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(54) **PROTECTIVE STRUCTURE FOR FENCES AND FIXING DEVICE**

(57) The protective structure is configured for being fixed on the front of fences (9) to cushion possible impacts. Said structure comprises a spongy body (2), a flat panel (3) made of a rigid and lightweight material, and a wrap-around laminar cover (5) by way of a case,

wherein the spongy body (2) and the flat panel (3) are attached to one another forming a whole body tightly fit within the laminar cover (5). The invention is comprised in the field of the technology of complements, accessories and guards for certain parts of athletic facilities.

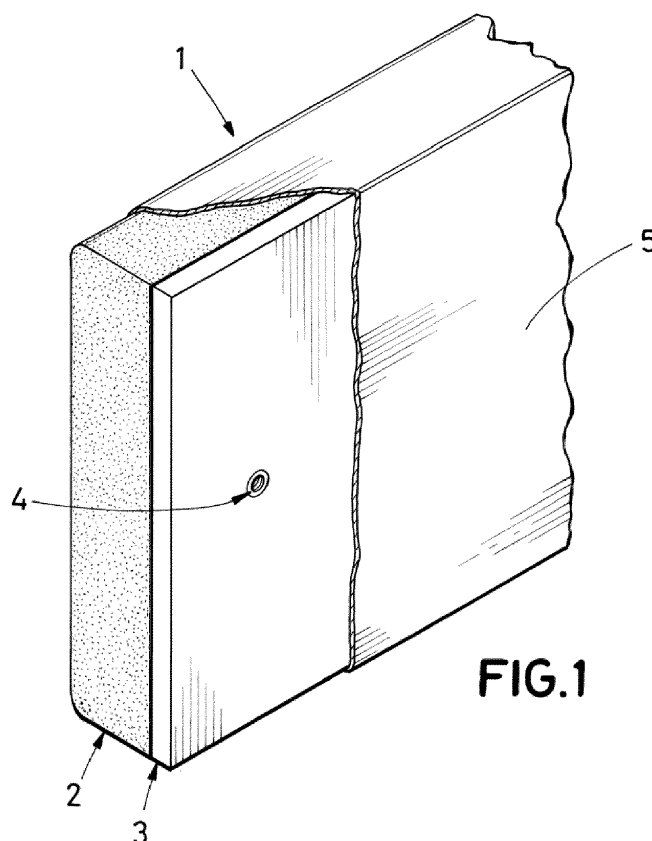


FIG.1

Description

Object of the invention

[0001] The present invention relates to a protective structure for fences and a fixing device, which is comprised in the field of the technology of complements, accessories and guards for certain parts of athletic facilities, such as training fields for competing in and practicing football/soccer, rugby, basketball, and, generally, any collective or individual sport, the playing surface of which is delimited by perimeter fencing.

Technical problem to be resolved and background of the invention

[0002] It is currently for common for any athletic facility to be delimited by a perimeter fence structure delimiting its area of activity. These fences, which are usually manufactured with metal profiles, can be dangerous for practicing certain sports in which a player can be projected over them as a result of a throw in the game. This may result in said player being injured against the actual element separating the athletic activity area and the area outside it.

[0003] The most common solutions for preventing injuries focus on placing the perimeter fencing as far away as possible from the playing field, with the limitations or difficulties relating to space this entails. Another solution is to use conventional mats or spongy bodies to at least partially cover more dangerous areas such as, for example, where the vertical fence posts are located. Logically, these are solutions which sometimes are not altogether as reliable as desirable.

[0004] Another problem with these fences, which usually present an average height of between 80 cm and 120 cm and have wide, uncovered intermediate spaces, is that said fences do not allow balls to be retained when they are ejected out after being thrown in the game, with the subsequent problems for players who must sometimes jump over said fences to be able to access the area where the ball has gone.

Description of the invention

[0005] For the purpose of achieving objectives and avoiding the drawbacks mentioned in the preceding sections, the invention proposes a protective structure for fences which is configured for being fixed on the front of fences to cushion possible impacts.

[0006] The protective structure comprises a spongy body, a flat panel made of a rigid and lightweight material, and a wrap-around laminar cover by way of a case, wherein the spongy body and the flat panel are attached to one another forming a whole body tightly fit within the laminar cover.

[0007] The flat panel comprises two opposite bases: a first base and a second base, and the spongy body in-

cludes two opposite bases: a first base and a second base, wherein these two parts are attached to one another at their two first bases, which are in contact with one another, by means of an adhesive.

[0008] The flat body is a polymer having an alveolar structure, such that in a particular embodiment of the invention, the flat body is an expanded polystyrene material, whereas the laminar cover is manufactured with an impermeable, opaque and flexible material.

[0009] The outer surface of the laminar cover includes front areas reserved for advertisements.

[0010] Each protective structure is fixed to the fence by means of screws configured for being coupled in threaded bushings which are inserted into the flat panel, wherein said screws are inserted through holes of the fences which are aligned with and facing the threaded bushings, and wherein the screws go through the laminar cover in isolated areas coinciding with the threaded bushings.

[0011] The object of the present invention relates to a protective structure having a very simple configuration, and a very limited cost which solves all the drawbacks mentioned in the background section.

[0012] In fact, the idea is to associate, in a flat whole body formed by the spongy body such as foam or the like, with the rigid flat panel by way of a board adhered or glued to said spongy body.

[0013] Said flat panel comprises sufficient thickness so as to allow the threaded bushings (or other fittings), provided to enable coupling the assembly screws, to be inserted into its material.

[0014] Next, to help better understand this specification and as an integral part thereof, a series of figures is attached in which the object of the invention is depicted in an illustrative and non-limiting manner.

Brief description of the figures

[0015]

Figure 1 shows a perspective view of the protective structure for fences object of the invention.

Figure 1a depicts a section view of a part of the structure of the invention, where anchoring means to enable fixing the protective structure to a fence are essentially shown.

Figure 2 shows a profile view of the protective structure for fences and the fixing device for fixing the protective structure to fences.

Figure 3 shows a perspective view of the application of the protective structure of the invention assembled on fences installed around a playing field.

Description of an exemplary embodiment of the invention

[0016] Considering the numbering adopted in the figures, the protective structure 1 for fences 9 comprises a

spongy body 2, a flat panel 3 made of a rigid material and a wrap-around laminar cover 5, wherein the spongy body 2 and the flat panel 3 are attached to one another forming a whole body tightly fit within the laminar cover 5, wherein the spongy body 2 is configured to cushion and absorb impacts, and wherein the flat panel 3 stiffens the assembly of the whole body.

[0017] The flat panel 3 is a body made of a lightweight material, such as expanded polystyrene, or another polymer with an alveolar structure.

[0018] The laminar cover 5 is preferably manufactured with an impermeable, opaque and flexible material such as a canvas, plastic sheet, etc., without ruling out other materials.

[0019] The flat panel 3 comprises two opposite bases: first base 3a and second base 3b, and the spongy body 2 also has two opposite bases: first base 2a and second base 2b, wherein these two parts 2, 3 are attached to one another at their two first bases 2a, 3a by means of an adhesive material or other equivalent means.

[0020] The outer surface of the whole body formed by the two parts 2, 3 attached to one another is in contact with the laminar cover 5, wherein said outer surface comprises the two second bases 2b, 3b of said parts 2, 3, and also comprises side faces delimiting the perimeter contours of those two parts 2, 3.

[0021] There are inserted and fixed on the flat panel 3 threaded bushings 4 by way of fittings or nuts, which are part of fixing means for being able to fix each protective structure 1 on the fence 9 by means of screws 8 which are also part of said fixing means, such that said screws 8 are inserted through holes of the fence 9 which are aligned with and facing the threaded bushings 4, as shown in Figure 2.

[0022] Obviously, the screws 8 also go through the laminar cover 5 in isolated areas coinciding with the threaded bushings 4.

[0023] The outer surface of the laminar cover 5 includes front areas 6 reserved for advertisements which can be located on one or on both opposite faces front of said outer surface, wherein one of said front faces constitutes an impact area 7 against which a player may collide, with the spongy body 2 cushioning the blow, and wherein said advertisements allow the additional use thereof as a protective advertising structure 1.

[0024] The configuration of the assembly screws 8 may vary depending on the morphology of the fence 9 in which they are to be assembled. To replace the screws 8, it is also possible to use clamps (not depicted in the figures), and the screws and clamps can even be used simultaneously.

[0025] As can be seen, with this structure and the assembly on the front of conventional fencing 9 installed around a playing field, the new protective structure 1 considerably minimizes the negative consequences of aggressive impacts against said fencing 9.

[0026] Furthermore, said protective structure 1 prevents such impacts from being dangerous for players,

because the energy from the collision is at first very effectively doubly absorbed by the spongy body 2, preventing local or isolated injuries to the player, and by the structure itself of the fence 9 to which the impact or collision is transmitted through the flat panel 3, without forgetting its ball retaining functions and the creation of additional spaces for advertising which allows it to pay for itself.

Claims

1. A protective structure for fences configured for being fixed on the front of fences (9) to cushion possible impacts, **characterised in that** it comprises a spongy body (2), a flat panel (3) made of a rigid and lightweight material and a wrap-around laminar cover (5) by way of a case, wherein the spongy body (2) and the flat panel (3) are attached to one another forming a whole body tightly fit within the laminar cover (5).
2. The protective structure for fences according to claim 1, wherein the flat panel (3) comprises two opposite bases: first base (3a) and second base (3b), and the spongy body (2) includes two opposite bases: first base (2a) and second base (2b), wherein these two parts (2, 3) are attached to one another at their two first bases (2a, 3a) by means of an adhesive.
3. The protective structure for fences according to any one of the preceding claims, wherein the flat body (3) is a polymer having an alveolar structure.
4. The protective structure for fences according to claim 3, wherein the flat body (3) is an expanded polystyrene material.
5. The protective structure for fences according to any one of the preceding claims, wherein the laminar cover (5) is manufactured with an impermeable, opaque and flexible material.
6. The protective structure for fences according to any one of the preceding claims, wherein the outer surface of the laminar cover (5) includes front areas (6) reserved for advertisements.
7. A fixing device for the protective structure (1) for fences (9) described in any one of the preceding claims, **characterised in that** the protective structure (1) is fixed to the fences (9) by means of screws (8) configured for being coupled in threaded bushings (4) which are inserted into the flat panel (3), wherein said screws (8) are inserted through holes of the fences (9) which are aligned with and facing the threaded bushings (4), and wherein the screws (8) go through the laminar cover (5) in isolated areas

coinciding with the threaded bushings (4).

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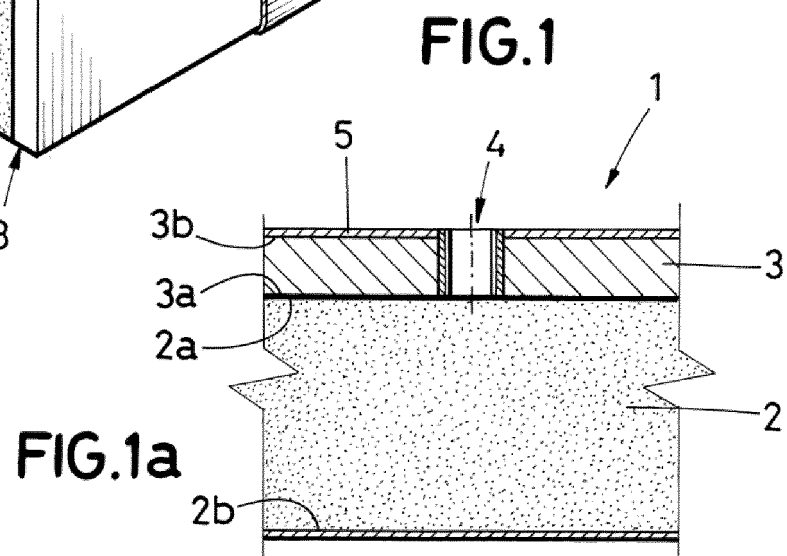
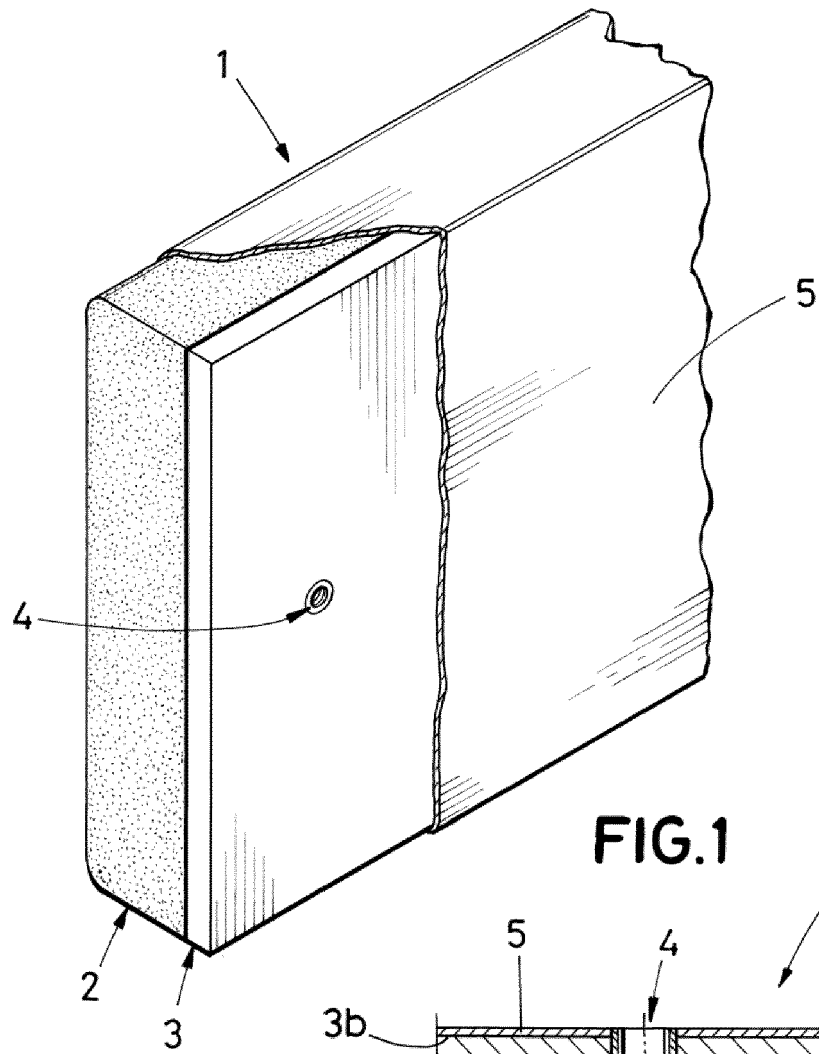
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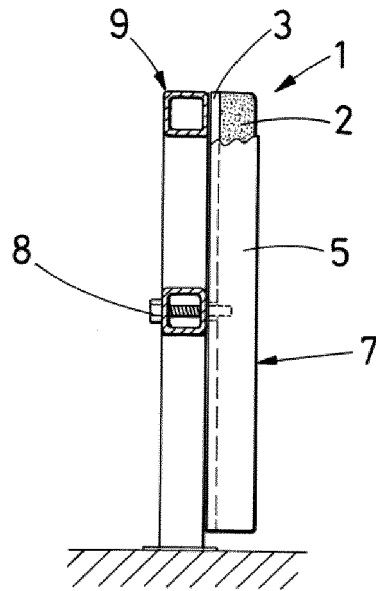


FIG. 2

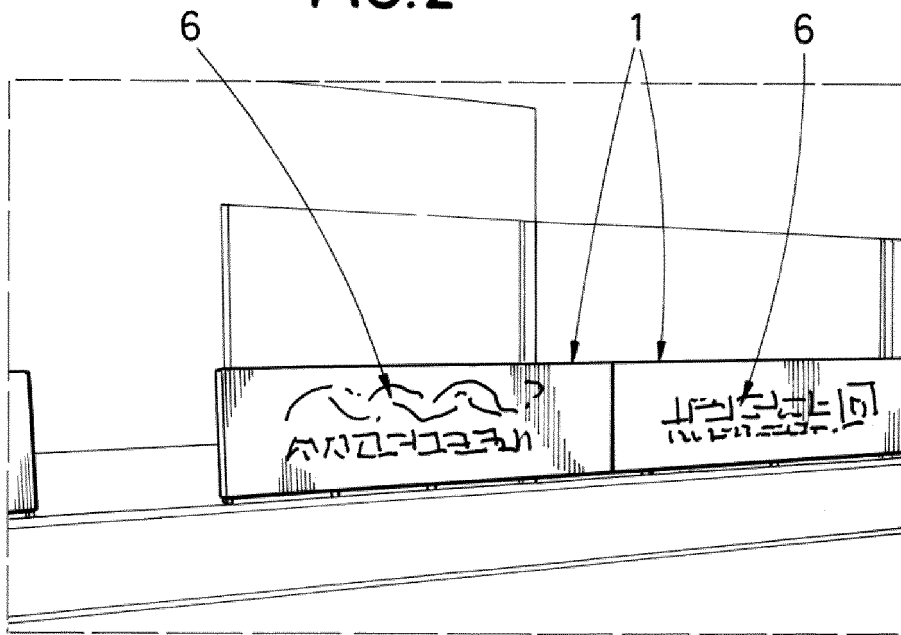


FIG. 3



EUROPEAN SEARCH REPORT

Application Number

EP 22 17 6067

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EPO FORM 1503 03.82 (P04C01)

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Y	* paragraphs [0007], [0029]; figures 1, 2, 3 *	3, 4, 6	
Y	----- KR 101 278 537 B1 (KWAK HO TAEK, KHO SOON TAK) 25 June 2013 (2013-06-25) * paragraphs [0040], [0094]; figure 13 *	3, 6	
Y	----- WO 2010/070386 A2 (TOSA MARK [US]) 24 June 2010 (2010-06-24) * claim 2 *	4	
A	----- DE 92 09 699 U1 (BORNHUETTER DIETER [DE]) 25 November 1993 (1993-11-25) * paragraph [0013]; figure 5 *	1-7	
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			A63C
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 9 November 2022	Examiner Murer, Michael
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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 22 17 6067

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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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09-11-2022

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82