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(54) Height adjustable crutch

(57) It is intended to be utilized by users needing help to walk, the crutch including, in principle, a handle and a cuff in order to respectively support the hand and the forearm of the user.

It is characterized in that it comprises two principal bodies made of plastic material: one bottom (1) elongated with the incorporation of an internal reinforcing ribbing (5) and another top (2) including other reinforcing ribs (12), both principal bodies (1) and (2) being detachably joined to each other by means of a guided and open coupling.

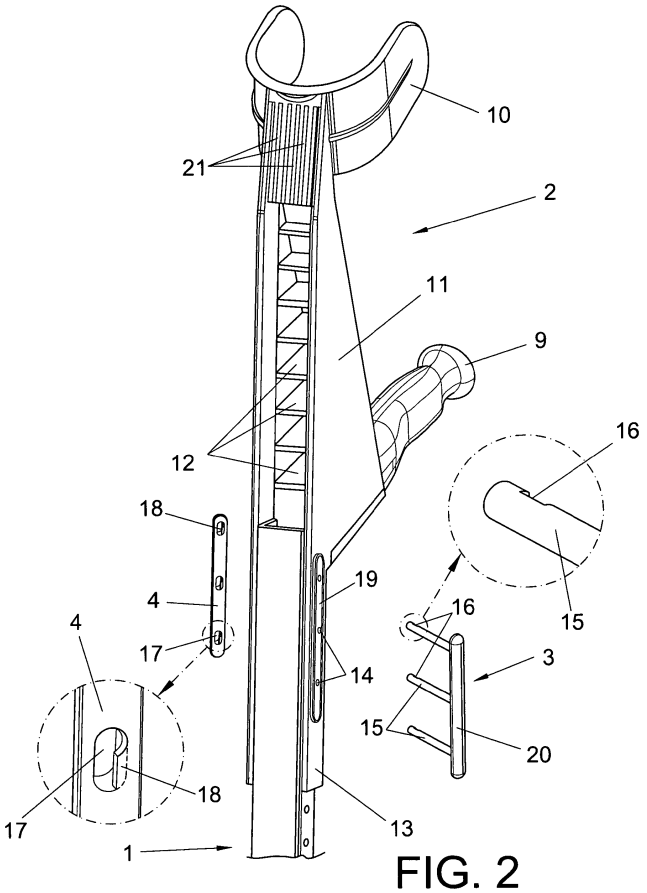

FIG. 2

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Description

OBJECT OF THE INVENTION

[0001] The present invention as expressed in the statement of this specification, relates to a height adjustable crutch manufactured entirely in plastic material, so that the manufacturing costs are substantially reduced, besides also improving the lightness of the assembly, thereby without undermining the necessary characteristics of robustness, resistance, and maneuverability that this type of products should provide to the user.

[0002] On the other hand, the crutch of the invention is also susceptible to be manufactured with other materials.

[0003] Starting from this premise, the object of the invention are some characteristic means for adjusting the height of the crutch, also the object of the invention being the characteristic structure represented by the assembly of the crutch.

BACKGROUND OF THE INVENTION

[0004] Nowadays time, height adjustable crutches manufactured with metallic material are known, so that they generally comprise a structure formed by two tubes, bottom and top, with a telescopic coupling, so that in order to adapt the height of the crutch to the user, the telescopic tubes incorporate facing holes whereby a pin or similar element is introduced in order to secure the height length of the crutch.

[0005] The top tube includes a handle which the user holds with the hand, and a cuff that is conformed to the forearm of the user in order to achieve a better maneuverability.

DESCRIPTION OF THE INVENTION

[0006] The height adjustable crutch constituting the object of the invention is determined as of a first bottom elongated body provided with an internal ribbing imparting sufficient rigidity and resistance to said elongated body, with a top part over which a second top body is inserted which makes up the support of the hand and forearm of the user.

[0007] For that purpose, this top body incorporates a handle which the user holds with his/her hand, and an end cuff that conforms to the forearm of that same user.

[0008] The top body possesses at least two through holes which can be aligned or facing with as many other holes that the bottom body possesses, so that the height adjustment of the crutch is allowed, and hence its adaptation to different heights of the users.

[0009] In order to secure the regulated attachment at the point that the user wishes, it has been envisaged the utilization of some means of attachment of the position of the top body with respect to the bottom body, or vice versa. Said means consist of a fixation support with at least two crossbars that are introduced through facing holes of the two bodies, bottom and top, of the crutch, the attachment of the fixation support being secured by means of a flatbar which is linked with the free ends of the crossbars by means of a bayonet-type coupling.

[0010] On the other hand, the fixation support also fulfills the function of securing the assembling of the crutch.

[0011] It should also be noted that the top body comprises a triangular structure with internal reinforcement ribs providing a great solidity to said top body.

[0012] Another characteristic of the invention is that the linking between the principal bodies, top and bottom, of the crutch, is an open coupling which facilitates the assembly and disassembly of the crutch.

[0013] Next, to facilitate a better understanding of this specification, and forming an integral part thereof, some figures are attached in which the object of the invention has been depicted in an illustrative and not limitative manner.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014]

Figure 1.- Shows a perspective view of the height adjustable crutch, object of the invention.

Figure 2.- Shows another perspective view of the crutch from another angle different to the one depicted in figure 1.

Figure 3.- Shows a section view according to the A-B cut of the previous figure.

DESCRIPTION OF THE PREFERRED EMBODIMENT

[0015] Considering the numbering adopted in the figures, the height adjustable crutch is determined from two principal bodies made of plastic material: a more elongated bottom one 1 and another top one 2, both detachably joined by means of a guided and open coupling through a fixation support 3, with an attachment carried out by means of a retention flatbar 4 with a bayonet-type coupling, these two pieces also being manufactured with plastic material.

[0016] The bottom body 1 comprises a "U"-shaped section with an internal reinforcing ribbing 5 at the same time that it finishes at a terminal narrowing 6 for support on the floor.

[0017] In turn, the bottom body 1 incorporates a set of through holes 7 leading to the branches of that "U"-shaped bottom body 1, at the same time that such through holes 7 are defined by small tubular portions 8 forming an integral part of the cited bottom body 1 and interrupting the internal reinforcing ribbing 5.

[0018] The top body 2 comprises a resistant structure including, in principle, a handle 9 and an end cuff 10 in order to respectively support the hand and the forearm of the user.

[0019] The top body 2 comprises an enveloping trian-

gular structure 11 having a succession of flat reinforcing ribs 12, triangular structure from which the handle 9 and the cuff 10 start at, as well as a "U"-shaped bottom extension 13 inside of which a top part of the bottom body 1 is adjusted, the branches of said bottom extension 13 having facing holes 14 which in turn are facing other holes 7 of the bottom body 1 to be able to introduce some crossbars 15 that form part of the fixation support 3 so as to secure the joining between both principal bodies 1 and 2.

[0020] The free ends of the cited crossbars 15 have some small cuts 16 to be able to couple the retention flatbar 4 in concordance with some short grooves 17, interrupted by some small longitudinal ribs 18 which engage on the cuts 16 of the crossbars 15 of the fixation support 3 by means of a small longitudinal movement in a direction of such retention flatbar 4. To be able to release the fixation support 3, the retention flatbar 4 should be displaced first in opposite direction to the aforementioned one for later extracting the fixation support 3.

[0021] The top body 2 incorporates some facing scores 19 wherein a base 20 of the fixation support 3 and the retention flatbar 4 are adjusted. Said top body 2 also has a succession of top flaps 21 facing the cuff 10, as well as a bottom flap 22 which associates the enveloping triangular structure 11 and the "U"-shaped bottom extension 13.

[0022] The triangular enveloping structure 11 allows the upwards guided displacement of the bottom body 1 when needed, thanks to the flat ribs 12 not reaching the free edges of such enveloping triangular structure 11, so that the guidance provided by the "U"-shaped bottom extension 13 is continued in the enveloping triangular structure 11.

Claims

1. HEIGHT ADJUSTABLE CRUTCH, which being intended to be utilized by users needing help to walk and including a handle and a cuff in order to respectively support the hand and the forearm of the user, is **characterized in that** it comprises two principal bodies made of plastic material: an elongated bottom one (1) with the incorporation of an internal reinforcing ribbing (5), and another top one (2) incorporating other reinforcing ribs (12), both principal bodies (1) and (2) being detachably joined to each other by means of a guided and open coupling.

2. HEIGHT ADJUSTABLE CRUTCH, according to claim 1, **characterized in that** the two principal bodies 1 and 2 are coupled by means of a fixation support (3), with an attachment carried out by means of a retention flatbar (4).

3. HEIGHT ADJUSTABLE CRUTCH, according to claim 2, **characterized in that** the guided coupling between both principal bodies (1 and 2) comprises a "U"-shaped bottom extension (13) forming part of the top body (2), at the same time that on said "U"-shaped extension (13) a segment of the bottom body (1) is adjusted, having through holes (7) facing other holes (14) established on the branches of the "U"-shaped bottom extension 13, being adjusted in said facing holes (7 and 14) some crossbars (15) forming part of the fixation support (3).

4. HEIGHT ADJUSTABLE CRUTCH, according to claim 3, **characterized in that** the overhanging end segments of the crossbars (15) of the fixation support (3) have some small cuts (16) wherein they are engaged, in a bayonet manner, with some longitudinal short ribs (18) which interrupt the continuity of some grooves (17) established on the retention flatbar (4) and which are facing the cited crossbars (15) made integral with a front base (20) forming part of the fixation support (3).

5. HEIGHT ADJUSTABLE CRUTCH, according to any one of claims 3 or 4, **characterized in that** the bottom body (1) comprises a "U"-shaped structure with an internal reinforcing ribbing (5) that is interrupted by tubular portions (8) that define the through holes (7).

6. HEIGHT ADJUSTABLE CRUTCH, according to any one of claims 3 to 6, **characterized in that** the top body (2) comprises an enveloping triangular structure (11) incorporating the succession of flat reinforcing ribs (12), enveloping triangular structure (11) from which the handle (9) and the cuff (10) start at, as well as the "U"-shaped bottom extension (13) , the enveloping triangular structure (11) further including a succession of flaps (21) facing the cuff (10).

7. HEIGHT ADJUSTABLE CRUTCH, according to claim 6, **characterized in that** the enveloping triangular structure (11) defines a guidance which is a continuation of the guidance of the bottom extension (13) of the top body (2).

8. HEIGHT ADJUSTABLE CRUTCH, according to claims 3 and 4, **characterized in that** the bottom extension (13) of the top body (2) incorporates some facing scores (19) in contraposition wherein the front base (20) of the fixation support (3) and the retention flatbar (4) are adjusted.

9. HEIGHT ADJUSTABLE CRUTCH, according to any one of claims 3 to 8, **characterized in that** the top body (2) incorporates a bottom flap (22) which associates the enveloping triangular structure and the "U"-shaped bottom extension (13).

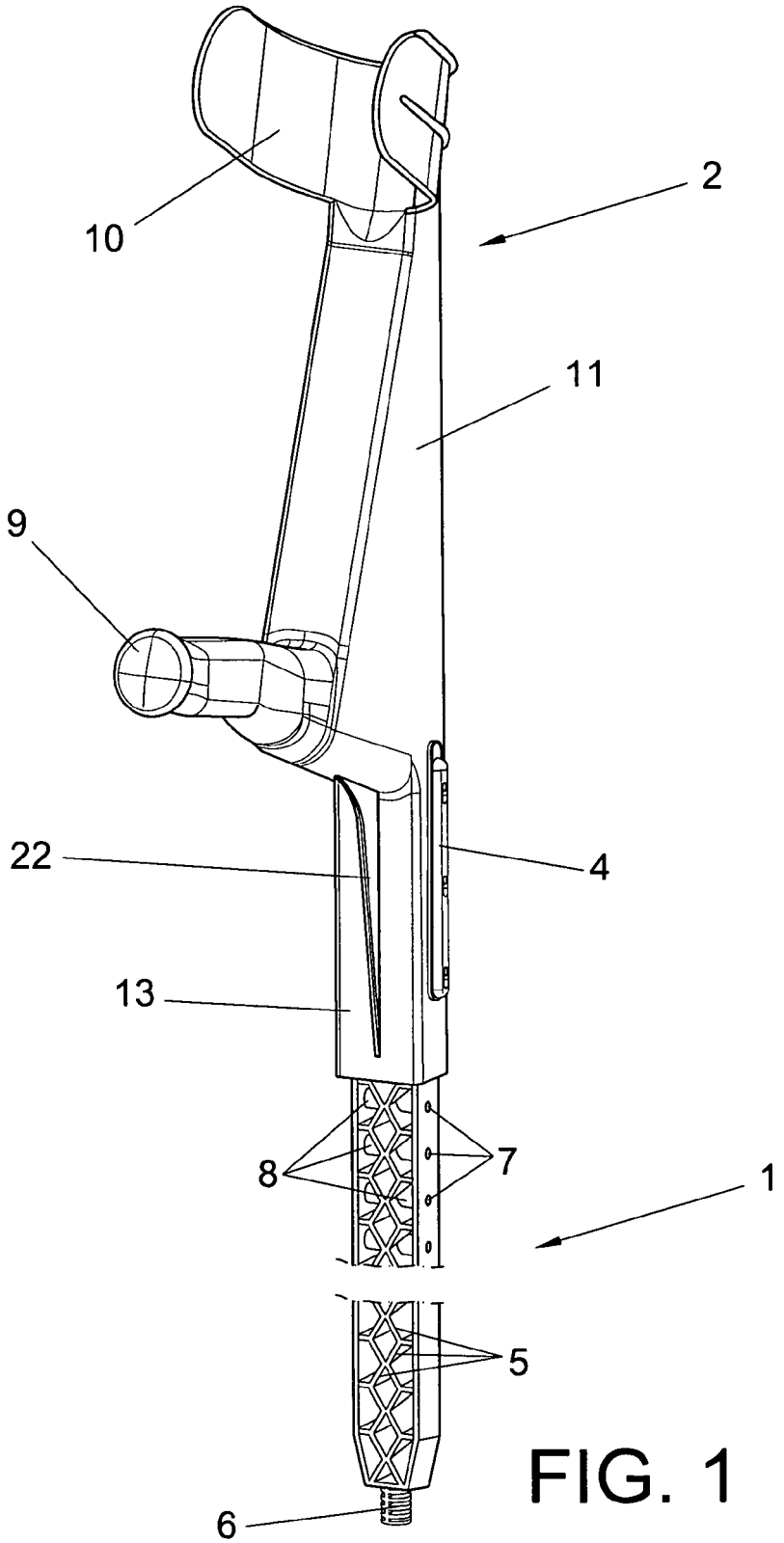

FIG. 1

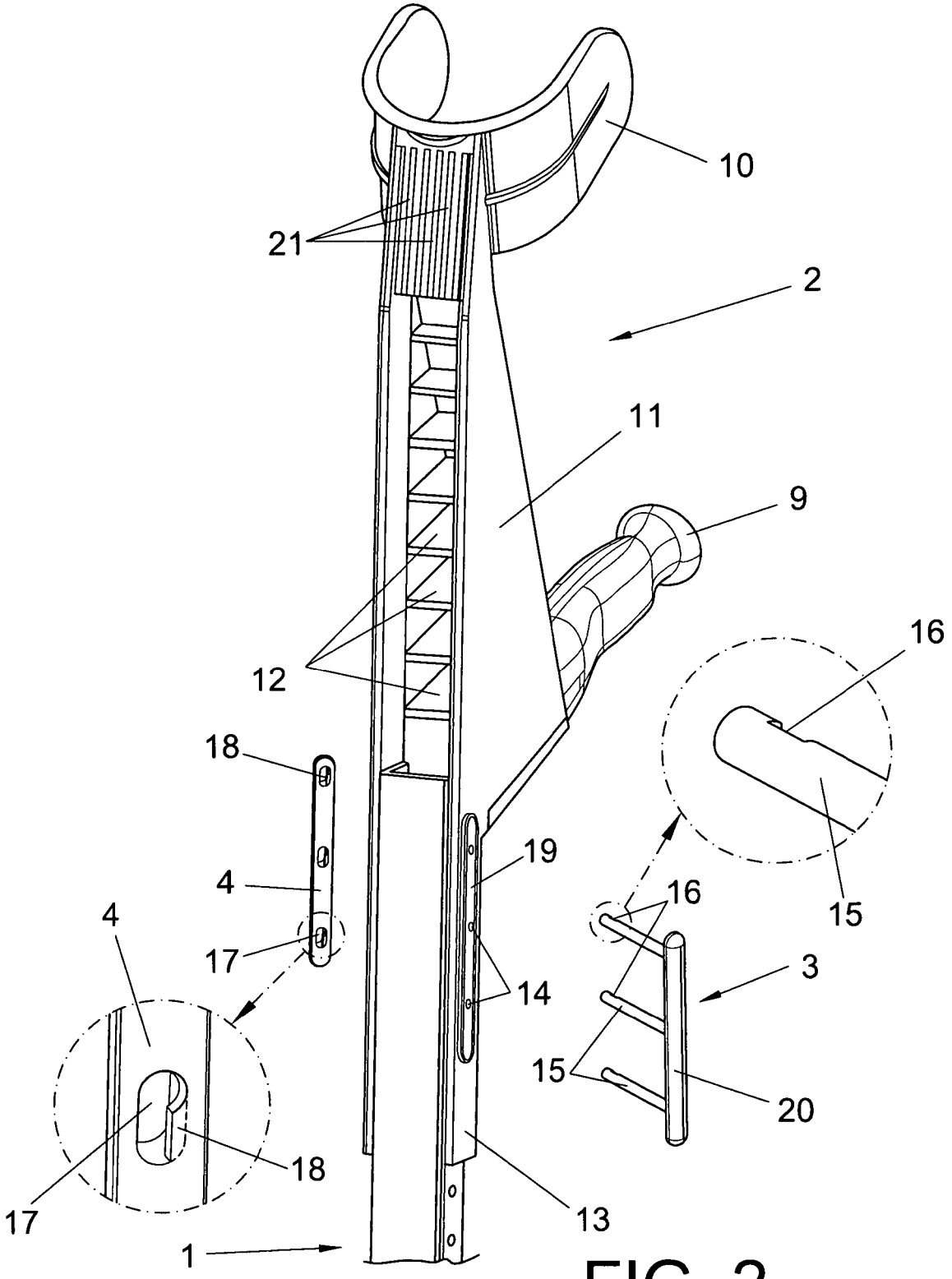

FIG. 2

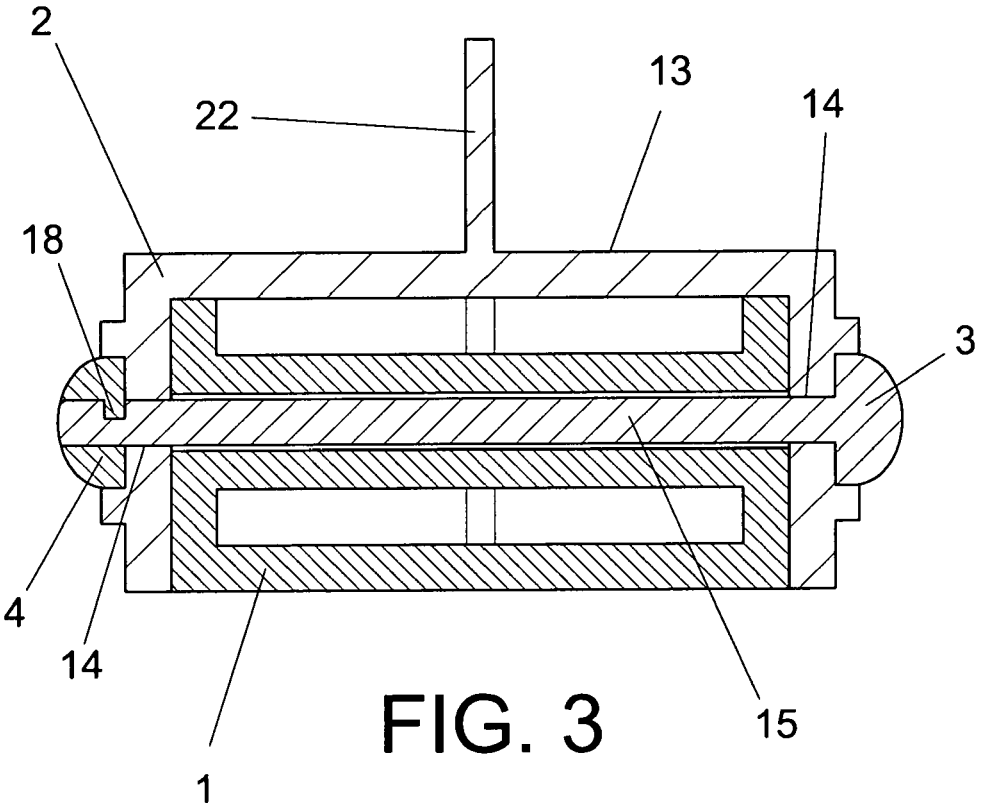

FIG. 3

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EUROPEAN SEARCH REPORT

Application Number
EP 10 38 0108

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X Y	US 2004/025925 A1 (GIN JEREMY [US] ET AL) 12 February 2004 (2004-02-12) * paragraphs [0052], [0053], [0080] - [0083]; claims; figures 16A-18D * -----	1 2-9	INV. A61H3/02
Y	US 2002/020438 A1 (BEST AARON R [US]) 21 February 2002 (2002-02-21) * figures 1-4 * -----	2-9	
A	US 2003/079767 A1 (SCHULTZ JIMMIE REUBEN [US]) 1 May 2003 (2003-05-01) * claims; figures * -----	1	
			TECHNICAL FIELDS SEARCHED (IPC)
			A61H

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	7 February 2011	Knoflacher, Nikolaus

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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D : document cited in the application
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EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 10 38 0108

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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07-02-2011

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2004025925 A1	12-02-2004	NONE	
US 2002020438 A1	21-02-2002	NONE	
US 2003079767 A1	01-05-2003	NONE	

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82