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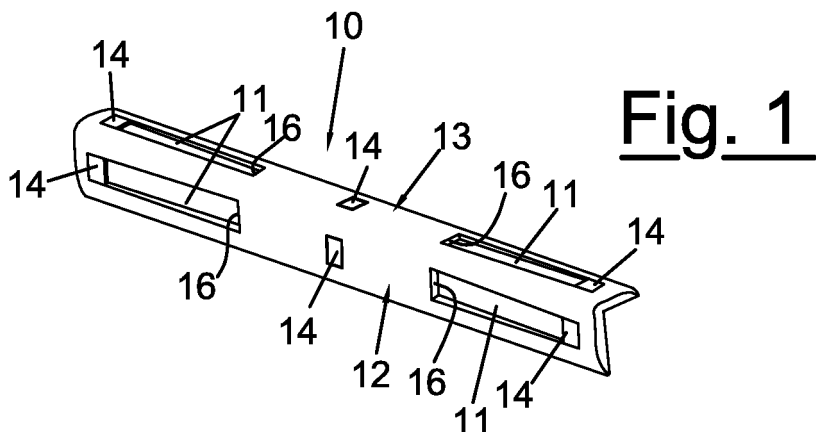
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(54) Safety road furniture element

(57) A safety road furniture element, adapted to enhance road safety characteristics for pedestrians and drivers of automotive vehicles, motor vehicles, bicycles and any other means going along the road itself. In particular, such element comprises an elongated angular structure (10), made of elastic plastic and impact-resistant material, adapted to cover the pavement kerbs, in order to deaden and soften impacts by things and/or people; the visible surfaces (12, 13) of the angular structure (10) foresee the insertion of refractive delineators (16), positioned inside appropriate seats (11), refractive adhesive tapes (17) and/or luminous LED diodes (20), powered by batteries, rechargeable by way of appropriate photovoltaic cells (18), the latter also inserted inside the angular structure (10).



## Description

**[0001]** The present invention refers to, in general, a safety road furniture element, highly visible, made to contribute to increasing road safety for pedestrians and drivers of automotive and motor vehicles, bicycles and any other means going along the road.

**[0002]** More specifically, the invention concerns an improvement of the road kerb's structure, in order to make pavements, obstacles and, in general, all horizontal signage more visible for motorists, motorcyclists, cyclists and pedestrians, especially at night.

**[0003]** The urban/road furniture elements named kerbs comprise prominences in cement or other material, which includes, for example, plastic material, that delimit direction lanes, lanes reserved for public transportation, kerbs near parks or near pedestrian crossings and/or regulated car parks.

**[0004]** However, such kerbs represent elements of risk for automotive vehicles, motor vehicles, pedestrians, etc., that go along the road, as they are not capable of sufficiently muffling and/or softening impacts with things and/or people.

**[0005]** Furthermore, in the context of ever advancing road safety research and multiple intervention requests so to ensure, in particular, the safety of pedestrians and cyclists, there is the increasing need for making products that indeed contribute to ensuring the safety of pedestrians and cyclists in particular, in order to improve the quality of life for all, and that, at the same time, are quality, with low environmental as well as ecological and economical impact, in order to contribute to also improving the quality of the environment in which we live.

**[0006]** Therefore, the object of the present invention is to make a safety road furniture element which ensures greater visibility, with respect to known techniques, for motorists, motorcyclists, cyclists and pedestrians, and, in general, for any other means going along the road, of stripes, obstacles and, in general, of all horizontal signage, mostly in conditions of darkness and especially at night.

**[0007]** Another object of the invention is to make a safety road furniture element, which permits a clear delimitation of the road carpet and an obvious signage of road kerbs.

**[0008]** Another object of the present invention is to make a safety road furniture element, also usable as urban furniture element, in virtue of its aesthetic elegance, which, at the same time, may be laid down with utmost ease and which ensures effective and reliable functioning.

**[0009]** A further object of the invention is to make a safety road furniture element, which allows obtaining significant saving on overall functioning, management and operating costs, with respect to the prior art.

**[0010]** These and other scopes are achieved by a safety road furniture element, according to claim 1; other detailed technical characteristics are described in the fol-

lowing claims. Advantageously, according to the invention, a shaped, luminous element is used, as a safety road furniture element, to cover road kerbs, offering high safety for motorists, motorcyclists, cyclists and pedestrians, effective and reliable in all critical situations, also with a low environmental, ecological and economical impact with respect to analogous traditional-type products.

**[0011]** The luminous element covering road kerbs, according to the invention, further represents a safety road furniture element, capable of enhancing the road safety characteristics of the road itself, encompassing the safety of all drivers of automotive vehicles, motor vehicles, bicycles, pedestrians and any other means going along the road.

**[0012]** In fact, the luminous element herein covers pavement kerbs, muffling and softening impacts of things and/or people, as its structure, made of plastic material with remarkable elasticity and impact-resistant properties, allows cushioning impacts, thus avoiding material damage to things or to people.

**[0013]** Lastly, the luminous element according to the invention is an aesthetic and harmonious product and may be made in various colours, meeting the most varied usage needs, such as, for example, the alternate yellow-black signage, the green outline of pavements adjacent to parks, the red kerb near pedestrian crossings, the azure kerb near regulated car parks, the yellow kerb in case pavements are used as cycling paths, the stop signage in car parks, etc.

**[0014]** Further objects and advantages of the present invention will be evident from the description of a preferred, exemplifying but not limiting embodiment, of a safety road furniture element, according to the present invention, and from the enclosed drawings, wherein:

- figure 1 is a schematic and partial perspective view of a first exemplifying and preferred, but not limiting embodiment, of a safety road furniture element, according to the present invention;
- figure 2 is an external front view of the road furniture element of figure 1, according to the present invention;
- figure 3 is a top view of the road furniture element of figure 1, according to the present invention;
- figure 4 is a side view of the safety road furniture element of figure 1, according to the present invention;
- figure 5 is a sectional view taken along line V-V of figure 2;
- figure 6 is a sectional view taken along line VI-VI of figure 2;
- figure 7 is a sectional view taken along line VII-VII of figure 2;
- figure 8 is a partial and enlarged perspective view of a structural detail of the safety road furniture element of figure 1, according to the present invention;
- figure 9 is a schematic and partial perspective view of a second exemplifying and preferred, but not lim-

iting embodiment, of a safety road furniture element, according to the present invention;

- figure 10 is a schematic and partial perspective view of a further exemplifying and preferred, but not limiting embodiment of a safety road furniture element, according to the present invention;
- figure 11 is an enlarged perspective view of a structural detail of the safety road furniture element of figure 10, according to the present invention.

**[0015]** Referring to the figures mentioned, the safety road furniture element, according to the present invention, comprises an elongated angular manufactured article, dismountable into one or more portions, more or less long (of which one is depicted in the accompanying figures and generically indicated by 10), capable of covering rectilinear and/or curvilinear pavement kerbs. Every portion 10 of the manufactured article is further made of plastic material with remarkable elasticity and impact-resistant properties, in order to deaden and/or cushion impacts, thus avoiding material damage to things and/or people.

**[0016]** On the side 12 and top 13 surfaces of the manufactured article, one or more refractive delineators 16 are also positioned, inside respective seats or grooves 11 (preferably present in a number of four, two for each side 12 and top 13 surface of the manufactured article's structure and having appropriately hollow walls), appropriately arranged inside the structure, which allow a clear delimitation of the road carpet and an obvious signage of the road kerb; in particular, a double application of delineators 16 in the side 12 and top 13 portion of the portion of manufactured article 10 allows roadway signage even in case pavements are used as cycling paths (figures 1-7).

**[0017]** The various portions 10 of the angular manufactured article, according to the invention, are then extremely easy to apply, thanks to the making of 6 hidden through holes 14, foreseen laterally and centrally, either in the side portion 12, or in the top portion 13 of the manufactured article, in order to fix said portions of manufactured article, with as many screws, to the prefabricated pavement or to the road carpet.

**[0018]** Furthermore, it is possible not to apply the screws at the holes 14 centrally positioned in portion 10 of the manufactured article, in order to appropriately shape such portion 10, for applications along slight pavement curves.

**[0019]** Next to the terminal ends of the side 12 and top 13 portions, making respective channels 15 is further foreseen for water drainage, so to not to create puddles or backwaters on the pavement (figure 8).

**[0020]** In alternative embodiments of the angular plastic manufactured article, according to the invention, the seats or grooves 11 of the top portion 13 are replaced by a refractive adhesive tape 17, as clearly depicted in figure 9, to obtain even greater safety.

**[0021]** In order to further increase road safety, in fur-

ther alternative embodiments of the angular manufactured article 10, according to the present invention, in correspondence to the hollow walls of the seats 11, LEDs are applied, generically indicated by 20 in figure 11, powered by rechargeable batteries by means of photovoltaic cells 18 (figure 10), the latter also inserted inside the structure of the angular manufactured article 10, as clearly shown in figure 10. The structure of the manufactured article 10 also constitutes an aesthetic and harmonious product and may be made in various colours, meeting the most varied needs, such as the alternate yellow-black signage, the green outline of pavements next to parks, the red kerb near pedestrian crossings, the azure kerb near regulated car parks, etc.

**[0022]** From the above description, the characteristics of the safety road furniture element, which is the object of the present invention, are clear as are the advantages. In particular, the latter are represented by the following aspects:

- greater safety in road circulation for motorists, motorcyclists, cyclists and pedestrians, in comparison to traditional products, determined by the greater visibility of lanes and obstacles indicated by the road furniture element, thanks to greater lighting of kerbs;
- low environmental impact of the product;
- limited production and operating costs;
- reliability, simplicity and ease of use;
- elegant aesthetics and possibility of using the road safety elements, according to the invention, as urban furniture.

**[0023]** Lastly, it is clear that numerous other variations may be applied to the safety road furniture element herein, without departing from the principles of novelty implied in the inventive idea, as it is clear that, in the practical implementation of the invention, the materials, forms and dimensions of the details depicted may be anything depending on the needs and these may be replaced with others technically equivalent.

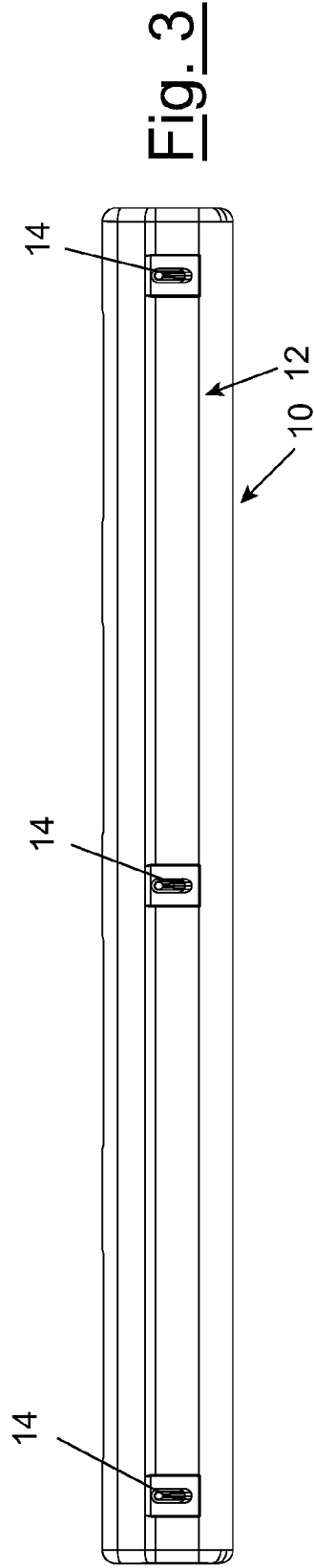
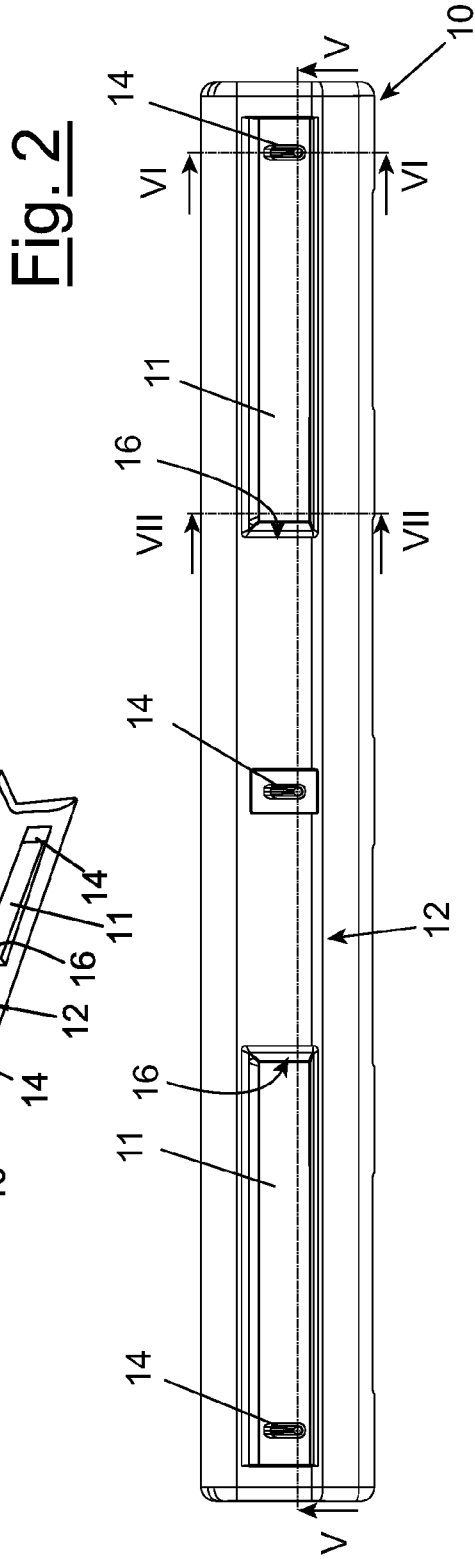
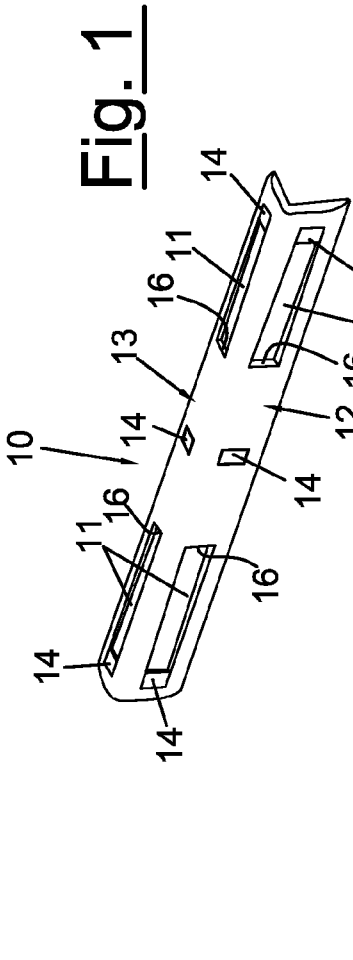
## Claims

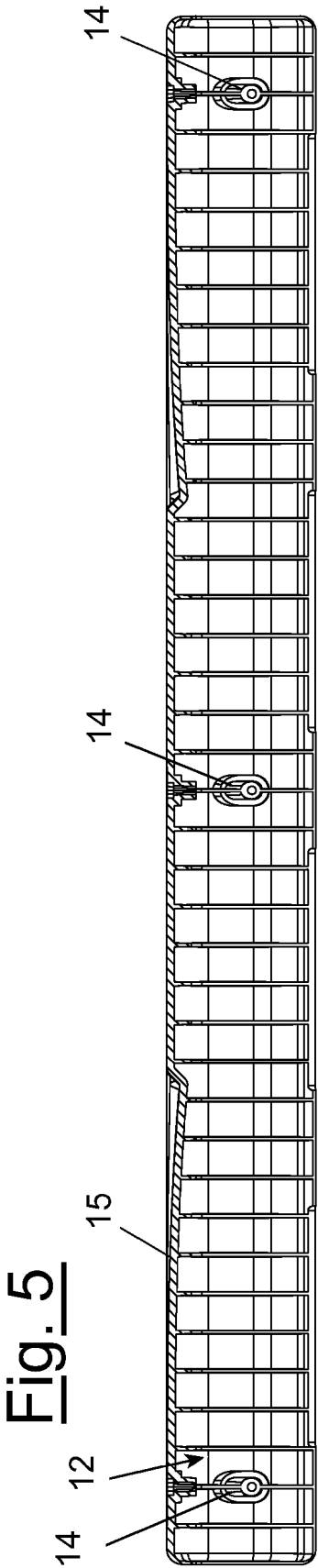
1. A safety road furniture element, adapted to enhance the road safety characteristics for pedestrians and drivers of automotive vehicles, motor vehicles, bicycles and any other means going along the road, said element comprising at least a portion of angular structure (10), adapted to cover pavement kerbs, **characterised in that** said angular structure (10) is made of elastic plastic and impact-resistant material, in order to deaden and/or soften impacts, thus avoiding material damage to things and/or people.
2. A road furniture element as in claim 1, **characterised in that** said angular structure (10) has at least two visible surfaces (12, 13), in correspondence of

at least one of which luminous devices (16, 17, 20) are positioned.

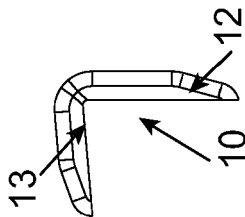
3. A road furniture element as in claim 2, **characterised in that**, in correspondence of at least one of said visible surfaces (12, 13) of the angular structure, at least one refractive delineator (16) is positioned, inside respective seats or grooves (11) which have hollow walls, which permits a clear delimitation of the road carpet and a clear signage of the road kerb. 5  
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4. A road furniture element as in claim 3, **characterised in that** said refractive delineators (16) are present in a number of two for each visible surface (12, 13) of the angular structure (10) in order to obtain roadway signage even in case pavements are used as cycling paths. 15
5. A road furniture element as in claim 2, **characterised in that** said visible surfaces (12, 13) foresee hidden through holes (14) to fix the structure (10) to a prefabricated pavement and/or to the road carpet. 20
6. A road furniture element according to claim 2, **characterised in that**, next to the terminal ends of said visible surfaces (12, 13), respective channels (15) are made for water drainage, in order not to create puddles or backwaters on the pavement. 25
7. A road furniture element according to claim 2, **characterised in that**, in correspondence of at least one of said visible surfaces (12, 13) of the angular structure, at least one refractive adhesive tape (17) is placed. 30  
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8. A road furniture element according to claim 3, **characterised in that**, at said hollow walls of the seats or grooves (11), luminous LED diodes (20) are applied, powered by rechargeable batteries by means of photovoltaic cells (18), the latter also inserted on at least one of said visible surfaces (12, 13) of said angular structure (10). 40
9. A road furniture element according to claim 1, **characterised in that** said angular structure (10) may be made in various colours, meeting the most varied needs, such as the alternate yellow-black signage, the green outline of pavements next to parks, the red kerb near pedestrian crossings, the azure kerb near regulated car parks, etc. 45  
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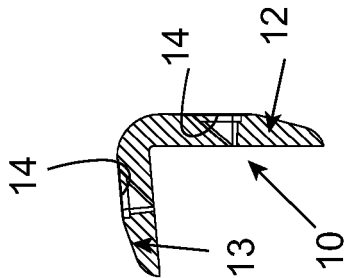
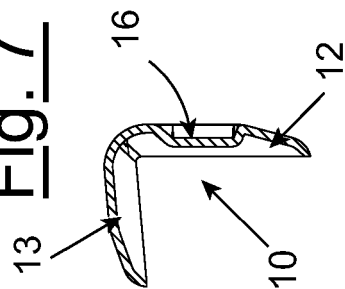




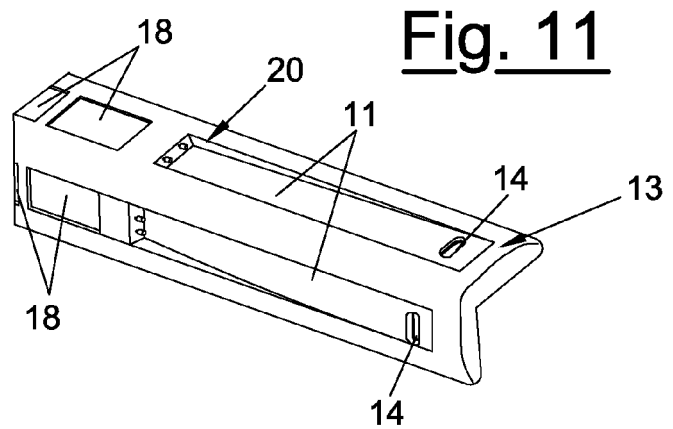
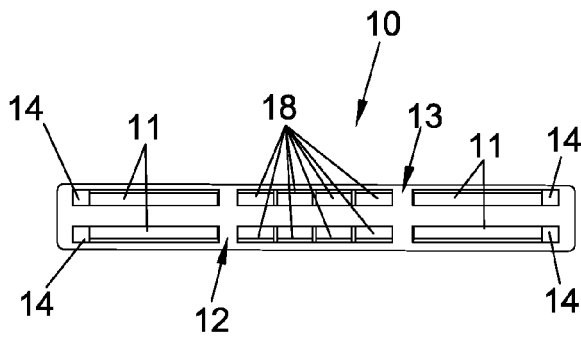
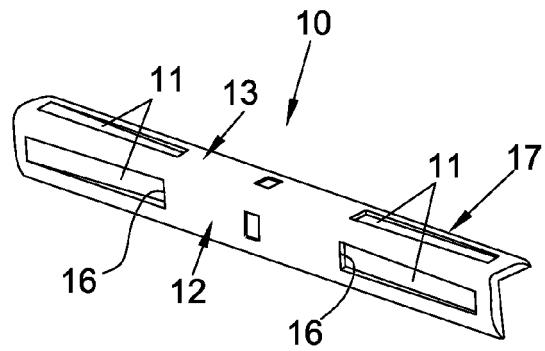
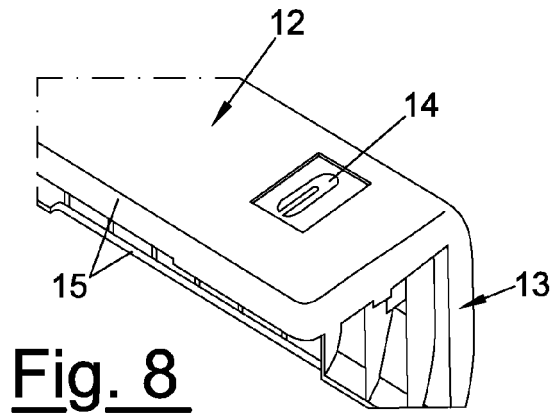
**Fig. 4**



**Fig. 7**



**Fig. 6**





European Patent  
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# EUROPEAN SEARCH REPORT

Application Number  
EP 06 12 3434

| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                            |                                                      |                                         |
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| The present search report has been drawn up for all claims                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                            |                                                      |                                         |
| Place of search<br>The Hague                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                            | Date of completion of the search<br>22 December 2006 | Examiner<br>Tran, Kim-Lien              |
| <p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone<br/>Y : particularly relevant if combined with another document of the same category<br/>A : technological background<br/>O : non-written disclosure<br/>P : intermediate document</p> <p>T : theory or principle underlying the invention<br/>E : earlier patent document, but published on, or after the filing date<br/>D : document cited in the application<br/>L : document cited for other reasons<br/>.....<br/>&amp; : member of the same patent family, corresponding document</p> |                                                                                                                                            |                                                      |                                         |

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EPO FORM 1503 03/82 (P04C01)

**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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