May 16, 1950 S. G. CLARKE 2,508,100

MECHANICAL GOLF CUP

Filed Oct. 20, 1948

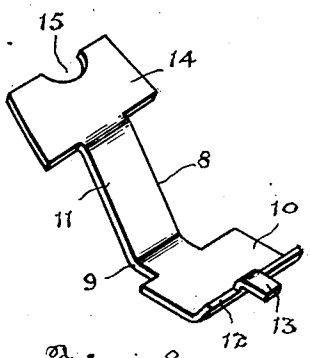


Fig. 8.

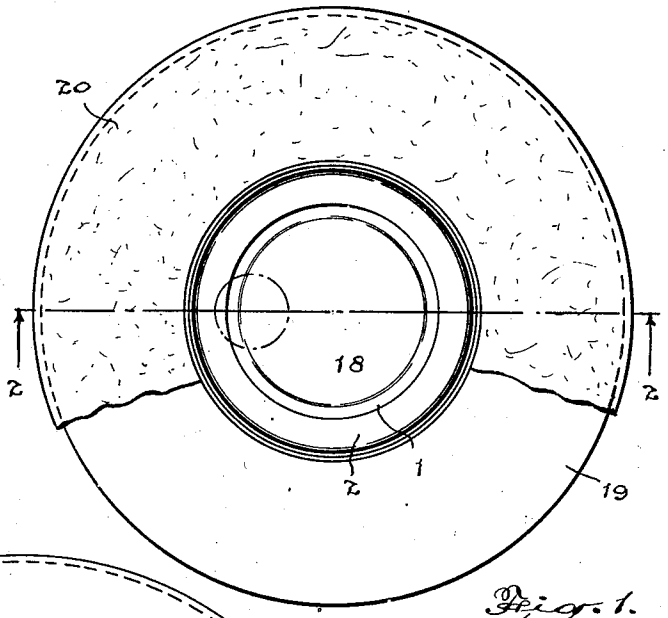


Fig. 1.

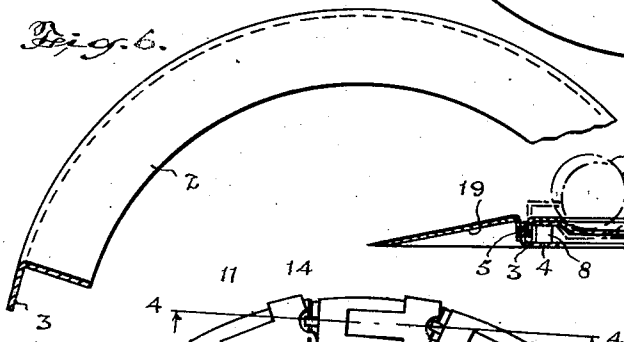


Fig. 6.

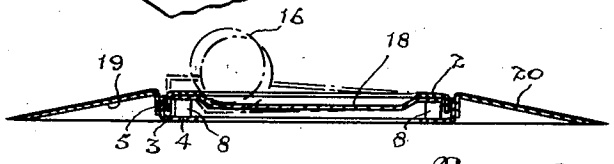


Fig. 2.

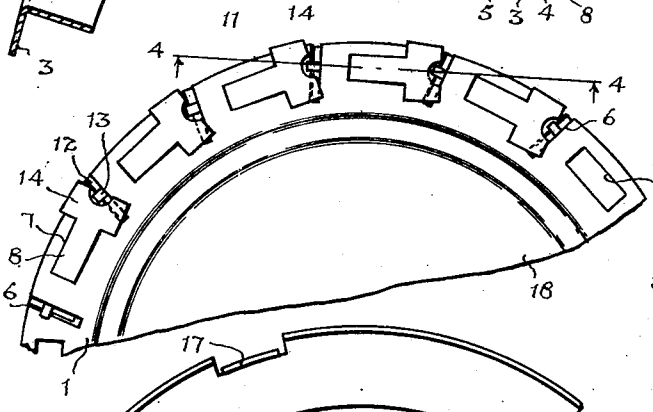


Fig. 3.

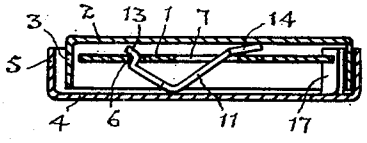


Fig. 4.

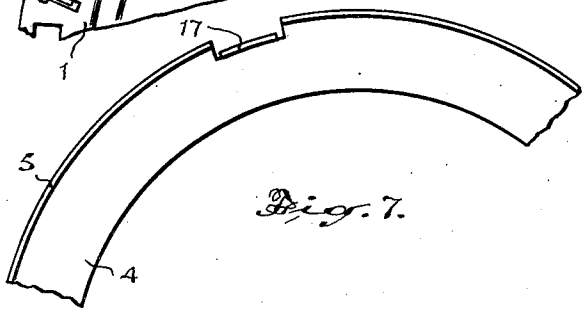


Fig. 7.

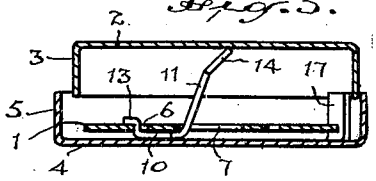


Fig. 5.

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MECHANICAL GOLF CUP

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9 Claims. (Cl. 273—36)

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This invention relates to a mechanical cup to be used for practising golf putting and the principal object of the invention is to provide a simple and exceedingly sensitive cup device which, when placed on a carpet or other surface, will permit the entry of and will retain a golf ball stroked in the proper direction and with the proper weight but which will reject an inaccurate or improperly weighted ball to very closely duplicate the conditions of a putting green.

A further important object is to provide a cup which will lie close to the carpet or other surface forming a target for practice putting, which target in itself will not impede or deflect the ball until same arrives adjacent the centre thereof, thus eliminating the necessity for any corrective allowances not required on a putting green in the stroking of the ball.

A further important object is to provide a mechanical cup which will permit the ball to accurately duplicate the "rimming" action occurring when an improperly stroked ball rims a hole.

The principal feature of the invention consists in providing a cup having as separate members, a circular bottom plate and an annular rim, the rim and bottom being supported at opposite ends of levers bent transversely intermediate their length to form bearing fulcra, the moment of the rim being of greater magnitude than the moment of the bottom about said fulcra to swing the levers about their fulcra to effect a raising of the bottom and the lowering of the rim to an equilibrium position adjacent the supporting surface, the cup thus permitting the ready entry of a golf ball within the rim, whereupon the weight of the ball upon entry upsets the equilibrium of the cup members to effect the lowering of the bottom and the raising of the rim to present a barrier sufficient to retain a slow-moving or properly weighted ball within the cup.

A further important feature consists in providing a frame to receive the rim and bottom members and incorporating guides to guide the relative movement of the movable cup members.

A still further important feature consists in arranging the levers circumferentially of the bottom and operating through slots in the bottom to engage the rim supported thereabove whereby, as the ball circles the bottom, the rim portion adjacent the ball will rise in anticipation of the ball to deflect same to effect a movement of the ball closely duplicating the antics of a ball in rimming the cup on a putting green.

Referring to the accompanying drawings: Figure 1 is a plan view of my mechanical cup device.

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Figure 2 is a mid-vertical sectional view on the line 2—2 of Figure 1.

Figure 3 is an enlarged fragmentary plan view of the cup bottom showing the levers arranged in their operating slots.

Figure 4 is a vertical sectional view through my cup device and cutting the bottom plate of the cup along the line 4—4 of Figure 3, and illustrating the cup rim and bottom plate in their normal equilibrium position.

Figure 5 is a view similar to Figure 4 but illustrating the manner in which the rim is elevated as the cup bottom is depressed under the weight of a golf ball.

Figure 6 is an enlarged fragmentary perspective view of the cup rim.

Figure 7 is an enlarged fragmentary plan view of the frame retaining the cup rim and bottom.

Figure 8 is an enlarged perspective view of one of the operating levers.

It is a common practice among golfers to practice putting on carpets or other pile fabrics simulating greens, and to provide a target to indicate the accuracy of the putting it is quite common to place a tumbler or the like on its side and stroke the ball towards the mouth of the tumbler. While this practice provides an indication of the accuracy of the putting, it gives no indication of whether the ball has been properly stroked to drop into the cup of a putting green, that is, the person putting might gain accuracy by stroking the ball strongly, but in doing so he would not be gaining any practice which would improve his putting on a putting green.

The present invention accordingly overcomes the above disadvantages encountered in practice putting by providing a cup which will not only form a source of amusement and recreation but will very closely duplicate the target presented by the cup in the putting green to afford the person practicing a means of improving his putting in the actual game of golf.

Referring to the accompanying drawings, my cup device consists essentially of a circular bottom plate 1 and a separate annular rim 2, as shown in Figure 6, formed with a depending flange 3 arranged within an annular frame 4, as shown in Figure 7, formed with an upturned flange 5.

As illustrated in Figures 2 to 5, it will be seen that the bottom plate 1 is formed with a plurality of substantially radially extending slots 6 extending inwardly from the edge thereof and with a plurality of peripherally extending slots 7 adjacent the edge thereof.

The slots 7 are arranged between the slots 6 with adjacent slots 6 and 7 forming a slot pair to receive a lever 8 preferably constructed as shown in Figure 8. This lever is bent transversely at 9 intermediate its length towards one end thereof to define a relatively short lever arm 10 and a relatively longer lever arm 11 with the bent portion 9 forming a bearing fulcrum therebetween.

The end of the lever arm 10 is enlarged and is provided with an upturned flange 12 which is adapted to engage in the slot 6 of one of the slot pairs. A small tab extension 13 projecting from the flange 12 serves to retain the flange in position in the slot 6.

The lever arm 11, which is arranged to project through the peripheral slot 7 of the slot pair as illustrated particularly in Figure 4, is formed with an enlarged head 14 which is adapted to engage the undersurface of the rim 2 when the rim is placed above and around the bottom plate 1.

In the normal position assumed by the bottom plate and the rim of the cup, as illustrated in Figure 4, the rim, supported by the lever arms 11 of the levers 8, acts, through its lever arms in accordance with its moment as produced by the length of its lever arms and its weight, to swing the levers about their fulcra 9 to elevate the bottom plate 1 which acts through the lever arms 10 with a moment corresponding to the length of said latter lever arms and the weight of the bottom plate.

The proportions of the lever are such in conjunction with the relative weights of the cup bottom plate and rim that the rim normally moves to its lowermost position to swing the bottom plate upwardly adjacent the underside thereof through the rocking of said levers on their fulcra to the position of Figure 4.

As will be seen from Figure 3, in rocking the levers to elevate the bottom plate the enlarged angularly arranged heads 14 of the lever arms 11 will swing down as permitted by the peripheral slots 7 into engagement with the upper face of the bottom plate, and said enlarged heads are provided with notches 15 to receive the tab extension 13 of the next adjacent lever when swung to against the upper surface of the bottom plate.

At the balance or equlibrium position of the rim and bottom, as shown in Figure 4, the separation of the cup members will be substantially equal to the thickness of the metal forming the levers, and the rim is lowered to adjacent the carpet or floor surface on which the cup is placed.

Upon a weight, such as the golf ball 16, being placed on the bottom plate 1 the equilibrium of the relatively movable rim and bottom cup members will be upset with the moment of the plate acting through its lever arms 11 affecting the rocking of the levers about their fulcra 9 which in turn effects the lowering of the bottom plate 1 and the elevation of the rim 2 to the positions as illustrated in Figure 5.

Thus the depth of the cup is increased by the entry of the golf ball corresponding to the relative vertical motion of the bottom plate and rim, and the rim in its elevated position thus presents a substantial barrier which will prevent the ball from rolling out over the edge of the cup.

The relative movements of the bottom plate and rim are chosen however so that the barrier presented upon elevation of the rim and depression of the bottom will not be sufficient to retain a ball that has been stroked too hard or that is moving with a velocity greater than the speed of a ball which would normally "drop" into a hole on an actual putting green.

In the relative vertical movements of the rim and bottom plate the rim is guided by means of upturned lugs 17 projecting upwardly from the annular frame 4 and spaced from the frame flange 5. Thus in the vertical movement of the rim it operates between the frame flange 5 and the lugs 17, while the bottom plate is centered and retained in position within the lugs 17.

Preferably the central portion 18 of the bottom plate is depressed so that when the plate moves to its lowermost position the central portion will lie below the peripheral portion supported by the lever arms 10 and thus effectively increase the depth of the cup without increasing the height of the rim from the floor or carpet surface when in its normal depressed equilibrium position as shown in Figure 4.

Surrounding the frame 4 is an annular ramp 19 which provides a very gradual incline from the floor carpeted surface to the rim when the rim is in its normal depressed position. Preferably, this ramp 19 is covered with a thin felt or other suitable fabric 20 to provide a surface corresponding to the surface of a putting green.

It will be appreciated that the cup when placed on the carpet or other practice surface will be extremely flat with its rim in the depressed equilibrium position and the gradually sloping extremely low ramp 19 will not materially impede a ball rolling into contact therewith and will not deflect the ball from its course.

Upon the ball moving over the rim of the cup, as illustrated in Figure 2, it will, as previously explained, contact the elevated bottom plate 1 and will thereupon effect the lowering of the bottom plate and the elevation of the rim to provide a barrier which will prevent the ball, unless it is moving at an excess speed, from rolling out of the cup.

With my arrangement it will be understood that a golf ball may be stroked towards the mechanical cup without requiring any corrective allowance for direction and weight due to the extremely gradual slope and low height of the ramp, and the ball, on entering the hole when its direction is correct, will be retained in the hole unless it has been stroked too hard, in which case it will, as on the actual putting green, move out of the hole, indicating to the person putting an error in judgement of the weight of the put.

In the event the ball enters the "side" of the hole the section of the rim adjacent the ball will rise and the ball will be deflected with the rim rising in anticipation to the ball movements to force it to circle the cup. Again, should the strength or force of the ball be too great, or should it have too much spin imparted in the stroke, it will follow the rim of the cup for a short distance and then will move out of the cup, very closely and realistically duplicating the action of the ball in rimming the cup on a normal putting green.

In addition to the practice and amusement afforded by my cup device, it will be appreciated that it will be extremely simple to manufacture with the parts being readily stamped and formed and assembled at a relatively low cost.

While I have shown one particular and efficient way of effecting the relative movement of the rim and bottom members of the cup, it will be appreciated that modifications in structure affecting this relative movement of the cup mem-

bers may be employed without departing from the scope of my invention.

With the provision of the rim flange 3 and the arrangement of the levers 8 to extend peripherally of the bottom plate, it will be appreciated that the head portion 14 of the levers will cooperate with said rim flange 3 to lock the annular rim against radial displacement by the ball when rolling in contact therewith.

What I claim as my invention is:

1. A golf practice device comprising a cup having separate relatively movable rim and bottom portions, and lever means connecting said rim and bottom portions and fulcrumed whereby said portions are normally maintained in substantially coplanar balanced relation said portions being adapted to be displaced from said normal coplanar balanced position upon entry of a golf ball within said rim to elevate said rim and depress said bottom to retain the ball.

2. A golf practice cup having a bottom plate and a rim separate from said bottom plate, levers bent transversely intermediate their length to provide bearing fulcra and defining lever arms either side of said fulcra, corresponding lever arms on one side of the fulcra of said levers supporting said bottom plate, and corresponding lever arms on the opposite side of said fulcra supporting said rim, the moment of said rim being greater than the moment of said bottom plate about said fulcra to rock said levers about their fulcra to effect elevation of said bottom plate and the depression of said rim to a normal equilibrium position, said equilibrium being such as to be destroyed by the entry of a golf ball within said rim to depress said bottom plate and elevate said rim through said levers to provide a barrier acting to retain said ball within the cup.

3. A device as claimed in claim 2 in which a ramp is provided to surround said cup and to form a gradual incline leading up to the top of said rim when said rim is in the depressed equilibrium position.

4. A device as claimed in claim 2 having a frame to receive said rim and bottom plate and means on said frame to guide said rim and bottom plate in their relative movements.

5. A golf practice cup comprising a circular frame, a ramp surrounding said frame, a circular bottom plate and an annular rim having a downturned flange surrounding said plate arranged within said frame, said plate being formed with a plurality of peripherally spaced pairs of slots

adjacent the edge thereof, a plurality of levers bent transversely intermediate their length to provide bearing fulcra and each having one end thereof engaging one of the slots of the slot pair and having the other end extending through the other slot of the slot pair and engaging said rim, the moment of said rim being greater than the moment of said bottom plate above the fulcra of said levers to rock said levers to effect the elevation of said bottom plate and the depression of said rim, said levers being actuatable under the weight of a golf ball rolling on said bottom plate to rock on said bearing fulcra to effect the depression of said bottom plate and the elevation of said rim to provide a barrier acting to retain the ball within the cup rim.

6. A device as claimed in claim 5 in which the ends of said levers engaging in said slots are formed with means to lock same from displacement from said slots.

7. A device as claimed in claim 5 in which said circular frame is in the form of an annulus having an upturned peripheral flange and upturned lugs spaced inwardly of said flange and forming with said flange a guideway to receive the downturned rim flange to guide the movements of said rim.

8. A device as claimed in claim 5 in which the central portion of said bottom plate is depressed below the periphery thereof.

9. A golf practice device comprising a cup having separate relatively movable rim and bottom portions, and levers fulcrumed intermediate their length and supporting said rim and bottom at opposite ends thereof with said rim and bottom normally balanced in substantially coplanar relation, said levers being adapted to be rocked about their fulcra upon entry of a golf ball within said rim to upset said balance to effect the elevation of said rim and depression of said bottom.

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