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(54) **A DAMPING ARRANGEMENT AT A BLADE FOR A FLOORBALL STICK**

AN EINER KLINGE ANGEORDENETE DÄMPFUNGSEINRICHTUNG FÜR EINEN AM BODEN ZU SPIELENDEN BALLSCHLÄGER

SYSTEME D'AMORTISSEUR SUR LA LAME D'UNE CROSSE POUR JEU DE BALLE AU SOL

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(56) References cited:
FI-B- 96 486
GB-A- 2 282 073
SE-B- 461 253
SE-C- 504 137

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Description

[0001] The present invention relates to a floorball stick blade in accordance with the preamble of Claim 1.

[0002] Present-day floorball stick blades, or indoor bandy club blades, either have a force damping property or lack such a property, which presents a problem.

[0003] There are known stick blades that include a force damping material on the shooting zone of the blade surface. A stick with such a blade is disclosed in document GB-A-2 282 073. The damping effect of this material is desirable when receiving a pass or when passing the ball, but is more negative when wishing to hit a hard shot or when shooting at a goal for instance, e.g. when firing a so-called hockey shot.

[0004] Although blade surfaces that lack damping means are able to produce a hard shot, they make receiving of a ball and controlled passing of a ball difficult to achieve.

[0005] Stick blades that are made of a material that has relatively high internal damping, so-called softly dampened blades, and that lack special damping means on the blade surface have been a good compromise between the two aforesaid extremities.

[0006] In view of this, most of the stick blades produced today have different forms of compromise between a dampened and a non-dampened blade.

[0007] In order to solve the problem created by these compromises, it would be desirable to create a stick blade that is dampened when receiving and passing a ball and which is non-dampened on shooting occasions.

[0008] The object of the present invention is to provide a solution to the aforesaid problems and to provide a floorball stick blade that exhibits effective damping properties when receiving and passing a ball and which also includes a non-dampened ball shooting surface which enables non-dampened hard shots to be fired (hockey shots). This object is achieved with a blade defined in the characterizing clause of the following Claims.

[0009] The aforesaid problem is solved by placing a damping element only on those zones of the blade that contact the ball on ball receiving and ball passing occasions, and to allow those surfaces of the blade used to "fire" the ball to remain undampened.

[0010] The invention will now be described in more detail with reference to exemplifying embodiments thereof and also with reference to the accompanying drawings, in which **Fig. 1** is a cross-sectional view of a first embodiment of an inventive floorball stick blade; **Fig. 2** is a cross-sectional view of a second embodiment of a floorball stick blade; **Fig. 3** is a cross-sectional view of a third embodiment of a floorball stick blade; and **Figs. 4** and **5** illustrate how the inventive blade functions in a dampened and non-dampened mode respectively.

[0011] The blade 2 shown in Fig. 1 includes a damping element 1 which is comprised of a fixed part of the blade and is made of the same material as the main part of said blade 2. The damping element 1 forms a damping construction and is conveniently placed on the blade 2 within a region of one ball radius (D/2) above the bottom edge of the blade 2, and upwards. The non-dampened shot zone on the blade 2 is spaced one ball radius (D/2) above the bottom edge of the blade and preferably at least 10 mm in a downward direction. The damping element or elements 1 is/are placed on the forehand side of the blade 2.

[0012] The blade 2 shown in Fig. 2 includes a damping element 1 that is placed within the region or area described with reference to Fig. 1, and the damping element, or elements, is/are exchangeable and/or are comprised of a highly damping material that differs from the surface material of the remainder of the blade 2. A non-dampened shot zone is located one ball radius (D/2) above the bottom edge of the blade and preferably at least 10 mm in a direction downwards. The damping element or elements 1 is/are placed on the forehand side of the blade 2.

[0013] Fig. 3 shows a stick blade 2 that includes a damping element 1, 3 in the aforesaid region on both the forehand side and the backhand side of the blade. A non-dampened shot zone is located at a height of one ball radius (D/2) above the bottom edge of the blade, and preferably at least 10 mm downwards on both the forehand and the backhand side.

[0014] Figs. 4 and 5 illustrate how the dampened zone/zones and the non-dampened zone/zones of the blade 2 function in respect of whether the angle a is slightly smaller or greater than 90 degrees.

[0015] If desired, the inventive damping element may be produced from a combination of the blade material and a different material, with or without damping constructions irrespective of its location on the forehand and/or backhand side.

[0016] It will be understood that the material from which the blade and the damping element or elements are made can vary. For instance, both blade and damping element may be made of a plastic material, although this is only mentioned by way of example.

[0017] The inventive damping device may be provided on the forehand side and/or the backhand side of the blade. The damping element or elements is/are either provided on part of the length extension of the blade or along the whole of said extension. The damping element may be continuous or intermittent.

[0018] The invention is mainly applied with floorball sticks.

[0019] It will be understood that the invention is not restricted to the illustrated and described embodiments and that changes and modifications can be made within the scope of the following Claims.

Claims

1. A floorball stick blade arrangement (2) for improving the playing properties of the stick with regard to re-

ceiving a pass and passing and shooting a ball, the blade (2) including a damping device in the form of a damping element (1, 3) on at least one side thereof; **characterized in that** the damping element is located within a region of the blade (2) that is located at a height above the bottom edge of the blade that exceeds one ball radius (R); and **in that** the blade (2) also includes a non-dampened shot zone that is located on a lower height level than the damping device (1, 3).

2. An arrangement according to Claim 1, **characterized in that** the damping element (1, 3) is located on the forehand and/or the backhand side of the blade (2).

3. An arrangement according to Claim 1 or 2, **characterized in that** the damping element (1, 3) is removable and/or exchangeable.

4. An arrangement according to any one of Claims 1-3, **characterized in that** the damping element (1, 3) is comprised of the same material as the remainder of the blade surface.

5. An arrangement according to any one of Claims 1-4, **characterized in that** the damping element (1, 3) is comprised of a material that differs from the material of the remainder of the blade surface.

6. An arrangement according to any one of Claims 1-5, **characterized in that** the damping element (1, 3) is comprised of the same material as the remainder of the blade surface in combination with another material or other materials.

7. An arrangement according to any one of Claims 1-6, **characterized in that** the damping element (1, 3) comprises a plurality of part-elements.

Patentansprüche

1. Unihockey-Schlägerschaufelanordnung (2) zum Verbessern der Spieleigenschaften des Schlägers in Bezug auf das Annehmen eines Passes und Passen und Schießen eines Balls, wobei die Schaufel (2) eine Dämpfervorrichtung im Form eines Dämpferelements (1, 3) auf zumindest einer ihrer Seiten enthält, **dadurch gekennzeichnet, dass** das Dämpferelement in einem Bereich der Schaufel (2) lokalisiert ist, die auf einer Höhe über der Unterkante der Schaufel lokalisiert ist, welche einen Ball-Radius (R) übersteigt; und dadurch, dass die Schaufel (2) auch eine ungedämpfte Schusszone enthält, die auf einem niedrigeren Niveau als die Dämpfervorrichtung lokalisiert ist.

2. Anordnung gemäß Anspruch 1, **dadurch gekennzeichnet, dass** das Dämpferelement (1, 3) auf der Vorhand- und/oder Rückhandseite der Schaufel (2) lokalisiert ist.

3. Anordnung gemäß Anspruch 1, **dadurch gekennzeichnet, dass** das Dämpferelement (1, 3) abnehmbar und/oder austauschbar ist.

4. Anordnung gemäß einem der Ansprüche 1 bis 3, **dadurch gekennzeichnet, dass** das Dämpferelement (1, 3) aus demselben Material besteht wie der Rest der Schaufeloberfläche.

5. Anordnung gemäß einem der Ansprüche 1 bis 4, **dadurch gekennzeichnet, dass** das Dämpferelement (1, 3) aus einem Material besteht, das sich vom Material des Rests der Schaufeloberfläche unterscheidet.

6. Anordnung gemäß einem der Ansprüche 1 bis 5, **dadurch gekennzeichnet, dass** das Dämpferelement (1, 3) aus demselben Material besteht wie der Rest der Schaufeloberfläche, in Kombination mit einem anderen Material oder anderen Materialien.

7. Anordnung gemäß einem der Ansprüche 1 bis 6, **dadurch gekennzeichnet, dass** das Dämpferelement (1, 3) eine Mehrzahl von Teilelementen umfasst.

Revendications

1. Arrangement de palette (2) pour crosse pour jeu de balle au sol destiné à améliorer les caractéristiques de jeu de la crosse concernant la réception d'une passe et les passes et les lancers de balle, la palette (2) incluant un dispositif d'amortissement ayant la forme d'un élément d'amortissement (1, 3) sur au moins un de ses côtés ; **caractérisé en ce que** l'élément d'amortissement est situé dans une zone de la palette (2) qui se trouve à une hauteur supérieure au bord inférieur de la palette qui dépasse un rayon (R) de balle ; et **en ce que** la palette (2) comprend également une zone de tir non amortie qui est située à un niveau de hauteur inférieur à celui du dispositif d'amortissement (1, 3).

2. Procédé selon la revendication 1, **caractérisé en ce que** l'élément d'amortissement (1, 3) est situé sur le côté du coup droit et/ou sur le côté du revers de la palette (2).

3. Arrangement selon la revendication 1 ou 2, **caractérisé en ce que** l'élément d'amortissement (1, 3) est amovible et/ou échangeable.

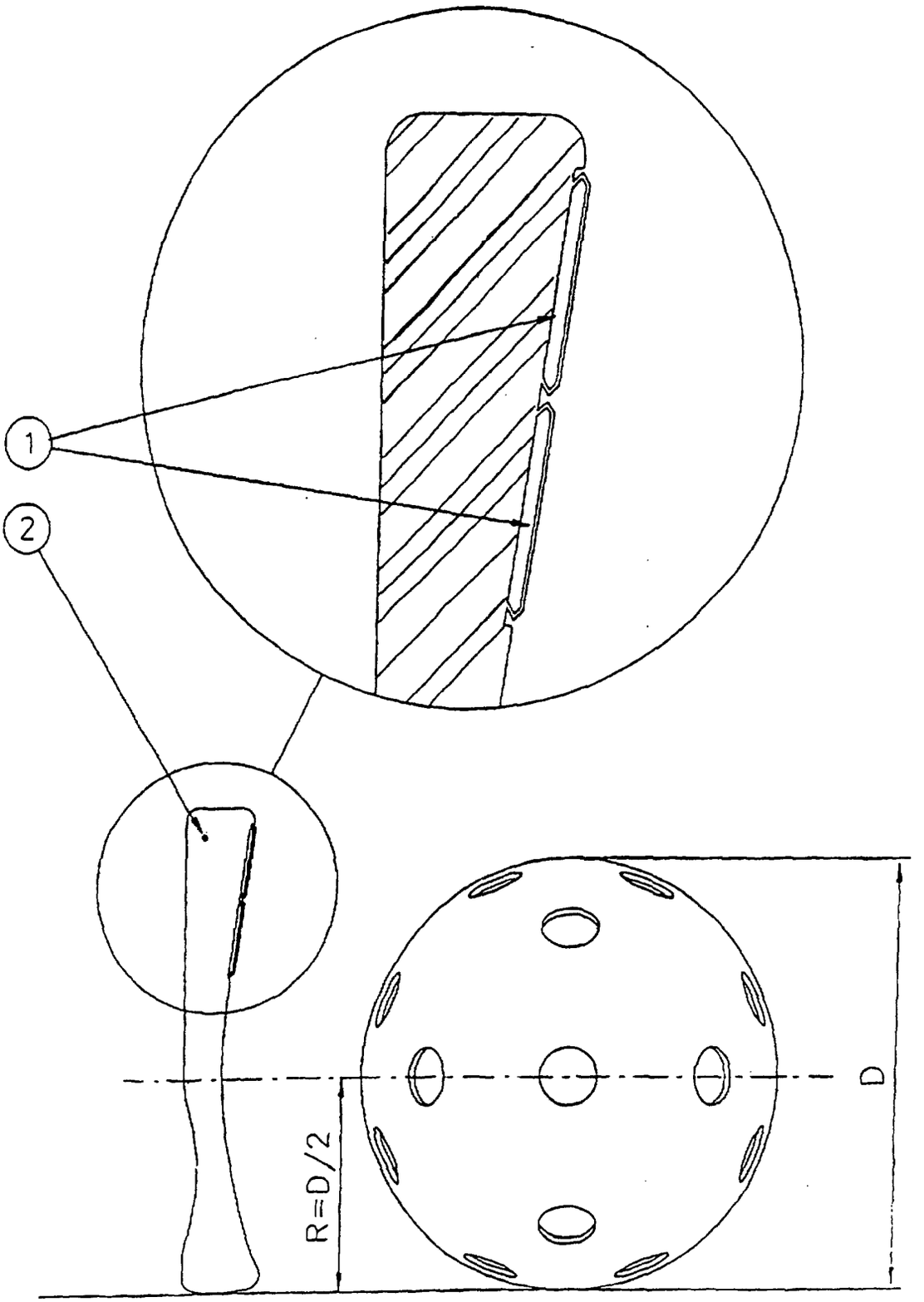
4. Arrangement selon l'une quelconque des revendications 1 à 3, **caractérisé en ce que** l'élément d'amortissement (1, 3) est composé de la même matière que le reste de la surface de la palette.

5. Arrangement selon l'une quelconque des revendications 1 à 4, **caractérisé en ce que** l'élément d'amortissement (1, 3) est composé d'une matière qui diffère de celle constituant le reste de la surface de la palette.

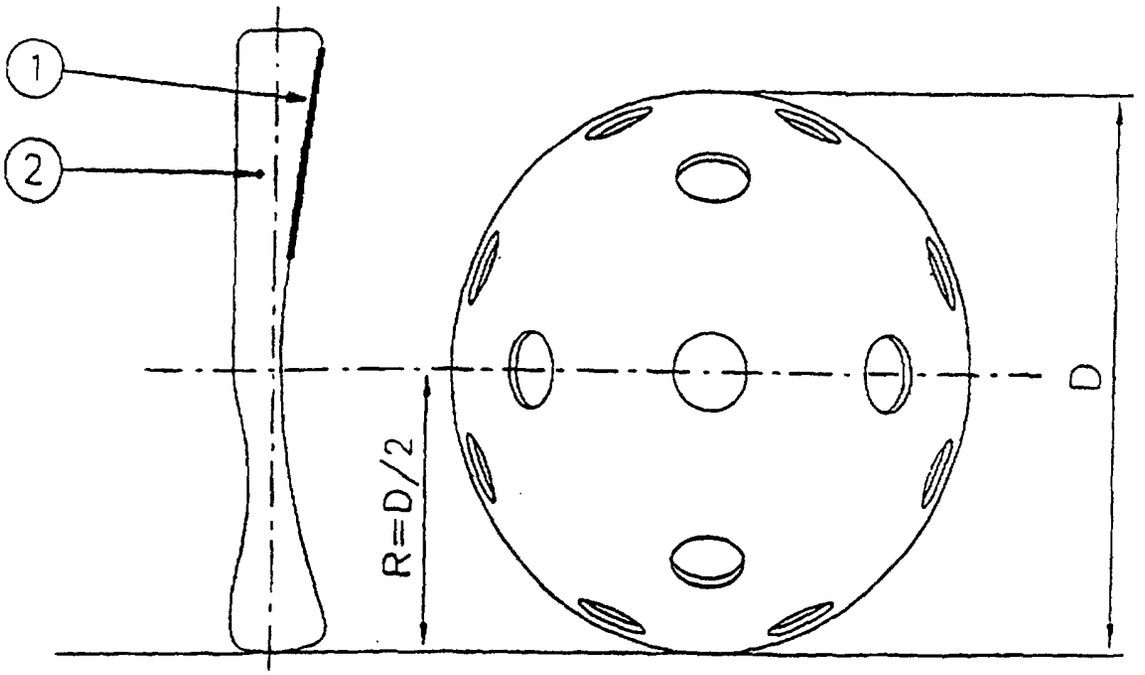
6. Arrangement selon l'une quelconque des revendications 1 à 5, **caractérisé en ce que** l'élément d'amortissement (1, 3) est composé de la même matière que le reste de la surface de la palette en combinaison avec une ou plusieurs autres matières.

7. Arrangement selon l'une quelconque des revendications 1 à 6, **caractérisé en ce que** l'élément d'amortissement (1, 3) comprend une pluralité d'éléments partiels.

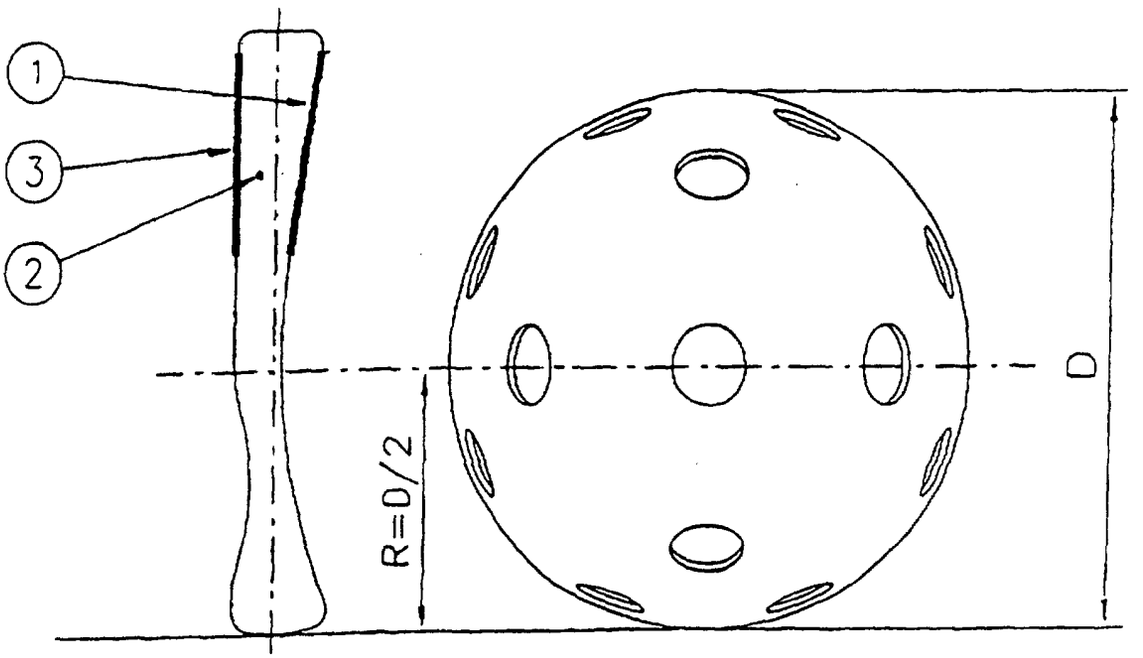
Figur 1



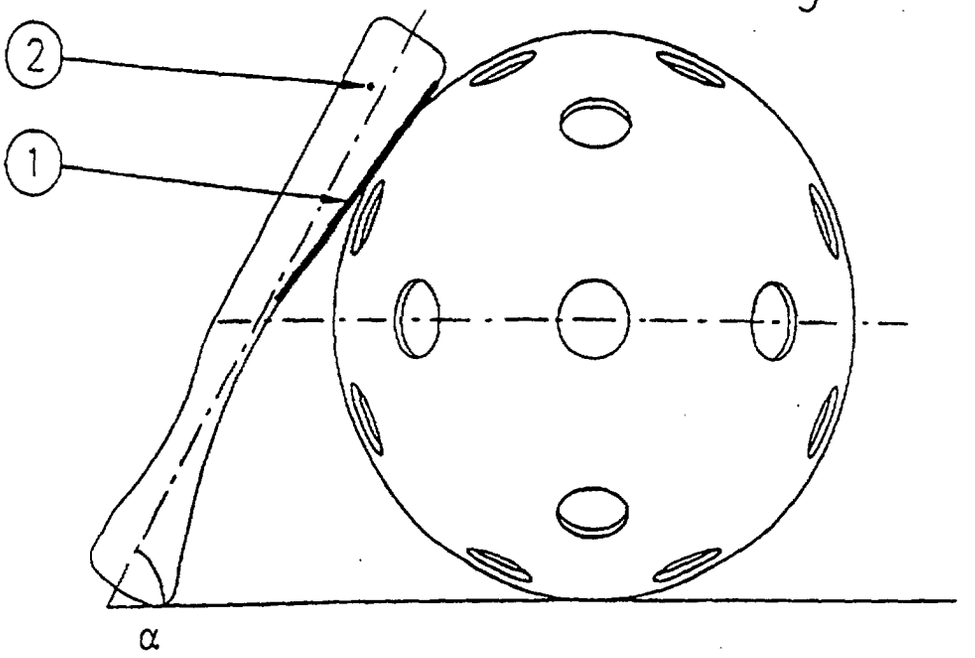
Figur 2



Figur 3



Figur 4



Figur 5