United States Patent [19]

Gordon

[11] **3,794,328**

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[54] **GOLF CLUB HEAD**

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[52] **U.S. Cl.** ..... **273/167 E**

[51] **Int. Cl.** **A63b 53/04**

[58] **Field of Search** ..... 273/77 R, 78, 167 E, 167 J, 273/169, 171, 173, 170

[56] **References Cited**

UNITED STATES PATENTS

780,776	1/1905	Brown	273/167 E
3,468,544	9/1969	Antonious	273/173
690,940	1/1902	Febiger	273/170
1,697,846	1/1929	Anderson	273/167 E

FOREIGN PATENTS OR APPLICATIONS

194,823	3/1923	Great Britain	273/171
1,058,560	2/1967	Great Britain	273/167 E
1,056,979	2/1967	Great Britain	273/170

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Attorney, Agent, or Firm—Berman, Bishoff & Platt

[57] **ABSTRACT**

A conventional wooden golf club head, contains a pair of parallel air passages beginning at the ball striking area and terminating at the rear of the club. The passages are located substantially midway between the top and bottom surfaces of the head and are spaced from each other, with one passage being located near the toe of the head and one near the heel. A perforated insert occupies each passage and is coplanar with the ball striking surface. The inserts are threadedly engaged with hollow brass tubes which fill the portion of the passageways extending away from the striking surface.

7 Claims, 5 Drawing Figures

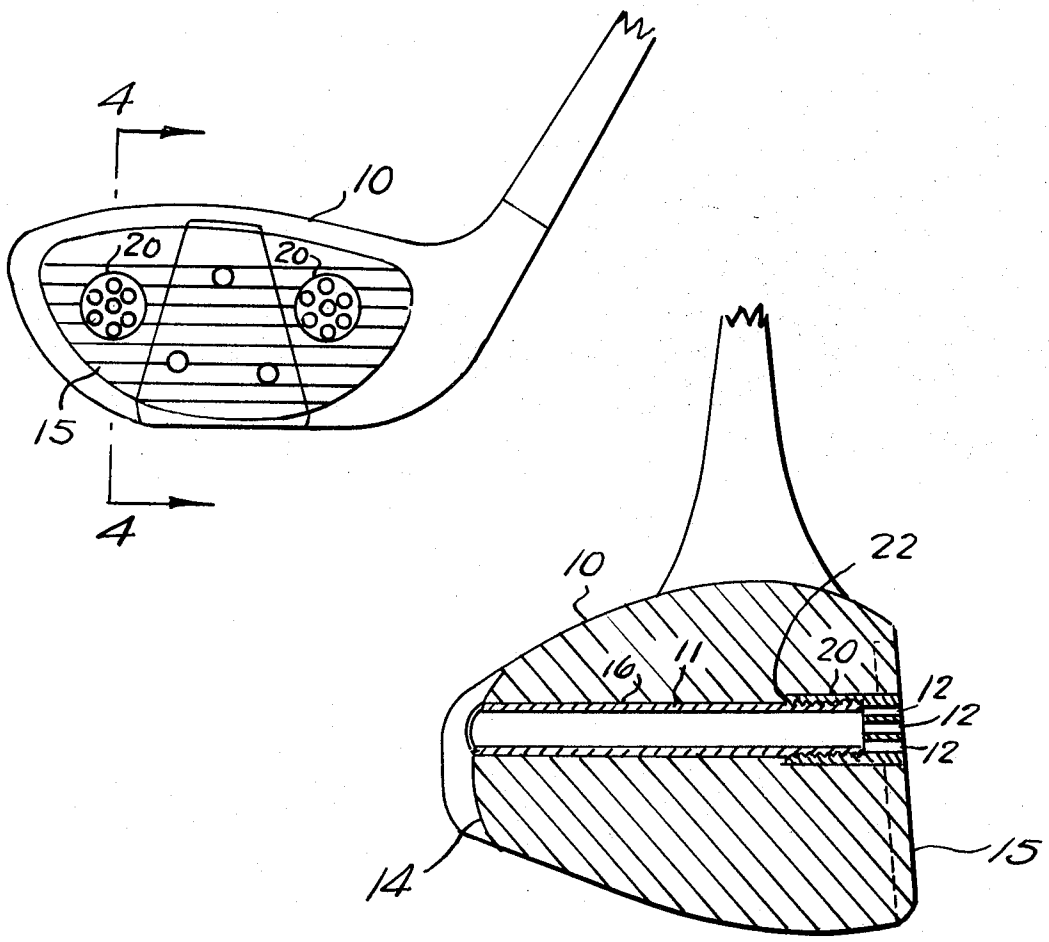


FIG. 2.

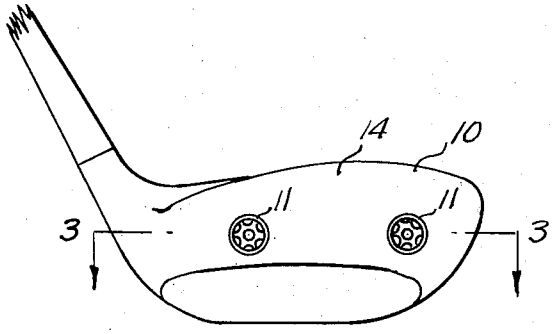
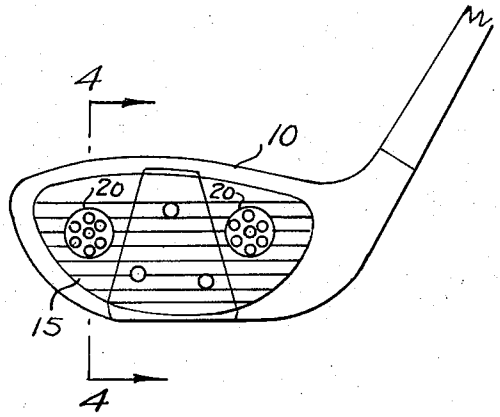


FIG. 1.



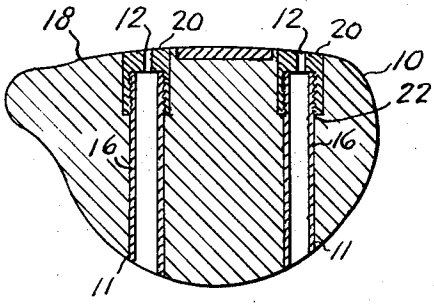


FIG. 3.

FIG. 4.

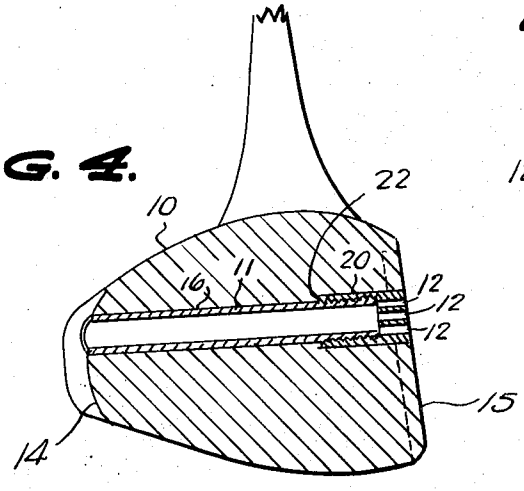
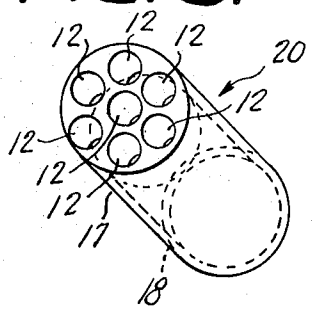


FIG. 5.



GOLF CLUB HEAD

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to improved golf club heads and more particularly relates to perforated inserts for insertion in passages provided in wooden golf club heads to reduce the air friction during the swing and thereby increase the speed and force of the swing, thus producing improved driving performance.

2. The Prior Art

A number of prior art patents disclose the concept of golf club heads having openings therein. This feature is generally shown in U.S. Pat. No. 780,776 to Brown, U.S. Pat. No. 1,336,671 to Backus, U.S. Pat. No. 1,414,124 to Griffin, U.S. Pat. No. 1,697,846 to Anderson and U.S. Pat. No. 3,468,544 to Antonious. However, the unique structure of the present invention represents an improvement over the prior art which results in ease of assembly, structural stability and improved air flow characteristics.

SUMMARY OF THE INVENTION

The inventive feature of the present invention resides in the use of perforated inserts which are placed in two parallel passages located substantially midway between the top and bottom surfaces of the head. The perforations, arranged in a symmetrical pattern, run from the striking surface of the club a short distance toward the rear of the club. The air exit portion of the passageway is filled with a hollow brass tube which threadedly engages the perforated insert.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a front elevational view of a golf club containing the inserts of the present invention;

FIG. 2 is a rear elevational view of the same golf club containing the inserts of the present invention;

FIG. 3 is a sectional view taken on the line 3—3 in FIG. 2, looking in the direction of the arrows;

FIG. 4 is a sectional view taken on the line 4—4 in FIG. 1, looking in the direction of the arrows; and

FIG. 5 is a perspective view of the perforated insert of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to the drawings, there is shown a preferred embodiment of the present invention. A wooden golf club head **10** of conventional design is provided with two parallel passageways **16** extending from the front ball striking surface **15** to the rear surface **14** of the club. Extending from the rear surface and filling passageway **16** are hollow brass tubes **11** which threadedly engage perforated inserts **20**, the outer surfaces of which are coplanar with front surface **15** of club head **10**.

As can be seen in FIG. **5**, insert **20** is cylindrical in configuration and comprises a first solid portion **17** having perforations **12** therein arranged in a symmetrical pattern, and a second hollow, internally threaded portion or sleeve **18** for threadedly engaging tubes **11**.

In a preferred embodiment, inserts **20** are formed of aluminum rods, three-quarters of an inch in length, and ½ inch in diameter. The inner diameter of portion **18** is three-eighths of an inch while perforations **12** are one-sixteenth of an inch in diameter with a depth of one-quarter of an inch. Brass tubes **11** are three-eighths of an inch in diameter. Passages **16** are ½ inch in diameter from the front surface **15** to a depth of ½ inch and then reduced at shoulders **22** to a diameter of three-eighths of an inch to accommodate brass tubes **11**.

In assembling the improved golf club head of the present invention, perforated inserts **20** are first inserted from the front surface **15** of the club and then brass tubes **11** are screwed, from the rear, into internally threaded portions **18** of the inserts. Shoulders **22** provide abutments to prevent the inserts **20** from being driven inside the passageways **16** by the impact of a golf ball, thereby insuring that the outer surface of the inserts remains coplanar with the ball striking surface **15**. Perforations **12** are arranged so that the passage of air therethrough communicates with the interior of tubes **11**, as shown in FIG. **4**. The perforations may be drilled in inserts **20** prior to insertion in the club head, or this operation may be performed after insertion. After tubes **11** and perforated inserts **20** are in place, they may be epoxied or otherwise cemented to insure their retention in passages **16**.

There has thus been described a new and improved structure for permitting the passage of air from the front to back of a golf club head during the swing, materially reducing the air friction during the swing, thereby increasing the speed and force of the swing and producing a better driving performance.

While a specific embodiment of the invention has been described, it will be realized by those skilled in the art that various modifications may be made therein and it is, therefore, intended that the scope of the invention be defined only by the claims appended hereto.

I claim:

1. An improved golf club wood head having a heel and toe, a striking face and a rear face, comprising:

a. a first substantially cylindrical passage adjacent said toe and passing completely through said head from the ball striking area of said striking face to said rear face;

b. a second substantially cylindrical passage substantially parallel to said first passage adjacent said heel and passing completely through said head from said striking face to said rear face; and

c. a weighted substantially cylindrical insert means having a substantially greater density than said wood head, fixedly mounted in each of said passages for communicating said striking face with said rear face, each of said insert means comprising:

i. a first cylindrical member having a plurality of spaced, parallel perforations therein extending from the ball striking area of the striking face of said head and terminating short of the rear face of said head; and

ii. A second hollow cylindrical member commencing at the termination of said first member and terminating at the rear face of said head.

2. The wood head set forth in claim **1** wherein said first cylindrical member is threadedly engaged with said second cylindrical member.

3. The wood head set forth in claim **2**, wherein said first cylindrical member comprises a first substantially solid portion containing said perforations and an internally threaded, substantially hollow second portion for receiving said second hollow cylindrical member.

4. The wood head set forth in claim 3, wherein an annular shoulder is located in each of said passages for abutting said hollow portion of said first cylindrical member.

5. The wood head set forth in claim 1, wherein said passages are located substantially midway between the upper and lower surfaces of said head.

6. The wood head set forth in claim 1, wherein each of said passages includes an abutment for engagement with said inserts.

7. The wood head set forth in claim 6, wherein each of said abutments comprises an annular shoulder extending into its respective passage.

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