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(54) Title: DEPILATION DEVICE AND METHOD FOR THE USE THEREOF

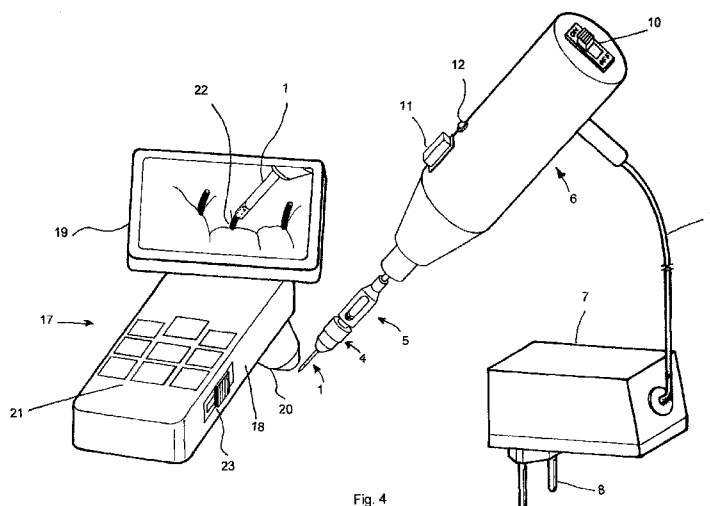


Fig. 4

(57) Abstract: A depilation device comprising a tubular cutting head punch unit (1) extending at a conical knife edge cutting surface (1d) with a diameter not exceeding 0.50 mm and a punch holder means (3, 6) for holding the punch unit (1) being provided in combination with a magnifying lens assembly (20) adapted to provide a magnified view of the hairy area subject to depilation. The lens assembly (20) can be part of a digital microscope unit (17) that allows taking crisp enlarged images of a hair follicle (22) displayed onto a monitor (19) by pressing the tip of the magnifying lens against the skin whilst applying and rotating punch unit (1) onto the skin to effect extraction of a targeted hair follicle (22). The depilation method involves application of the depilation device for effecting extraction of individual single hair follicles, one after the other, until depilation of the overall targeted hairy area is complete.

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Depilation device and method for the use thereof

The field of the art

The invention relates to a depilation device adapted to perform single hair removal from the human body.

5 The background of the invention

Depilation is a cosmetic process mainly used by women and nowadays increasingly used by men with a scope of achieving aesthetic improvement of the human body through extraction of unwanted hair from selected regions thereof, e.g. from the chest, the dorsum, hands or legs. A depilation
10 process is deemed effective if it provides a permanent or at least long term aesthetic effect whilst incurring minimal pain in the application thereof.

Various depilation procedures and equipment associated with the implementation thereof have been employed in the prior art. Specifically, laser and electrolytic depilation procedures and devices are the most
15 commonly used.

In a laser depilation process, laser light is used for the treatment of hairy areas of the human body. A laser depilator is an electronic-optical device that emits coherent light radiation. In fact the term "laser" is an acronym for
"Light Amplification by Stimulated Emission of Radiation" and as such a
20 laser depilation process is subject to the well known characteristic of light

radiation that is to be reflected by a white substance, whilst being absorbed by a black substance. Moreover, in the case of laser light this characteristic is exhibited much more intensely. Thus when laser light radiation is employed in a depilation process, what is actually taking place is that since cellular
5 tissues of the skin, outer root sheaths, hair mother cells and the like contain a large amount of melanin which is a black substance, laser radiation tends to be excessively absorbed therein. Consequently such absorption damages hair roots in the targeted hairy areas of the human body by means of heat generation due to conversion of laser light energy into thermal energy,
10 thereby achieving the scope of destructing the hair regeneration mechanism and delaying hair regrowth.

However, the laser depilation mechanism does not achieve to perform total hair extraction and future hair regrowth might be expected as hair follicles remain practically unaffected. Additionally, the large number of repeated
15 sessions (8-10) required for the completion of the treatment renders the process rather expensive and time-consuming.

One solution to these problems is proposed in US-2005177139 where a laser depilation device comprises a light source for irradiating laser light, a unit for removing hair from the skin and a lens for irradiating the skin with the
20 laser light while deforming the beam shape so as to conform to the shape of the target region of the skin from which hair is removed by the hair

removing unit. In this invention, the effectiveness of laser depilation is relatively improved considering the treatment result, as well as the expected reduction in the cost and time consumed in hair removal, but hair regrowth is still possible.

5 Another disadvantage of laser depilation process is that it is rather painful especially when performed in sensitive hairy areas of the human body (e.g. in the axilla). Skin burning or discoloring, hypo pigmentation (white spots) and flare of acne are additional potential risks in the application of laser depilation processes and devices.

10 A further disadvantage of the laser depilation process is the selective absorption of laser light from melanin that leads to the subsequent selective damage of hair with specific colors only. In this respect, black or dark brown colored hair are damaged, whilst blond, red or white colored hair remain relatively unaffected from laser light irradiation. Furthermore laser depilators
15 present differentiated results depending on the type of hair that has to be removed and in this respect they have proved inefficient in the treatment of non-straight, curly hair.

Moreover, the human body tends to be sensitive to sun radiation after the laser depilation process for a period of approximately 3 weeks, thereby
20 leading to post-depilation imposed restrictions. Finally, the production cost of a laser depilation device is rather high.

Another commonly used depilation process is the electrolytic depilation where electrolytic depilation devices are applied. In electrolytic depilation devices, a continuous current supplied to the entry of a hair follicle is used to reach the papilla joined to the root of the hair and to consequently chemically
5 destroy the papilla by galvanic electrolysis. The liquid contained in the tissue then constitutes an electrolyte during this procedure. By reason of this electrolysis the root of the hair is destroyed and it is expected that regrowth thereof will be delayed.

Electrolytic depilation devices are known in which several needles are used
10 to implement depilation by electrolysis. These needles must be applied to the vicinity of the papillae of the hair to be treated. The needles comprise first electrodes inserted into the skin of the individual in the vicinity of the respective papilla, whilst a second electrode is placed on the skin for the circulation of current.

15 One disadvantage of these depilation devices is that the distribution of current is not even among all the needles and so depilation is not sufficiently effective, thereby requiring repeated visits to accomplish complete hair removal from a targeted region. One solution to this problem is proposed in U.S. Pat. No. 4,155,363, but the device described therein is relatively
20 complicated and difficult to use. Accordingly the tweezers electrolysis

depilation device disclosed in US-4,784,136 is also complex and difficult to handle effectively and quickly.

An attempt to increase the effectiveness and in parallel provide a simple mechanism for an electrolytic depilation device is disclosed in US-
5 2007/0239152, wherein the electrolytic depilation device works by electrical contact with the skin surface and contains an electrical power supply source and an electronic control circuit connected to the electrical power supply source with the latter supplying two appropriately spaced electrodes of different polarity. The current applied between the two electrodes initiates
10 electrolysis at the level of the hair to be treated and removal thereof is obtained.

After all, the electrolytic depilation process, likewise laser depilation, despite effecting a damage of the root of the hair and to a certain extent delaying the regrowth thereof, still leaves the hair follicle unaffected and again hair re-
15 growth possibility is high.

Moreover the long term effects of using both abovementioned technologies of electrolytic and laser depilation devices are yet unknown and it is not certain that employment of such devices will not be the cause of future hazardous effects on the general health prospects of the individual.

In light of this prior art and disadvantages linked to the aforementioned known devices, the object of the present invention is to overcome and eliminate the abovementioned disadvantages and drawbacks of the prior art.

With this scope in mind, the invention proposes a depilation device and a
5 minimally invasive depilation process for single hair removal and total extraction thereof by means of the extraction of the hair follicles that eventually substantially inhibits possibilities of hair re-growth.

The proposed depilation process is applied to any hair type and any hair color whatsoever and is insensitive to sun radiation thereby removing post-
10 treatment restrictions of the prior art and permitting implementation thereof at any time throughout the year. The depilation treatment of the invention is not painful or hazardous for the human health both immediately after treatment as well as for the future and it is minimally time-consuming and therefore less expensive since a single visit is sufficient for the treatment of a
15 specific area of the human body.

Another object of the invention is to propose a low cost depilation device adapted to perform removal of single hair follicles, the device being simple in use and having a long service life without any significant cost of maintenance.

20 In accordance with a preferred embodiment of the invention, the depilation device comprises a tubular cutting head punch unit with a very small

diameter and a conical knife edge cutting surface formed at the end thereof. Accordingly the depilation process of the invention comprises the step of exerting a slight pressure on the skin and effecting a rotational movement of the tubular cutting head perimetrically around the targeted hair follicle, 5 thereby leading the tubular cutting head at a predetermined depth within the cellular mass and subsequently effecting an equivalent rotational movement of the tubular cutting head in the reverse direction leading to extraction of the same from the cellular mass; henceforth employing tweezers to remove the radically cut hair follicle and repeat the abovementioned process with 10 adjacent hair follicles until depilation of the overall targeted hairy area is complete.

Still another object of the invention is to propose alternative mechanically, i.e. manually and automatically, i.e. electrically operated modes of the depilation device.

15 A further object of the invention is to propose a combination of the depilation device with a magnifier lens unit that may assist in precisely targeting the hairy area to be treated.

Brief description of the drawings

The invention is described with reference to the attached figures in which:

Fig. 1 shows a first embodiment of the depilation device of the invention comprising a typical cutting head punch unit mounted at the free end of a tubular shank, the device being adapted to operate mechanically in performing single hair follicle removal operations.

- 5 Fig. 2 shows a second embodiment of the depilation device of the invention comprising a typical cutting head punch unit mounted at a choke device that is connected to a tubular shank, the device also being adapted to operate mechanically in performing single hair follicle removal operations.

- Fig. 3 illustrates an exploded view of the depilation device depicted in Fig. 2,
10 the device further comprising a tubular case connected with a choke device that holds the cutting head punch unit and being adapted to operate electrically with the tubular case serving as a punch holder means and a means for incorporating batteries and basic electrical operating circuit.

- Fig. 4 presents an overall pattern of an electrically operated depilation device
15 connected to a transformer for power supply and operated in conjunction with a digital microscope employed to magnify the hairy area in which depilation is to be performed.

Detailed description of preferred embodiments

The invention relates to a depilation device for single hair follicle extraction from a targeted area of the human body and to a depilation method in which individual hair follicles are extracted from the targeted hairy area.

The depilation device comprises a tubular cutting head punch unit 1 that is
5 divided along a circumferential line 1c into a frontal portion 1a and a rear portion 1b, wherein the frontal portion 1a is provided with an appropriate coating, gold or equivalent, to provide for a medically acceptable contact with the human body. Whilst a punch holder means for the tubular cutting head 1 is not an absolute requirement, a punch holder means is preferably
10 used to facilitate the process and, if this is the case, the rear portion 1b of the tubular cutting head 1 is appropriately connected at the frontal end of the punch holder means.

In accordance with a first embodiment of the invention as depicted in Fig. 1, the punch holder means is a plastic tubular shank 3 of appropriate length
15 adapted to receive the tubular cutting head 1 at the free end thereof.

Alternatively, in accordance with a second embodiment of the invention as depicted in Fig. 2, the punch holder means is a tubular shank 3 bearing a connecting extension member 5 and a choke means 4 at the free end thereof whereby the depilating tubular cutting head punch unit 1 is mounted at the
20 free end of the choke means 4.

In both the abovementioned cases as illustrated in accompanying Figures 1 and 2, the depilation device is adapted to operate mechanically by manual rotation of the tubular shank 3 as the targeted hair follicle is approached and the tubular cutting head punch unit 1 touches the skin for effecting an extraction operation. In this respect it is noted that the frontal end 1a of the tubular cutting head punch unit 1 is formed with a conical knife edge cutting surface 1d adapted to successively perform cutting of single hair follicles when it is brought in contact with the root of the hair follicle and is manually rotated around the perimeter of the same.

10 The diameter of the knife edge cutting surface 1d of the tubular cutting head 1 of the invention is extraordinarily small thereby resulting in a minimally painful and practically non painful depilation process and it preferably may vary within a range of 0.30-0.50 mm to provide for depilating operations in the overall hairy geography of the human body.

15 In accordance with a preferred embodiment of the invention a pair of distinctly sized conical knife edge cutting surfaces 1d may be formed at both ends of a single tubular cutting head punch unit 1 or a pair of tubular cutting head punch units 1 with distinctly sized conical knife edge cutting surfaces 1d may be mounted at two ends of the plastic tubular punch holder means 3,

20 thereby serving the purpose of removal of single hair follicles with

preferential employment of one or the other of the pair of knife edge cutting surfaces 1d that have predetermined different diameters.

As mentioned hereinabove and shown in Fig. 2, a connecting extension member 5 is employed to connect the punch holder means 3 with the choke means 4 that is adapted to receive the tubular cutting head punch unit 1 at the free end thereof. The connecting extension member 5 is an elongated cylindrical item with a frontal jaw portion 5a that is introduced within a through axial opening of the choke 4 and is adapted to receive and fixedly hold the tubular cutting head punch unit 1. Choke 4 is also a tubular item with a rear portion 4b adapted to receive the frontal portion 5a of the connecting extension member 5 and a convergent frontal portion 4a wherein outwardly extends the tubular cutting head punch unit 1. Connection of the choke item 4 with the connecting extension member 5 is implemented via screwing an externally threaded part 13 of the frontal jaw portion 5a of the connecting extension member 5 into an internally threaded part 14 of the rear end 4b of the choke item 4. A central portion 5c of the connecting extension member 5, intermediately between the frontal portion 5a and the rear portion 5b thereof, is provided with a longitudinal side opening 15. Extracted hair follicles that might be led through the interior of cutting head 1 are led through the frontal portion 5a of connection member 5 into the central portion 5c whereby they are being discharged through the side opening 15.

The rear portion 5b of the connecting extension member 5 is fixedly mounted onto the free end of the punch holder means 3 or it is alternatively fixedly connected with an outwardly extending shaft 16 of a punch holder means that takes the form of a tubular case 6 as will be described hereinafter by reference to the embodiment shown in Fig. 3.

As shown in Fig. 3, the depilation device of the invention may be adapted to operate electrically with a tubular case 6 serving as a punch holder means, such tubular case 6 being connected with the choke 4 and connecting extension member 5 assembly described hereinabove. An array of power supplying batteries and a basic electrical operating circuit with a motor capable of initiating a rotating movement of the tubular cutting head punch unit 1 are incorporated within the tubular case 6, whereby the motor (not shown) is appropriately connected to power supply terminals.

As shown in Fig. 4, the electrically operated depilation device can also be alternatively supplied with power from the mains, whereby the tubular case 6 extends to a conductor 9 that is connected to a transformer unit 7 for power supply, wherein the transformer unit 7 is provided with a plug terminal 8. An on-off switch 10 is provided at the rear of the tubular case 6, whereas a push button 11 is provided at the frontal side thereof to ergonomically facilitate the user to initiate operation of the device and depilation effecting rotation of the tubular cutting head punch unit 1 by exerting a pushing touch thereupon

or termination of rotation of the tubular cutting head punch unit 1 by releasing such pushing touch onto the push button 11. A led light 12 is provided adjacently the push button 11 to indicate operation of the device when lit. The same device may alternatively operate either with power
5 supplied from the mains through the transformer unit 7 or with power supplied from the batteries incorporated within the tubular case 6. A battery charger device may be provided in association with the depilation device, such charger being employed to charge the batteries during idle intervals of the device.

10 The depilation process is substantially improved if the hereinabove described depilation device operates in conjunction with a lens magnifying unit 20 that may be mounted onto the punch holder unit 3 or 6 bearing the tubular cutting head punch unit 1 so as to allow the operator to view a magnified image of each individual targeted hair follicle prior to initiating a cutting action
15 thereupon. The accuracy of the depilation process is thereby substantially improved. In accordance with a first embodiment of the invention, the lens magnifying unit is appropriately mounted onto a lens support that is provided onto a laterally extending arm of a collar encircling the cylindrical perimeter of either the plastic tubular punch holder means 3 or the tubular case 6.

20 In accordance with a preferred embodiment of the invention as shown in Fig. 4 the magnifying lens unit 20 is part of a digital microscope unit 17

employed to magnify the hairy area in which depilation is to be performed. Unit 17 is a touch-and-view high resolution digital microscope that allows users to take crisp enlarged images simply by pressing the tip of the lens unit 20 against the subject. The unit is equipped with an LCD monitor 19 with a typical size of the order of 3.5'' and a rechargeable battery. Lens unit 20 incorporates a bayonet type lens mount enabling users to switch between a broad range of lens units with different magnification and light sources. Image quality and brightness can be set manually through keyboard unit 21 allowing customizable use. Moreover acquired images can be stored on an incorporated memory card allowing access thereof on a variety of external devices that include PCs and printers. Thus an assessment may be made of the hairy geography (thickness, density, inclination, skin type, etc.) of an individual prior to initiating depilation that will enable selection of the utensils most appropriate in each particular case. Mainly however, the device that is activated by means of switch 23 at the side wall of main unit 18 is intended for on-line use and, as shown in Fig. 4, it operates by approaching the lens unit 20 and the depilation cutting head 1 at the targeted hair follicle 22 to be extracted, viewing an enlarged image of the hair follicle 22 on the monitor 19 and thereby being given the opportunity for precisely adjusting the tubular cutting head 1 so as to effect a most effective and minimally painful extraction of the hair follicle through rotation of the tubular cutting

head 1 initiated either manually if a depilation device such as that depicted in Fig. 1 or Fig. 2 is used or electrically through pressing push button means 11 in the electrically operated depilation device depicted in Fig. 4.

The depilation process in accordance with the present invention comprises the steps of cleaning the hairy area to be depilated with an antiseptic cream and preparing an aseptic area whereupon are mounted aseptic punches, punch holders, forceps and tweezers, gauzes and a petri dish whereupon extracted hair will be mounted. Henceforth, although not necessary, an anaesthetic cream or gel may be applied locally onto the area subject to depilation and the depilation process starts by applying the tubular cutting head of the punch unit onto the skin at an angle corresponding to the angle of hair sprouting, exerting a slight pressure thereupon and effecting a rotational movement of the tubular cutting head perimetrically around the targeted hair follicle thereby leading the tubular cutting head at a predetermined depth of the order of 2-3 mm within the cellular mass in a manner such as to ensure insertion of the hair follicle to be removed within the tubular cutting head punch unit and subsequently effecting an equivalent rotational movement of the tubular cutting head punch unit in the reverse direction leading to extraction of the hair follicle entrapped therein from the cellular mass; henceforth employing tweezers to remove the radically cut hair follicle and repeat the abovementioned process with adjacent hair follicles until

depilation of the overall targeted hairy area is complete. A final step of cleaning and antiseptis of the hairy area treated is performed onto the resultant depilated area. No post depilation pharmaceutical treatment is necessary due to the minimally invasive nature of the depilation process of
5 the invention.

It is hereby noted that any changes or amendments in the above that do not constitute a new inventive step are considered part of the scope and aims of the present invention as defined in the appended claims.

CLAIMS

1. Depilation device comprising a tubular cutting head punch unit (1) that is divided along a circumferential line (1c) into a frontal portion (1a) and a rear portion (1b), said frontal portion (1a) provided with an appropriate
5 medically acceptable coating, gold or equivalent, and extending at a conical knife edge cutting surface (1d), characterised in that said tubular cutting head punch unit (1) having a diameter not exceeding 0.50 mm and in that said rear portion (1b) thereof being mounted onto a frontal end of a punch holder means (3, 6), said punch holder means (3, 6) being provided in combination
10 with a magnifying lens assembly (20) adapted to provide a magnified view of the hairy area subject to depilation.
2. Depilation device as claimed in above claim 1, characterised in that said punch holder means (3, 6) is a plastic tubular shank (3) of appropriate length adapted to receive the tubular cutting head punch unit (1) at the free
15 end thereof, said depilation device being adapted to operate through manual operation of said plastic tubular shank (3).
3. Depilation device as claimed in above claim 1, characterised in that said punch holder means (3, 6) is a tubular case (6) adapted to receive the tubular cutting head punch unit (1) at the free end thereof, an array of power
20 supplying batteries and a motor capable of initiating a rotating movement of the tubular cutting head punch unit (1) being incorporated within said tubular

case (6), an electrical operating circuit connecting said motor to a power supply, said power supply being provided either by said array of power supplying batteries or from the mains, a conductor (9) being provided for connection to the mains via a transformer unit (7), said tubular case (6) being
5 provided with an on-off switch (10) and a push button (11) adapted to initiate operation of the device and depilation effecting rotation of the tubular cutting head punch unit (1) when a pushing touch is exerted thereupon or termination of rotation of the tubular cutting head punch unit (1) when said push button (11) is released.

10 4. Depilation device as claimed in above claims 1 or 2, characterised in that a connecting extension member (5) is mounted at the free end of said punch holder means (3, 6), said connecting extension member (5) being adapted to join said punch holder means (3, 6) with a choke means (4), said connecting extension member (5) being an elongated cylindrical item with a
15 frontal jaw portion (5a) introduced within a through axial opening of said choke means (4) and adapted to receive and fixedly hold the tubular cutting head punch unit (1) that extends forwardly a convergent frontal portion (4a) of said choke means (4), an externally threaded part (13) of the frontal jaw portion (5a) of said connecting extension member (5) being fixedly screwed
20 into an internally threaded part (14) of the rear end (4b) of said choke means (4), a central portion (5c) being provided intermediately between the frontal

portion (5a) and the rear portion (5b) of said connecting extension member (5), said central portion (5c) being provided with a longitudinal side opening (15) wherein are discharged extracted hair follicles that might be led rearwardly through the interior of said cutting head punch unit (1).

5 5. Depilation device as claimed in anyone of the above claims 1-4, characterised in that a lens support means is provided onto a laterally extending arm of a collar encircling the cylindrical perimeter of either the plastic tubular punch holder means (3) or the tubular case punch holder means (6), said magnifying lens assembly (20) adapted to provide a
10 magnified view of the hairy area subject to depilation being mounted onto said lens support means.

6. Depilation device as claimed in anyone of the above claims 1-4, characterised in that said magnifying lens assembly (20) is part of a touch-and-view high resolution digital microscope unit (17) that allows taking crisp
15 enlarged images by pressing the tip of said magnifying lens assembly (20) against the subject, said digital microscope unit (17) being equipped with an LCD monitor (19), a keyboard unit (21) whereby image quality and brightness can be set manually allowing customizable use and a memory card for storing acquired images and allowing access thereof on a variety of
20 external devices.

7. Depilation method employing the depilation device as claimed in anyone of the above claims 1-6, characterised in that it comprises in combination the steps of:

cleaning the hairy area to be depilated with an antiseptic cream and
5 preparing an aseptic area whereupon are mounted aseptic punches, punch holders, forceps and tweezers, gauzes and a petri dish whereupon extracted hair will be mounted;

approaching a magnifying lens assembly (20) at a first targeted hair
follicle (22) to be extracted, viewing an enlarged image of the hair follicle
10 (22) and precisely adjusting the tubular cutting head punch unit (1) of the depilation device so as to effect a most effective and minimally painful extraction of the hair follicle (22);

applying the tubular cutting head punch unit (1) onto the skin at an
angle corresponding to the angle of hair sprouting, exerting a slight pressure
15 thereupon and effecting a rotational movement of the tubular cutting head punch unit (1) perimetrically around said first targeted hair follicle (22) thereby leading the tubular cutting head punch unit (1) at a predetermined depth within the cellular mass such as to ensure insertion of the hair follicle (22) to be removed within the tubular cutting head punch unit (1) and
20 subsequently effecting an equivalent rotational movement of the tubular

cutting head punch unit (1) in the reverse direction leading to extraction of the hair follicle (22) entrapped therein from the cellular mass;

employing tweezers to remove the cut hair follicle, and repeating the above steps with adjacent hair follicles until depilation of the overall targeted
5 hairy area is complete.

8. Depilation method as claimed in above claim 7, characterised in that it further comprises the step of employing a digital microscope unit (17) incorporating the magnifying lens assembly (20), a monitor (19), a keyboard (21) and a memory card for performing an assessment of the hairy
10 geography including hair thickness, density, inclination, skin type, etc. of an individual to enable selection of the utensils most appropriate in each particular case prior to initiating depilation.

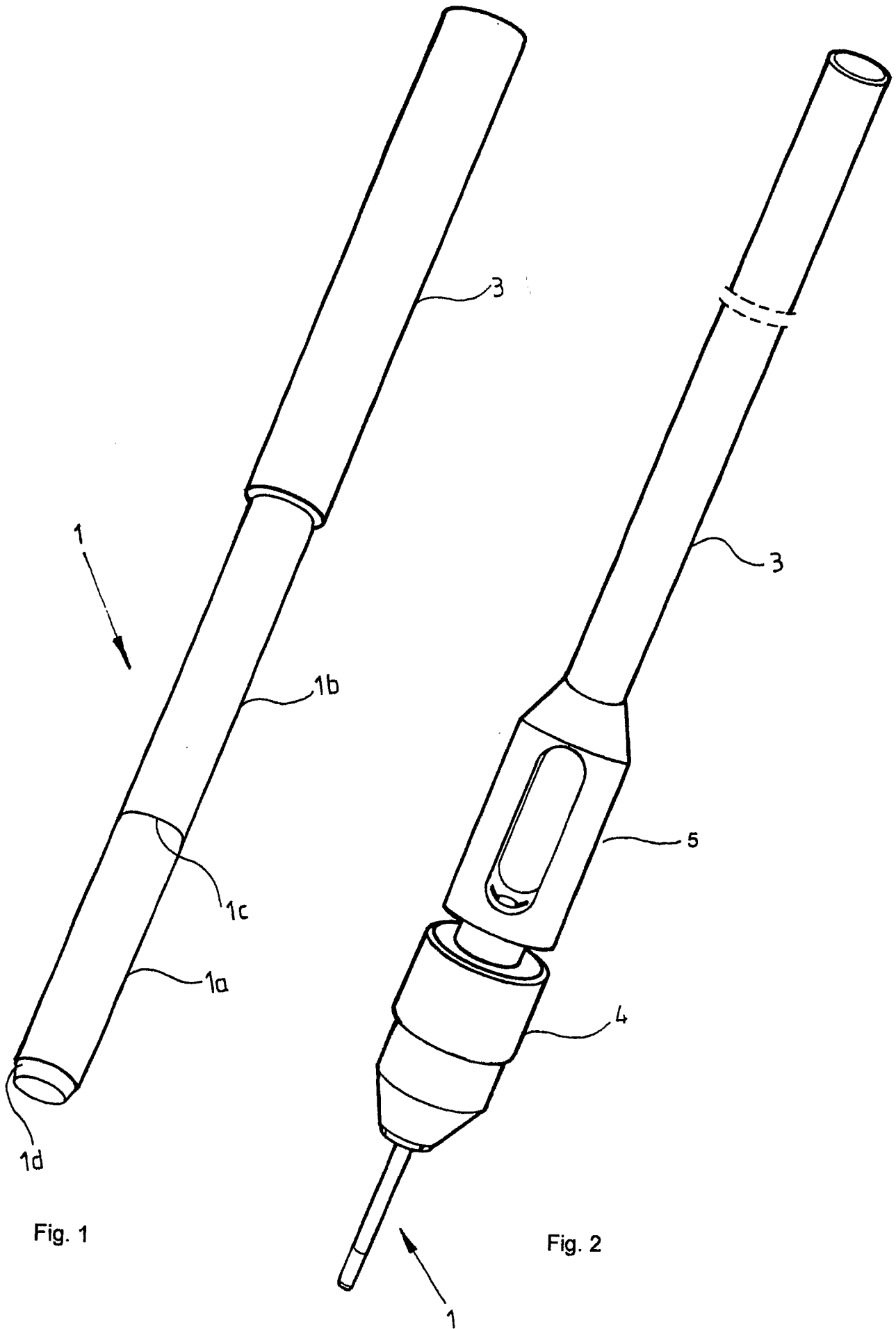


Fig. 1

Fig. 2

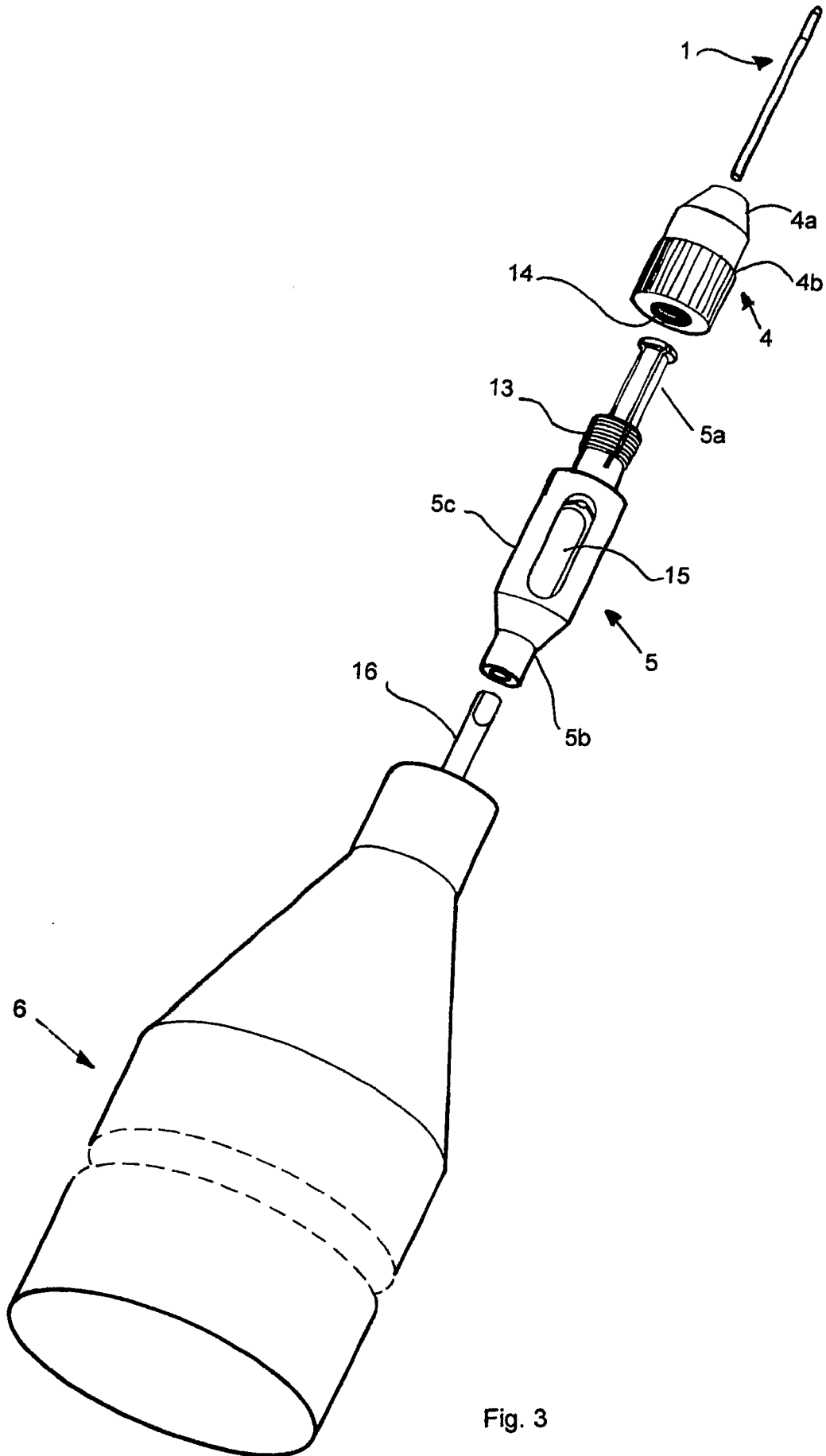


Fig. 3

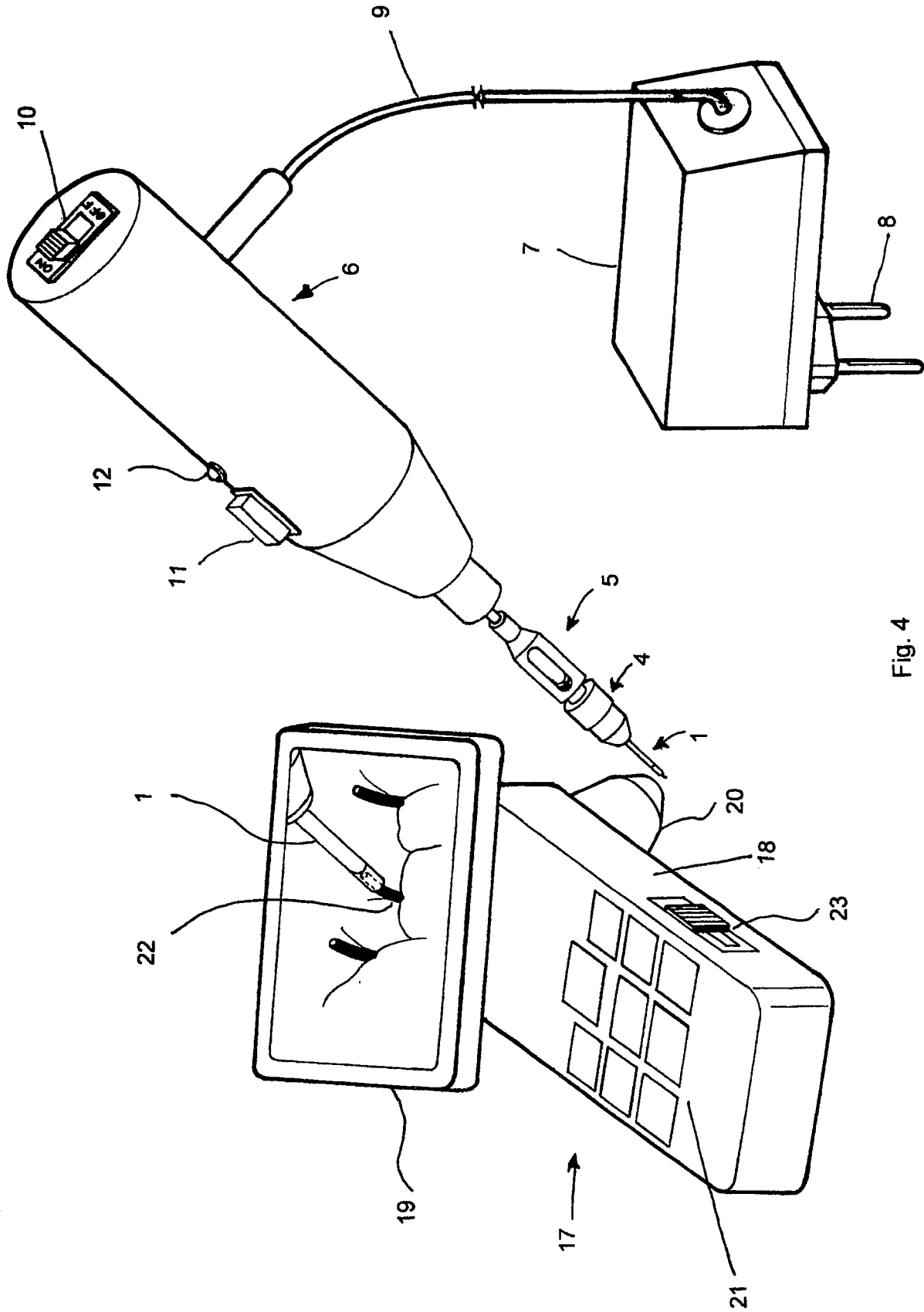


Fig. 4

INTERNATIONAL SEARCH REPORT

International application No
PCT/GR2008/000059

A. CLASSIFICATION OF SUBJECT MATTER

INV. A61B17/3205
ADD. A61B17/00

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)
A61B 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 practical, 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	US 2007/078473 A1 (BODDULURI MOHAN [US] ET AL) 5 April 2007 (2007-04-05)	1-3
A	paragraphs [0008] - [0010], [0013], [0028] - [0031], [0034] - [0036], [0040], [0051] - [0055], [0059] figures 1-3,5,7	4,6
X	US 2007/156164 A1 (COLE JOHN P [US] ET AL) 5 July 2007 (2007-07-05)	1-3
A	paragraphs [0057] - [0060], [0064] - [0066], [0075], [0077], [0078], [0084] - [0086], [0099], [0100], [0115], [0118], [0120] - [0122] paragraphs [0133], [0137] figures 1a,1b,6c,6d,7g,8,9b,10h,11a,11b	4
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Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

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Date of the actual completion of the international search

10 August 2009

Date of mailing of the international search report

20/08/2009

Name and mailing address of the ISA/

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Frank, Lucia

INTERNATIONAL SEARCH REPORT

International application No
PCT/GR2008/000059

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 6 572 625 B1 (RASSMAN WILLIAM R [US]) 3 June 2003 (2003-06-03)	1,2
A	column 1, line 49 - line 57 column 2, line 21 - column 3, line 50 figures	4,6
A	----- WO 01/10307 A (KIM JUNG CHUL [KR]) 15 February 2001 (2001-02-15) page 4, line 29 - page 6, line 29 figures	1,2,4,5
A	----- US 3 011 258 A (KOTCHAN CHARLES J) 5 December 1961 (1961-12-05) the whole document	1,2,4,5
E	----- WO 2009/083741 A (KONSTANTINOS GIOTIS P [GR]) 9 July 2009 (2009-07-09) the whole document	1-5

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GR2008/000059

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.: 7,8
because they relate to subject matter not required to be searched by this Authority, namely:
Claims 7,8 relate to subject-matter considered by this Authority to be covered by the provisions of Rule 39.1(iv), 67.1(iv) PCT, 43bis.1(b); i.e. being methods for surgery they are not patentable (PCT Guidelines Section IV 9.08-9.10). The search of the application was restricted to claims 1-6.
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 allsearchable 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 reportcovers 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

Information on patent family members

International application No PCT/GR2008/000059
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2007078473 A1	05-04-2007	US 2007078475 A1	05-04-2007
US 2007156164 A1	05-07-2007	NONE	
US 6572625 B1	03-06-2003	NONE	
WO 0110307 A	15-02-2001	AU 5110400 A	05-03-2001
		CN 1318992 A	24-10-2001
		JP 3697413 B2	21-09-2005
		JP 2003506130 T	18-02-2003
		KR 20010016936 A	05-03-2001
		KR 20010072422 A	31-07-2001
		US 6461369 B1	08-10-2002
US 3011258 A	05-12-1961	NONE	
WO 2009083741 A	09-07-2009	NONE	