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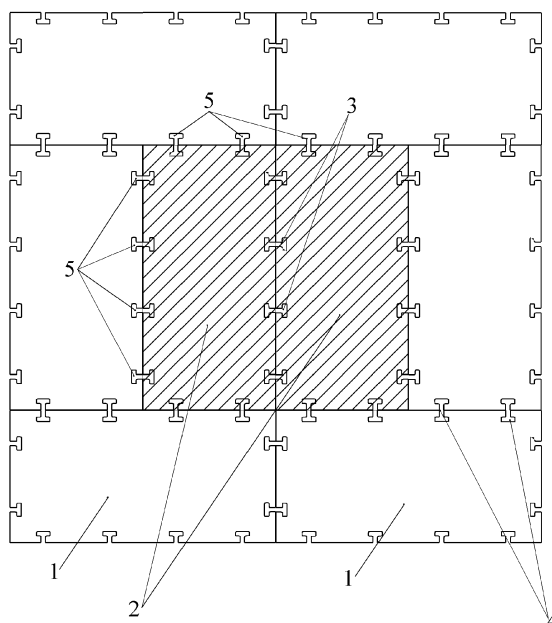
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(54) SPORTS MAT SYSTEM

(57) In order to make it possible to construct a competitive area with a central first zone and a second zone, surrounding the first, of different colours, a mat system is proposed, comprising a plurality of individual mats (1, 2) and also connecting means (3, 4, 5). The mats (1, 2) have in each case an upper side (7), an underside, running parallel thereto, and at least one straight-running side edge (8), the straight-running side edges (8) of the

individual mats (1, 2) in each case having at least one undercut recess (6). The connecting means (3, 4, 5) have a form that makes it possible to connect two mats (1, 2) along their straight-running side edges (8) by engagement of one of their halves in each case in one undercut recess (6) in each case. The individual mats (1, 2) and connecting means (3, 4, 5) have in each case at least one layer of foam.

*Fig. 2*

Description

Sports mat system

[0001] The invention relates to a mat system, in particular for competitive types of sport, comprising a plurality of individual mats and connecting means, which connect the mats to one another, and also to the use of such a mat system for constructing a martial arts area or a competition area.

Technical field

[0002] In the case of many types of competitive sport, in particular types of martial art such as judo, karate or wrestling, it is usual to hold the competitions on a competition area made up of individual mats, the individual mats being of a different colour in the inner zone, the combat area, than in the outer zone, the safety area. Since the actual competition is only intended to take place in the inner zone, it must be possible for the referee to judge unequivocally whether a competitor leaves this inner zone.

Prior art

[0003] The company publication "Sport-Thieme, Tata-mi- und Kampfsportmatten richtig verlegen" [Sport-Thieme, correct laying of Tatami and martial arts mats], Art. 1197264, Internet download of 17.06.2014, discloses a mat system that consists of individual mats of different colours and edge and corner pieces, from which a corresponding competition area can be constructed. The individual square mats have running around them a system of interlocking teeth with undercuts, formed by alternating projections and recesses, so that the individual mats can be firmly connected to one another at their edges. One disadvantage of these known sports mat systems is that the interlocking edges of adjacent individual mats of different colours do not define a clear border, so that it is only possible with difficulty to judge whether a competitor leaves the competition area.

Object

[0004] The object of the present invention is therefore to provide a mat system that makes it possible to construct competition areas with different colour zones without having this disadvantage.

Summary of the invention

[0005] The invention achieves this object by a mat system according to Claim 1, preferably in conjunction with one or more of the features of the dependent claims, and also by a use according to Claim 11.

[0006] The invention therefore essentially concerns the provision of a mat system comprising a plurality of

individual mats and also connecting means that are separate from the individual mats and connect the undercut recesses of two adjacent mats to one another.

[0007] The connecting means preferably have two plane-parallel surfaces and a height that corresponds to the height of the individual sports mats. The undercut recesses of the individual mats are preferably all embodied identically, and the connecting means are accordingly preferably formed mirror-symmetrically.

[0008] When viewed from above, the individual mats may expediently have a rectangular form, for example with the dimensions 1 m × 1 m, 1 m × 2 m and/or 1 m × 4 m.

[0009] It is preferred if the individual mats have on each of their edges an undercut recess only every 100 - 1000 mm of edge length. For the most part, the edges of the individual mats consequently run in a straight line without recesses.

[0010] The mat system according to the invention preferably comprises mats and connecting means of at least two different colours. However, it is within the scope of the present invention also to use mats and connecting means of more different colours.

[0011] According to a particularly preferred embodiment of the invention, the mat system according to the invention comprises connecting means that are themselves likewise divided into two colours, so that, when they are used as intended, one half of the connecting means of the first colour is inserted into a mat of the first colour, while the second half of the connecting means is inserted into the adjacent mat of a different colour. Adjacent mats of different colours consequently have a sharp, clearly defined colour border running around them.

[0012] If need be, the undercut recesses in the outer edges of a competitive area constructed with the mat system according to the invention may be filled with halved connecting means.

[0013] According to the invention, the individual mats have at least one layer of foam, preferably based on polyethylene foam, particularly preferably of crosslinked polyethylene foam. In order to achieve optimum damping and at the same time force distribution, the mats may consist of different layers with a different density and elasticity or compressive strength of the individual layers.

[0014] According to a further preferred embodiment of the invention, the surface of individual mats may be laminated with a coloured, nonslip, possibly structured film, for example of plasticized PVC or thermoplastic elastomer (TPE).

Brief description of the drawing

[0015] The invention is explained in more detail below on the basis of an exemplary embodiment and the drawing, in which:

Figure 1 shows respectively in plan view two mats

according to the invention of different colouring and also three connecting means of corresponding colouration;

Figure 2 symbolically shows a plan view of a competition area with a central combat area and a surrounding safety zone.

Best way of carrying out the invention

[0016] The mats 1, 2 according to the invention, represented in Figure 1 in a view from above, have a length of in each case 2 m and a width of in each case 1 m and also a thickness of 41 mm. The underside consists of a crosslinked polyethylene foam of an apparent density of 30 kg/m³. Laminated on that is a layer 10 mm thick of a density of 50 kg/m³. The final nonslip, coloured surface covering consists of plasticized PVC and forms the upper side 7. The upper mat 1 is embodied in a first colour a, for the safety zone, and the lower mat 2 is embodied in a second colour b, for the combat zone.

[0017] The three connecting means 3, 4, 5 are of an identical construction. They are embodied in the colour a (connecting means 4), colour b (connecting means 3) and also in the third embodiment (connecting means 5) in two colours, colour b on the left and colour a on the right.

[0018] Along each of the four edges of the mats 1, 2, undercut recesses 6 have been respectively cut out by waterjet cutting. The distance between every two recesses 6 is in each case 50 cm. The form and size of the respective recesses 6 correspond to half the form and size of the connecting means 3, 4, 5.

[0019] The connecting means 5 are likewise cut out from the same material as that of the mats by waterjet cutting. Since the foams that are used are flexible, the connecting means can be inserted into the respective recesses 6 without any great effort being exerted.

[0020] In Figure 2, a competition area is symbolically represented, with a central first zone as the combat area of the colour b and a second zone, surrounding the first, as a safety zone of the colour a. In the case of a genuine competition area, the central zone with the combat area will be for example 8 × 8 m², for which 32 mats 2 of the colour b are required. In the central zone of the colour b, the connection of the individual mats 2 to one another is performed with the connecting means 3. The mats 1 of the colour a surrounding the central zone form the safety zone and are connected to one another by connecting means 4 of the colour a. The connection of the mats 2 to the surrounding mats 1 is performed by way of the connecting means 5, which are embodied with one half of the colour a and one half of the colour b.

Legend

[0021]

1 Mat (colour a)

2 Mat (colour b)

3 Connecting means (colour b)

4 Connecting means (colour a)

5 Connecting means (each ½ colour a and ½ colour b)

5 6 Recess

7 Upper side

8 Edge

10 Claims

1. Mat system, in particular for competitive types of sport, comprising

15 - a plurality of individual mats (1, 2) with in each case an upper side (7), an underside running parallel thereto and at least one straight-running side edge (8),
 - the straight-running side edges (8) of the individual mats (1, 2) in each case having at least one undercut recess (6), and
 - connecting means (3, 4, 5), which have a form that makes it possible to connect two mats (1, 2) along their straight-running side edges (8) by engagement of one of their halves in each case in one undercut recess (6) in each case,
 - the individual mats (1, 2) and connecting means (3, 4, 5) in each case having at least one layer of foam.

2. Mat system according to Claim 1, **characterized in that** the connecting means (3, 4, 5) are formed mirror-symmetrically.

35 3. Mat system according to Claim 1 or 2, **characterized in that** the individual mats (1, 2) have a rectangular cross section.

40 4. Mat system according to one of Claims 1 to 3, **characterized in that** the individual mats (1, 2) have on each of their edges an undercut recess (6) every 100 - 1000 mm of edge length.

45 5. Mat system according to one of Claims 1 to 4, **characterized in that** it comprises mats (1, 2) of two different colours.

6. Mat system according to Claim 5, **characterized in that** it comprises two-coloured connecting means (5).

55 7. Mat system according to Claims 5 and 6, **characterized in that** it has mats (1, 2) of two different colours, connecting means (3, 4) of the same two different colours and connecting means (5) that are themselves of two colours.

8. Mat system according to one of Claims 1 to 7, **char-**

acterized in that the individual mats (1, 2) have multiple layers of foam of different densities.

9. Mat system according to one of Claims 1 to 8, **characterized in that** the individual connecting means (3, 4, 5) have multiple layers of foam of different densities. 5
10. Mat system according to one of Claims 1 to 9, **characterized in that** the individual mats (1, 2) and/or connecting means (3, 4, 5) have at least one layer of foam on the basis of crosslinked polyethylene. 10
11. Use of a mat system according to one of Claims 1 to 10 for constructing a competition area with a central first zone as a combat area and a second zone, surrounding the first, as a safety area, the central first zone and second zone, surrounding the first, being of different colours. 15

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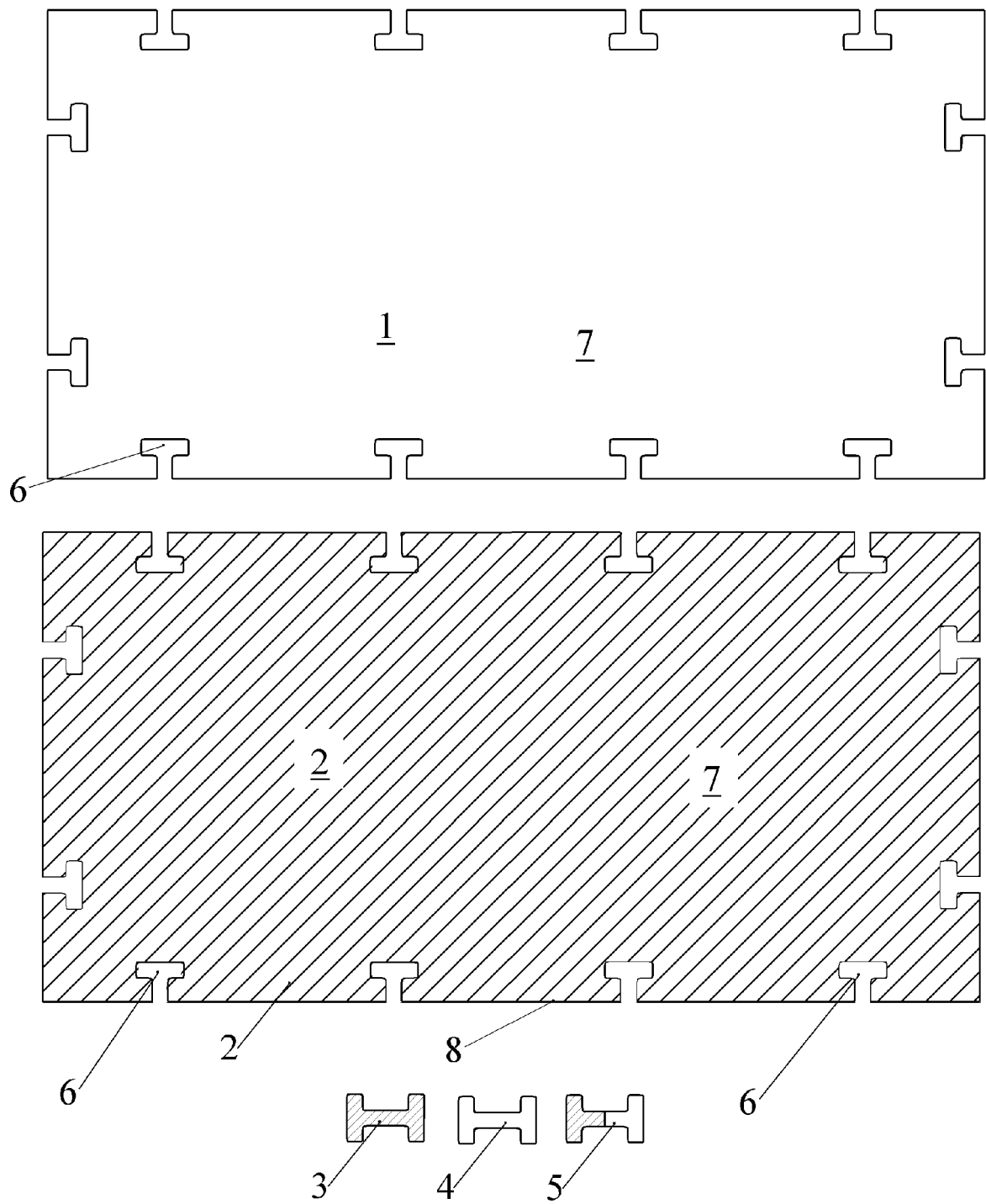


Fig. 1

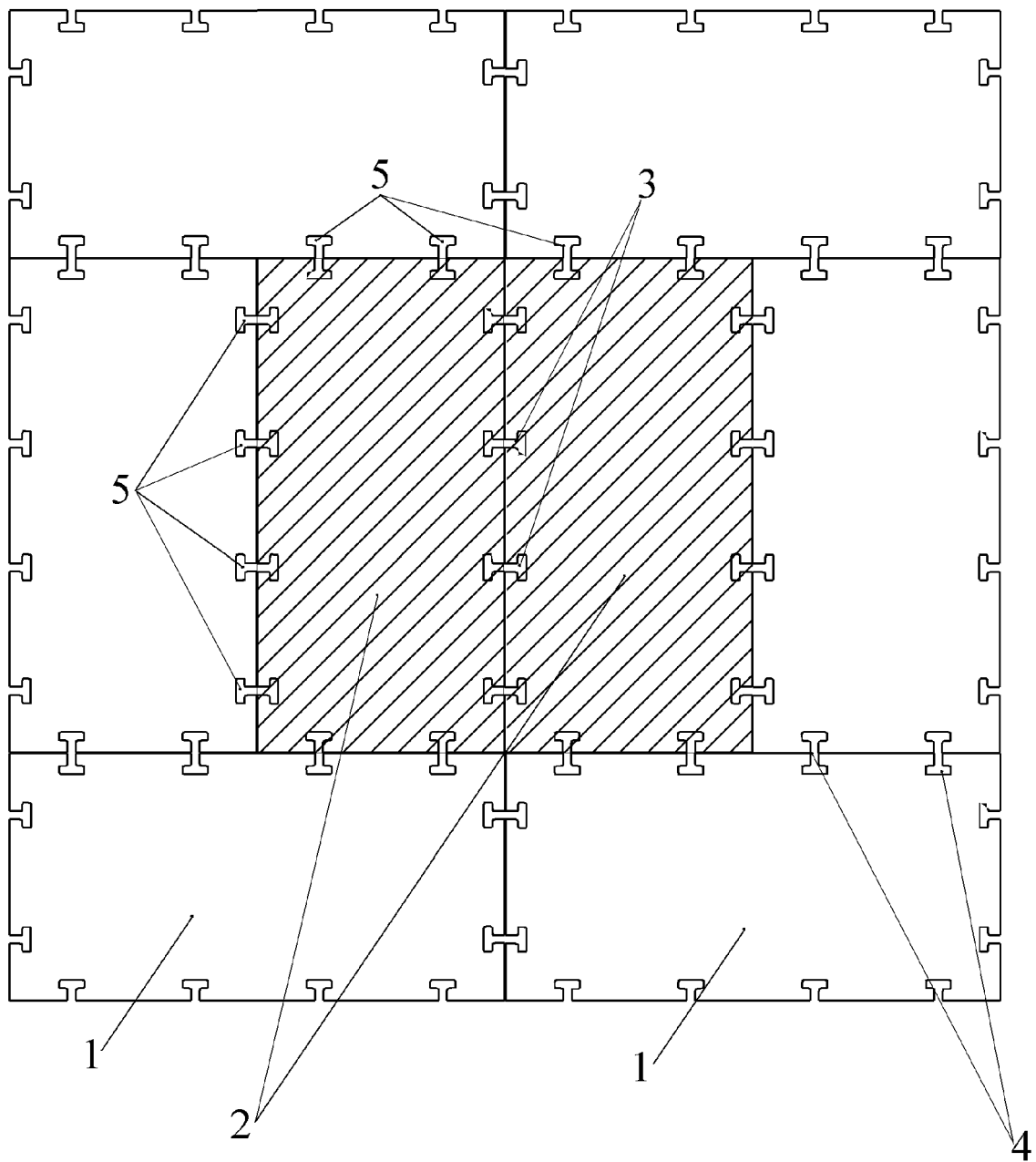


Fig. 2



EUROPEAN SEARCH REPORT

 Application Number
EP 15 17 2379

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Y	* paragraph [0008] - paragraph [0014];	4,5,8	
A	figure 6 *	6,7,9-11	

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A	* page 4, line 3 - page 4, line 14;	1-3,6-11	
	figures 1,2 *		
	* page 9, line 26 - page 10, line 3 *		
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A	WO 2007/039593 A1 (TARKETT SAS [FR]; BATHELIER XAVIER [FR]) 12 April 2007 (2007-04-12)	1-11	
	* page 11, line 28 - page 12, line 21; figure 3 *		

The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			A63C
Place of search		Date of completion of the search	Examiner
Munich		13 August 2015	Murer, Michael
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone		T : theory or principle underlying the invention	
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P : intermediate document		& : member of the same patent family, corresponding document	

EPO FORM 1503 03.82 (P04C01)

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

EP 15 17 2379

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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- Sport-Thieme, Tatami- und Kampfsportmatten richtig verlegen. Sport-Thieme, 17 June 2014 **[0003]**