

Description

[0001] The present invention is intended to disclose a beam for supporting shuttering panels which provides significant advantages compared with the prior art.

[0002] The beam of the present invention is intended to remedy some of the drawbacks arising at present in the known beams intended to perform the function of supporting shuttering panels.

[0003] In fact, in the beams known at present, the opposed edges of two floor shuttering panels are placed so as to bear on the upper part of the beam and with their edges facing each other. However, in view of the not very high degree of precision of manufacture of the shuttering panels and other structural members, it is difficult to achieve correct alignment of the edges of the panels so that they do not partially overlap each other or so that there are no excessive gaps between them. However, the construction known at present of beams and shuttering panels for floors do not have means for remedying said drawbacks, which require a major use of labour to ensure subsequently the correct arrangement of the panels on the beams.

[0004] The present invention is intended to remedy the drawbacks mentioned by providing for the beam for supporting the shuttering panels to be equipped with means for centring the edges of the panels, which basically consist of a longitudinal protuberance arranged in the central part of the upper face of the support beam, which has a shape adapted for self-centring of the edges of the panels, adopting in a preferred embodiment an angled profile structure or the like which has inclined flanks or side walls intended to guide downwards the edges of two adjacent panels, so that the edges where each of said inclined flanks joins the horizontal surface of the beam will determine the position of the corresponding panel, simultaneously controlling the gap between the two panels and facilitating to an extraordinary degree the placing of the panels, since they will be guided by the flanks or lateral walls of the profile of the beam automatically until the correct assembly position is reached.

[0005] In order to obtain at the same time greater simplicity and rigidity of the beam, the upper face of the latter may be constituted by a narrow metal plate of suitable thickness which has in its central part the profile with two inclined planes or walls for guiding the edges of the panels, there being arranged inside the angled profile a plurality of longitudinal reinforcements, preferably separated from one another to obtain greater rigidity of the beam and at the same time avoiding an excessive increase in the weight thereof.

[0006] Inside the beam, which preferably has a straight rectangular parallelepipedal shape, there will be arranged another reinforcement in the form of a narrow horizontal metal plate joined by its edges to the inner walls of the internal cavity of the beam. Said reinforcing profile will preferably extend to a central part of the beam

without reaching its ends.

[0007] For greater understanding, drawings of a preferred embodiment of the present invention are appended by way of non-limiting example.

[0008] Figure 1 shows diagrammatically a support beam according to the state of the art, showing the relative position of two shuttering panels.

[0009] Figure 2 shows a cross-section through a beam according to the present invention likewise showing the relative position of the two shuttering panels in the positioning stage.

[0010] Figure 3 shows a view similar to that of Figure 2 with the shuttering panels already mounted.

[0011] Figure 4 shows a detail in section.

[0012] Figure 5 shows a perspective view of an end of a beam according to the present invention.

[0013] Figure 6 shows a detail in cross-section of the beam.

[0014] Figure 7 shows a detail in longitudinal section of the support beam of the present invention.

[0015] As shown in Figure 1, in a conventional floor shuttering system a beam 1 is used, customarily in the form of a straight rectangular substantially parallelepipedal member, which receives on top the panels 2 and 3, with their edges facing each other, and intended to bear on the upper face 4 of the beam. One of the drawbacks of this known system consists in that the panels may not be properly centred in the bearing region on the beam, since, depending on the position occupied by the first of the panels, the second may partially overlap the first, as can be seen in said figure, by opposition of the end edges 2' and 3' of said panels. In other cases it may occur that the gap between them is excessive.

[0016] In order to remedy these drawbacks, the present invention provides a beam 5 in which the upper face 6 has a profile 7 with flanks or inclined lateral faces 7' and 7'', which are intended to receive the bottom edges 8' and 9' of respective panels 8 and 9 which will slide with said edges on the inclined planes or lateral faces 7' and 7'', necessarily reaching correctly centred positions, as can be seen in Figure 3, in which it will be observed that the bottom edges 8' and 9' of the panels 8 and 9 coincide with the lower edges of the inclined planes 7' and 7'', which have been designated by the numbers 12 and 12'.

[0017] In this way, correct automatic positioning of the two adjacent panels is facilitated, and these can be substantially butted with their top edges 13 and 14, that is to say, with a much reduced intermediate gap 15.

[0018] The present invention therefore will make possible much simpler assembly of the shuttering panels and correct centring of the latter with respect to the beam, achieving a reduction in the labour required and further obtaining an improved quality of finish of the concrete floor.

[0019] The upper profile 7 can adopt any shape which allows its lateral faces 7' and 7'' to assume a downward inclination suitable for receiving and guiding the lower

edges of two shuttering panels, so that they occupy the correct centring position on the beam. Thus, for example, besides the inclined planes forming an acute angle in an inverted arrangement which have been shown in the drawings, it would also be possible to provide guide surfaces slightly curved in a concave or convex shape, trapezoidal arrangement of the profile instead of an acute angle, etc.

[0020] In view of the constitution of the upper base of the beam, consisting of the plate 6, 6' and the intermediate profile 7, provision was made for the arrangement of a plurality of internal reinforcing members such as the member 11 shown in Figures 2, 3 and 4 and the members 11, 11', 11" shown in Figure 7, which, preferably discontinuously, in order to reduce the weight of the assembly, reinforce the interior of the centring profile. As will be understood, said reinforcing members may adopt shapes different from those illustrated, for example, members of greater length, transverse bars, etc., without departing from the scope of the present invention.

[0021] Similarly, in order to reinforce the beam 5 transversely, the latter will include an internal member 10 in the shape of a narrow metal plate arranged transversely, joined by its edges 16 and 17, for example, by welding or other methods, to the internal faces of the beam 5, in order to reinforce the latter structurally. The length of the member 10, which has been illustrated in Figure 7, will preferably be less than the total length of the beam, being arranged in the central part thereof, that is to say, without reaching the ends of the beam.

5. A beam for supporting shuttering panels, according to claims 1 and 4, **characterised by** the arrangement of internal reinforcing members between the inclined guide faces of the beam, arranged transversely with respect to said centring faces.

6. A beam for supporting shuttering panels, according to claim 1, **characterised by** the arrangement of an internal plate which extends at the central part of the hollow parallelepipedal body of the beam, being joined by its edges to the internal faces of the beam.

Claims

1. A beam for supporting shuttering panels, of the type which comprises a beam of hollow, substantially parallelepipedal cross-section, with its upper face intended to receive the lateral edges of two adjacent shuttering panels, **characterised in that** it has on its upper face inclined faces which protrude from said upper face, and are intended to receive the bottom edges of the shuttering panels to guide them downwards in order to centre them on the upper face of the beam.
2. A beam for supporting shuttering panels, according to claim 1, **characterised in that** the inclined faces which protrude from the upper face of the beam are flat.
3. A beam for supporting shuttering panels, according to claim 1, **characterised in that** the inclined faces are curved.
4. A beam for supporting shuttering panels, according to claim 1, **characterised in that** the inclined faces form part of a projection of the upper face of the beam.

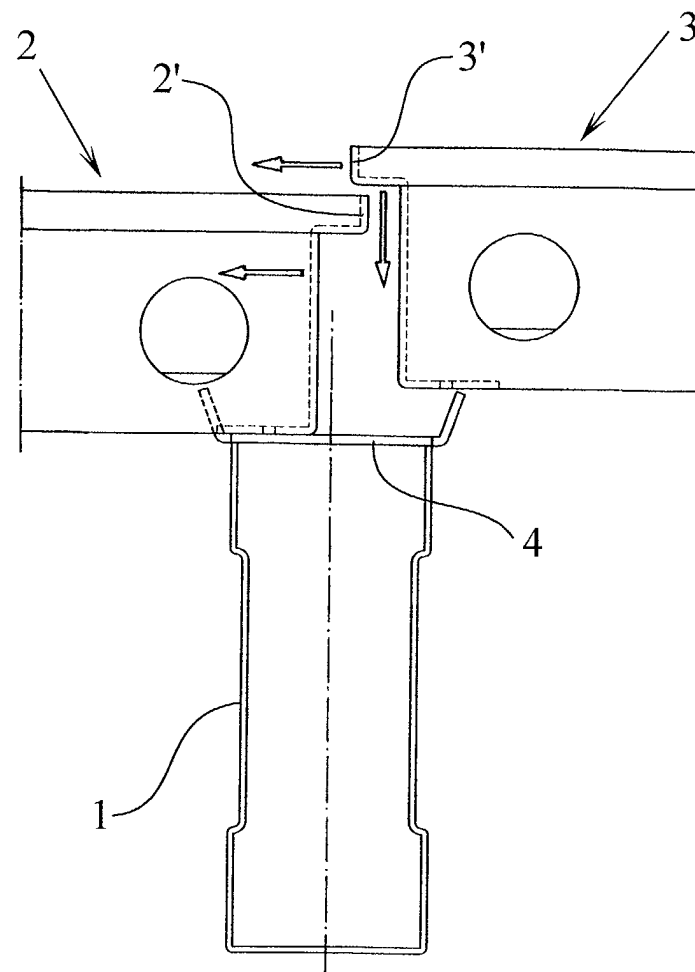


FIG. 1

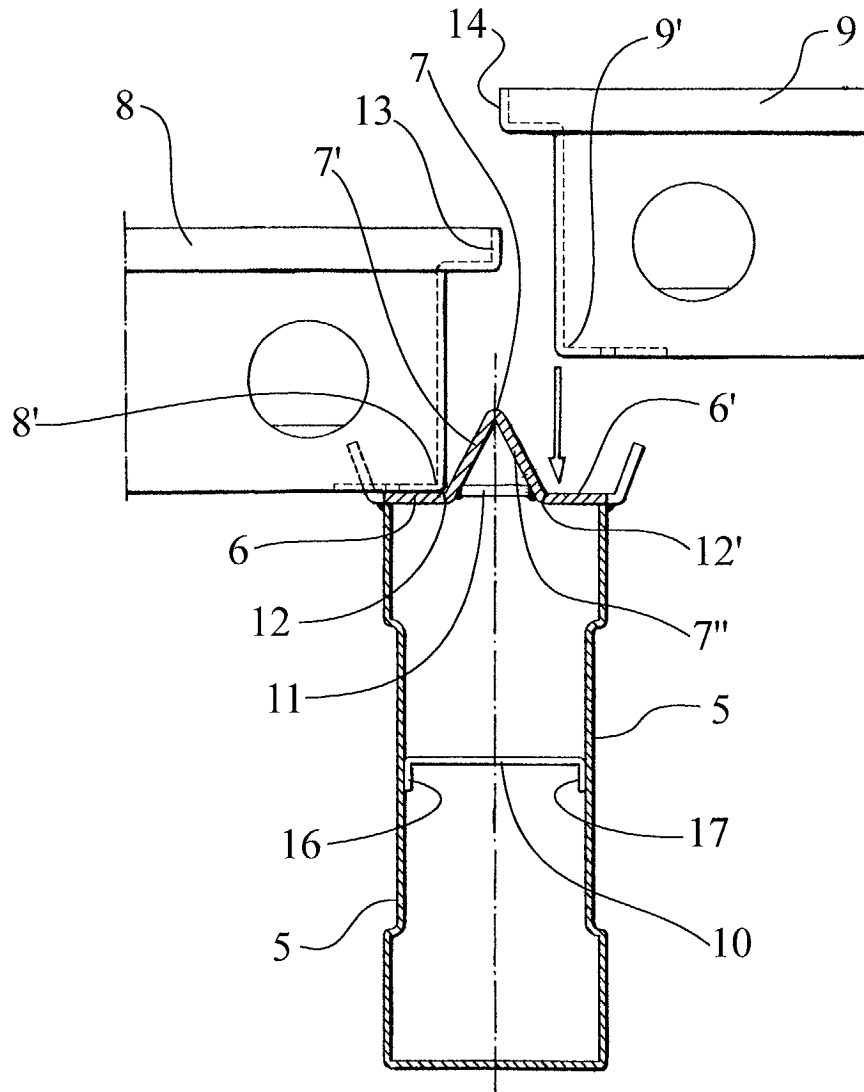


FIG. 2

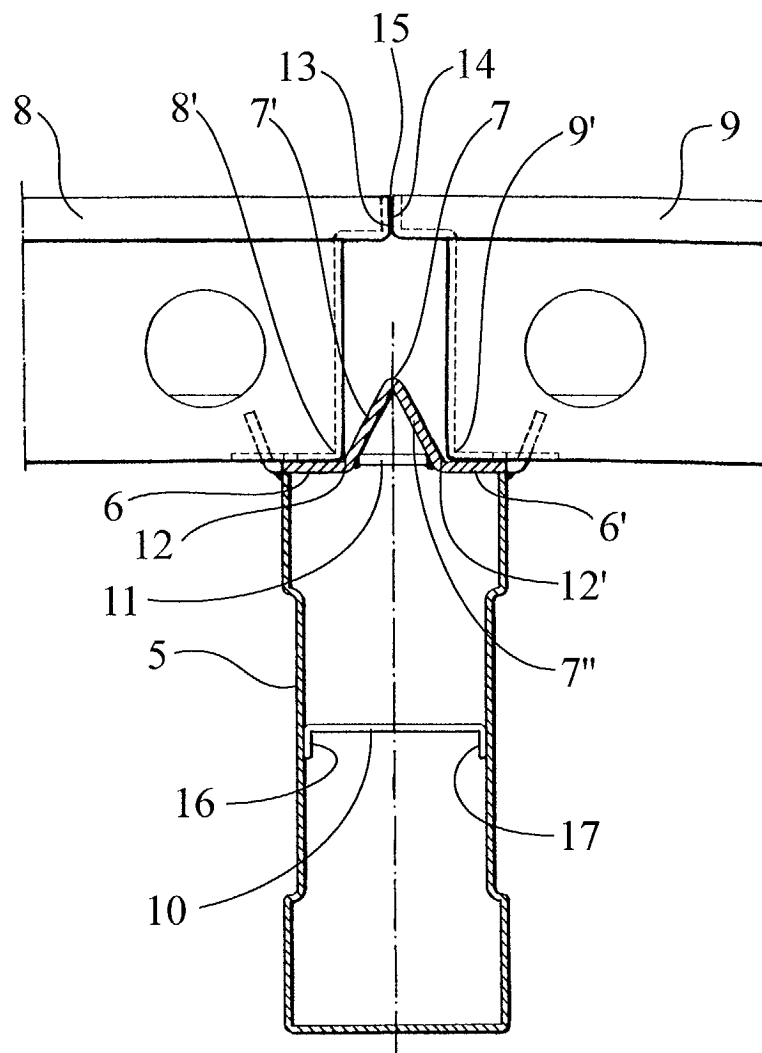


FIG. 3

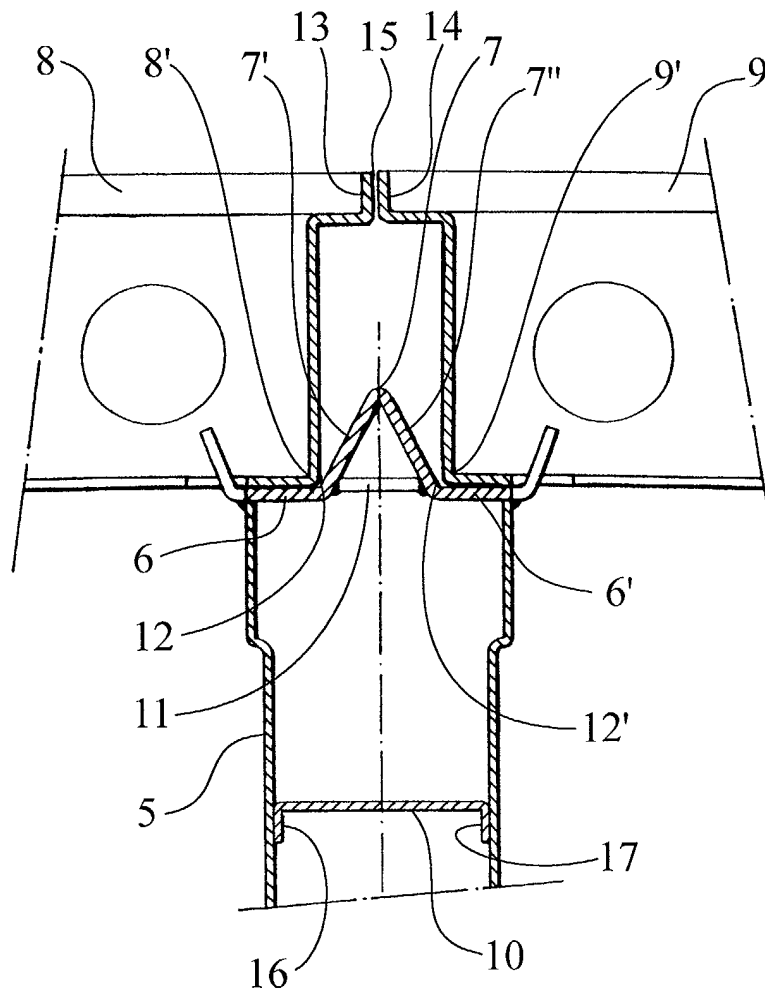


FIG. 4

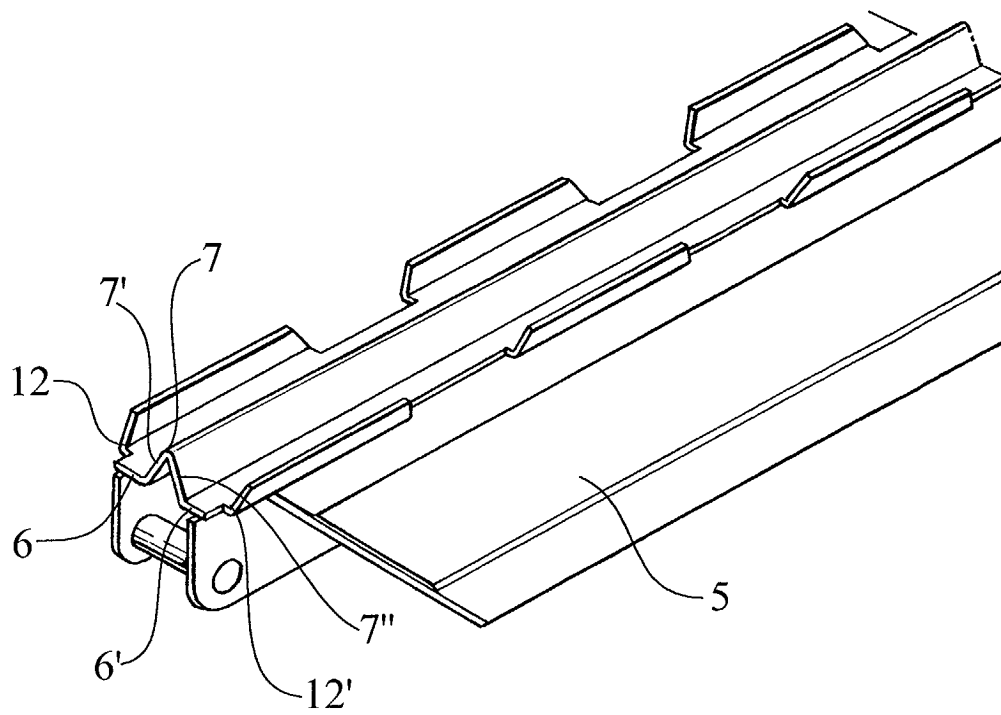


FIG. 5

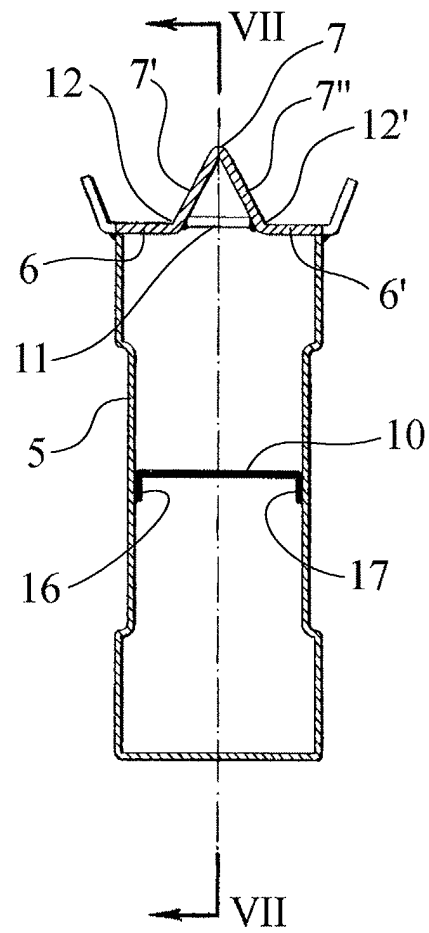


FIG. 6

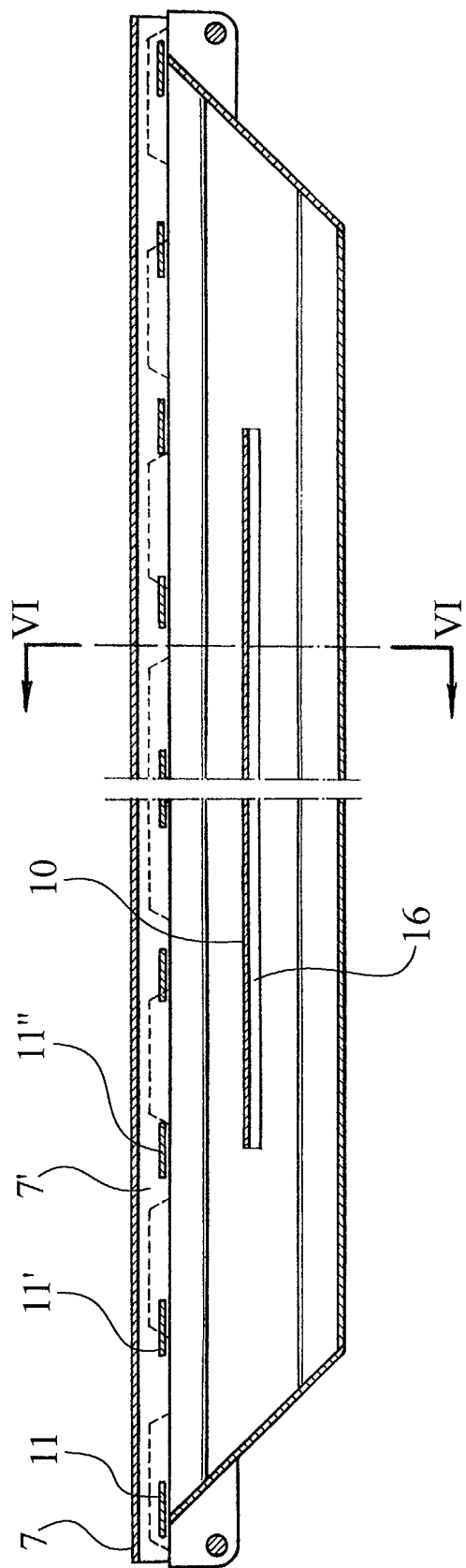


FIG. 7



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 02 38 0079

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)
X	US 5 683 609 A (SCHWOERER ARTUR) 4 November 1997 (1997-11-04) * the whole document *	1,3,4,6	E04G11/50
X	EP 0 495 738 A (DIEBOLT JEAN) 22 July 1992 (1992-07-22) * the whole document *	1,2,4,5	
X	EP 0 380 149 A (MATAB BV) 1 August 1990 (1990-08-01) * the whole document *	1,2,4	
A	US 3 899 857 A (MOCHIZUKI MITSUO) 19 August 1975 (1975-08-19) * the whole document *	1	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			E04G
Place of search		Date of completion of the search	Examiner
MUNICH		26 March 2003	Festor, E
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 (P04C01)

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

EP 02 38 0079

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.

26-03-2003

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 5683609	A	04-11-1997	DE	4237516 A1	11-05-1994
			WO	9411594 A1	26-05-1994
			DE	59304923 D1	06-02-1997
			DE	59310149 D1	05-04-2001
			EP	0670944 A1	13-09-1995
			EP	0718453 A2	26-06-1996
			ES	2098062 T3	16-04-1997
			ES	2156964 T3	01-08-2001
			JP	8503036 T	02-04-1996
			JP	3242661 B2	25-12-2001

EP 0495738	A	22-07-1992	FR	2671850 A1	24-07-1992
			EP	0495738 A1	22-07-1992

EP 0380149	A	01-08-1990	NL	8900199 A	16-08-1990
			AT	78313 T	15-08-1992
			DE	69000188 D1	20-08-1992
			DE	69000188 T2	21-01-1993
			DK	380149 T3	24-08-1992
			EP	0380149 A1	01-08-1990
			ES	2033558 T3	16-03-1993
			GR	3005492 T3	24-05-1993

US 3899857	A	19-08-1975	NONE		
