(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 095 867 A1

(12) EUROPEAN PATENT APPLICATION

published in accordance with Art. 158(3) EPC

(43) Date of publication:
02.05.2001 Bulletin 2001/18

(21) Application number: **98930815.0**

(22) Date of filing: **08.07.1998**

(51) Int. Cl.[7]: **B65D 19/00**

(86) International application number:
PCT/ES98/00199

(87) International publication number:
WO 00/02786 (20.01.2000 Gazette 2000/03)

(84) Designated Contracting States:
AT BE CH DE DK ES FI FR GB GR IE IT LI LU NL PT SE

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(54) NEW LAMINAR SUPPORT

(57) New laminar support comprising the union of two parts (2 and 2') having a quadrangular or rectangular base and wherein is housed a core (4) formed by paper which adopts a honeycomb configuration, said parts being joined to each other by a perimetral welding line (3) and presenting protuberances such as hollow legs or legs with a core (4') similar to (4), the protuberances being optionally joined to each other by a laminar part (6) having characteristics which are similar to those of part (2 or 2').

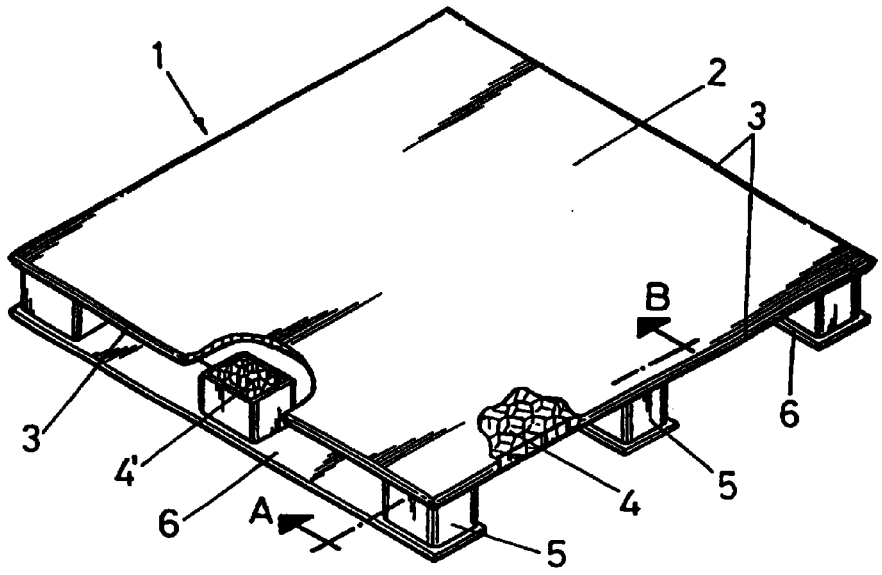

FIG.-1

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Description

OBJECT OF THE INVENTION

[0001] As expressed in the title of this specification, the present invention refers to a new laminar support, which has been designed and made in order to obtain numerous and noteworthy advantages with respect to other existing ones with similar purposes.

[0002] Said laminar support is constituted as a quadrangular or rectangular plan low body, formed by the connection of two or more sheets of paper or the like, between which a paper core that has a honeycomb cellular shape is incorporated, the assembly being closed by the perimetric connection of the edges of the sheets that cover the central structure.

[0003] The thus formed laminar support has as its main characteristic that of great resistance, aside from a minimum weight, easy operability and 100% recycleability.

FIELD OF THE INVENTION

[0004] This invention is applicable in the industry dedicated to the manufacture of laminar supports, especially of paper and cardboard.

BACKGROUND OF THE INVENTION

[0005] The applicant has knowledge of the current existence of a plurality of laminar supports.

[0006] Some of these supports are formed as pallets provided in their bottom part with a support point, according to which the support thus constituted is conveyed with the help of a machine provided with the pertinent elements which incorporated under the laminar support itself, permit conveyance and positioning thereof at different heights.

[0007] The pallets thus constituted, are manufactured preferably out of wood, which are connected together with some transversally placed boards, that serve as anchoring of all the longitudinal parts. Then the connection is carried out by fastening of the wooden structure with the support legs formed as plugs of the same material.

[0008] The applicant also has knowledge of the existence of supports similar to those described above, manufactured in the monobloc manner, by means of the use of metal materials, especially sheet metal, having projections derived from the shape itself of the material, projections that rise conveniently and up to a certain height the laminar area over which the bodies to be conveyed are located, permitting the operation of the machine that facilitates the conveyance up to the distribution points, by land transport or up to the points where the support elements and the material stored on the same are conveniently stacked.

[0009] The applicant also has knowledge of the existence of laminar supports made from cardboard sheets, that adopting the quadrangular or rectangular plan shape, are connected to a core formed by a plurality of microcells, that act as reinforcements of the external sheets, having externally, specifically at the sides thereof, longitudinal openings derived from the incorporation of the cited core.

[0010] The applicant also has knowledge of the existence of supports coming from cardboard boxes that provided when they were designed with the pertinent perforated and recessed lines, result in the existence of a box, mountable by mechanical or manual means, that after being adequately connected, have projections in the bottom part of the horizontal base structure, of the pertinent lifting and conveying means derived from a suitable machine for this purpose.

[0011] The resistance of the supports shaped as pallets, provided with solid legs or deformations in their own structure, is proven to be useful in practice, adequately complying with their purpose, which does not prevent that there are certain inconveniences derived from their own nature when being handled, that is to say, their excessive weight, their awkwardness and dangerousness due to the existence of nails and splinters and of course the great difficulty existing when same is disposed of.

[0012] As to the laminar supports obtained from sheets connected together, forming in the inside area a core derived from the incorporation of foreign bodies, manufactured out of different materials, forming cells, these have been observed to be only partially optimum, since as they do not have the pertinent stability in the connection of the two laminar bodies that act as the top and bottom surface of the support itself, certain abnormalities, such as less resistance, greater moisture absorption and therefore, easier damageability, in their use have been observed.

[0013] The use of boxes manufactured out of cardboard has proven not to be useful for certain uses, especially in the conveyance of merchandize that exceeds suitable characteristics as far as the resistance of the cardboard itself is concerned.

[0014] The obvious solution to the currently existing problem in this matter would be to be able to have a laminar support, that either considered individually, either as a pallet, or as a box, acquires resistance levels equal to or greater than those obtained from materials such as wood or metal, but that in turn have all the advantages inherent in their raw material, paper, that is to say:

- Operability: lighter weight
- Less dangerousness: without nails or splinters
- Recycleability

[0015] Aside from the support of the invention, the applicant has no knowledge of the existence at the present time of a laminar support that is provided with

the above mentioned ideal characteristics.

DESCRIPTION OF THE INVENTION

[0016] The new laminar support that the invention proposes, constitutes in itself an evident novelty within its field of application, since according to its basic structural characteristics and being manufactured out of light materials, it is characterized in that it has in its context the possibility of rendering service similar to that of supports manufactured out of wood and metal, and that in turn has the performance qualities derived from a notably lighter material and that permits its recycling, once reused.

[0017] More specifically, the new laminar support, object of the invention, is constituted as of the connection of two or more sheets of paper, that give rise to the constitution of two resistant laminar elements, between which a paper core, that adopts a honeycomb type cellular configuration, is incorporated. Then a perimetric bonding is carried out, the purpose of which is to connect the top sheet and bottom sheet and to immovably incorporate the cited core.

[0018] This sheet constituted in the described manner, can be implemented by means of the connection thereof at one of its surfaces of three lines of rectangular, quadrangular or circular plan protrusions, provided inside with a core similar to the one incorporated between the two bodies constituting the top part and bottom part of the support, or else the protrusions constituting the legs being hollow inside.

[0019] In turn, the protrusions are connected by conventional means at one of their surfaces and can optionally be connected together by a laminar material piece, similar to the one used for the configuration of the body of the support.

[0020] Optionally, the invention can have on its perimetric structure, four pieces similar to the body of the support, connected together by conventional means, forming a hollow container, with a general prismatic shape, inside of which different packaged or bulk merchandize may be conveyed.

[0021] Likewise, said four pieces can in themselves form a monobloc body formed with a container box shape, provided with three recessed lines, where the pertinent folding of the same will take place, consequently forming four surfaces, using the two smaller ends of the cited configuration to carry out the pertinent connection of the same and to form the top hollow area; each one of the surfaces having some characteristics identical to the new laminar support.

[0022] The body of the container thus formed, in accordance with that which has been cited above, can optionally have a cover, which can be formed from the support itself, to which laminar edges are incorporated for fastening thereof in the mouth, these laminar edges being of any type that is considered appropriate, totally conventional and applicable in an exclusively punctual manner.

DESCRIPTION OF THE DRAWINGS

[0023] In order to complete the description that is being made and in order to provide a better understanding of the characteristics of the invention, two sheets of drawings, in which the following has been represented in an illustrative and non-restrictive manner, are attached hereto.

Figure 1 is a perspective view of the new laminar support, object of the invention, under which support legs provided inside with the pertinent filler or core are fastened by conventional means, said legs being connected in turn by laminar pieces that reinforce the action of the assembly.

Figure 2 shows a duly sectioned side raised view of the object represented in figure 1.

Figure 3 corresponds to a perspective view of a detail of the object of the invention, wherein the legs do not have the filler or core.

Figure 4 finally shows a perspective view of the object represented in figure 1, on which cores similar to the one constituting the general area of the support have been incorporated, forming a hollow prismatic body, inside of which the pertinent conveyance and distribution of bulk merchandize can be carried out.

PREFERRED EMBODIMENT OF THE INVENTION

[0024] In view of these figures, one can see how the new laminar support (1) that is proposed, is constituted as of a core formed by two pieces (2) and (2'), that adopt the quadrangular or rectangular plan configuration, which in turn are constituted by the connection together of a plurality of sheets of paper or similar material, that result in the configuration of two rigid pieces, between which a filler (4), that adopts the configuration of a plurality of honeycomb type cells, is incorporated, the pieces (2) and (2') being abutted to the top part and bottom part respectively of the cells or cores (4).

[0025] Subsequently, the laminar pieces (2) and (2') constituting the top and bottom areas of the core constituting the new laminar support, are subjected to the pertinent bonding or connecting operation, forming a perimetric bonding line (3), as of which not only are pieces (2) and (2') connected, but also the inside material (4) is sealed in the inside thereof.

[0026] To the assembly formed by the connection of pieces (2) and (2'), with the inside material (4), connected by the bonding line or perimetric connection (3), three alignments of pieces (5), constituted as quadrangular, rectangular or cylindrical, plan bodies, filled inside with a material (4'), similar to material (4), are abutted to one of the surfaces thereof, as represented in figures 1 and 2, or else in an optional embodiment, the legs (5)

can be totally hollow connected to one of the surfaces, specifically to the bottom surface (2') of the assembly formed by the connection of the pieces (2)-(2'), to the inside core (4).

[0027] Likewise, the aligned legs may be optionally connected together by a laminar piece (6), with characteristics similar, as far as the manufacturing thereof is concerned, and the resistance derived from the same, to the characteristics of pieces (2) and (2').

[0028] The legs (5) will be manufactured out of an identical material just like the connecting sheets (6).

[0029] Optionally, just as it is shown in figure 4, the new laminar support thus constituted may incorporate on the structure formed by the connection of the pieces (2) and (2'), with the inside core (4), and the perimetric connecting or bonding line (3), incorporating legs (5) connected together by laminar pieces (6), a plurality of panels or pieces (1'), similar in characteristics to that achieved with the connection of the pieces (2) and (2') with the inside core (4), forming a prismatic shaped emerging body, that results in the possibility of using the new laminar support provided with these characteristics as an element for the conveyance and distribution of merchandize, even bulk merchandize.

[0030] Optionally, the body that is abutted to the support, that forms the four surfaces of the box or container, can be constituted as a monobloc body, provided with three recessed lines, along which the pertinent folding of the seine will be carried out, consequently forming four surfaces and using the two smaller ends of the cited configuration to carry out the pertinent connection of the same and to form the top hollow area, each one of the surfaces having some characteristics similar to the base piece that is formed as the new laminar support.

Claims

1. New laminar support, characterized in that the structure is constituted as of the connection of two laminar pieces (2) and 2'), obtained as of the connecting together of a plurality of sheets of paper or the like, by means of the use of conventional means, the rigid pieces (2) and (2') being connected to a core (4), that is formed like a honeycomb, made out of paper.

2. New laminar support, according to claim 1, characterized in that the surface (2') constituting the obverse of the new laminar support (1), three alignments of protrusions (5) are fastened by conventional means, protrusions made out of a material similar to the material used in the manufacture of the sheets or pieces (2) and (2'), that can adopt the quadrangular, rectangular or circular plan shape, forming a cylinder, these protrusions connected to the surface (2') being optionally filled with a material (4') similar to the material constituting the inside core (4), incorporated between the sheets or pieces (2) and (2').

3. New laminar support, according to the preceding claims, characterized in that optionally the alignments of legs (5), formed as quadrangular, rectangular or cylindrical protrusions, that may or may not be filled with material (4'), can be connected together by a strip of laminar material similar to that used for the manufacture of the legs (5) and of the pieces constituting the base (2) and (2').

4. New laminar support, according to the preceding claims, characterized in that on the structure of the base formed by the connection of the sheets (2) and (2') incorporating in its inside a core (4), provided with legs (5), optionally filled with a core (4') and optionally connected by laminar pieces (6), it can have on its top structure, vertically, four pieces (1'), constituting a hollow prism connected by conventional means, the pieces (1') having characteristics similar to the connection of the sheets (2) and (2'), with the inside core (4) and fringed perimetrically by a bonding line similar to line (3).

5. New laminar support, according to the preceding claims, characterized in that optionally the pieces that form the hollow area constituting the container inside of which the merchandize is incorporated, pieces placed in the top part of the new laminar support, can be formed in a monobloc body, subdivided into four geometrically identical areas, provided with separation lines by a recessed line, along which they fold and abut on the support surface, being connected together by the remaining branches using conventional means.

6. New laminar support, according to the preceding claims, characterized in that optionally the box formed as of the connection of five similar bodies constituting the support, may be used as a conventional box, with or without the support legs constituting the bottom area like a pallet.

7. New laminar support, according to the preceding claims, characterized in that optionally the laminar support may be used as an element for separating and strapping merchandize, without the incorporation of the bottom legs of any type.

8. New laminar support, according to the preceding claims, characterized in that laminar support (1), may be used to form a cover adaptable to the mouth of a box formed likewise as of the laminar support (1), with the collaboration of conventional fastening elements, such as edges and the like.

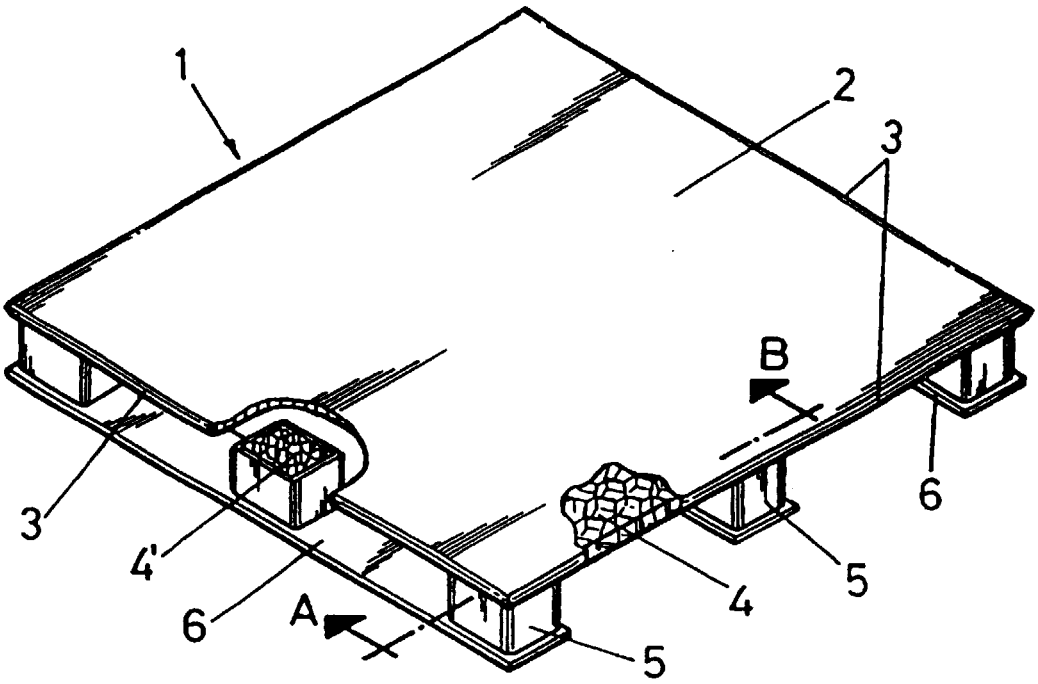

FIG.-1

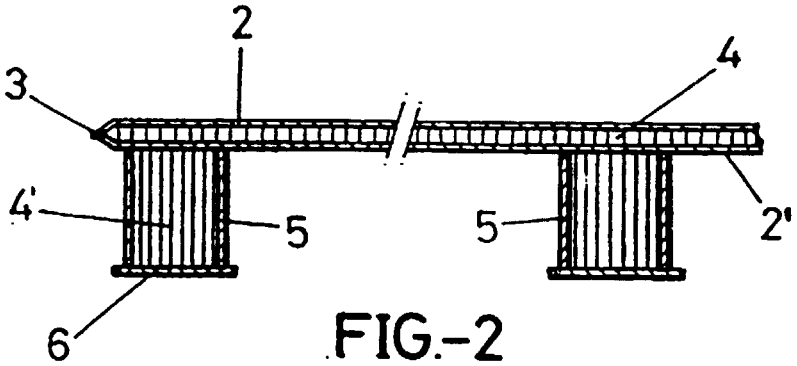

FIG.-2
A-B

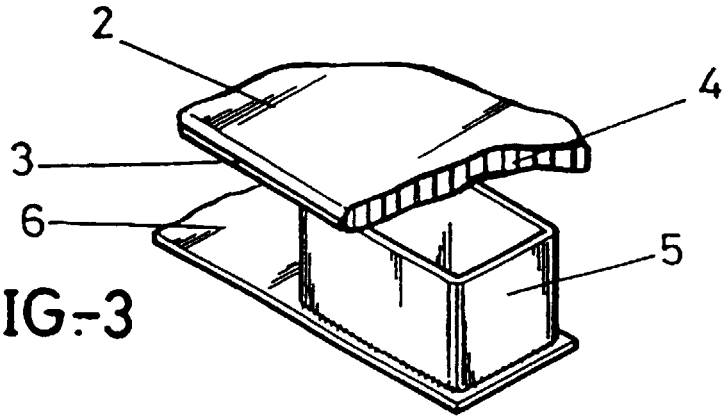

FIG.-3

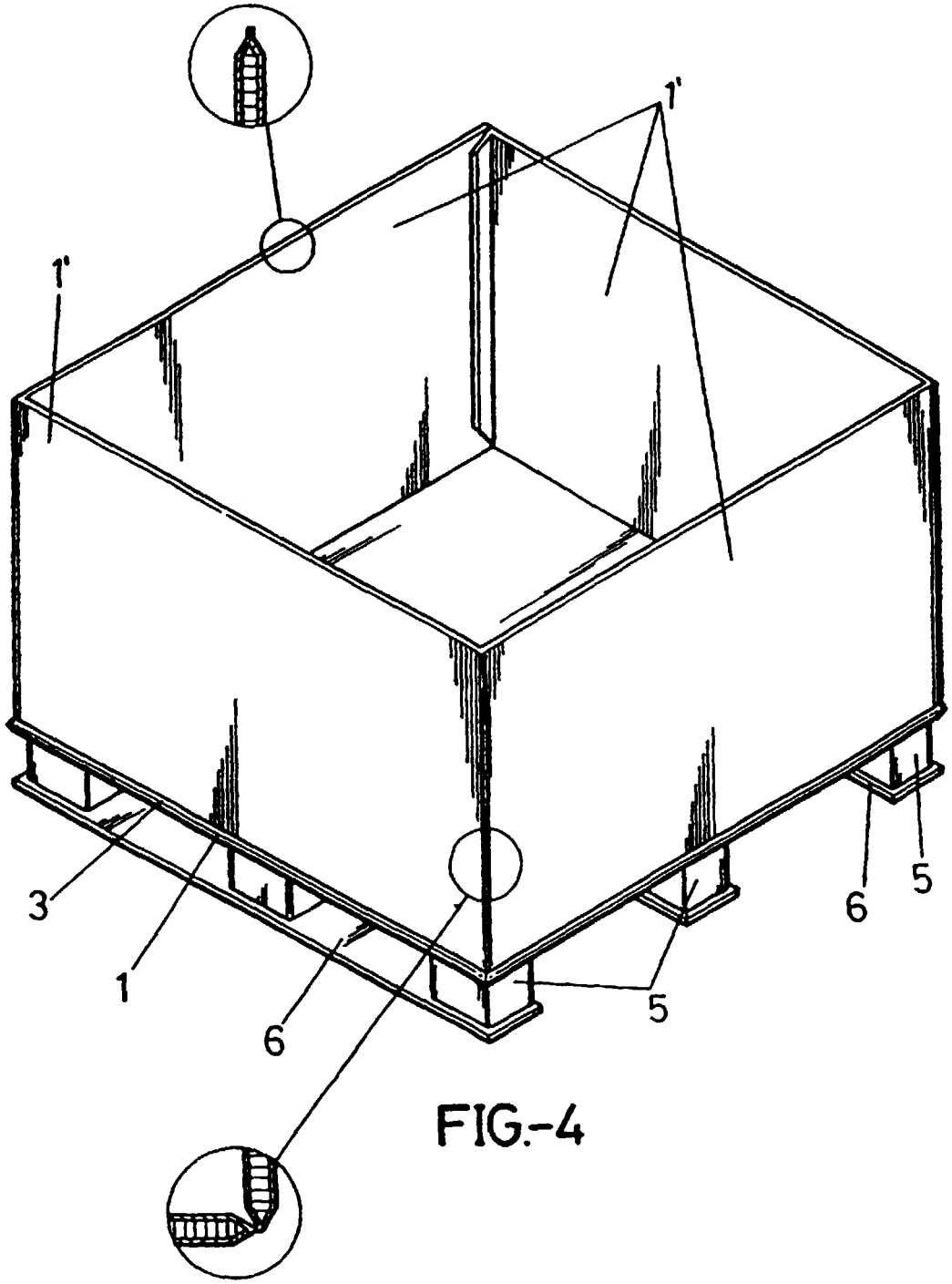

FIG.-4

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES 98/00199

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 : B 65 D 19/00
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 : B 65 D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPODOC, CIBEPAT, WPIL

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US-5493962-A (MC.CARTHY) 27 February 1996 (27.02.96), column 3, line 59- column 4, line 60 ; column 5, lines 50-63 ; figures 1-3.	1-3
X	WO-94003565-A1 (DAMAGE PREVENTIONS PRODUCTS, corp.) 6 January 1994 (06.01.94), column 5, line 25 – column 7, line 32,figure 1A .	1,3
X	GB-2213462-A (DUFAYLITE DEVELOPMENTS, Ltd) 16 August 1989 (16.08.89), the whole document .	1
A	US-3661099-A (SHELOR) 9 May 1972 (09.05.72) column 2, line 43 ; column 4, line 5 ; figures.	1-3
A	WO-9709239-A1 (BESIN B. V.) 13 March 1997 (13.03.97) The whole document	1
A	US-5356014-A(BEINER) 18 october 1994 (18.10.94), column 2, line 30 – column 4, line 67 ; figures.	4-8

☐ Further documents are listed in the continuation of box C. ☒ Patent family members are listed in annex.

* Special categories of cited documents:

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot beconsidered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
3 December 1998 (03.12.98)	4 December 1998 (04.12.98)
Name and mailing address of the ISA S.P.T.O	Authorized officer Telephone No.

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International Application No
PCT/ ES98/00199

Patent document cited in search report	Publication date	Patent familiy member(s)	Publication date
US- 5493962-A	27.02.1996	JP-9512232-T	09.12.1997
		AU-681315-B	21.08.1997
		US-5329861-A	19.07.1994
		WO-9529102-A	02.11.1995
		EP-752956-A	15.01.1997
		AU-3643895-A	16.02.1996
WO-94003565-A	06.01.1994	AU-682474-B	09.10.1997
		US-5230291-A	27.07.1993
		EP-647196-A	12.04.1995
		CA-2139126-A	06.01.1994
		AU-4991893-A	24.01.1994
		CN-1084132-A	23.03.1994
GB-2213462-A	16.08.1989		
US- 3661099-A	09.05.1972		
WO-9709239-A	13.03.1997	CA-2230755-A	13.03.1997
		PL-325289-A	20.07.1998
		AU-6757496-A	27.03.1997
		NL-1001117-C	04.03.1997
US-5356014-A	18.10.1994	WO-9114631-A	03.10.1991
		EP-474813-AB	18.03.1992
		DE-59102332D-D	01.09.1994
		CA-2055608-AC	27.09.1991
		AT-109096T-T	15.08.1994
		NO-176874B-BC	06.03.1995

Form PCT/ISA/210 (patent family annex) (July 1992)