Sept. 22, 1964 P. W. WARD 3,149,872

GOLF BALL RETRIEVER AND STORAGE MEANS

Filed Nov. 13, 1962

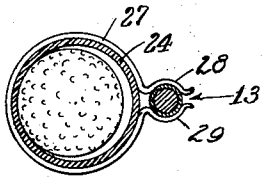


Fig. 3

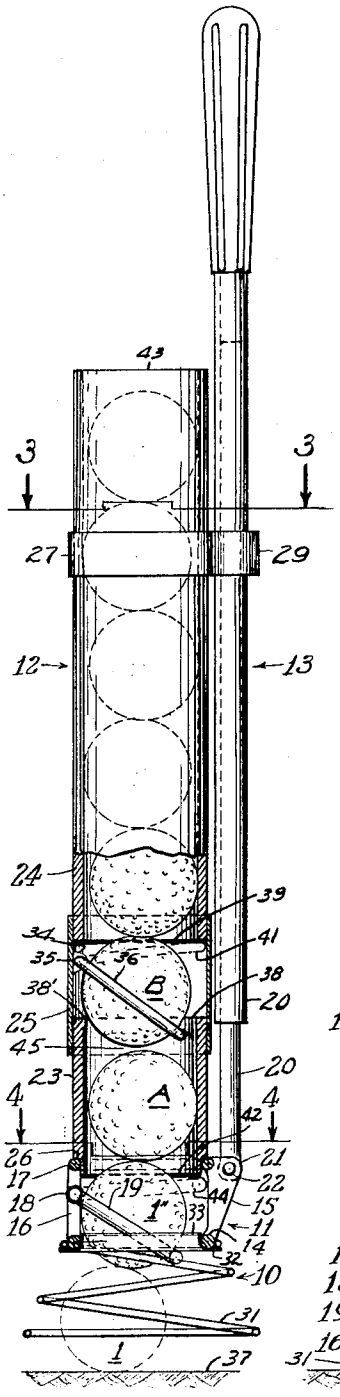


Fig. 1

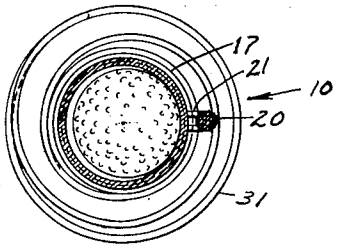


Fig. 4

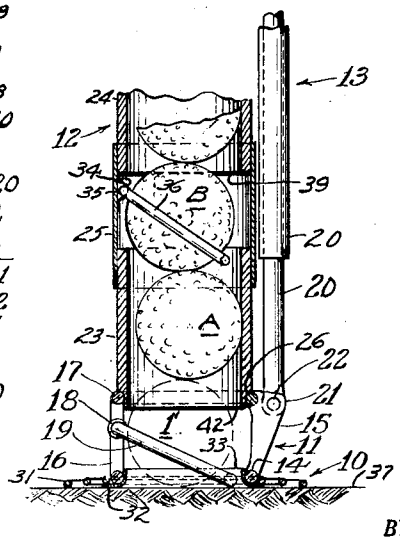


Fig. 2

INVENTOR.
Paul W. Ward
BY Stanley C. Finish
ATTORNEY

United States Patent Office 3,149,872 Patented Sept. 22, 1964

3,149,872

GOLF BALL RETRIEVER AND STORAGE MEANS

Paul W. Ward, 816 S. West St., Findlay, Ohio

Filed Nov. 13, 1962, Ser. No. 236,997
11 Claims. (Cl. 294—19)

This invention relates generally to golf ball retriever devices and more particularly to container means coacting therewith for retrieving, retaining and storing a plurality of practice driven golf balls.

The purpose of this invention is to provide means whereby a plurality of practice driven golf balls may be expeditiously picked up and automatically stored without the necessity of bending over or stooping to gather up such multiplicity of balls.

An object of this invention is the provision of golf ball retriever means having a storage canister associated therewith for directly and automatically receiving balls from the retriever and supportably storing said balls in said canister.

Another object is to provide a golf ball retriever and a removable storage container associated therewith, whereby the retriever can be used separately and apart from the storage container.

Yet another object is the provision of compressible guide means for guiding a golf ball to a golf ball retriever.

Other specific objects and many of the attendant advantages of this invention will be readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings in which like reference numerals designate like parts throughout the figures thereof and wherein:

FIG. 1 is a fragmental side elevation view of the retriever-container device, partly in section, showing the device, already containing stored balls, placed over a golf ball resting on the ground or the like, as the first stage in retrieving and storing a ball;

FIG. 2 is a side elevation view of the retriever-container device, partly in section, showing the device lowered over and surrounding the ball, as a subsequent stage in retrieving a ball, and showing the pivotal ring gate having dropped below the ball to an entrapping position;

FIG. 3 is a section view taken on line 3—3 of FIG. 1; and

FIG. 4 is a section view taken on line 4—4 of FIG. 1.

Referring now to the drawings wherein like reference characters designate like or corresponding parts throughout the several views, there is shown generally indicated at **10** a guide cage for guiding a ball to an entrapment cage generally indicated at **11**, a tubular storage container generally indicated at **12**, and a handle generally indicated at **13**.

The trap cage **11** comprises a lower horizontal ring **14** of an inside diameter larger than a golf ball to receive and pass such golf ball quite loosely therethrough.

A pair of diametrically opposite vertical support posts **15** and **16** extend upwardly from said lower ring **14**, and support upper horizontal ring **17** thereon. Said posts and rings are secured to one another as by welding. The upper ring is axially aligned with the lower ring, and of substantially the same diameter as the lower ring. Said rings are spaced apart a distance substantially equal to the diameter of a golf ball, but preferably less than the measure of the diameter of a golf ball to prevent the exit of a golf ball therebetween; however, the invention is not limited to such distance measure.

Intermediate the ends of outer post **16**, said outer post **16** is provided with a bore **18** to receive a lower ring gate **19** pivotally journalled therein. Said ring gate is disposed to oscillate between said lower and upper rings,

and it has an inside diameter slightly larger than a golf ball to receive and pass a golf ball therethrough.

When the pivotal gate ring **19** is disposed parallel to lower ring **14**, it is axially aligned with said lower ring and positioned to pass a ball through the presented ring area.

At rest, the pivotal ring gate **19** assumes a diagonal or declined position, sloping downwardly from the bore **18**, and is supported on the lower ring **14** at two points, equally spaced, one on each side of post **15**, adjacent the inner periphery of lower ring **14**. In this "closed" position of rest, the outer lower portion of the ring gate **19** is disposed within and below lower ring **14**, and the presented passage area is reduced thereby preventing a ball from escaping downwardly. The pivotal axis of said gate ring **19** is preferably spaced above the bottom of said lower ring a distance substantially equal to half the diameter of such golf ball, or less than such distance. However, the invention is not limited to such distance dimensions.

The upper end portion of said inner post **15** is provided with a pair of spaced ears, such as indicated at **21**, axially bored to receive a pin **22** supportably therein.

A handle or shaft, generally indicated at **13**, formed of a plurality of telescopically related sections such as indicated at **20**, is pivotally connected to the trap cage **11** through means of said pin **22**. A hand grip member is provided on the upper end portion of said handle **13**. Obviously the handle may be rigid in lieu of telescopic.

The telescopically related handle sections are adapted to be retained in extended or retracted positions, frictionally, or by any suitable positive engaging means, not shown.

The pivotal coupling of the handle to the pin **22**, and between said ears **21**, is sufficiently tight to frictionally retain the trap cage **10** in any angular position, relative to the handle, to which it may be manually turned and adjusted.

The handle is adapted to be moved to a vertical position relative to the rings, that is to a position at right angle to the plane of upper ring **17**, to a disposition parallel and adjacent to container **12**.

Container **12** comprises a lower tubular section **23**, an upper tubular section **24** spaced above and axially aligned with section **23**, and an intermediate tubular sleeve section **25** for coupling said upper and lower sections as by being press-fit onto and around the adjacent ends of said sections. Said tubular sections are axially aligned, and have an inner diameter sufficient to receive a golf ball loosely therein and therethrough. Obviously the sleeve section **25** has a somewhat greater inner diameter than the adjacent sections.

The lower end of tubular section **23** is provided with an annular shoulder **26** adapted to be snugly received and supported press-fit inwardly of and on upper ring **17**, axially aligned therewith. The press-fit functions to releasably secure the storage container **12** on said upper ring **17**.

A split spring clip **27** tensionally embraces and is supported on the upper end portion of said container. The terminal portions of said split clip **27** are provided with a pair of spaced projecting arcuate ears **28** and **29** to tensionally receive and embrace the handle **13** releasably therebetween.

The guide cage **10** comprises a spirally wound compression spring **31**, shaped as a hollow conical frustum, and means for releasably securing said spring to the lower ring **14** of the trap cage. Said securing means includes an annulus **32** having an inner upturned flange or collar **33** which is press-fit onto the inner periphery of lower ring **14**. The upper ringed portion of the spring **31** is welded on the top side of said annulus, along the rim edge thereof so as to be clear of the lower ring **14** when

said ring is press-fit onto the flange 33 and otherwise seated on annulus 32. The inner diameter of flange 33 is of a measure to pass a golf ball loosely therethrough.

An inwardly projecting lug 34 is integrally formed on the inner periphery of coupling tube section 25, and a bore 35 is provided therethrough, the axis of said bore being spaced a distance of substantially two golf ball diameters from the axis of companion bore 18, but the invention is not limited thereto. Bore 35 is vertically above and parallel to the axis of bore 18.

An upper gate ring 36 is pivotally supported in said bore 35. Said upper gate ring has an inside diameter slightly larger than a golf ball, to receive and pass such golf ball therethrough and past said lug 34 when the gate ring is pivotally disposed substantially at right angle to the longitudinal axis of tubular container 12.

The upper swing of gate ring 19 is stopped by its engagement with the lower edge 42 of lower tube section 23. Such upper stop position disposes the gate ring 19 in a position substantially parallel to lower ring 14 to allow a golf ball to pass therethrough for emptying the tube 12 of balls as hereinafter described.

When the pivotal axes of such ring gates 19 and 36 are spaced a distance of substantially one or a multiple of golf ball diameters said rings are operative substantially in unison.

Said upper ring 36 takes a position of rest and is stopped in a declined position bearing on the upper edge 38 of lower tube section 23. The upper swing of gate ring 36 is stopped by its engagement with the lower edge 39 of upper tube section 24, see dotted line position 41. Such upper stop position disposes the gate ring 36 in a position substantially transversely of the longitudinal axis of tubular means 12 to allow a golf ball to pass therethrough for emptying tube 12 of balls as hereinafter described.

Operation.—With the tubular container 12 and the compressible guide cage 10 removed from the above described apparatus, the remaining device functions as a golf ball retriever, per se, whereby when the ring gate 19 is lowered over a golf ball, the outer end portion of said gate ring is caused to engage the adjacent sloping side of such golf ball and be slidably held up thereon until said ring gate becomes disposed in a position substantially parallel to said lower ring whereupon the outer end portion of said ring gate suddenly drops past the widest or equator portion of such golf ball to a declined position adjacent the underside of such golf ball, whereupon an upward lift of the trap cage 11, including ring gate 19, causes the underside of such golf ball to be engaged by the outer end portion of said ring gate which is supported on said lower ring 14, and by the opposite side as by outer post 16 at ring 14, thus the golf ball is retrievably held in said trap cage 11.

With the container 12 operatively attached to upper ring 17, and the guide cage 10 operatively attached to lower ring 14, and the upright handle embraced between spring ears 28 and 29, the above assembly is operative to retrieve and store a multiplicity of practice driven golf balls 1, resting on the ground or other supporting surface, as follows. The hand grip element on handle 13 is grasped by an operator and the assembly maneuvered until the guide cage 10 is disposed above golf ball 1 and then lowered over the ball, see FIG. 1, until the guide cage engages the ground 37 on which the ball is resting. As the handle is pressed further downwardly, against the tension of spring 31, the spring compresses and guides the ball 1 to lower ring 14 until said lower ring encircles the upper portion of the ball 1 and the lower end portion of gate ring 19 engages the sharply sloping adjacent side of ball 1.

Continued downward movement and lowering of entrapment cage 11 causes such lower end portion of gate ring 19 to be slidably held up on ball 1 while the cage and remaining upper portion of the gate ring proceed relatively downwardly to surround ball 1. When the gate ring 19 becomes disposed in a position substantially parallel to the lower ring 14, the end portion of gate ring 19, previously slidably held up on the sharply sloping adjacent side of ball 1, suddenly drops past the widest or equator portion of the ball, gravitationally, and stops supported in a declined position on flange 33, as position indicated at 1', see FIG. 2. At this time the spring guide cage is fully compressed, and the lower ring 14 is disposed adjacent the ground.

As the gate ring 19 is pivotally dropped past the equator of the ball, it swings in an arc and comes to rest on the flange 33, and under a portion of ball 1, for supporting engagement therewith, such as positionally indicated at 1'.

The ball is now trapped and ready to be elevated and retrieved. As the entrapment cage is elevated, the end portion of gate 19 engages the adjacent underside of such golf ball, and the opposite side of the ball engages the post 16 at the ring 14, thereby providing stable support means for the ball, such as positionally indicated at 1'', see FIG. 1.

With the first ball thus retained in the trap cage, the operation is repeated on a second ball whereby the first ball is pushed upwardly by the second ball, and the first ball takes a position in the storage retainer 12 as position indicated at A, supported on ring 36 and on opposite side at edge 38', FIG. 1.

The process is further repeated on a third ball whereby the first ball is consequently pushed upwardly through upper gate ring 36, which pivotally drops past the equator of said first ball, and assumes an engaging position under said first ball as position indicated at B, the ring 36 resting on stop edge 38.

The operation can be further repeated until the storage container is full of balls or substantially so.

When it is desired to empty or otherwise remove the golf balls from the container, one need only tip or overturn the assembly so that the balls roll and spill out the upper end 43 of tube 12. Every ball in the assembly will spill out, including ball A between the gate rings and ball 1'' in the trap cage 11. In such dumping or emptying of the balls from the assembly, upper ring gate 36 moves to its substantially transverse position of rest against stop edge 39, as indicated by the dotted line position 41, and lower ring gate 19 moves to its substantially parallel position of rest against stop edge 42, as indicated by the dotted line position 44, thereby allowing the balls A and 1'' to pass freely through said ring gates and out the open end 43.

As shown in FIG. 1, and evidenced by space 45 between balls A and B, the column of balls above upper gate ring 36 is entirely supported by said gate ring 36, whereas balls 1'' and A are supported by lower gate ring 19.

If desired, the storage container 12 may then be separated from the retriever device by pivotally disengaging the handle from the embracing ears 28 and 29, and otherwise withdrawing the container from its shoulder engaging seat on upper ring 17. Obviously all the balls above upper gate ring 36 will be held retained and stored in said retainer by means of the blocking action of said gate ring preventing the balls from escaping theredown. However, the ball in position indicated A will fall away from the tube; while the ball in position indicated 1'' will be held in the cage 11.

Thus the separated storage container, plus the balls therein, can be separately disposed of, and the remaining structure can be employed as a retriever, per se, for retrieving individual balls from water hazards and other inaccessible places, with or without the guide cage 10, as described hereinbefore.

Some characteristic features of this invention are the combination of a golf ball retriever and ball storage means operatively connected therewith; the provision of a separable golf ball storage means operably connectable

with golf ball retriever means; and the combination of golf ball retriever means and yieldable guide cage means.

Obviously many modifications and variations of the present invention are possible in the light of the above teachings. It is therefore to be understood, that within the scope of the appended claims, the invention may be practiced otherwise than as specifically described.

What is claimed and desired to be protected by Letters Patent of the United States is:

1. A golf ball retriever and cooperating golf ball receiving storage tube, comprising: a lower ring having an inner diameter to receive a golf ball loosely therethrough; an upper ring spaced above said lower ring and having an inner diameter to receive a golf ball loosely therethrough, said upper ring being disposed substantially parallel to and substantially axially aligned with said lower ring; support means rigidly connecting said upper and lower rings; handle means connected to said support means; post means extending from one of said rings toward the other of said rings; a first gate ring having an inner diameter slightly greater than the diameter of such golf ball to receive such golf ball therethrough; first means for pivotally connecting said first gate ring to said post means, said first gate ring being operatively disposable to a position substantially parallel to said lower ring, and substantially axially aligned therewith, said gate ring being oscillatable from said substantially parallel position to a declined position of rest on said lower ring; tubular means on said upper ring extending substantially axially upwardly thereof, said tubular means having an inner diameter to receive a golf ball loosely therethrough; a second gate ring disposed interiorly of said tubular means, said second gate ring having an inner diameter slightly greater than the diameter of such golf ball to receive such golf ball therethrough; second means on the inner periphery of said tubular means for pivotally connecting said second gate ring to said tubular means, said second gate ring being operatively disposable to a position substantially parallel to said lower ring, and substantially aligned therewith, said second gate ring being oscillatable from its said substantially parallel position to a declined position; and first stop means for limiting the downward swing of said second gate ring to said declined position; whereby when said first gate ring is lowered over such golf ball, the outer end portion of said first gate ring is caused to engage the adjacent sloping side of such golf ball and be slidably held up thereon until said first gate ring becomes disposed in a position substantially parallel to said lower ring whereupon the outer end portion of said first gate ring suddenly drops past the widest or equator portion of such golf ball to a declined position adjacent the underside of such golf ball, whereupon an upward lift of said handle means causes the underside of such golf ball to be engaged by the outer end portion of said first gate ring which is supported on said lower ring, and also engaged by said post means at said lower ring, and thus be consequently retrievably held thereby, and whereby, as succeeding golf balls are thusly retrieved, such original golf ball is urged upwardly into and guided by said tubular means to and through said second gate ring which substantially likewise retrievably holds said original golf ball and other balls that follow stored in said tubular means.

2. The apparatus of claim 1 wherein said second gate ring is disposed adjacent the lower end of said tubular means.

3. The apparatus of claim 1 wherein the pivotal axis of said second gate ring is disposed a distance substantially equal to two diameters of such golf ball above the pivotal axis of said first gate ring.

4. The apparatus of claim 1 wherein the pivotal axis of said second gate ring is spaced above the pivotal axis of said first gate ring a distance substantially equal to multiple diameters of such golf ball.

5. The apparatus of claim 1 wherein said parallel position of said first gate ring disposes said first gate ring at a distance from said lower ring of not more than substantially half the diameter of such golf ball.

6. The apparatus of claim 1 wherein said parallel position of said first gate ring disposes said first gate ring at a distance from said lower ring substantially equal to half the diameter of such golf ball.

7. The apparatus of claim 1 and second stop means for limiting the upward swing of said second gate ring to its said substantially parallel position.

8. The apparatus of claim 1 and third stop means for limiting the upward swing of said first gate ring to its said substantially parallel position.

9. The apparatus of claim 1 and means for removably mounting said tubular means on said upper ring.

10. The apparatus of claim 1 and compressible guide means pending from said lower ring operative to receive and guide such golf ball to said lower ring.

11. The apparatus of claim 1 wherein said handle means is pivotally connected to said support means and operative to be swung upwardly adjacent said tubular means; and releasable means connecting said handle means and said tubular means when said handle means is disposed adjacent said tubular means.

References Cited in the file of this patent

UNITED STATES PATENTS

540,201	Varney	May 28, 1895
2,760,807	Watson	Aug. 28, 1956
2,962,321	Fowler et al.	Nov. 29, 1960
3,029,097	Ward	Apr. 10, 1962