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(72) Inventor: **Lanaquera Gimeno, José**
46190 Ribarroja Del Turia (Valencia) (ES)

(74) Representative: **Canadell-Isern, Roberto**
Travessera de Gracia 30-1o C
08021 Barcelona (ES)

(71) Applicant: **Lanaquera, S.L.**
46190 Ribarroja del Turia (Valencia) (ES)

(54) **Package blanks with score lines**

(57) Folded closing system applicable to continuous packaging. In order to form the folds, longitudinal grooves (1), transversal cuts (2), transversal grooves (3), parallel to and near the cuts (2), as well as oblique grooves (4) between the cuts (2) and the transversal

grooves (3) are made on one of the faces of the corrugated cardboard band, which affect the larger faces (5) and the longitudinal flap (6).

The oblique end grooves affecting the larger face (5') are replaced by the cut lines (7) that facilitate the separation of the cardboard triangle (8).

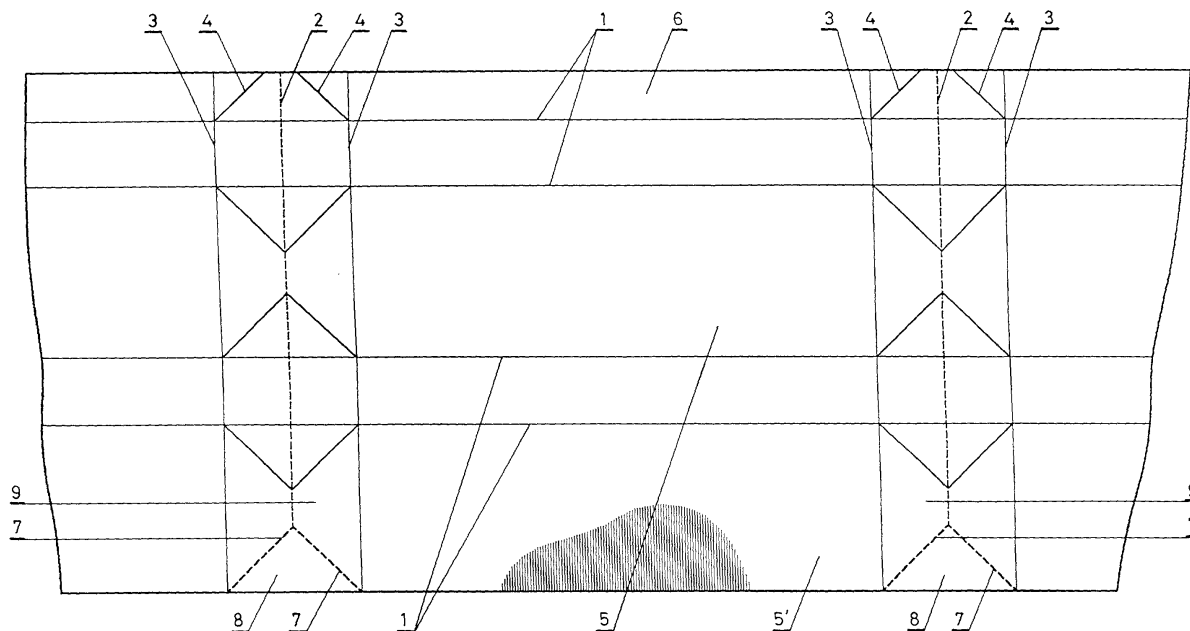


FIG. 1

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Description

PURPOSE

[0001] The purpose to which the invention protected by this Patent refers is a "Folded closing system applicable to continuous packaging".

[0002] Continuous packaging is understood to be that which is consecutively produced on a continuous band of corrugated cardboard that unwinds from reels or is supplied in blocks folded in zigzag.

[0003] The claimed system is preferably applied to packaging of a great length.

HISTORY

[0004] The company requesting this Patent is the title holder of European Patent no. 0.680.822-B1, "Method for manufacturing packaging of a great length", according to which and using corrugated cardboard reels on one face only, longitudinal grooves and transversal cuts are made on its corrugated face and longitudinal cuts on the transversal cut lines.

[0005] Using this continuous band of cardboard corrugated on one face, on which the described signals have been made, pieces of it are successively separated through the transversal cut lines and each piece is folded along the longitudinal grooves to form a rectangular prismatic package of an optionally pre-established length the bases of which are closed by folding the flaps resulting from the longitudinal cuts made on the transversal cut lines.

[0006] The packaging thus obtained requires the extensive application of securing and sealing means (for example, self-adhesive tape) to maintain the joints among parts of the packaging in their closed position, apart from those overlapping on the bases.

DESCRIPTION OF THE INVENTION

[0007] The aim of the invention constituting the purpose of this Patent consists in reducing the number and length of the joints among the closing flaps of the bases, replacing the cuts of the latter with folds facilitated by oblique and transversal grooves.

[0008] In effect, to form the end closures of the packaging by folding, parallel transversal grooves near the transversal cut lines are made on one of its faces, as well as oblique grooves between the cut lines and the transversal grooves, that affect the larger lateral faces of the packaging and the longitudinal closing flap. The layout is convergent from the intersection points of the longitudinal and transversal grooves towards the transversal cut lines, adopting inversely symmetric positions on one side and the other of said cut lines.

[0009] The end oblique grooves affecting the larger face defined by the edge of the band are replaced by cut lines facilitating the separation of a cardboard trian-

gle so that the closure can be folded inwards, thus avoiding that the longitudinal flap and the one corresponding to the larger end face are superimposed and hamper it.

[0010] The end closures of the packaging, formed by folding according to the above descriptions, eliminate the closing flaps, reduce the number of cuts needed to delimit the parts and facilitate securing and sealing of the joints.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] To complement the description of the invention and facilitate the interpretation of its formal, structural and functional characteristics, attached are drawings in which the different aspects of a preferred performance of the "Folded closing system applicable to continuous packaging" constituting the purpose of this Patent are represented.

[0012] In said drawings:

Figure 1 represents a part of the corrugated cardboard band in which the grooves and cuts needed to form the packaging and folded closing of its ends have been performed. It includes the folded development of a complete package, plus the adjacent ends of the preceding and next package in the order in which this is produced continuously.

Figure 2 shows the plate of one package only, separated and independent from the next ones by the end transversal cut lines.

Figures 3, 4, 5, 6 and 7 show the successive positions adopted by the different parts of the ends of the packaging to obtain their closing by folding, whilst the same sequence that follows the order of the Figures follows the operative phases, which refer to the end in which the longitudinal closing flap is to the left.

DESCRIPTION OF A PREFERRED PERFORMANCE

[0013] In order to clearly show the nature and scope of the advantageous application of the "Folded closing system applicable to continuous packaging", constituting the purpose of the claimed invention, the following is a description of its structure and use, making reference to the drawings that, on representing a preferred performance of said objective for information purposes, must be considered in the widest and non-limiting sense of the application and content of the claimed invention.

[0014] The packaging to which the claimed system is applicable is of the type that forms a corrugated cardboard band that unwinds from reels or is supplied in blocks folded in zigzag, on one of the faces of which longitudinal grooves (1) and transversal cut lines (2) are made. These facilitate separation of the consecutive packaging, which are formed by folding the band along the longitudinal grooves, adopting the shape of a rectangular prism.

In order to shape the ends closures of the packaging by folding, transversal grooves (3) parallel and near the transversal cut lines (2) are made on one of the faces, as well as oblique grooves (4) between the cut lines (2) and the transversal grooves (3). These affect the larger lateral faces (5) of the packaging and the longitudinal closing flap (6), whilst the layout is convergent from the intersection points of the longitudinal (1) and transversal (3) grooves towards the transversal cut lines (2), adopting inversely symmetric positions on one side and the other of said cut lines.

[0015] The end oblique grooves affecting the larger face defined by the edge of the band are replaced by cut lines (7) facilitating the separation of a cardboard triangle (8) so that the closure can be folded inwards, thus avoiding that the longitudinal flap (6) and the one (9) corresponding to the larger end face (5') are superimposed and hamper it.

Claims

1. Folded closing system applicable to continuous packaging, of the type formed by a corrugated cardboard band that unwinds from reels or is supplied in blocks folded in zigzag. On one its faces longitudinal grooves (1) and transversal cut lines (2) are made. These facilitate the separation of consecutive packaging, which is formed by folding the band along the longitudinal grooves, adopting the shape of a rectangular prism. It is **characterized by** the fact that, in order to shape the end closures of the packaging by folding, transversal grooves (3), parallel to and near the transversal cut lines (2) are made on one of the faces, as well as oblique grooves (4) between the cut lines (2) and the transversal grooves (3), that affect the larger lateral faces (5) of the packaging and the longitudinal closing flap (6). The layout is convergent from the intersection points of the longitudinal (1) and transversal (3) grooves towards the cut lines (2), adopting inversely symmetric positions on one side and the other of said cut lines (2).
2. Folded closing system applicable to continuous packaging, according to claim 1, **characterized by** the fact that the end oblique grooves affecting the larger face defined by the edge of the band are replaced by cut lines (2) facilitating the separation of a cardboard triangle (8) so that the closure can be folded inwards, thus avoiding that the longitudinal flap (6) and the one (9) corresponding to the larger end face are superimposed and hamper it.

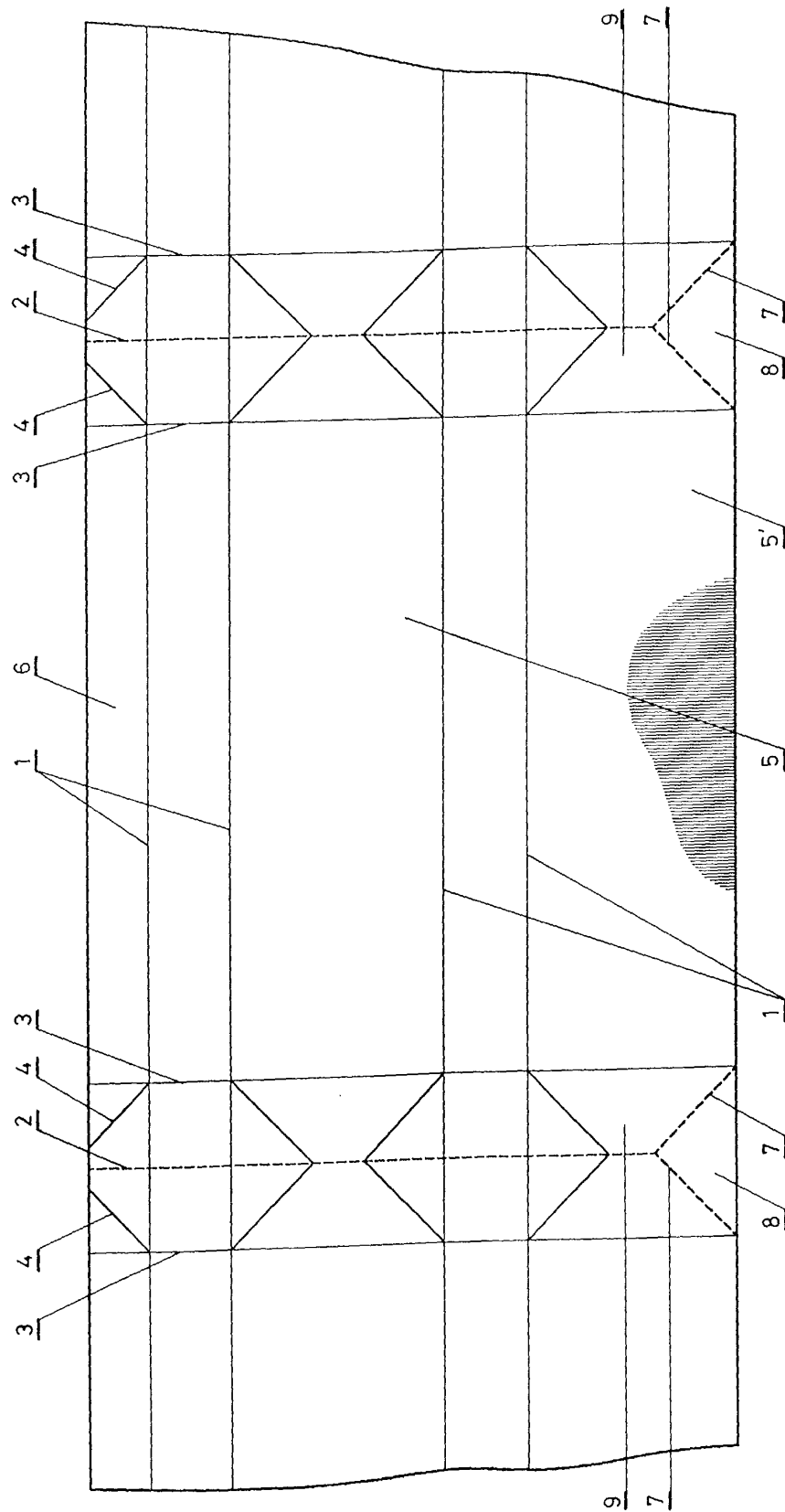


FIG.1

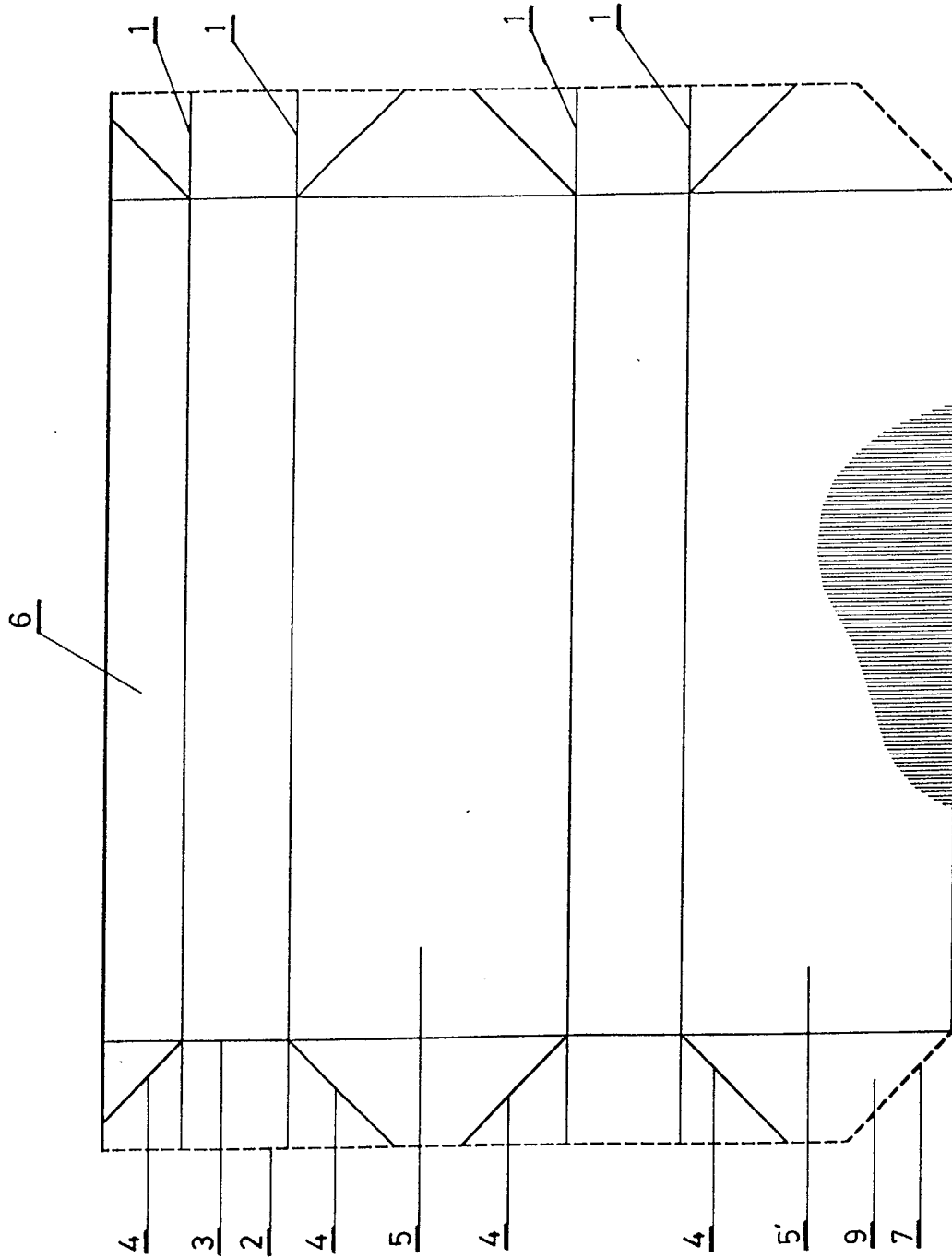
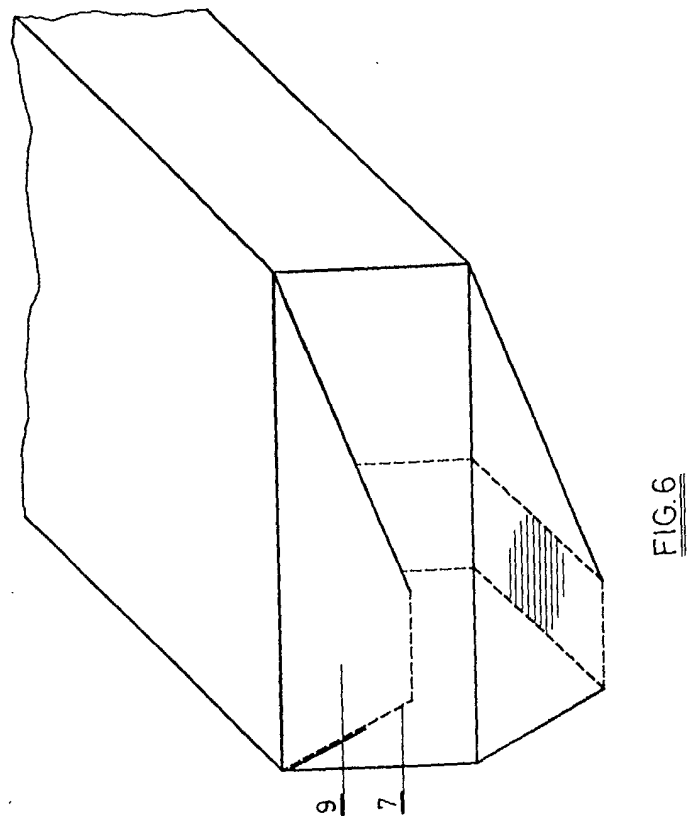
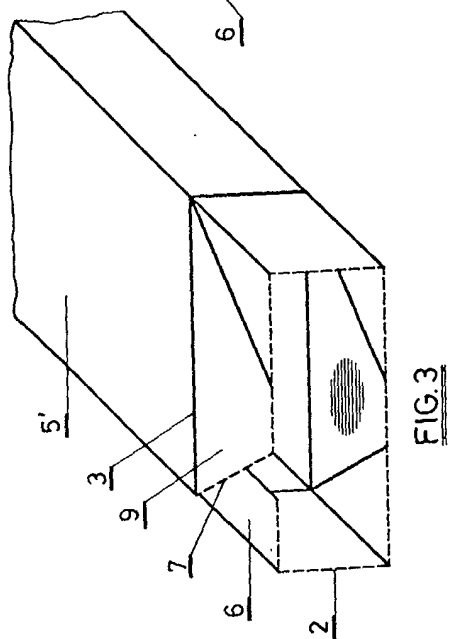
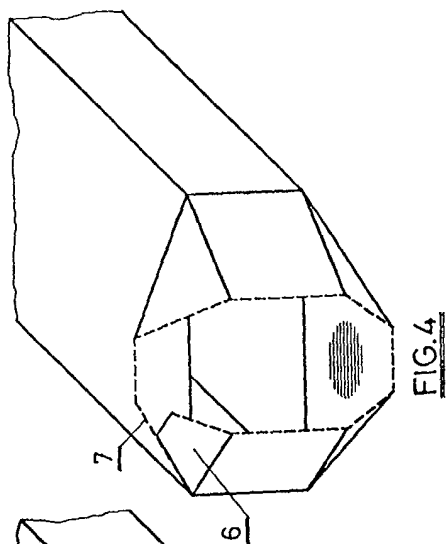
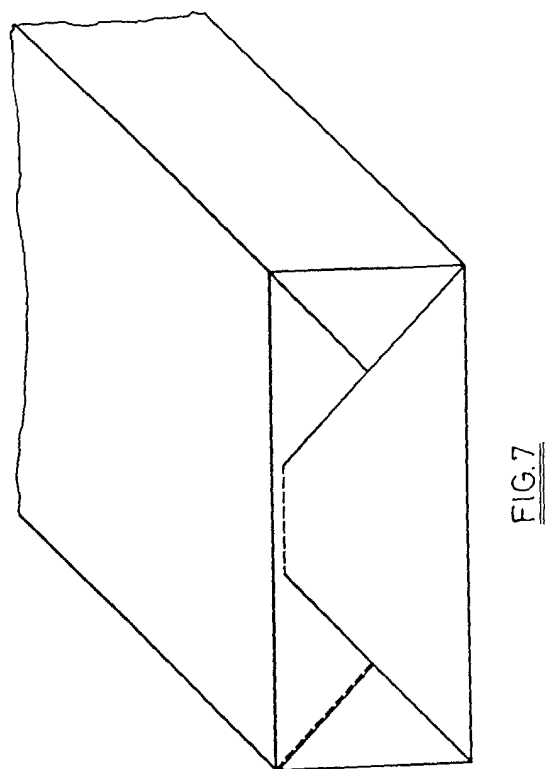
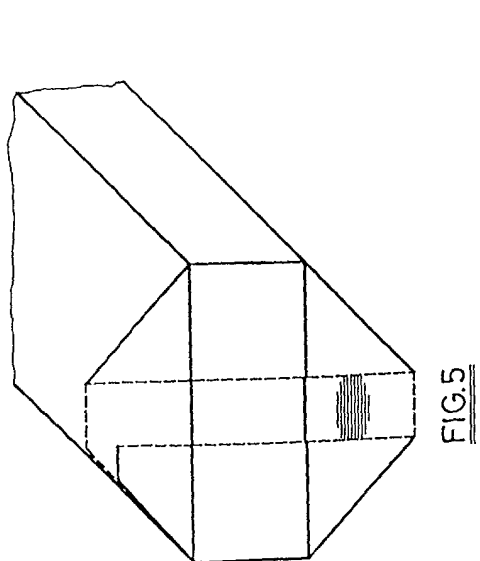


FIG. 2





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EUROPEAN SEARCH REPORT

Application Number
EP 02 38 0081

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
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			B31B B65D
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		10 September 2002	Pipping, L
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			

EPO FORM 1503 03.82 (P0401)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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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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