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(54) **Block for road kerb equipped with reflector elements and process for manufacturing such block**

(57) A block (1) for road kerb is described, comprising a block body (3) and at least one element or band of reflector material (5), such element or band of reflector

material (5) being fixed onto the block body (3) by interposing at least one layer of a gluing agent (9); a process for manufacturing such block (1) is further described.

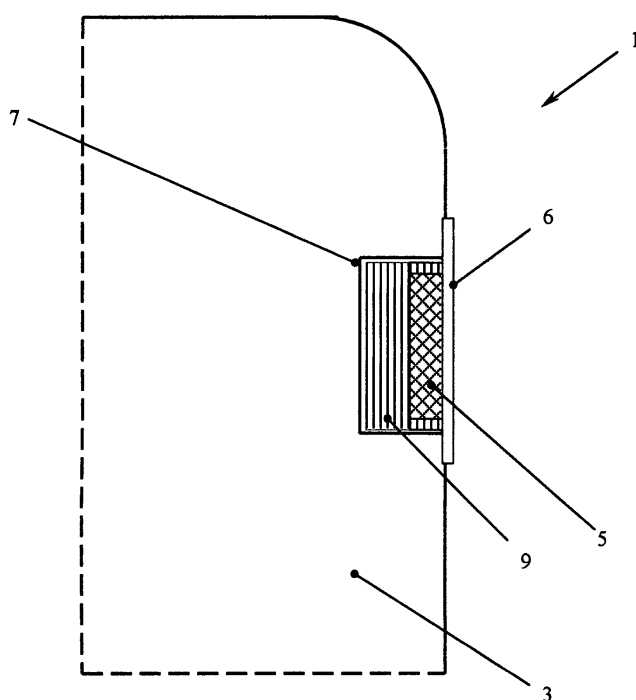


FIG. 2b

Description

[0001] The present invention refers to a block for road kerb equipped with at least one reflector element, and to a process for manufacturing such block.

[0002] As known, kerbs or road kerbs (herein below, briefly designated as road kerbs) are used for manufacturing pavement edges, pavement flower bed edges or traffic separators, for delimiting road routes, carriage openings, urban furniture, protection barriers of the "New Jersey" type, etc., and are built by putting side by side or together a plurality of prefabricated blocks (filled or lightened) made of concrete mix or stony material.

[0003] It is also known that, in order to make their visibility easier above all during the night or when there is fog, the kerb blocks for many years have been equipped with reflector elements adapted to reflect the light projected by motor vehicle lamps. Generally the reflector, if made as a band or a film, is first applied on a support or a metal lamination and afterwards secured to the kerb by means of screws or small blocks.

[0004] Similarly, if the reflector is made as a reflector solid, usually made of plastic material, it is made integral with the block, always by means of screws or small blocks.

[0005] In order to try and avoid using screws, small blocks or other mechanical fastening means, the prior art has tried to propose alternative arrangements. In particular, Japanese Application n. JP10121408 in the name of Tatewana Ryoji discloses a block for road kerb equipped with at least one recess with semi-circular section in which a reflector bar can be glued, also made with a semi-circular section complementary with the recess shape. Though such arrangement excludes the use of screws or small blocks to fasten the reflector to the block, it however has other inconveniences that impair its feasibility and manufacturing easiness. In fact, not only is it necessary to take care of making the semi-circular recess in the block, but it is also necessary to make a reflector bar for such purpose: in particular, this application provides that the reflector is made as a column with semi-circular section through injection moulding of a synthetic resin, such as translucent plastics, in which a luminous agent or a fluorescent agent and glass grains, a piece of glass or a reflecting device like a piece of ceramics, are immersed and mutually mixed, in order to be then cut afterwards for gluing it inside the block recess.

[0006] Therefore, object of the present invention is solving the above prior art problems by providing a block for road kerb equipped with at least one reflector element, in which such reflector element is directly fastened to the block by gluing, thereby avoiding the use of screws, small blocks or other mechanical fastening means, and/or of suitably made reflector elements.

[0007] Another object of the present invention is providing a process for manufacturing a block for road kerb equipped with at least one reflector element.

[0008] The above and other objects and advantages

of the invention, as will result from the following description, are obtained with a block for road kerb equipped with at least one reflector element as claimed in claim 1.

[0009] Moreover, the above and other objects and advantages of the invention are obtained with a process for manufacturing a block for road kerb equipped with at least one reflector element as claimed in claim 10.

[0010] Preferred embodiments and non-trivial variations of the present invention are the subject matter of the dependent claims.

[0011] The present invention will be better described by some preferred embodiments thereof, provided as a non-limiting example, with reference to the enclosed drawings, in which:

- FIG. 1 shows a perspective view of an embodiment of the block for road kerb according to the present invention;
- FIG. 2a shows a perspective view of another embodiment of the block for road kerb according to the present invention;
- FIG. 2b shows a partially sectioned view of the block in FIG. 2a according to section plan A;
- FIG. 3a to 3g show perspective views of other preferred embodiments of the block for road kerb according to the present invention.

[0012] With reference to the Figures, it is possible to note that the block 1 for road kerb according to the present invention comprises a block body 3, substantially made in a known way and therefore, for example, as a prefabricated, filled or lightened, manufactured article, made of cement mix or stony material, and at least one element or band of reflector material 5, such element of reflector material being fixed to the block body 3 by interposing at least one layer of a gluing agent. Though, in order to perform gluing, any gluing agent suitable for such purpose could be advantageously used, it is possible to provide for the use of specific bonding agents, such as putties, resins or epoxy adhesive agents.

[0013] Though the Figures show as an example blocks 1 according to the present invention equipped with a single element as a band of reflector material 5 arranged longitudinally, it is wholly evident that length and arrangement on the block 3 of the band of reflector material 5 can be changed, without anyway departing from the scope of the present invention: in fact, the band 5 can for example be glued onto a side face 3a and/or an upper face 3b of the block, can be continuous or intermittent and/or with an horizontal or vertical development with respect to the block 3. As well, the number of elements or bands 5 glued onto the block 3, and their sizes and/or shapes can be several.

[0014] In order to increase the adherence of the band of reflector material 5 to the block body 3 and protect it from atmospheric agents, this latter one, once glued, can be covered with at least one layer of transparent protecting film 6 applied, for example, through a roller or a brush.

[0015] In a preferred variation of the block 1 according to the present invention shown in FIG. 2 and 2b, the block body 3 can be equipped with at least one housing groove 7 in which the band of reflector material 5 is inserted. Therefore, once the housing groove 7 has been obtained with an adequate depth, for example through milling from the solid block body 3 or through suitable pegs of a die during the moulding step of the body 3 itself, and possibly through a following flaming, sand-blasting or another type of abrasive process, this latter one can be filled with the gluing agent 9, for example an epoxy resin with a transparency included between 95% and 98%, in which the band of reflector material 5 can be immersed. In such a way, the band of reflector material 5, once glued to the block body 3 inside its housing groove 7, is coplanar with the external surface of the body 3.

[0016] The band of reflector material 5 is substantially of a known type, that can be easily found on the market, and can be both rigid and made as flexible film, in such a way as to be able to be easily glued onto block bodies 3 having the most different shapes. For such purpose, with reference to Figures 3a to 3f, it is possible to note some preferred embodiments of the block 1 according to the present invention having straight chamfered edges (FIG. 3a) or curvilinear edges (FIG. 3b), a curvilinear (FIG. 3c) or slanted (FIG. 3f) development, or passing recesses 11 for piping or reflow waters (FIG. 3d and 3e). Moreover, the block 1 according to the present invention can also be shaped, for example, as a wayside stone or a traffic separator (FIG. 3g).

[0017] The present invention further refers to a process for manufacturing a block 1 for road kerb as previously described.

[0018] In particular, the process according to the present invention comprises the steps of:

- a) providing at least one element or band of reflector material 5;
- b) providing a block body 3; possibly, on a visible face of the block body 3, obtaining at least one housing groove 7 of the element of reflector material 5;
- c) applying at least one layer of gluing agent 9 on the block body 3; possibly, the layer of gluing agent 9 is applied inside the housing groove 7;
- d) applying the element of reflector material 5 onto the layer of gluing agent 9;
- e) possibly, applying on the element of reflector material 5 at least one layer of transparent protecting film 6.

[0019] It is evident that, through the process according to the present invention, the element or band of reflector material 5, in addition to be obviously glued onto its own block body 3 when manufacturing the block 1 according to the present invention, can also be advantageously applied on already installed and operating blocks.

Claims

1. Block (1) for road kerb **characterised in that** it comprises a block body (3) and at least one element of reflector material (5), said element of reflector material (5) being fixed onto said block body (3) by interposing at least one layer of a gluing agent (9).
2. Block (1) according to claim 1, **characterised in that** said gluing agent (9) is a putty.
3. Block (1) according to claim 1, **characterised in that** said gluing agent (9) is an epoxy adhesive agent.
4. Block (1) according to claim 1, **characterised in that** said gluing agent (9) is an epoxy resin.
5. Block (1) according to claim 4, **characterised in that** said epoxy resin has a transparency included between 95% and 98%.
6. Block (1) according to claim 1, **characterised in that** said element of reflector material (5) is a band covered with at least one layer of transparent protecting film (6).
7. Block (1) according to claim 6, **characterised in that** said band of reflector material (5) is inserted in at least one housing groove (7).
8. Block (1) according to claim 6, **characterised in that** said band of reflector material (5) is rigid.
9. Block (1) according to claim 6, **characterised in that** said band of reflector material (5) is a flexible film.
10. Process for manufacturing a block (1) for road kerb according to Claim 1, **characterised in that** it comprises the steps of:
 - a) providing at least one element or band of reflector material (5);
 - b) providing a block body (3);
 - c) applying at least one layer of gluing agent (9) onto said block body (3);
 - d) applying said element or band of reflector material (5) onto said layer of gluing agent (9).
11. Process according to claim 10, **characterised in that** it comprises, between step c) and step d), the step of obtaining at least one housing groove (7) of said element or band of reflector material (5).
12. Process according to claim 11, **characterised in that** said layer of gluing agent (9) is applied inside said housing groove (7).
13. Process according to claim 10, **characterised in**

that it comprises, after step d), the step e) of applying, onto said element or band of reflector material (5), at least one layer of transparent protecting film (6).

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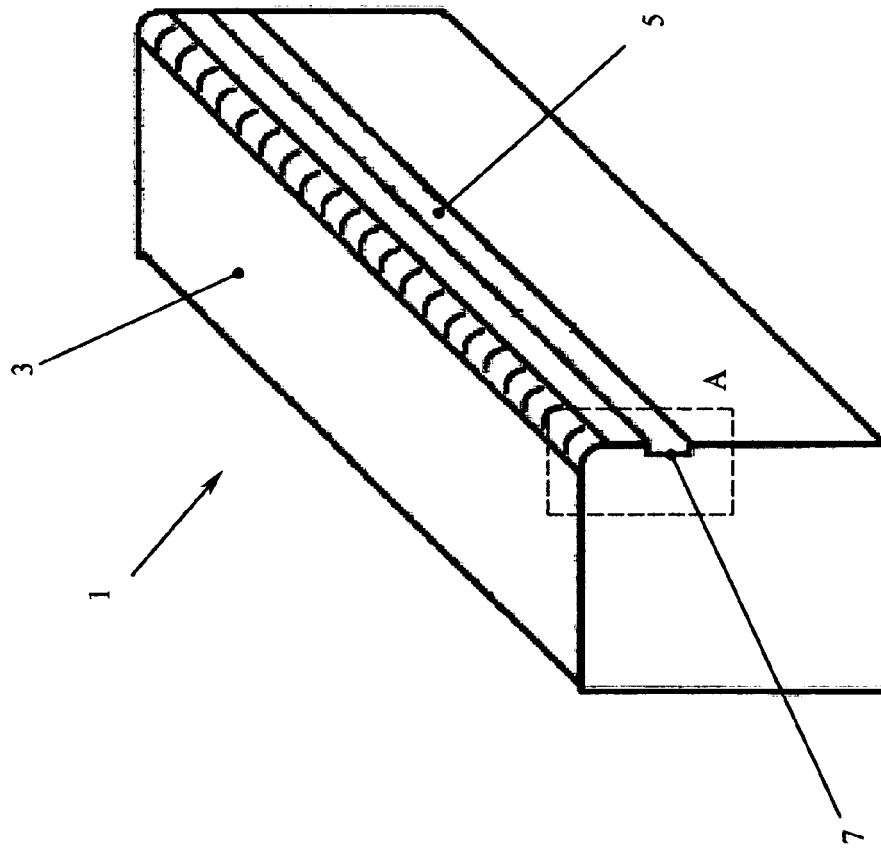


FIG. 2a

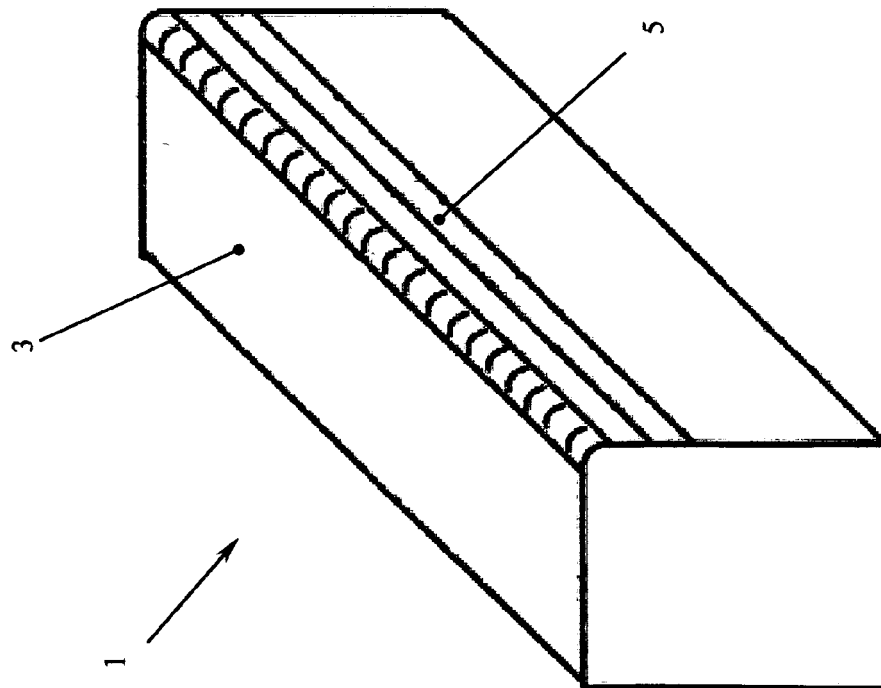


FIG. 1

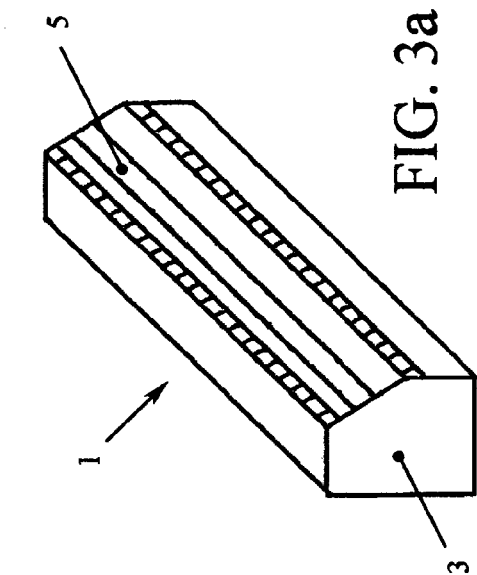


FIG. 3a

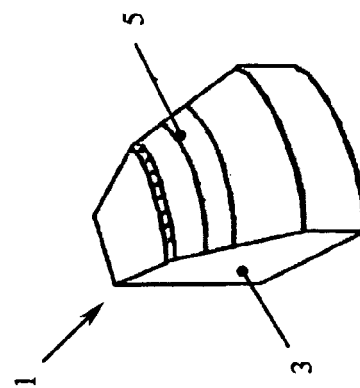


FIG. 3b

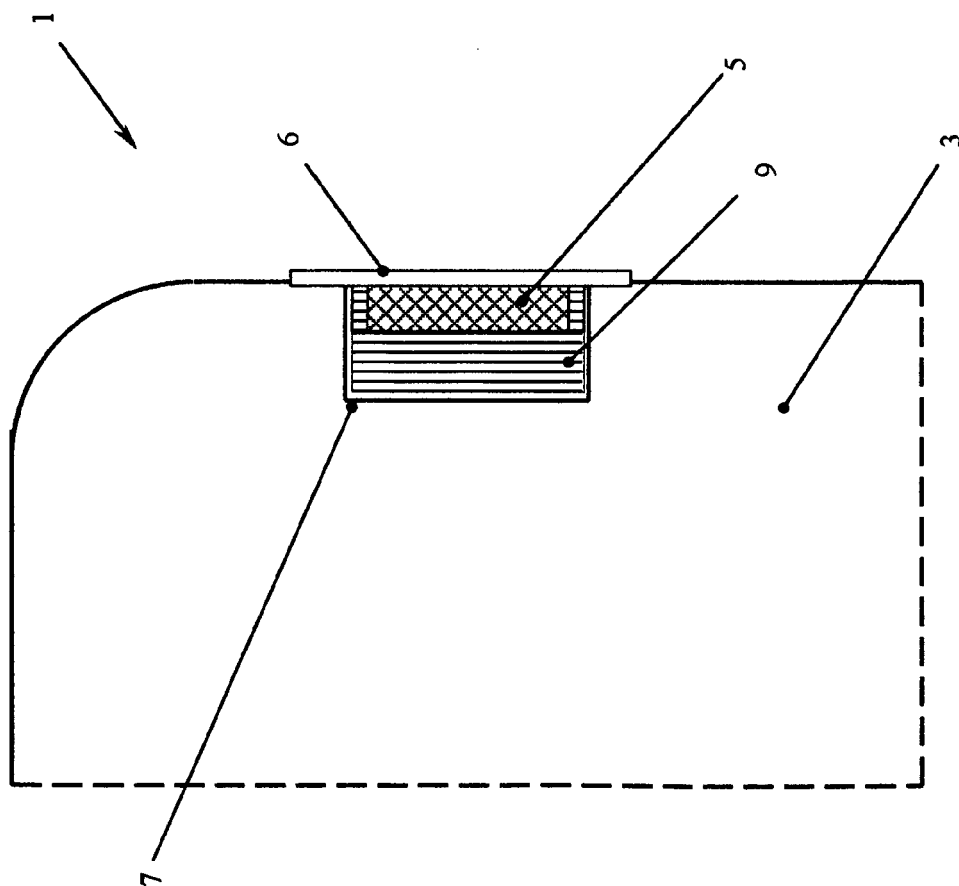
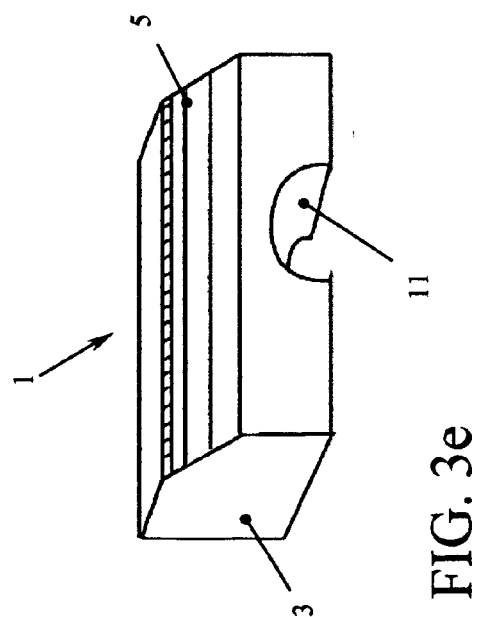
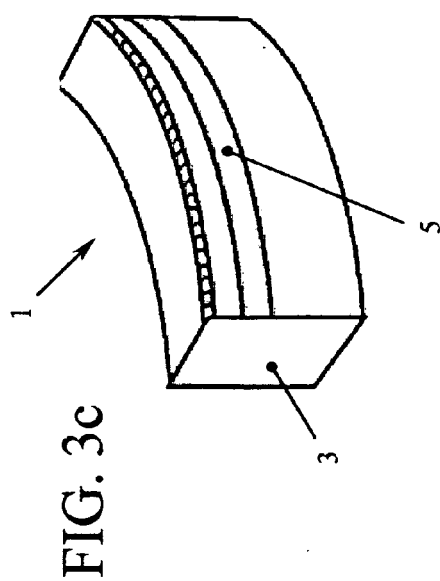
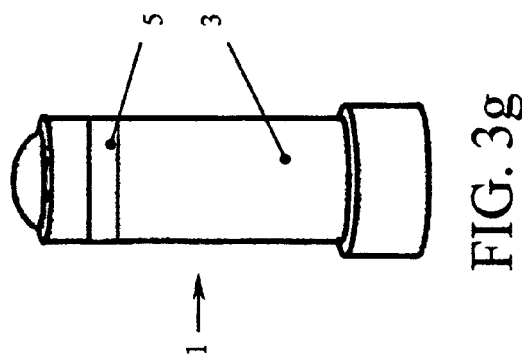
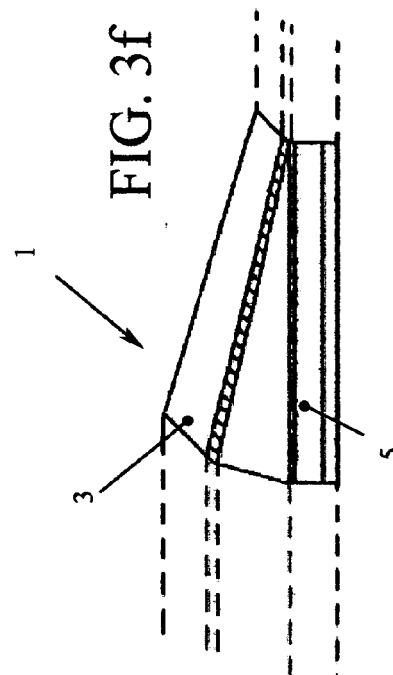
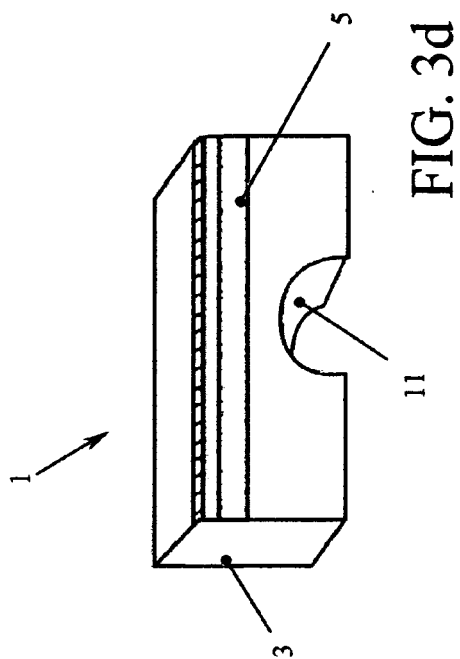


FIG. 2b





European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 07 00 9146

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	EP 0 773 325 A (R P ROBERTI & PAOLETTI S R L [IT]) 14 May 1997 (1997-05-14) * abstract * * column 2, lines 49-58 * * figures 1-3 *	1,6-9, 11-13	INV. E01F9/053
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X	FR 1 515 256 A (G IMBERT [FR]) 1 March 1968 (1968-03-01) * page 1, left-hand column, paragraph 4 * * page 2, left-hand column, paragraphs 3,4 * * page 2, right-hand column, paragraph 5 * * figures 1-4 *	1,6,13	
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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 8 August 2007	Examiner Tran, Kim-Lien
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			

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EPO FORM 1503 03.82 (P04C01)

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

EP 07 00 9146

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08-08-2007

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REFERENCES CITED IN THE DESCRIPTION

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