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(54) Dart barrel

(57) A dart barrel comprises a body (10) with a predetermined length, the body is made of a low hardness iron rod which is cheaper than copper, and the body (10) has two free ends (12,14) which are each formed with a female threaded portion (16), respectively, for engaging with a tip (20) and a shaft (30) to form a complete dart (1). The surface (50) of the barrel is treated with electroplating, blackening or anodizing. With above arrangements and treatment, the dart barrel is environment friendly and low toxic.

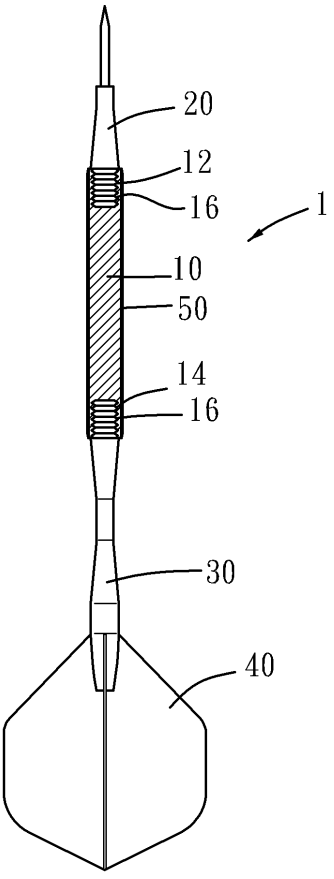

FIG. 1

EP 2 204 633 A2

Description

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The present invention relates to a dart barrel, and more particularly to a dart barrel which is environment friendly and high safety.

Description of the Prior Art

[0002] For non-competition or competition darts used in competition, normally, their tips are either metal or plastic, and their barrels can also be metal or plastic. Non-competition darts are mostly in the form of a copper rod with two threaded ends which are to be screwed with the dart tip and the dart shaft, respectively. However, the copper barrels contains too much lead, which doesn't meet the European RoHS (restriction of hazard substances) issued in recent years, so the copper darts are not allowed to be sold to Europe. Furthermore, the problem of containing excessive amount of lead will make children have the risk of chronic metal positioning because they always like to put the dart barrel in their mouths. On the other hand, since the copper is less rigid, copper dart is likely to be deformed after being thrown repeatedly, which will further affect the throwing accuracy. Last but not least, the high cost of copper material might also deter consumers from buying.

[0003] For the plastic dart barrel, it is a plastic barrel coated on a copper rod, and then the plastic barrel is provided with two threaded ends which are to be screwed with the dart tip and the dart shaft, respectively. The method of covering the copper with plastic can prevent the children from the risk of chronic metal poisoning, however, the plastic barrel is likely to be damaged and cannot be used again after continuous throwing and impacting or falling to the ground.

[0004] The present invention has arisen to mitigate and/or obviate the afore-described disadvantages.

SUMMARY OF THE INVENTION

[0005] The primary object of the present invention is to provide a dart barrel which meets the RoHS directive.

[0006] Another object of the present invention is to provide a dart barrel which is environment friendly and low cost.

[0007] To obtain the above objective, a dart barrel provided by the present invention comprises a body with a predetermined length, the body is made of low hardness iron rod which is cheaper than copper, and the body has two free ends which are formed with a female threaded portion, respectively, for engaging with a tip and a shaft to form a complete dart. The surface of the barrel is treated with electroplating, blackening or anodizing. With above arrangements and treatment, the dart barrel is environment friendly and low toxic.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008]

Fig. 1 is a partial cross sectional view of a dart in accordance with a first embodiment of the present invention;
Fig. 2 is a partial cross sectional view of a dart in accordance with a second embodiment of the present invention;
Fig. 3 is an exploded view of Fig. 2; and
Fig. 4 is an assembly view of Fig. 2.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0009] The present invention relates to a dart barrel which can be used both on the competition dart and on the non-dangerous electronic dart.

[0010] Referring to Fig. 1, a barrel of a dart 1 in accordance with the present invention comprises a body 10 which is made of a low hardness iron rod with a head 12 and an end 14, and on each of the head 12 and end 14 is formed a threaded portion 16 which is a female thread portion (if the tip and shaft of the dart are female threaded, the threaded portions of the barrel of the dart are male). The head 12 of the barrel of the dart is screwed with the tip 20 through the female threaded portion 12, and the end 14 of the barrel of the dart is screwed to the shaft 30 of the flight 40 through the threaded portion 16, thus forming a dart 1.

[0011] In order to prevent oxidization, the low hardness iron barrel is coated with a rustproof layer 50 which can be a plating layer, a blackening layer, or an anode layer. Plating or blackening layer can prevent the barrel from oxidization after being exposed to air. In addition to prevent the barrel from rust, the anode layer can also add color to the dart and draw more audiences' attention.

[0012] In addition to the straight barrel shaped structure with its weight evenly distributed in its body (as shown in the drawing), the low hardness iron barrel can also take the forms of a wine barrel shaped structure (not shown) whose weight is evenly focused in the center of its body, or a torpedo-shaped structure (not shown) whose weight is distributed in the front portion of its body. In whatever shapes, the barrel of the dart is additionally provided with plural friction portions (not shown) which can be in the form of grooves or cavities equidistantly or non-equidistantly and annularly distributed in the surface of the barrel, or can take the form of tiny convex portions formed at the finger-gripping portion on the barrel. Besides the anti-skid purpose, the friction portions can also be used to determine whether the user is holding the dart in the right place or not.

[0013] The above barrel is mainly used to apply on a relatively hard metal tip, in addition to that, it can also be

modified to cooperate with a relatively soft tip. As shown in Figs. 2-4, the body 10 is a low-hardness iron rod with two threaded ends, and a plastic member 60 with a larger length than the body 10 can be directly formed on the surface of the body 10 by injection molding, or the plastic member 60 can be molded first and then mounted on the outer periphery of the body 10 on the condition that the surface of the body 10 is not subjected to an antirust treatment (but antirust is preferably carried out to slow down the dart barrel oxidization). Both ends of the plastic member 60 extend out of both free ends of the body of the barrel and then are processed to form a female threaded portion 62 (or male threaded portion, depends on the design of the tip and the shaft of the dart), the surface of the threaded portion 62 is formed with a friction portion which consists of a plurality of convexes or concaves without being coated with plastic. With the aforementioned structures, the barrel is applicable to plastic tip.

[0014] With the barrel made of low hardness iron rod, the present invention is expected to achieve the following effects:

1. The poison containing amount of the iron is lower than that of the copper, and the iron barrel's weight and size are all in line with the requirement of dart competition or dart game, and more importantly, they meet the RoHS directive, allowing children and adults to use safely.
2. The iron is lower in cost than copper, thus improving the price competiveness of the dart.
3. After electroplating or anode treatment, the low hardness iron barrel is the same as the competition dart in whatever respect, including assembly, color, or quality, while its cost is considerably reduced. Furthermore even the anodized barrel can provide more color and better visual effect.
4. The whole rigidity of the low hardness iron made barrel is better that the copper one, which prevents the dart from deformation after continuous throwing, ensuring the accuracy of throw.
5. The low hardness iron made barrel coated with the plastic member can be applicable to plastic tip, and meets the RoHS directive and ANSI (American National Standards Institute). The cost of the low hardness iron made barrel is close to that of the barrel which is made of pure iron, while its security is improved, and it can further prevent the problem that the female threaded portion of the conventional dart is easily broken during throwing.

[0015] While we have shown and described various embodiments in accordance with the present invention, it is clear to those skilled in the art that further embodiments may be made without departing from the scope of the present invention.

Claims

1. A dart barrel comprising a body (10) which is made of low hardness iron rod with a predetermined length, the body (10) having two free ends, and on each of the head (12) and end (14) being formed a threaded portion (16), respectively.

2. The dart barrel as claimed in claim 1, wherein the threaded portions (16) of the body (10) are female.

3. The dart barrel as claimed in claim 1 being of a straight barrel shaped structure with its weight evenly distributed.

4. The dart barrel as claimed in claim 1 being of a wine barrel shaped structure whose weight is evenly focused in a center of its body.

5. The dart barrel as claimed in claim 1 being of a torpedo-shaped structure whose weight is distributed in a front portion of its body.

6. The dart barrel as claimed in claim 1, wherein a surface of the dart barrel is additionally provided with at least one friction portion.

7. The dart barrel as claimed in claim 6, wherein the friction portion consists of concaves.

8. The dart barrel as claimed in claim 6, wherein the friction portion consists of convexes.

9. The dart barrel as claimed in claim 1, wherein a surface of the body 10 of the dart barrel is provided with a rustproof layer (50).

10. The dart barrel as claimed in claim 9, wherein the rustproof layer (50) is a plating layer.

11. The dart barrel as claimed in claim 9, wherein the rustproof layer (50) is an anode layer which can also add color to the dart.

12. A dart barrel comprising a body (10) which is made of a low hardness iron rod with a predetermined length, a plastic member (60) with a larger length than the body (10) being coated on a surface of the body (10), both ends of the plastic member (60) extend out of both free ends of the body (10) of the dart barrel and are processed to form a threaded portion (62), respectively.

13. The dart barrel as claimed in claim 12, wherein the threaded portions (62) are female.

14. The dart barrel as claimed in claim 12, wherein the threaded portions (62) are male.

15. The dart barrel as claimed in claim 12, wherein at least one friction portion consisting of concaves is formed on a surface of the plastic member (60).

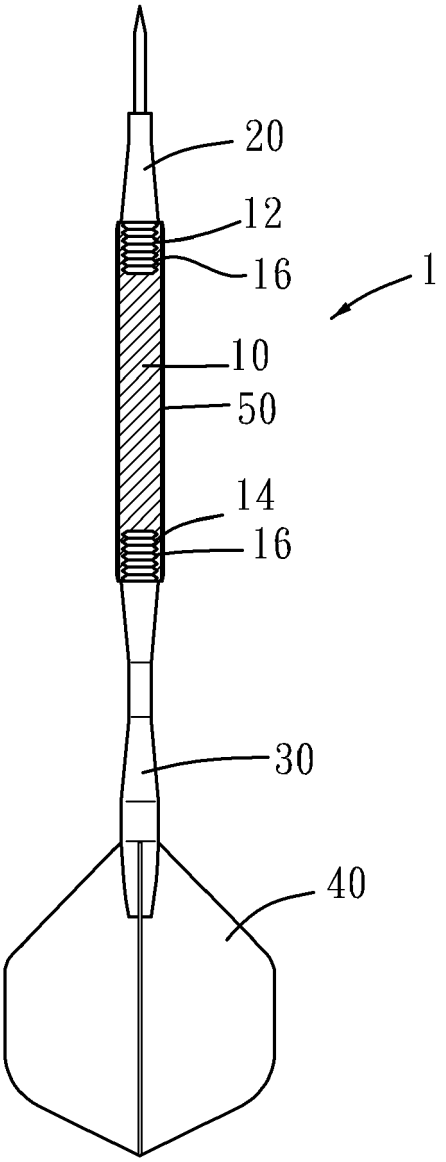

FIG. 1

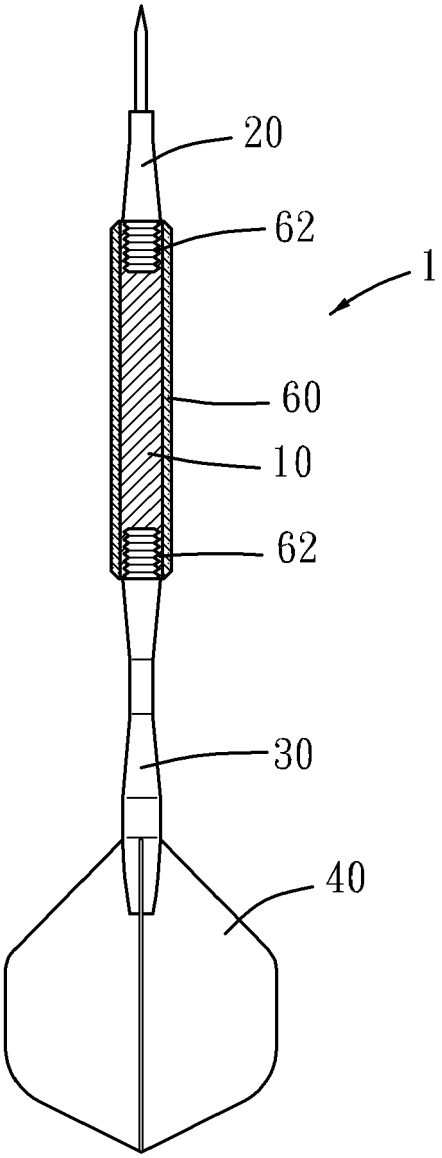

FIG. 2

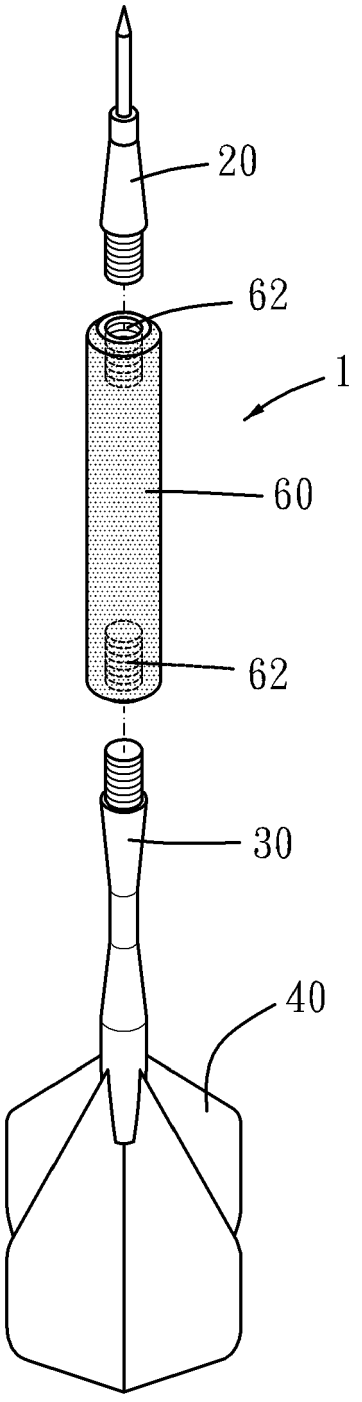

FIG. 3

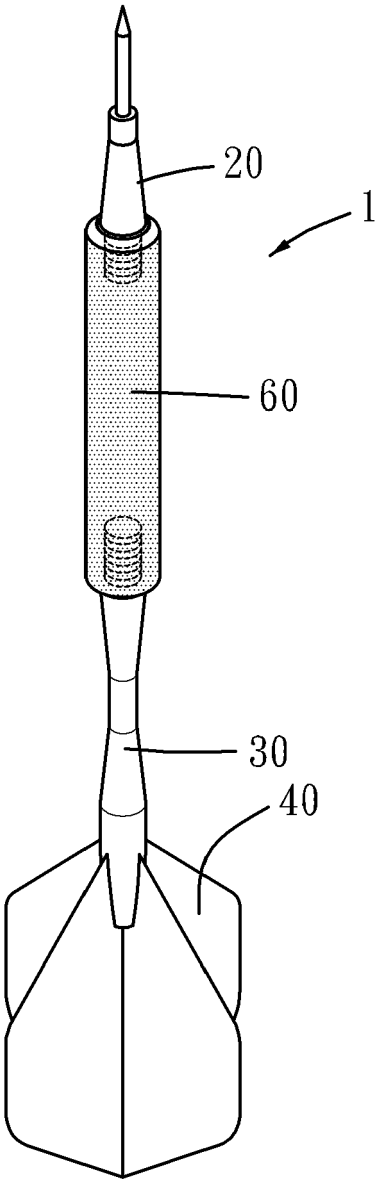

FIG. 4