

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
15 December 2005 (15.12.2005)

PCT

(10) International Publication Number
WO 2005/117640 A1

(51) International Patent Classification⁷: **A45D 26/00**

(21) International Application Number:
PCT/SE2005/000835

(22) International Filing Date: 2 June 2005 (02.06.2005)

(25) Filing Language: Swedish

(26) Publication Language: English

(30) Priority Data:
0401427-0 4 June 2004 (04.06.2004) SE

(71) Applicant and

(72) Inventor: **BOËTHIUS, Victoria** [SE/SE]; Skånegatan
113, S-116 35 Stockholm (SE).

(74) Agent: **ERIKSSON, Kjell**; Norrtälje Patentbyrå AB, P.O.
Box 38, S-761 21 Norrtälje (SE).

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, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA,
MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ,
OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL,
SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC,
VN, YU, ZA, ZM, ZW.

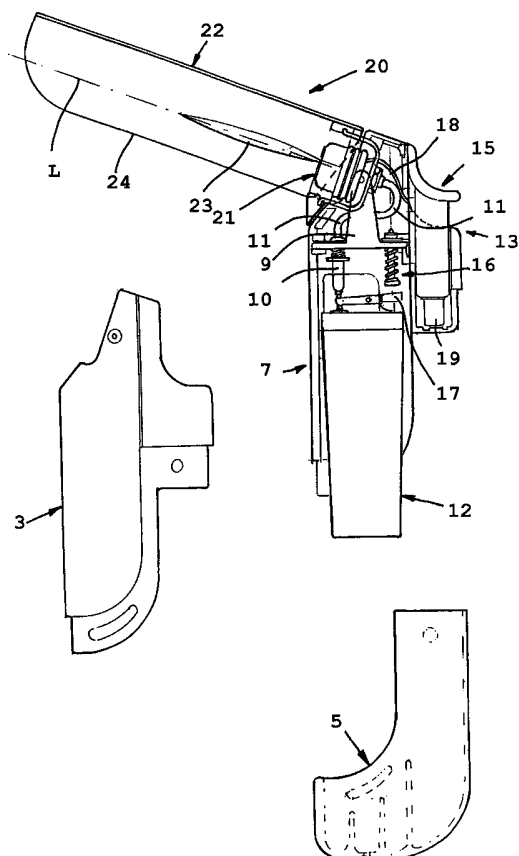
(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, 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).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,

Published:
— with international search report

[Continued on next page]

(54) Title: DEVICE FOR REMOVING HAIR



(57) Abstract: The present invention relates to a device for re-
moving hair, especially superfluous hair on the legs, the device
comprising a housing (1) and means (10, 11, 12, 13, 18, 19,
21) provided in the housing (1) to generate a flame (23) having
an extension in a main direction (L), that the device comprises
positioning means (22) adjacent to the flame (23), and that the
positioning means (22) has attachment means (24) that are in-
tended to be brought into contact with the skin area from which
hair is to be removed. It is significant of the device according to
the present invention that these attachment means (24) have
an extension essentially parallel to the main direction (L) of the
generated flame (23).



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.

DEVICE FOR REMOVING HAIR**Technical Field of the Invention**

The present invention relates to a device for removing
5 hair, especially superfluous hair on the legs, the device
comprising a housing and means provided in the housing to
generate a flame having an extension in a main direction, that
the device comprises positioning means adjacent to the flame,
and that the positioning means has attachment means that are
10 intended to be brought into contact with the skin area from
which hair is to be removed.

Prior Art

The most common way to remove superfluous hair is by
15 means of a razor, by means of waxing or by means of special
creams. Removal by means of a razor is an effective method,
one disadvantage however being thicker and darker hair in the
long run. Besides, the superfluous hair returns fast in the
shape of annoying bristles that are unpleasant to touch.

20 Removal by means of waxing is equal to tearing the
superfluous hair with the roots, this being painful to most
people. However, the new hair is of the same quality as
before the treatment.

It is also known to permanently remove superfluous hair,
25 e.g. by means of laser treatment. However, this is very time
consuming and expensive method.

From US-A-6,113,565 a device for removing hair is
previously known, said device comprising a housing and a
nozzle emanating from the housing. The nozzle is terminated
30 by a diffusing element, the object of this element being to
diffuse the generated flame on a larger area. To that purpose
the diffusing element is equipped with several holes that are
located at a certain mutual distance. Generally, the flame
will have a position perpendicular to the skin area, from
35 which superfluous hair is to be removed. This arrangement
makes it complicated to control, in a user-friendly way, that
the flame is at a suitable distance from the skin. In this
connection it should especially be noted that the flame will

have different length depending on the pressure of the discharging fluid.

Objects and Features of the Invention

5 A primary object of the present invention is to present a device of the type defined above, said device being user-friendly since it is guaranteed, as far as possible, that the user will not provide a local overheating of the skin, from which hair is to be removed.

10 A further object of the present invention is that the removal of hair in principle will take place without the sensation of pain.

 Still an object of the present invention is that the removal of hair is faster compared to conventional methods for
15 removing hair.

 A further object of the present invention is to avoid that the returning superfluous hair is in the shape of an annoying bristle.

 At least the primary object of the present invention is
20 realised by means of a device that has been given the features of the appending independent claim 1. Preferred embodiments of the invention are defined in the dependent claims.

Brief Description of the Drawings

25 Below a preferred embodiment of the invention will be described, reference being made to the enclosed drawings, where:

Figure 1 shows a side view of a device according to the present invention;

30 Figure 2 shows an exploded view of the device according to figure 1; and

Figure 3 shows a perspective view that schematically illustrates the use of the device according to the present invention.

35

Detailed Description of a Preferred Embodiment of the Invention

 The device shown in figures 1 and 2 comprises a housing 1, in which a number of components of the hair removal device

are located. To a certain degree the housing 1 constitutes two covers 3 and 5 that may be mounted on a base unit 7, see figure 2, of the housing 1, e.g. by means of a snap-in action.

The base unit 7 of the housing 1 is equipped with a supporting means 9, on which a nipple 10 is mounted. One end of a flowline 11 is connected to the nipple 10. As is evident from figure 2 a gas body 12 is received in a space of the base unit 7, said gas body 12 in principle being a conventional cigarette lighter from which the spark mechanism has been removed. The tube of the cigarette lighter that gas discharges from is connected to the nipple 10.

A push-button arrangement 13 is also provided on the housing 1, said arrangement comprising a control button 15 and an activating means 16. By activation of the control button 15 and the activating means 16 a lever 17 of the gas body 12 may be actuated. In connection therewith the control button 15 is displaced downwards and also the activating means 16 is given a downward movement. The activating means 16 will then contact the lever 17, which is actuated and gas is discharged from the gas body 12. The activating means 16 is resiliently suspended. This brings about that certain deviations in dimension between different gas bodies 12 may be taken care of.

The device for removing hair according to the present invention comprises a burner portion 20 that in its turn comprises a burner nozzle 21 and a protection cover 22 that in its position of use has an extension in the main direction of the flame 23 that projects from the nozzle 21. In figures 1 and 2 the main direction of the flame 23 is symbolised by the dash dotted line L. The protection cover 22 has also an extension in a direction perpendicular to the paper in figures 1 and 2 and the protection cover 22 is also open downwards, i.e. in a direction parallel to the paper. The lower edge portions of the protection cover 22 are designated by 24, these edge portions 24 constituting attachment means when the protection cover 22 is to be attached to a skin area from which superfluous hair is to be removed. Below the function of the attachment means 24 will be further described. As is evident from figures 1 and 2 the protection cover 22 has an

extension below the line L, the importance of this design will be touched upon below.

The protection cover 22 is pivotally attached to the base unit 7, this being illustrated by the arrow P in figure 1. The transfer of the protection cover 22 may thus be effected from the position of use shown in figures 1 and 2 to a position of transport where the protection cover 22 surrounds the first cover 3. In this position of the protection cover 22 the hair removal device is extremely compact and may easily be stored in a limited space.

The burner nozzle 21 is stationary mounted on the base unit 7 of the housing 1 and the other end of the flowline 11 is connected to the burner nozzle 21. Further, a cable 18 is connected to the burner nozzle 21, said cable being connected to a piezo-electric crystal 19 of the push-button arrangement 13. The piezo-electric crystal generates a spark in the cable 18 when the push-button arrangement 13 is activated.

The protection cover 22 is rotatably mounted on the base unit 7 and the line L constitutes the axis of rotation of the protection cover 22.

Functionally, the hair removal device according to the present invention functions in such a way that the user grasps the housing 1 and activates the push-button arrangement 13 in a suitable way, e.g. by means of a finger. In connection therewith the piezo-electric crystal 19 will be activated and a spark is generated in the burner nozzle 21. Simultaneously the activating means 16 will actuate the discharge button 17 and fuel flows in the flowline 11, from the lighter 12 to the burner nozzle 21. Thereby, a flame 23 is generated in the burner nozzle 21, this flame 23 generally having a direction along the dash dotted line L, see figure 2. The flame 23 of the hair removal device according to the present invention behaves in principle as a welding flame, i.e. the gas discharges under such high pressure that the flame 23 will have an extension along the dash dotted line L regardless of the orientation of the protection cover 22.

The use of the device according to the present invention is schematically illustrated in figure 3. Before the device according to the present invention is used the flame is

ignited in the way described above, the push-button arrangement 13 preferably being designed in such a way that the control button 15 must be kept active in a certain position in order to have the flame ignited.

5 When orienting the protection cover 22 it is a general rule that the flame 23 and the skin, from which superfluous hair is to be removed, should be parallel. In this connection the rotatably mounting of the protection cover 22 is important since a high degree of flexibility is achieved as concerns the
10 mutual orientation of the housing 1 and the protection cover 22. This is illustrated in an excellent way in figure 3 where the housing 1 rests comfortable in one hand of the user while the protection cover 22 extends laterally from the housing 1. Normally there is natural/comfortable way to hold the housing
15 1 in one's hand and consequently it is of a great importance that the protection cover 22 may be oriented in several degrees of freedom relative to the housing 1. When the housing 1 is received in one's hand in the intended way it should be natural to orient the cover 22 in a correct way when
20 it is attached to the skin, from which superfluous hair is to be removed. When the device according to the present invention is oriented in a correct way the flame 23 preferably has an extension parallel to the skin area, from which superfluous hair is to be removed. In principle, this is
25 achieved automatically since the attachment means/edge portions 24 have an extension that is parallel to the main direction of the flame 23. When the edge portions 24 of the open side of the protection cover 22 are brought to contact the skin area in question the flame 23 will be at a certain
30 distance from the skin due to the lateral extension, relative to the line L, of the open end of the protection cover 22. In this connection it should be emphasised that the distance between the flame 23 and the skin area in question must not be too large since the superfluous hair must be burnt away
35 completely. In normal use the protection cover 22 of the device according to the present invention is repeatedly moved over the skin area in question and the attachment means, in the shape of edge portions 24, are brought to contact the skin area in question. Each time the protection cover 22 is moved

over the skin area in question a further portion of the superfluous hair is burnt/singed away. If this movement of the protection cover 22 along the skin is not performed too slow the hair will be burnt/singed away without any affection
5 of the flame 23 upon the skin. This is also evident regarding the most sensitive areas of the body. However, it is in principle inevitable that a certain smell of burnt hair arises.

10 **Feasible Modifications of the Invention**

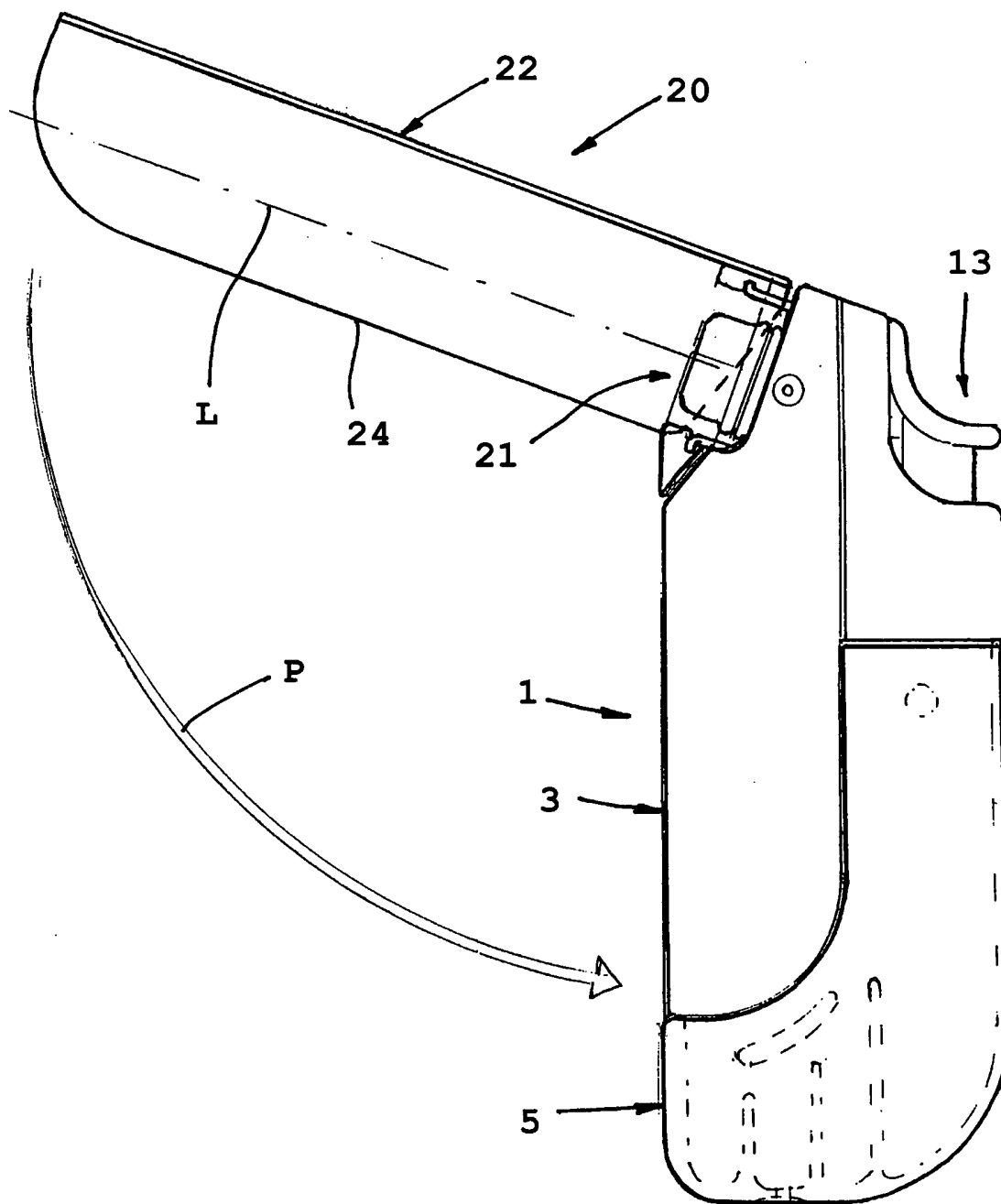
The embodiment described above of a hair removal device comprises a protection cover 22 that has an open side that is brought into contact with the skin. However, within the scope
15 of the present invention it is feasible to have alternative structural designs of the means that control the orientation of the flame relative to the skin. An important function of such a means is that the distance from the flame to the skin is controlled properly.

Claims

1. Device for removing hair, especially superfluous hair on the legs, the device comprising a housing (1) and means (10, 11, 12, 13, 18, 19, 21) provided in the housing (1) to
5 generate a flame (23) having an extension in a main direction (L), that the device comprises positioning means (22) adjacent to the flame (23), and that the positioning means (22) has attachment means (24) that are intended to be brought into
10 contact with the skin area from which hair is to be removed, c h a r a c t e r i s e d in that these attachment means (24) have an extension essentially parallel to the main direction (L) of the generated flame (23).
- 15 2. Device according to claim 1, c h a r a c t e r i s e d in that the means to generate a flame (23) comprises a gas body (12) and a flowline (11) attached to the gas body (12).
3. Device according to claim 2, c h a r a c t e r i s e d in
20 that the positioning means is designed as a protection cover (22) with an open side.
4. Device according to claim 3, c h a r a c t e r i s e d in that the protection cover (22) has attachment means in the
25 shape of edge portions (24) adjacent to the open side.
5. Device according to any of the previous claims, c h a r a c t e r i s e d in that the means for generating a flame (23) comprises a burner nozzle (21).
30
6. Device according to claim 2 or 5, c h a r a c t e r i s e d in that the burner nozzle (21) is provided inside the protection cover (22).
- 35 7. Device according to claim 6, c h a r a c t e r i s e d in that the means to generate a flame (23) comprises a gas body (12) that constitutes a portion of a cigarette lighter.

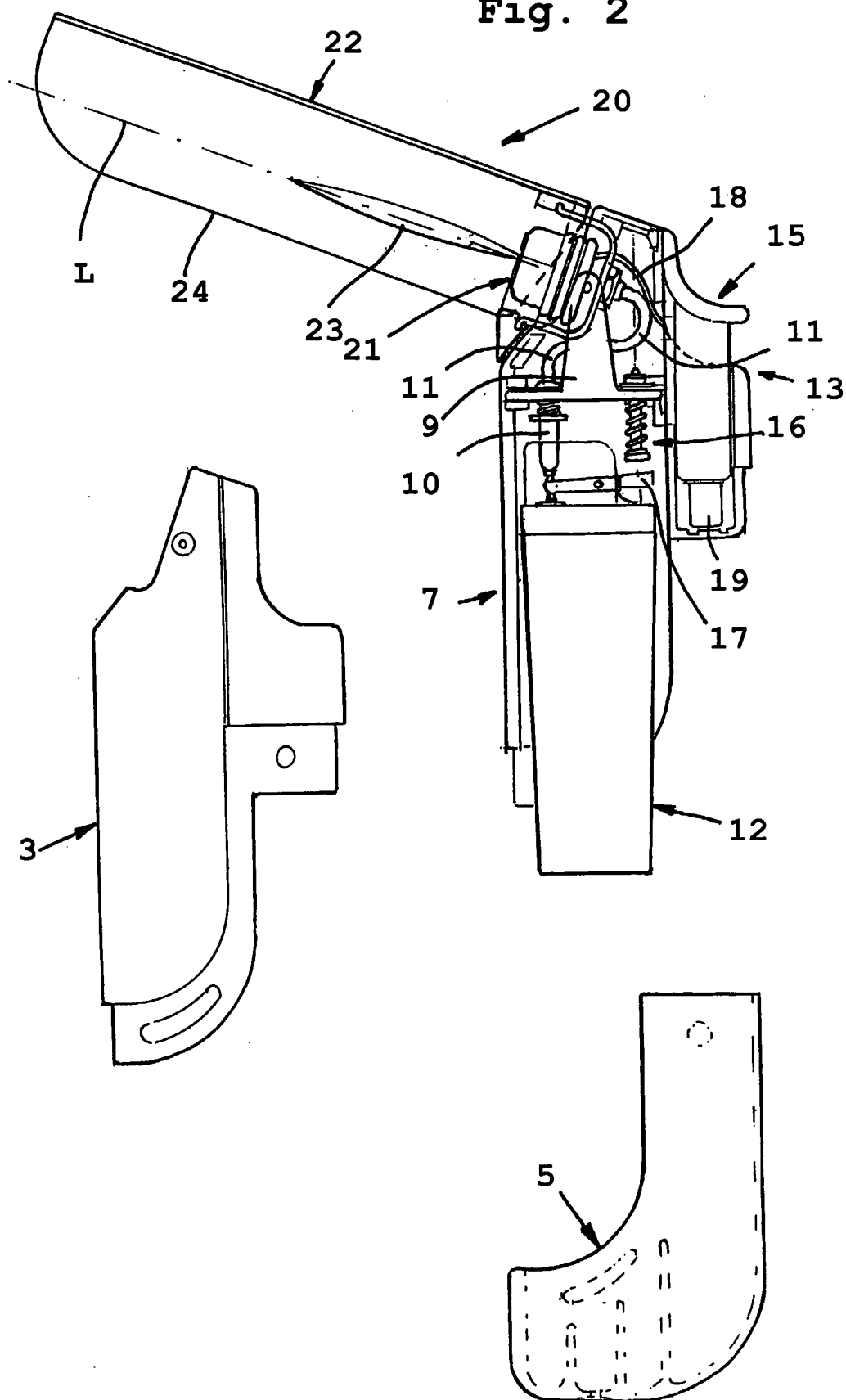
1/3

Fig. 1



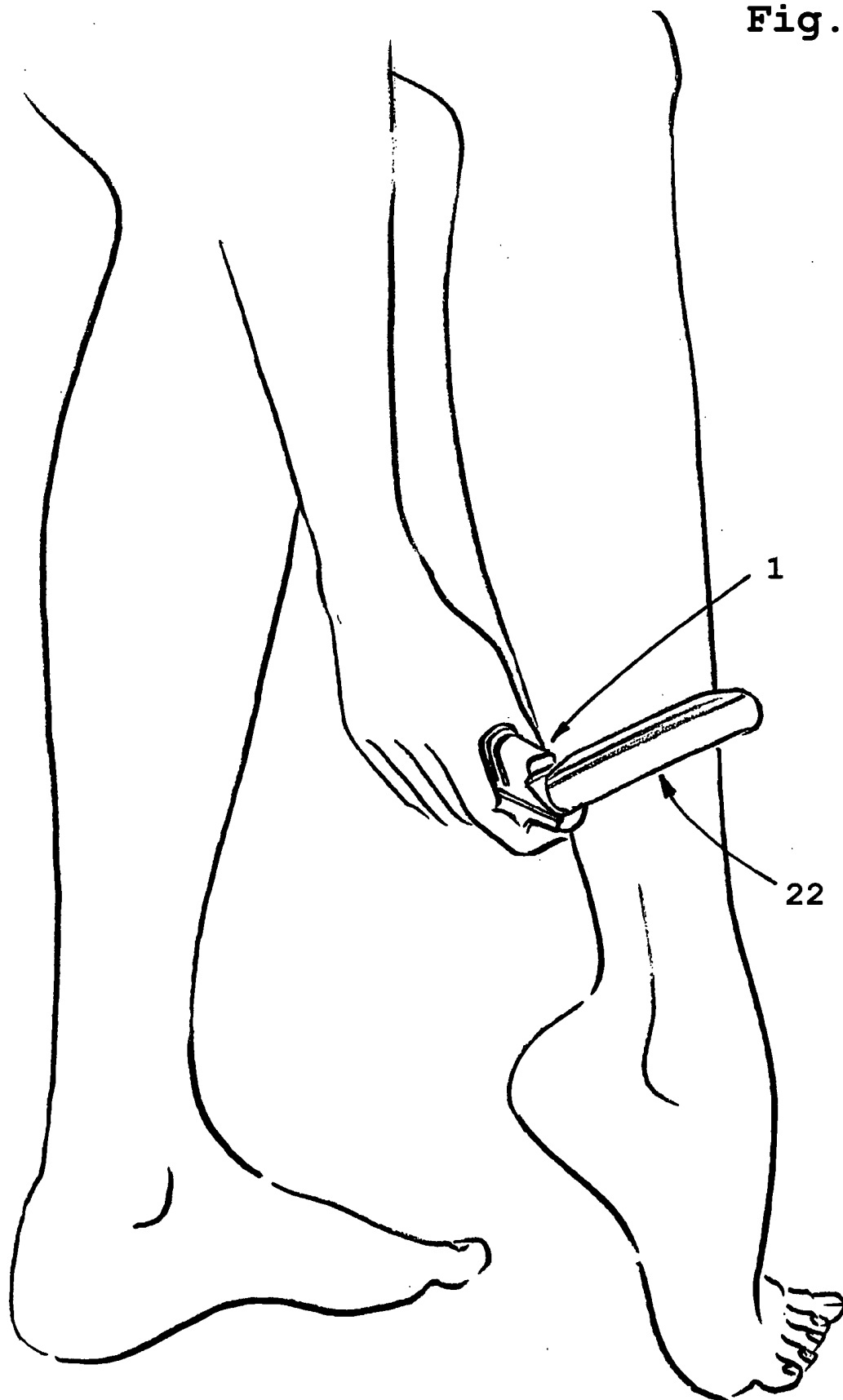
2/3

Fig. 2



3/3

Fig. 3



INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 2005/000835

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: A45D 26/00

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)

IPC7: A45D

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

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, 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.
A	DE 695133 C (WALTER H E THIEMANN), 17 August 1940 (17.08.1940), fig, claims --	1-7
A	US 6113585 A (CAPARRELLI), 5 Sept 2000 (05.09.2000), claim 1, abstract --	1-7
A	US 5082440 A (YAMAMOTO), 21 January 1992 (21.01.1992), fig, abstract --	1-7
A	EP 0315604 A2 (PINTON, ILES), 10 May 1989 (10.05.1989), abstract -- -----	1-7

☐ 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 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

24 August 2005

Date of mailing of the international search report

07-09-2005

Name and mailing address of the ISA/

Swedish Patent Office

Box 5055, S-102 42 STOCKHOLM

Facsimile No. +46 8 666 02 86

Authorized officer

Hélène Sundström/EK

Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT

Information on patent family members

08/07/2005

International application No.

PCT/SE 2005/000835

DE	695133	C	17/08/1940	NONE		
US	6113585	A	05/09/2000	KR	2000017097 A	25/03/2000
				US	6321093 B	20/11/2001
US	5082440	A	21/01/1992	NONE		
EP	0315604	A2	10/05/1989	IT	212079 Z	16/06/1989
				IT	8722652 D,V	03/11/1987