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(54) **A CORE ELEMENT FOR ROLE PLAY WEAPONS AND A ROLE PLAY WEAPON**

(57) The present invention relates to a core element for a role play weapon, wherein said core element is the inner element in a role play weapon, and wherein the outer contour of said weapon is determined by the shape of the outer foam layer covering the core. The core comprises a rod covered by an intermediate foam material with a hardness higher than the hardness of the outer foam layer. Thereby, the core has both flex and weight abilities similar to a prior art thinner core while maintaining

the diameter of a thicker core. A lighter and more flexible core will deliver less energy upon impact. With an intermediate foam material, such as PU covering a fibreglass Rod, it is possible to create slimmer blades as the core is protected under two layers of foam, i.e. the intermediate layer and the outer layer. The invention further relates to a weapon with such a core element and a method of making a weapon with a core element.

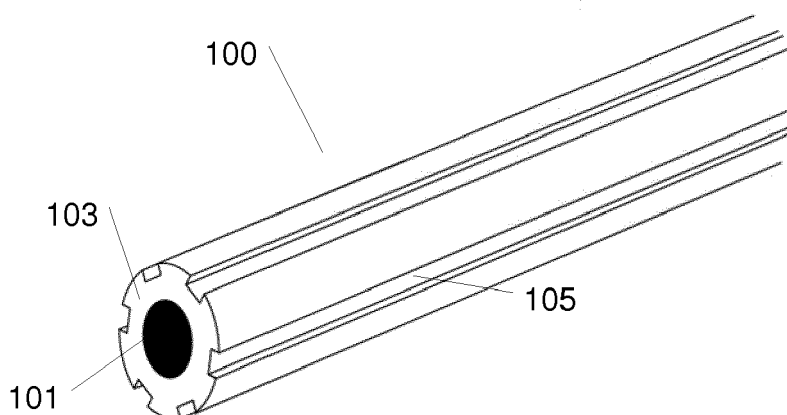


Fig. 1

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Description

[0001] The current invention relates to a core element for a role play weapon, wherein said core element is the inner element of a role play weapon, and wherein the outer contour of said weapon is determined by the shape of the outer foam layer covering the core. The present invention further relates to a role play weapon comprising a core element and to a method of making a role play weapon.

Description of related art

[0002] A foam weapon (also known as a boffer, padded weapon, or latex weapon) is a padded mock weapon used for simulated handheld combat. Such weapons are used in simulated battles called battle gaming and in some live action role-playing games (LARPs).

[0003] There are different kinds of mock weapons to be used in medieval combat sports, battle gaming, and LARPs, and these weapons could e.g. involve a single piece of PVC pipe with one layer of pipe foam around it which again is airbrush-painted to provide a latex finish. Alternatively, the weapon could be made via a flexible core element (such as glass fibre) connected to an outer foam layer e.g. by gluing or by foaming the outer layer around the stiff core element.

[0004] The primary concern in designing a foam weapon is safety; a pulled blow with a foam weapon should not hurt the target, and in systems allowing it even a full-strength blow should not cause injury. Combatants, who fail to pull their blows consistently, are liable to be ejected from an event or at least pulled out of the fighting for safety reasons. The weapon should be durable to withstand the stress of combat.

[0005] A secondary issue is aesthetics; often, a foam weapon is designed to look something like a real weapon such as a sword or an axe, sometimes with detailed adornment. The weighting and balance of a foam weapon can also affect how easy it is to use in combat.

[0006] The most important piece of a foam weapon is its core which acts as the shaft of the weapon and gives it its initial shape. Cores made out of PVC, graphite, fibreglass, carbon fibre, bamboo or aluminum are used with standards varying between groups and countries. Typically, these cores are integrated as the core of the weapon either by gluing foam shells around the core or by injection molding the foam in a mold around the core.

[0007] In order to ensure that the cores with quite hard surfaces do not hurt the opponent, it is important that a significant layer of soft foam is present on the surface of the core. Thereby, the foam acts as absorbing layer between the core and the opponent and reduces the impact of the weapon on the opponent being hit by the weapon.

[0008] The requirement of a sufficient thickness of the foam layer on the core results in that the thickness of the foam layer has to increase when the diameter of the core increases. Thereby, thin weapons can only have a quite

thin core which makes the weapon too flexible, and whereby the contact and interconnection surfaces connecting the core to the foam layer are correspondingly small with a weaker connection compared to a larger connection surface. For similar reasons, if a thicker core is used, then it can only be used for larger weapons.

[0009] A further problem is that it is important to obtain a stable connection between the core element and the foam layer, and this can be challenging due to the relatively large dimensions of the outer foam layer compared to the dimensions of the foam element, whereby the connection surface between the core element and the outer foam layer is subjected to a lot of strain during use of the weapon with the risk of the core losing contact with the outer foam layer.

Summary of the invention

[0010] A first aspect of the current invention is therefore to provide a foam weapon as mentioned in the introductory paragraph which is better than the solutions provided in the prior art.

[0011] This is possible via a core element for a role play weapon, wherein said core element is the inner element in a role play weapon, and wherein the outer contour of said weapon is determined by the shape of the outer foam layer covering the core. The core comprises a rod covered by an intermediate foam material with a hardness higher than the hardness of the outer foam layer.

[0012] Thereby, the core has both flex and weight abilities similar to a prior art thinner core while maintaining the diameter of a thicker core. A lighter and more flexible core will deliver less energy upon impact. With an intermediate foam material, such as PU covering a fibreglass Rod, it is possible to create slimmer blades as the core is protected under two layers of foam, i.e. the intermediate layer and the outer layer.

[0013] When a core wrapped in foam, such as a PU foam, snaps or breaks, the fibres that splinter of the core will be contained within the PU shell. This will create a safer LARP weapon if the outer foam layer has been ripped or damaged by hard usage.

[0014] Further, the intermediate foam results in a thicker core, whereby the surface of the core is increased for better gluing inside the blade. The surface of e.g. a 10mm core is bigger than e.g. a 4mm core and therefore, more adhesive strength is obtained by a better grip between the core elements according to the present invention and the outer foam layer.

[0015] Further, the intermediate foam is harder than the outer foam and thereby also more dense than the outer foam. A more dense foam has a better connection to the rod of the core element compared to a softer foam. Further, also since the intermediate foam has a uniform and limited dimension, quite a good contact can be obtained between the rod and the intermediate foam.

[0016] In an embodiment, the outer surface of the in-

intermediate foam material is provided with a groove pattern for better contact to the outer foam layer. Thereby, a better contact can be obtained between the core and the outer foam layer, where the shape of the grooves could further be chosen to provide specific strength in the connection between the outer layer and the core element.

[0017] In an embodiment, the intermediate layer has a hardness between shore 60-80 on a shore A scale.

[0018] In another embodiment, the outer layer has a hardness between shore 20-25 on a shore A scale.

[0019] The above hardness intervals result in an outer surface having a required softness with an intermediate softness in the intermediate layer.

[0020] In an embodiment, the foam material used in the intermediate layer or the outer layer is Polyurethane foam. Thereby, if similar material is used as the outer foam layer, a good contact can be obtained between the core and the outer foam layer.

[0021] In an embodiment, the rod is made of fibreglass material.

[0022] The invention further relates to a role play weapon comprising a core element according to the above.

[0023] The invention further relates to a method of making a role play weapon comprising the steps of connecting a core element according to the above to an outer foam layer determining the outer contour of said role play weapon.

[0024] In an embodiment, connecting the core element to the outer foam layer is achieved by connecting the outer foam layer as two half shells around the core elements.

[0025] In an alternative embodiment, connecting the core element to the outer foam layer is achieved by positioning the core elements in a mould and moulding the outer foam layer to the core elements.

[0026] In an alternative embodiment, connecting the core element to the outer foam layer is achieved by making a bore in a the outer foam, adding a glue material into the bore and inserting the core elements into the bore for gluing the core element and the outer foam layer together.

[0027] Furthermore, it should be noted that the claims as currently on file define one scope of protection. but a separate divisional application, which focusses on the combination of a tablet holding housing and the pivot fitting disclosed in the current specification, could also be filed in the future.

Brief description of the drawings

[0028] In the following, the invention will be described in greater detail with reference to embodiments shown by the enclosed figures. It should be emphasised that the embodiments shown are used for example purposes only and should not be used to limit the scope of the invention.

[0029] The following figures are used to describe em-

bodiments of the present invention, wherein

Fig. 1 illustrates the elements in a core element according to the present invention,

Figs. 2A - C illustrate alternative recess shapes on the surface of the core element according to the present invention,

Fig. 3 illustrates an entire core element according to the present invention,

Figs. 4A - C illustrate various methods of adding an outer foam layer to a core element of the present invention.

Detailed description of the embodiments

[0030] Fig. 1 illustrates the elements in a core element 100 according to the present invention. The core element 100 comprises a rod 101 and an intermediate foam layer 103. In one embodiment, the intermediate foam layer could be moulded around the rod 101. This could e.g. be by positioning the rod in a mould (not shown) and then adding the foam material of the intermediate foam layer 103 in the mould for hardening around the rod 101. The surface of the core element comprising both the rod and the intermediate mould layer comprises elongated recesses 105 and this could e.g. be obtained via corresponding protrusions positioned in the mould on the inner mould surface, or the recesses could be added by tooling of the intermediate layer after moulding. The rod is a stiff but elastic element which is e.g. made of PVC, graphite, fiberglass, carbon fiber, bamboo or aluminum. The rod could be prepared for binding to the intermediate foam layer before the layer is added, and this could be via a special surface treatment of the rod.

[0031] Figs. 2A - C illustrate alternative recess shapes on the surface of the core element according to the present invention. The recesses could be adapted to obtain a specific property, and this could e.g. be increasing the number of elongated recesses 201 as illustrated in Fig. 2A, adding squared recesses 203 as illustrated in Fig. 2B or twisted recesses 205 as illustrated in Fig. 2C. The number of recesses as well as the recess pattern influence the connection between the core element and the outer foam layer and could depend on in which type of weapon the core is to be used and more specifically to the actual shape of the outer foam layer.

[0032] Fig. 3 illustrates an entire core element according to the present invention. Such core element could e.g. be incorporated in a sword or a spear. Further, as illustrated in the figure, both ends of the core element have an increased thickness resulting in pointy ends. Thereby, a protective cap can be positioned above the core end and intermediate foam layer on each end of the core element before the element is incorporated in a weapon.

[0033] Figs. 4A - C illustrate various methods of adding an outer foam layer to a core element of the present invention. In Fig. 4A, the outer foam layer has been moulded as two shells 401, 403 with a groove 407, where the rod 405 is positioned in the groove 407, and the shells 401, 403 are assembled and glued together around the rod 405. Fig. 4B illustrates a scenario, where the outer foam layer is moulded on to the rod 413 in a mould 411. Here, the rod 413 is positioned in the aperture 415 of the mould, and foam material is poured into the mould and hardens as the outer foam layer of the weapon. Fig. 4C illustrates another method of adding the outer layer, where the outer foam layer 421 has been moulded, and a bore 423 is provided in the outer foam layer 421. The rod is inserted in the bore 423, and glue or foam material is added to secure the outer foam layer 421 to the rod 425.

Claims

1. A core element for a role play weapon, wherein said core element is the inner element in a role play weapon, and wherein the outer contour of said weapon is determined by the shape of the outer foam layer covering the core **characterised in that** the core comprises a rod covered by an intermediate foam material with a hardness higher than the hardness of the outer foam layer.
2. A core element according to claim 1, wherein the outer surface of the intermediate foam material is provided with a groove pattern for better contact to the outer foam layer.
3. A core element according to claims 1-2, wherein the intermediate layer has a hardness between shore 60-80 on a shore A scale.
4. A core element according to claims 1-3, wherein the outer layer has a hardness between shore 20-25 on a shore A scale.
5. A core element according to claims 1-4, wherein foam material used in the intermediate layer or the outer layer is Polyurethane foam.
6. A core element according to claims 1-5, wherein the rod is made of fibreglass material.
7. A role play weapon comprising a core element according to claims 1-6.
8. A method of making a role play weapon comprising the steps of connecting a core element according to claims 1-7 to an outer foam layer determining the outer contour of said role play weapon.
9. A method of making a role play weapon according

to claim 8, wherein connecting the core element to the outer foam layer is achieved by connecting the outer foam layer as two half shells around the core elements.

10. A method of making a role play weapon according to claim 8, wherein connecting the core element to the outer foam layer is achieved by positioning the core elements in a mould and moulding the outer foam layer to the core elements.
11. A method of making a role play weapon according to claim 8, wherein connecting the core element to the outer foam layer is achieved by making a bore in a the outer foam, adding a glue material into the bore and inserting the core elements into the bore for gluing the core element and the outer foam layer together.

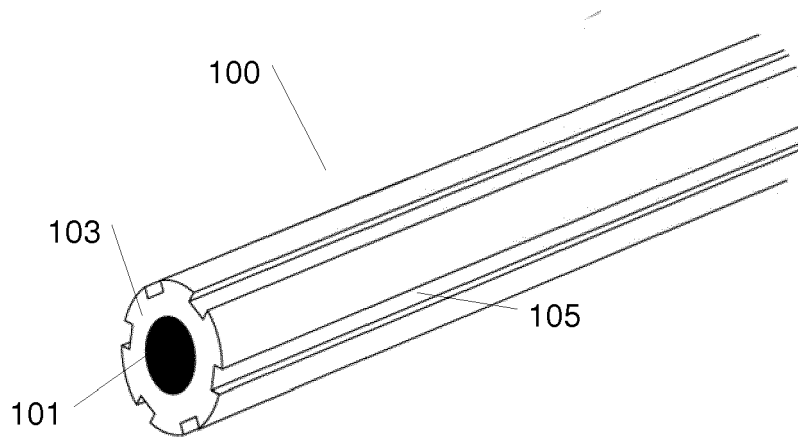


Fig. 1

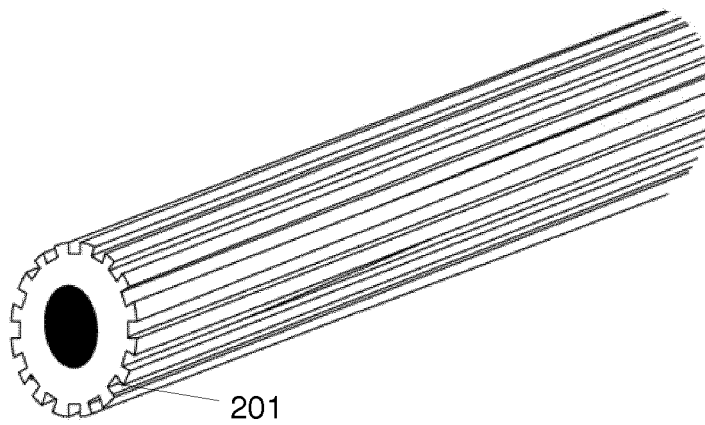


Fig. 2A

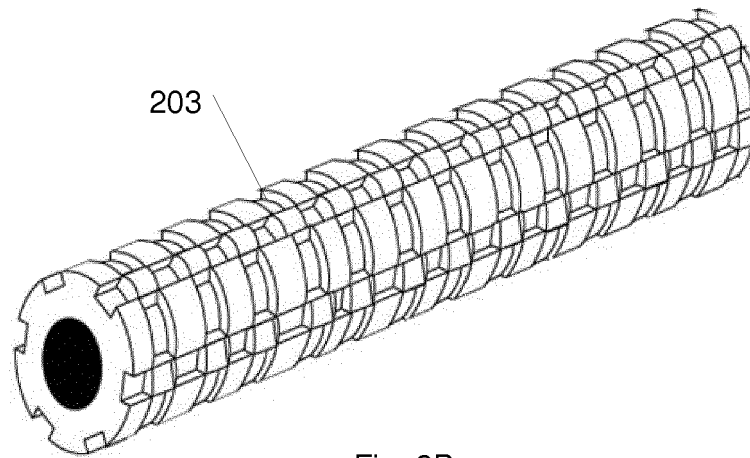


Fig. 2B

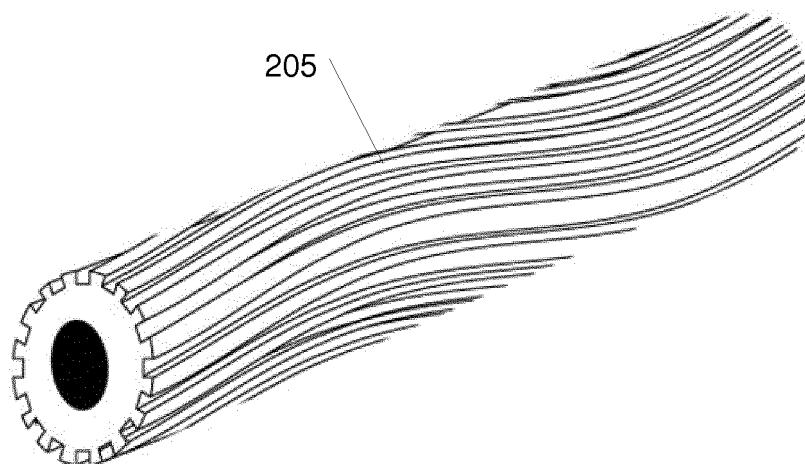


Fig. 2C

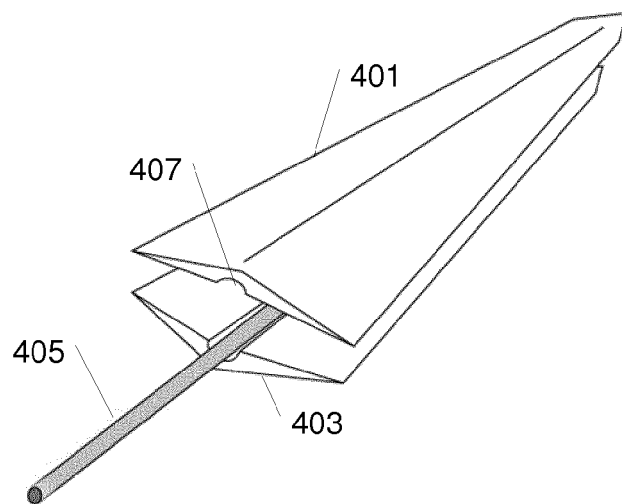
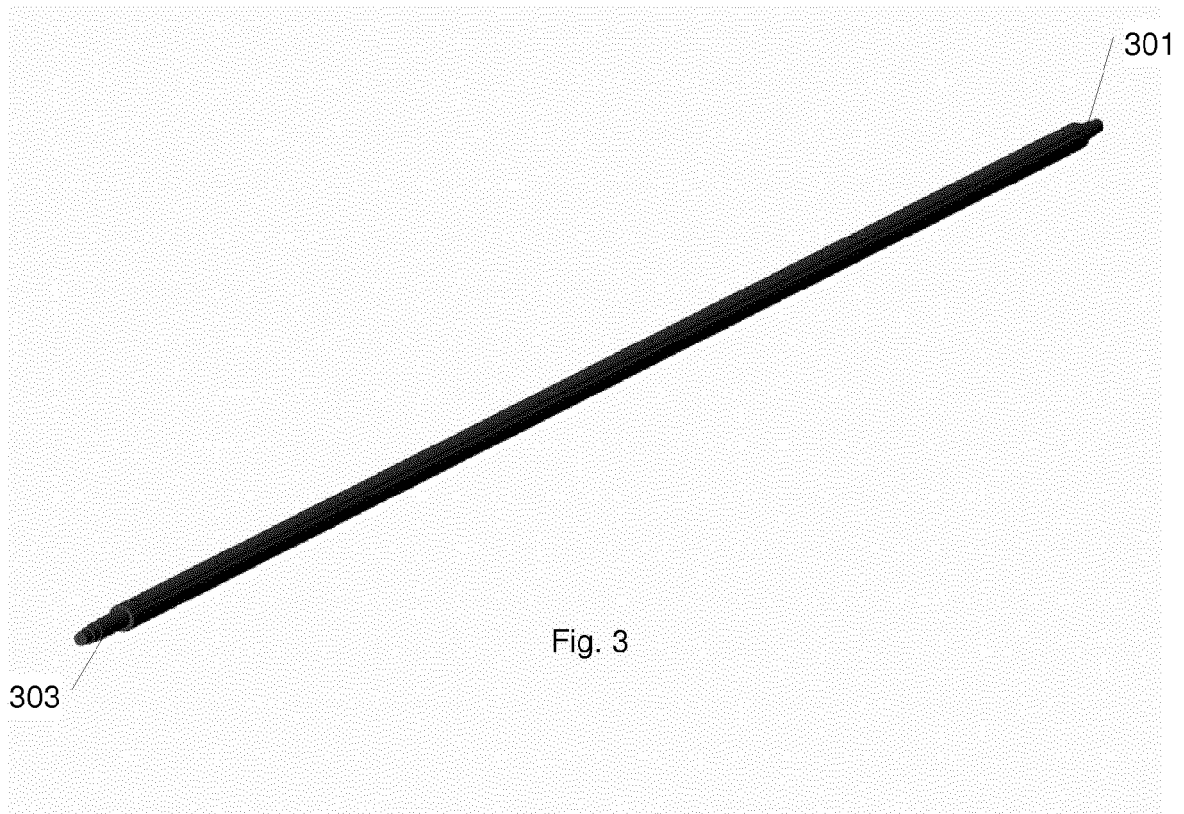
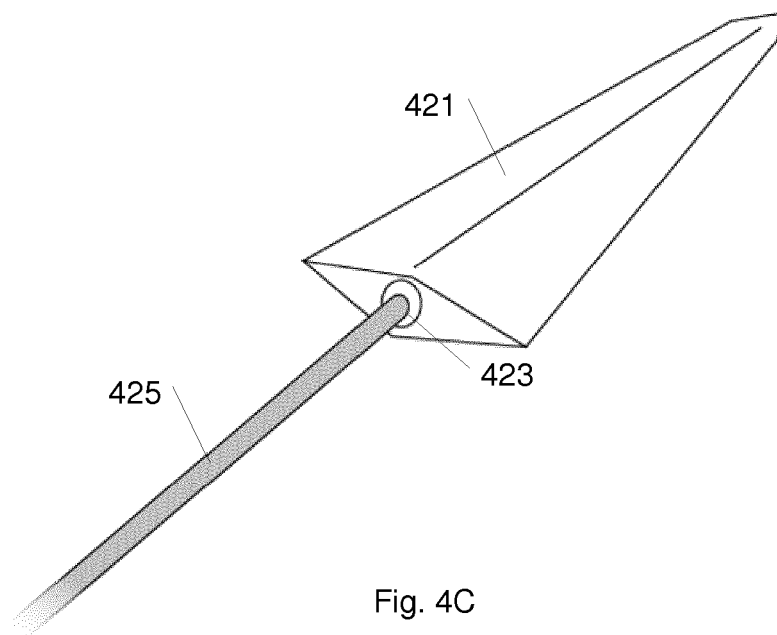
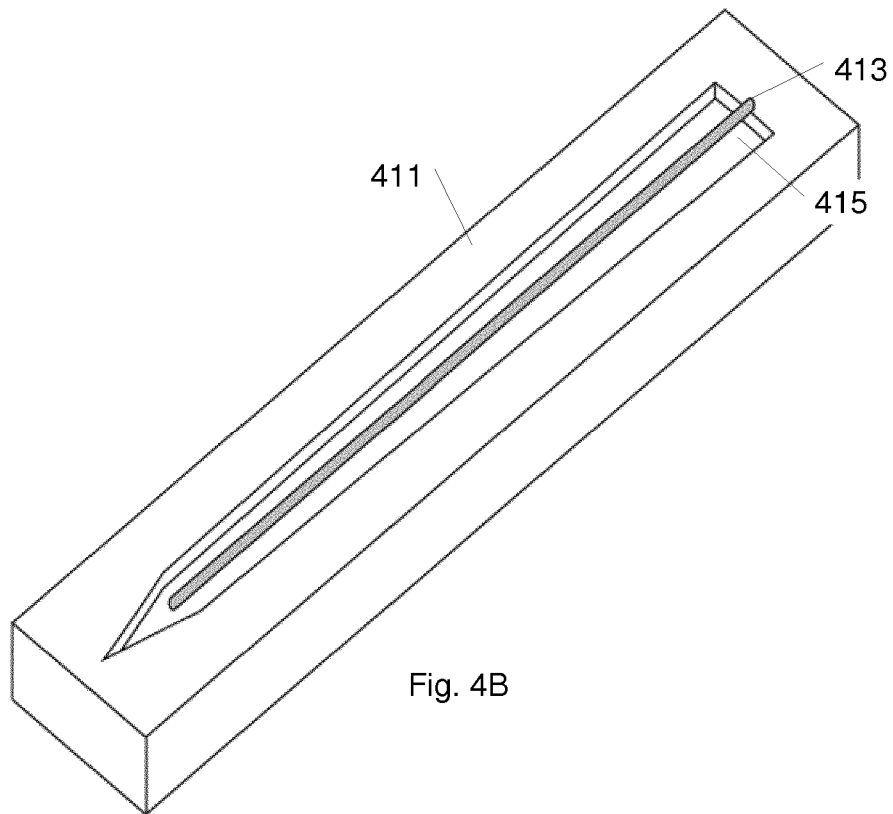


Fig. 4A





EUROPEAN SEARCH REPORT

Application Number
EP 15 16 3005

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DOCUMENTS CONSIDERED TO BE RELEVANT			
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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 9 October 2015	Examiner Bagarry, Damien
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			

EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 15 16 3005

5 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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09-10-2015

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