Sept. 15, 1931. E. H. CLEAR 1,823,487

GOLF GAME

Filed Oct. 9, 1930

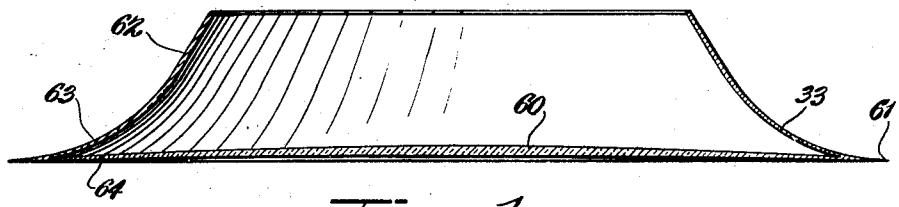


Fig 1

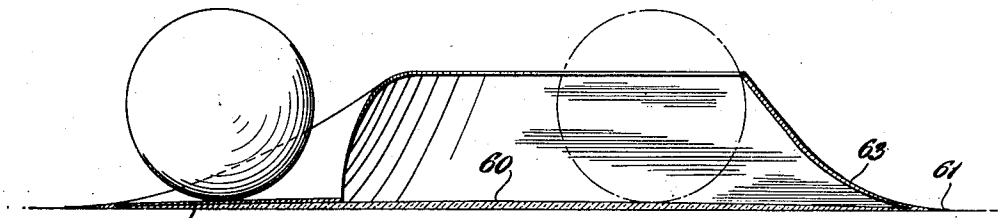
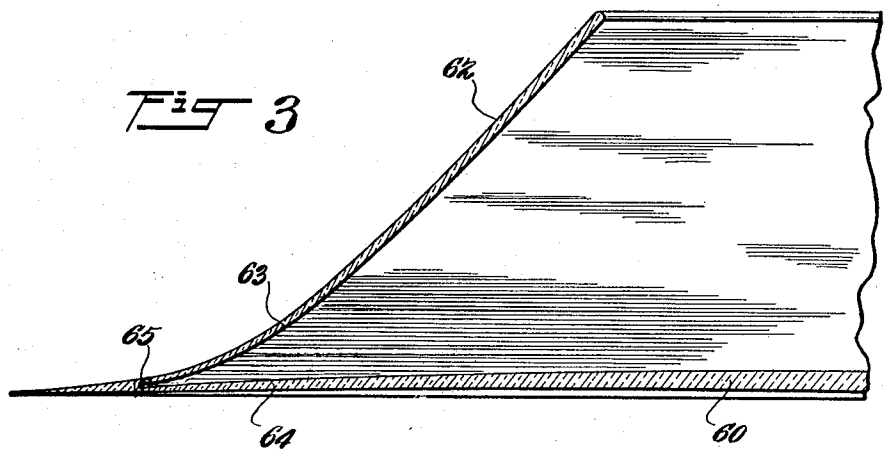


Fig 2

Fig 3



INVENTOR
E. H. Clear
BY
John D. Morgan
ATTORNEY

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EDMUND H. CLEAR, OF NEW YORK, N. Y.

GOLF GAME

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The invention relates to a novel and useful device for simulating a golf hole or cup, to be used in practicing putting or in connection with indoor or miniature golf game.

Objects and advantages of the invention will be set forth in part hereinafter and in part will be obvious herefrom, or may be learned by practice with the invention, the same being realized and attained by means of the instrumentalities and combinations pointed out in the appended claims.

The invention consists in the novel parts, constructions, arrangements, combinations and improvements herein shown and described.

The accompanying drawings, referred to herein and constituting a part hereof, illustrate one embodiment of the invention, and together with the description, serve to explain the principles of the invention.

Of the drawings:—

Fig. 1 is a central vertical section of a device embodying the invention; Fig. 2 is a view similar to Fig. 1, but showing the action of the putting cup with a ball rolling thereinto; and

Fig. 3 is a fragmentary enlarged view similar to Fig. 1, showing the details of the ball-contact area.

The invention is directed to providing a novel and useful putting cup or hole to be used in practicing putting, or in connection with indoor or miniature golf games. The putting cup of my invention is designed to provide substantially the same effect as that of a ball cup on a regulation outdoor golf green. With this end in view, the shape, size and construction of the cup are such that a ball which is properly stroked with a regulation putting iron or putter will roll into and be retained by the cup, while improperly directed balls will be deflected thereby and balls travelling with too great force will pass through the cup and escape.

One object of the invention is to provide a putting cup designed to give the closest approach to the natural operation of a hole or cup on a putting green of a regulation golf course. The cup is furthermore uniquely adapted for indoor play, in that it is designed to resist displacement due to impact from balls, while being as light in weight as possible. Furthermore, said putting cup is designed to be attractive in appearance, simple in design, and easy and inexpensive to manufacture. Moreover the putting cup provided by my invention can be used indoors without marring furniture or floor surfaces and can be moved about and carried from place to place without harm or inconvenience.

As embodied, the putting cup is preferably composed of rubber or some other similar plastic composition which combines the features of yielding and resiliency. The cup comprises a preferably circular disc 60 constituting the bottom or base thereof, said disc being relatively thick at the center and tapering gradually outwardly to a relatively very thin edge 61 at its periphery. This tapered structure of the base is designed to lend sufficient weight to the cup to prevent displacement thereof, while presenting the slighest possible resistance to the oncoming ball at its periphery.

It will be further noted that the bottom or lower surface of the base 60 is slightly concave upwardly, whereby a slight suction action is created and maintained between the base of the cup and the surface upon which it rests. This suction action is important in tending to enhance the displacement-resisting action of the cup. Furthermore, when the cup is resting upon a flat surface, the arched base tends to sink to uniform contact with the surface, thereby substantially flattening out the bottom of the cup and giving a practically level surface therewithin over which the base may roll (Fig. 2).

An upstanding lip or guard 62 is provided around the base 60, comprising a upwardly and inwardly inclined flange in the form of a truncated cone. Said lip is formed of relatively thin flexible rubber, molded as an integral piece with the base 60 and merging exteriorly with the surface thereof so as to taper to the relatively thin edge 61 at the periphery of the combined lip and base. It will be noted that the portion of the lip member which merges with the base forms, at the junction, a smooth continuous curved sur-

face. The vertical distance from the inner and upper rim of the lip to the surface of base 60 is preferably greater than the radius of a standard golf ball. As shown in Fig. 2, said distance is about one and $\frac{1}{16}$ inches, although the invention is not restricted to this or any other specific dimension.

As shown in Fig. 2 the lip 62 is adapted to be depressed by a golf ball rolling toward the center of the cup, whereby the lip lies flat against the top of the base 60 and then rolls into the interior of the cup and is retained therein by the oppositely disposed portion of the lip 62. By the passage of a golf ball over a portion of the lip member, the adjacent edge portion of the base is tilted or raised slightly so that the resistance of the passage of the ball into the interior of the cup or hole is minimized. It will be understood that the relative strength and resiliency of the lip 62 is designed so that it will offer substantially the same resistance to a putted ball as that of a regular golf green cup. Consequently, if the ball is travelling too slowly it will not be able to depress the lip 62 sufficiently to enter the cup, while if the ball be struck with excessive force, it will travel into the cup and out again by depressing the lip on the opposite side.

In designing the cup to simulate the action of the true golf cup as closely as possible, one structural feature of my invention is of particular importance. As embodied, the lip 62 and base 60 are specially designed at the junction of their interior surfaces so that an undue resistance will not be encountered by the ball as it rolls against the bottom of the lip. For this purpose, the lower portion of the lip 62 is gradually reduced in thickness from about the point 63 to the junction thereof with the inner surface of the disc 60. Similarly the thickness of the disc 60 is reduced radially outwardly from a point such as 64 at a rate considerably greater than the natural taper of the disc. Thus from the points 63 and 64 outwardly there is a zone of relatively thin material both in the lip and in the base, so that when the lip is depressed by the oncoming ball, the thinned portions 63 and 64 come together and present in the aggregate a total thickness substantially much less than the combined average thicknesses of the lip and base elsewhere. Thus the ball rolling over the lower portion of the lip encounters only gradually the cumulative resistance of the superposed lip and base, whereas if the described thinning of these elements was not present, the ball would suddenly encounter a severe baffling action due to the double thicknesses of the overlying lip and base.

To further enhance the ease with which the ball encounters the bottom of the lip, I provide an additionally hollowed-out groove or beading 65 at the junction line of the inner surface of lip 62 with the base 60. This beading may be conveniently produced by an enlarged or thickened edge on the mould upon which the cup is formed and thereby serves an additional function in that the rubber of the cup is prevented from being cut or severed as would be the case if the mould were tapered to a thin knife edge at said junction line.

The groove 65 is particularly important in the action of the cup. Said groove operates not only to additionally thin out the rubber thickness at the depressed contact point of the oncoming ball, but also serves as a hinge at the contact point so that depression of the lip by the ball is relatively thick and easy. Furthermore by virtue of the construction described, the lip has a relatively quick reaction or recovery to its normal upstanding position after the ball has passed thereover, thereby tending to retain the ball in the cup.

The invention in its broader aspects is not limited to the specific devices and instrumentalities shown and described but departures may be made therefrom within the scope of the accompanying claims without departing from the principles of the invention and without sacrificing its chief advantages.

What I claim is:

1. A golf-hole simulating device including in combination a base portion of disk form, a relatively thin flexible lip member of conoidal form extending upwardy and inwardly in a curve from the surface of the base and from a junction therewith a substantial distance inward from the periphery thereof, said base portion decreasing in thickness from the junction of the lip member therewith to its periphery to provide a relatively thin edge, said base also tapering in thickness from an interior point outwardly to said junction, the said lip member merging with said base at said junction so as to form a smooth continuous curved surface.

2. A golf-hole simulating device including in combination a base having a relatively thin peripheral edge portion and an inner portion increasing in thickness centrally, the upper surface of said edge portion merging into a thin flexible substantially frustro-conical lip projecting upwardly and inwardly from the base in a gradual curve from an annular junction line a substantial distance from the periphery of the base.

3. A golf-hole simulating device including in combination a base having a relatively thin peripheral edge portion and an inner portion increasing in thickness centrally, and a thin flexible frustro-conoidal lip member projecting upwardly and inwardly from the base from an annular junction line a substantial distance from the periphery of the base, the combined thickness of the lip member and base portion immediately inside said junction line being substantially equal to the

thickness of the base alone immediately exterior to said junction line, and the upper surface of said edge portion being merged with the surface of said lip member so as to form a smooth, continuous curve inwardly from said edge portion.

4. A golf-hole simulating device comprising a rubber unitary body having a continuous base portion and an upstanding conoidal lip member united to the base portion near but at a substantial distance inward of the peripheral edge thereof, the united portion of said base portion with said lip member forming a thin outwardly tapering edge offering substantially no resistance to a ball passing thereover, said lip member being so merged with said peripheral edge as to form a continuous surface having gradually increasing upward slope from the periphery of the base, said lip member and edge portion being sufficiently flexible to permit tilting of the adjacent peripheral edge portion in the passage of a ball over the said lip member, whereby the resistance to the passage of the ball into the interior of said device is minimized.

In testimony whereof, I have signed my name to this specification.

EDMUND H. CLEAR.