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(54) **SHOE FOR SPORTS ACTIVITIES ON SAND OR SOFT SURFACES**

(57) Footwear for sports activities on sand or soft surfaces is a comfortable, light type of footwear that adjusts perfectly to the anatomy of the foot and the ankle. It is made of isolating materials that repel dampness and are breathable, designed for sports activities on sand, the purpose of which is to carry out any activity done on sand,

such as beach football, volleyball and beach jogging, walking on the beach or soft surfaces, etc. In addition, this type of sports footwear, due to its design, is resistant to heat and friction both inside and on its exterior, while at the same time said sports footwear repels water from the exterior.

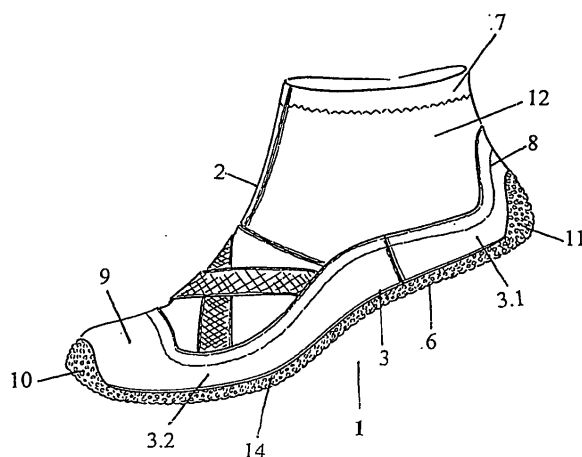


FIG. 1

EP 1 688 054 A1

Description

Object of the invention

[0001] The object of the present invention, as expressed in this descriptive disclosure, is related to a type of footwear that is comfortable, light and adjusts itself perfectly to the anatomy of the foot and ankle, made of isolating material that repels dampness and is breathable, designed for sports activities on sand or soft surfaces, the purpose of which is to carry out any kind of activity played on beach sand or soft surfaces, such as beach football, volleyball, walking, beach jogging and any other sports that are enjoyed on these surfaces; in addition, this type of sports footwear, due to its makeup, is resistant to heat and friction both inside and on its exterior, also repelling water on its exterior.

Background of the invention

[0002] In the past, sports activities were done on beach sand, soft, fine earth and similar surfaces without any kind of footwear which, by covering the foot, could protect it from certain aggressions that said surfaces present. The main drawback that is found when playing on beach sand (without water), is that when the sand overheats due to solar radiation, this heat is transferred to the person who is doing one of the activities, through their feet, producing discomfort typical of sand that is too hot, which makes it impossible to enjoy the sporting activity.

[0003] Within the aforementioned drawbacks, collisions between the feet or other parts of the body are produced, whether of the same person or with another person while doing the sporting activity, thus bringing about more or less painful injuries, including some serious ones such as scratches or sprained toes.

[0004] The main requirements that every type of footwear should fulfil are basically, to protect the foot and complement its functions. Within the field of sports footwear is where these functions become especially significant. So much so that, without their contribution, sport as it is known today would not exist.

[0005] The speed featured in games played on modern surfaces for tennis, the fact that records are broken year after year in athletics and the constant appearance of new modalities of sport would not be possible if it were not for the constant technical optimisation of sports footwear.

[0006] In order to create a good design for sports footwear, a number of general recommendations should be taken into account for footwear to be used in outdoor activities, depending on the terrain and the temperature and humidity conditions determined in each case by the geographical location, footwear whose features vary considerably would be required. Nonetheless, from a point of view of biomechanics, several general indications should be observed which, as in other footwear, affect four basic areas. 1) Footwear should adjust to the

shape and functional dimensions of the foot, determined by the form it is made with. 2) The facts related to the capability of the footwear to soften the impacts produced upon the collision of the foot with the ground. 3) The adjustment of the footwear to the movements made by the foot and ankle. 4) The facts related to friction between the sole and the surfaces.

[0007] In order to partially avoid these drawbacks, one recourse is to cover the foot with socks, thus avoiding overheating, but with discomfort for matches or playing sports, since activity and movement tend to make socks change position, which loosens them and can make them fall off, or ankle bands can be used in order to hold the foot and ankle and avoid discomfort and blows to this part of the body, but they do not prevent the feet from overheating on contact with the sandy surface.

[0008] As one possible solution, occasionally this type of sports activity is carried out with ordinary sports shoes, so that less foot discomfort is experienced due to overheating, friction and twisting, but the feel of the sand on the soles of the feet is lost, while pain in other parts of the body due to blows with these shoes is greater, hence bringing about a greater risk of injury.

[0009] In order to prevent all of these drawbacks innovative footwear has been designed which is comfortable, adjusts to the foot preventing discomfort and possible injury, yet in every case maintaining the pleasant sensation of walking on sand since the design of this footwear is very flexible and light, and does not lead to a loss of the sensation of walking barefoot.

Description of the invention

[0010] Footwear for sports activities carried out on sand or soft surfaces, having a perfectly configured design that makes it comfortable, light due to the materials that it is made from, thus adjusting to the anatomy of the sports-player's feet and ankles. The materials used are isolating, repel dampness, are breathable and flexible, so that their fit to the sports player's feet is perfect, including at its basis toe protection at the front and heel protection.

[0011] What is thus achieved is that the foot is protected in order to prevent sand from entering, facilitating improved sport activity on this type of soft surfaces, generally sand.

[0012] By covering the feet, direct contact among feet is avoided, preventing scratches and friction both on the feet and on other parts of the body due to the feet, as effects of kicks, and at the same time by keeping feet covered sprains and more or less serious injuries are avoided.

[0013] This type of footwear for sports activities on sand or soft surfaces is made up as a whole by:

- A) Instep
- B) Instep basis
- C) Mounted sole

- D) Sole lining
E) Sole or floor

A) The instep is composed of different parts joined together, covering the upper part of the foot, of the ankle, and in some versions reaching to above the height of the ankle, in order to avoid injuries that may be feared from carrying out the aforementioned sports activities. The materials used are preferably double lycra (interior and exterior) or similar of the type used for these kinds of footwear, and to them a layer of latex foam is attached. This set of materials, being elastic, give when the foot is introduced and contract once the foot is situated within the footwear, adjusting to it like a sock.

The seams joining the parts are reinforced with double stitching and nylon bias which, together with the type of materials that it is made up of, which are compact, resistant and comfortable, which protect the feet from sand and dampness, as well as from any other damaging element and high temperatures. B) The instep basis is made up of one or two parts made with reinforced material with supports, which protects the parts of the feet that are more vulnerable to blows and scratches, as may occur with toes, metatarsus-phalanx, malleolar and heel articulations. Despite being reinforced, this material allows for minimal elasticity so that it can adapt itself and adjust perfectly to the foot. The instep basis is made of materials such as nylon, laminated rubber, natural rayon or similar materials. A waterproofing treatment is applied to these materials that slightly repels water, especially dampness, preventing it from penetrating to the sole of the foot. The waterproofing treatment should be applied depending on the characteristics of the particular material used, being applicable in each particular case either to the whole garment or just to the reinforcements.

The shape that this part adjusts to is designed to protect the more sensitive areas, such as the upper part of the toe, of the articulation, and at the heel. The union of the parts has been made at the sides in order to avoid seams at the toe and heel, which could bring about friction and discomfort to the foot. C) Mounted sole is the part that closes off the edge of the instep at its bottom section, is joined by way of a seam, using the glove or stobber system, depending on the particular design version. This union of the part with the instep edge provides it with a closed shape (like that of a sock), which adjusts perfectly to the foot. The mounted sole is made of natural textile fibre agglomerate, joined with an adhesive, which are later pressed together, laminated and finally sewn crossways. This set of unwoven fibres joined together by an adhesive provides the material with high flexibility.

D) Sole lining, is an injected part, anatomically shaped and breathable. It is made up of a textile

surface with latex basis and a material which, by injection, forms an anatomical base that adapts to the surface of the sole of the foot, which allows the foot to be isolated from the sand, providing it with a sensation of greater comfort.

E) Sole or floor, this part is made as a whole of several materials, of which 60% is rubber, as well as 10% vulcasil, which makes it flexible, isolating, and as a softener for the irregularities in the terrain, sufficiently resistant in order to prevent abrasion that it could cause. The shape adopted by the part due to its design enable it to elevate the more sensitive parts of the foot, such as: the toe area in order to protect the toes, the waist of the shoe to hold the foot's arch in its interior area and at the back in order to protect the heel. The entire surface is covered with small semi-spheres that act as anchors on the surface of the sand to avoid slippage, providing a better grip.

[0014] In order to provide an improved understanding of the present descriptive disclosure, and as an integrated part of the same, several figures accompany it with an illustrative, non-limiting character in which the following are shown.

Brief description of the drawings

[0015]

Figure 1 shows a perspective view of the footwear for sports activities on sand or soft surfaces, object of the present invention, where its entire configuration is represented.

Figure 2 shows a detached perspective view of the footwear for sports activities on sand, where all of the parts that make up said footwear are represented.

Preferred embodiment of the invention

[0016] The footwear for sports activities on sand or soft surfaces is a type of comfortable, light footwear that adjusts perfectly to the anatomy of the foot and ankle of the sports player. It is made of isolating materials that repel dampness and is also breathable.

[0017] As shown in figures 1 and 2, the footwear for sports activities on sand is made up of the following parts:

- A) Instep B) Instep basis C) Mounted sole D) Sole lining E) Sole or floor.

[0018] The part that makes up the upper area of the footwear, the instep (2), is made up of the union of different parts, that which covers or protects the top part of the foot and of the ankle, in some designs reaching to above the height of the ankle. The material used as a whole throughout this section (12) is double lycra on the inner and exterior parts, having a layer of latex foam in-

serted between it. This set of materials, since they are elastic, allow it to give when the foot is introduced and contract when the foot is situated inside the sports footwear, adjusting itself to it.

[0019] The seams between the parts are reinforced with double stitching and nylon bias, as well as the protection (7) at the upper area or foot entrance opening.

[0020] The basis of the instep (3), made up of one or two parts (3.1) and (3.2) of reinforced material with supports that protect the parts of the foot that are more vulnerable to blows or friction. The materials used to make this part are nylon, laminated rubber, natural rayon or similar materials. A waterproofing treatment is applied to these parts that repels water slightly and especially dampness and prevents it from penetrating into the sole of the foot. The waterproofing treatment is applied depending on the characteristics of the particular type of material used. It may be treated, in each particular case, in its entirety, or just at the reinforcements.

[0021] The design of this part allows it to protect the more sensitive areas, such as the upper part of the toe (9), the articulations and at the heel (8). The union of the two parts is carried out at the sides in order to avoid seams at the toe (9) and at the heel (8).

[0022] The mounted sole (5) is what encloses the instep at the area of the sole, using a glove or sttobber system, depending on the design. The mounted sole (5) is made from an agglomerate of natural textile fibres with adhesives that are later pressed together, laminated and sewn crossways. This unwoven set of fibres joined together with adhesives provides the material with high flexibility.

[0023] The sole lining (4) is an injected part with an anatomical and breathable form. It is made up of a textile surface with a latex basis and a material which, through injection, makes up an anatomical basis that adapts to the surface of the sole of the foot, which facilitates isolating the foot from the sand, providing an increased sensation of comfort.

[0024] The sole or floor (6) is made up as a whole of a series of materials featuring more than 60% rubber, as well as more than 10% vulcasil, that makes it flexible, isolating and as a softener for the irregularities of the terrain, as well as sufficiently hard to prevent abrasion that it may produce. The shape adopted by the sole or floor part (6) facilitates raising the more sensitive areas of the foot, such as the toe area (10), to protect the toes, the waist area of the shoe (13), to protect the arch of the foot at its inner section and at the back (11), to protect the heel. The exterior surface (14) is covered with small semi-spheres that act as small anchors on the surface of the sand in order to prevent slippage.

[0025] Having sufficiently described the nature of the present invention, as well as a way to put it into practice, it only remains to be added that changes may be introduced in the form, materials and shape as a whole or of the parts that make it up, as long as said alterations do not substantially vary the characteristics of the invention

as claimed below.

Claims

1. Footwear for sports activities on sand or soft surfaces, it is a type of comfortable, light footwear that adjusts perfectly to the anatomy of the foot and ankle, the materials used are isolating, repel dampness, are breathable and flexible, **characterised in that** said footwear is made up of the following parts: the instep (2), the basis of the instep (3), mounted sole (5), sole lining (4) and sole or floor (6).
2. Footwear for sports activities on sand or soft surfaces, according to the first claim, **characterised in that** the instep is made up of the union of different parts (12), assembled, the materials as a whole throughout the entire section indicated being double lycra, or similar materials, having a layer of latex foam inserted between them. The seams between the parts are reinforced with double stitching and nylon bias, as well as the protection (7), at the upper section or foot entrance opening.
3. Footwear for sports activities on sand or soft surfaces, according to the first claim, **characterised in that** the basis of the instep (3) is made up of one part or of two parts (3.1) and (3.2) with reinforced material with supports. The materials used in the realisation of this part are nylon, laminated rubber or natural rayon. A waterproofing treatment is applied to these materials that slightly repels water and especially dampness, and prevents it from penetrating into the sole of the foot. The waterproofing treatment is applied depending on the characteristics of the particular type of material used, in each case being applied to its entirety, or just at the reinforcements. The basis of the instep presents an elevation (9) at the toe area, at the articulations and at the heel (8).
4. Footwear for sports activities on sand, according to the first claim, **characterised in that** the mounted sole (5) encloses the shape of the instep at the section of the sole, its union is joined by way of a seam, using the glove or sttobber system. It is made of an agglomerate of natural textile fibres with adhesives that are later pressed together, laminated and sewn crossways.
5. Footwear for sports activities on sand, according to the first claim, **characterised in that** the instep (4) is an injected part, cut as an anatomical and breathable shape. It is made up of a textile surface with a latex basis and a material which, through injection, forms an anatomical basis that adjusts to the surface of the foot.

6. Footwear for sports activities on sand, according to the first claim, **characterised in that** the sole or floor (6) is made as a whole of a series of materials where more than 60% is rubber, and 10% vulcasil, which makes it flexible, isolating, and as a softener for the irregularities of the terrain. The shape taken by the part, sole or floor (6) facilitates elevating the more sensitive parts of the foot, such as the toe area (10), the waist area (13), in order to hold the arch of the foot at its interior and the heel area (11). The exterior surface of the floor (14) is covered with small semi-spheres (14.1) that act as small anchors.

more than 60% rubber and 10% vulcasil in order to make it flexible, isolating and softening to the irregularities of the terrain, and which features raised areas corresponding to the more sensitive areas of the foot, specifically the toe (10), the waist section (13) to hold the arch of the foot at its interior, and the heel section (11), said sole or floor (6) featuring small semi-spheres (14.1) on its exterior surface, which act as small anchors;

Amended claims under Art. 19.1 PCT

1. Footwear for sports activities on sand or soft surfaces, light and adjustable to the anatomy of the foot and ankle and made of materials that repel dampness and are isolating, breathable and flexible, **characterised in that** it is made up of the following parts

- the instep (2), formed by joining multiple assembled parts, all of which include an external layer and an internal layer of lycra or similar material, and among said internal and external layers a layer of latex foam, said three layers being joined by double stitching and their seams being reinforced with nylon bias, the protection (7) located at the upper section or opening entrance for the foot also being reinforced with nylon bias.
- the basis of the instep (3), formed by one part or by two parts (3.1 and 3.2), which features raised areas (9) at the toe, at the articulations and at the heel (8), said basis of the instep (3) being made with reinforced material with protection reinforcements of the parts of the foot that are more exposed to blows or friction, the materials used being nylon, laminated rubber or natural rayon, to which a waterproofing treatment is applied in order to prevent water from penetrating to the sole of the foot, said waterproofing treatment being applied to the entire said basis of the instep (3) or only to said reinforcements depending on the characteristics or the particular type of material used;
- mounted sole (5), that closes off the shape of the instep at the sole or floor (6) section and to which it is sewn on using the glove or sttobber system, said sole (5) being made of an agglomerate of natural textile fibres joined by adhesives that are later pressed together, laminated and sewn crossways.
- sole lining (4), which is a breathable part made by injection in an anatomical shape that adjusts to the surface of the foot, and is made of textile material with latex support; and
- sole or floor (6), made of material that contains

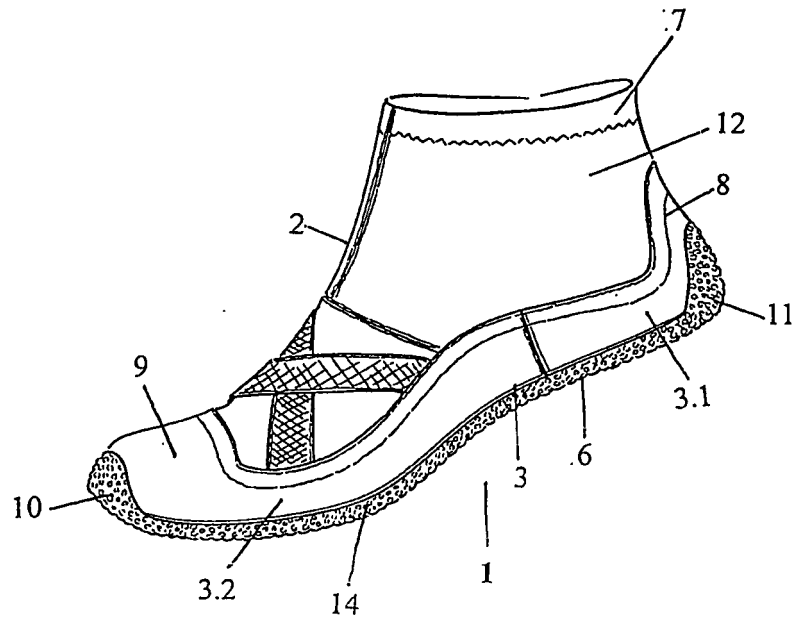
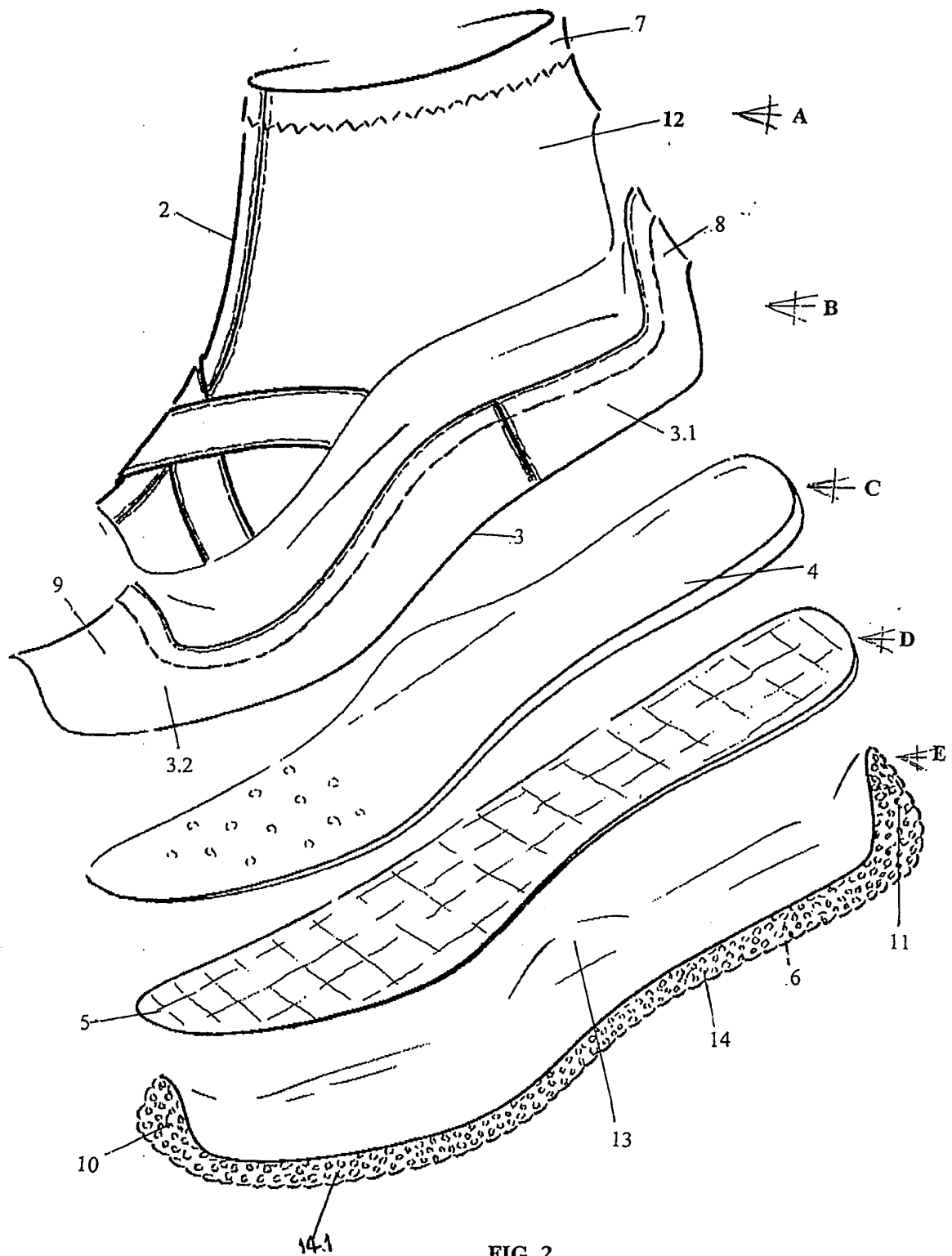


FIG. 1



INTERNATIONAL SEARCH REPORT

International application No.

PCT/ ES 2003/000416

A. CLASSIFICATION OF SUBJECT MATTER

IPC⁷ A43B 5/00, 5/08, A43B 1/14

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)

IPC⁷ A43B

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 practicable, search terms used)

EPOQUE, MISTRAL, WPIL

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	ES 1043016 U (PEREA LIFANTE) 01.11.1999. The whole document	1-6
A	US 5774898 A (MALPEE) 7.07.1998. Column 2, line 60-column 4, line 43; fugures.	1-6
A	US 5513450 A (AVILES PALAZZO) 7.05.1996. Abstract; figures.	1,2
A	FR 2546382 A1 (LES MANUFACTURES DE SAINT MARCEL) 30.11.1984	

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/ ES 2003/000416

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
ES 1043016 U	01.11.1999	NONE	
US 5774898 A	07.07.1998	WO 0001261 A	13.01.2000
US 5513450 A	07.05.1996	NONE	
FR 2546382 A1	30.11.1984	FR 2555026 A	24.05.1985