



US 20050026728A1

(19) **United States**

(12) **Patent Application Publication**
Warther

(10) **Pub. No.: US 2005/0026728 A1**

(43) **Pub. Date: Feb. 3, 2005**

(54) **LACROSSE STICK HEAD WITH SHIELD TO PROTECT NETTING**

(52) **U.S. Cl. 473/513**

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(57) **ABSTRACT**

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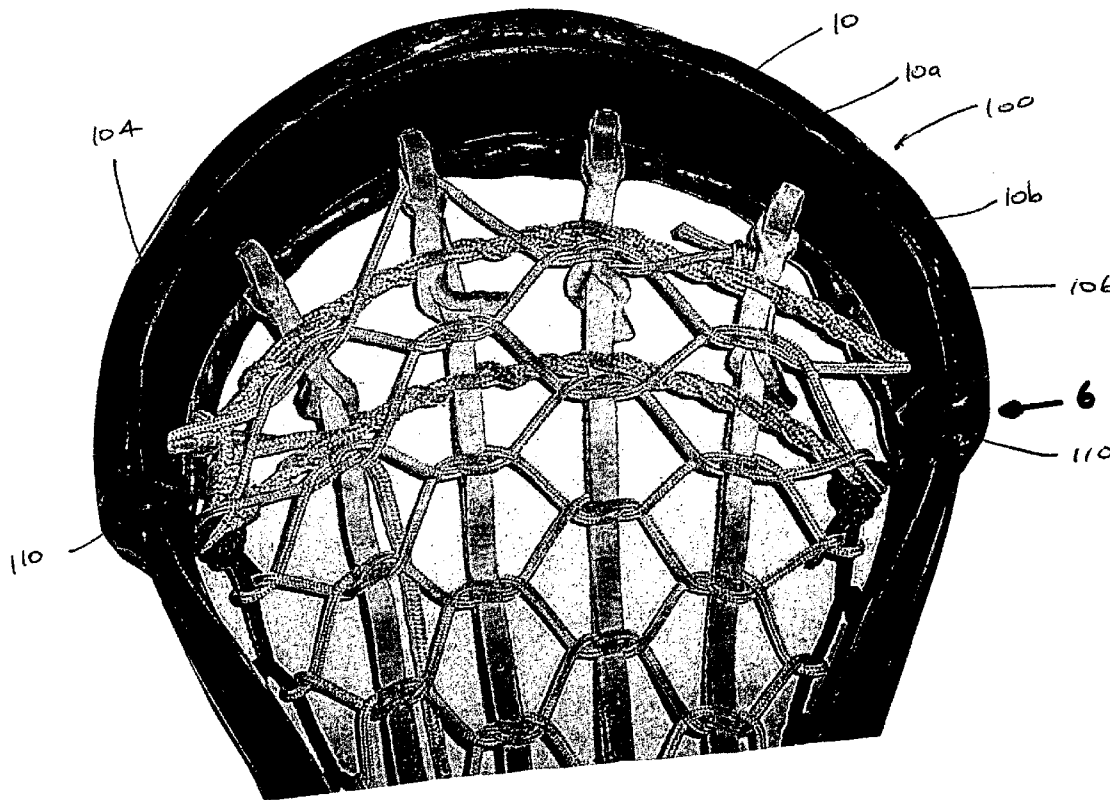
A lacrosse stick head includes a frame having a throat, a sidewall extending from the throat, and a lip joined to an end of the sidewall remote from the throat. Netting is attached to the frame by portions of the netting disposed through the netting support holes in the sidewall and lip. A shield is disposed on the lip and protects portions of the netting disposed through the netting support holes of the lip from abrasive wear that occurs when the lip engages a ground surface during play.

(21) **Appl. No.: 10/630,106**

(22) **Filed: Jul. 30, 2003**

Publication Classification

(51) **Int. Cl.⁷ A63B 59/02**



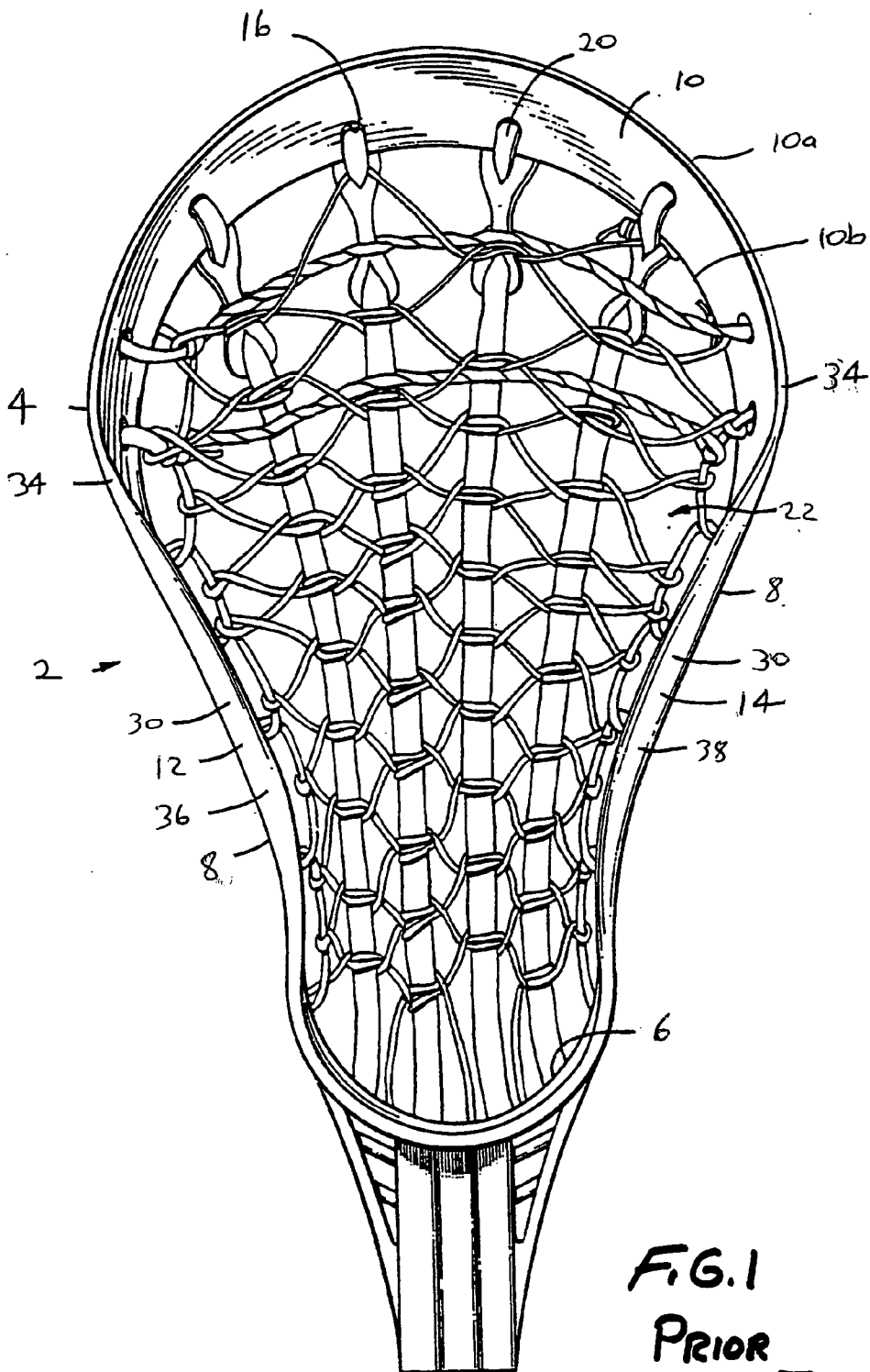


FIG. 1
PRIOR
ART

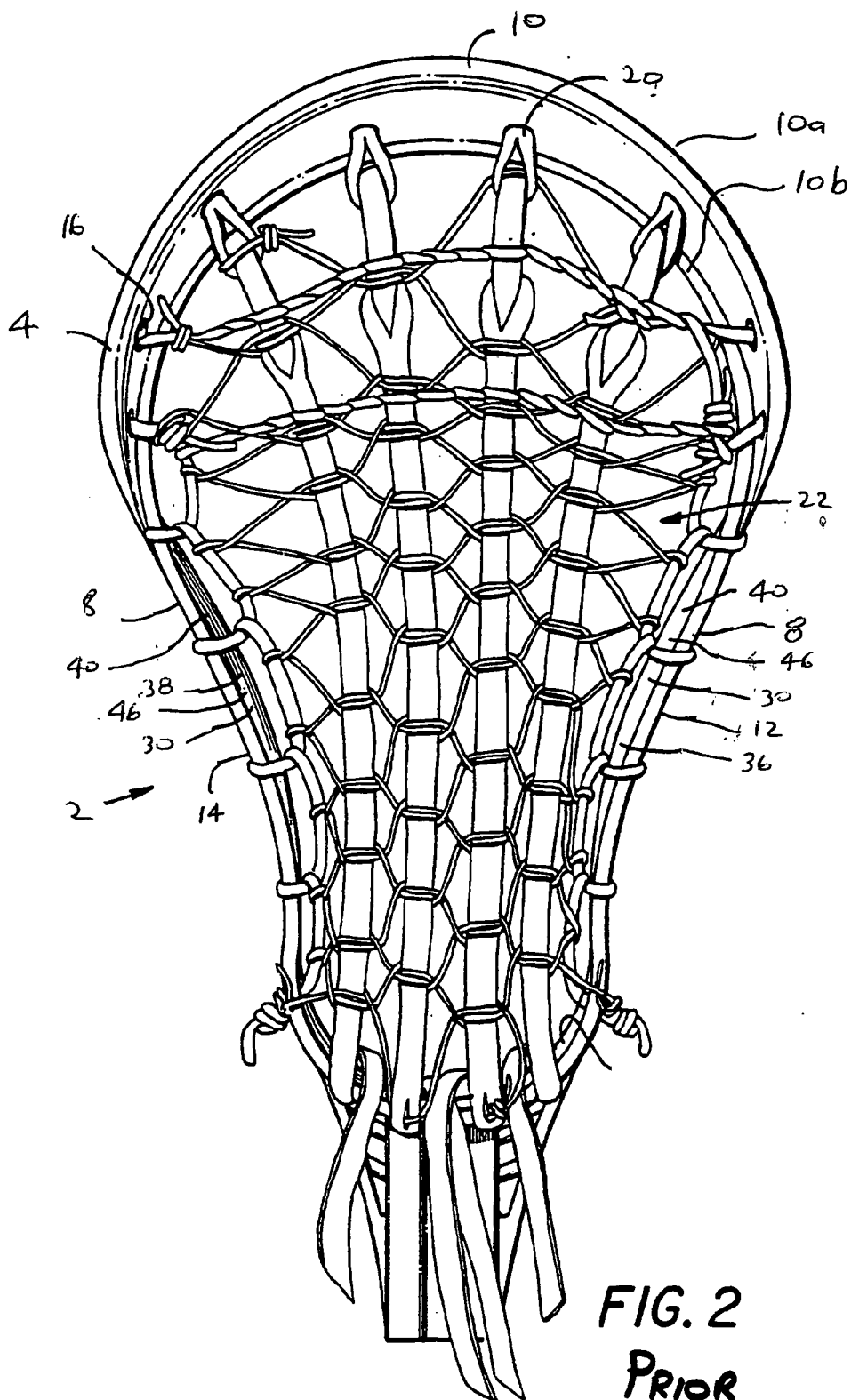


FIG. 2
PRIOR
ART

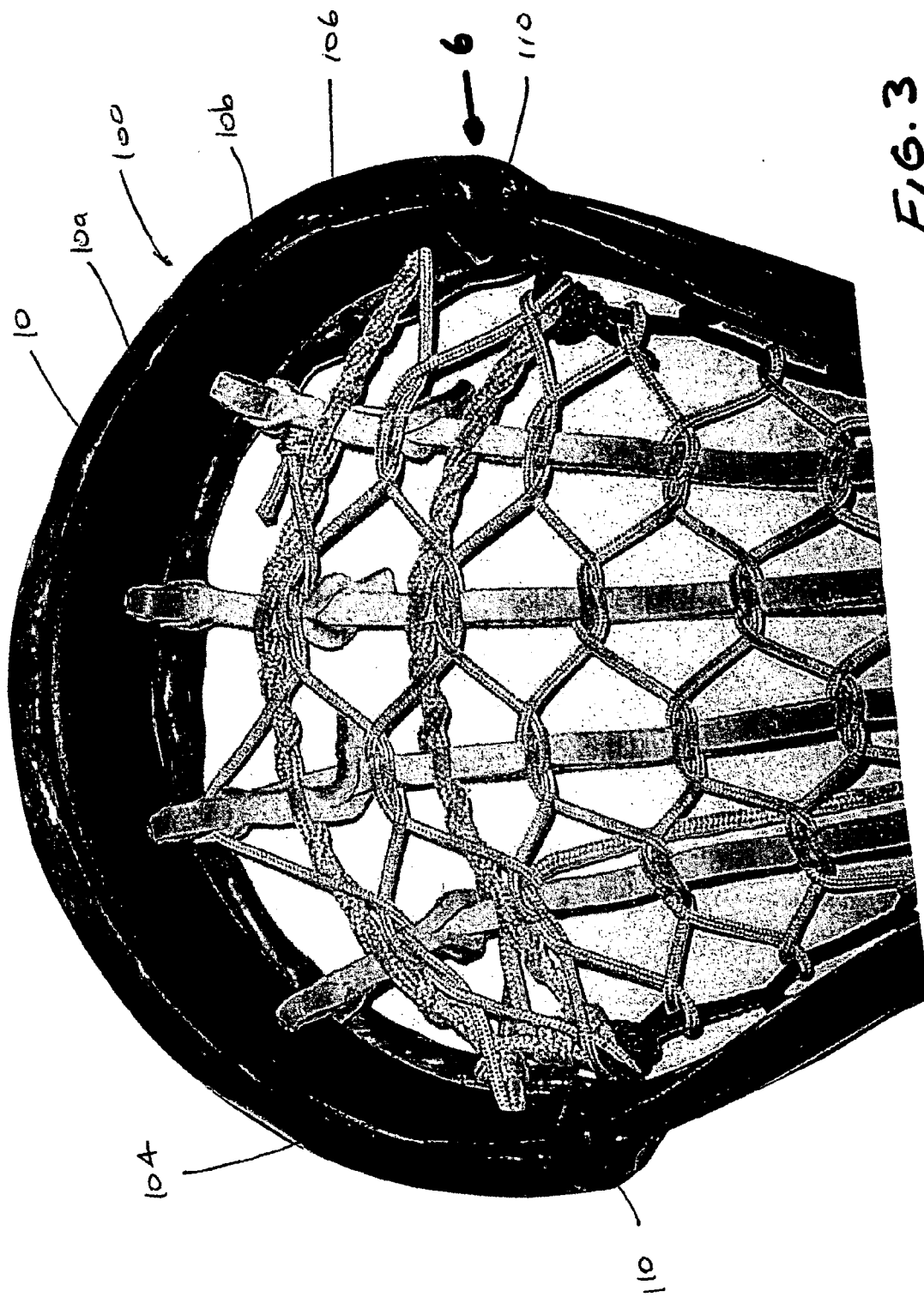


FIG. 3

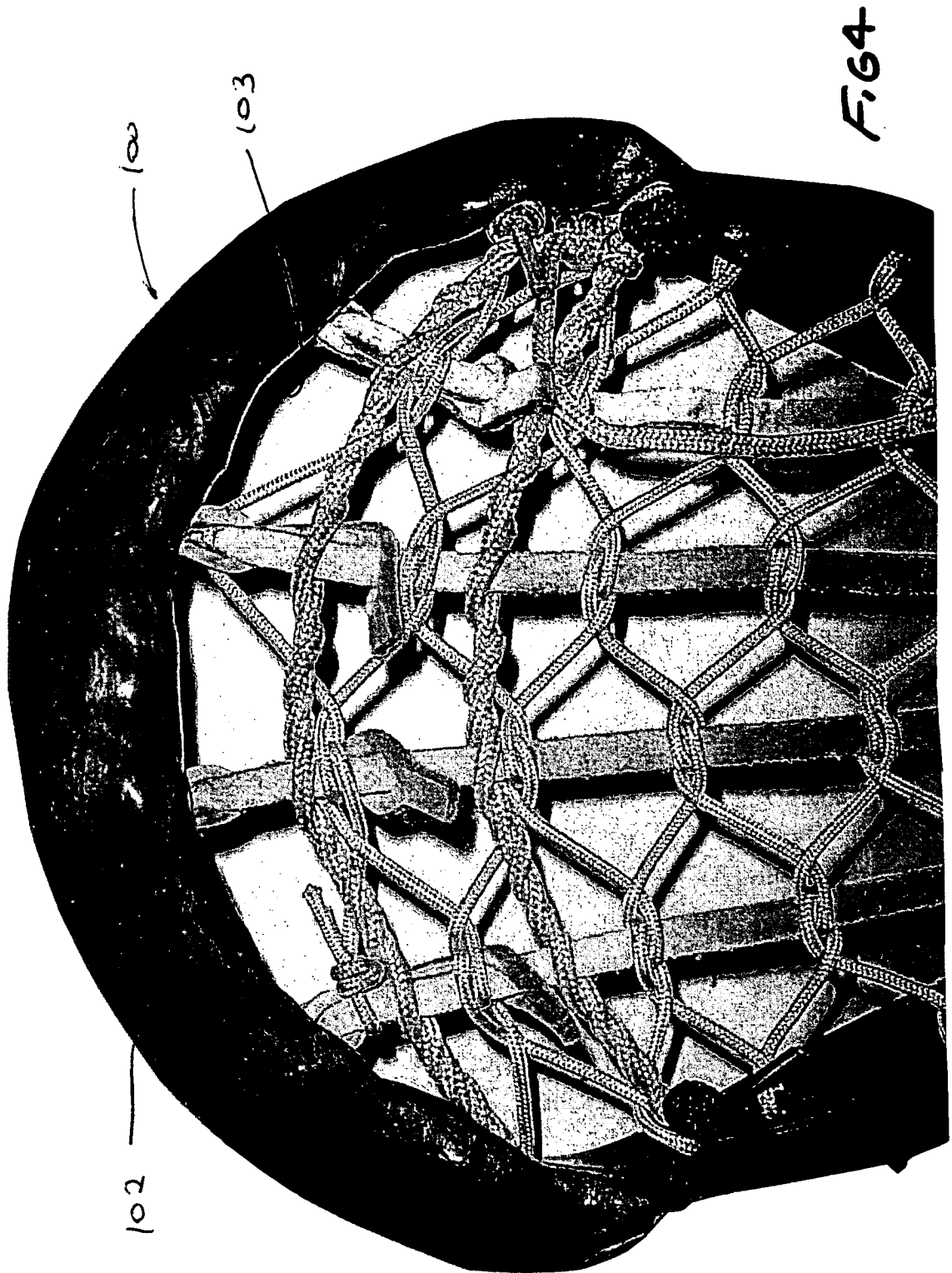
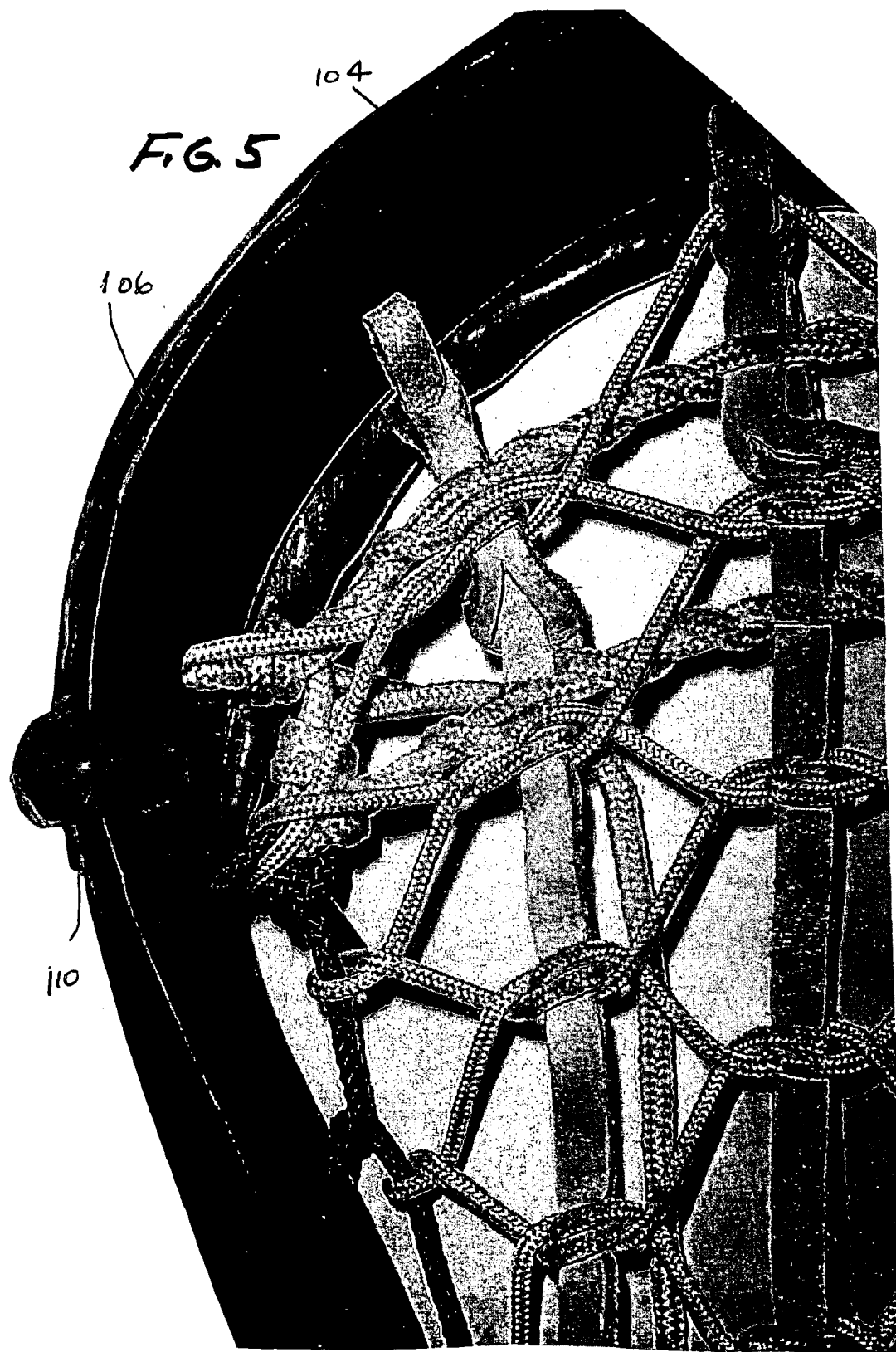


FIG. 4



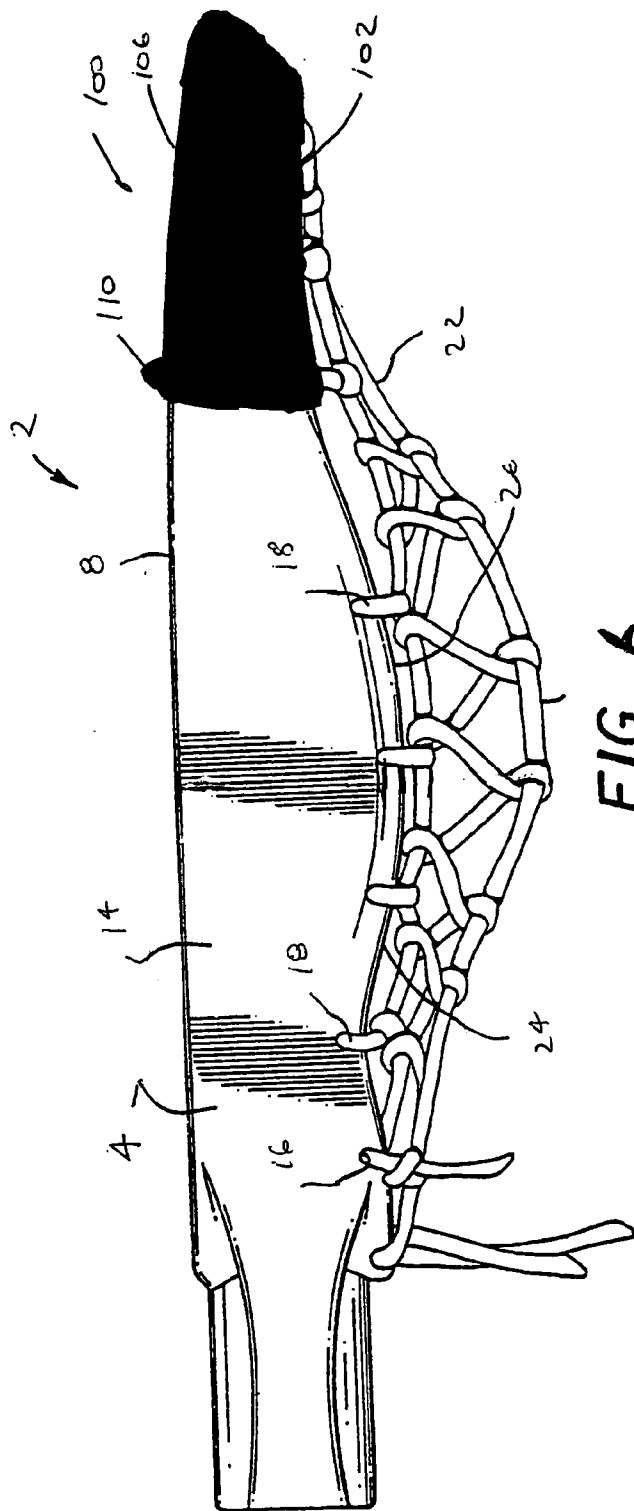


FIG. 6

LACROSSE STICK HEAD WITH SHIELD TO PROTECT NETTING

FIELD OF THE INVENTION

[0001] This invention relates to the field of lacrosse, and more particularly, this invention relates to lacrosse stick heads.

BACKGROUND OF THE INVENTION

[0002] Lacrosse is an older sport dating to the 15th century when American Indians played lacrosse as an inter-tribal game to show manliness and win honor with friend and foe alike. The game was often used to settle tribal disputes, and more importantly, prepare and toughen warriors for battle. Legends tell of supernatural spirits that controlled team selection and victories. Even today, some players and equipment are prepared in ceremonies that resemble ancient rituals the Indians practiced before departing on a warpath.

[0003] When early Europeans witnessed the game, they believed the lacrosse stick was similar to a "crosier" used by bishops as a symbol of their office. For this reason, the name "lacrosse" remained.

[0004] Non-Europeans first played lacrosse in the 1800's in Montreal, Canada, and as a result, lacrosse became the national sport for Canada. Other countries, such as the United States, England, Ireland, Scotland and Australia, also played lacrosse and competed at the international level. Many believe lacrosse is one of the fastest games on two feet and one of the more arduous tests of strength and endurance.

[0005] Even though it is a physically active sport, increasing numbers of American youth are playing lacrosse. To gain skills, young lacrosse players practice by throwing the ball against a wall in a schoolyard, against a garage door, or against a wall at home. In this manner, they are able to practice their throwing and catching skills. Usually the playing surface for these practice sessions is asphalt, concrete, or other rough or abrasive surface. In practice, the lacrosse players are encouraged to scoop the ball properly, requiring the player to slide the stick firmly against the ground to force the ball onto the lip and into the stick head and netting. This scooping practice quickly causes the strings that attach the netting to the stick head to fray and eventually fail. As strings fail, the player must either restring the stick, use a second stick, or forego practice. A string kit costs approximately \$12 to about \$20 and requires between about 1-3 hours to install, depending on the string type and the skill of the individual stringing the lacrosse stick head. A new stick costs between about \$30 and \$100. Thus, if a lacrosse player wants to continue practice after fraying the netting, the player must expend considerable sums.

SUMMARY OF THE INVENTION

[0006] It is therefore an object of the present invention to provide a lacrosse stick head that can overcome the disadvantages of the prior art and allow lacrosse players to practice on asphalt, concrete or similar abrasive surfaces.

[0007] The present invention advantageously provides a shield disposed on the lip of the lacrosse stick head to protect those portions of the netting that are disposed through netting support holes in the lip from the abrasive wear that occurs when the lip engages a ground surface, such as

asphalt, during play. The shield protects the strings from fraying and the shield works on any rough surface that would wear the strings. The shield can be easily replaced when it wears.

[0008] In one aspect of the present invention, the lacrosse stick head includes a frame having a throat, at least one sidewall extending from the throat, and a lip joined to an end of the sidewall remote from the throat. The at least one sidewall and lip have netting support holes. Netting is attached to the frame by portions of the netting disposed through the netting support holes. A shield is disposed on the lip and protects those portions of the netting disposed through the netting support holes from abrasive wear that occurs when the lip engages a ground surface during play.

[0009] In one aspect of the present invention, the shield is formed from a substantially rigid and molded, plastic material. It can include integrally formed tabs that retain the shield on the lip. The tabs can be formed to be snap fitted onto the lip. The tabs can also be formed on the shield such that when the shield is attached to the lip, the tabs are in a location that minimizes any interference of the trajectory of a ball thrown from the lacrosse stick head. The lip typically includes an upper and lower edge and the netting disposed through the netting support holes in the lip and extending over the lower edge of the lip. The shield in particular protects this portion of the netting that extends over the lower edge of the lip.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] Other objects, features and advantages of the present invention will become apparent from the detailed description of the invention, which follows when considered in light of the accompanying drawings in which:

[0011] **FIG. 1** is a top plan view of a prior art lacrosse stick head and showing the netting attached to the frame by portions of the netting disposed through the netting support holes located in the lip and sidewalls extending from the throat.

[0012] **FIG. 2** is a bottom plan view of the lacrosse stick head of **FIG. 1** and showing in greater detail the netting disposed through the netting support holes.

[0013] **FIG. 3** is a top plan view of a portion of a lacrosse stick head, such as shown in **FIGS. 1 and 2**, and showing the shield of the present invention attached to the lip to protect portions of the netting disposed through the netting support holes from abrasive wear that occurs when the lip engages an abrasive ground surface.

[0014] **FIG. 4** is a bottom plan view of the lacrosse stick head shown in **FIG. 3** and showing the shield on the lip and protecting portions of the netting that extend through the netting support holes in the lip.

[0015] **FIG. 5** is an enlarged plan view of a portion of the lacrosse stick head of **FIG. 3** and showing in greater detail a tab integrally formed with the shield and formed to snap fit onto the upper edge of the lip.

[0016] **FIG. 6** is a side elevation view of the lacrosse stick head looking in the direction of arrow **6** of **FIG. 3** and showing the shield attached to the lip to protect portions of the netting disposed through the netting support holes.

DETAILED DESCRIPTION OF THE
PREFERRED EMBODIMENTS

[0017] The present invention will now be described more fully hereinafter with reference to the accompanying drawings, in which preferred embodiments of the invention are shown. This invention may, however, be embodied in many different forms and should not be construed as limited to the embodiments set forth herein. Rather, these embodiments are provided so that this disclosure will be thorough and complete, and will fully convey the scope of the invention to those skilled in the art. Like numbers refer to like elements throughout.

[0018] The present invention advantageously overcomes the disadvantages of the prior art, conventional lacrosse stick heads that have netting portions disposed through the lip and prone to wear when the user practices on a rough, abrasive surface, such as concrete. The shield of the present invention attaches to the lip allowing practice in very rough terrain, such as asphalt and concrete, which would tend to wear the netting and especially those portions of the netting used to attach the netting onto the lip. The shield of the present invention protects the netting and any strings from fraying and can be used on asphalt, concrete and other rough surfaces and can be easily replaced when it wears.

[0019] A prior art lacrosse stick head, such as disclosed in U.S. Pat. Nos. 5,035,434 and 5,080,372, the disclosures which are hereby incorporated by reference in their entirety, is described relative to FIGS. 1 and 2. The shield of the present invention attaches to the lip of the prior art lacrosse stick head shown in FIGS. 1 and 2, and is shown attached to a similar lacrosse stick head in FIGS. 3-6. A detailed description of the prior art lacrosse stick head shown in FIGS. 1 and 2 is followed by a detailed description of the shield of the present invention attached to the prior art lacrosse stick head of FIGS. 1 and 2. Common structural elements of the lacrosse stick head described in FIGS. 1 and 2 use similar reference numerals with the common elements shown in FIGS. 3-6. Although the present invention is described relative to the incorporated by reference '434 and '372 patents and the lacrosse stick heads disclosed therein, it should be understood that the present invention can be used with any lacrosse stick head, such as disclosed in U.S. Pat. Nos. 3,591,178; 5,494,297; and 5,568,925, as non-limiting examples, the disclosures which are hereby incorporated by reference in their entirety.

[0020] Referring to FIGS. 1 and 2, showing a prior art lacrosse stick head, it will be seen that an illustrative lacrosse stick head 2 comprises a frame 4, which includes a throat 6 from which extends a sidewall 8. A distal end of the sidewall 8 joins a lip 10, which is arcuate configured, and in this embodiment, substantially semicircular configured, and includes upper and lower edges as 10a, 10b. The sidewall 8 generally includes two sidewalls 12, 14, as illustrated in FIG. 1, but may comprise only one sidewall. The frame 4 may be of wood, but in recent times predominantly has been constructed of a substantially rigid lightweight plastic, such as a nylon, a polyurethane, or mixtures of thermoplastic polymers.

[0021] The throat 6, the sidewall 8 and the lip 10 are provided with holes 16 in which are disposed portions 18, 20, respectively, of a netting 22. The netting 22 is attached to, and retained by, the frame 4.

[0022] The sidewall 8 is characterized by a bottom edge thereof 24 which extends outwardly, edgewise, such as generally to define a bulge 26 in the bottom of the sidewall. The bulge 26 comprises an outward extension of the bottom edge 24, the bulge being substantially in the plane of the sidewall (FIG. 6). The holes 16 in the sidewall 8 are each disposed proximate the bottom edge 24, enabling the netting to define a ball pocket 28 generally alongside and beneath the bulge 26, which is disposed about mid-length of the sidewall.

[0023] As described and shown in the incorporated by reference '372 patent, each sidewall 12, 14 is provided with elongated rib on an interior surface of the sidewall and extending inwardly so as to overlie marginal portions of the netting (FIGS. 1 and 2). Preferably, the rib is disposed, at least in part, proximate an upper edge 34 of the sidewall. In the embodiments using two sidewalls 12, 14, the rib 30 includes first and second ribs 36, 38 extending inwardly of the frame toward each other in a plane overlying the ball pocket 28, and overlying portions of the netting proximate the ball pocket 28. The ribs 36, 38 each comprise elongated protrusions projecting inwardly of the head portion from the interior surfaces of their respective walls 12, 14, and substantially normal to the interior surfaces, which need not be curved, thus simplifying the molding of the frame. Preferably, the rib is molded integrally with the sidewall 8.

[0024] Each of the ribs 36, 38 has a substantially flat undersurface 40 (FIG. 2) generally normal to the interior surface of the associated sidewall 12, 14, and has an end surface disposed inwardly of the interior surface. The end surface and the undersurface 40 are generally normal to each other and at their juncture provide a ridge inwardly of the interior surface and disposed so as to overlie marginal portions of the netting 22. Each protrusion, at its ends, flairs into the interior surface of its sidewall 12, 14 (FIG. 2). The widest portion 46 of each rib undersurface 40, when viewed in plan, projects inwardly from the sidewall bulge 26 area to overlie marginal portions of the ball pocket 28.

[0025] The shield 100 of the present invention can be used on the lacrosse stick head 2 shown in FIGS. 1 and 2, and is shown attached to the lacrosse stick head in FIGS. 3-6. The shield 100 can be formed from a substantially rigid, lightweight plastic material, such as nylon, polyurethane or mixtures of thermoplastic polymers as non-limiting examples. The shield is typically formed as a molded shield, for example, through injection molding, and attaches along the arcuate portion of the lip 10. The bottom portion 102 of the shield has an internal area 103 that engages the lower edge 10b of the lip 10. The lower edge 10b of the lip resides in a groove or other lip retaining area 104 formed within the shield, as shown in FIG. 5. The upper portion 106 of the shield can be coextensive with the upper edge 10a of the lip such that balls can roll gently over the lip, and the shield 100 will not interfere with the user's throwing of the ball in a controlled manner. Two tabs 110 are integrally formed at either end of the shield and extend over the upper edge of the lip at the area where the lip conjoins with the sides to retain the shield to the lip.

[0026] As shown in greater detail in FIG. 5, the tabs 110 are integrally formed with the shield, but could be formed separate and could also be separate clips that attach onto the shield and hold the shield to the lip. In the embodiment

shown in FIG. 5, the tabs are formed resilient enough to allow the shield to be placed onto the lip by pressing the lower edge of the lip into the groove or other lip retaining area 104. The tabs are bent over to retain the shield to the lip. The tabs 100 are positioned so that the tabs will not interfere with the accuracy of ball throwing and especially when a ball is guided over the lip during throwing.

[0027] FIG. 6 clearly shows that the shield protects those portions of the netting that extend through the netting support holes in the lip to prevent fraying of the strands or threads forming that portion of the netting. Thus, it is now possible to practice lacrosse on an asphalt, concrete or other rough surface that would tend to wear the netting. The shield can be easily replaced when either worn or lost during rough play. The cost would be about \$5 to manufacture, which is a benefit to lacrosse players when a string kit costs between about \$12 to about \$20 and requiring about 1-3 hours to install. It is a great benefit over wearing a stick out that costs between about \$30-\$100 to replace.

[0028] Many modifications and other embodiments of the invention will come to the mind of one skilled in the art having the benefit of the teachings presented in the foregoing descriptions and the associated drawings. Therefore, it is to be understood that the invention is not to be limited to the specific embodiments disclosed, and that the modifications and embodiments are intended to be included within the scope of the dependent claims.

That which is claimed is:

- 1. A lacrosse stick head comprising:
 - a frame having a throat, a sidewall extending from the throat, and a lip joined to an end of the sidewall remote from the throat, the sidewall and lip having netting support holes;
 - netting attached to said frame by portions of said netting disposed through said netting support holes; and
 - a shield disposed on the lip that protects portions of netting disposed through said netting support holes of the lip from abrasive wear that occurs when the lip engages a ground surface.
- 2. A lacrosse stick head according to claim 1, wherein said shield is formed from a molded, plastic material.
- 3. A lacrosse stick head according to claim 1, wherein said shield is formed from a rigid material.
- 4. A lacrosse stick head according to claim 1, wherein said shield includes integrally formed tabs that retain the shield on the lip.

5. A lacrosse stick head according to claim 4, wherein said tabs are formed to snap fit onto the lip.

6. A lacrosse stick head according to claim 4, wherein said tabs are formed on the shield in a location to minimize interfering with a trajectory of a ball thrown from the lacrosse stick head.

7. A lacrosse stick head comprising:

- a frame having a throat, sidewalls extending from the throat, and an arcuate lip joined to ends of the sidewalls remote from the throat, said lip having an upper and lower edge, each of said sidewalls and lip having netting support holes;

netting attached to said frame by portions of said netting disposed through said netting support holes and extending over the lower edge of the lip; and

a shield disposed on the lip that protects those portions of netting disposed through said netting support holes and along the lower edge of the lip from abrasive wear that occurs when the lip engages a ground surface.

8. A lacrosse stick head according to claim 7, wherein said shield is formed from a molded, plastic material.

9. A lacrosse stick head according to claim 7, wherein said shield is formed from a rigid material.

10. A lacrosse stick head according to claim 7, wherein said shield includes integrally formed tabs that retain the shield on the lip.

11. A lacrosse stick head according to claim 10, wherein said tabs are formed to snap fit onto the lip.

12. A lacrosse stick head according to claim 10, wherein said tabs are formed on the shield in a location to minimize interfering with a trajectory of a ball thrown from the lacrosse stick head.

13. A lacrosse stick head according to claim 7, wherein said arcuate lip is substantially semicircular configured.

14. A shield for a lacrosse stick head comprising:

- a rigid member configured to fit onto the lip of a lacrosse stick head and having a lower portion for protecting netting disposed through holes in the lip and an attachment means for retaining the shield onto the lip.

15. A shield according to claim 1, wherein said attachment means comprises integrally formed tabs adapted to fit over an upper edge of the lip of the lacrosse stick head.

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