Jan. 7, 1958 J. E. BORAH 2,819,108

GOLF BALL RETRIEVER

Filed March 4, 1953

FIG. 1.

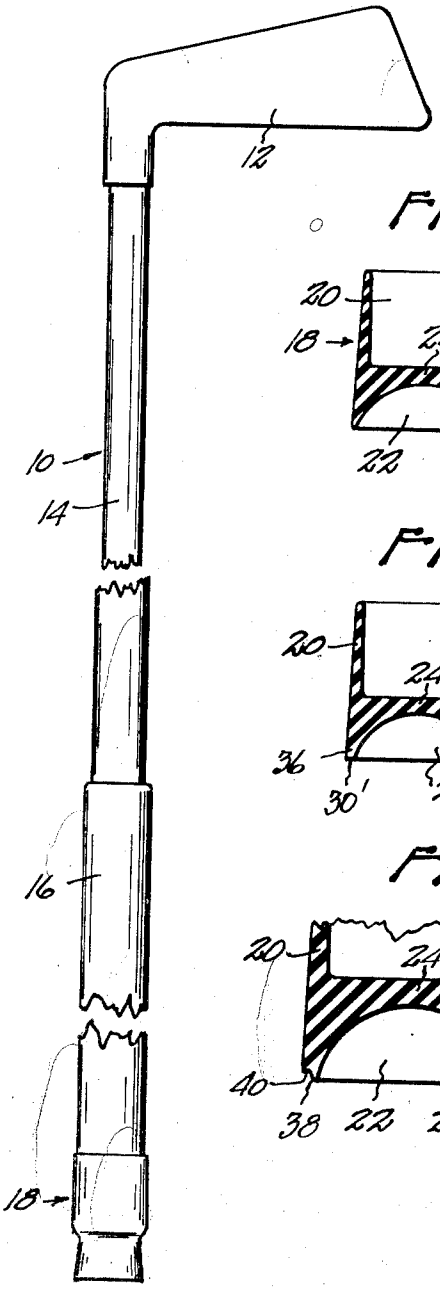


FIG. 2.

FIG. 3.

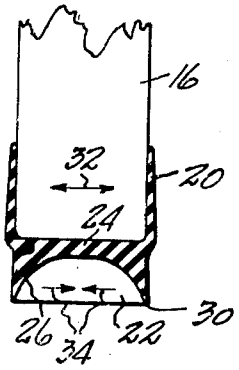


FIG. 5.

FIG. 4.

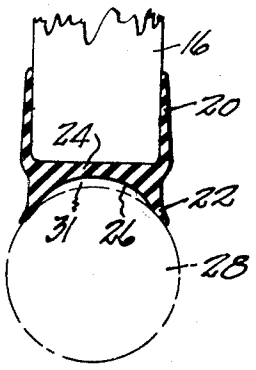


FIG. 6.

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GOLF BALL RETRIEVER

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3 Claims. (Cl. 294—19)

This invention relates to improvements in golf ball retrievers, and more particularly to golf ball retrievers of the character illustrated in my co-pending patent application, Serial No. 300,061, filed July 21, 1952, now Patent No. 2,750,222, dated June 12, 1956.

In the development of a golf ball retriever of the type which will fit upon the handle of a golf club and which will be of such small size and light weight as to avoid interference with the use of the club, as in stroking and swinging the same, while at the same time being available and convenient to grip a golf ball so that it can be picked out of a golf cup or can be picked up from the ground without requiring stooping, I first designed the type of device illustrated in my co-pending application which is characterized by the provision of an inwardly directed lip or flange at the margin of a cup-shaped socket. Since developing the foregoing construction, I have ascertained that a ball retriever having equally effective and efficient gripping properties can be produced without requiring the use of the inwardly directed lip. In particular, I have learned that the shape of the mouth of a ball-cupping socket is secondary in importance to the depth of that socket and to the forces exerted within the rubber of the socket when a skirt of the device is stretched when mounted upon a golf club shaft.

Therefore, it is the primary object of this invention to provide a new, simple and inexpensive golf ball retriever of a size smaller than the ball, which is adapted to be mounted detachably upon a club, and which is re-shaped, strengthened and reinforced by the stretching thereof for mounting upon a club in such a manner as to effect a grip upon a ball having a pebbled or irregular surface and of larger diameter than the diameter of the mouth of the socket.

Other objects will be apparent from the following specification.

In the drawing:

Fig. 1 is a view of a golf ball retriever mounted upon the handle of a golf club;

Fig. 2 is an axial sectional view of one embodiment of my invention;

Fig. 3 is an axial sectional view of the embodiment illustrated in Fig. 2, showing the same mounted upon a golf club and re-shaped by such mounting;

Fig. 4 is an axial sectional view of the ball retriever shown in Figs. 2 and 3 in its ball-gripping position;

Fig. 5 is an axial sectional view of a modified embodiment of the invention; and

Fig. 6 is an enlarged detail fragmentary sectional view illustrating still another embodiment of my invention.

Referring to the drawings which illustrates the preferred embodiment of the invention, and particularly to the embodiment illustrated in Figs. 1 to 4, inclusive, thereof, the numeral **10** designates a golf club having a club head **12**, a shaft **14** and a handle **16**. My improved golf ball retriever **18** is mounted upon the free or upper end of the handle **16**.

The retriever in the form illustrated in Figs. 1 to 4 has a socket portion **20** at one end thereof adapted to fit around the free end portion of the handle **16** of the club shaft and a suction cup end portion **22** formed integrally with the socket **20** and separated therefrom by a transverse web **24**. The retriever **18** is formed integrally in one piece, preferably by molding, and is formed from rubber, synthetic rubber, or other material possessing resilience and flexibility. When formed of rubber or synthetic rubber, a so-called "soft rubber" is required. The rubber will preferably be of such character that its durometer measurement will be in the range from 15 to 60 and preferably will be less than 50.

The cup portion **22** of the retainer has a concave surface **26** whose curvature, if part-spherical, has a radius less than the radius of a golf ball **28**, and which, if not truly part-sperical, has a concave surface so curved that the socket defined thereby will be the equivalent of that provided by a part-spherical surface of lesser radius than a golf ball. The concave surface **26** extends to the edge **30** of the cup portion **22**, which edge preferably lies in a plane substantially perpendicular to the axis of the socket **20** and is of thin construction approaching and somewhat comparable to a feather edge. In this connection it may be mentioned that the surface **26** is less in extent than half a sphere so that the portion thereof adjacent the edge **30** extends in converging relation to the outer surface **29** of the member **18**.

The diameter of the socket portion **22** at its edge **30** will preferably be approximately $1\frac{1}{16}$ inch. The depth of the socket of the cup at its center, measured from the plane of the edge **30**, will preferably be about $\frac{5}{32}$ of an inch.

The socket **20** will be of a depth in the order of $\frac{3}{4}$ of an inch and will preferably have a bore of about $\frac{7}{8}$ inch in diameter where used on clubs having handles of a diameter in the order of $\frac{31}{32}$ of an inch. The member **18** in its normal form will taper substantially uniformly from end to end thereof with its largest diameter being located adjacent the edge **30**. The socket **20** will have a thin wall thickness so as to avoid excessive bulk and circumferential dimension thereof when it fits upon the club handle. The size of the bore of the socket **20** being smaller than the handle **16** requires stretching of the socket and a consequent snug frictional constrictive fit upon the club handle. The fit of the device upon the club handle is best illustrated in Fig. 3, and the manner in which the socket portion **20** is stretched is illustrated schematically by the arrows **32**. The extension or stretching of the socket **20** will be such as to enlarge it to a diameter substantially equal to or even greater than the major or maximum diameter of the cup portion of the device, that is, at the edge **30** thereof. I have found that, when the socket **20** is fitted upon the club handle **16** in such a manner that the club handle extends full depth into the socket and preferably engages, or at least lies adjacent to the cross web **24**, forces, as designated by the arrows **34** in Fig. 3, act upon the ball-receiving socket portion **22**. These forces are laterally constrictive in character and serve to reduce the diameter of the socket **22** at the edge portion **30** thereof when the retriever **18** is mounted upon the club handle as illustrated in Fig. 3.

Consequently, no lateral projection of the ball retriever occurs relative to the club handle, and the retriever does not interfere with the grip of the user upon the golf club. The club most commonly selected for mounting the retriever is the putter, and the putter may be used expeditiously and effectively when the retriever is mounted thereon. In this connection the retriever is of such light weight and small size that it does not interfere with the balance of the club and does not destroy the "feel" of the

club or otherwise act detrimentally or in a manner which tends to hamper the player in the normal use of the club.

The stretching of the handle embracing skirt portion **20** produces both the lateral constriction of the golf ball-engaging socket **22** and a reinforcing or strengthening action on the socket **22**. This may be likened to a leverage action, and appears to result from a cold flow of the rubber and from stabilization of the skirt portion **20** by reason of its grip upon the handle. In any event, I have observed that the result is of such a nature that a firm grip is produced upon a golf ball when the reinforced socket portion **22** is pressed against a golf ball **28**, as shown in Fig. 4, to flare or expand the lip of the socket portion **22**.

The manner in which and the extent to which the gripping action of the part **18** upon a golf ball is improved when it is mounted upon a golf club, as compared to its action when handled separately, is quite surprising. I have found in many devices of this character that little, if any, gripping action is provided between the socket **22** and the part **18** if an attempt is made to effect a grip by inserting a finger into the socket **20** to press the same against a golf ball. If the same device producing negligible or even no gripping results when tried or tested in the manner just explained, is then mounted upon a golf club with the expansion or stretching of its skirt portion **20**, and resultant contraction and reinforcing of its socket **22**, a firm gripping action upon the golf ball is secured. The grip so produced is highly efficient and effective even upon a golf ball having a pebbled surface. In this connection the lip of the socket adjacent the margin of the cup **22** adjacent to the edge **30** is deformed into continuous frictional face engagement with the ball, with its contour following the contour or configuration of the surface indentations of the ball and maintaining a suction or evacuated condition in the socket portion **31** between the surface of the ball and the surface **26** of the socket, as best illustrated in Fig. 4.

The important considerations in the development of a device of this character, having a mouth of a diameter less than the diameter of a pebbled surface of a golf ball, are a socket concavity of a curvature of substantially smaller radius than the curvature of the surface of the ball to provide a chamber, as at **31**, when the device grips a ball; a lateral or radial constriction of the socket **22** as produced by a stretching and rigidifying of the socket portion **20** by fitting upon a support; and a rubber of a durometer measurement in the range from 15 to 60 which is soft enough to permit the deforming of the device, including the stretching of the web **24** when mounting the same upon a handle, and at the same time to permit the margin of the socket **22** to follow the contour of a pebbled ball surface.

The construction or shape of the socket **22** at its mouth is not of critical importance. Thus, I have illustrated in Fig. 5 a construction substantially the same as that at Fig. 2 except that the edge **30'** thereof is substantially blunt and the skirt portion **36** thereof adjacent to the edge **30'** is substantially thicker than in the form shown in Fig. 2. Devices as shown in Fig. 5 will work effectively for gripping purposes when mounted upon a golf club in a manner to stretch the socket portion **20** thereof laterally.

Another illustrative construction which I have found is feasible is to provide an axially extending lip part **38** at the inner periphery of an otherwise blunt edge or mouth portion **40** of a socket member **22**, with its inner surface forming a continuation of the concave face **26**, as illustrated in Fig. 6.

In each of the two instances illustrated in Figs. 5 and 6, the construction may be such that no gripping action, or a gripping action of only negligible value, is effected upon a golf ball by the device if applied loosely, but a firm and effective gripping action is provided with the same device when it is mounted upon a support, such as a golf club handle, in a manner to stretch the skirt **20** thereof and thus deform the device out of its natural shape with the resultant application of forces as illustrated by the arrows in Fig. 3.

While the preferred embodiment of the invention has been illustrated and described herein, it will be understood that changes in the construction may be made within the scope of the appended claims without departing from the spirit of the invention.

I claim:

1. In combination, a shaft, and a ball retriever mounted on said shaft, said retriever comprising a resilient unitary body of soft deformable material including a skirt portion, a ball-gripping cup portion and a transverse web between said skirt and cup portions, said skirt portion having a substantially cylindrical recess whose normal diameter is less than that of said shaft and whose normal exterior transverse dimension is substantially equal to the exterior transverse dimension of said cup portion, said cup portion having a mouth whose diameter is less than the diameter of a ball and an interior concave surface area greater than the convex surface area of the portion of a ball confronting said cup portion, said concave surface being substantially spherical throughout, said skirt portion being transversely stretched by said shaft to stress and transversely contract said cup portion to a smaller diameter to stiffen the same and facilitate a suction grip of a ball by said cup portion when its margin is stretched and conforms to the surface of said ball.

2. The combination defined in claim 1, wherein said cup portion has a reduced thickness continuous axially projecting lip at its edge, the inner surface of said lip forming a continuation of the interior surface of said cup portion.

3. A golf ball retriever comprising a resilient soft rubber-like unitary body of a durometer measurement between 15 and 60 having a substantially cylindrical recess at one end defining a thin walled skirt portion, and a substantially part spherical concave recess at its opposite end defining a cup portion of a diameter less than the diameter of a golf ball, the depth of said cup recess being less than the radius of the ball and greater than the maximum spacing between the outer surface of said ball and the plane of engagement of the edge portion of said cup with said ball as measured perpendicular to said plane, and a shaft of a transverse dimension greater than that of said cylindrical recess fitting in said skirt portion to distend the same, said cup portion being normally of substantially the same exterior cross-sectional dimension as said skirt portion and being radially contracted and stiffened when said skirt portion is mounted on said shaft to facilitate constrictive contour-conforming engagement of a narrow marginal portion thereof with the surface of a golf ball.

References Cited in the file of this patent

UNITED STATES PATENTS

904,650	Sampson	Nov. 24, 1908
1,830,520	Moyses	Nov. 3, 1931

FOREIGN PATENTS

207,138	Great Britain	Nov. 22, 1923