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(54) Blade, particularly for fencing

(57) A blade (1), particularly for fencing, including a single body (2) obtained by stratified application of composite material made of resin and glass fiber or synthetic fibers that forms an internal channel (6). A metallic point (13) and tang (7) are associable with the ends (4,5) of the single body and are electrically connectable to each other. The blade can thus be used to obtain a foil, an épée, or a saber having optimum safety features.

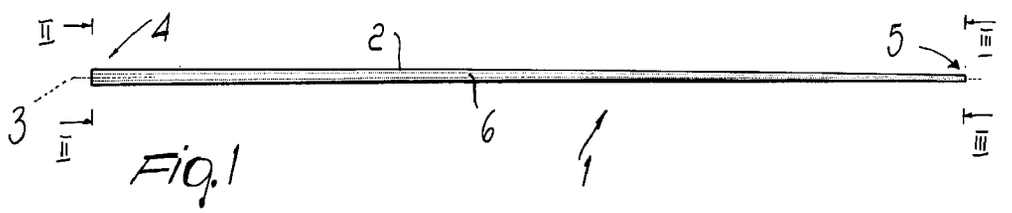

Fig.1

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Description

The present invention relates to a blade, particularly for fencing and therefore for the disciplines of foil, saber, and épée.

Currently, in the practice of fencing, and therefore in the three disciplines it includes, conventional implements are used all having a metal blade with which a handle and a hilt are associated together with electrical devices for detecting the occurrence of a thrust on the metallised jacket of the opponent.

These conventional implements have the considerable drawback due to possible breakage of the metal blade during sports practice, with possible extremely severe injury to the opponent's body due to the penetration of the blade stump in said body, as indeed has occurred.

The danger of breakage lies in the fact that it occurs when the point of the blade is already in contact with the jacket of the opponent, and particularly when said blade has assumed a curved shape due to the pushing force that the athlete applies during the thrust.

This penetration is facilitated by the fact that, since the composition of the blade is not perfectly uniform, it breaks along an axis that lies diagonally to said blade, in a manner termed a flute-mouthpiece breakage.

This problem of blade breakage is currently increased by the higher athletic level of the competitors and therefore by the greater force of the thrust.

As a partial solution to this drawback, the jacket or mask of the athletes have been strengthened; however, this solution has not been found adequate.

A principal aim of the present invention is therefore to solve the described technical problems, eliminating the drawbacks of the mentioned prior art by providing an implement for fencing that is reliable and safe in use and avoids dangers to the safety of the athletes in case of blade breakage.

An important object of the invention is to provide an implement that can be used in international contests and can therefore be electrified.

Another important object is to provide an implement that can be manufactured with conventional machines and facilities and which is light in weight.

Another object is to provide an implement having low manufacturing costs that allow its rapid and wide diffusion.

According to a preferred embodiment of the invention, there is provided a blade, particularly for fencing, which is characterized in that it is constituted by a single body obtained by stratified application of composite material made of resin and glass fiber or synthetic fibers that forms an internal channel. An electrically connectable metallic point and tang are associable with the ends of the single body.

The characteristics and advantages of the invention will become apparent from the following detailed description of a particular but not exclusive embodiment thereof, described and illustrated in the accompanying drawings only by way of non-limitative example, wherein:

figure 1 is a side elevation view of the blade according to one preferred aspect of the invention;

figure 2 is a sectional view of the blade, taken along the plane II-II of figure 1;

figure 3 is a sectional view of the blade, taken along the plane III-III of figure 1;

figure 4 is a sectional view of the blade of the preceding figures, taken at an end with which a tang is associable, in which the tang is also shown in cross-section;

figure 5 is a sectional view of the blade of the preceding figures, taken at an end with which a point is associable, in which the point is also shown in cross-section.

With reference to the above figures, the reference numeral 1 designates a blade, which is particularly usable for fencing in its various disciplines, namely foil, saber, and épée.

The blade is constituted by a single body 2 obtained by stratified application of a composite material made of resin and glass fiber or other synthetic fibers.

These layers are preferably applied along an axis that is parallel to the longitudinal axis 3 of the blade 1, so as to achieve good uniformity.

The body 2 has a frustum shape that allows it to be flexible during use.

A first end 4 having a larger diameter and a second end 5 having a smaller diameter are thus formed.

The body 2 is provided so as to internally form at least one channel 6 that allows the passage of appropriate cables or wires.

A metal tang 7 is associable at the first end 4 and has a first stem 8, insertable in the channel 6, an annular ridge 9, abutting at the edge 10 of the first end 4, and a first cylindrical head 11 for connection to a hilt and/or a handle.

The tang 7 has a first axial hole 12 allowing the passage of the wires or cables arranged inside the channel 6.

A point 13 made of metal is associable at the second end 5 and allows electrification; it can therefore have a second stem 14 insertable in the channel 6 and a second head 15 having essentially the shape of a truncated cone in a transverse cross-section.

As an alternative, the point can be of the type comprising a bush rigidly coupled to the second end 5 by means of a disk and provided with adapted conventional means for sending an electric signal.

It has thus been observed that the invention has achieved the intended aim and objects, a blade for a fencing implement having been provided that is reliable and safe in use since, while having optimum flexibility, in case of breakage it has a shearing section that lies transversely or essentially perpendicular to the longitudinal axis; this means that, even if the broken tip of the

blade makes contact with the jacket of the opponent, it causes no damage, since the deeper the breakage, the wider the diameter of its flat cross-section.

The presence of the internal channel allows to give good elasticity to the blade and allows to electrify it, so as to allow use of the sports implement even in international contests.

Finally, the blade thus obtained is light in weight and has low manufacturing costs and at the same time has lower production costs than conventional metal blades.

The blade according to the invention is of course susceptible of numerous modifications and variations, all of which are within the scope of the same inventive concept.

The materials and the dimensions that constitute the individual components of the blade may of course be the most pertinent according to the specific requirements.

Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. Blade (1), particularly for fencing, characterized in that it comprises a single body (2) obtained by stratified application of composite material made of resin and glass fiber or synthetic fibers that forms at least one internal channel (6), an electrically connectable metallic point (13) and tang (7) being associable with the ends (4, 5) of said single body.

2. Blade according to claim 1, characterized in that said application of layers preferably occurs along an axis that is parallel to the longitudinal axis of said blade, so as to achieve good uniformity.

3. Blade according to any one or more of the preceding claims, characterized in that said body is frustum-shaped and is internally provided with at least one axial channel (6) allowing the passage of appropriate cables or wires for electrification.

4. Blade according to any one or more of the preceding claims, characterized in that a metal tang (7) is associable at a first end (4) of said body, having a larger cross-section, said tang having: a first stem (8), insertable in said channel; an annular ridge (9), abutting at the edge (10) of said first end; and a first cylindrical head (11) for connection to a hilt and/or to a handle.

5. Blade according to any one or more of the preceding claims, characterized in that said tang (7) has a first axial hole (12) allowing the passage of said wires or cables arranged inside said channel (6).

6. Blade according to any one or more of the preceding claims, characterized in that a metal point (13) is associable at a second end (5) of said body, having a smaller diameter, said point (13) allowing electrification.

7. A blade for fencing according to any one or more of the preceding claims, characterized in that it comprises a single body (2) obtained by stratified application of composite material including resin and a fiber material which is chosen among glass fibers and synthetic fibers.

8. A blade for fencing according to any one or more of the preceding claims, characterized in that it comprises a single elongated body (2) having a truncated-cone cross sectional configuration.

9. The blade of claim 8, characterized in that it comprises a longitudinal channel (6) extending internally of said body (2) along a longitudinal axis (3) thereof.

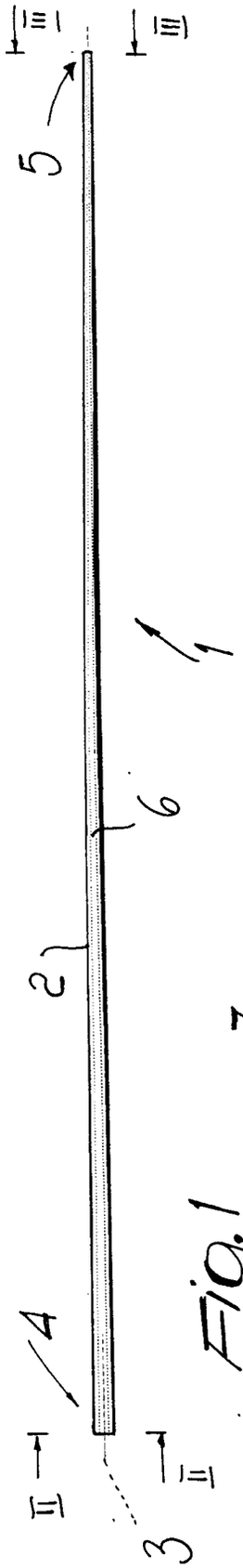

Fig. 1

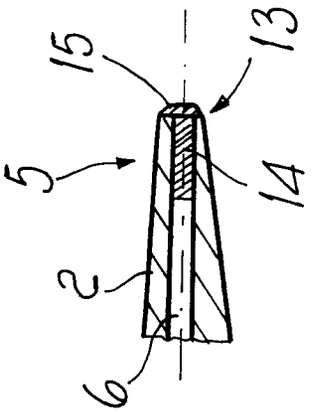

Fig. 5

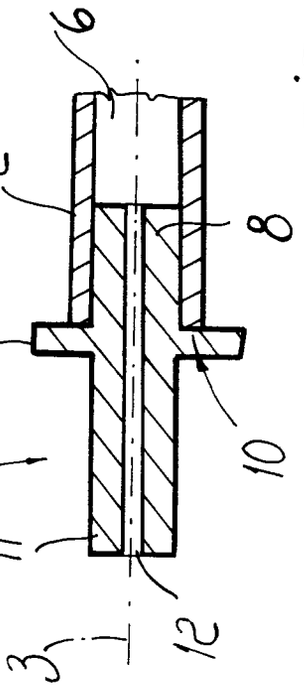

Fig. 4

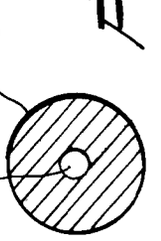

Fig. 3

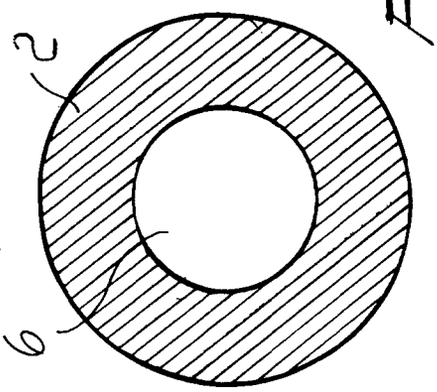

Fig. 2

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 95 11 9301

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X Y	FR-A-2 532 412 (MAIER) * page 3, line 29 - page 5, line 18; figures 1,2 *	1-4,6-9 5	F41B13/02
X	FR-A-1 132 671 (PECHEUX) * page 2, left-hand column, line 22 - page 3, right-hand column, line 5; figures 1,2,6 *	1-3,6-9	
X A	GB-A-2 281 867 (STUART) * page 3, line 1 - line 30; figure 1 *	7-9 1-4	
X	GB-A-1 276 224 (DINAMO) * the whole document *	7,8	
Y A	GB-A-2 240 282 (PLECTO) * page 8, line 4 - page 9, line 28; figure 5 *	5 1-4,7,9	
A	US-A-2 998 974 (STAFFORD)		
A	US-A-2 294 026 (DE TUSCAN)		

TECHNICAL FIELDS SEARCHED (Int.Cl.6)
F41B A63B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	11 July 1996	Giesen, M

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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E : earlier patent document, but published on, or after the filing date
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