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(54) **A grip for a ball hitting device, ball hitting device comprising such a grip, notably a golf club**

(57) A grip for a ball hitting device, for example for a golf club, comprising a shaft from one end of which protrudes a head having a face for hitting a ball, for example a golf ball, said grip being destined to be fixed to the end of the shaft opposite the head, said grip comprising a web which is to be wrapped around the shaft in the shape of a tube, said web having an external face which is to

come in contact with the hand of the user of the ball hitting device, and an internal face that is to be fixated to said shaft, **characterized in that** hooks are protruding from said internal face, said hooks being destined to cooperate with loops or hooks protruding from said shaft so as to effect fixation of said grip to said shaft by a hook and loop or hook in hook self gripper or mechanical fastener.

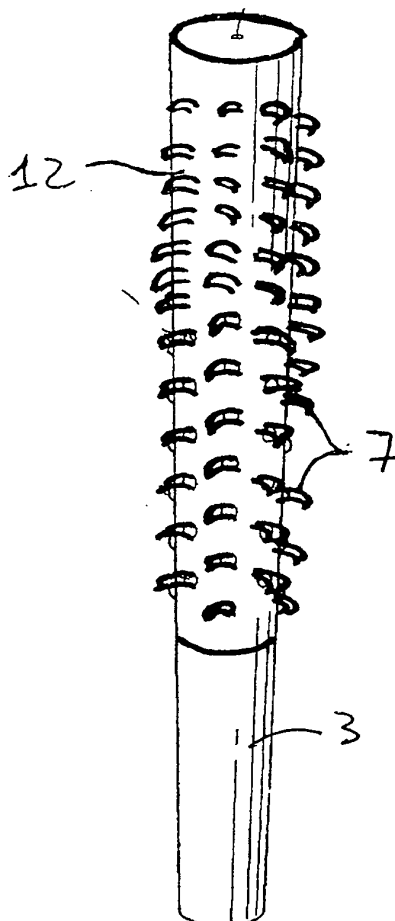


Fig. 3

Description

[0001] The present invention relates to a grip for holding a shaft, in particular the shaft of ball sport item, such as a golf club, a tennis racket, a hockey stick and so on. The present invention also relates to a ball sport item, notably a golf club, a tennis racket, a hockey stick, which incorporates such a grip.

[0002] For example, a golf club, comprising an head having a face that is configured to come in contact with the golf ball and a shaft extending from said head, comprises at the handling end of the club, or butt end of the club, ie the end of the shaft opposite to the head, a grip comprising a tube made of a softer material than the material of the shaft, such as leather, rubber, thermoplastic material, such as PE, PP, polyamides and so on. This tube is fixed by adhesive, notably glued, around the shaft of the golf club at the butt end thereof to help the golfer to hold the club more easily, and in particular helps against slippage of the club in the hands of the player when he hits the ball.

[0003] These prior art grips have the following drawbacks:

[0004] Firstly, under rainy playing condition, it can often happen that the adhesive loose its sticking properties and the tube grip starts sliding in rotation relatively to the shaft, and this impairs badly the capacity of the player to hold his club and therefore to hit the ball well.

[0005] Then, when the player wants to change the grip of the club, he needs to shear the tube away from the shaft, and the tube grip cannot be used anymore, and he must buy another tube grip for replacement, eventhough it the previous grip did totally wear out.

[0006] Furthermore, the prior art tube grip are not easy to change, and very often players need to go to the repair shop to have them replace. As a result, they tend not to change them up to the moment when the grip has wore out so much that the change cannot be postponed anymore, but this imply that the player has played with worn out grip for quite a long time, and this certainly had a negative impact on their play during that period.

[0007] The present invention aims to overcome among others these drawbacks. The present invention provides a grip which resists well to the rain and in particular which stays well fixated to the shaft under the rain. Furthermore, the grip of the invention is easy to change.

[0008] According to a first aspect of the invention, a grip is as defined in claim 1.

[0009] According to a second aspect of the invention, a grip is as defined in claim 2.

[0010] According to a third aspect of the invention, a grip is as defined in claim 4.

[0011] According to a second aspect of the invention, a grip is as defined in claim 5.

[0012] In one embodiment of the invention, the web is to be wrapped helicoidally around said shaft.

[0013] In another embodiment, said grip has the shape of a blind hole tube.

[0014] In a preferred embodiment, a slit extends from the opening of the blind hole tube toward the closed end of the tube, for example substantially up to said closed end.

5 **[0015]** Preferably, said blind hole tube is conically shaped, said opening being of a smaller dimension than the opposite end of the tube.

[0016] The present invention also relates to a ball hitting device, notably a golf club, comprising a shaft from 10 one end of which extends a head having a face for hitting a ball, and loops are protruding from the upper part of the shaft, said loops being destined to cooperate with hooks of a grip of the present invention.

15 **[0017]** The present invention also relates to a ball hitting device, notably a golf club, comprising a shaft from one end of which extends a head having a face for hitting a ball, and loops are protruding from the upper part of the shaft, said loops being penetrated by hooks of a grip of the present invention, so that said grip is mechanically 20 fixed to said shaft.

[0018] The present invention also relates to a ball hitting device, notably a golf club, comprising a shaft from one end of which extends a head having a face for hitting 25 a ball, and hooks are protruding from the upper part of the shaft, said hooks being destined to cooperate with loops or hooks of a grip of the present invention.

[0019] The present invention also relates to a ball hitting device, notably a golf club, comprising a shaft from one end of which extends a head having a face for hitting 30 a ball, and hooks are protruding from the upper part of the shaft, said hooks penetrating in loops of a grip of the second aspect of the present invention, so that said grip is mechanically fixed to said shaft.

[0020] The present invention also relates to a ball hitting device, notably a golf club, comprising a shaft from one end of which extends a head having a face for hitting 35 a ball, and hooks are protruding from the upper part of the shaft, said hooks hooking themselves with hooks of a grip of the first aspect of the present invention, so that said grip is mechanically fixed to said shaft.

[0021] Preferably, a looped non woven sheet or a looped knitted fabric or a looped woven fabric is fixed, for example with an adhesive, to the upper part of the shaft, the loops of said sheet or fabric being the loops 40 that are destined to cooperate with hooks of said grip.

[0022] In another preferred embodiment, a web with hooks protruding from said web is fixed around the upper part of said shaft, the hooks being the hooks that are 45 destined to cooperate with hooks or loops of said grip.

50 **[0023]** Exemplary embodiments are now described, in relation with the drawings, in which

Figure 1 represents a golf club comprising a grip of the invention;

Figure 2 represents a shaft of a golf club on which has been adhesively fixated a sheet of loops that are destined to cooperate with hooks protruding from a

grip of the invention;

Figure 3 represents a shaft of a golf club on which has been adhesively fixated a web with hooks that are destined to cooperate with loops or hooks protruding from a grip of the invention;

Figure 4 represents a first embodiment of a grip of the invention, that is destined to be wrapped around a shaft of a golf club;

Figure 5 represents a second embodiment of a grip of the invention that is destined to be wrapped around a shaft of a golf club;

Figure 6 represents another embodiment of a grip of the invention; and

Figure 7 represents another embodiment of a grip of the invention.

[0024] In figure 1 is represented a golf club 1 comprising a head 2 (this is the head of a so called iron club, but this could also be any other clubs such as a wood or a putter) and a shaft 3 extending from said head 2.

[0025] On the upper part of the shaft (the lower part being the head side), a grip 4 has been fitted.

[0026] The grip 4 has the shape of a tube, slightly conical, having an internal surface 5 destined to come in contact with the shaft for mutual fixation and an external surface 6 destined to come in contact with the hand of the player.

[0027] The grip 4 is in a usual material for grips, namely leather, rubber, felt and so on.

[0028] In a first possible embodiment of a club of the invention which is illustrated in figures 3 and 7, hooks 7 are protruding from said shaft 3 while loops 8 are protruding from said grip internal face 5. The grip is in the shape of a tube on the internal face 5 of which has been fixed for example by thermo bonding, ultrasonic bonding, adhesive lamination and analogous art a looped sheet 11 with loops 8. This looped sheet can for example be a looped non woven as recited in EP-A-1302582, a looped woven fabric as recited in US-A-4739635, a looped knitted fabric as recited in EP 0517275, EP-A-0284020, EP-A-0848938, EP-A-0694642 or US-A-4624116 or any other looped structure of these types.

[0029] On the upper end of the club, a web 12 with hooks 7, for example as recited in EP-A-0324577, have been fixated, for example by an adhesive. Then, the tube is wrapped around said web 12, so that fixation of the grip to the shaft is obtained. To help this wrapping, it is possible to provide for a longitudinal slit 13 that extends from the lower opening 14 toward the upper end 15 of the tube grip.

[0030] In a second possible embodiment of a club of the invention which is illustrated in figures 2 and 6, loops 17 are protruding from said shaft 3 while hooks 18 are

protruding from said grip internal face 5. The grip is in the shape of a tube on the internal face 5 of which has been fixed for example by thermo bonding, ultrasonic bonding, adhesive lamination and analogous art a hook web 21 with hooks 18. (This hook web can be as recited in EP-A-0324577).

[0031] On the upper end of the club, a looped sheet 22 with loops 17 (This looped sheet can for example be a a looped non woven as recited in EP-A-1302582, a looped woven fabric as recited in US-A-4739635, a looped knitted fabric as recited in EP 0517275, EP-A-0284020, EP-A-0848938, EP-A-0694642 or US-A-4624116 or any other looped structure of these types) have been fixated, for example by an adhesive. Then, the tube grip is wrapped around said sheet 22, so that fixation of the grip to the shaft is obtained. To help this wrapping, it is also possible to provide for a longitudinal slit 13 that extends from the lower opening 14 toward the upper end 15 of the tube grip. To help install the grip on the shaft, one firstly opens the slit and have the shaft come into the interior cavity of the grip, having the club coming to abut against the closed end of the grip, and then have the flaps on both sides of the slit to come in mutual contact along said slit to close the grip around the shaft and have therefore the grip positioned on the shaft, ready for play.

[0032] In a another possible embodiment of a club of the invention, as illustrated in figures 4 or 5, the grip can be in the shape of a web having hooks protruding from one face. The web is then wrapped, notably helicoidally, around said shaft, from which loops are protruding. The loops are in the shape of a looped sheet fixated, notably by glue around the shaft. The hooks can be made in one piece with the grip, and the grip can have one layer 100 in a material usual for golf grip, such as leather or rubber, and a layer constituted of a web with hooks fixated on one face of the said one layer. This embodiment corresponds to figure 4. Another embodiment illustrated in figure 5 consists in the inversion of the hooks and loops of the above mentionned embodiment, the grip being in the shape of a web having loops protruding thereof and destined to be wrapped, notably helicoidally around a shaft from which protrudes hooks. In this embodiment, the grip comprises a layer in a material usual for golf grip, such as leather or rubber, and a layer constituted of a looped sheet fixated on one face of the said one layer.

[0033] All the previous description can be used for describing other embodiments which are the exact reverse cases in which hooks and loops are being mutually replaced. In such a case, the web with hooks is being fixated, for example by thermo bonding, ultrasonic bonding, adhesive and so on on the internal face of the grip, while a looped sheet as define above is fixed on the shaft, notably by an adhesive, notably a double face adhesive tape.

[0034] It is also possible when fabricating the grip to obtain this grip directly with hooks protruding from its internal face.

[0035] In general, tube shaped grip are obtained from a band which is rolled on itself so that the opposite edges of the band come in mutual contact, so as to obtain a tube with two opposite lateral openings. Then the upper opening is being closed by a plug which is for example adhesively fixed to the upper part of the internal surface of the grip.

[0036] Appropriate dimensions of the hooks and loops are notably those used for the self grippers used for closing the belt of baby diapers or lower dimensions.

[0037] For example, the hooks can have an height comprised between 50 micrometers and 2 millimeters, preferably between 200 micrometers and 1000 micrometers . Their density can be choosed from 20 to 100 hooks per square centimeter.

[0038] In the present invention, hooks are considered as being any element capable of penetrating into a loop and to hook itself in it to obtain a mutual fixation at least in one direction, and this includes notably mushrooms, double hooks, harpoons, spears and so on.

Claims

1. A grip for a ball hitting device, for example for a golf club, comprising a shaft from one end of which protrudes a head having a face for hitting a ball, for example a golf ball, said grip being destined to be fixed to the end of the shaft opposite the head, said grip comprising a web which is to be wrapped around the shaft in the shape of a tube, said web having an external face which is to come in contact with the hand of the user of the ball hitting device, and an internal face that is to be fixated to said shaft, **characterized in that** hooks are protruding from said internal face, said hooks being destined to cooperate with loops or hooks protruding from said shaft so as to effect fixation of said grip to said shaft by a hook and loop or hook in hook self gripper or mechanical fastener.
2. A grip for a ball hitting device, for example for a golf club, comprising a shaft from one end of which protrudes a head having a face for hitting a ball, for example a golf ball, said grip being destined to be fixed to the end of the shaft opposite the head, said grip comprising a web which is to be wrapped around the shaft in the shape of a tube, said web having an external face which is to come in contact with the hand of the user of the ball hitting device, and an internal face that is to be fixated to said shaft, **characterized in that** loops are protruding from said internal face, said loops being destined to cooperate with hooks protruding from said shaft so as to effect fixation of said grip to said shaft by a hook and loop self gripper or mechanical fastener.
3. The grip of claim 1 or 2, **characterized in that** the web is to be wrapped helicoidally around said shaft.
4. A grip for a ball hitting device, for example for a golf club, comprising a shaft from one end of which protrudes a head having a face for hitting a ball, for example a golf ball, said grip being destined to be fixed to the end of the shaft opposite the head, said grip comprising a tube, said tube having an external face which is to come in contact with the hand of the user of the ball hitting device, and an internal face that is to be fixated to said shaft, **characterized in that** hooks are protruding from said internal face, said hooks being destined to cooperate with loops or hooks protruding from said shaft so as to effect fixation of said grip to said shaft by a hook and loop or hook in hook self gripper or mechanical fastener.
5. A grip for a ball hitting device, for example for a golf club, comprising a shaft from one end of which protrudes a head having a face for hitting a ball, for example a golf ball, said grip being destined to be fixed to the end of the shaft opposite the head, said grip comprising a tube, said tube having an external face which is to come in contact with the hand of the user of the ball hitting device, and an internal face that is to be fixated to said shaft, **characterized in that** loops are protruding from said internal face, said loops being destined to cooperate with hooks protruding from said shaft so as to effect fixation of said grip to said shaft by a hook and loop self gripper or mechanical fastener.
6. The grip of claim 4 or 5, **characterized in that** said grip has the shape of a blind hole tube.
7. The grip of claim 6, **characterized in that** a slit extends from the opening of the blind hole tube toward the closed end of the tube, for example substantially up to said closed end.
8. A ball hitting device, notably a golf club, comprising a shaft from one end of which extends a head having a face for hitting a ball, and loops are protruding from the upper part of the shaft, said loops being destined to cooperate with the hooks of a grip as defined in claims 1, 4 or 6 to 7 when depending from claim 4.
9. A ball hitting device, notably a golf club, comprising a shaft from one end of which extends a head having a face for hitting a ball, and loops are protruding from the upper part of the shaft, said loops being penetrated by hooks of a grip as defined in claim 1, 4 or 6 to 7 when depending from claim 4, so that said grip is mechanically fixed to said shaft.
10. A ball hitting device, notably a golf club, comprising a shaft from one end of which extends a head having a face for hitting a ball, and hooks are protruding

from the upper part of the shaft, said hooks being destined to cooperate with loops or hooks of a grip as defined in one claims 1 to 7.

11. A ball hitting device, notably a golf club, comprising a shaft from one end of which extends a head having a face for hitting a ball, and hooks are protruding from the upper part of the shaft, said hooks penetrating in loops or hooks of a grip as defined in one of claim 1 to 7, so that said grip is mechanically fixed to said shaft. 5 10
12. A ball hitting device as defined in one of claims 8 or 9, **characterized in that** a looped non woven sheet or a looped knitted fabric or a looped woven fabric is fixed, for example with an adhesive, to the upper part of the shaft, the loops of said sheet or fabric being the loops that are destined to cooperate with hooks of said grip. 15 20
13. A ball hitting device as defined in one of claims 10 or 11, **characterized in that** a web with hooks protruding from said web is fixed around the upper part of said shaft, the hooks being the hooks that are destined to cooperate with hooks or loops of said grip. 25
14. A golf grip comprising a grip as defined in one of claims 1 to 7.
15. A golf club comprising a ball hitting device as defined in one of claims 8 to 14. 30

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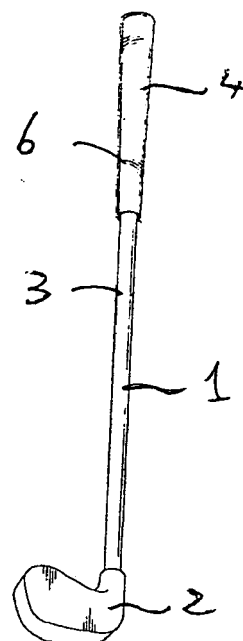


Fig. 1

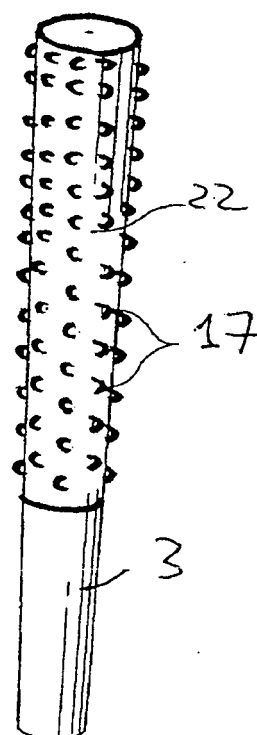


Fig. 2

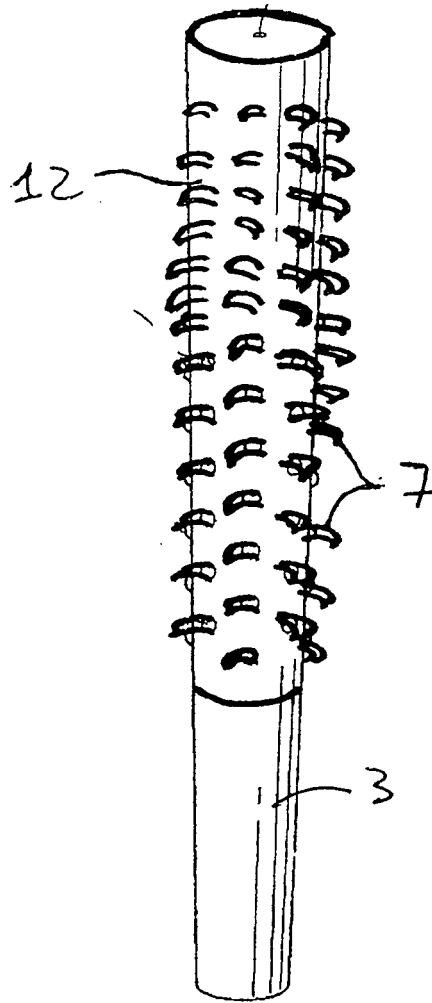


Fig. 3

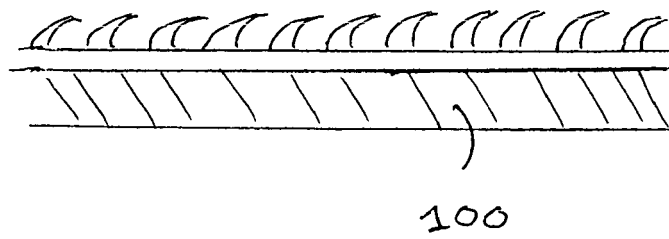


Fig. 4

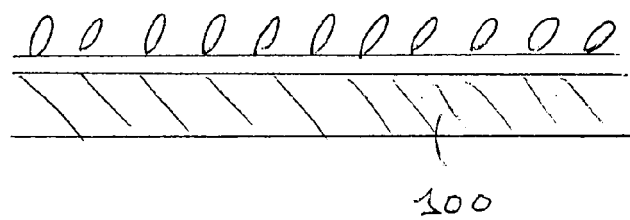


Fig. 5

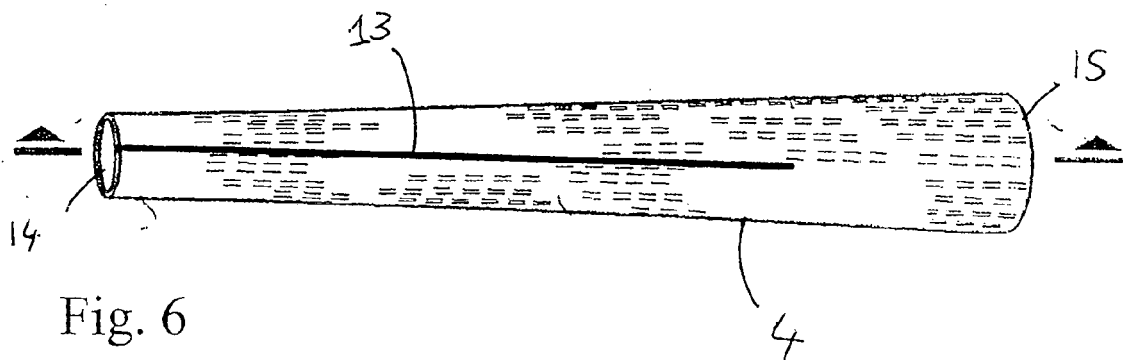
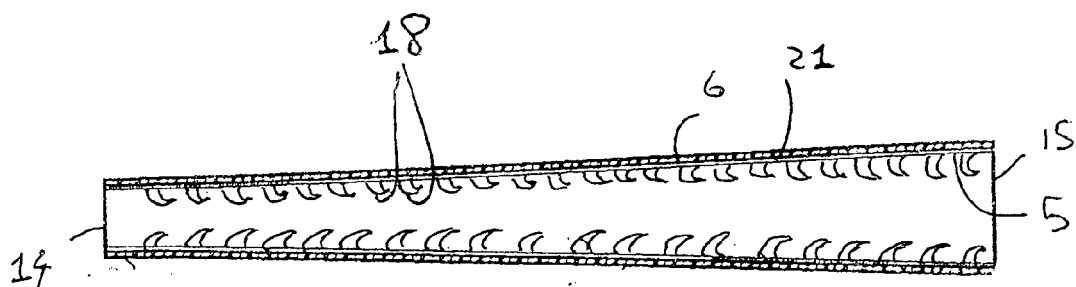


Fig. 6

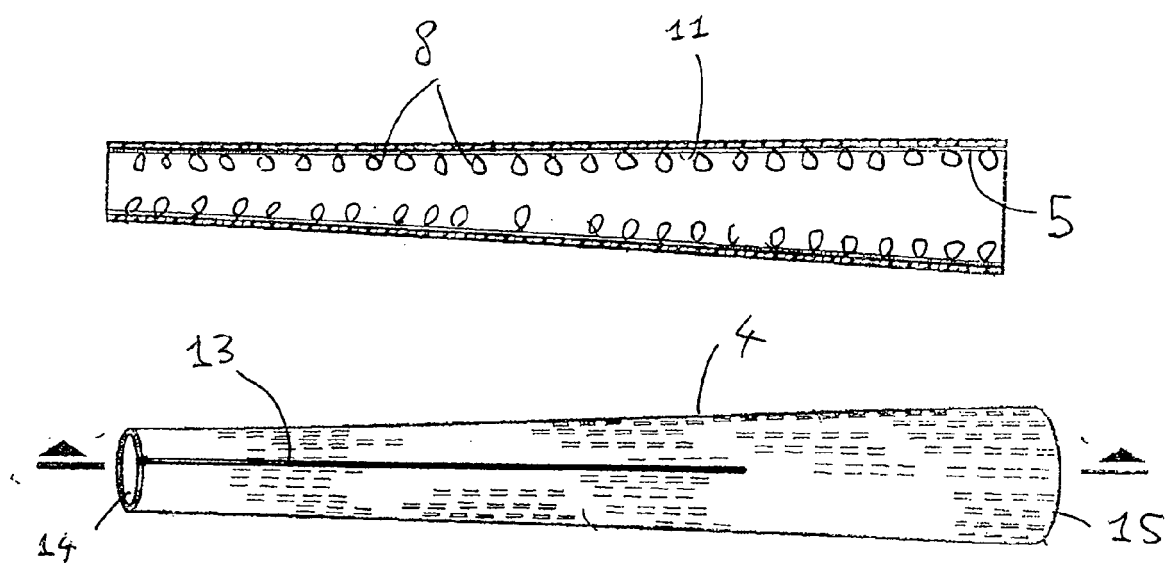


Fig. 7



EUROPEAN SEARCH REPORT

Application Number
EP 08 29 0776

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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X	AU 2006 203 318 A1 (HULL CHARLES) 22 February 2007 (2007-02-22) * page 8, lines 1-6 * * figure 5 *	4-15	TECHNICAL FIELDS SEARCHED (IPC) A63B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 9 January 2009	Examiner Tejada Biarge, Diego
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EPO FORM 1503 03.82 (P04C01)

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

EP 08 29 0776

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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