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(54) **Field hockey stick having a separator element**

(57) The present invention relates to the hockey stick (120) or similar stick, with a grip component (A), a handle component (B) and a head component (C) whereby the grip component comprises a first and second grip portion separated by a separator element (10,20,30), whereby the diameter of the separator element (d3) is larger than the diameter of the first (d2) and second (d4) grip portion. An object of the present invention is the production of a hockey stick or similar stick with which the playing of hockey is encouraged, in particular for people who are playing hockey for the first time, in particular children, for example children of between 4 and 7 years of age.

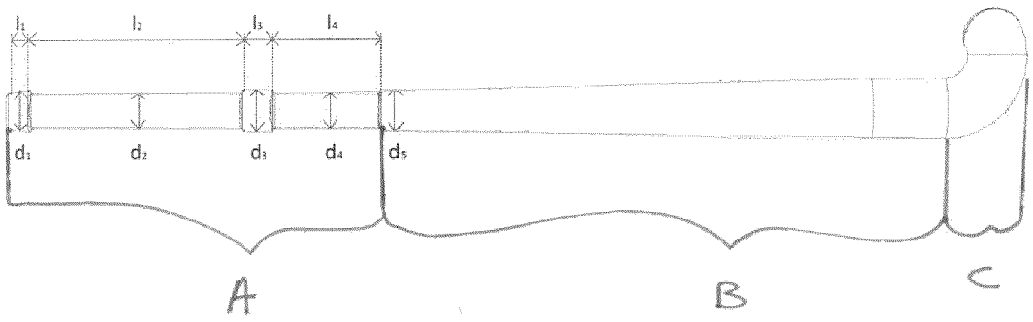

Fig. 1

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Description

[0001] The present invention relates to a hockey stick or similar stick, with a grip component, a handle component and a head component.

[0002] Similar hockey sticks are known, for example from the Dutch publications NL 9500054 and 1009095 and, amongst others, the American patents 7,556,573 and 5,603,498.

[0003] Hockey is a sport played around the world. The most important attribute of a hockey player is the stick, which is used in order to manipulate the (hockey) ball. Hockey is played outside on a field, often an artificial grass field, and is also sometimes known as field hockey or grass hockey in order to prevent confusion with ice hockey. Hockey might also be played inside, in which case hockey is known as indoor hockey.

[0004] The stick is used in order to control the ball. The stick has a rounded side and a flat side and is often made of wood and/or plastic, for example glass fibre, polyfibre, aramid or carbon, or combinations thereof. The stick must be able to fit through a ring with an internal diameter of 5.10 cm. The curve in the stick, that is the variation which the stick may have in its length, and above all desirable is for so-called dragging, is also limited by certain restrictions according to hockey rules. The shape of the hook or curl, that is the head component with which the ball is contacted, can have many different (rounded) forms, for example an L form, a quarter circle, a half circle (semi circle) and even a U form. The leg arising from the said U form has to, according to the rules, as measured from the base, have a maximal distance of no more than 10 cm. The hockey stick has according to the rules a rounded side on the right hand side and a flat side on the left hand side for a stick made for a right handed person.

[0005] Hockey is a sport which requires flexible and dexterous work with the hockey stick. Learning how to play hockey starts at a young age and it is therefore of utmost importance that interested young children learn to have a good stance. A good stance increases the pleasure derived from playing hockey and stimulates and also facilitates the learning of different types of playing including so-called dribbling with the hockey ball.

[0006] An object of the present invention is to provide a hockey stick or similar stick with which the requirements to play hockey are met, in particular for people who encounter hockey for the first time, in particular children of 4-7 years of age.

[0007] Another object of the invention is to provide a hockey stick or similar stick, whereby the correct positioning of both hands of the player is intended.

[0008] Another object of the invention is the preparation of a hockey stick or similar stick with which dribbling is facilitated.

[0009] The hockey stick or similar stick with a grip component, a handle component and a head component as described in the present application is characterised by a grip component that is divided into a first and second grip portion by a separator element, wherein the diameter of the separator element is larger than the diameter of the first and second grip portion.

[0010] By applying such a construction of a grip component, in particular dividing the grip component in a first grip portion, a separator element and a second grip portion, one or more of the above named aims are met. The presence of the first and second grip portions gives the user of the hockey stick the possibility to place the hands at the correct position of the grip component. The correct position of the hands on the hockey stick for the left as well as the right hand is necessary to insure correct wielding of the hockey stick so that the player can easily manoeuvre the stick. For a right handed version of the hockey stick according to the present invention, the right hand is placed on the grip portion neighbouring the handle component, with the left hand on the other grip portion. For a left handed version of the hockey stick according to the invention the position of both hands is inversed. It should be noted here that the present invention in no respect is limited to a left handed or right handed version of the hockey stick. In the present invention the first grip portion, the separator element and the second grip portion are in line with eachother.

[0011] According to a preferred embodiment of the present hockey stick, the diameter of the first grip portion is in agreement with the diameter of the second grip portion. The phrase "in agreement with" is understood to mean a situation wherein the diameter of the first grip portion differs from the diameter of the second grip portion by at the most 10%. In practice a similar diameter of both the first and second grip portions is aimed to be made by application of tape wrapped around the grip component, and should possible deviations in the manufacturing process occur, the diameters may in some respect vary. The application of (as close as possible) identical diameters for both grip portions is desirable from an ergonomic point of view.

[0012] Another embodiment of the present hockey stick relates to the position of the separator element, which separator element is preferably situated in the middle of the grip component. Such a construction makes the wielding and picking up of the hockey stick easier, particularly when the ball is played.

[0013] In a particular embodiment, the position of the separator element on the grip component is preferably situated so that the length over which the first grip portion extends, is larger than the length over which the second grip portion extends over the grip component. Here also it is noted that such positioning of the separator element has been shown to be promote playing hockey.

[0014] It is also desired that the length of the separator element, that extends over the grip component, is shorter than

the length over which the first grip portion and the second grip portion extend over the grip component. Such positioning of the separator element is desirable with respect to the correct positioning of both hands on the grip component.

[0015] In another embodiment the preferred diameter of the separator element which extends over the length of the grip component, is substantially constant. Such a uniform diameter is desirable from a production point of view, and is also particularly desirable with respect to the mechanical stability of the hockey stick.

[0016] According to similar considerations it is desirable that the diameter of the first grip portion over the length over which the first grip portion extends over the grip component is substantially the same. A similar preference is also valid for the diameter of the second grip portion over the length over which the second grip portion extends over the grip component, is substantially the same.

[0017] Above all the position of the grip component is provided in a preferred embodiment wherein at the tip of the grip component neighbouring the end of the first grip portion, an end element is located, whereby the diameter of the said end element is larger than the diameter of the first grip portion neighbouring said end element. The above-mentioned description is valid for a right handed hockey stick. For a left handed hockey stick is the position of the left and right hand is reversed.

[0018] Such an end element is preferably constructed such that the length over which the end element extends is smaller than the length over which the first and second grip portions extend.

[0019] From the view point of placing the hands of the player at the correct and desired position on the grip component it is desirable that the first grip portion is provided with markings which indicate the position of the hands. When the player's hand is therefore brought into contact with the marked position, then the player adopts an ergonomic position, in particular with respect to the usability of the hockey stick by the player.

[0020] Following a similar reasoning it is also an advantage that the second grip portion is also provided with markings indicating the position of the player's hands.

[0021] The above named markings are implemented such that the markings show the correct positioning in terms of a double V grip. The V grip relates to the positioning of the left hand at the uppermost end of the hockey stick whereby the V between the thumb and index finger are opposite the bend in the hockey stick. The back of the hand points to the left and all fingers on the hockey stick (also thumb and index finger) whereby the right hand is separated from the left hand by the above-mentioned separator element. The desired V between the thumb and index finger is located opposite the bend on the hockey stick whereby the back of the right hand points towards the right and also all fingers are placed on the hockey stick. The said grip is above all used for a right handed version of the hockey stick and is substantially used for the long hit. For a left handed hockey stick the position of both hands is reversed.

[0022] A possible embodiment of such markings includes markings applied to the grip component in a helix format, in particular the helix consisting of at least two different types of print comprising tape. Hereby is meant tapes with different colours, highlightings, stripes, or surfaces but also prints such in the form of cartoons, characters or adverts. The said markings are preferably not present on the separator element. In a particular embodiment the markings are also found on the end element.

[0023] According to another embodiment of the present hockey stick it is possible to manufacture a hockey stick wherein the grip portion bordering the head component of the hockey stick is provided with a rotatable element, which element encompasses at least one section of the said grip portion and is positioned around the respective grip component. Therefore "dribbling", also known as "Indian dribbling" can be simply and objectively carried out because during the dribbling the hockey stick is turned repeatedly left and right, in the embodiment of a right handed hockey stick, the left hand is placed on the other, not rotatable grip portion and which thus facilitates the rotation of the hockey stick, and the right hand is held fast on the rotatable element. The rotation of the left hand provides for the rotation of the hockey stick, whereby the right hand which resides on the rotatable element remains in a fixed position, in such a way that the hockey stick is free to rotate by virtue of the rotatable element. In other words, the right hand encloses the rotatable element, whereby the rotatable element is free to rotate around the hockey stick, whilst maintaining a fixed position of the right hand on the rotatable element, wherein said rotation is produced by rotating the left hand. Although a right handed version of a hockey stick is given here as an example, a similar rotatable element is also suitable for a left handed version of a hockey stick. Such a rotatable separator element can be summarised as two separate elements which enable rotation of the hockey stick.

[0024] From the view point of running with the stick and playing of the ball, whereby the (hockey) ball remains close to the hockey stick and in such a way that the ball cannot "bounce away", the head component is preferably provided with a hollow recess for maintaining contact with the (hockey) ball.

[0025] The present invention show now the explained using a number of Figures wherein the Figures describe nearly a number of embodiments and are not meant as limiting.

Figure 1 shows a hockey stick according to the present invention.
Figure 2 shows a number of embodiments of a rotatable element for use on a hockey stick.
Figure 3 shows another embodiment of a rotatable element for use on a hockey stick.

Figure 4 shows the embodiment according to Figure 3 when mounted on a hockey stick.
Figure 5 shows a hockey stick provided with a recess in the head component.

[0026] In the attached Figure 1 a hockey stick is schematically represented. The grip component A includes a first grip portion provided with a length l2 and diameter d2, a second grip portion provided with a length l4 and a diameter d4, and a separator element provided with a length l3 and diameter d3. Neighbouring the first grip portion is found an end element provided with a length l1 and a diameter d1. The diameter of the handle component B is provided with diameter d5. The grip component A includes, according to the embodiment of Figure 1, an end element, a first grip portion, a separator element and a second grip portion. The handle component B forms, together with the head component C and the grip component A, the hockey stick.

[0027] Figure 2 shows a rotatable element 10, 20, 30 in a number of different embodiments. Rotatable element 10, 20, 30 is suitable to be positioned on the grip component A of the hockey stick. In particular such a rotatable element is positioned on the grip portion neighbouring the handle component. Rotatable element 10, 20, 30 is preferably removable and in such an embodiment can be simply removed or added to the hockey stick. The said removable capability of the rotatable element is desirable from a training point of view. The present rotatable element is therefore, in particular, used to encourage "dribbling", also known as "indian dribbling", in a simple and objective way, also during running with the hockey ball, when the hockey stick is repeatedly turned left and right by rotating the stick with the hands. When the exercise of "dribbling" is finished, then the rotatable element can be removed easily from the hockey stick. Rotatable element 10 includes a tube 11 comprising two substantially identical half halves which are placed on grip component A. Tube 11 is surrounded by a ring part 12 comprising two separate elements, whereby both ring parts 12 are held together by for example a clamping connection, including pins 14 and recesses 13. The clamping connection can also be provided by teeth 16 and indentations 17, or by a coupling 15. Rotatable element 10, 20, 30 can be used in certain embodiments in which no use of markings on the grip component is made.

[0028] For a hockey stick with a length of for example 21 ", 24" and 27" the values for the corresponding diameters and lengths are shown in Tables 1 and 2 below. The said values are principally representative and may vary by at most 10% with respect to the value given. The values given in Tables 1 and 2 relate to the embodiment described in Figure 1.

[0029] The present hockey stick can be made out of materials, commonly used to make hockey sticks or combinations thereof.

Table 1, Overview of lengths.

Stick/Length	l1	l2	l3	l4
21"	15,00	125,00	5,00	75,00
24"	15,00	132,50	12,50	75,00
27"	15,00	140,00	20,00	75,00

Table 2, Overview of diameters.

Stick/Diameter	d1	d2	d3	d4	d5
21"	27,00	23,00	27,00	23,00	27,00
24"	27,00	23,00	27,00	23,00	27,00
27"	27,00	23,00	27,00	23,00	27,00

[0030] Figure 3 shows another embodiment of a rotatable element which can be used on a hockey stick 120, comprising a grip portion 110, a separator element 80, a grip portion 100 and an end element 70. The handle component is described by reference number 90 whereby the head component is not shown due to the schematic nature of the figure. The rotatable element includes a ring part 50 and the ring part 40. Both ring parts 40, 50 are placed on the grip portion 110 such that the grip element 110 is enclosed and whereby ring part 40 and ring part 50 are in removable form. The grip portion 110 enclosed by ring parts 40 and 50, can further be enclosed by head element 60 by said positioning as shown in Figure 4. Although head element 60 in Figure 4 is shown as an integral element, it is also possible that head element 60 is composed of two separated halves which couple together to form coupled head element 60. Such an embodiment is desirable in order to make fixing and removing of the rotatable element easier.

[0031] The rotatable element as described in the present invention is for example made out of plastic material, for example obtained by an injection moulding method. In order to obtain a better grip on the rotatable element it is desirable

in certain embodiments to provide on the outer surface of the grip ribs, protrusions, grooves of or in some way rough surface. Also the rotatable element can be provided with markings in order to show the correct position of the hands, as described above.

[0032] Figure 4 shows an embodiment according to Figure 3 in a hockey stick whereby hockey stick 120 comprises a grip portion 100, a separator element 80, and an end component 70. The portion bordering the handle component 90 is enclosed by a head element 60. The special construction of head element 60 and both ring parts 40, 50 make it possible that for example the left hand is placed on grip portion 100 and the right hand on head element 60, such that hockey stick 120 can be moved in a sweeping manner by rotation of the left hand whereby the right hand on head element 60 does not rotate because the rotating hockey stick 120 is free to rotate within element 60, in particular as a result of the construction of ring parts 40, 50 and the positioning of the head element 60 thereover. Therefore, the previously described dribbling exercise can simply be carried out by positioning the left hand on grip portion 100 provides for rotation of hockey stick 120, and the right hand, which has been positioned on head element 60, does not rotate, but enables free rotation of the hockey stick 120 by virtue of the construction of the ring parts 40, 50 within head element 60.

[0033] Figure 5 shows a hockey stick 140 provided with a recess 150 in the head component 160. Recess 150 is positioned in the end of the head component 160 so that the hockey ball (not shown) is located in recess 150 and thus running with the hockey ball with said hockey stick 140 is made easier because the hockey ball, is, as it were "captured" by the recess 150. According to the prior art a common hockey stick has a curved and a flat side, whereby the flat side enables the "springing away" of the hockey ball. By the presence of recess 150 undesirable springing away of the hockey ball can be reduced to a minimum. The hockey stick 140 as shown in Figure 5 has, in a particular embodiment, also the above-described separator element, especially the above-described rotatable element.

Claims

1. Hockey stick or similar stick with a grip component, a handle component and a head component, **characterised in that** the grip component comprises a first and second grip portion separated by a separator element, whereby the diameter of the separator element is larger than the diameter of the first and second grip portion.

2. Hockey stick according to claim 1, **characterised in that** the diameter of the first grip portion in agreement with as the diameter of the second grip portion.

3. Hockey stick according to one or more of the above claims, **characterised in that** the separator element is located out of the middle of the grip component, in particular that the position of the separator element on the grip component is such that the length over which the first grip portion extends is larger than the length over which the second grip portion extends over the grip component.

4. Hockey stick according to one or more of the above claims, **characterised in that** the length of the separator element that extends over the grip component, is shorter than the length over which the first grip portion and the second grip portion extend over the grip component.

5. Hockey stick according to one or more of the above claims, **characterised in that** the diameter of the separator element, over the length whereover the separator element extends over the grip component, is practically constant.

6. Hockey stick according to one or more of the above claims, **characterised in that** the diameter of the first grip portion, over the length whereover the first grip portion extends over the grip component, is practically constant.

7. Hockey stick according to one or more of the above claims, **characterised in that** the diameter of the second grip portion, over the length whereover the second grip portion extends over the grip component, is practically constant.

8. Hockey stick according to one or more of the above claims, **characterised in that** an end element is found at the tip of the grip component neighbouring the end of the first grip portion, wherein the diameter of the said end element is larger than the diameter of the first grip portion neighbouring the said end element, in particular the length of the end element that extends over the grip component is shorter than the length over which the first and second grip portions extend over the grip component.

9. Hockey stick according to one or more of the above claims, **characterised in that** the first grip portion is provided with markings which show the position of the hands, in particular the positioning according to the double V grip, specifically that the markings are positioned around the grip component in a helix form, and in particular are comprised

of an at least two different prints comprising tape.

10. Hockey stick according to one or more of the above claims, **characterised in that** the second grip portion is provided with markings which show the position of the hands, in particular the positioning according to the double V grip, in particular that the markings which include a helix form are wound around the grip component, in particular comprised of an at least two different prints comprising tape.

11. Hockey stick according to one or more of claims 9 or 10, **characterised in that** the markings are not found on the separator element.

12. Hockey stick according to one or more of the above claims, **characterised in that** around the grip component a rotatable element is placable, which rotatable element is removable from the hockey stick, and in particular that the rotatable element is placed on the handle component neighbouring the grip portion.

13. Hockey stick according to according to claim 12, **characterised in that** the rotatable element is composed of two practically identical half tubes, whereby the tube is provided by at least two separate parts entailing fixable ring parts.

14. Hockey stick according to one or more of claims 12 or 13, **characterised in that** the rotatable element comprises two substantially similar ring parts, which ring parts are placed around the grip component, whereby the thus positioned ring parts are enclosable by a head element, whereby the ring parts and the head element enable rotation of the thus enclosed hockey stick.

15. Hockey stick according to one or more of the above claims, **characterised in that** the head component is provided with a hollow recess for contact with the (hockey) ball.

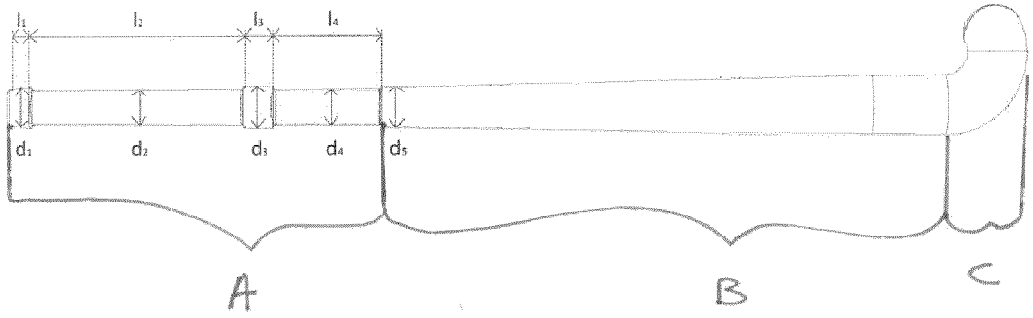

Fig. 1

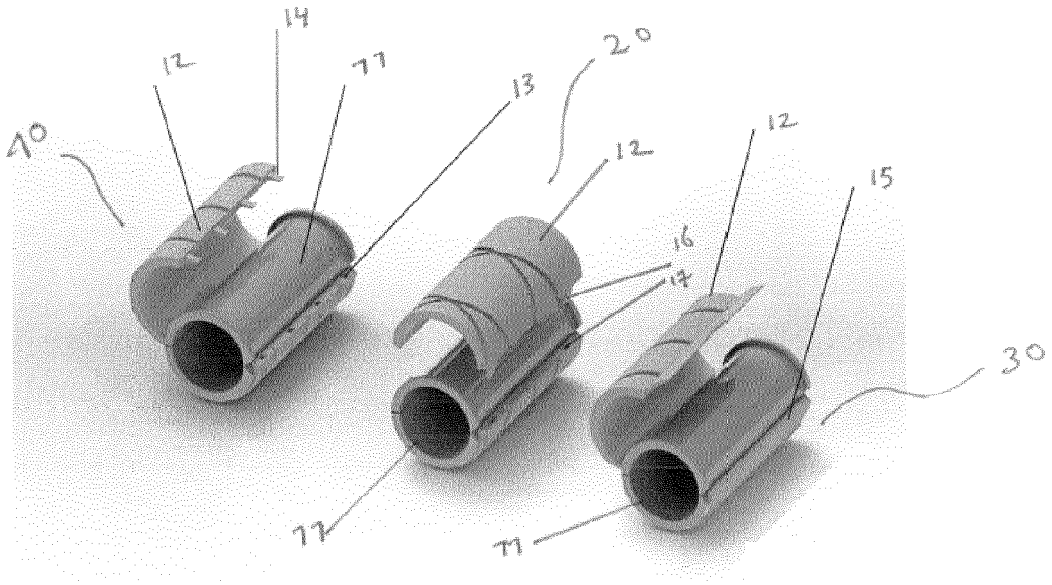

Fig. 2

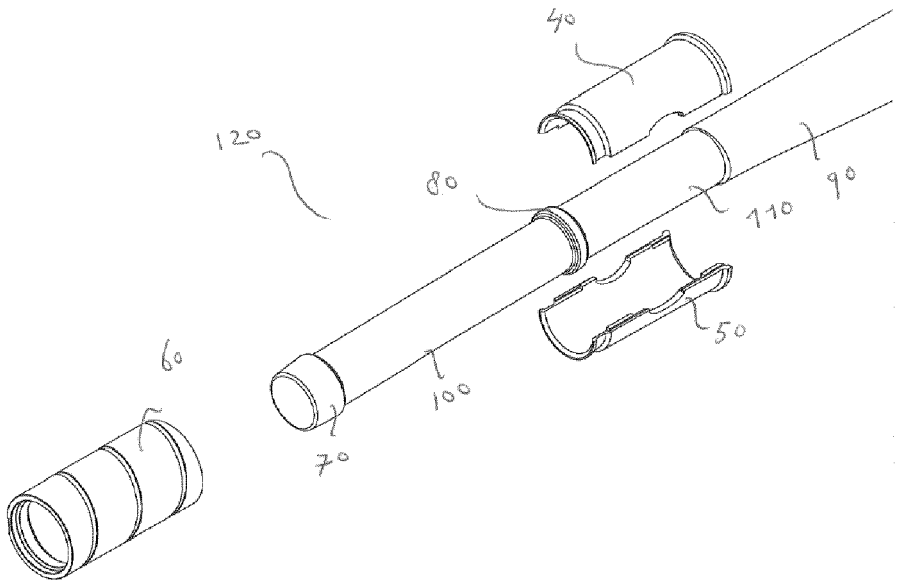

Fig. 3

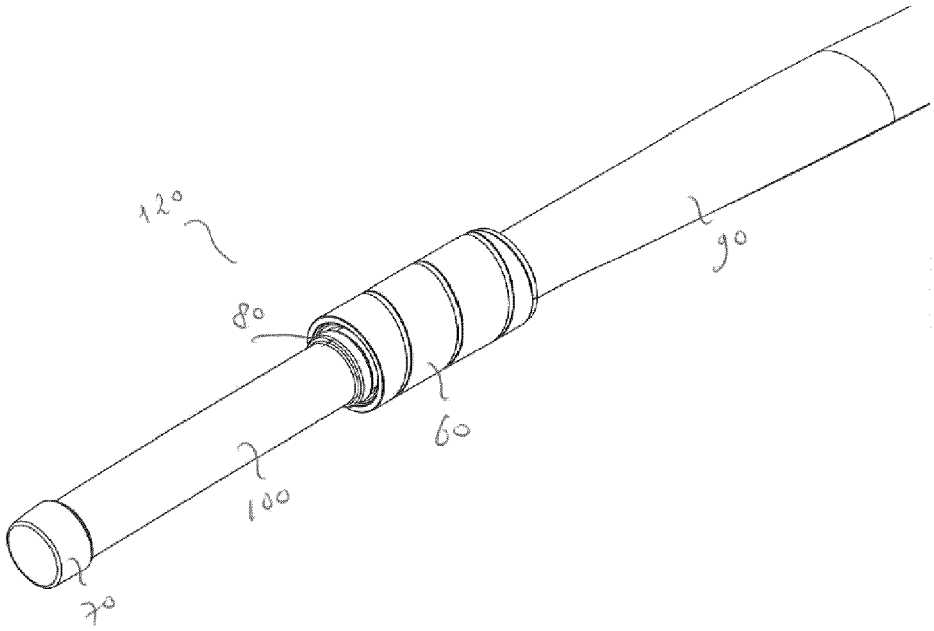

Fig. 4

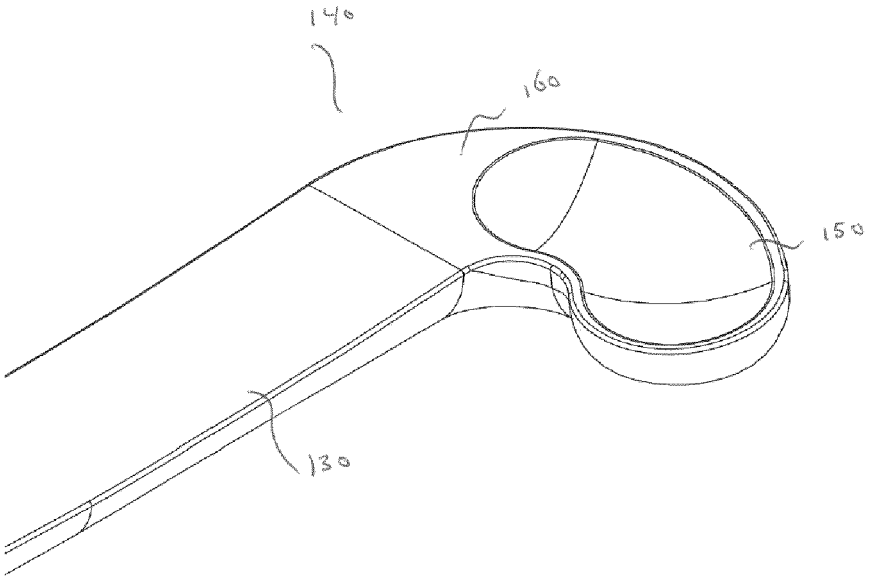

Fig. 5

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EUROPEAN SEARCH REPORT

Application Number
EP 12 19 2733

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 4 052 059 A (RIGSBY RANDLE L) 4 October 1977 (1977-10-04) * figure 2 *	1-8	INV. A63B59/12 A63B59/00
X	US 5 816 961 A (KRAEMER CLEMENT L [US]) 6 October 1998 (1998-10-06) * figures *	1-8	
X	FR 2 909 005 A1 (BABOLAT VS SA [FR]) 30 May 2008 (2008-05-30) * figures *	1	
X	US 4 361 326 A (KOKES IVAN J) 30 November 1982 (1982-11-30) * figures *	1	
X	US 7 220 195 B1 (CRONIN MAURICE F [US]) 22 May 2007 (2007-05-22) * figures *	1	

TECHNICAL FIELDS SEARCHED (IPC)

A63B

~~The present search report has been drawn up for all claims~~

Place of search	Date of completion of the search	Examiner
Munich	22 March 2013	Lundblad, Hampus

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

1

EPO FORM 1503 03.82 (P04C01)

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Application Number
EP 12 19 2733

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☒ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

1-8

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).

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LACK OF UNITY OF INVENTION
SHEET B

Application Number
EP 12 19 2733

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-8

   A hockey stick comprising a special position of a separator element and special dimension of the grip portions.

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2. claims: 9-11

   A hockey stick comprising special markings on the different grip portions.

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3. claims: 12-14

   A hockey stick comprising a rotatable element.

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4. claim: 15

   A hockey stick comprising a hollow recess in the head component.

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 12 19 2733

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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22-03-2013

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US 7220195 B1	22-05-2007	NONE	

EPO FORM P0459

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

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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- NL 1009095 **[0002]**
- WO 7556573 A **[0002]**
- WO 5603498 A **[0002]**