United States Patent

Jacob

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[45] **Aug. 1, 1972**

[54] **GOLF PUTTER WITH ROTATABLE SOLE DEVICE MOUNTED THEREON**

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[73] Assignee: **Dayco Corporation,** Dayton, Ohio

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[21] Appl. No.: **99,445**

[52] **U.S. Cl.**.....**273/174,** 273/167 A

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

[58] **Field of Search**....273/32 R, 67 R, 67 A, 77, 128 R, 273/129, 163 R, 167 R, 167 A, 169, 171, 172, 174, 186, 193 R, 194 R

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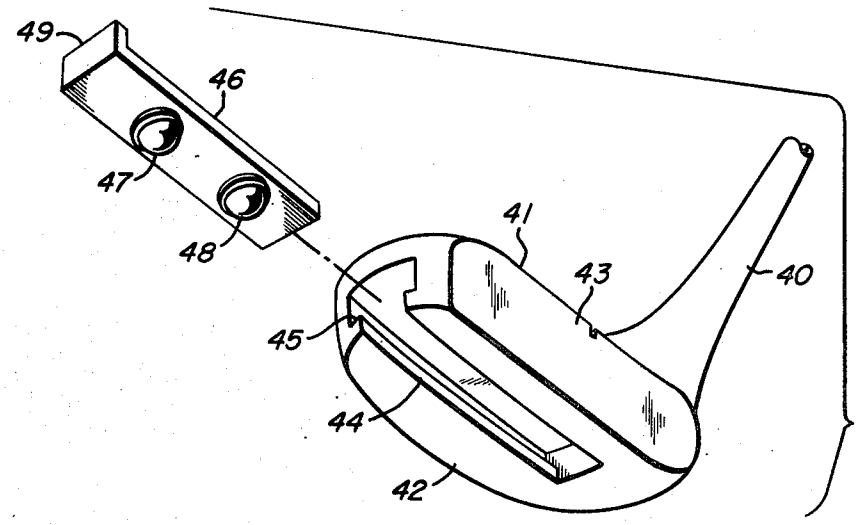
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Assistant Examiner—Richard J. Apley
Attorney—Reuben Wolk

[57] **ABSTRACT**

A golf putter with at least one rotatable spherical device mounted in the bottom of the putting head to reduce friction between the head and the putting surface during the putting stroke. A variation of the putter permits the device to be removed from the club and replaced by another one having different characteristics.

5 Claims, 7 Drawing Figures



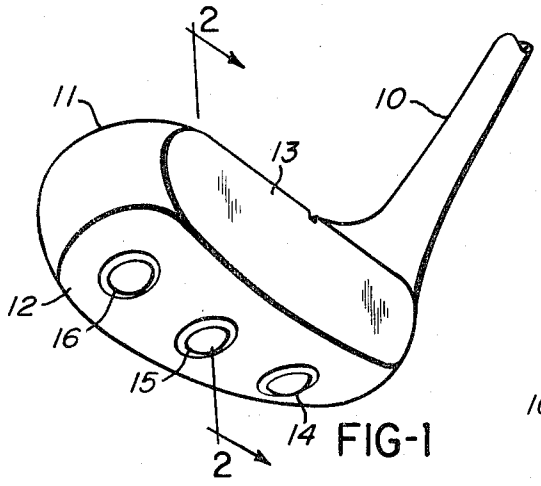


FIG-1

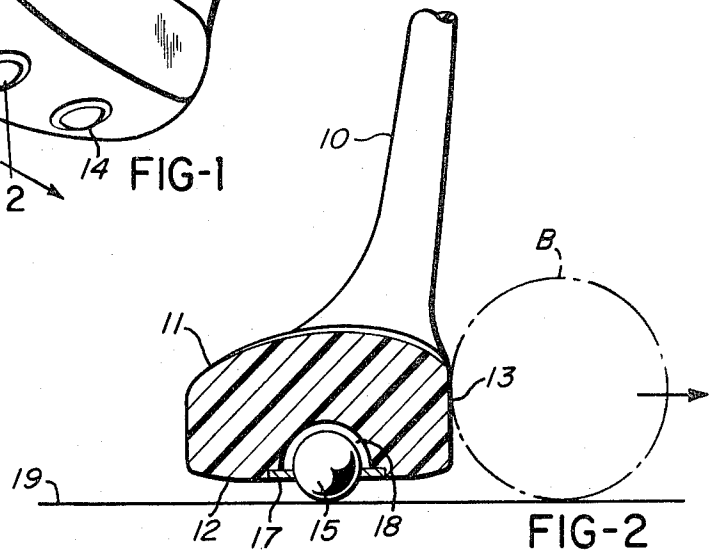


FIG-2

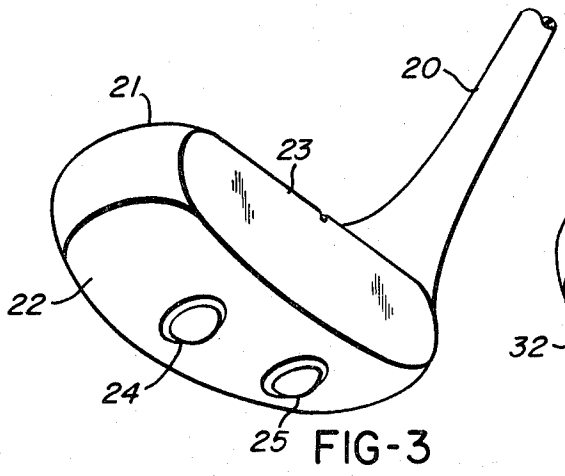


FIG-3

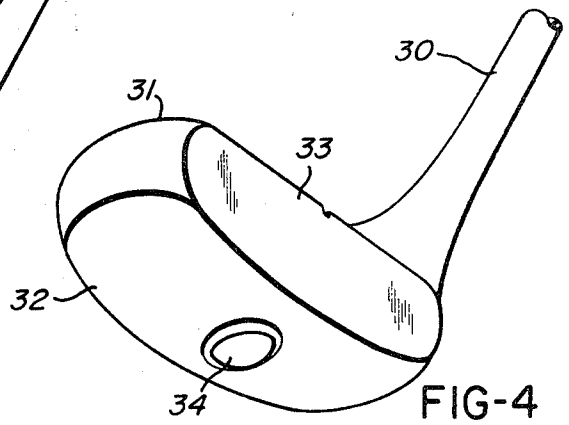


FIG-4

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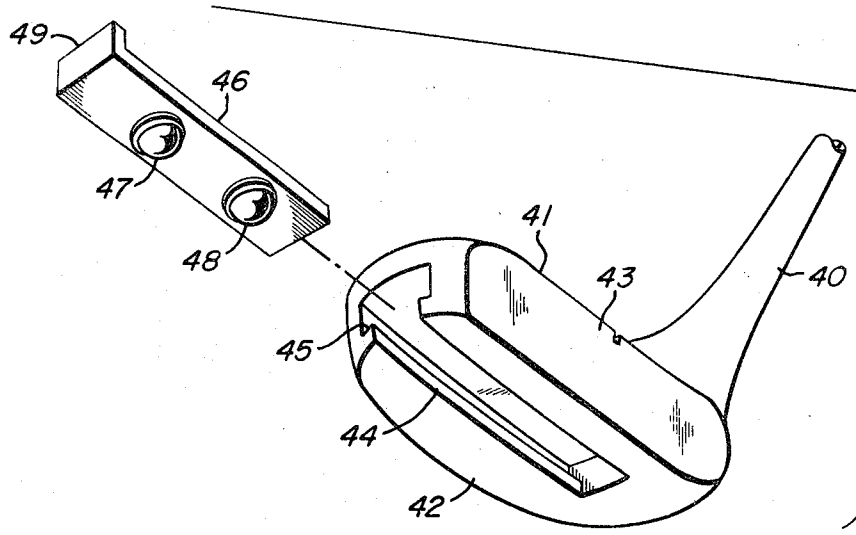


FIG-5

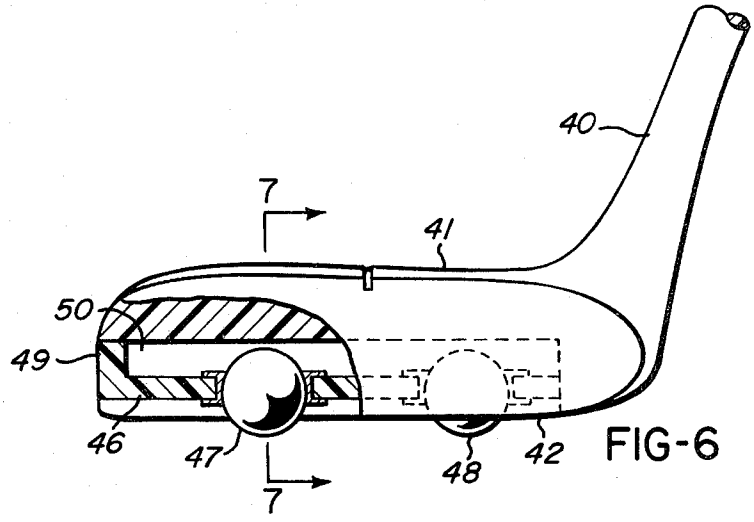


FIG-6

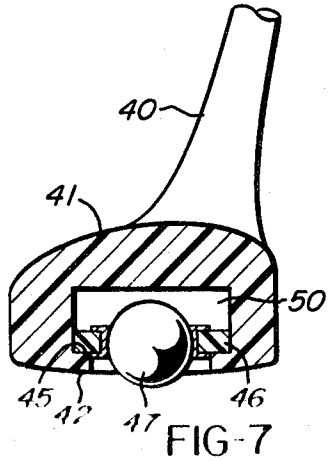


FIG-7

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GOLF PUTTER WITH ROTATABLE SOLE DEVICE MOUNTED THEREON

BACKGROUND OF THE INVENTION

Any golfer knows that one of the most frustrating aspects of the game of golf resides in the fact that he may reach the golfing green in a comparatively few strokes over a long distance ranging from about 120 yards to 550 yards in most cases, only to find that he is still faced with the exacting task of placing his ball in a small hole. This final act in many cases requires as many strokes as the negotiation of the entire distance from the tee to the green. It is, therefore, highly important that everything possible be done to improve the golfer's accuracy during the putting operation in order to place the ball in the hole with as few strokes as possible.

One of the causes of inaccurate putting is the resistance of the golfing surface, which is usually sod consisting of special fine-bladed grass, although it is also possible that certain types of putting may be done on artificial turf, carpeting, concrete, hard sand, etc. The natural resistance of any of these surfaces to the bottom of a conventional putter tends to increase the problems of accurate putting because the rigid nature of the putter permits it to be easily deflected when it contacts the irregularities of the playing surface. It would be desirable, therefore, to minimize the friction between the putter and playing surface, and thus to improve accuracy. One attempt to accomplish this is described in U.S. Pat. No. 2,426,274, in which the inventor provides a series of discs or a roller on the club head to reduce friction. There are, however, certain drawbacks to this design which the present invention overcomes.

SUMMARY OF THE INVENTION

The present invention improves the action of a putter by using devices similar to ball bearings, which are placed in the bottom of the putting head so that the club head moves in its putting path with less friction and more accuracy. The use of spherical devices such as balls accomplishes much better results than any other type of rolling devices because they permit flexibility in other directions than the normal direction of motion of the putter. It is possible to accomplish this by one or more balls which would provide a different type of operation in accordance with the desires of the individual.

An alternative form of the invention provides that the spherical devices may be removed from the club for cleaning out any grass or dirt that may become lodged in the devices, while at the same time permitting replacement by devices of different size, weight or quantity to accommodate the skills of each individual user.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an isometric view of one of the embodiments of the invention, illustrating the use of three spherical devices.

FIG. 2 is a section taken along line 2—2 of FIG. 1.

FIG. 3 is a view similar to FIG. 1, illustrating a modified form of the invention having two spherical devices.

FIG. 4 is a view similar to FIG. 1, illustrating another modified form of the invention with a single device.

FIG. 5 is an exploded isometric view of another form of the invention having removable devices.

FIG. 6 is a side view in partial section, illustrating the putter of FIG. 5 in assembled form.

FIG. 7 is a sectional view taken along lines 7—7 of FIG. 6.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings, FIG. 1 illustrates a putter 10 having a putter head 11 of more or less conventional shape. The putter may be made of steel or aluminum in the same manner in which putters have been made for many years; or may be made of plastic material which has more recently been utilized for the manufacture of putters. The exact type of plastic material is not critical but will preferably be a hard material such as nylon, ABS, polycarbonate, or the like. The exact shape of the putting head is also not critical, and although it is shown in FIG. 2 to be comparatively deep, it may also be considerably thinner as in conventional putters. The head has a bottom 12 and a putting face 13 which contacts the ball.

Mounted in the bottom 12 of the putting head are three spherical devices 14, 15, and 16 which are aligned along an axis parallel to the putting face 13. These may be similar to conventional metal ball bearings or they may simply be plastic balls made of similar material to a plastic putter. In the cross-sectional view of the putter of FIG. 2 it is seen that a typical ball 15 is mounted in a housing or race 17, with the head of the putter having an aperture 18 in which the ball is free to rotate. It can be readily seen that the balls 14, 15, and 16 contact the golfing surface 19 during the typical putting motion of FIG. 2, rather than having the bottom 12 of the putter make surface contact. The reduction in frictional contact thus produces greater control and accuracy in striking the ball B.

FIG. 3 illustrates a modified form of the invention in which a putter 20 has a putting head 21 with a bottom 22 and a putting face 23. This putter is identical to putter 10 except that only two spherical devices 24 and 25 are mounted in the bottom 22.

FIG. 4 illustrates a further form of the invention in which a putter 30 has a putting head 31, a bottom 32, and a putting face 33. This putter is also identical to putters 10 and 20 except that only a single spherical device 34 is shown as mounted in the bottom 32.

It should also be understood that the number of spherical devices, the exact arrangement in the bottom of the putting head, and the size of the devices are not limiting to the inventive concept. A number of factors enter into the selection of these devices and the individual user may prefer a lighter or heavier set of devices or may find that his own particular putting touch is better adapted to the use of a single device or ball rather than two or three.

In order to provide additional versatility of the novel device, a further form of the invention is illustrated in FIGS. 5 to 7 in which the spherical antifriction devices may be readily removed from the club head. There are several reasons for doing this: first of all, it is possible that dirt or blades of grass may work their way into the

spherical devices, and it may be desired to remove them from the club so that they may be cleaned. The modified structure illustrated provides a means for doing this in a very simple manner without the need for special tools or without affecting the structural integrity of the putter. Another advantage of the removable devices lies in the fact that a golfer can readily remove a certain quantity or size of the devices or balls and replace them with other quantities or sizes. For example, the golfer may prefer to use a double ball structure on artificial turf but may find that a single ball structure is superior on natural grass. This expedient also permits the marketing of the club to the public with an optional number of inserts containing a different quantity or different weight of the spherical devices.

The above concept is illustrated in FIGS. **5** to **7** in which reference numeral **40** represents a putter having a putting head **41**, a bottom surface **42**, and a face **43**, similar to the putters **10**, **20**, and **30** described above. However, in this form of the invention a longitudinal slot **44** is located in the bottom of the putting head parallel to the face **43**. This slot extends from the toe portion toward the heel portion partially upward into the head and is exposed at the bottom and is provided with a pair of shoulders **45**. The spherical devices **47** and **48** are mounted on a member **46** which may be slid into the slot and rests upon the shoulders **45**, as better illustrated in FIG. **7**. The member **46** rests firmly within the slot, but yet the ball is free to contact the ground on the lower side and is free to rotate within the space **50** at its upper surface. The member **46** is preferably made of a metal or plastic material which fits snugly within the slot so that it may be simply slid into place and held by friction and removed with comparatively little effort. As shown in FIGS. **5** and **6** the member **46** has a vertical segment **49** which serves to block off the slot **44** so that dirt, grass, etc. will not accumulate in the space **50**.

When it is desired to remove the member **46** with the two spherical devices it is simply done with the fingers or a hand tool and may then be readily replaced by a similar member having a different quantity or size of these devices. It should be understood that the specific structure shown is only exemplary and that many other equally simple arrangements may be utilized for the removal and replacement of a member and devices.

I claim:

1. A golf putter for use on a golfing surface comprising a handle and a putting head; said putting head having a putting face, toe and heel portions, and a bottom surface; a slot located in said head extending parallel to said putting face from said toe portion toward said heel portion and opening into said bottom surface; and further comprising an assembly having a housing member and at least one freely rotatable spherical device mounted therein; said assembly slidably and securely mounted within said slot; said device contacting the golfing surface during putting action to reduce friction therewith.

2. The putter of claim **1** in which said putting head includes a pair of shoulders defining said slot on the bottom surface of said head, said assembly being supported on said shoulders.

3. The putter of claim **1** having at least two spaced devices aligned along an axis parallel to said putting face and said bottom surface.

4. The putter of claim **1** having only a single device centrally mounted with respect to the bottom surface.

5. The putter of claim **1** in which said putting head is made of plastic.

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