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(54) Stock for a firearm made from polymeric material

(57) A stock for a firearm consists of a left half-shell (12A) and a right half-shell (12B) moulded in polymeric material and equipped with joining edges (15) comprising a flat portion (16), arranged in a middle joining plane (13), suitable for being joined to an interfacing flat portion (16), a groove (17), which extends on the joining edge (15) parallel and adjacent to said flat portion (16) and to the outside of it, as well as an outer lip (18), suitable for defining a perimetric throat (20).

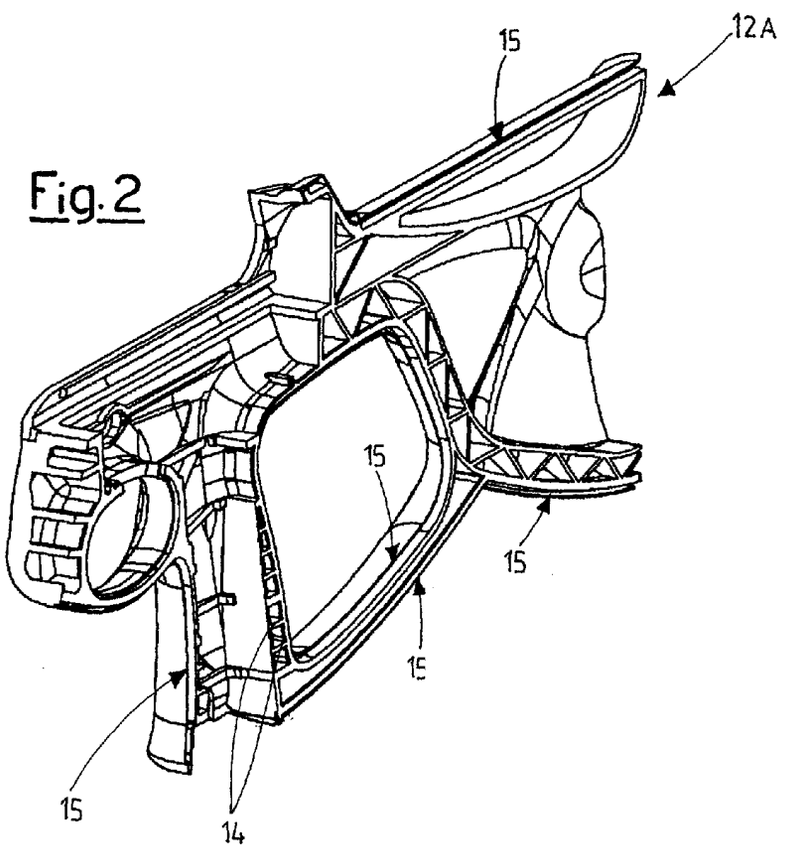

Fig.2

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Description

[0001] The present invention refers to a stock for a firearm made from polymeric material.

[0002] A stock for a firearm generally has a complex geometry, designed based upon ergonomic, structural and even aesthetic requirements.

[0003] Moreover, a stock, realised both in solid configuration, from wood, and in skeleton configuration, from metal, represents a useless and disadvantageous weighing down of the firearm.

[0004] Wood, moreover, does not allow complete workability and, under certain thicknesses, does not have good structural resistance.

[0005] By using polymeric materials for the moulding of the stock of a firearm it is, on the other hand, possible to reconcile complexity of the shape with lightness of the structure.

[0006] A stock for a firearm must, however, also ensure good structural resistance, since the firearm can be used to knock down obstacles, or at least be subjected to substantial stresses during use, or in the case of the firearm itself being dropped.

[0007] A stock for a firearm made from polymeric material can be realised in the form of two moulded half-shells, each of which equipped with suitable rigidifying ribs, connected together through gluing, welding or mechanical attachment.

[0008] Nevertheless, in welded products the welding burrs between the two half-shells, which represent an unacceptable eyesore in firearms of high quality, also in terms of aesthetics, and which must thus be taken away during a subsequent finishing step.

[0009] This represents one of the main drawbacks of the construction of a stock for a firearm in two half-shells, then integral with each other, above all in the case of high aesthetic quality firearms.

[0010] The purpose of the present invention is that of realising a stock for a firearm with complex geometry, minimum weight and good structural resistance.

[0011] Another purpose of the present invention is that of realising a stock for a firearm which achieves an excellent aesthetic result.

[0012] Another purpose of the present invention is that of realising a particularly simple and function stock, with low costs.

[0013] These purposes according to the present invention are accomplished by realising a stock as outlined in claim 1.

[0014] Further characteristics of a stock are the object of the dependent claims.

[0015] The characteristics and advantages of a stock for a firearm according to the present invention shall become clearer from the following description, given as an example and not for limiting purposes, referring to the attached schematic drawings, in which:

- figure 1 is a perspective view of a stock for a firearm, object of the present invention, realised in two half-shells;
- figures 2 and 3 are perspective views of the two half-shells of figure 1;
- figure 4 is an elevation view of a stock for a firearm according to the invention;
- figure 5 shows a detail of the left half-shell sectioned according to the line V-V of figure 4;
- figures 6 and 7 are section views according to the line V-V of figure 4 which show a detail of the joining edges of the two half-shells connected together respectively before and after the application of a cord of polymeric material in a throat between such joining edges.

[0016] With reference to the figures, a stock for a firearm is shown, wholly indicated with 10, comprising two half-shells 12, a left half-shell 12A and a right half-shell 12B, suitable for being connected together in a middle joining plane 13 to form the final outer geometry of the stock 10.

[0017] The two half-shells 12, shown in figures 2 and 3, are moulded in polymeric material, for example through an injection procedure, according to techniques known to men skilled in the art.

[0018] Each half-shell 12 is shaped externally according to the desired final geometry and is equipped on the inner side with ribs 14, or local strengtheners, suitable for ensuring the required resistance without substantially influencing the weight or external geometry.

[0019] The two half-shells 12A and 12B are also equipped, along their perimeter, with joining edges 15, which can extend along the entire perimeter of the stock 10 or can only involve some portions of it, as represented as an example in figures 2 and 4.

[0020] Each joining edge 15, seen in section, has a flat portion 16, suitable for being welded to the flat portion 16 of the joining edge 15 of the interfacing and mirroring shell 12.

[0021] On the outside of the flat portion 16, each joining edge 15 is equipped with a groove 17, which extends parallel and adjacent to the flat portion 16, and identifies a thin outer lip 18, the vertex of which is not arranged in the joining plane 13, but rather goes inwards with respect to it (figure 5).

[0022] To assemble the stock 10, object of the present invention, the two half-shells 12 are initially brought together and then joined and made integral with each other, for example through a welding operation carried out on the flat portions 16 of the joining edges 15, or for example through gluing.

[0023] In a preferred embodiment, the half-shells 12 are joined through a welding operation carried out according to known methods.

[0024] When the half-shells 12 of the stock 10, object of the present invention, are connected together, the interfacing lips 18 do not touch, but define a slit 19 for access to a dovetailing perimetric throat 20, which ex-

tends along all of the joining edge 15 and is formed from the interfacing grooves 17 (figure 6).

[0025] In the throat 20 polymeric material, for example rubber material, can be applied, deposited or injected, forming a cord 21, which hides the joining edges 15 and the welding burrs and gives softness to the touch, as well as an excellent aesthetic result (figure 7).

[0026] In particular, the rubber material can be applied after the welding of the half-shells 12A and 12B or else the cord 21 can be positioned in the groove 17 of one of the half-shells 12A or 12B before carrying out the welding.

[0027] The stock for a firearm, object of the present invention, has the advantage of consisting of two shells of polymeric material which are light and shaped according to whatever geometry.

[0028] The interfacing lips which are separated only by a thin slit advantageously hide the welding burrs from view, even without the application of the cord of rubber.

[0029] Moreover, the joining edges are advantageously hidden by a cord of material, a detail which, as well as giving a pleasant aesthetic result, also realises a shock-absorbing edge which reduces the risk of scratches and scorings.

Claims

1. Stock for a firearm, consisting of a left half-shell (12A) and a right half-shell (12B) moulded in polymeric material and made integral with each other, **characterised in that** said interfacing half-shells (12) are equipped with joining edges (15) comprising a flat portion (16), suitable for being joined to an interfacing flat portion (16), a groove (17), which extends on said joining edge (15) parallel and adjacent to said flat portion (16) and to the outside of it, as well as an outer lip (18), suitable for defining a perimetric throat (20).

2. Stock according to claim 1, **characterised in that** said outer lip (18) goes inwards with respect to a joining plane (13) and is suitable for defining a perimetric slit (19) for access to said throat (20).

3. Stock according to claim 1, **characterised in that** said cord (21) of polymeric material can be applied in said throat (20).

4. Stock according to claim 1, **characterised in that** said cord (21) of polymeric material is injected in said perimetric throat (20).

5. Stock according to claim 1, **characterised in that** said cord (21) of polymeric material is a rubber material.

6. Stock according to claim 1, **characterised in that** said perimetric throat (20) is dovetailed.

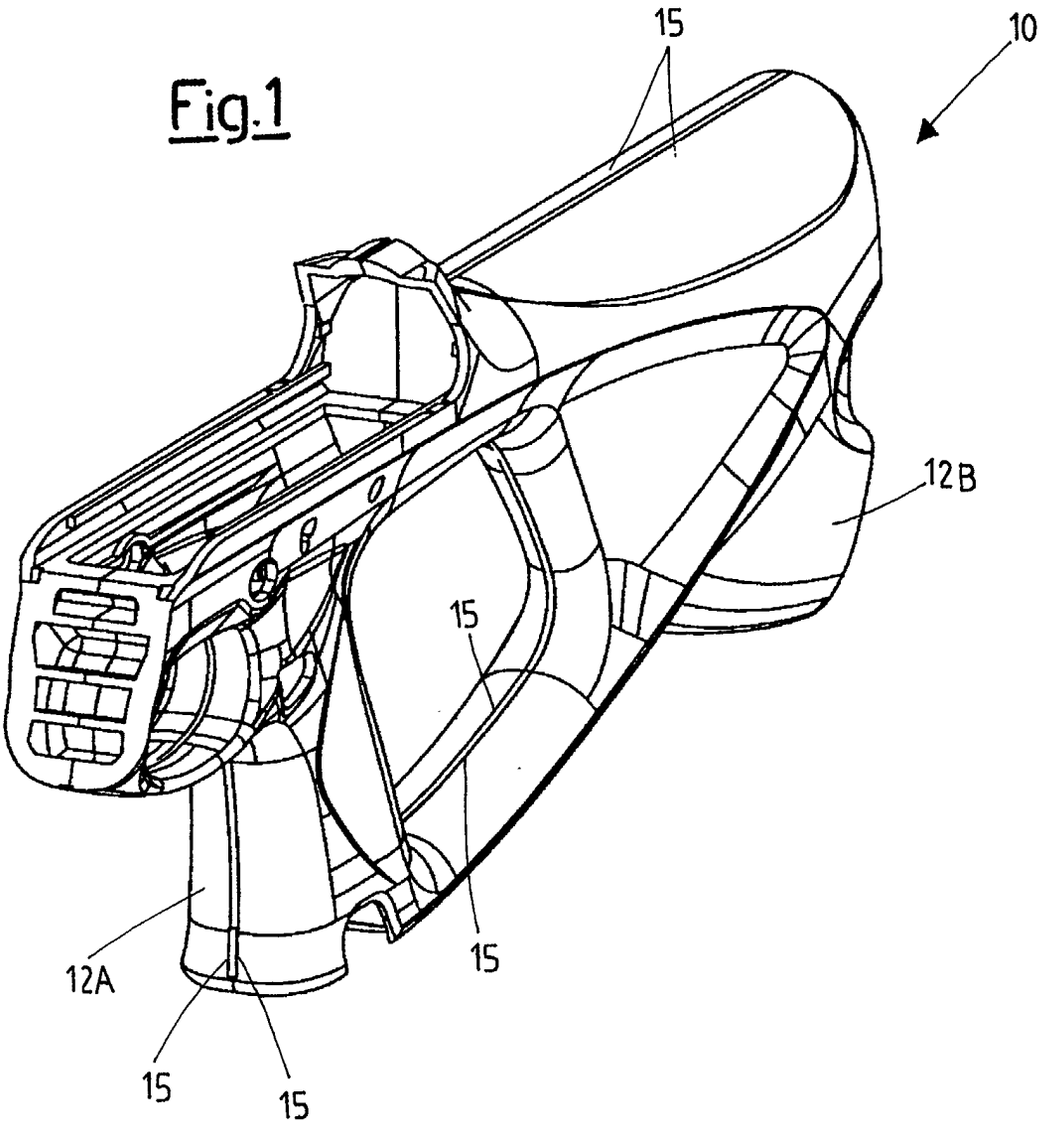
7. Stock according to claim 1, **characterised in that** said half-shells (12A and 12B) are equipped on the inner side with ribs (14) suitable for giving structural resistance.

8. Stock according to claim 1, **characterised in that** said joining edges (15) extend along the entire perimeter of said stock (10).

9. Stock according to claim 1, **characterised in that** said joining edges (15) extend along portions of the perimeter of said stock.

10. Stock according to claim 1, **characterised in that** said half-shells (12A and 12B) are joined through a welding operation.

Fig.1



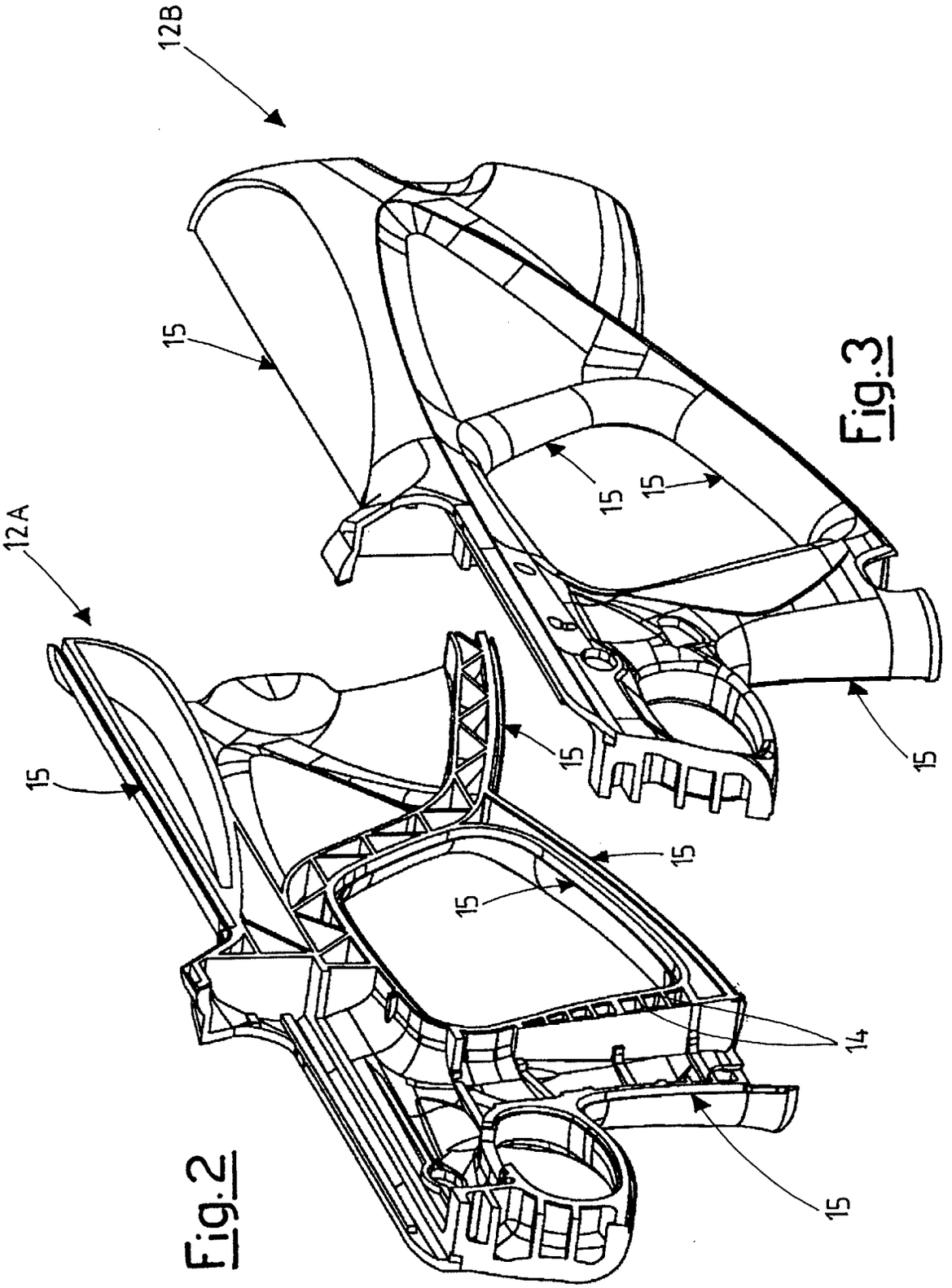


Fig.2

Fig.3

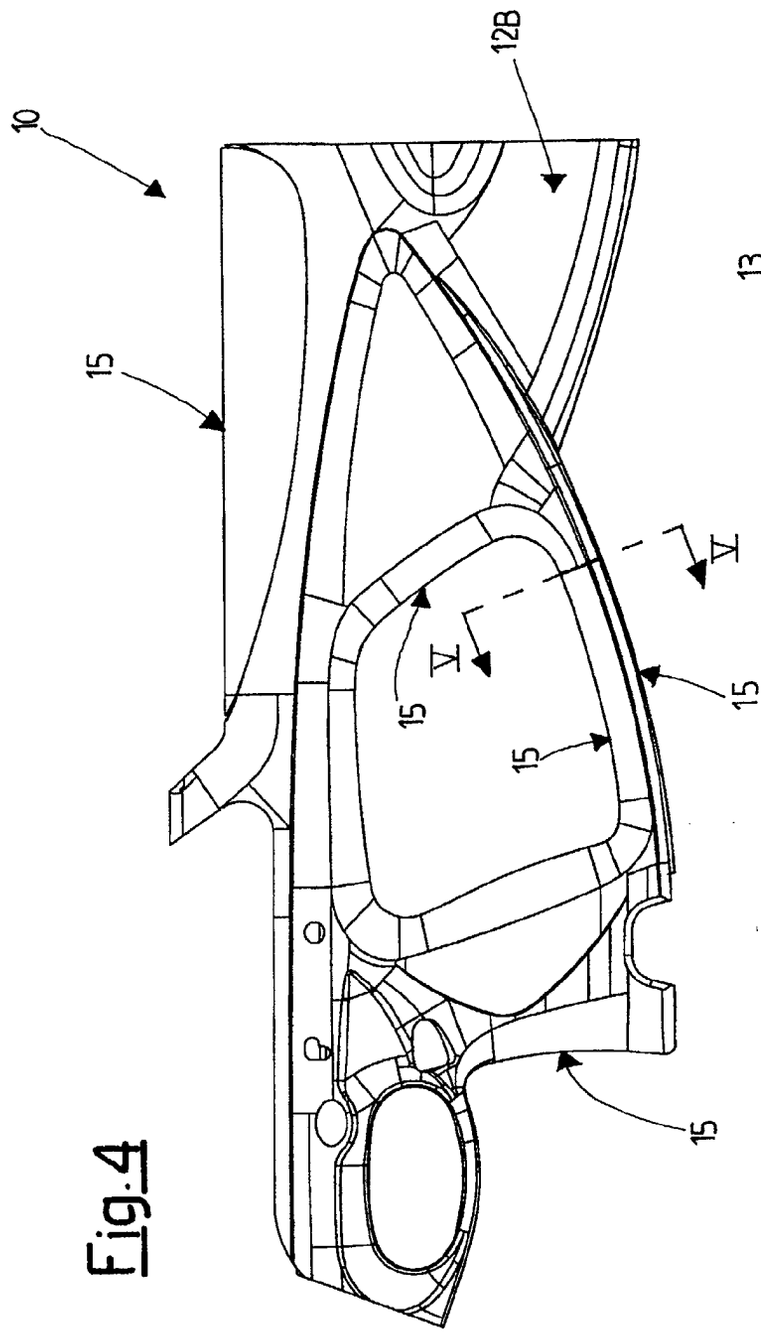


Fig.4

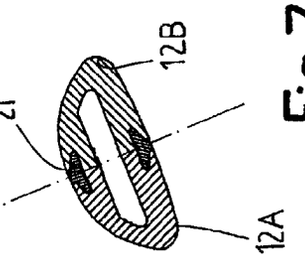


Fig.7

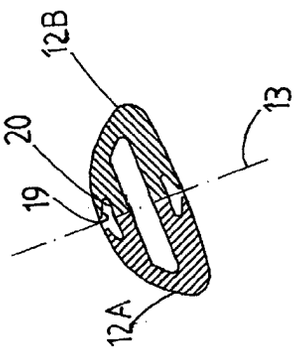


Fig.6

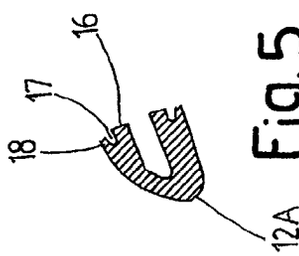


Fig.5

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EUROPEAN SEARCH REPORT

Application Number
EP 03 07 6122

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	US 4 674 216 A (LARSON LAWRENCE L ET AL) 23 June 1987 (1987-06-23) * abstract; figures *	1	F41C23/18
A	EP 0 903 556 A (BENELLI ARMI SPA) 24 March 1999 (1999-03-24) * abstract; figures *	1	
A	FR 1 261 998 A (LE MAGNESIUM IND) 26 May 1961 (1961-05-26) * the whole document *	1	
A	FR 925 197 A (VERNEY CARRON & CIE) 27 August 1947 (1947-08-27) * the whole document *	1	

TECHNICAL FIELDS SEARCHED (Int.Cl.7)

F41C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
MUNICH	8 August 2003	Herrera, M

CATEGORY OF CITED DOCUMENTS

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08-08-2003

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4674216 A	23-06-1987	AT 401106 B	25-06-1996
		AT 322386 A	15-10-1995
		AU 597009 B2	24-05-1990
		AU 6515086 A	11-06-1987
		CA 1262834 A1	14-11-1989
		DE 3640528 A1	11-06-1987
		FR 2590972 A1	05-06-1987
		GB 2183801 A ,B	10-06-1987
		JP 2507371 B2	12-06-1996
		JP 62196600 A	29-08-1987
		SE 461810 B	26-03-1990
		SE 8605088 A	05-06-1987
EP 0903556 A	24-03-1999	IT MI972105 A1	17-03-1999
		AU 741081 B2	22-11-2001
		AU 8518398 A	01-04-1999
		BR 9803455 A	26-10-1999
		CN 1211722 A ,B	24-03-1999
		CZ 9802832 A3	11-08-1999
		EA 781 B1	24-04-2000
		EG 21608 A	31-12-2001
		EP 0903556 A1	24-03-1999
		HK 1018308 A1	02-08-2002
		HU 9802059 A1	28-06-1999
		IL 125763 A	13-09-2001
		JP 11142094 A	28-05-1999
		RO 116500 B1	28-02-2001
		SK 123398 A3	13-04-1999
		TR 9801843 A2	21-04-1999
		US 6070354 A	06-06-2000
		ZA 9807637 A	24-02-1999
FR 1261998 A	26-05-1961	NONE	
FR 925197 A	27-08-1947	BE 464739 A	

EPO FORM P0459

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