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(54) **GOLF CLUB HEAD AND METHOD OF PROVIDING SAME**

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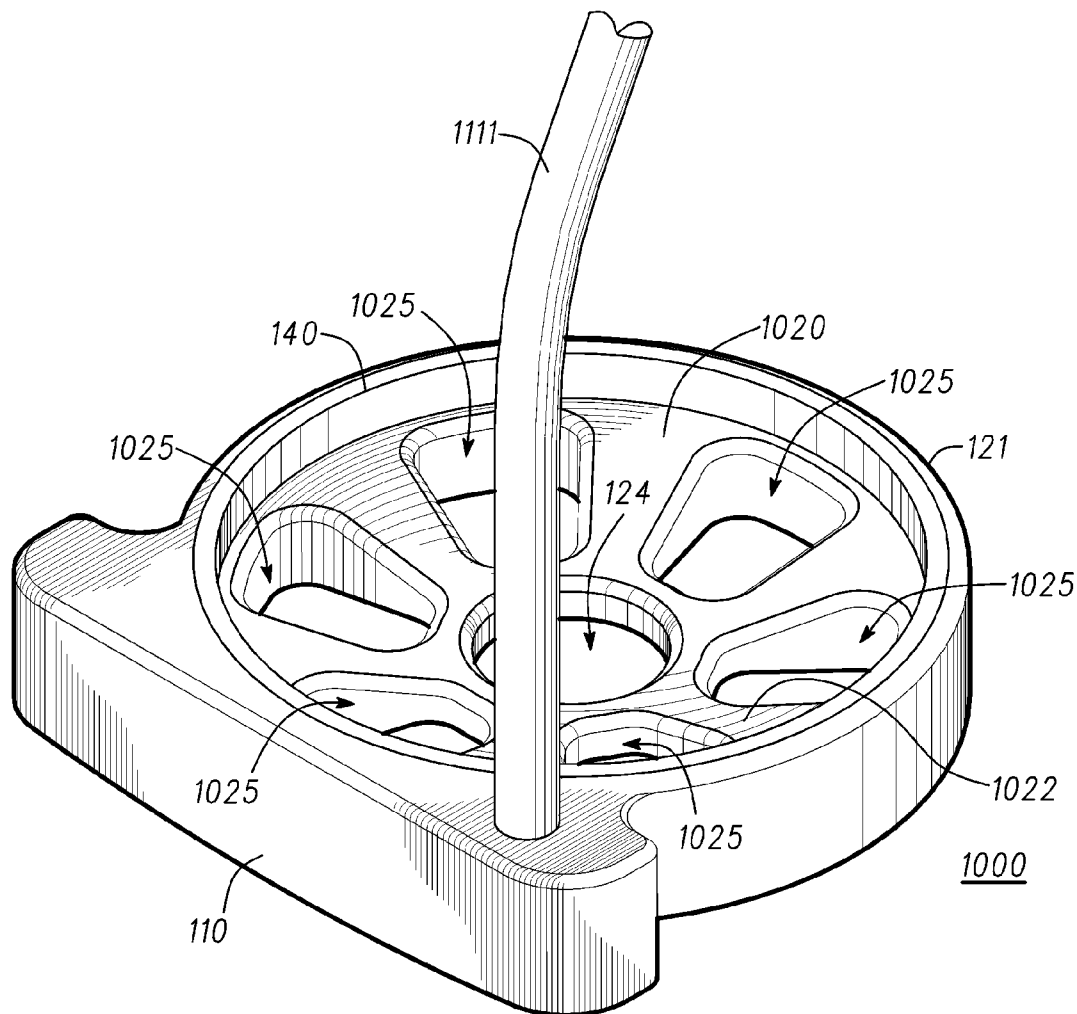
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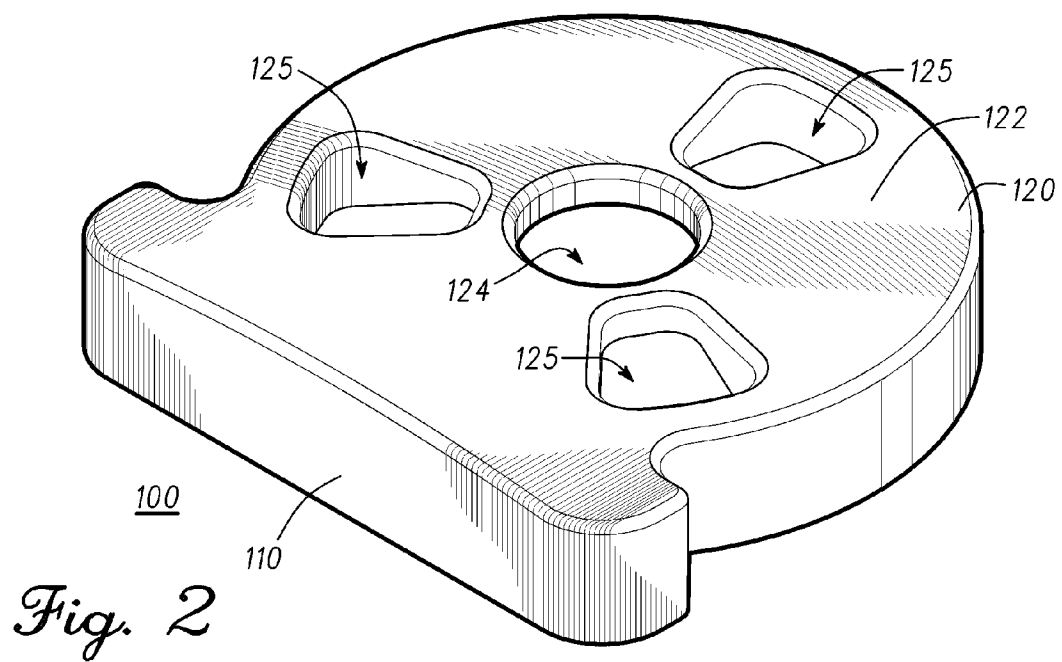
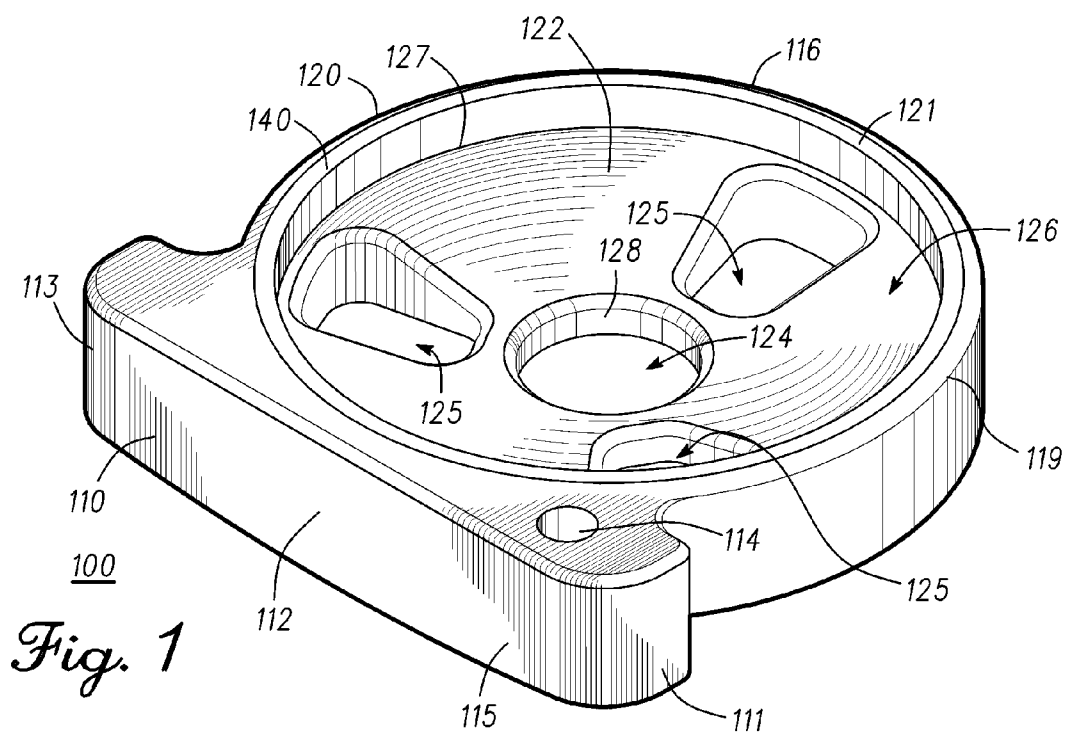
(57) **ABSTRACT**

In some embodiments, a golf club head can include: (a) a face member; and (b) a rear section coupled to the face member. The rear section can include an edge. The edge can be substantially circular in shape. A diameter of the edge can be equal to a diameter of a regulation golf hole. Other embodiments are disclosed in this application.

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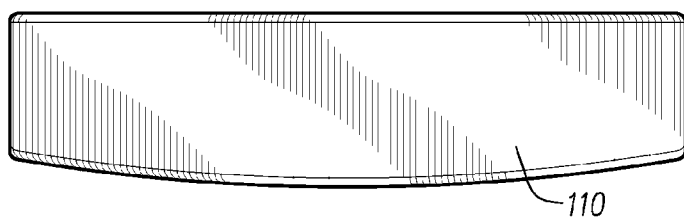


Fig. 3

100

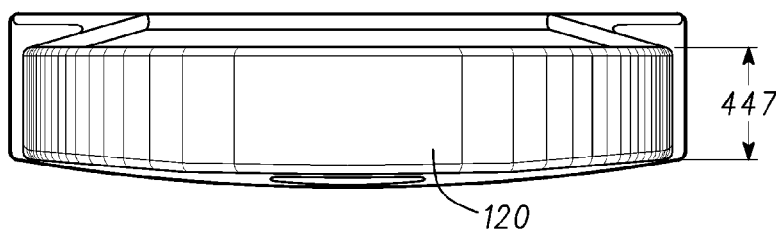


Fig. 4

100

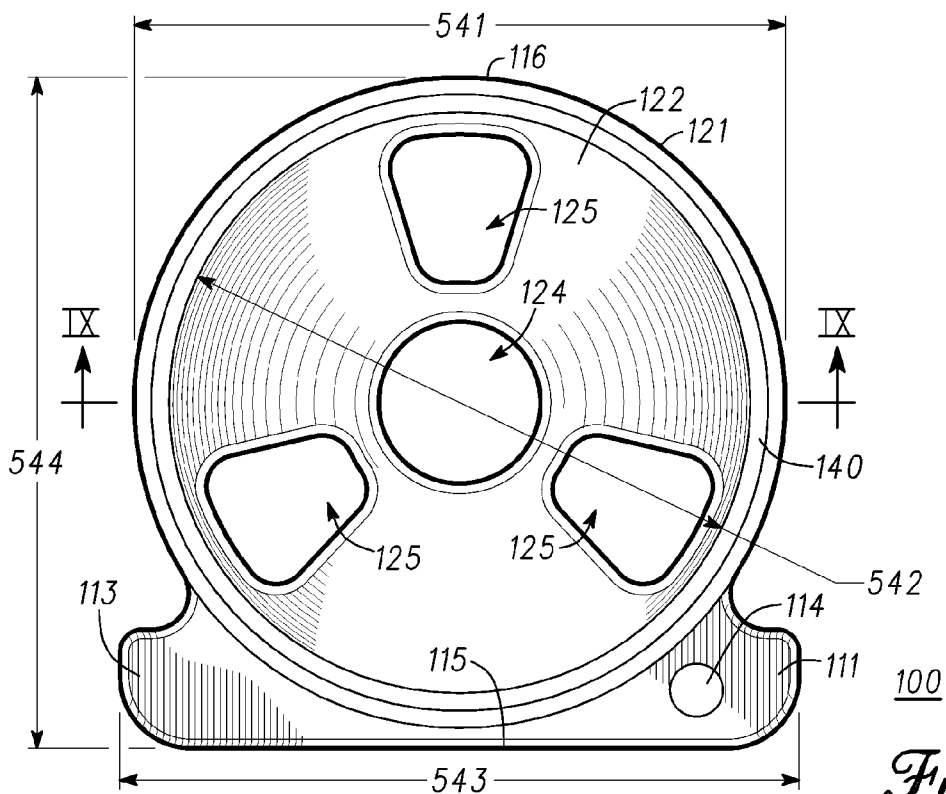
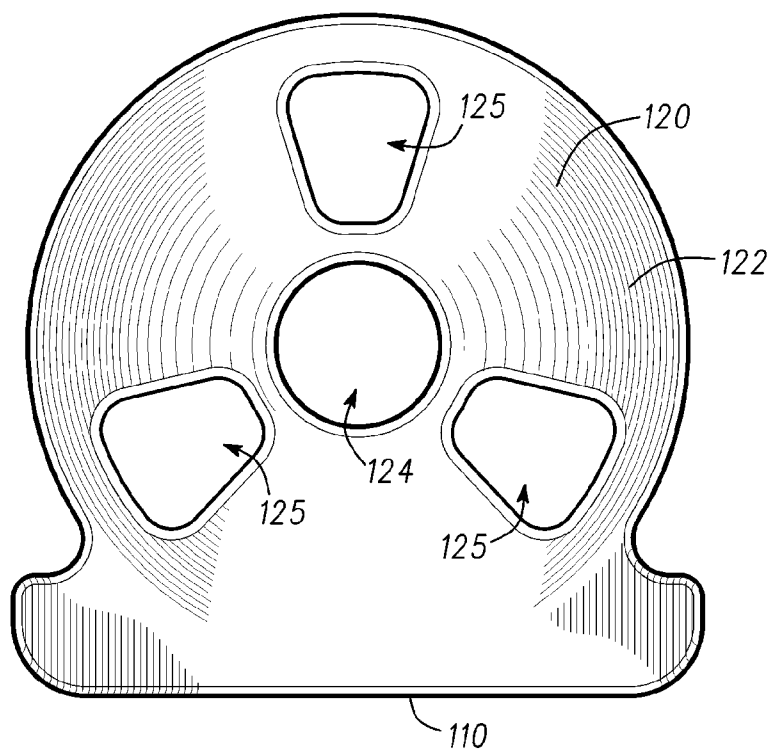


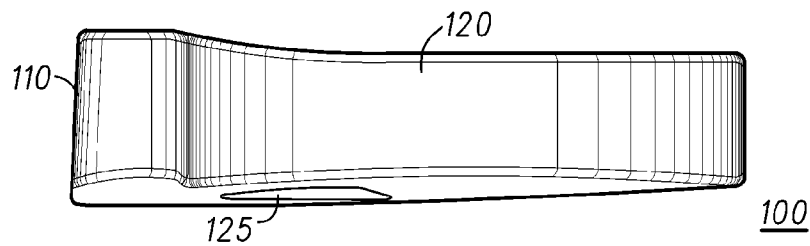
Fig. 5

100



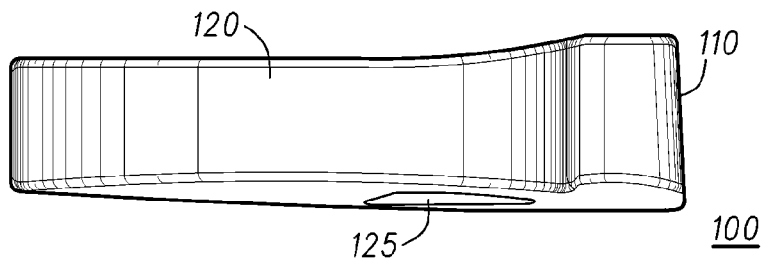
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Fig. 6



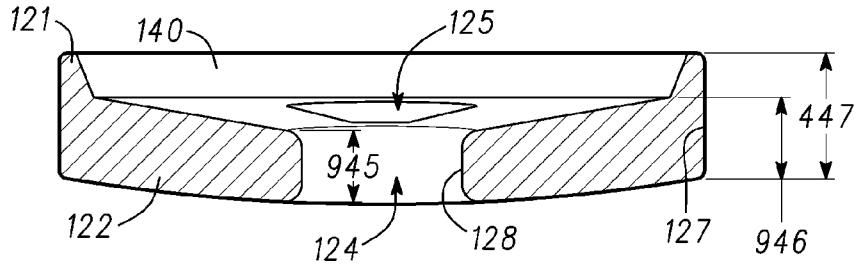
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Fig. 7



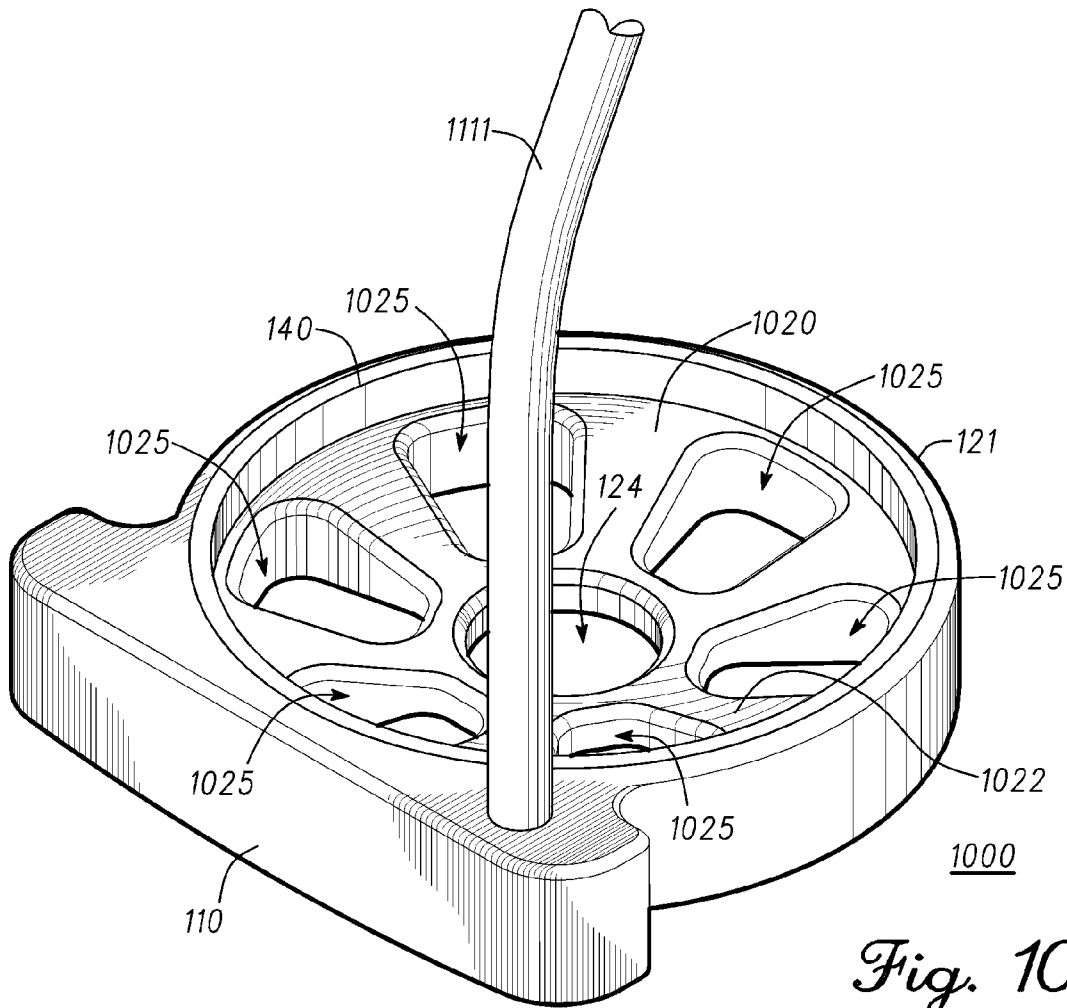
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Fig. 8



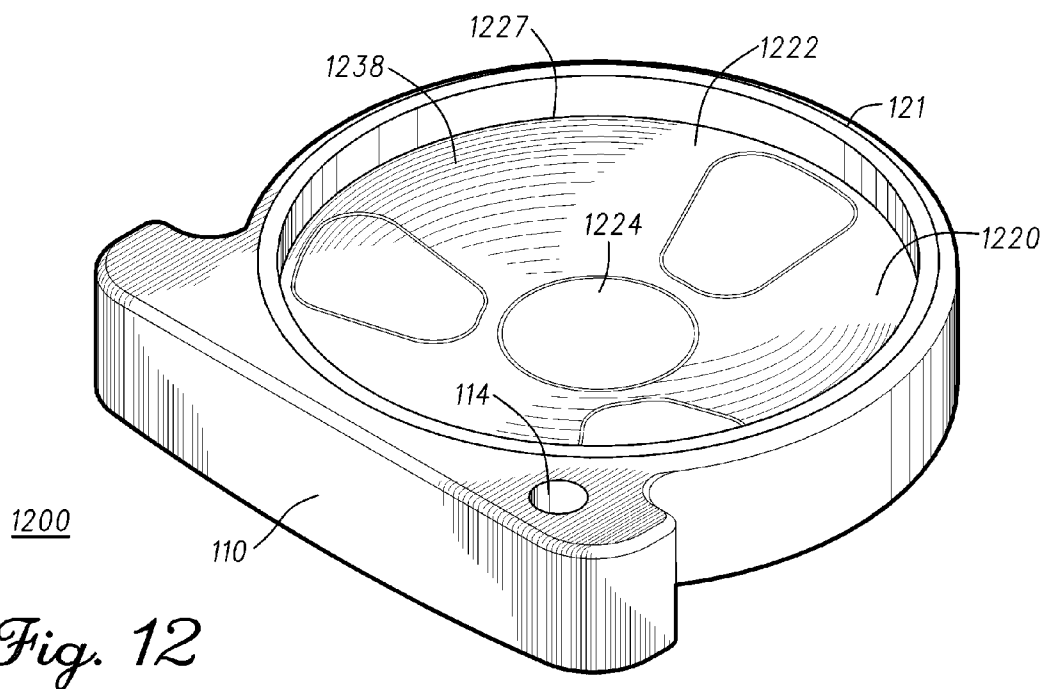
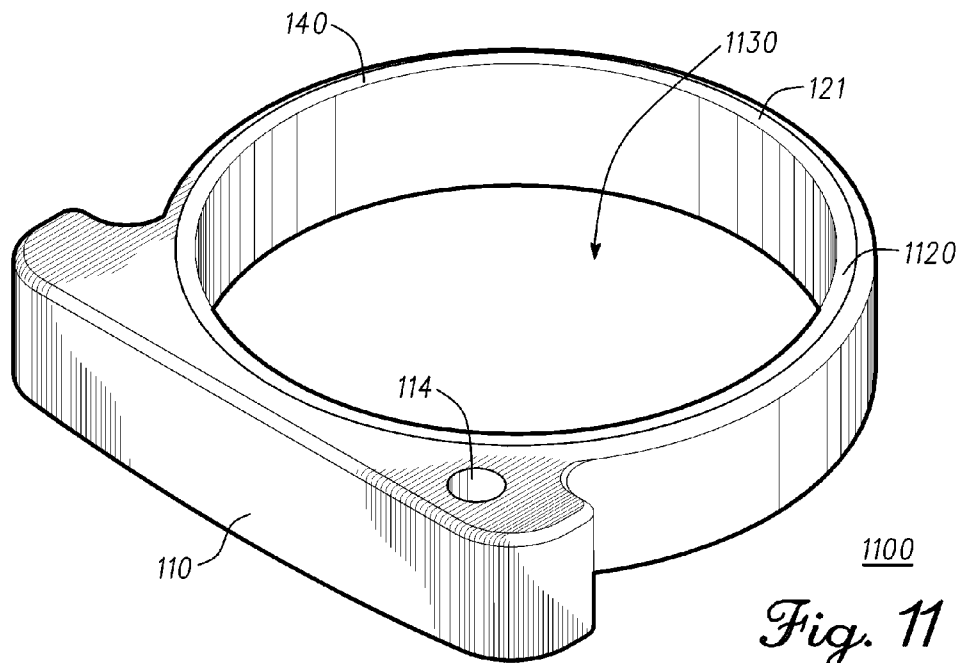
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Fig. 9



1000

Fig. 10



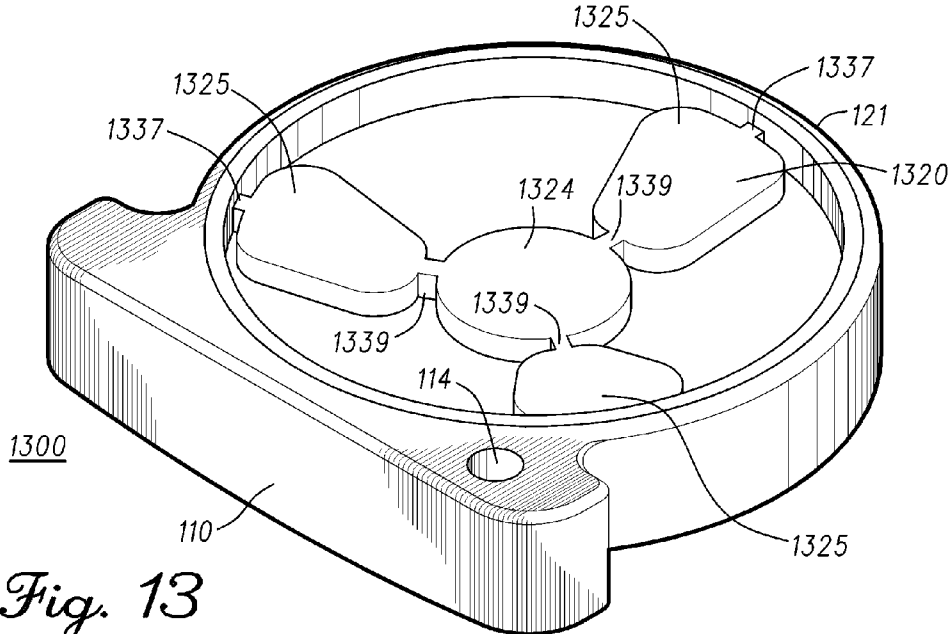


Fig. 13

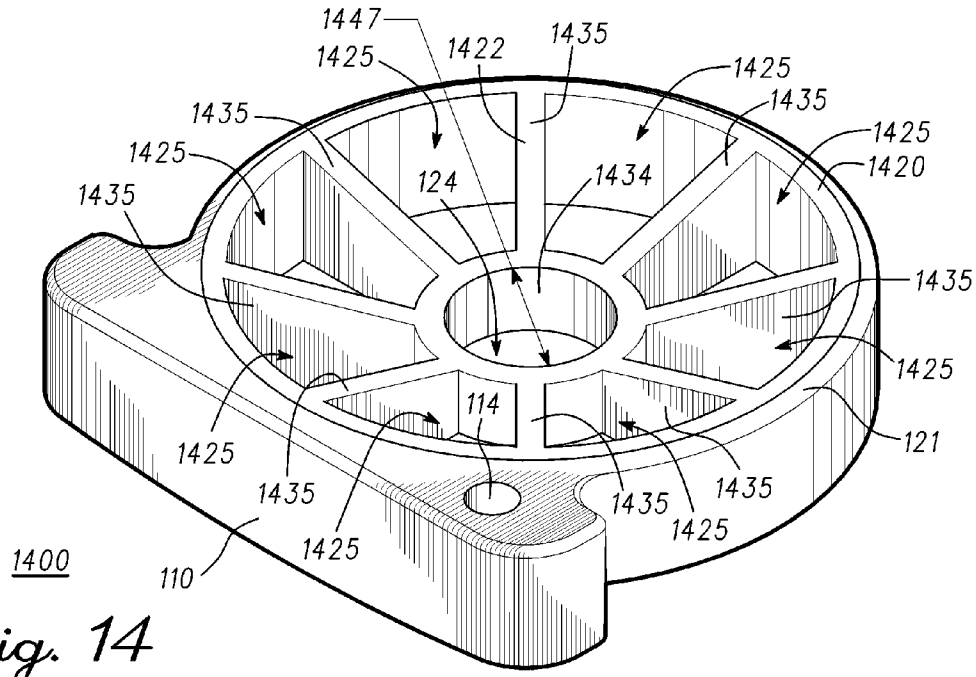
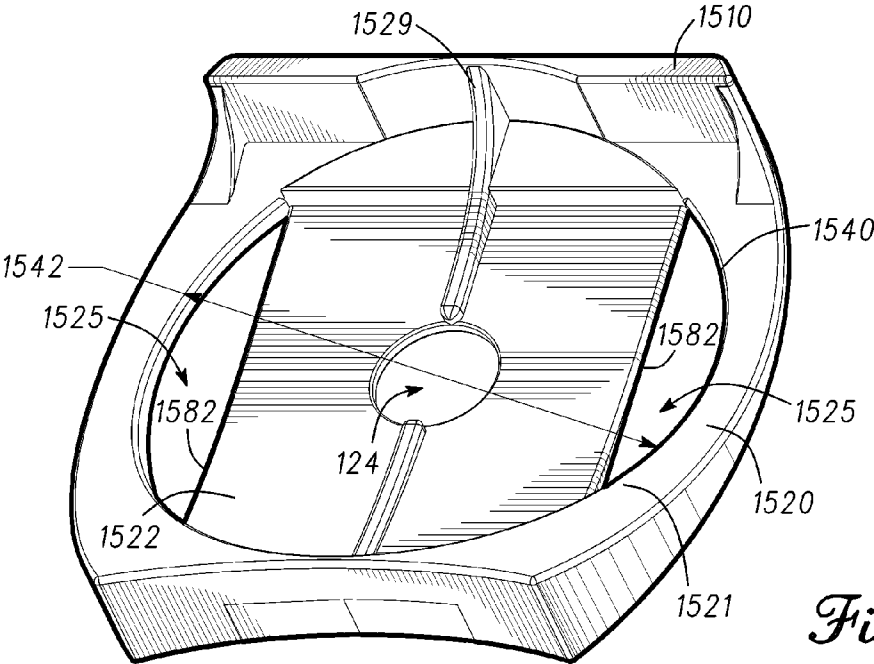
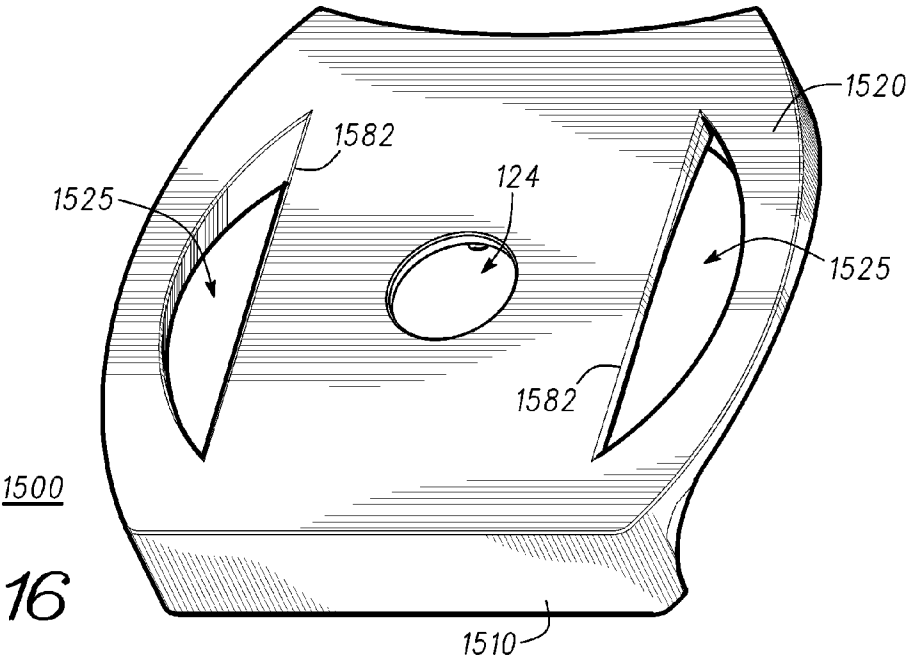


Fig. 14



1500
Fig. 15



1500
Fig. 16

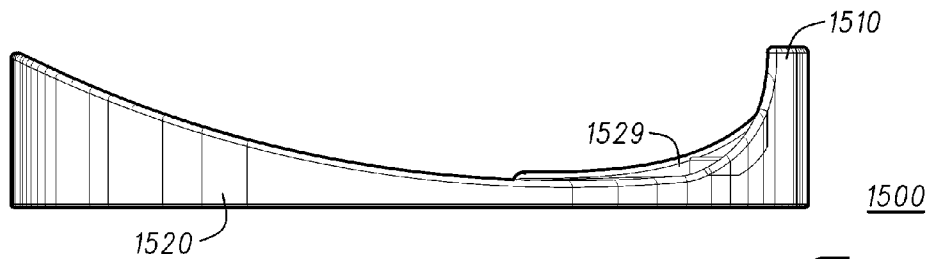


Fig. 17

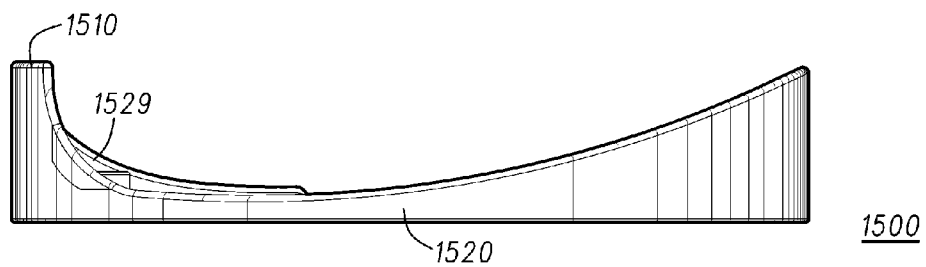


Fig. 18

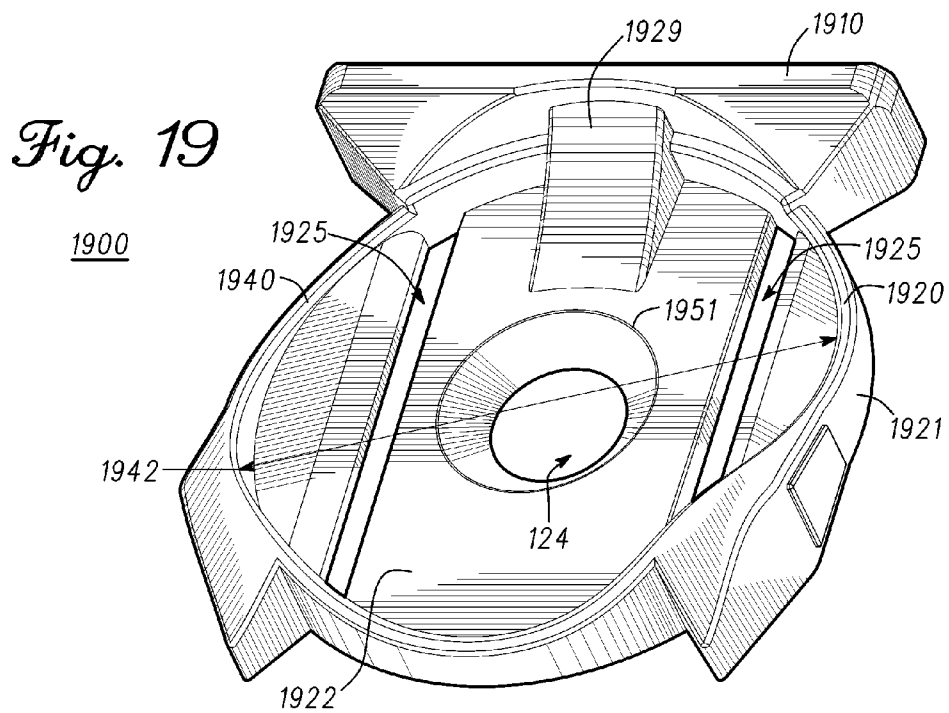
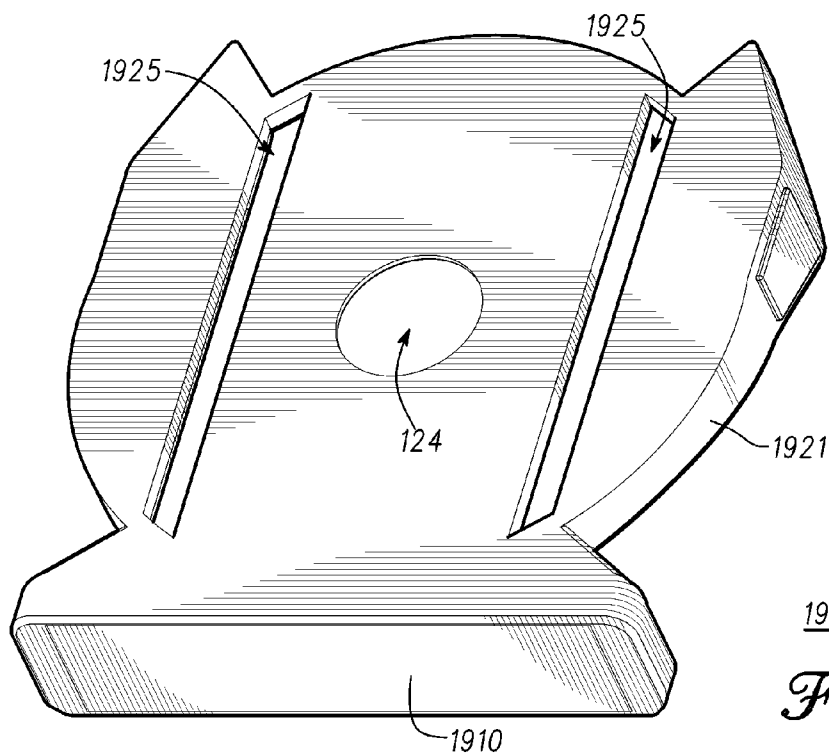
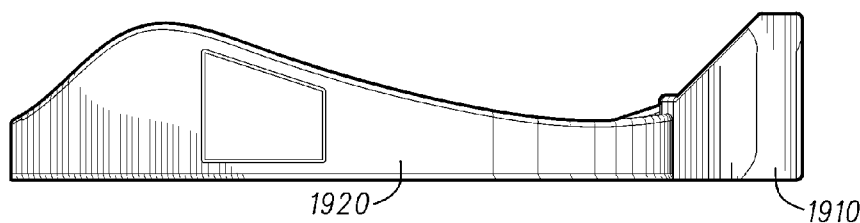


Fig. 19



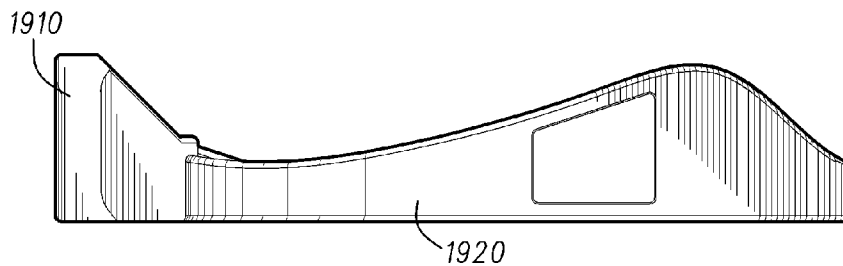
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Fig. 20



1900

Fig. 21



1900

Fig. 22

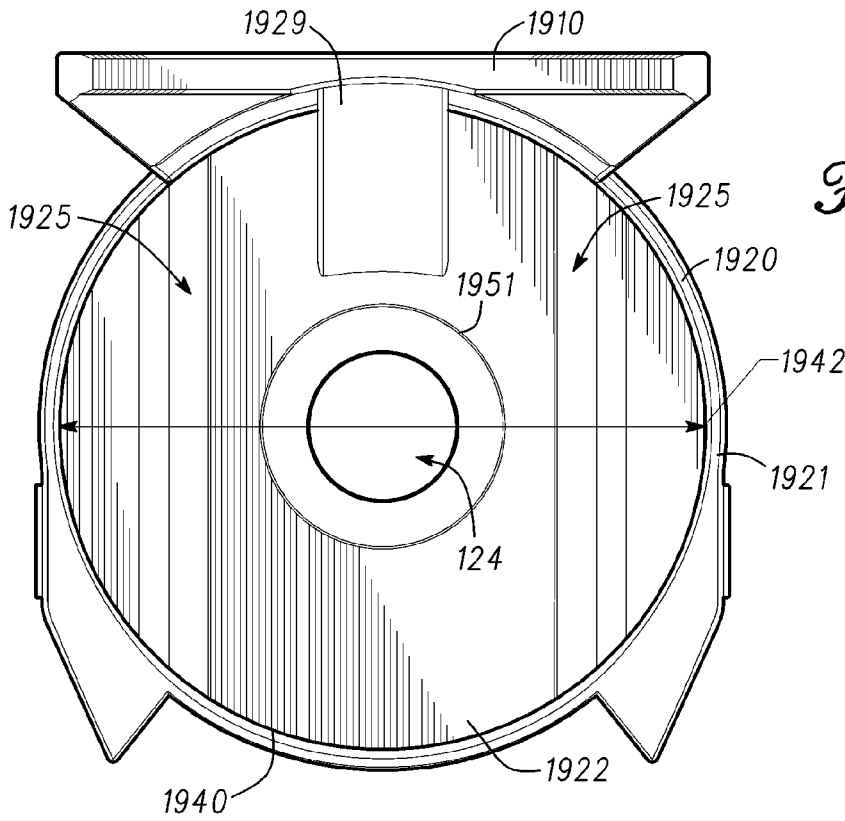
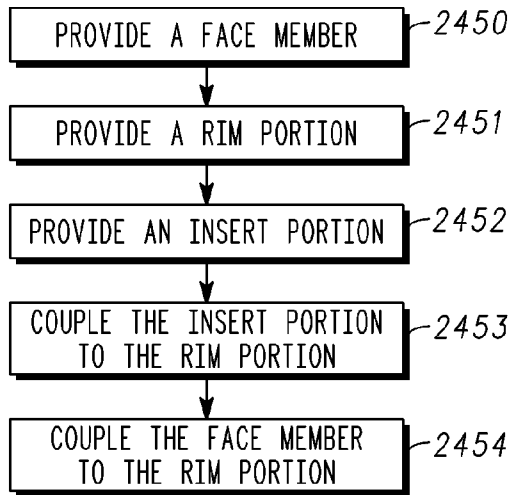


Fig. 23

1900



2400

Fig. 24

GOLF CLUB HEAD AND METHOD OF PROVIDING SAME

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This is a continuation-in-part application of U.S. application Ser. No. 29/333,361, filed Mar. 6, 2009. U.S. application Ser. No. 29/333,361 is incorporated herein by reference.

FIELD OF THE INVENTION

[0002] This disclosure relates generally to golf equipment, and relates more particularly to golf club heads and methods of providing the same.

BACKGROUND

[0003] Putting a golf ball is one of the most difficult aspects of playing golf. A person can create psychological obstacles that hinder his ability to successfully putt the golf ball into the golf hole. For example, if the golf ball is several yards or meters away from the golf hole, the size of the golf hole can appear smaller than the golf ball, when in reality the golf hole is much larger than the golf ball. This perceived difference in size between the golf hole and the golf ball can cause a person to believe the putt is more difficult than it actually is and, thus, affect the person's ability to successfully putt the golf ball into the golf hole.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] To facilitate further description of the embodiments, the following drawings are provided in which:

[0005] FIG. 1 illustrates a top perspective view of a golf club head, according to a first embodiment;

[0006] FIG. 2 illustrates a bottom perspective view of the golf club head of FIG. 1, according to the first embodiment;

[0007] FIG. 3 illustrates a front elevation view of the golf club head of FIG. 1, according to the first embodiment;

[0008] FIG. 4 illustrates a rear elevation view of the golf club head of FIG. 1, according to the first embodiment;

[0009] FIG. 5 illustrates a top view of the golf club head of FIG. 1, according to the first embodiment;

[0010] FIG. 6 illustrates a bottom view of the golf club head of FIG. 1, according to the first embodiment;

[0011] FIG. 7 illustrates a right side view of the golf club head of FIG. 1, according to the first embodiment;

[0012] FIG. 8 illustrates a left side view of the golf club head of FIG. 1, according to the first embodiment;

[0013] FIG. 9 illustrates a cut-away view along section line IX-IX of the golf club head of FIG. 5, according to the first embodiment;

[0014] FIG. 10 illustrates a top perspective view of a golf club head, according to a second embodiment;

[0015] FIG. 11 illustrates a top perspective view of a golf club head, according to a third embodiment;

[0016] FIG. 12 illustrates a top perspective view of a golf club head, according to a fourth embodiment;

[0017] FIG. 13 illustrates a top perspective view of a golf club head, according to a fifth embodiment;

[0018] FIG. 14 illustrates a top perspective view of a golf club head, according to a sixth embodiment;

[0019] FIG. 15 illustrates a top perspective view of a golf club head, according to a seventh embodiment;

[0020] FIG. 16 illustrates a bottom perspective view of the golf club head of FIG. 15, according to the seventh embodiment;

[0021] FIG. 17 illustrates a left side view of the golf club head of FIG. 15, according to the seventh embodiment;

[0022] FIG. 18 illustrates a right side view of the golf club head of FIG. 15, according to the seventh embodiment;

[0023] FIG. 19 illustrates a top perspective view of a golf club head, according to a eighth embodiment;

[0024] FIG. 20 illustrates a bottom perspective view of the golf club head of FIG. 19, according to the eighth embodiment;

[0025] FIG. 21 illustrates a left side view of the golf club head of FIG. 19, according to the eighth embodiment;

[0026] FIG. 22 illustrates a right side view of the golf club head of FIG. 19, according to the eighth embodiment;

[0027] FIG. 23 illustrates a top view of the golf club head of FIG. 19, according to the eighth embodiment; and

[0028] FIG. 24 is a flow chart illustrating an embodiment of a method of providing a golf club head, according to an embodiment.

[0029] For simplicity and clarity of illustration, the drawing figures illustrate the general manner of construction, and descriptions and details of well-known features and techniques may be omitted to avoid unnecessarily obscuring the invention. Additionally, elements in the drawing figures are not necessarily drawn to scale. For example, the dimensions of some of the elements in the figures may be exaggerated relative to other elements to help improve understanding of embodiments of the present invention. The same reference numerals in different figures denote the same elements.

[0030] The terms "first," "second," "third," "fourth," and the like in the description and in the claims, if any, are used for distinguishing between similar elements and not necessarily for describing a particular sequential or chronological order. It is to be understood that the terms so used are interchangeable under appropriate circumstances such that the embodiments described herein are, for example, capable of operation in sequences other than those illustrated or otherwise described herein. Furthermore, the terms "include," and "have," and any variations thereof, are intended to cover a non-exclusive inclusion, such that a process, method, system, article, device, or apparatus that comprises a list of elements is not necessarily limited to those elements, but may include other elements not expressly listed or inherent to such process, method, system, article, device, or apparatus.

[0031] The terms "left," "right," "front," "back," "top," "bottom," "over," "under," and the like in the description and in the claims, if any, are used for descriptive purposes and not necessarily for describing permanent relative positions. It is to be understood that the terms so used are interchangeable under appropriate circumstances such that the embodiments of the invention described herein are, for example, capable of operation in other orientations than those illustrated or otherwise described herein.

[0032] The terms "couple," "coupled," "couples," "coupling," and the like should be broadly understood and refer to connecting two or more elements, whether mechanically, magnetically, chemically, and/or otherwise. Coupling may be for any length of time, e.g., permanent or semi-permanent or only for an instant. The absence of the word "removably,"

“removable,” and the like near the word “coupled,” and the like does not mean that the coupling, etc. in question is or is not removable.

DESCRIPTION

[0033] In a number of embodiments, a golf club or a golf club head can include: (a) a face member; and (b) a rear section coupled to the face member. The rear section can include an edge. The edge can be substantially circular in shape. A diameter of the edge can be equal to a diameter of a regulation golf hole. The embodiments of a golf club or a golf club head can help a person overcome psychological obstacles that may hinder his or her ability to successfully putt the golf ball into the golf hole.

[0034] In other embodiments, a golf putter or golf putter head can include: (a) a face member arranged for impacting a golf ball; (b) a rim portion coupled to the face member; and (c) an insert portion having a center and an outer edge, the insert portion is located in an interior of the rim portion. A length from the center of the insert portion to the outer edge of the insert portion can be equal to a radius of a regulation golf hole. The insert portion can include a pattern substantially similar to a pattern of the regulation golf hole.

[0035] Other embodiments can concern a method of providing a golf club head. The method can include: providing a face member; providing a rim portion with a rim such that the rim has a diameter that is substantially equal to a diameter of a regulation golf hole; and coupling the face member to the rim portion. In some examples, the rim can be an inner rim of the rim portion. In other examples, the rim can be an outer rim of the rim portion.

[0036] Turning to the drawings, FIG. 1 illustrates a top perspective view of a golf club head **100**, according to a first embodiment. FIG. 2 illustrates a bottom perspective view of golf club head **100**, according to the first embodiment. FIG. 3 illustrates a front elevation view of golf club head **100**, according to the first embodiment. FIG. 4 illustrates a rear elevation view of golf club head **100**, according to the first embodiment. FIG. 5 illustrates a top view of golf club head **100**, according to the first embodiment. FIG. 6 illustrates a bottom view of golf club head **100**, according to the first embodiment. FIG. 7 illustrates a right side view of golf club head **100**, according to the first embodiment. FIG. 8 illustrates a left side view of golf club head **100**, according to the first embodiment. FIG. 9 illustrates a cut-away view of golf club head **100** along a line IX-IX. Golf club head **100** is merely exemplary and is not limited to the embodiments presented herein. Golf club head **100** can be employed in many different embodiments or examples not specifically depicted or described herein.

[0037] In some embodiments, golf club head **100** can include: (a) a face member **110** arranged for impacting a golf ball; (b) a rear section **120** coupled to face member **110**. In some examples, golf club head **100** is a golf putter head.

[0038] Face member **110** can include: (a) a heel end **111**; (b) a middle section **112** configured to impact a golf ball (not shown); (c) a toe end **113** opposite heel end **111**; and (d) an aperture **114**. In accordance with the rules of golf as defined by the United State Golf Association (USGA) and/or the Royal and Ancient Golf Club of St. Andrews (R&A), for example, a length **543** (FIG. 5) from heel end **111** to toe end **113** must be greater than a length **544** (FIG. 5) from a front end **115** of golf club head **100** to a back end **116** of golf club

head **100**. The apparatus, methods, and articles of manufacture described herein are not limited in this regard.

[0039] In addition to the golf club heads described herein, further embodiments include golf clubs (e.g., golf putters). More particularly, golf putters are provided that include a golf club head described herein. The golf putters can also include a golf club shaft and a grip (not shown). To form a golf putter with golf club head **100**, aperture **114** thereof can receive a first end of a shaft (not shown in FIGS. 1-9). The shaft and aperture **114** can be secured to each other by an adhesive bonding process (e.g., epoxy) and/or other suitable bonding processes (e.g., mechanical bonding, soldering, welding, and/or brazing). Aperture **114** can be located at the other end of face member **110** and/or at a center portion of face member **110** in other embodiments. In still further embodiments, aperture **114** can be located at other areas other than face member **110**. Furthermore, aperture **114** can be a hosel in other embodiments. To complete the golf putter, a grip (not shown in FIGS. 1-9) can receive a second end of the shaft. The shaft and the grip can be secured to each other by an adhesive bonding process and/or other suitable bonding processes.

[0040] Rear section **120** can include: (a) a rim portion **121** attached to face member **110**; and (b) an insert portion **122** located in an interior of the rim portion **121**. In the example shown in FIGS. 1-9, face member **110** can be formed integrally with rim portion **121**. For example, face member **110** and rim portion **121** may be a single piece formed by a casting process. In other embodiments, rim portion **121** and face member **110** may be two or more separate portions that can be secured together by an adhesive bonding process (e.g., epoxy) and/or other suitable bonding processes (e.g., mechanical bonding, soldering, welding, and/or brazing). The apparatus, methods, and articles of manufacture described herein are not limited in this regard.

[0041] Similarly, in some examples, rim portion **121** and insert portion **122** can be formed integrally with each other. For example, rim portion **121** and insert portion **122** may be a single piece formed by a casting process. In other examples, rim portion **121** and insert portion **122** may be two or more separate portions that can be secured to each other by an adhesive bonding process (e.g., epoxy) and/or other suitable bonding processes (e.g., mechanical bonding, soldering, welding, and/or brazing).

[0042] In some examples, rim portion **121** can include an inner edge or rim **140**. Inner rim **140** can be substantially circular in shape and have an inner diameter **542** (FIG. 5). Rim portion **121** can have an outer edge or rim **119** with an outer diameter **541** (FIG. 5).

[0043] In some examples, inner diameter **542** can be substantially equal to the diameter of a regulation golf hole (i.e., a regulation golf hole cup) as defined by one or more golf standard organizations and/or governing bodies. For example, as set forth by the USGA and/or the R&A, the diameter of a regulation golf hole (i.e., a regulation golf hole cup) is 108 millimeters (i.e., 4.25 inches). Accordingly, in some examples, inner diameter **542** (or outer diameter **541**) is approximately 108 mm. That is, inner rim **140** can have a radius of approximately 54 mm (2.125 inches). In some examples, a length from a center of insert portion **122** to an outer edge **127** of insert portion **122** is also substantially equal to the radius of the regulation golf hole (and/or, in some embodiments, slightly smaller in radius than inner rim **140** (e.g., 0.1 percent (%) to 3.0% smaller)). In other examples, outer diameter **541** of outer rim **119** can be substantially equal

to the diameter of a regulation golf hole. The apparatus, methods, and articles of manufacture described herein are not limited in this regard.

[0044] In the same or different examples, insert portion 122 can be a solid piece of material and can have: (a) a center aperture 124; and (b) one or more peripheral apertures 125. In some examples, one or more of peripheral apertures 125 can be located in insert portion 122 such that one or more of peripheral apertures 125 may be used as an alignment aid.

[0045] In some embodiments, insert portion 122 is designed such that insert portion 122 includes a pattern substantially similar to a pattern of a regulation golf hole. The pattern of apertures 124 and 125 in insert portion 122 as illustrated in FIGS. 1-2 and 5-6 is substantially similar to the pattern of regulation golf hole. As will be described in more detail later, insert portions 1022 and 1422 of FIGS. 10 and 14, respectively, also include pattern substantially similar to patterns of other regulation golf holes. As used herein, "a pattern substantially similar to a pattern of regulation golf hole" and the like means a pattern of apertures, dimensions, and shapes of apertures and/or other markings of the insert portion that substantially mimics the pattern of the apertures, dimensions, and shape of the apertures and/or other markings of a regulation golf hole. Alternatively, apertures 124 and/or 125 may be substituted with recesses and/or protrusions configured in the same or similar pattern as apertures 124 and 125. A regulation golf hole is a golf hole as defined by the USGA, the R&A, and/or other golf governing bodies.

[0046] Referring again to the embodiment shown in FIGS. 1-9, center aperture 124 is located at a center of insert portion 122. In most golf holes, the center aperture is designed to removably couple to a ferrule of a flagstick. Typically, a golf flagstick (not shown) includes a long cylindrical body and a ferrule attached to one end of the long cylindrical body. In many examples, the ferrule can be a metallic cylindrical projection attached to the flagstick with a diameter larger than the diameter of the long cylindrical body.

[0047] The diameter of the center aperture in a regulation golf hole and a diameter of center aperture 124 are substantially equal to (and/or slightly larger than) a radius of a ferrule or an end of the flagstick if no ferrule is used on the flagstick. In one example, a ferrule has a diameter of 27.3 mm (1.075 inches). Accordingly, center aperture 124 can have a diameter substantially equal to 27.3 mm and/or slightly larger than 27.3 mm (e.g., 0.1% to 3.0% larger).

[0048] Peripheral apertures 125 are located in a region 126 between an edge 128 of center aperture 124 and outer edge 127 of insert portion 122. That is, peripheral apertures 125 can be located around a periphery of center aperture 124. Peripheral apertures 125 can be substantially evenly distributed in region 126 and can be located substantially similar to the locations of peripheral apertures in a regulation golf hole.

[0049] In many examples, peripheral apertures 125 can also be shaped substantially similar to peripheral apertures in a regulation golf hole. For example, peripheral apertures 125 can be substantially trapezoidal in shape in at least one plane, as illustrated in FIGS. 1-2 and 5-6. As used herein, "trapezoidal," "trapezoid," or the like refer to a four-sided figure with one pair of at least partially parallel sides. As an example, peripheral apertures 125 are trapezoids, even though two of the sides of peripheral apertures 125 can be curved or rounded. The apparatus, methods, and articles of manufacture described herein are not limited in this regard.

[0050] In the example shown in FIGS. 1-2 and 5-6, insert portion 122 includes three peripheral apertures 125. In other examples, insert portion 122 can include one peripheral aperture, two peripheral apertures, or four or more peripheral apertures. As previously mentioned, the number, dimensions, sizes, and locations of apertures in insert section 122 are substantially similar to the number, dimensions, and locations of apertures in a regulation golf hole being substantially mimicked by apertures 124 and 125.

[0051] In some examples, insert portion 122 can have a first height 945 (FIG. 9) at edge 128 of center aperture 124. Insert portion 122 can have a second height 946 (FIG. 9) at outer edge 127. In many embodiments, a height of insert portion 122 tapers down from second height 946 at outer edge 127 to first height 945 at edge 128 of center aperture 124. In an example where insert portion 122 is made from an aluminum material or other suitable type of material(s), the taper can be at an angle of approximately 25 degrees. When insert portion 122 is made from other metals or materials, the taper angle can vary based on the properties of the metal or material. For example, if a more dense and heavier metal or material (e.g., steel) is used to construct insert portion 122, the taper angle can be greater than 25 degrees. In another example, if a less dense and lighter material is used to construct insert portion 122, a smaller taper angle can be used.

[0052] In some examples, rim portion 121 can have a height 447 (FIG. 4) between approximately 6.4 mm (0.25 inches) and 64 mm (2.5 inches). In the same or different examples, height 946 of insert portion 122 at outer edge 127 is less than height 447 of rim portion 121.

[0053] A regulation golf ball, as defined by the USGA and/or the R&A, is 42.67 mm (1.68 inches) in diameter. That is, a regulation golf ball has a diameter equal to 40% of the diameter of a regulation golf hole. Setting the diameter of inner rim 140 (or outer rim 119) equal to the diameter of a regulation golf hole provides psychological benefits to a person using a putter-type golf club with golf club head 100. Golf club head 100 allows the person to see the size of the golf hole next to the golf ball before performing a putting stroke. This visual representation of the golf hole gives the person confidence that the golf hole is quite large in relation to the golf ball. Thus, the person has an increased level of confidence and increased success when putting. This psychological boost can be especially high when the golf ball is far from the golf hole and the golf hole appears to be quite small in the distance.

[0054] In some examples, rear section 120 can be seen by the person when he or she is performing a putting stroke and can supply a continuous visual reminder of the large size of the golf hole in relation to the golf ball throughout the putting process. For relatively shorter putts, the difference in size can be very evident because the ball is sandwiched between the golf hole and rear section 120.

[0055] Furthermore, a person's confidence can be further boosted by including a pattern on insert portion 122 substantially similar to the pattern on a regulation golf hole. Including the same or substantially similar pattern in rear section 120 can help the person visualize a successful putt of the golf ball into the golf hole.

[0056] Some golf club heads may have a circular portion but the diameter of the circular portion is not the same as the diameter of a regulation golf hole. These golf club heads do not provide the same psychological boost to the person as golf club head 100. Golf club heads with circular portions that are smaller in diameter than the diameter of a regulation golf hole

do not provide the same visualization of the size of the diameter of the golf hole relative to the diameter of the golf ball. Moreover, golf club heads with smaller diameter circular portions could, in some instances, hurt the person's confidence because the smaller circular portion could mislead the person into thinking that the diameter of the golf hole is smaller than its actually size.

[0057] Similarly, a golf club head with a circular portion that is larger in diameter than the diameter of a regulation golf hole does not provide the same visualization of the relative size of the golf hole to the golf ball. People may quickly recognize that the circular portion of this putter is larger than the diameter of the golf hole, and consequently, any psychological boost may be lost.

[0058] In addition, using golf club head 100 with rim portion 121 having a height greater than the height of insert portion 122 helps to further develop the visual perception that rear section 120 is a golf hole. Golf holes by design have a tall outer rim with an insert portion at the bottom of the hole. As defined by the USGA and/or the R&A, the depth of a golf hole is at least 102 mm (4 inches) deep. The USGA and/or the R&A also define the height of a putter-type golf head to be less than 63.5 mm (2.5 inches). Accordingly, the height of the rim portion 121 of a regulation golf putter head cannot be equal to the depth of a golf hole, but using rim portion 121 with a height greater than the height of insert portion 122 can still help create the visual perception of a golf hole.

[0059] In some examples, face member 110, rim portion 121, and/or insert portion 122 are formed with one or more suitable materials, such as, for example, steel, titanium, brass, copper, aluminum, composites, and the like. In one example, golf club head 100 can be manufactured from a steel material or steel-based material by a casting process, a forging process, a combination thereof, or other suitable manufacturing processes. The apparatus, methods, and articles of manufacture described herein are not limited in this regard.

[0060] In addition, in some examples, a removable ring can be attached to rear portion 120. The ring can be removably coupled to rim portion 121 (and/or insert portion 122) and have a diameter substantially equal to a regulation golf hole. The ring can be removed from golf club head 100 and placed on a putting green or indoor carpet and used as an aiming aid, similar to a golf hole itself. In some embodiments, the ring replaces insert portion 122.

[0061] Turning to another embodiment, FIG. 10 illustrates a top perspective view of a golf club head 1000, according to a second embodiment. Referring to FIG. 10, golf club head 1000 can include: (a) face member 110 arranged for impacting a golf ball; (b) a rear section 1020 coupled to face member 110. Rear section 1020 can include: (a) rim portion 121 attached to face member 110; (b) an insert portion 1022 located inside rim portion 121. In some examples, inner rim 140 of rim portion 121 and insert portion 1022 are substantially circular in shape. Golf club head 1000 is merely exemplary and is not limited to the embodiments presented herein. Golf club head 1000 can be employed in many different embodiments or examples not specifically depicted or described herein.

[0062] In this embodiment, insert portion 1022 can include: (a) a center aperture 124; and (b) six peripheral apertures 1025. In many embodiments, insert portion 1022 is designed such that insert portion 122 includes a pattern substantially similar to a pattern of a regulation golf hole. In some embodiments, peripheral apertures 1025 can have the same shape,

size, and dimensions of peripheral apertures 125. In other embodiments, the shape, size, or dimensions of peripheral apertures 1025 can be different than peripheral apertures 125. For example, each of peripheral apertures 1025 can be smaller than peripheral apertures 125.

[0063] Turning to yet another embodiment, FIG. 11 illustrates a top perspective view of a golf club head 1100, according to a third embodiment. Referring to FIG. 11, golf club head 1100 can include: (a) face member 110 arranged for impacting a golf ball; (b) a rear section 1120 coupled to face member 110. Rear section 1120 can include rim portion 121 attached to face member 110. Golf club head 1100 is merely exemplary and is not limited to the embodiments presented herein. Golf club head 1100 can be employed in many different embodiments or examples not specifically depicted or described herein.

[0064] In this embodiment, rear section 1120 does not have an insert portion. Instead of an insert portion, rear section 1120 has an aperture 1130. Aperture 1130 can be the size of a regulation golf hole. The lack of an insert portion is advantageous because not having an insert portion decreases the weight of rear section 1120, which allows more weight to be placed around the perimeter of golf club head 1100. Moreover, in these embodiments, the person using the golf club head still receives the psychological boost of golf club head 100 (FIG. 1) because a diameter of rim portion 121 of golf club head 1100 is still substantially equal to the diameter of a regulation golf hole. FIG. 11 also shows a portion of golf club shaft 1111 coupled to golf club head 1100 to form a golf club. Golf club shaft 1111 can also be coupled to the other golf club heads described herein.

[0065] Turning to still another embodiment, FIG. 12 illustrates a top perspective view of a golf club head, according to a fourth embodiment. Referring to FIG. 12, golf club head 1200 can include: (a) face member 110 arranged for impacting a golf ball; and (b) a rear section 1220 coupled to face member 110. Rear section 1220 can include: (a) rim portion 121 attached to face member 110; (b) an insert portion 1222 located inside rim portion 121. Golf club head 1200 is merely exemplary and is not limited to the embodiments presented herein. Golf club head 1200 can be employed in many different embodiments or examples not specifically depicted or described herein.

[0066] In this embodiment, insert portion 1222 can be a solid piece of metal or other material. In some examples, insert portion 1222 is a flat piece of material. In other embodiments, insert portion 1222 can be tapered with insert portion 1222 being tallest at outer edge 1227 and shortest at center region 1224.

[0067] Insert portion 1222 has a top surface 1238 and a bottom surface opposite top surface 1238. The bottom surface is configured to face towards a playing surface when a person is using golf club head 1200 to hit a golf ball. In some embodiments, top surface 1238 can include markings substantially similar to the patterns of a regulation golf hole. As an example, insert portion 1222 can include scoring on top surface 1238, as illustrated in FIG. 12. The scoring or markings on top surface 1238 can be imprinted, stamped, carved, impressed, etched, or engraved onto and/or into insert portion 1222 in various embodiments. In other examples, the scoring or marking can be printed, painted, or drawn on top surface 1238. Marking top surface 1238 with the pattern of a golf hole, instead of forming apertures in the insert portion, can

decrease the manufacturing cost of the golf club head while still providing the psychological boost to the person of golf club head 100 (FIG. 1).

[0068] Turning to another embodiment, FIG. 13 illustrates a top perspective view of a golf club head, according to a fifth embodiment. In some examples, golf club head 1300 can be considered a reverse image of golf club head 100 (FIG. 1). Referring to FIG. 13, golf club head 1300 can include: (a) face member 110 arranged for impacting a golf ball; (b) a rear section 1320 coupled to face member 110. Rear section 1320 can include: (a) rim portion 121 attached to face member 110; (b) an insert portion 1322 located inside rim portion 121. Golf club head 1300 is merely exemplary and is not limited to the embodiments presented herein. Golf club head 1300 can be employed in many different embodiments or examples not specifically depicted or described herein.

[0069] In this embodiment, insert portion 1322 can include: (a) a center section 1324; (b) one or more peripheral sections 1325; and (c) connection sections 1337 and 1339. In some examples, connection sections 1337 can couple peripheral sections 1325 to rim portion 121. Connection sections 1339 can couple center section 1324 to peripheral sections 1325. Insert portion 1322 can be considered to have a pattern substantially similar to a pattern of a regulation golf hole, even though insert portion 1322 includes connection sections 1337 and 1339, which are not found in a regulation golf hole. That is, the pattern of insert portion 1322 can include center section 1324 and peripheral sections 1325.

[0070] One advantage of this embodiment is that insert portion 1322 contains less material than other designs and, thus, can be lighter and less costly to manufacture while still providing the psychological boost to the person using golf club head 1300.

[0071] Turning to a still further embodiment, FIG. 14 illustrates a top perspective view of a golf club head, according to a sixth embodiment. Referring to FIG. 14, golf club head 1400 can include: (a) face member 110 arranged for impacting a golf ball; (b) a rear section 1420 coupled to face member 110. Rear section 1420 can include: (a) a rim portion 121 attached to face member 110; (b) an insert portion 1422 located inside the rim portion 121. Golf club head 1400 is merely exemplary and is not limited to the embodiments presented herein. Golf club head 1400 can be employed in many different embodiments or examples not specifically depicted or described herein.

[0072] Insert portion 1422 can include: (a) a center section 1434; and (b) one or more radial posts 1435 coupled to center section 1434 and rim portion 121. Center section 1434 can be circular in shape and have a center aperture 124. In some examples, an inner diameter 1447 of center aperture 124 of center section 1434 can be substantially equal to the diameter of a ferrule.

[0073] In some examples, radial posts 1435 can be coupled to center section 1434 at equal intervals along the outer circumference of center section 1434. Radial posts 1435 can extend radially outward from center section 1434 to rim portion 121. In some examples, radial posts 1435 are separated from each other by peripheral apertures 1425. In many embodiments, insert portion 1422 is designed such that insert portion 1422 includes a pattern substantially similar to a pattern of a regulation golf hole. In some examples, the pattern of insert portion 1422 can include center section 1434 and radial posts 1435.

[0074] One advantage of the embodiment of FIG. 14 is that insert portion 1422 contains less material than other designs and, thus, can be lighter and less costly to manufacture while still providing the psychological boost to the person using golf club head 1400.

[0075] FIG. 15 illustrates a top perspective view of a golf club head 1500, according to a seventh embodiment. FIG. 16 illustrates a bottom perspective view of golf club head 1500, according to the seventh embodiment. FIG. 17 illustrates a left side view of golf club head 1500, according to the seventh embodiment. FIG. 18 illustrates a right side view of golf club head 1500, according to the seventh embodiment. Golf club head 1500 is merely exemplary and is not limited to the embodiments presented herein. Golf club head 1500 can be employed in many different embodiments or examples not specifically depicted or described herein.

[0076] In some embodiments, golf club head 1500 can include: (a) a face member 1510 arranged for impacting a golf ball; (b) a rear section 1520 couple to face member 1510. Rear section 1520 can include: (a) a rim portion 1521 attached to face member 1510; (b) an insert portion 1522 located inside the rim portion 1521.

[0077] In some examples, rim portion 1521 can have an inner edge or rim 1540 that is substantially circular in shape. Inner rim 1540 can have a diameter 1542 that is substantially equal to a diameter of a regulation golf hole. In some embodiments, face member 1510 and rear section 1520 can be integrated such that face member 1510 forms a portion of inner rim 1540.

[0078] Insert portion 1522 can include: (a) center aperture 124; and (b) one or more peripheral apertures 1525. In some examples, golf club head 1500 can also include an alignment aid 1529 that can extend across insert portion 1522 to a back side of face member 1510. Peripheral apertures 1525 can have an edge 1582 that is substantially parallel to alignment aid 1529. Edges 1582 can also function as alignment aids to the person playing golf.

[0079] Turning to yet another embodiment, FIG. 19 illustrates a top perspective view of a golf club head 1900, according to an eighth embodiment. FIG. 20 illustrates a bottom perspective view of golf club head 1900, according to the eighth embodiment. FIG. 21 illustrates a left side view of golf club head 1900, according to the eighth embodiment. FIG. 22 illustrates a right side view of golf club head 1900, according to the eighth embodiment. FIG. 23 illustrates a top view of golf club head 1900, according to the eighth embodiment. Golf club head 1900 is merely exemplary and is not limited to the embodiments presented herein. Golf club head 1900 can be employed in many different embodiments or examples not specifically depicted or described herein.

[0080] In some embodiments, a golf club head 1900 can include: (a) a face member 1910 arranged for impacting a golf ball; (b) a rear section 1920 couple to face member 1910. Rear section 1920 can include: (a) a rim portion 1921 attached to face member 1910; (b) an insert portion 1922 located inside the rim portion 1921; and (c) an alignment aid 1929 that can extend across a part of insert portion 1922 to a back side of face member 1910.

[0081] In some examples, rim portion 1921 can have an inner rim 1940 that is substantially circular in shape. Inner rim 1940 can have a diameter 1942 that is substantially equal to a diameter of a regulation golf hole. In some embodiments, face member 1910 and rear section 1920 can be integrated such that face member 1910 forms a portion of inner rim 1940.

[0082] Insert portion **1922** can include: (a) center aperture **124**; and (b) peripheral apertures **1925**. In some examples, peripheral apertures **1925** can be rectangular in shape with two edges of peripheral apertures **1525** substantially parallel to alignment aid **1529**. These edges can function as alignment aids to the person playing golf.

[0083] FIG. **24** illustrates a flow chart for an embodiment of a method **2400** of providing a golf club head. Method **2400** is merely exemplary and is not limited to the embodiments presented herein. Method **2400** can be employed in many different embodiments or examples not specifically depicted or described herein. In some examples, the golf club head provided by method **2400** can be similar or identical to golf club head **100**, **1000**, **1100**, **1200**, **1300**, **1400**, **1500**, and/or **1900** of FIGS. **1**, **10**, **11**, **12**, **13**, **14**, **15**, and **19**, respectively.

[0084] Method **2400** of FIG. **24** includes an activity **2450** of providing a face member. As an example, the face member can be similar or identical to face member **110**, **1510**, or **1910** of FIGS. **1**, **15**, and **19**, respectively.

[0085] Subsequently, method **2400** of FIG. **24** includes an activity **2451** of providing a rim portion. In some examples, providing a rim portion includes providing a rim portion with a rim such that the inner rim has a diameter that is substantially equal to a diameter of a regulation golf hole. As an example, the rim portion can be similar or identical to rim portion **121**, **1521**, or **1921** of FIGS. **1**, **15**, and **19**, respectively. The diameter of the rim can be similar or identical to the diameter of inner rim **140**, **1540**, and/or **1940** of FIGS. **1**, **15**, and **19**, respectively. In other embodiments, the diameter of the rim can be similar or identical to the diameter of outer rim **119** of FIG. **1**. In some examples, the diameter of the rim can be substantially equal to 4.25 inches (i.e., 108 mm).

[0086] Method **2400** in FIG. **24** continues with an activity **2452** of providing an insert portion. In some examples, insert portion can be similar or identical to insert portions **122**, **1022**, **1222**, **1322**, **1422**, **1522**, and/or **1922** of FIGS. **1**, **10**, **12**, **13**, **14**, **15**, and **19**, respectively. In some examples, the golf club head does not include an insert portion, and activity **2452** can be skipped.

[0087] In some examples, providing the insert portion includes providing the insert portion such that the insert portion has a pattern substantially similar to a pattern of the regulation golf hole. In some examples, the pattern of the insert portion can be similar or identical to the pattern of insert portions **122**, **1022**, **1222**, **1322**, **1422**, **1522**, and/or **1922** of FIGS. **1**, **10**, **12**, **13**, **14**, **15**, and **19**, respectively. In some examples, the insert portion can include a center aperture and one or more peripheral apertures.

[0088] Subsequently, method **2400** of FIG. **24** includes an activity **2453** of coupling the insert portion to the rim portion. For example, insert portion can be located in an interior of rim portion similar to coupling of the insert portion to the rim portion, as shown in FIGS. **1**, **10**, **12**, **13**, **14**, **15**, and **19**, respectively. In embodiments without an insert portion, activities **2452** and **2453** can be skipped.

[0089] In various examples, the rim portion and insert portion can be integrally formed. In other examples, the insert portion and the rim portion can be coupled to each other by an adhesive bonding process (e.g., epoxy) and/or other suitable bonding processes (e.g., mechanical bonding, soldering, welding, and/or brazing). In various embodiments, the insert portion can be inserted into the rim portion from the top or inserted from the front or back of the golf club head.

[0090] Next, method **2400** of FIG. **24** includes an activity **2454** of coupling the face member to the rim portion. In some examples, the face member can be coupled to the rim portion similar to the coupling of the face member to the rim portion, as shown in FIGS. **1**, **10**, **11**, **12**, **13**, **14**, **15**, and **19**, respectively. In some examples, face member and rim portion are integrally formed. In these examples, activities **2450**, **2451**, and **2453** can occur simultaneously with each other.

[0091] In other examples, activity **2454** can occur before or simultaneously with activities **2451**, **2452**, and/or **2453**. In the same or different example, activity **2451** can occur after or simultaneously with activities **2452** and/or **2453**. Activity **2450** can occur after or simultaneously with activities **2451**, **2452**, and/or **2453**.

[0092] Although the invention has been described with reference to specific embodiments, it will be understood by those skilled in the art that various changes may be made without departing from the spirit or scope of the invention. Accordingly, the disclosure of embodiments of the invention is intended to be illustrative of the scope of the invention and is not intended to be limiting. It is intended that the scope of the invention shall be limited only to the extent required by the appended claims. For example, to one of ordinary skill in the art, it will be readily apparent that activities **2450-2454** in FIG. **24** may be comprised of many different activities, procedures and be performed in many different orders and that the foregoing discussion of certain of these embodiments does not necessarily represent a complete description of all possible embodiments. In other examples, peripheral apertures **125** in FIG. **1** can have a non-trapezoidal shape such as a circular, a rectangular, or an irregular shape. Furthermore, the shape of one or more of peripheral apertures **125** can be different than the shapes of the other ones of peripheral apertures **125**, and the layout of peripheral apertures **125** can be different than the layout of peripheral apertures in a regulation golf hole. Similarly, the taper angle of insert portion can vary from the details described herein. In yet other examples, an outer diameter of rear section **1020**, **1120**, **1220**, **1320**, or **1420** of FIGS. **10**, **11**, **12**, **13**, and **14**, respectively, (e.g., a diameter of an outer rim or edge) can be equal to a diameter of a regulation golf hole.

[0093] All elements claimed in any particular claim are essential to the embodiment claimed in that particular claim. Consequently, replacement of one or more claimed elements constitutes reconstruction and not repair. Additionally, benefits, other advantages, and solutions to problems have been described with regard to specific embodiments. The benefits, advantages, solutions to problems, and any element or elements that may cause any benefit, advantage, or solution to occur or become more pronounced, however, are not to be construed as critical, required, or essential features or elements of any or all of the claims.

[0094] Moreover, embodiments and limitations disclosed herein are not dedicated to the public under the doctrine of dedication if the embodiments and/or limitations: (1) are not expressly claimed in the claims; and (2) are or are potentially equivalents of express elements and/or limitations in the claims under the doctrine of equivalents.

What is claimed is:

1. A golf club head comprising:
 - a face member; and
 - a rear section coupled to the face member,

wherein:

the rear section comprises an edge; the edge is substantially circular in shape; and a diameter of the edge is equal to a diameter of a regulation golf hole.

2. The golf club head of claim 1, wherein: the rear section further comprises an insert portion; the insert portion has at least four apertures; and the at least four apertures in the insert portion are shaped substantially similarly to apertures in the regulation golf hole.

3. The golf club head of claim 1, wherein: the rear section further comprises an insert portion; the insert portion comprises:

a first aperture at a center of the insert portion; and three or more peripheral apertures;

the three or more peripheral apertures are located in a first region between a first edge of the first aperture and a second edge;

the second edge is located at a peripheral edge of the insert portion; and

the three or more peripheral apertures are substantially evenly distributed in the first region.

4. The golf club head of claim 3, wherein: the three or more peripheral apertures are substantially trapezoidal in shape.

5. The golf club head of claim 3, wherein: the insert portion has a first height at the first edge; the insert portion has a second height at the second edge; and

the insert portion has a third height that tapers down from the second height at the second edge to the first height at the first edge.

6. The golf club head of claim 5, wherein: the third height of the insert portion tapers down at a substantially twenty-five degree angle from the second edge to the first edge.

7. The golf club head of claim 1, wherein: the diameter of the edge is substantially 4.25 inches.

8. The golf club head of claim 1, wherein: the rear section further comprises: a rim portion; and the rim portion comprises the inner edge.

9. The golf club head of claim 8, wherein: the rear section further comprises: an insert portion coupled to the rim portion.

10. The golf club head of claim 9, wherein: a height of the rim portion is greater than any height of the insert portion.

11. The golf club head of claim 1, wherein: the edge is an inner edge of the rear section.

12. The golf club head of claim 1, wherein: the edge is an outer edge of the rear section.

13. A golf putter head comprising: a face member arranged for impacting a golf ball; a rim portion coupled to the face member; and an insert portion having a center and an outer edge, the insert portion is located in an interior of the rim portion,

wherein:

a length from the center of the insert portion to the outer edge of the insert portion is equal to a radius of a regulation golf hole; and

the insert portion includes a pattern substantially similar to a pattern of the regulation golf hole.

14. The golf putter head of claim 13, wherein: the length from the center of the insert portion to the outer edge of the insert portion is 54 millimeters.

15. The golf putter head of claim 13, wherein: the insert portion has: a first aperture located at the center of the insert portion; and

three or more trapezoidal-shaped apertures located around a periphery of the first aperture; and the pattern of the insert portion comprises the first aperture and the three or more trapezoidal-shaped apertures.

16. The golf putter head of claim 15, wherein: a radius of the first aperture is substantially equal to a radius of a ferrule of a flagstick.

17. The golf putter head of claim 13, wherein: the insert portion has a top surface and a bottom surface opposite the top surface;

the bottom surface is configured to face towards a playing surface when a person uses the golf putter head to hit a golf ball; and

the pattern of the insert portion comprises markings at the top surface of the insert portion.

18. The golf putter head of claim 13, wherein: the insert portion comprises: a center circular section; and two or more radial posts extending from the center circular section to rim portion; and

the pattern of the insert portion comprises the center circular section and the two or more radial posts.

19. The golf putter head of claim 13, wherein: the insert portion comprises: a center section; two or more connection sections; and two or more peripheral sections coupled to the center section by the two or more connection sections; and

the pattern of the insert portion comprises the center section and the two or more peripheral sections.

20. A method of providing a golf club head, the method comprising: providing a face member;

providing a rim portion with a rim such that the rim has a diameter that is substantially equal to a diameter of a regulation golf hole; and

coupling the face member to the rim portion.

21. The method of claim 20, further comprising: providing an insert portion; and

coupling the insert portion to the rim portion.

22. The method of claim 21, wherein: providing the insert portion comprises: providing the insert portion such that the insert portion has a pattern substantially similar to a pattern of the regulation golf hole.

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