



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
13.01.2016 Bulletin 2016/02

(51) Int Cl.:
B65D 5/24 ^(2006.01)
B65D 77/20 ^(2006.01) **B65D 5/60** ^(2006.01)

(21) Application number: **15396001.8**

(22) Date of filing: **07.01.2015**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

(72) Inventors:
• **Suokas, Jouni**
FI-31300 Tammela (FI)
• **Vikman, Kai**
FI-08800 Lohja (FI)

(30) Priority: **07.01.2014 FI 20140008**

(74) Representative: **Nieminen, Taisto Tapani**
Patenttitoimisto T. Nieminen Oy
P.O. Box 65
33201 Tampere (FI)

(71) Applicant: **Jospak Oy**
30101 Forssa (FI)

(54) **FOOD STUFFS PACKAGING AND A METHOD FOR MANUFACTURING THE SAME**

(57) Food stuff packaging which comprises a space (2) equipped with edges for the food stuff to be packed and comprises an attachment surface or an attachment edge at the upper edge (6) of the mentioned space for adjusting a lid (1) to be an upper surface of the packaging.

The frame of the space (2) is formed of recyclable cardboard and that the mentioned space (2) is coated on the inside with a separate food stuff film (5) which can be removed from the mentioned frame.

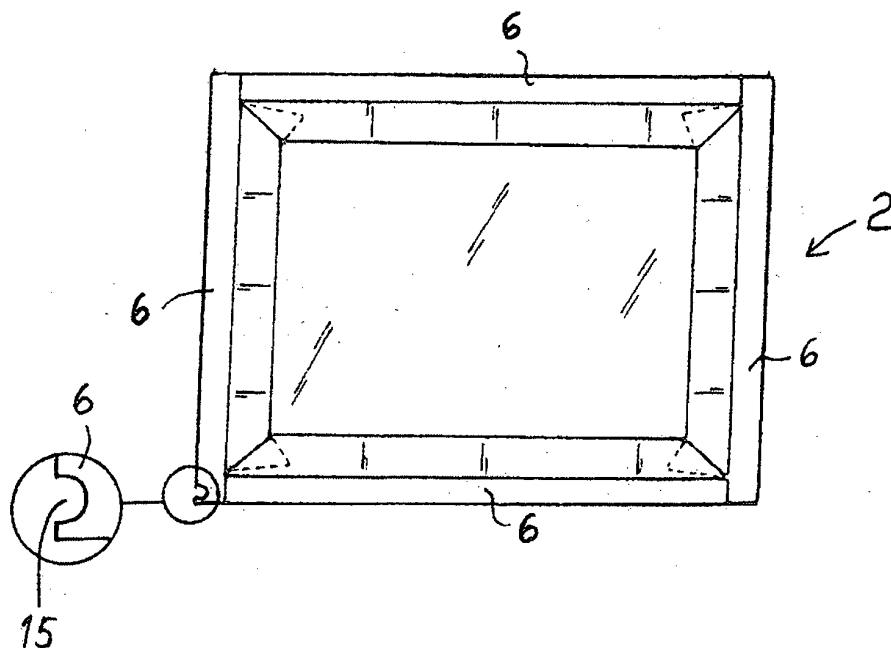


Fig. 3

Description

[0001] Invention relates to a food stuff packaging which comprises a space equipped with edges for the food stuff to be packed and at the upper edge of the mentioned space an attachment surface or an attachment edge in order to arrange a lid to be an upper surface of the packaging.

[0002] Packagings with a plastic and metallic frame are previously known as food stuff packagings. Box-type packagings made of cardboard are also known but there is a laminated food stuff film on the surface of the cardboard used in them. The result of using this kind of laminated foodstuff film on the surface of the cardboard is that the cardboard is not accepted for recycling through the cardboard collection. Plastic and metallic packaging frames which are accepted for foodstuff usage can certainly be used and these materials can be recycled through the relevant recycling points but the frames manufactured of these materials have higher costs than the conventional cardboard frames.

[0003] Further a food stuff packaging is known from the publication WO 2009/138786 which food stuff packaging has a bowl-like frame. A plastic film is formed to the cavity of the frame with the help of heating and pressure difference. The film is formed at the location of the bowl-like frame first in an opposite direction in relation to the cavity of the bowl-like frame with the help of a specific counter shape mould and pressure difference and after this at the following stage it is placed to the cavity of the frame with the help of pressure difference.

[0004] The fitting of the plastic film into the cavity of the frame in the above described way is difficult and slows down the packing process when the plastic film is formed first in the other direction with the help of heating and pressure difference and after that at the next stage in the opposite direction into the cavity of the bowl-like frame. This manufacturing method is not very advantageous because on the contrary all excessive and multiple working phases, which slow down the speed of the packing line, should be avoided in the packing process.

[0005] In order to remove these disadvantages and in order to create a food stuff packaging that is manufactured of recyclable material, a new food stuff packaging has been developed in which the used materials can be easily separated and each material can be separately sorted to its separate recycling point. What has been presented in the claim 1 and in the dependent claims 1 - 6, is characteristic of the foodstuff packaging according to the invention.

[0006] What has been presented in the claim 7 and in the dependent claim 8, is characteristic of the method for manufacturing a food stuff packaging according to the invention.

[0007] The advantage of the food stuff packaging according to the invention is the fact that a frame made of conventional cardboard can be used as the frame of the packaging which frame can be arranged to have the de-

sired cup or bowl form at least with the help of folds and such an upper edge can be arranged for it to which the lid can be attached. At the disposal moment of the packaging the cardboard frame and the food stuff film that coats it can easily be separated as well as also the lid of the packaging wherein all these are separate and each is made of its own homogeneous matter wherein they can be placed in their separate recycling points.

[0008] In the following the invention is described more detailed by referring to the accompanying drawings in which

- Figure 1 shows a food stuff packaging.
- Figure 2 shows a packaging of the figure 1 when a lid is removed and the coating film is at its place.
- Figure 3 shows a cardboard frame seen from the top.
- Figure 4 shows a cardboard frame as a side view.
- Figure 5 shows a cardboard packaging frame being opened.
- Figure 6 shows a cardboard packaging frame being partly folded.
- Figure 7 shows a fitting of the plastic film into a space of the frame.

[0009] A food stuff packaging is shown in the figure 1 which food stuff packaging comprises a quadrangular, bowl-like frame which frame forms a space 2 for the food stuffs and a lid 1 which is attached on top of the frame which lid can be detached in a conventional way by gripping the tear-off extension 3. The lid 1 is made of cardboard or food stuff plastic onto which the needed information can be printed.

[0010] Figure 2 shows the food stuff packaging of the figure 1 when the lid 1 has been removed. Thus the food stuff film 5 which is adjusted inside the frame can be seen which food stuff film is adjusted against the frame and the edges of which film 5 extend on top of the folds belonging to the edges of the frame. Of the foodstuff film 5 the part 4 extends over the edge of the frame wherein the mentioned film 5 can be removed from the frame by gripping the part 4. The film 5 also extends on top of the part 4 and because the part 4 has been perforated so that it can be detached along the line 14 from the rest of the edge part, then by gripping the film coated part 4 the film 5 can be easily removed.

[0011] In the figure 3 a frame of the packaging made of ordinary cardboard and formed with the help of folds inside which frame a locating space 2 for the food stuff is formed when the mentioned space is coated with a food stuff film 5. With the help of the folds an attachment surface which surrounds the upper edge 6 of the created frame can be formed which attachment surface is at the same level in the whole area which forms the whole upper edge 6. The folding arrangement, with the help of which the planar upper edge 6 can be created, is shown in the figures 4 - 6. In the enlargement a hole 15 located in the edge part 6 is shown. The plastic film 5 can be placed over the hole 15 wherein the film 5 can be gripped at the

location of the hole 15 and the film 5 can be torn away at it from the locating space 2 when the materials are separated for recycling.

[0012] Figure 4 shows the packaging frame of the figure 3 as a side view. The frame comprises several folds wherein the folds are attached to other frame parts with glue when the needed frame for the packaging has gradually been folded by using the straight, cut to shape cardboard. If the lid 1 is a food stuff plastic film, it is attached to the attachment surfaces, in other words to the upper edges 6 of the frame with a glue qualified for food stuff use which upper edges already have a food stuff plastic film 5 as the first, attached layer. An alternative lid 1 made of cardboard is attached to the film 5 which is attached to the attachment surface of the frame correspondingly with glue.

[0013] In the figure 5 the cardboard billet of a packaging frame is shown as a straight plate. The billet is cut at its outer edges to its final form. The out cut parts belonging inside the billet are shown with a reference number 7. All the other lines being inside the billet show folding lines. At the location of these lines either creasings or preliminary folds or some other shapings that control the folding have been made.

[0014] In the figure 6 the billet of the figure 5 is shown slightly folded wherein the space 2 itself, in other words the cavity which is located inside the attachment surfaces of the upper edge 6 is already formed. The flaps 10 and 8, 9 and 11 and 12 and 13 are still not folded and must be attached with gluing of which flaps the flaps 9 and 10 are folded to the lower surface of the attachment surfaces of the upper edge 6 and the flaps 8, 11 and 12 are attached to the sides of the frame and the part 13 is attached to the bottom of the frame.

[0015] In the figure 7 the fitting of the plastic film 5 from the slide to the cavity of the frame according to the invention is shown which cavity functions as the space 2 for the food stuffs. The movement of the film 5 is stopped when the packaging frame has moved to the locating station of the film 5 at which station there is heating/blowing tool 16 for the film 5 above the film 5 and a suction tool 17 for the film 5 underneath said film. Both the upper side 16 and the lower side tools 17 are both moved to have a contact with the film 5 so that the edges of both tools are squeezed a little bit against each other. The film 5 and the upper edges 6 of the frame will thus be squeezed.

[0016] Hot air is blown towards the film 5 through the tool which is located above the film. Most advantageously hot air is blown already earlier before the tool is lowered to have a contact with the film 5. The suction is started through the tool 17 which is located underneath said film when it is lifted to have a contact with the upper edges 6 of the frame. The suction coming from underneath occurs through the cardboard which functions as the frame. This method eases considerably the removal of the air from between the packaging frame and the film 5. Even though in this case the tools 17 and 16 are discussed as tools

that are located underneath and above said film, their positions can naturally be also in other directions in relation to the film 5 but however on the opposite sides of the film 5.

Claims

1. Food stuff packaging which comprises a space (2) equipped with edges for the food stuff to be packed and comprises an attachment surface or an attachment edge at the upper edge (6) of the mentioned space for adjusting a lid (1) to be an upper surface of the packaging, **characterized in that** a frame of the space (2) is formed of recyclable cardboard and with the help of folds in such a way that the upper edges (6) of all sides of the frame are adjusted to be at the same upper surface level by means of the dimensions of the folds forming the frame and that the mentioned space (2) is coated on the inside with a separate food stuff film (5) which is turned to extend on top of the upper edge (6) that surrounds the frame and which film (5) can be removed from the mentioned frame by gripping the tear-off point (4), (15) arranged to it.
2. Food stuff packaging according to the claim 1, **characterized in that** in order to ease the removal of the food stuff film (5) a part, (4) which exceeds the upper edge (6) of the frame and is separated with perforation (14), is arranged to the mentioned film.
3. Food stuff packaging according to the claim 1, **characterized in that** in order to ease the removal of the food stuff film (5) a hole (15) is arranged to the upper edge (6) of the frame which hole comprises only the film (5) at which film one can grip for the tearing.
4. Food stuff packaging according to the claim 1, **characterized in that** the lid (1) is made of recyclable food stuff plastic or recyclable cardboard.
5. Food stuff packaging according to the claim 1, **characterized in that** the lid (1) is attached with the help of glue to the upper edge (6) of the frame onto the surface of the food stuff film (5) which is located at the upper edge.
6. Food stuff packaging according to the claim 1, **characterized in that** the food stuff film (5) that coats the frame is formed/stretched to have the shape of the frame.
7. Method for manufacturing a food stuff packaging which comprises a space (2) equipped with edges for the food stuff to be packed and an attachment surface or an attachment edge located at the upper edge (6) of the mentioned locating space to which

the lid (1) is attached to form the upper surface of the packaging, **characterized in that** in the method the frame of the space (2) is formed of recyclable cardboard with the help of folds in such a way that the upper edges (6) of all sides of the frame will be located at the same upper surface level due to the dimensions of the folds forming the frame and that the mentioned space (2) is coated on the inside with a separate food stuff film (5) the edges of which food stuff film are extended on top of the upper edge (6) of the frame of the space (2) and at the fitting stage of the film (5) the needed area of the film (5) is squeezed together with the upper edges (6) of the mentioned frame between the edge parts of the tools (17),(16) that are located underneath and above the film wherein through the tool (17) underpressure is formed between the film (5) and the frame and through the tool (16) at least the heating of the film (5) is arranged.

8. Method according to the claim 7, **characterized in that** underpressure is sucked through the mentioned frame between the film (5) and the frame of the space (2).

5

10

15

20

25

30

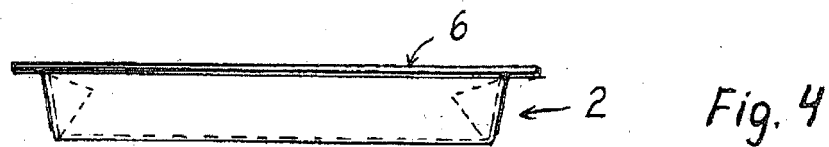
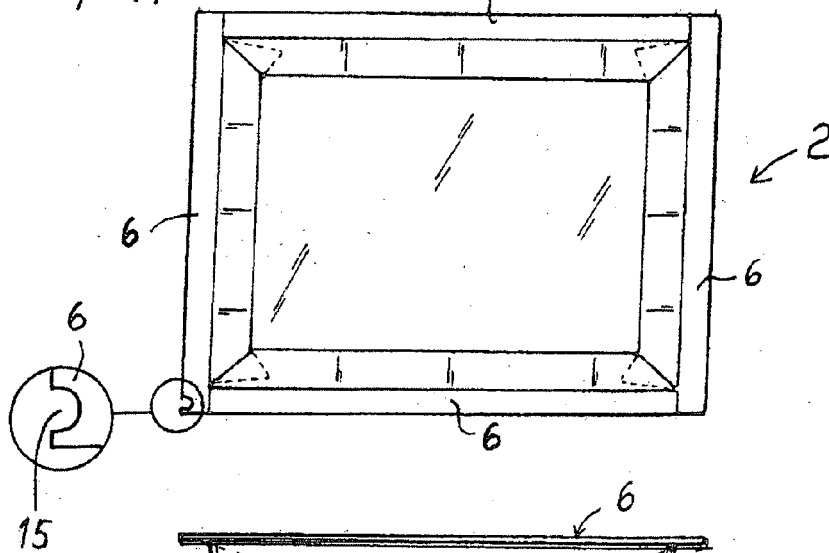
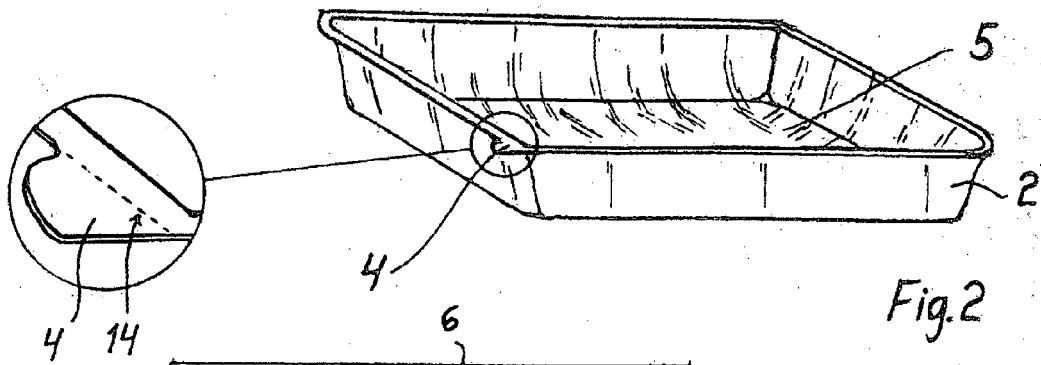
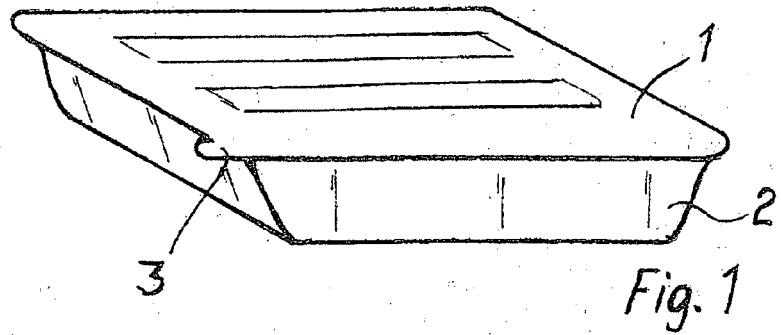
35

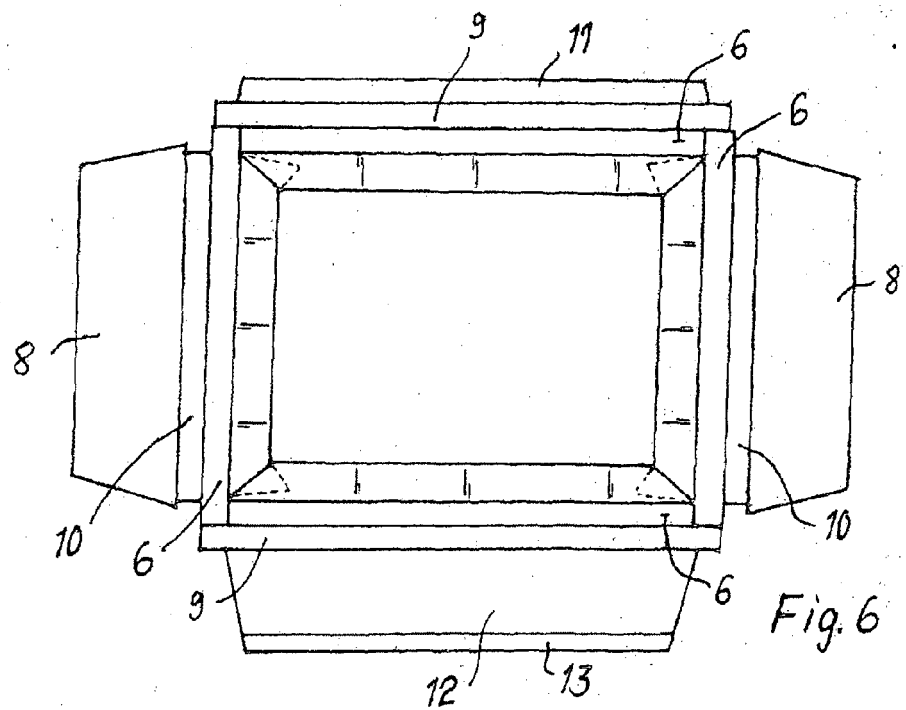
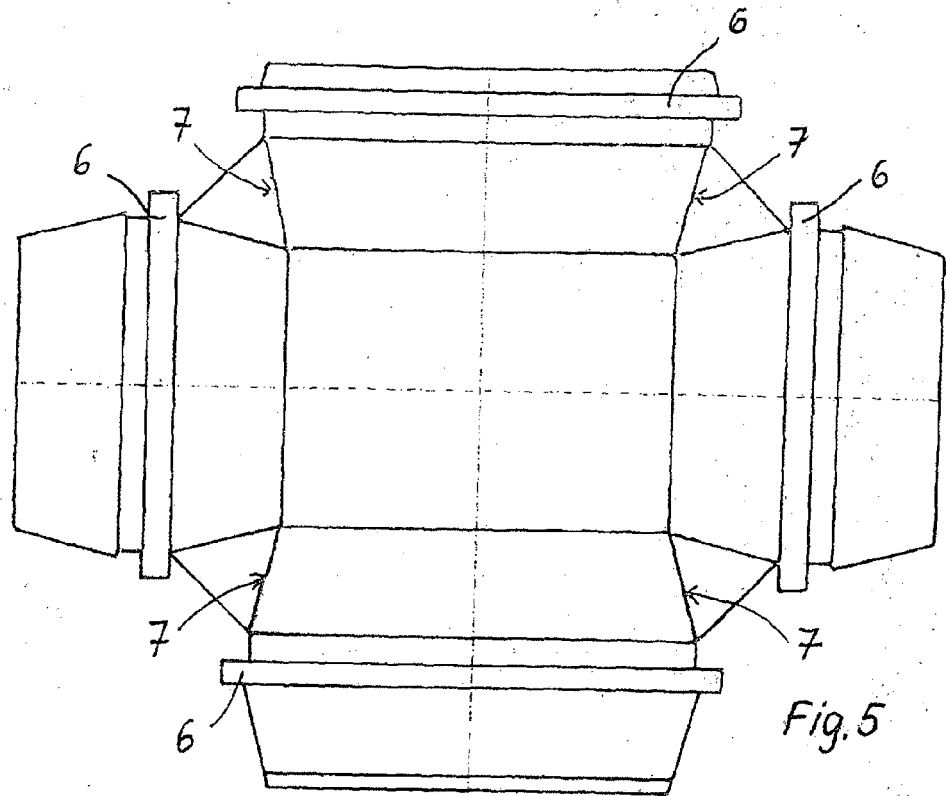
40

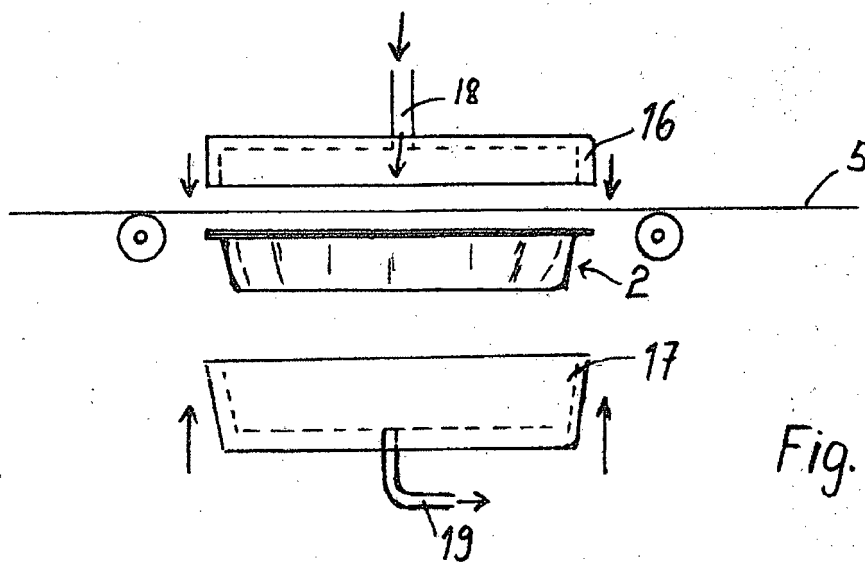
45

50

55









EUROPEAN SEARCH REPORT

Application Number
EP 15 39 6001

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	DE 196 54 230 A1 (DIETRICH JOCHEN [DE]) 2 July 1998 (1998-07-02)	1,3,4, 6-8	INV. B65D5/24 B65D5/60 B65D77/20
Y	* column 7, line 27 - column 9, line 37; figures 3, 8, 10 *	2,5	
X	DE 43 27 669 A1 (DIETRICH JOCHEN [DE]) 23 February 1995 (1995-02-23) * column 11, lines 43-65; figures 10, 11 *	1,3,4,6	
Y	EP 2 441 696 A1 (PACKABLE B V [NL]) 18 April 2012 (2012-04-18) * paragraphs [0046], [0047]; figure 7 *	2	
Y	US 6 264 099 B1 (SAKUMA KOUICHI [JP] ET AL) 24 July 2001 (2001-07-24) * column 12, lines 23-36 *	5	
X	WO 2013/002639 A1 (STEEN DEKKER BEHEER BV VAN [NL]; BALKE MAN BV [NL]; BALKE MARCELLINUS) 3 January 2013 (2013-01-03) * abstract; figure 5 *	1	TECHNICAL FIELDS SEARCHED (IPC)
			B65D
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 2 December 2015	Examiner Balz, Oliver
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document 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 & : member of the same patent family, corresponding document			

 1
EPO FORM 1503 03.82 (P04001)

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

EP 15 39 6001

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.

02-12-2015

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 19654230 A1	02-07-1998	AT 243139 T DE 19654230 A1 EP 0946391 A1 WO 9828195 A1	15-07-2003 02-07-1998 06-10-1999 02-07-1998
DE 4327669 A1	23-02-1995	NONE	
EP 2441696 A1	18-04-2012	AU 2011315758 A1 CA 2814149 A1 DK 2441697 T3 EP 2441696 A1 EP 2441697 A1 ES 2504968 T3 JP 2013545675 A PT 2441697 E RU 2013121810 A US 2013327821 A1 WO 2012049005 A1	28-03-2013 19-04-2012 29-09-2014 18-04-2012 18-04-2012 09-10-2014 26-12-2013 16-09-2014 20-11-2014 12-12-2013 19-04-2012
US 6264099 B1	24-07-2001	NONE	
WO 2013002639 A1	03-01-2013	EP 2726380 A1 NL 2007024 C US 2014131428 A1 WO 2013002639 A1	07-05-2014 03-01-2013 15-05-2014 03-01-2013

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- WO 2009138786 A [0003]