(11) EP 2 045 387 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication: **08.04.2009 Bulletin 2009/15**

(51) Int Cl.: **D05C** 17/00 (2006.01)

(21) Application number: 08016195.3

(22) Date of filing: 15.09.2008

(84) Designated Contracting States:

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR

Designated Extension States:

AL BA MK RS

(30) Priority: 03.10.2007 IT MI20071899

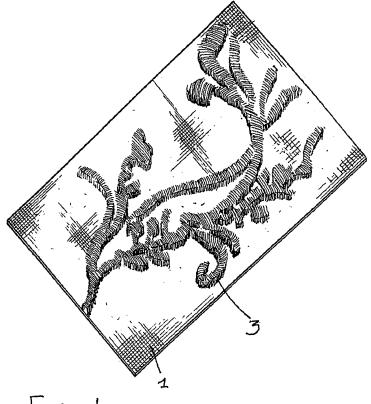
(71) Applicant: Nalesso, Roberto 62022 Castelraimondo (MC) (IT) (72) Inventor: Nalesso, Roberto 62022 Castelraimondo (MC) (IT)

(74) Representative: Cicogna, Franco Ufficio Internazionale Brevetti Dott.Prof. Franco Cicogna Via Visconti di Modrone, 14/A 20122 Milano (IT)

(54) Method for making a tridimensional embroidery pattern

(57) A method for making a tridimensional embroidery pattern comprises a first method step of coupling a fabric material to be embroidered to a water soluble material plate or film, a second method step of embroidering,

by an embroidery yarn, the fabric-water soluble material plate laminated assembly, and a third step of dissolving the water soluble material plate, to allow the embroidery forming yarn to be held spaced from the fabric, thereby providing a desired tridimensional effect.



F16.1

10

20

35

Description

BACKGROUND OF THE INVENTION

[0001] The present invention relates to a method for making a tridimensional embroidery pattern.

1

[0002] As is known, is at present very difficult to make tridimensional effect fabric embroidery patterns on automatic embroidering machines.

SUMMARY OF THE INVENTION

[0003] Thus, the aim of the present invention is to provide a system for easily and quickly making tridimensional embroidery patterns on automatic embroidering machines.

[0004] Within the scope of the above mentioned aim, a main object of the invention is to provide such an embroidering method allowing to obtain a refined and high quality embroidered product.

[0005] Yet another object of the present invention is to provide such an embroidering method which, owing to its specifically designed operating features, is very reliable and safe in operation.

[0006] Yet another object of the present invention is to provide such an embroidering method which can be easily carried out and which, moreover, is very competitive from a mere economic standpoint.

[0007] According to the present invention, the above mentioned aim and objects, as well as yet other objects, which will become more apparent hereinafter, are achieved by a method for making a tridimensional embroidery pattern, characterized in that said method comprises a first method step of coupling a fabric material to be embroidered to a water soluble material plate, a second method step of embroidering, by a yarn, the fabric material-water soluble material plate coupled assembly, and a third method step of dissolving said water soluble material plate.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] Further characteristics and advantages of the present invention will become more apparent hereinafter from the following detailed disclosure of a preferred, though not exclusive, embodiment of the invention, which is illustrated, by way of an indicative, but not limitative example, in the accompanying drawings, where:

Figure 1 is a perspective view showing a fabric material piece embroidered by the embroidering method according to the present invention;

Figure 2 is a cross-sectional view of the fabric material embroidered piece or portion shown in figure 1; Figure 3 is a further exploded perspective view showing a fabric material piece and a paper or water soluble material plate portion, before the embroidering operation proper;

Figure 4 is a further cross-sectional view of the fabric material-water soluble material plate coupled or laminated assembly, before the embroidering operation proper:

Figure 5 is yet another perspective view, showing an embroidery pattern on the fabric material-water soluble plate laminated assembly;

Figure 6 is yet another cross-sectional view, showing the embroidered pattern on the fabric material-water soluble material plate laminated assembly.

DESCRIPTION OF THE PREFERRED EMBODIMENT

[0009] With reference to the number references of the above mentioned figures, the tridimensional embroidering method according to the present invention, comprises a first method step of coupling a fabric material 1 to be embroidered to a water soluble material plate 2.

[0010] In particular, said fabric material 1 can comprise any desired tulle, cotton, flax, polyester or non-woven fabrics.

[0011] The water soluble plate 2, in turn, can comprise a foamed or extruded polystyrene material having a thickness of 4-5 mm, for example of a type commercially known with the product name "Depron".

[0012] After having coupled the fabric material 1 to the plate 2, an embroidery pattern is embroidered on the thus laminated assembly, by using any desired types of embroidering yarn 3, and loom machines, such as a Schiffly loom, providing a vertical type of embroidery, with an embroidery height of 150 cm or less, depending on the contingent requirements.

[0013] In particular, it is possible to achieve embroidered patterns on 16 yd fabric pieces, by using any desired type of embroidery stitches such as full, filet, chain stitches, and so on.

[0014] According to the invention, after having completed the embroidered pattern, the water soluble material plate or film 2 is dissolved, thereby leaving embroidered pattern forming yarn 3 spaced from the fabric material 1, as it is schematically shown in figure 2; thus such spacing between the yarn 3 and base fabric material 1 will provide the desired tridimensional effect.

[0015] It has been found that the invention fully achieves the intended aim and objects.

[0016] In fact, the invention provides a method allowing to make, on any desired embroidering machines, tridimensional effect embroidered patterns, thereby providing high quality and refined embroidered fabric material products.

[0017] In practicing the invention, the used materials, as well as the contingent size and shapes, can be any, depending on requirements.

Claims

1. A method for making a tridimensional embroidery

pattern on an automatic embroidering machine, characterized in that said method comprises a first method step of coupling a fabric material to be embroidered to a water soluble material plate or film, a second method step of embroidering, by an embroidering yarn, the fabric material-water soluble material plate laminated assembly, and a third method step of dissolving said water soluble material plate.

- 2. A method according to claim 1, characterized in that said fabric material comprises a tulle, cotton, flax, polyester, or non-woven fabrics.
- A method according to claim 1 or 2, characterized in that said water soluble material plate is a water soluble paper comprising foamed or extruded polystyrene.
- **4.** A method according to one or more of the preceding claims, **characterized in that** said foamed or extruded polystyrene plate has a thickness from about 4 to 5 mm.
- 5. A method according to one or more of the preceding claims, characterized in that said water soluble material plate comprises a foamed or extruded polystyrene material, of a type commercially known with the product name "Depron",
- 6. A method according to one or more of the preceding claims, characterized in that the embroidering step is performed on a Schiffly loom, providing both vertical embroidered patterns with an embroidering height of 150 cm or less, and embroidered patterns on 16 yd fabric pieces.
- 7. A method according to one or more of the preceding claims, **characterized in that** said method is adapted to provide embroidery full, filet, and chain stitches.
- 8. A method according to one or more of the preceding claims, **characterized in that** said method comprises one or more of the disclosed and/or illustrated characteristics.

10

20

25

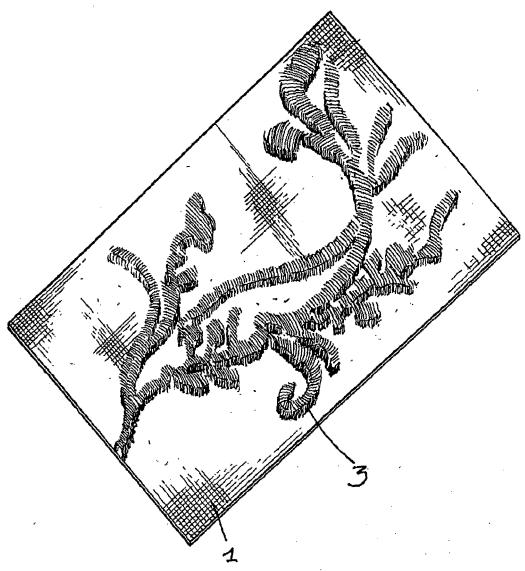
30

35

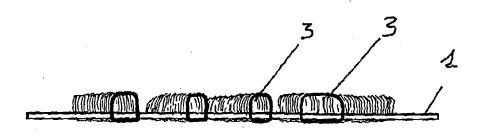
40

45

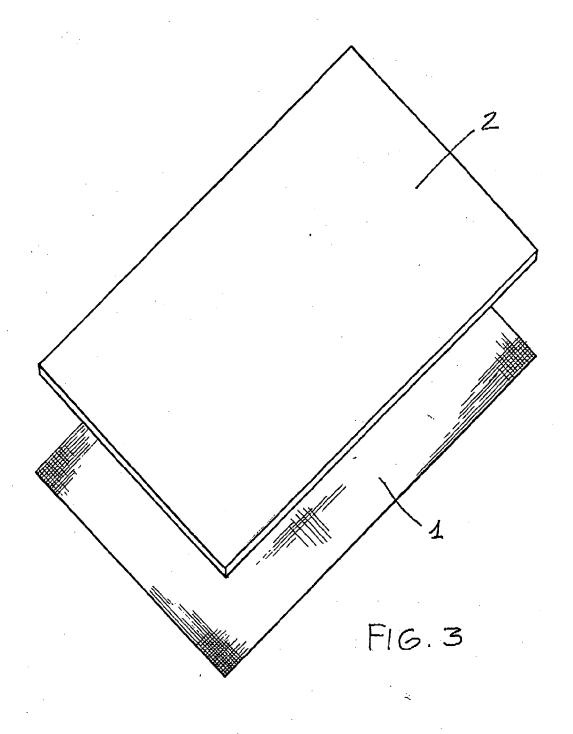
50

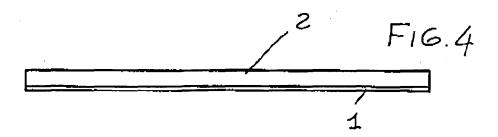


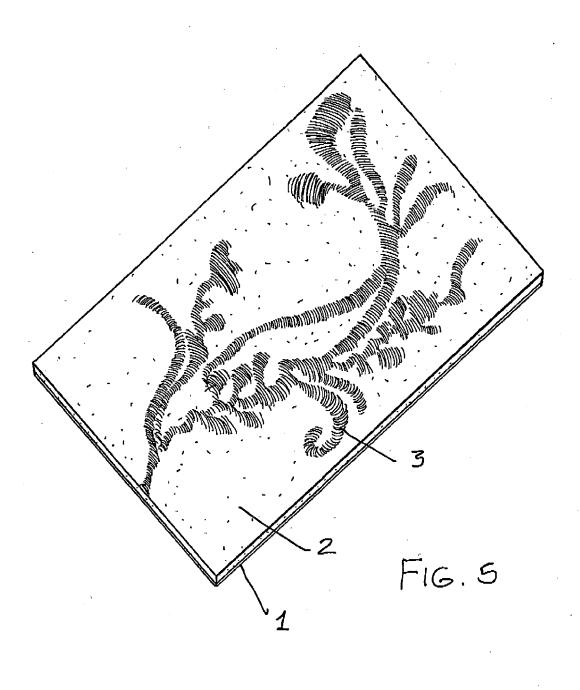
F16.1

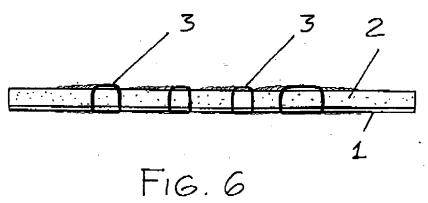


F16.2











EUROPEAN SEARCH REPORT

Application Number EP 08 01 6195

	DOCUMENTS CONSID	ERED TO BE RELEVANT		
Category	Citation of document with ir of relevant pass	ndication, where appropriate, ages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Х	6 September 2007 (2	CHONG PHILLIP Y [US]) 2007-09-06) - paragraph [0072];	1,2,6-8	INV. D05C17/00
Х	EP 1 586 690 A (LU 19 October 2005 (20 * paragraph [0008] figures 1-4 *	TAK SHING [CN]) 105-10-19) - paragraph [0015];	1,2,6-8	
Х	THUER [DE]) 15 Apri	EXTILFORSCHUNGSINSTITUT 1 2004 (2004-04-15) - paragraph [0027] *	1,2,6-8	
Х	THUER [DE]) 3 Decem	EXTILFORSCHUNGSINSTITUT aber 1998 (1998-12-03) - column 3, line 18;	1,2,6-8	
Х	11 February 1998 (1	DEIRA ASIA PTE LTD [SG]) 998-02-11) column 4, line 14;	1,2,6-8	TECHNICAL FIELDS SEARCHED (IPC)
Х		I CHUAN EMBROIDERY June 1995 (1995-06-22) 5 - column 2, line 23;	1,2,6-8	
Х	GB 768 385 A (KERST 13 February 1957 (1 * page 1, line 1 -		1,2,6-8	
Х	JP 2002 069814 A (DAIWABO POYTECH KK) 8 March 2002 (2002- * abstract *		1,2,6-8	
		-/		
	The present search report has	been drawn up for all claims		
	Place of search	Date of completion of the search		Examiner
	Munich	27 January 2009	Her	ry-Martin, D
X : parti Y : parti docu A : tech O : non	ATEGORY OF CITED DOCUMENTS cularly relevant if taken alone cularly relevant if combined with anotiment of the same category nological background written disclosure mediate document	T: theory or principle E: earlier patent door after the filing date her D: document cited in L: document cited for &: member of the sar document	ument, but publis the application rother reasons	shed on, or

EPO FORM 1503 03.82 (P04C01)



EUROPEAN SEARCH REPORT

Application Number EP 08 01 6195

The present search report has been drawn up for all claims The pr	Category	Citation of document with indication	n, where appropriate,	Relevant	CLASSIFICATION OF THE
The present search report has been drawn up for all claims The present search report has been drawn up for all claims		of relevant passages		to claim	APPLICATION (IPC)
* abstract * US 3 859 941 A (KRIEGER DAVID) 14 January 1975 (1975-01-14) * column 3, line 65 - column 4, line 53; figures 1-8 * TECHNICAL FIELDS SEARCHED (IPC) TECHNICAL FIELDS SEARCHED (IPC) The present search report has been drawn up for all claims Place of search Munich 27 January 2009 CATEGORYOF CITED DOCUMENTS X: particularly relevant if taken alone Y: perfoulierly relevant if toombined with another document of the same category L: document cited in the application D: document cited in the application Column 13 to the same category Column 14 to the same category Column 15	X	CN 1 265 436 A (JIN ZHO	UMIN [CN])	1,2,6-8	
The present search report has been drawn up for all claims The present search report has been drawn up for all claims		6 September 2000 (2000-	09-06)		
The present search report has been drawn up for all claims The present search report has been drawn up for all claims The present search report has been drawn up for all claims Place of search Place of search Munich CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if taken alone Y: particularly relevant if taken alone Occument of the same calledgry The present search report has been drawn up for all claims The present search repo		^ apstract ^			
The present search report has been drawn up for all claims The present search report has been drawn up for all claims The present search report has been drawn up for all claims Place of search Place of search Munich CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if taken alone Y: particularly relevant if taken alone Occument of the same calledgry The present search report has been drawn up for all claims The present search repo	Α	US 3 859 941 A (KRIFGER	DAVID)	1-8	
The present search report has been drawn up for all claims The present search report has been drawn up for all claims Place of search Munich CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if tombined with another cocument of the same category T: theory or principle underlying the invention eight relet filing date D: document of the same category		14 January 1975 (1975-0	1-14)		
The present search report has been drawn up for all claims The present search report has been drawn up for all claims Place of search Munich CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if tombined with another document, but published on, or after the filing date D: document cited in the application Course of the same category Technical Fields Examiner Course of the search Examiner Exa		* column 3, line 65 - c	olumn 4, line 53;		
The present search report has been drawn up for all claims Place of search Munich 27 January 2009 CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if ormbined with another document of the same category T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document of the same category		figures 1-8 *			
The present search report has been drawn up for all claims Place of search Munich 27 January 2009 CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if ormbined with another document of the same category T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document of the same category					
The present search report has been drawn up for all claims Place of search Munich 27 January 2009 CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if ormbined with another document of the same category T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document of the same category					
The present search report has been drawn up for all claims Place of search Munich 27 January 2009 CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if ormbined with another document of the same category T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document of the same category					
The present search report has been drawn up for all claims Place of search Munich 27 January 2009 CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if ormbined with another document of the same category T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document of the same category					
The present search report has been drawn up for all claims Place of search Munich 27 January 2009 CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if ormbined with another document of the same category T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document of the same category					
The present search report has been drawn up for all claims Place of search Munich 27 January 2009 CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if ormbined with another document of the same category T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document of the same category					
The present search report has been drawn up for all claims Place of search Munich 27 January 2009 CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if ormbined with another document of the same category T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document of the same category					
The present search report has been drawn up for all claims Place of search Munich 27 January 2009 CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if ormbined with another document of the same category T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document of the same category					
The present search report has been drawn up for all claims Place of search Munich 27 January 2009 CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if ormbined with another document of the same category T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document of the same category					
The present search report has been drawn up for all claims Place of search Munich 27 January 2009 CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if ormbined with another document of the same category T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document of the same category					TECHNICAL FIELDS
Place of search Munich 27 January 2009 Herry-Martin, D CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category Date of completion of the search T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document cited in the application L: document of the same category					
Place of search Munich 27 January 2009 Herry-Martin, D CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category Date of completion of the search T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document cited in the application L: document of the same category					
Place of search Munich 27 January 2009 Herry-Martin, D CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category Date of completion of the search T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document cited in the application L: document of the same category					
Place of search Munich 27 January 2009 Herry-Martin, D CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category Date of completion of the search T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document cited in the application L: document of the same category					
Place of search Munich 27 January 2009 Herry-Martin, D CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category Date of completion of the search T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document cited in the application L: document of the same category					
Place of search Munich 27 January 2009 Herry-Martin, D CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category Date of completion of the search T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document cited in the application L: document of the same category					
Place of search Munich 27 January 2009 Herry-Martin, D CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category Date of completion of the search T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document cited in the application L: document of the same category					
Place of search Munich 27 January 2009 Herry-Martin, D CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category Date of completion of the search T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document cited in the application L: document of the same category					
Place of search Munich 27 January 2009 Herry-Martin, D CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category Date of completion of the search T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document cited in the application L: document of the same category					
Place of search Munich 27 January 2009 Herry-Martin, D CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category Date of completion of the search T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document cited in the application L: document of the same category					
Place of search Munich 27 January 2009 Herry-Martin, D CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category Date of completion of the search T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document cited in the application L: document of the same category					
Place of search Munich 27 January 2009 Herry-Martin, D CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category Date of completion of the search T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document cited in the application L: document of the same category					
Place of search Munich 27 January 2009 Herry-Martin, D CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category Date of completion of the search T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document cited in the application L: document of the same category					
Place of search Munich 27 January 2009 Herry-Martin, D CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category Date of completion of the search T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document cited in the application L: document of the same category					
Place of search Munich 27 January 2009 Herry-Martin, D CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category Date of completion of the search T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document cited in the application L: document of the same category					
Place of search Munich 27 January 2009 Herry-Martin, D CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category Date of completion of the search T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document cited in the application L: document of the same category					
Place of search Munich 27 January 2009 Herry-Martin, D CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category Date of completion of the search T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document cited in the application L: document of the same category					
Munich CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons		The present search report has been d	rawn up for all claims		
CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category X: theory or principle underlying the invention E: earlier patent document, but published on, or after the filling date D: document cited in the application L: document of the same category		Place of search	Date of completion of the search		Examiner
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons		Munich	27 January 2009	Her	ry-Martin, D
E : earlier patent document, but published on, or after the filing date Y : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category L : document cited in the application L : document cited for other reasons	C	ATEGORY OF CITED DOCUMENTS	T : theory or princip	le underlying the in	nvention
Y : particularly relevant if combined with another D : document cited in the application L : document cited for other reasons	X : part	cularly relevant if taken alone	E : earlier patent de after the filing de	ocument, but publis ate	shed on, or
	Y:part	cularly relevant if combined with another	D : document cited	in the application	
A : technological background O : non-written disclosure & : member of the same patent family, corresponding	A : tech	nological background			

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO.

EP 08 01 6195

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 The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

27-01-2009

W0 2004074566 A1 02-09-2000 DE 10344573 A1 15-04-2004 NONE DE 19817694 A1 03-12-1998 NONE EP 0823502 A 11-02-1998 CN 1174903 A 04-03-1990 GR 3036645 T3 31-12-2000 HK 1003149 A2 25-09-1990 ID 18007 A 19-02-1990 PT 823502 T 30-10-2000 US 5794555 A 18-08-1990 DE 4343230 A1 22-06-1995 NONE GB 768385 A 13-02-1957 NONE	EP 1586690 A 19-10-2005 CN 1445407 A 01-10-200 DE 10344573 A1 15-04-2004 NONE DE 19817694 A1 03-12-1998 NONE EP 0823502 A 11-02-1998 CN 1174903 A 04-03-199 GR 3036645 T3 31-12-200 HK 1003149 A2 25-09-199 ID 18007 A 19-02-199 PT 823502 T 30-10-200 US 5794555 A 18-08-199 DE 4343230 A1 22-06-1995 NONE GB 768385 A 13-02-1957 NONE JP 2002069814 A 08-03-2002 JP 3785034 B2 14-06-200
W0 2004074566 A1 02-09-2000 DE 10344573 A1 15-04-2004 NONE DE 19817694 A1 03-12-1998 NONE EP 0823502 A 11-02-1998 CN 1174903 A 04-03-1990 GR 3036645 T3 31-12-2000 HK 1003149 A2 25-09-1990 ID 18007 A 19-02-1990 PT 823502 T 30-10-2000 US 5794555 A 18-08-1990 DE 4343230 A1 22-06-1995 NONE GB 768385 A 13-02-1957 NONE JP 2002069814 A 08-03-2002 JP 3785034 B2 14-06-2000	WO 2004074566 A1 02-09-200 DE 10344573 A1 15-04-2004 NONE DE 19817694 A1 03-12-1998 NONE EP 0823502 A 11-02-1998 CN 1174903 A 04-03-199 DE 19632092 A1 12-02-199 GR 3036645 T3 31-12-200 HK 1003149 A2 25-09-199 ID 18007 A 19-02-199 PT 823502 T 30-10-200 US 5794555 A 18-08-199 DE 4343230 A1 22-06-1995 NONE GB 768385 A 13-02-1957 NONE JP 2002069814 A 08-03-2002 JP 3785034 B2 14-06-200 CN 1265436 A 06-09-2000 NONE
DE 19817694 A1 03-12-1998 NONE EP 0823502 A 11-02-1998 CN 1174903 A 04-03-1998 GR 19632092 A1 12-02-1998 GR 3036645 T3 31-12-2069 HK 1003149 A2 25-09-1999 ID 18007 A 19-02-1999 PT 823502 T 30-10-2069 US 5794555 A 18-08-1999 DE 4343230 A1 22-06-1995 NONE GB 768385 A 13-02-1957 NONE JP 2002069814 A 08-03-2002 JP 3785034 B2 14-06-2069	DE 19817694 A1 03-12-1998 NONE EP 0823502 A 11-02-1998 CN 1174903 A 04-03-199
EP 0823502 A 11-02-1998 CN 1174903 A 04-03-1998 GR 19632092 A1 12-02-1998 GR 3036645 T3 31-12-2000 HK 1003149 A2 25-09-1998 ID 18007 A 19-02-1998 PT 823502 T 30-10-2000 US 5794555 A 18-08-1998 DE 4343230 A1 22-06-1995 NONE GB 768385 A 13-02-1957 NONE JP 2002069814 A 08-03-2002 JP 3785034 B2 14-06-2000 HE 100 A 100	EP 0823502 A 11-02-1998 CN 1174903 A 04-03-199
DE 19632092 A1 12-02-199 GR 3036645 T3 31-12-200 HK 1003149 A2 25-09-199 ID 18007 A 19-02-199 PT 823502 T 30-10-200 US 5794555 A 18-08-199 DE 4343230 A1 22-06-1995 NONE GB 768385 A 13-02-1957 NONE JP 2002069814 A 08-03-2002 JP 3785034 B2 14-06-200	DE 19632092 A1 12-02-199 GR 3036645 T3 31-12-200 HK 1003149 A2 25-09-199 ID 18007 A 19-02-199 PT 823502 T 30-10-200 US 5794555 A 18-08-199 DE 4343230 A1 22-06-1995 NONE GB 768385 A 13-02-1957 NONE JP 2002069814 A 08-03-2002 JP 3785034 B2 14-06-200 CN 1265436 A 06-09-2000 NONE
GB 768385 A 13-02-1957 NONE JP 2002069814 A 08-03-2002 JP 3785034 B2 14-06-200	GB 768385 A 13-02-1957 NONE JP 2002069814 A 08-03-2002 JP 3785034 B2 14-06-200 CN 1265436 A 06-09-2000 NONE
JP 2002069814 A 08-03-2002 JP 3785034 B2 14-06-200	JP 2002069814 A 08-03-2002 JP 3785034 B2 14-06-200 CN 1265436 A 06-09-2000 NONE
	CN 1265436 A 06-09-2000 NONE
CN 1265436 A 06-09-2000 NONE	
	US 3859941 A 14-01-1975 NONE
US 3859941 A 14-01-1975 NONE	

FORM P0459