A putter is disclosed that is integrally formed on the shaft of the putter. A plurality of different shaped projections may be formed on the shaft of the putter. The shaft is preferably formed of a hardened metal alloy to reduce the flexibility of the shaft. A layer of elastomer may be provided on the shaft between the projections.
PUTTER WITH AN INTEGRAL GRIP

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. provisional application Ser. No. 61/733,964 filed Dec. 6, 2012, the disclosure of which is hereby incorporated in its entirety by reference herein.

TECHNICAL FIELD

[0002] This invention relates to golf clubs and in particular to a putter that includes a shaft that is integrally formed into a grip that has a hard surface like the shaft of the putter.

BACKGROUND

[0003] In the game of golf a putter is used to roll the golf ball over the surface of the green and, hopefully, into the golf hole. Putters are available with a wide variety of heads including blades, mallets and a wide variety of other shapes. The shaft of a putter is normally similar to the shaft of the other golf clubs and may be metal, wood or graphite. The grip of a putter is normally the same type of grip used for the other clubs and may be an elastomeric tube or a leather grip provided on an inner tube or wrapped on the shaft.

[0004] Putters grips are generally relatively soft to provide a feel that is similar to the feel of gripping when an iron, hybrid club, fairway wood or driver. The other clubs are normally swung with great force to maximize the distance that the golf ball is hit with a particular club. The soft grip absorbs vibrations and reduces the shock of the club head impacting the golf ball.

[0005] The putter is seldom struck with the same degree of force as the other clubs in a golfer’s bag. There is no need to absorb vibration or reduce the shock of impact with the golf ball when putting. The most important aspect of putting is to put the ball in the intended direction with the correct amount of force to reach the hole.

[0006] The problem with soft putter grips is that they may be deflected in the golfer’s hands by contact with the ball especially if the ball is hit with the toe or heel of the putter head. In addition, the force imparted to the ball may be reduced as a result of the resiliency of the grip material. Soft putter grips may provide an inconsistent, low amplitude signal that reduces the rate at which feedback is provided to the golfer. The feedback provided to the golfer’s hands and nervous system is interpreted to improve putting skills.

[0007] The shaft of a putter typically has the same degree of flex as the other golf clubs in a golfer’s bag. Flex is an important characteristic of the other types of golf clubs that are designed to flex to provide more distance and maximize club head speed at the moment of impact with the golf ball. Flex in a putter shaft is counter-productive in that it reduces the level of control that a golfer has over the speed that the putter club head is moving as the golf ball is contacted.

[0008] Applicant’s invention is directed to solving the above problems and other problems as will be summarized below.

SUMMARY

[0009] This invention is to provide a rigid grip for a putter that is integral with the shaft of the putter.

[0010] The putter grip may be formed on an upper portion of the shaft that is initially expanded to between 0.75 and 1.5 inches in diameter and that extends from 10 to 12 inches from the upper end of the shaft. A plurality of conical points are formed to extend radially outwardly from the expanded portion of the shaft. The projections may be cone shaped, knurled, fluted, or other forms providing an aggressive, non-slip texture.

[0011] The shaft is a hardened hollow or solid shaft. The cross-sectional shape of the shaft may be cylindrical or have a hob, star, fluted or other shape to increase stiffness. The shaft may be formed from a metal alloy, and hardened to its maximum potential after the grip is formed.

[0012] According to one aspect of this disclosure, a golf putter is disclosed that includes a putter head and a shaft attached to the putter head at a lower end of the shaft. An upper end of the shaft has a plurality of projections extending radially outwardly from the upper end of the shaft that provide an integral grip that is gripped by a golfer to putt.

[0013] According to other aspects of the disclosed putter, the upper end of the shaft may have an outer surface that has an enlarged radius. An intermediate portion of the shaft has a radius that is smaller than the enlarged radius and extends between the putter head and the upper end, and wherein the projections extend radially outwardly from the outer surface. The plurality of projections may extend radially outwardly from the outer diameter of the upper end of the shaft.

[0014] According to another aspect of the disclosed putter the shaft may be a tubular shaft with the upper end of the shaft having an outer diameter that is larger than the diameter of the shaft between the upper end and the putter head. The shaft may have a plurality of reduced diameter portions that step down in radius from the upper end to the putter head.

[0015] According to another aspect of this disclosure, a method is disclosed for making a grip for a golf putter having a shaft and a putter head attached to a lower end of the shaft. The method comprises selecting a tubular shaft, expanding an upper end of the shaft in an outward radial direction, forming a plurality of projections on the upper end of the shaft, and attaching the putter head to the lower end of the shaft.

[0016] The method may combine the steps of expanding the upper end of the shaft and forming a plurality of projections are performed in a single operation. The step of expanding the upper end of the shaft may be performed in a hydraulic press. The step of forming the plurality of projections may be performed in a hydraulic press.

[0017] These and other aspects of this disclosure will be more fully described below with reference to the attached drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] FIG. 1 is a perspective view of a golfer using a putter made according to one aspect of the present invention to make a putt;

[0019] FIG. 2 is an elevation view of a putter made in accordance with one aspect of the present invention;

[0020] FIG. 3 is a fragmentary perspective view of a putter grip made according to one aspect of the present invention;

[0021] FIG. 4 is a cross-sectional view taken along the line 4-4 in FIG. 3;

[0022] FIG. 5 is a fragmentary perspective view of a putter grip made according to an alternative embodiment of the present invention;

[0023] FIGS. 5A-5D are fragmentary views of differently shaped projections that may be provided on the grip;
FIG. 6 is a cross-sectional view taken along the line 6-6 in FIG. 5; and FIG. 7 is a perspective view of a hydraulic press that may be used to form a grip integrally with the shaft of the putter.

DETAILED DESCRIPTION

The illustrated embodiments are disclosed with reference to the drawings. However, it is to be understood that the disclosed embodiments are intended to be merely examples that may be embodied in various and alternative forms. The figures are not necessarily to scale and some features may be exaggerated or minimized to show details of particular components. The specific structural and functional details disclosed are not to be interpreted as limiting, but as a representative basis for teaching those skilled in the art how to practice the disclosed concepts.

Referring to FIGS. 1 and 2, a putter is generally indicated by reference numeral 10. The putter 10 has a head 12 that is used to strike a golf ball 14 when the ball is on or near the putting surface. The putter 10 includes a shaft 16 that is connected to the head 12. An upper portion, generally indicated by reference numeral 18, of the shaft 16 is provided with an integral grip 20 that is formed into the shaft 16.

Referring to FIGS. 3 and 4, a shaft 16 is shown with a grip 20 formed on the upper portion 18 of the shaft 16. A plurality of conical points 22, or projections, form the grip 20 and are integrally formed in the shaft 16. The conical points 22 are formed by a hydraulic press (as shown in FIG. 7 below) that is used to expand the shaft and form the conical points 22 by exerting pressure through one or more pointed portions of a die that are pressed against the inside of the upper portion 18 of the shaft 16. The conical points 22 provide a gripping surface. A golfer gripping the conical points 22 of the grip 20 inhibits the putter 10 from being deflected in the golfer’s hands by contact with the ball on the toe or heel of the putter head. The conical points 22 are not resilient and facilitate providing a consistent, high amplitude signal that increases the rate at which feedback is provided to the golfer through the grip 20. A flat 23 may be provided on one side of the upper portion 18 of the shaft 16 to facilitate aligning the putter by providing a surface on the grip that is adapted to receive the thumbs of the golfer on the opposite side of the grip 20 from the golfer’s body. While the flat 23 is shown with the conical points 22, it should be understood that the conical points 22 could also be eliminated from the flat 23.

As best seen in FIG. 4, a thin layer 25 of elastomeric material may be provided between the conical points 22 to reduce the tendency of the grip 20 to slip in a golfer’s hands. The layer of elastomer does not cover the tops of the conical points in the illustrated embodiment but the golfer’s hands contact the elastomeric layer 25 at the same time that the conical points 22 are contacted. As a result the benefit of providing a consistent, high amplitude signal that increases the rate at which feedback is provided to the golfer through the grip 20 and enhanced frictional engagement with the elastomeric layer. The flat 23 includes the conical points 22 and the elastomeric layer 25 is provided between the conical points 22 on the flat 23 as illustrated in FIG. 4. It should be understood that the flat 23 may not include conical points and may or may not be covered by the elastomeric layer 25.

Referring to FIGS. 5 and 6, an alternative embodiment of the putter grip 20 is illustrated in which a plurality of flutes 21 is provided as the grip 20. The flutes 21 are formed by displacing portions of the shaft radially outwardly to form the plurality of elongated flutes 21 to extend lengthwise on the shaft 16.

Referring to FIGS. 5A-D, a plurality of different types of projections are illustrated. Referring to FIG. 5A, a portion of a grip 20 is shown that includes a plurality of points 24 that are formed by displacing the points 24 radially outwardly from the shaft 16. In FIG. 5B, a portion of a grip 20 is shown with a plurality of rectangular projections 26. Referring to FIG. 5C, a portion of a grip 20 is shown to include a plurality of diamond-shaped projections 28. In FIG. 5D, a portion of a grip is shown with a plurality of star-shaped projections 30. It should be understood that many other different shaped projections may be provided without departing from the spirit and scope of this invention.

Referring to FIG. 7, a hydraulic press 32 is shown that may be utilized to expand the shaft and form the conical points 22 on a shaft 16. The conical points 22 may alternatively be projections in the shape of any of the projections 21-30, as described above. A die 36 is provided in the hydraulic press 32 that is used to form the conical points 22 in the upper portion 18 of the shaft 16. The conical points may be formed individually or more likely would be formed in groups arranged in a series of rings or strips on the upper portion 18 of the shaft 16. A set of expanding mandrels 38 is shown next to the hydraulic press 32 that may be used to expand the shaft 16.

While exemplary embodiments are described above, it is not intended that these embodiments describe all possible forms of the disclosed apparatus and method. Rather, the words used in the specification are words of description rather than limitation, and it is understood that various changes may be made without departing from the spirit and scope of the disclosure as claimed. The features of various implementing embodiments may be combined to form further embodiments of the disclosed concepts.

1 claim:

1. A golf putter comprising:
   a putter head; and
   a shaft attached to the putter head at a lower end of the shaft, and an upper end of the shaft having a plurality of projections extending radially outwardly from the upper end of the shaft that provide an integral grip that is gripped by a golfer for putting.

2. The golf putter of claim 1 wherein the upper end of the shaft has an outer surface that has an enlarged radius, and an intermediate portion of the shaft has a radius that is smaller than the enlarged radius and extends between the putter head and the upper end, and wherein the projections extend radially outwardly from the outer surface.

3. The golf putter of claim 1 wherein the shaft is a tubular shaft, and wherein the upper end of the shaft has outer diameter that is larger than the diameter of the shaft between the upper end and the putter head.

4. The golf putter of claim 3 wherein the plurality of projections extend radially outwardly from the outer diameter of the upper end of the shaft.

5. The golf putter of claim 3 wherein the shaft has a plurality of reduced diameter portions that step down in radius from the upper end to the putter head.

6. The golf putter of claim 1 wherein the projections are cone shaped.
7. The golf putter of claim 1 further comprising a layer of elastomer provided on the upper end of the shaft between the projections.

8. The golf putter of claim 1 wherein the projections are flutes.

9. The golf putter of claim 1 wherein the shaft is cylindrical.

10. The golf putter of claim 1 wherein the shaft has an outer surface that is hob shaped.

11. The golf putter of claim 1 wherein the shaft has an outer surface that is star shaped.

12. The golf putter of claim 1 wherein the shaft has an outer surface that is fluted in shape.

13. The golf putter of claim 1 wherein the shaft is formed of a metal alloy that is hardened after the projections are formed in the upper end.

14. A method of making a grip for a golf putter having a shaft and a putter head attached to a lower end of the shaft, the method comprising:

   selecting a tubular shaft;
   expanding an upper end of the shaft in an outward radial direction;
   forming a plurality of projections on the upper end of the shaft; and
   attaching the putter head to the lower end of the shaft.

15. The method of claim 14 wherein the steps of expanding the upper end of the shaft and forming a plurality of projections are performed in a single operation.

16. The method of claim 14 wherein the step of expanding the upper end of the shaft are performed in a hydraulic press.

17. The method of claim 14 wherein the step of forming the plurality of projections are performed in a hydraulic press.

18. The method of claim 14 further comprising:
   molding a layer of elastomer onto the upper end of the shaft between the projections.

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