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(54) **TOP WEIGHTED PUTTER HEAD**

(57) **ABSTRACT**

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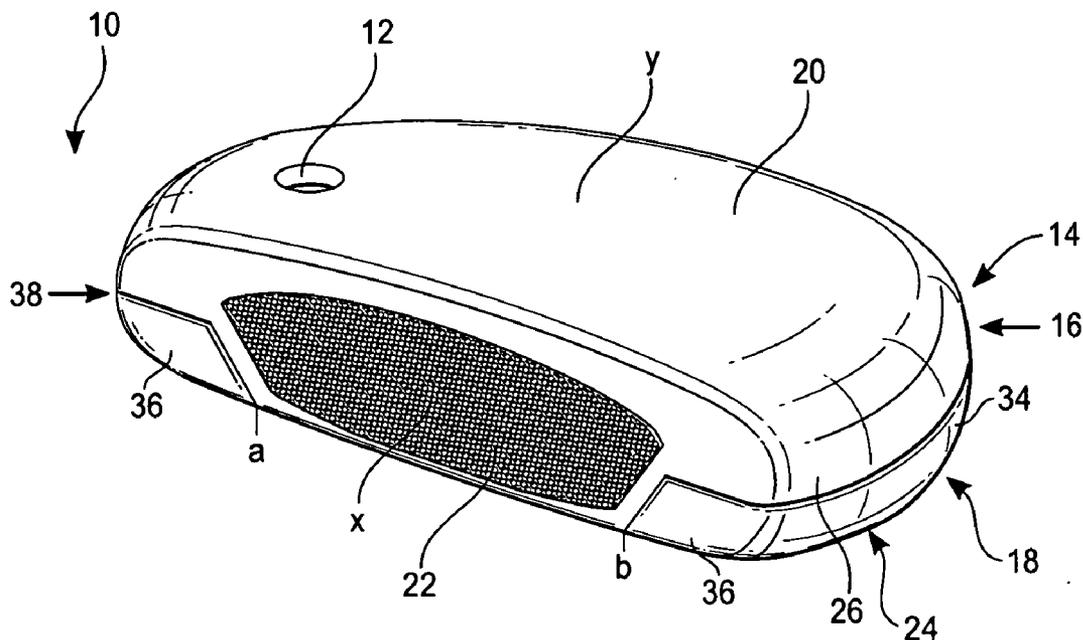
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A club head for a golf putter including upper and lower sections where the upper section has a mass greater than a mass of the bottom section and where the upper section of the club head includes an entire top surface, an upper perimeter of the club, and a portion extending into a front striking face of the lower club head. The upper section may also include a portion extending from the front striking face into the sole, a portion extending from the upper, rear perimeter portion to a lower, rear perimeter portion, and/or a portion extending from the lower, rear perimeter portion to the sole. The lower section comprises the part of the club head which is other than the upper section part and includes lower perimeter sections of the club. The upper and lower sections mate to form a club head having a hollow, interior core.



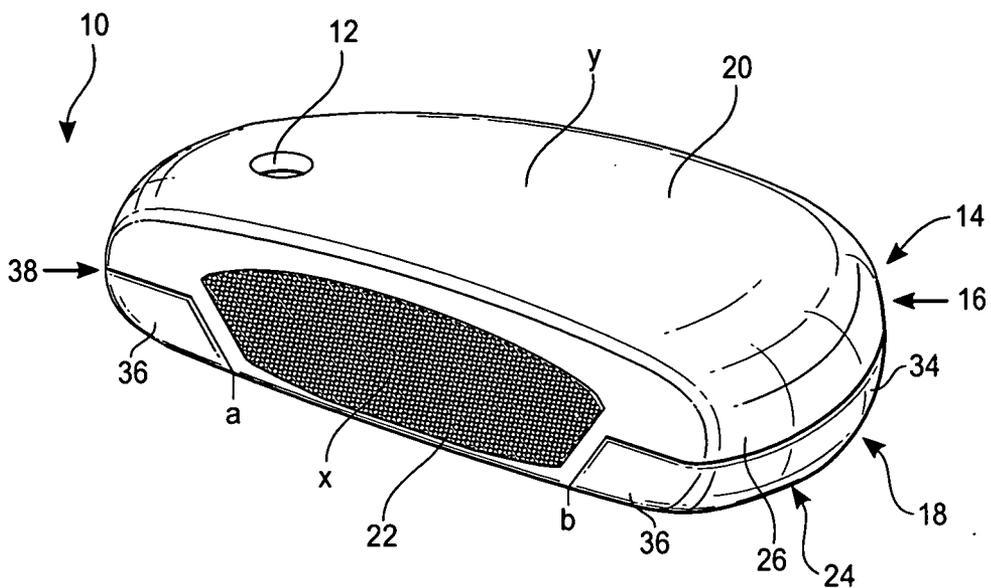


Fig. 1

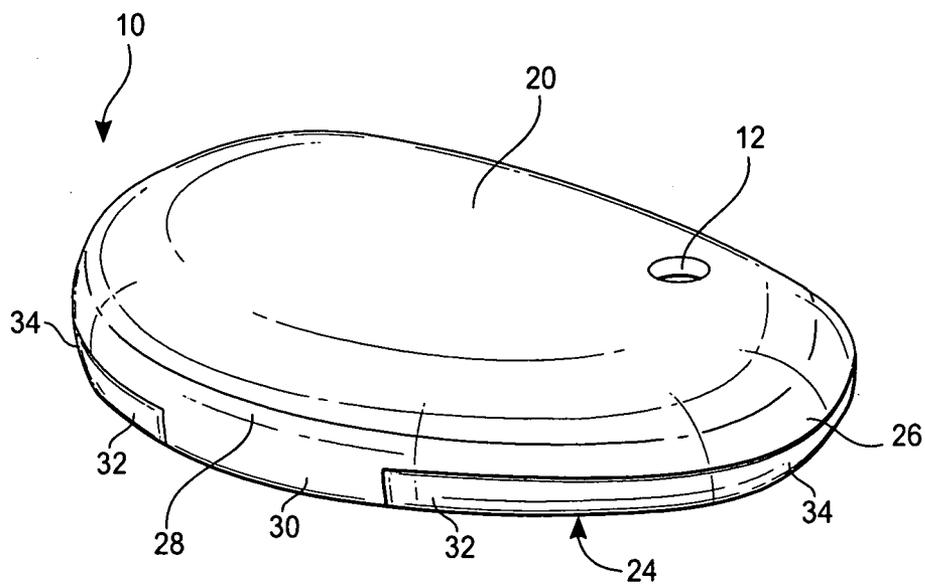


Fig. 2

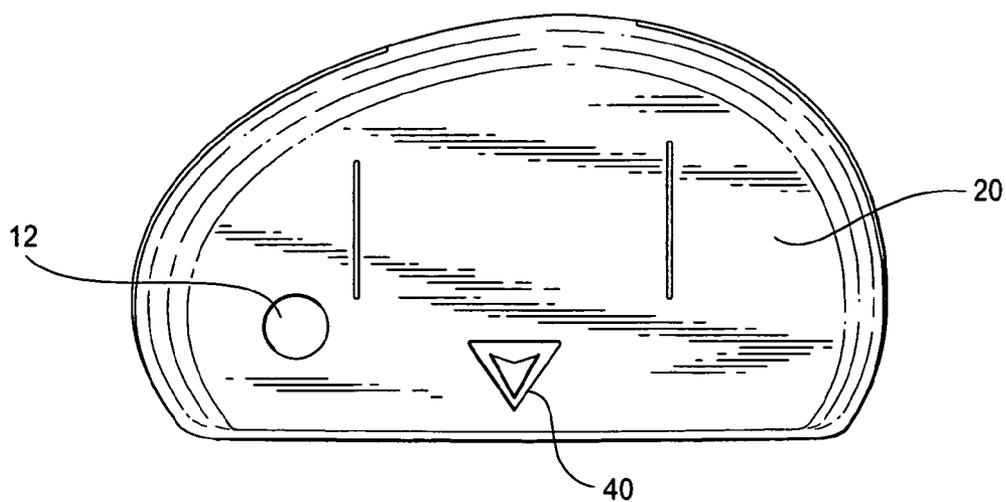


Fig. 3

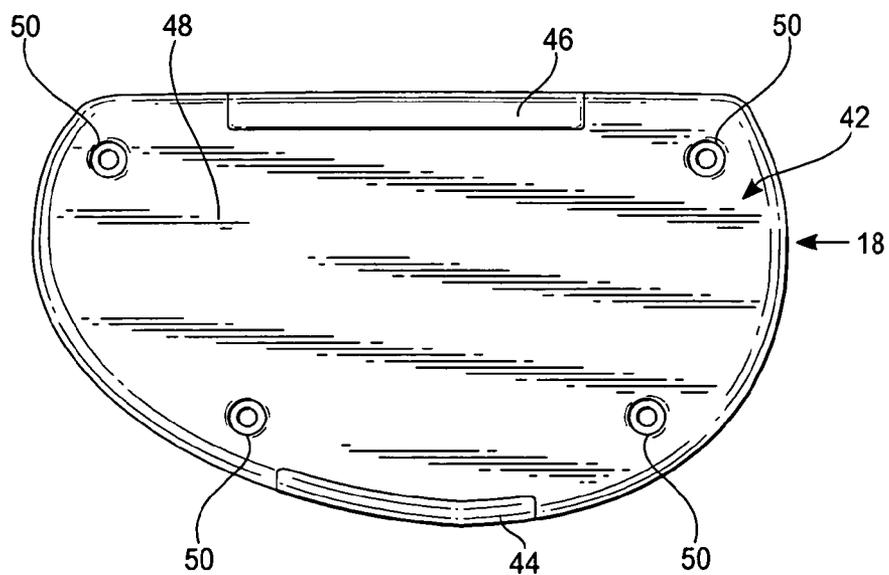


Fig. 4

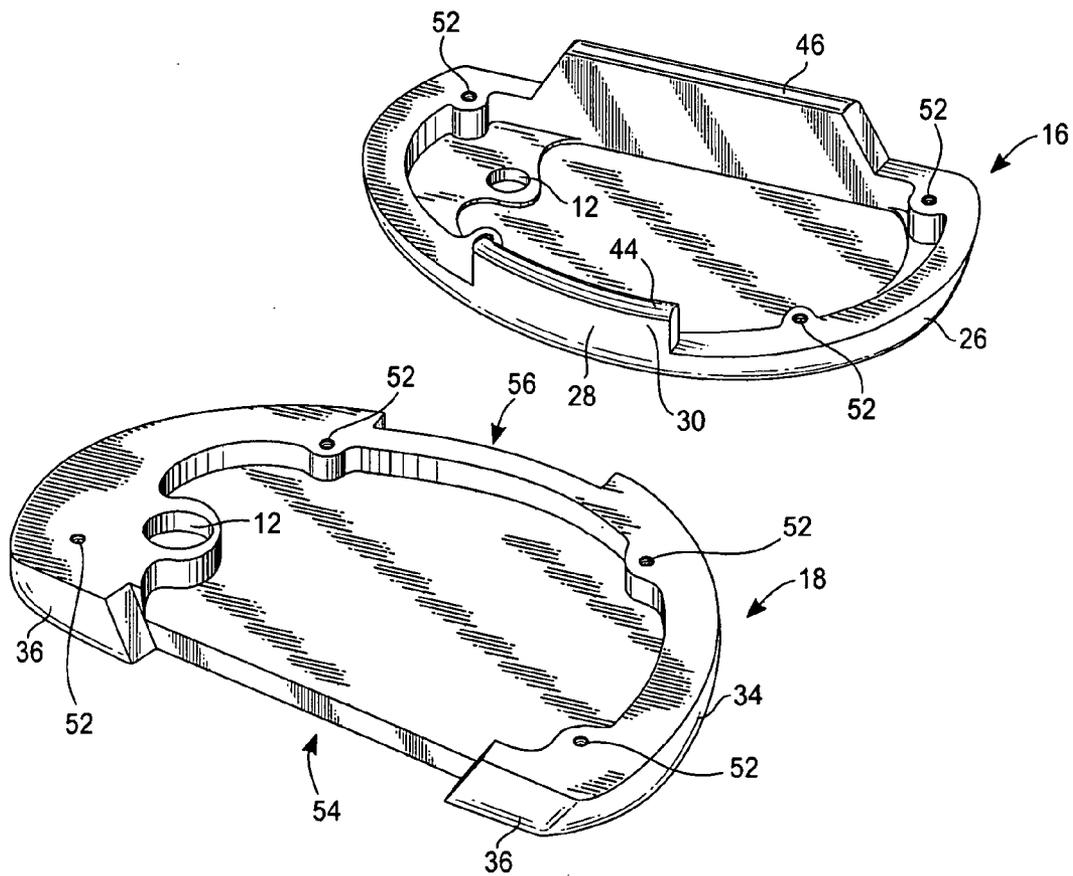


Fig. 5

TOP WEIGHTED PUTTER HEAD

FIELD OF THE INVENTION

[0001] The present invention relates to golf clubs, in general, and more particularly to golf club putter heads.

BACKGROUND ART

[0002] Various constructions of golf putter heads have been designed to enhance putting skills. For example, U.S. Pat. No. 6,484,375 to McKinley describes a putter head having an upper section manufactured from a heavier, more dense material than the lower half. The higher center of gravity design is to cause a golf ball struck by a face to be less prone to bouncing or hopping. The head has a large cavity in the center to accommodate a large insert face block and other face blocks to adjust the characteristics of the putter.

[0003] U.S. Pat. No. 6,267,689 to Ambrose describes a golf putter having most of its mass in the upper half of the putter head. The putter preferably incorporates a solid brass head.

[0004] U.S. Pat. No. 5,676,606 to Schaeffer et al. describes a putter head having a main body portion including a front, striking face and an arcuate indent. The main body portion is of a first mass, and an arcuate massing member comprised of a material heavier than the first material is secured in the indent in the bottom of the club. The massing member has a lower face flush with the sole face of the main body and an outer peripheral portion flush with the adjacent outer perimeter portions.

[0005] U.S. Pat. No. 6,315,678 to Teramoto describes a golf club including weights, either separate from or integral with the club, adjacent the top and the face of the club. The weights are projections projecting inwardly into the club.

[0006] U.S. Pat. No. 5,211,401 to Hainey describes a putter head having a thick upper plate and thin face and sole plates so that the bulk of the mass of the putter will be concentrated about a plane through the center of the ball.

[0007] U.S. Pat. Nos. 5,797,176 and 5,951,412 to Rose et al. describes putters each including a first body element made of a high density material constituting the heel, toe and a sole and a second body element of a lower density covering the remainder of the head including at least the central portion of the striking face.

[0008] U.S. Pat. No. 6,149,534 to Peters et al. describes a putter having an upper metal piece and a lower metal piece, the lower piece being comprised of a relatively denser and heavier material.

[0009] Though many golf clubs enhancing putting ability have been provided, it is an object of the present invention to provide a new and improved golf putter head and/or putter.

[0010] It is another object of the present invention to provide a new and improved putter head and/or putter.

[0011] Also, it is an object of the present invention to provide a golf putter head and/or putter to assist in enhancing putting ability.

SUMMARY OF THE INVENTION

[0012] These and other objects have been achieved by a putter head comprising a body including an upper section having a first mass and a lower section having a second mass less than the first mass with the upper section including an entire top surface extending into an entire upper perimeter of the body and a front striking face of the lower body. The upper section, in one example, includes an extension from the front striking face into a front sole portion and may also include a portion extending from the upper, rear perimeter portion to a lower, rear perimeter of the body which may also extend into a rear sole portion of the club head. The lighter, lower section comprises all of the sections of the putter body which do not make up the heavier, upper section, including the majority of the sole and lower perimeter portions. The upper and lower section are attached or connected to each other to form the putter head with a hollow interior.

[0013] The mass distribution of the putter head incorporated into a putter results in optimum balance and moment of inertia while putting, as most of the mass of the putter head is placed at or above the equator of a golf ball to be struck. The mass distribution imparts immediate topspin on the ball when putting and substantially decreases or eliminates skidding, sidespin, or bouncing resulting in more accurate putts. The dispersion of the high density material of the putter head to the top surface and face of the putter and, in other examples, also to the rear, lower perimeter and/or sole portions also results in optimum balance and moment of inertia when putting. The weight of the putter head is distributed such that when a putter incorporating the head is swung it does not tend to "open" or "close" at impact with a golf ball.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] FIG. 1 is a front perspective view of one embodiment of a putter head of the present invention.

[0015] FIG. 2 is a rear perspective view of the putter head of FIG. 1.

[0016] FIG. 3 is a top view of the putter head of FIG. 1.

[0017] FIG. 4 is a bottom view of the putter head of FIG. 1.

[0018] FIG. 5 is a perspective view of an upper section and a lower section of the putter head of FIG. 1.

DETAILED DESCRIPTION

[0019] With reference to FIG. 1 there is seen a first embodiment of a putter head 10 of the present invention. The putter head 10 includes an opening 12 configured to receive a shaft (not shown) to form a putter (not shown). The depicted putter head includes a body 14 having an upper section 16 and a lower section 18. The upper section 16 has a mass greater than a mass of the lower section 18. In one example, the upper section 16 is comprised of stainless steel and the lower section is comprised of aluminum. In one example, the upper section is comprised of a material having a greater density than the lower section. The upper section of the putter head includes an entire top surface 20 which extends into a front, striking face section 22 of front surface 38 of the body. The front striking face section 22 of the upper

section may be integral with the top surface 20 or it may be a separate insert of the upper section. It may have various degrees of loft. In one example, a lower length of the front face striking section 22 measured from the lines a to b ranges from $\frac{3}{4}$ of an inch at its shortest to $3\frac{3}{4}$ inches at its longest, typically less than the entire length. An interior of the putter 10 head is hollow.

[0020] With reference to FIGS. 1 and 2, it is seen that the top surface 20 of the upper section 16 extends into a perimeter 24, for example, an upper perimeter 26 of the body 14. A rear, upper perimeter portion 28 of the upper section 16 extends into a rear, lower perimeter portion 30 of the body. The lower section 18 of the putter head comprises parts other than the parts of the upper section 16. As seen in FIGS. 1 and 2, the lower section of the putter comprises portions of perimeter 24, for example, lower, rear perimeter portions 32, lower side perimeter portions 34, and portions 36 of front surface 38, which may be used for striking.

[0021] With reference to FIG. 3, the entire top surface 20 of the upper section 16 is seen. An arrow 40 indicates a recommended location in vertical alignment with a location on the front surface 38 at which to strike a golf ball (not shown).

[0022] With reference to FIG. 4, the lower section 18 comprises a majority of a sole 42 of the putter head. The rear, lower perimeter section 30 (FIG. 2) of the upper section 16 of the putter body 14 extends into a thin strip 44 at the rear of the sole 42. The front striking face portion 22 of the upper section 16 extends into a thin strip 46 at the front of the sole 42. A remainder of the sole 48 comprises part of the lower section 16. Fasteners 50, such as screws are used, in one example, to secure the upper section 16 to the lower section 18.

[0023] With reference to FIG. 5, upper section 16 of the putter head is seen disassembled from the lower section 18. The upper section 16, which is comprised of, for example, a material of a greater density than the lower section, weighs more than the lower section. In one example, the putter head weighs 350 grams with the upper section weighing 270 grams and the lower section weighing 80 grams. Fasteners 50, such as screws, in conjunction with openings 52, connect or attach the upper and lower sections. Other attachment or connection mechanisms may be used.

[0024] Lower section 18 is seen to include a front recessed area 54 in which the sole portion 46 and front striking portion 22 of the upper section 16 nest and a rear recessed area 56 in which the sole portion 44 and the rear perimeter portion 30 of the upper section 18 nest.

[0025] Referring back to FIG. 1, in one embodiment of the present invention, a central region of the front striking face 22 includes a balance point x. In one example, the balance point is $\frac{1}{4}$ of an inch from the top of the striking face in a central region of the striking face. The balance point of the top striking face, in another example, may range from $\frac{1}{8}$ of an inch to $\frac{3}{8}$ of an inch from the top of the striking face in a central region of the striking face.

[0026] Still referring to FIG. 1, in another embodiment of the present invention, a central region of the top surface 20 includes a balance point y. In one example, the balance point is $\frac{3}{4}$ of an inch from the front of the top surface in a central region of the striking face. The balance point of the top

surface, in another example, may range from $\frac{3}{4}$ to $1\frac{1}{2}$ inches back from the front of the top surface in a central region of the striking face. The top surface balance point may be in vertical alignment with the face balance point.

[0027] The balance point may include two dimensions and thus may include a dimension for the front striking face and the top surface, as given above.

[0028] In another embodiment of the present invention, an upper section of the club head, which weighs more than a lower section, comprises the upper top surface 20 and various combinations of upper section portions described above including the upper perimeter 26, the front striking face portion 22, the rear, lower perimeter 30, the front sole portion 46 and the back sole portion 44. For example, the upper section may include the top surface 20, the upper perimeter 26, and the front striking portion 22 as shown in FIG. 1, and the lighter lower section 18 may comprise the remaining portions of the club body 14.

[0029] In another example, the upper section 16 may include the top surface 20, the upper perimeter 26, the rear portion of the lower perimeter 30, and the front striking portion 22, and the lighter lower section 18 comprises the remaining portions of the club body 14.

[0030] One example of an advantage of the present invention is that 60%, or about 60%, of a weight of the putter head strikes a golf ball at or above its equator when the putter is lifted $\frac{1}{8}$ of an inch or about $\frac{1}{8}$ of an inch from the ground plus one half the diameter of a golf ball (for example, 0.965 of an inch), about one half the diameter of a golf ball, or about 1 inch. Such a weight distribution provides a balanced putter for enhancing putts.

What is claimed is:

1. A golf putter head, comprising:

a putter head body including an upper section made of a first material and having a first mass, and a lower section made of a second material and having a second mass less than said first mass, said upper section including an entire top surface of said putter head body and a front surface portion of said putter head body, said lower section including a portion of a sole of said putter head body, wherein said upper and lower sections extend at least partially about a perimeter of said putter head body and form a cavity there between.

2. The golf putter head of claim 1 wherein said upper section extends about an upper perimeter of said putter head body, and across a rear, lower perimeter portion into another portion of said sole of said putter head body.

3. The golf putter head of claim 2 wherein said lower section extends about a lower perimeter of said putter head body except about the rear, lower perimeter portion where said upper section extends and wherein said lower section extends into front surface portions other than said upper section front surface portion.

4. The golf putter head of claim 1 wherein said upper section extends from said front surface portion into another portion of said sole of said putter head body.

5. The golf putter head of claim 1 wherein said front surface portion is integral with said top surface.

6. The golf putter head of claim 1 wherein said front surface portion is an insert.

7. The golf putter head of claim 1 wherein said first material is stainless steel and said second material is aluminum.

8. The golf putter head of claim 1 wherein a central region of said front surface portion includes a balance point.

9. The golf putter head of claim 8 wherein said balance point is ¼ of an inch from a top of said face.

10. The golf putter head of claim 8 wherein said balance point ranges from ⅛ of an inch to ⅜ of an inch from a top of said face.

11. The golf putter head of claim 1 wherein a balance point of said top surface is in a central region of said top surface and ranges from ¾ of an inch to 1½ inches from a front of said top surface.

12. The golf putter head of claim 1 wherein a lower length of said front surface portion ranges from ¾ of an inch to 3¼ inches.

13. The golf putter head of claim 1 wherein said head weighs 350 grams.

14. The golf putter head of claim 13 wherein said upper section weighs 270 grams and said lower section weighs 80 grams.

15. The golf putter head of claim 1 wherein about 60% of a mass of the golf putter head strikes a golf ball on its equator or above when the golf putter head has a ground clearance of about 1 inch plus about ½ a diameter of the golf ball.

16. The golf putter head of claim 1 wherein said upper and lower sections include an opening configured to receive a shaft.

17. A golf putter head comprising:

an upper component having a hollow interior, and a lower component having a hollow interior, said upper com-

ponent having a first mass and said lower component having a second mass less than said first mass, wherein said upper component includes a front striking face of said golf putter head extending into a front, recessed area of said lower component, a rear portion of said golf putter head extending into a rear, recessed area of said lower component, a thin sole portion extending from said front striking face into said front recessed area, and another thin sole portion extending from said rear portion into said rear, recessed area, and wherein said lower section comprises portions other than said upper component.

18. A club head for a golf putter, comprising:

a body having a top and a bottom wherein said top has a greater mass than said bottom and said top includes an entire top surface of said body portion and extends into an upper perimeter of said body and a front surface portion of said body.

19. The club head of claim 18 wherein said top extends into a rear, lower perimeter portion of said body.

20. The club head of claim 19 wherein said front surface of said top extends into a sole portion, said rear, lower perimeter portion extends into another sole portion, and said bottom extends into said remaining perimeter, sole, and front surface portions.

21. The club head of claim 18 wherein said body portion includes a hollow core.

22. The club head of claim 18 is wherein said top is comprised of a first material having a first density and said bottom is comprised of a second material having a second density less than said first density.

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