depositing the cosmetic product on the user's eyelashes. The second of these brushes can support a curved element for curling the eyelashes, or another element for their surface treatment.

These known arrangements present the most disparate configurations: for example they can comprise a one-piece V-shaped wand defined by the aforesaid arms joined together (integrally) at their free end; or they can present a scissor configuration with the said arms forming ends of substantially straight parts hinged together as scissor arms. In another embodiment, these known arrangements comprise pairs of V-shaped arms carrying eyelash support elements and mascara applicators at their ends.

These known arrangements present various drawbacks: for example, they are of large dimensions and hence

difficult to use and to deposit in a compartment of a small case or, as in the case of one-piece V-shaped applicators, the user can make contact with the cosmetic product during its application, with obvious inconvenience.

An object of the present invention is to provide a mascara applicator which is of improved construction and use compared with known arrangements.

Another object is to provide a mascara applicator of the stated type which enables the user to easily move the adjacent arms while making it difficult for the user to make contact with the mascara while depositing it on the eyelashes.

These and other objects which will be apparent to the expert of the art are attained by a mascara applicator in accordance with the accompanying claims.

The present invention will be better understood from the accompanying drawing, which is provided by way of non-limiting example and in which:

Figure 1 is a perspective view of a first applicator according to the invention, taken from below;

Figure 2 is a side perspective view of the applicator

of Figure 1;

Figure 3 is a side perspective view of the applicator of Figure 1, but in a different utilization position;

Figure 4 is a section on the line 4-4 of Figure 2;

Figure 5 is a section on the line 5-5 of Figure 2;

Figure 6 is an exploded perspective view of the applicator of Figure 1;

Figures 7-9 are longitudinal sections showing the various steps in using a mascara provided with a container and an applicator according to the invention; and

Figures 10-13 show different elements which can be associated with the applicator of Figure 1;

Figure 14 is a perspective view of a second applicator of the invention, seen from below;

Figure 15 is an exploded side perspective view of the applicator of Figure 14;

Figure 16 is a longitudinal side section through the applicator of Figure 14;

Figure 17 is a longitudinal section through a mascara provided with a container and the applicator of Figure 14;

Figures 18-20 are longitudinal sections showing the

various steps in using the mascara of Figure 17;

Figure 21 is a perspective view of a third applicator according to the invention; and

Figures 22 and 23 are longitudinal sections through the applicator of Figure 21 in two different utilization positions.

With reference to Figures from 1 to 13, a mascara applicator is indicated overall by 1. It comprises a wand 2 presenting elongate arms 3 and 4 positioned side by side and movable relative to each other. These arms are associated with a retaining member 5 provided with manipulator means 6 for their manipulation, said arms carrying at a first end 7 an interacting element 8 able to interact with the eyelashes to deposit mascara thereon or to provide a mechanical curling or combing action. These interacting elements 8 comprise (see Figures 10-13) brushes 10, a small comb 11, an arcuate element 12 or an element 13 with a helical surface projection; the elements 11-13 are generally associated with one of said arms 3, 4, the other arm carrying the brush 10. The elements 10-13 are associated with a seat 14 provided in the first end 7.

Each arm 3, 4 presents a second end 15 inserted into a cavity 16 of the retaining member 5. Said second end comprises a widened part 17 external to the arm, presenting an inner cavity 18 and a terminal part 20 provided with a through hole 21. The terminal part 20 of the arm 3 is flat and is inserted into the terminal part 20 of the arm 4 which instead is fork-shaped. Both said terminal parts 20 can evidently be fork-shaped or flat, similar to the part 20 of the arm 3 visible in Figure 6.

The retaining member 5 presents a jacket 26 defining its cavity 16. In this jacket, in opposing positions on the same axis K, there are provided two through holes 27 to receive a pin 28. This latter is inserted into the through holes 21 in the terminal parts 20 of the arms 3 and 4 when these have been fitted together such that their holes lie coaxial with said axis K. The pin 28 acts as a mutual fixing element for the arms 3 and 4 and enables them to be moved away from and towards each other about the pin, against the action of a spring 30 inserted into the inner cavities 18 of the externally widened parts 17 of said arms when fitted together.

To enable the arms to be moved towards each other against the spring 30, manipulator means 6 are provided. These comprise pushbuttons 33 movably inserted into lateral cavities 34 in the jacket 26 of the retaining member 5 communicating with the inner cavity 16 in this latter. These pushbuttons 33 present a part 35 which is external to the jacket 36 of the retaining member, and a part 36 arranged to cooperate with the terminal part 20 of the arms 3 and 4; the part 36 has a projecting shape able to engage a seat 38 provided in said part 20 of said arms 3 and 4, so becoming rigid with said part 20.

Each arm 3 and 4 also presents in proximity to the widened part 17 a series of transverse recesses 40 to receive corresponding transverse projections 41 of the other arm 4 and 3 when the two arms are closed for their insertion into a mascara container 42. This latter is shown in Figures 7-9 and comprises a hollow body 43 provided with an aperture 44 where a usual scraper 45 is positioned through which the mascara applicator 1 is inserted with its arms closed. They are closed (arrows F of Figure 8) by pressing the pushbuttons 33 towards the retaining member

(arrows G of Figure 8). On releasing the pushbuttons 33, the spring 30 forces the arms apart so that they open (arrows K1 of Figure 9).

The arms 3 and 4 may be opened and closed several times in applying mascara to a user's eyelashes and possibly in subjecting them to mechanical curling or other action depending on the interacting element 8 carried by one of the arms.

Reference will now be made to Figures 14-20. In these the mascara applicator is indicated overall by 100. It comprises a wand 102 presenting elongate arms 103 and 104 positioned side by side and movable relative to each other. These arms are associated with a cup-shaped retaining member 105 provided with manipulator means 106 for their manipulation, said arms carrying, in any known manner, at a first end 107 an interacting element 108 able to interact with the eyelashes to deposit mascara thereon or to provide a mechanical curling or combing action. These interacting elements 108 comprise, for example, brushes, a small comb, an arcuate element or other similar element. The elements 108 are connected to said arms 103, 104 for example by a

part

Each arm 103, 104 presents a second end 115 inserted into a cavity 116 provided in the retaining member 105 and closed by an upper plug 111. Said second end of each arm forms one piece with an interconnection element 113 which hence connects said two arms together. These latter, together with the element 113, hence define a single member partially inserted into said cavity 116.

Said second end 115 of each arm 103, 104 presents a widened part 117 external to the arm. This part 117 penetrates into a lateral cavity 118 provided in the jacket of the part 105 where movable elements 120 are present acting as pushbuttons for manipulating the arms 103 and 104 and defining the aforesaid means 106.

By pressing on the elements 120 towards the interior of the cavity 116 (arrows E of Figure 18) these act on the parts 117 to elastically urge the ends 107 of the arms 103 and 104 together (arrows M of Figure 18), to enable the mascara to be applied to the eyelashes while maintaining then elements 120 pressed.

The element 113 is externally threaded at 124 (Figure

15) and cooperates with an internal thread 125 provided in the cavity 116. A lower end 129 of the part 105 is internally threaded to cooperate with a thread 126 provided on the open terminal part 127 of a container 128 for the mascara where a scraper 129 with two apertures 130 for the arms 103 and 104 is positioned. The thread on the lower end 124 is opposite to that provided in the cavity 116 so that on screwing the part 105 onto the container 128, the arms 103 and 104 remain at rest, while moving relative to, i.e. translate upwards within, the cavity 16 of this part (so that the element 13 moves close to the upper plug 111, arrow L of Figure 20).

The arms 103 and 104 may be opened and closed several times in applying mascara to a user's eyelashes and possibly in subjecting them to mechanical curling or other action depending on the interacting element 108 carried by one of these arms.

With reference to Figures 21, 22 and 23, these show a mascara applicator 200 comprising a wand 202 presenting arms 203 and 204 positioned side by side and movable relative to each other. These arms are associated with a

cup-shaped retaining member 205 provided with manipulator means 206 for their manipulation, said arms carrying at a first end 207 an interacting element 208 able to interact with the eyelashes to deposit mascara thereon or to provide a mechanical curling or combing action. These interacting elements 208 are similar to the elements 8 and 108 already described in relation to the preceding figures and will therefore not be further described.

Each arm 203, 204 presents a second end 215 inserted into a cavity 216 provided in the retaining member 205 (for example of cup shape). The second ends 215 of the arms 203, 204 are connected together by a spring 230 having a first end 231 mounted about a projection 232 on the first arm 203 and a second end 234 inserted into a recess 235 in the second arm 204. This latter is associated with (or, as in the figures, integral with) a pushbutton movable within an aperture 236 of the retaining member 205. The pushbutton and the second arm 204 move against the action of the springs 230 towards the first arm 203, which is itself fixed to the retaining member 205.

In this manner, by acting on said pushbutton, the arms

203 and 204 can be elastically closed together to apply the mascara.

Specific embodiments of the invention have been described. Others are however possible in the light of the preceding description: for example the expert of the art can provide a different configuration of the manipulator means 6, 106, 206 such that they do not project from the member 5, 105, 205 or that they take the form of a pushbutton movable towards the arms (3, 103, 203; 4, 104, 204).

These embodiments are also to be considered as falling within the scope of the present document as defined by the accompanying claims.

CLAIMS

1. A mascara applicator comprising a wand (2, 102, 202) presenting two side-by-side arms (3, 4: 103, 104: 203, 204) movable relative to each other, at least one of said arms (3, 4: 103, 104: 203, 204) carrying an element (8, 108, 208) for interacting with the eyelashes and a part for applying the mascara to the eyelashes, characterised in that said arms (3, 4: 103, 104: 203, 204) are connected together and can be made to elastically approach each other, said arms (3, 4: 103, 104: 203, 204) being partially contained within a retaining member (5, 105, 205) acting as a lid for a mascara container (28, 128), said retaining member (5, 105, 205) presenting means (6, 106, 206) for controlling the movement of said arms (3, 4: 103, 104: 203, 204), enabling them to be closed together so that they can interact with the eyelashes and to apply mascara thereto.

2. A mascara applicator as claimed in claim 1, characterised in that each arm (3, 4: 103, 104: 203, 204) presents a first end (7, 107, 207) carrying the element (8, 108, 208) for interacting with the eyelashes and a second end (15, 115, 215) inserted into a cavity (16, 116, 216) of

the retaining member, said second ends (15) of said movable arms (3, 4) being hinged together and moving against the action of elastic means (30) contained in the retaining member (5).

3. A mascara applicator as claimed in claim 2, characterised in that the second ends (15) of the movable arms (3, 4) present through holes (21) arranged to lie coaxially with each other and with at least one hole (27) provided in the retaining member, in these holes (21, 27) there being inserted a pin (28) acting as a hinge for the movement of the movable arms (3, 4).

4. A mascara applicator as claimed in claim 3, characterised in that the pin (28) joins the movable arms (3, 4) to the retaining member (5).

5. A mascara applicator as claimed in claim 2, characterised in that the second end (15) of one of said movable arms (3, 4) comprises a fork-shaped terminal part (20) arranged to receive a flat terminal part (20) of the other movable arm (4, 3).

6. A mascara applicator as claimed in claim 2, characterised in that the elastic means (30) are positioned

between the movable arms (3, 4).

7. A mascara applicator as claimed in claim 6, characterised in that said elastic means (30) are a spring positioned between seats (18) provided in parts (17) of said arms (3, 4), said seats (18) being opposing.

8. A mascara applicator as claimed in claim 1, characterised in that each arm (103, 104) presents a first end (107) carrying the element (108) for interacting with the eyelashes and a second end (115) inserted into a cavity (116) of the retaining member, said second end (115) of said movable arms (1031, 104) being integral with an interconnection element (113) located in said cavity.

9. A mascara applicator as claimed in claim 8, characterised in that the interconnection element (113) is movable within the cavity (116) of the retaining member (105).

10. A mascara applicator as claimed in claim 9, characterised in that the interconnection element (113) is threaded (at 124) and cooperates with a thread (1125) provided in the cavity (116) of the retaining member (105).

11. A mascara applicator as claimed in claim 1,

characterised in that the each arm (203, 204) presents a first end (207) carrying the element (208) for interacting with the eyelashes and a second end (215) inserted into a cavity (216) of the retaining member (105), a first (203) of said arms being rigid with said part (205) and the second (204) of said arms being movable relative to the first against the action of elastic means (230) interposed between the second ends (215) of said arms (203, 204).

12. A mascara applicator as claimed in claim 11, characterised in that the elastic means (230) are a spring having a first end (231) rigid with the first arm (203) and a second end (232) rigid with the second arm and movable therewith.

13. A mascara applicator as claimed in claim 11, characterised in that the second arm (204) is rigid with the control means (6).

14. A mascara applicator as claimed in claim 1, characterised in that the control means (6, 106, 206) are at least one pushbutton (33, 120).

15. A mascara applicator as claimed in claim 14, characterised in that the control means (6) are pushbuttons

(33, 120) movably inserted into lateral cavities (34, 118, 236) of the retaining member (5, 105, 205).

16. A mascara applicator as claimed in claim 15, characterised in that each pushbutton (33) engages a seat (38) provided in a corresponding movable arm (3, 4).

17. A mascara applicator as claimed in claim 15, characterised in that each pushbutton projects from the retaining member (5, 105, 205).

18. A mascara applicator as claimed in claim 15, characterised in that each pushbutton is coplanar between a free end surface with the outer surface of the retaining member (5, 105, 205)

19. A mascara applicator as claimed in claim 14, characterised in that the is only one pushbutton, this moving axially on the retaining member.

20. A mascara applicator as claimed in claim 1, characterised in that the retaining member (105) presents a threaded end (129) cooperating, by screwing, with a threaded free end (127) of a container (128), said threaded free end (127) supporting a scraper (129).

21. A mascara applicator as claimed in claim 5,

characterised in that the scraper (129) presents separate apertures (130) for the movable arms (103, 104), said arms being torsionally immovable when screwing the retaining member (105) onto the container.

22. A mascara applicator as claimed in claim 1, characterised in that the element (8, 108, 208) for interacting with the eyelashes comprises a brush (10).

23. A mascara applicator as claimed in claim 1, characterised in that the element (8, 108, 208) for interacting with the eyelashes comprises an eyelash curler (12).

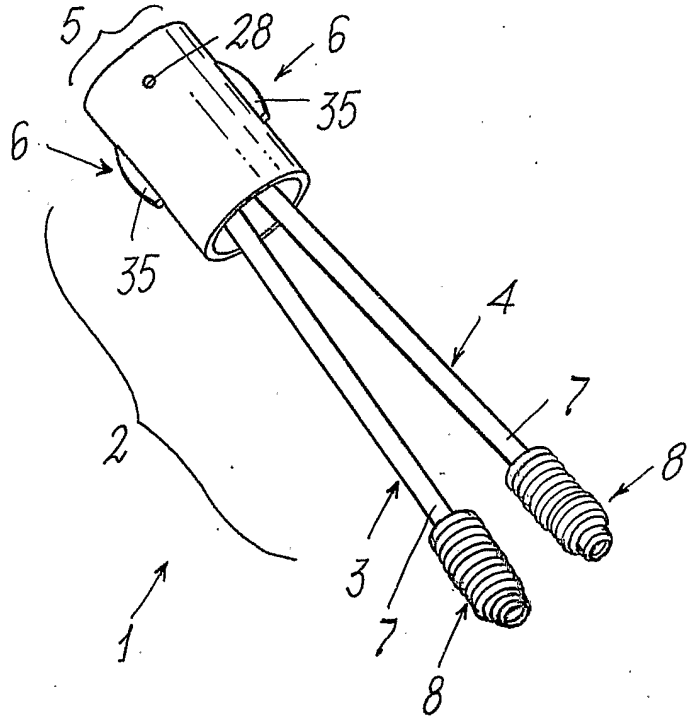


FIG. 1

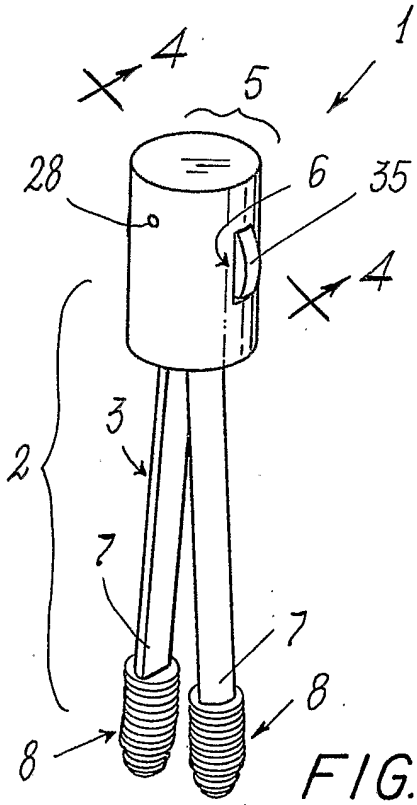


FIG. 2

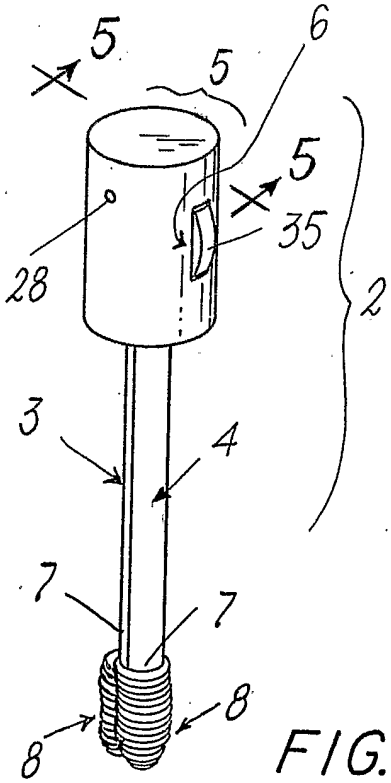


FIG. 3

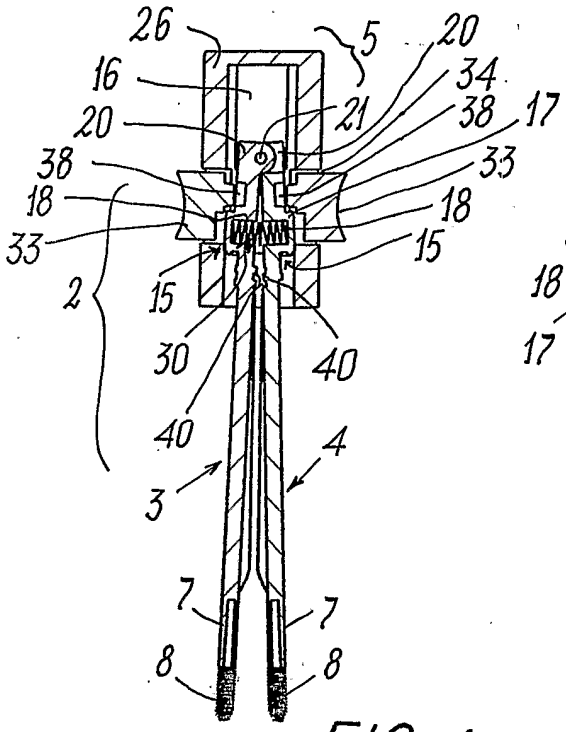


FIG. 4

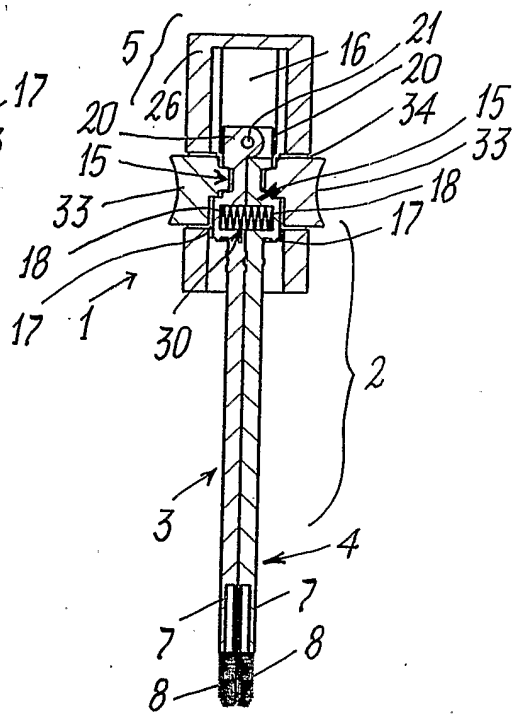


FIG. 5

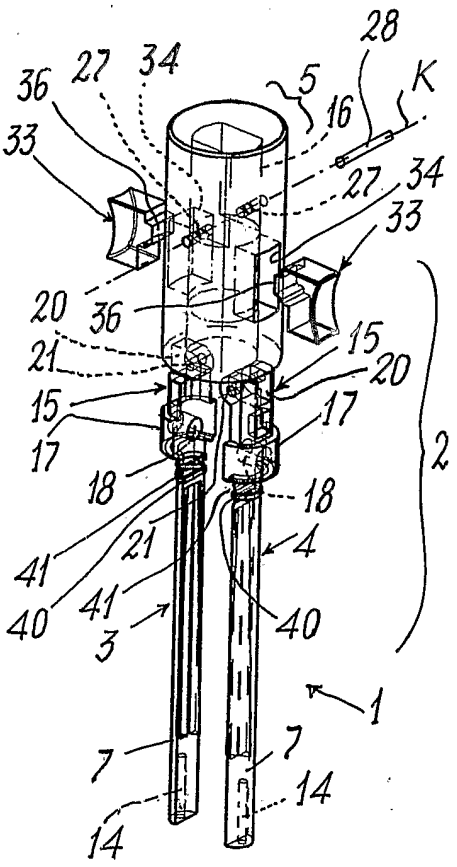


FIG. 6

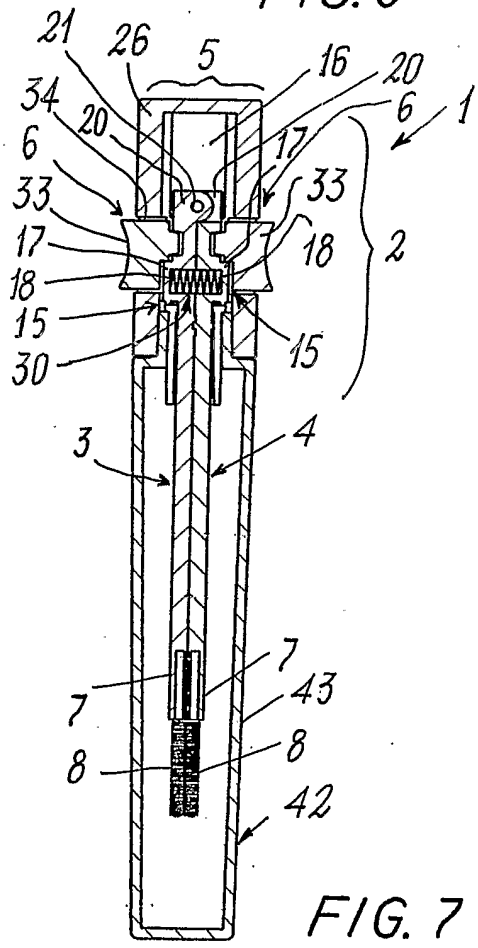
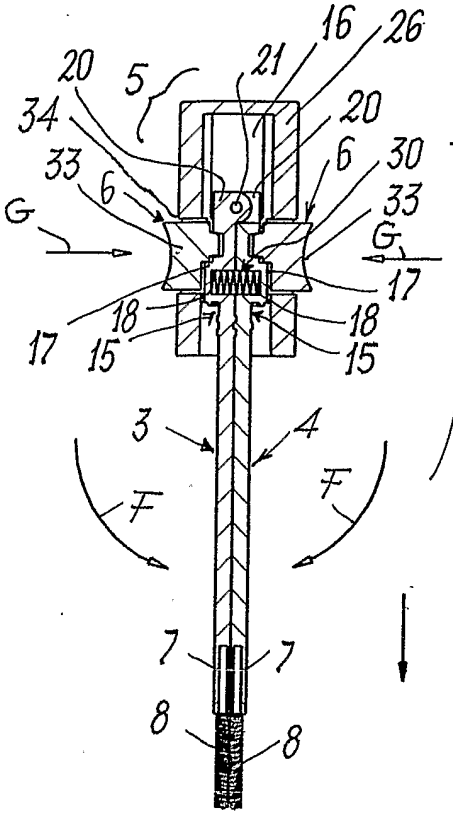


FIG. 7



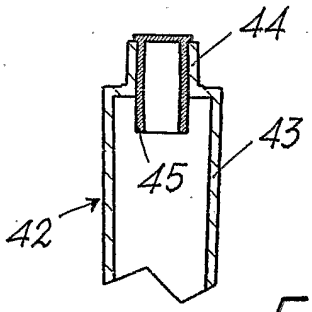
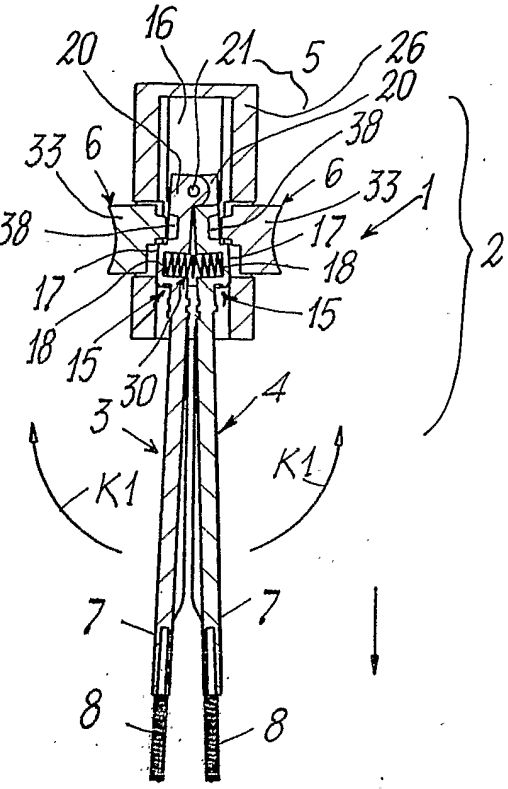


FIG. 8



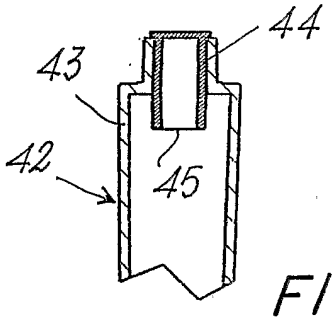


FIG. 9

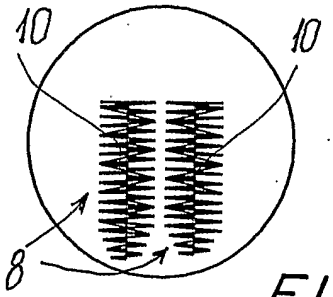


FIG. 10

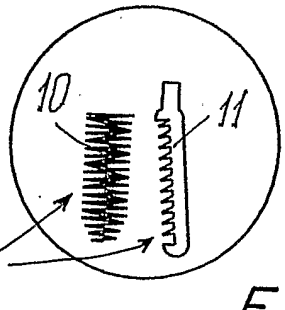


FIG. 11

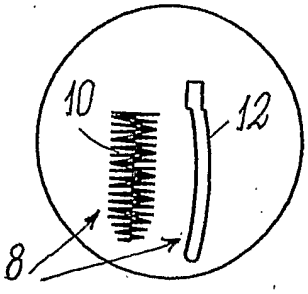


FIG. 12

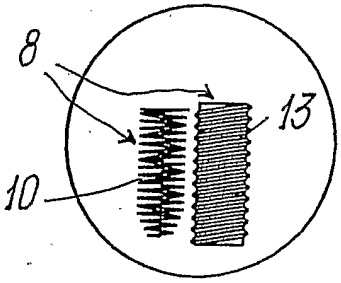


FIG. 13

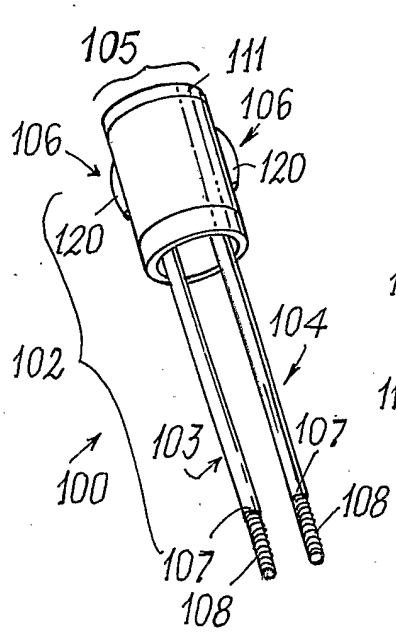


FIG. 14

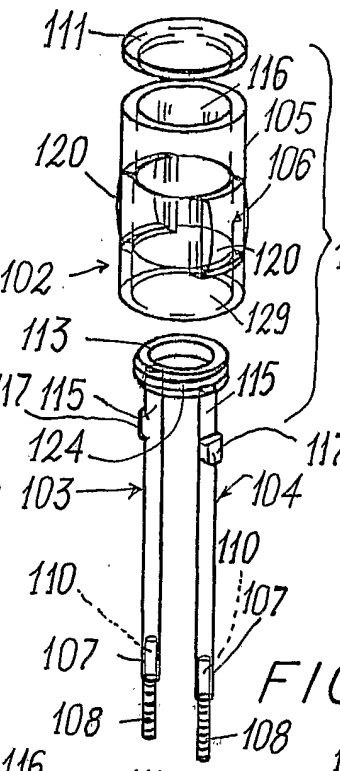


FIG. 15

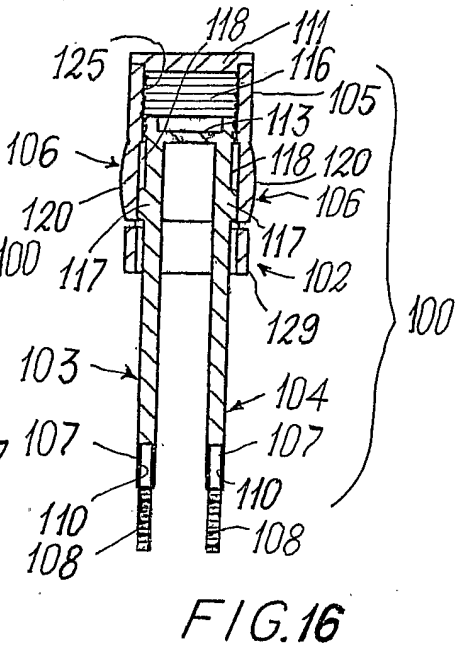


FIG. 16

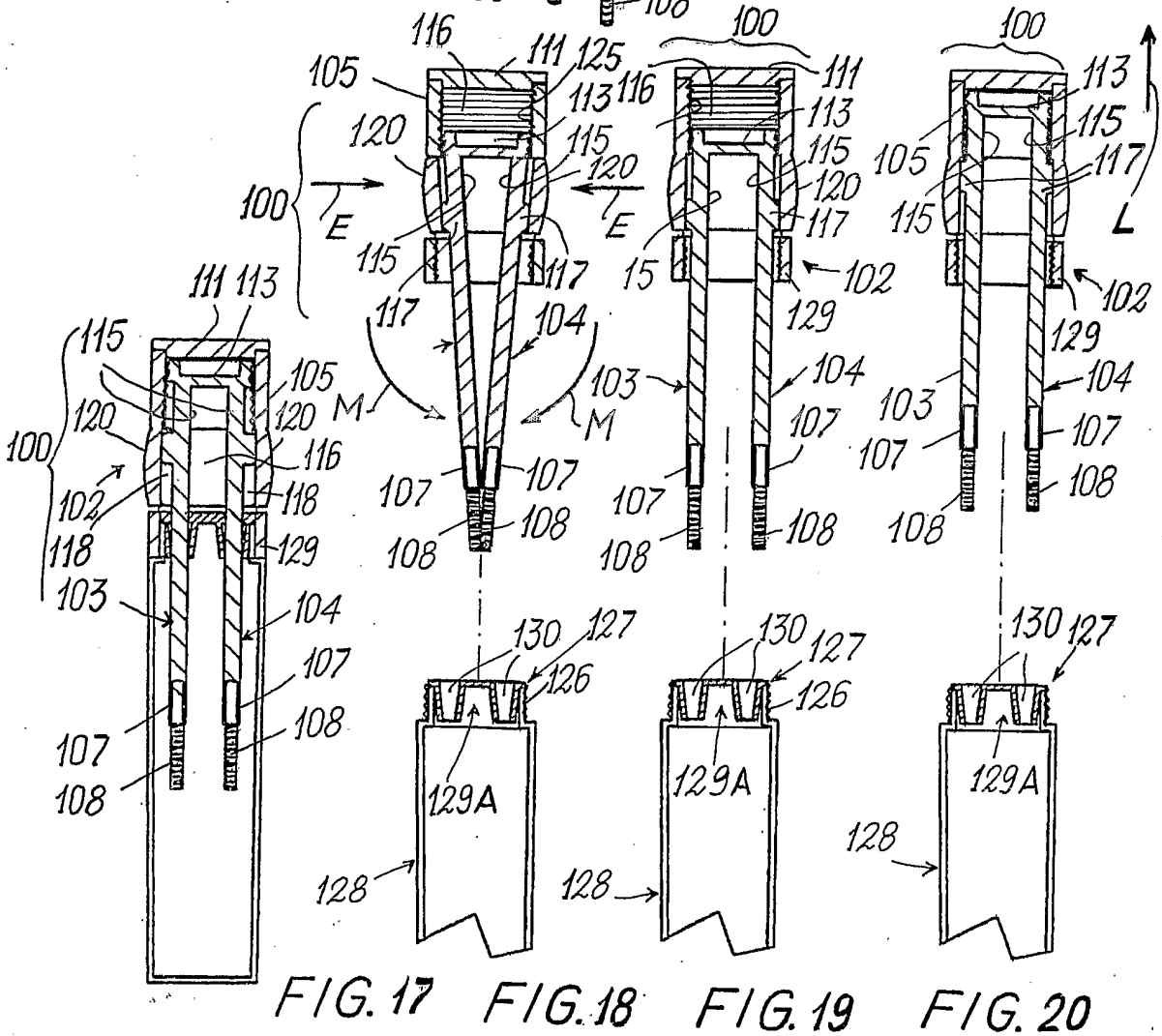


FIG. 17 FIG. 18 FIG. 19 FIG. 20

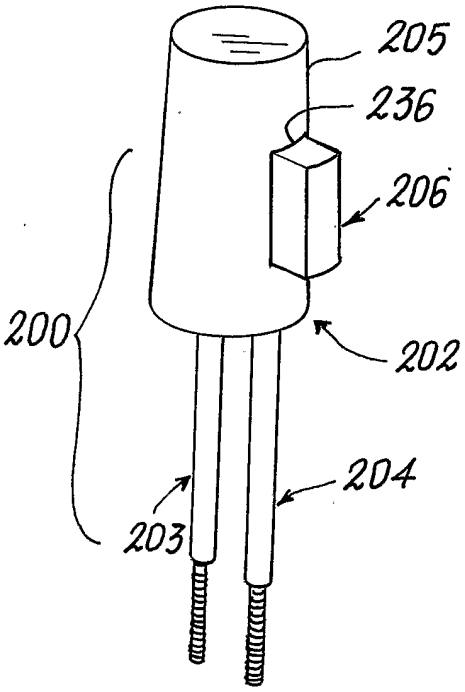


FIG.21

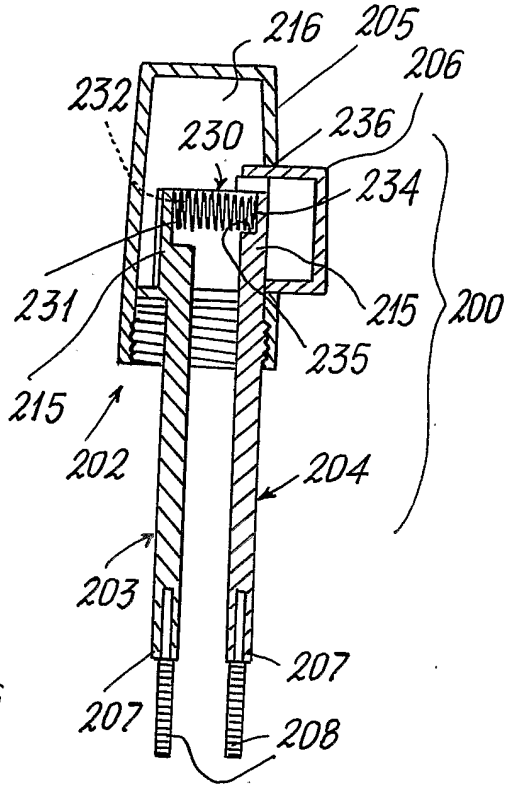


FIG. 22

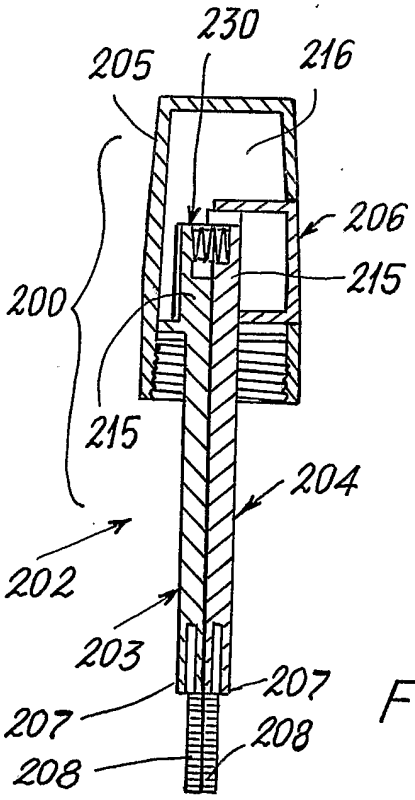


FIG. 23

INTERNATIONAL SEARCH REPORT

International Application No
PCT/IB2004/000794

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A45D40/26 A45D2/48

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)
IPC 7 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 practical, search terms used)
EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2 022 896 A (NATHANS ROBERT R) 3 December 1935 (1935-12-03) page 1, column 2, line 26 -page 2, column 2, line 27; claims; figures 1-4	1,2,6,7
X	GB 526 272 A (CHARLES WILLIAM STICKEL;KURLASH COMPANY INC; WILLIAM RAYMOND TUTTLE) 13 September 1940 (1940-09-13) page 1, line 55 -page 2, line 104; claims; figures	1,2,8, 22,23
X	DE 820 792 C (HEROLD WILFRIED) 12 November 1951 (1951-11-12) page 2, line 28,29; claims; figures	1,22

-/--

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in 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 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
17 June 2004	30/06/2004

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, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Herry, M

Form PCT/ISA/210 (second sheet) (January 2004)

INTERNATIONAL SEARCH REPORT

International Application No
PCT/IB2004/000794

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 6 325 071 B1 (BUTCHER JOHN) 4 December 2001 (2001-12-04) column 3, line 37-50; figures 1,3	1,20,21
A	US 6 026 825 A (DE LAFORCADE VINCENT) 22 February 2000 (2000-02-22) figures	1
A	DE 817 945 C (KEHDER OTTO) 22 October 1951 (1951-10-22) figures	1

INTERNATIONAL SEARCH REPORT

International Application No
PCT/IB2004/000794

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2022896 A	03-12-1935	DE 670017 C	09-01-1939
		GB 448999 A	18-06-1936
GB 526272 A	13-09-1940	NONE	
DE 820792 C	12-11-1951	NONE	
US 6325071 B1	04-12-2001	NONE	
US 6026825 A	22-02-2000	FR 2779041 A1	03-12-1999
		DE 69917128 D1	17-06-2004
		EP 0960584 A1	01-12-1999
		JP 3210910 B2	25-09-2001
		JP 11346827 A	21-12-1999
DE 817945 C	22-10-1951	NONE	