BALL PICK-UP AND TEE-UP AID

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ABSTRACT

The lightweight and small tee-up-device is attached to a golf club shaft or a golf club head for the purpose of picking-up and teeing-up balls while practicing at a driving range or on a putting green, or playing a round at a golf course. The device allows a golfer to practice hitting balls off a tee without: bending over, squatting down, moving his feet, shifting his natural stance, releasing or adjusting his natural grip on the golf club, altering his natural swing, or interfering with the natural striking of the teed-up golf ball. The device has a seat (110) to hold the ball, a gap (118) in the seat to allow the device to withdraw from the tee, tips (114) to help hold the ball and help guide the device when picking-up the ball, a mount (120) and accessories (123) to attach the device to the club. The seat is preferably C-shaped with diameter slightly less than the diameter of a ball. The device is made of a material rigid enough to carry the ball when the ball sits in the C-shape. This material also has enough flexibility so that the ball can be easily forced through the C-shape when the ball is picked-up by the push-through method. The tips are curved to prevent sticking in the ground and flared to help guide the ball onto the seat when the ball is picked-up by the scoop-method. The C-shape exposes the bottom of the ball so that the ball can be placed on the tee. The gap in the C-shape of the seat is large enough to allow the tee to pass through the gap after the ball has been placed on the tee.
BALL PICK-UP AND TEE-UP AID

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to picking-up and teeing-up a golf ball with the aid of a tee-up device with the golfer remaining in a standing position.

2. Description of the Related Art

The teachings of the prior art falls into the following categories:

(a) Manual Method: Employing this method, the golfer bends over or squats down, and manually picks-up a golf ball from the ground or from a basket, and places the golf ball on a tee. He/Her (hereby he) can then strike the ball off the tee with his/her (hereby his) club. This method of teeing-up puts stress on the body, and when performed repeatedly can cause fatigue or injury to the legs and/or back. This method can be tedious and time consuming and consequently can cause boredom. In addition, by teeing-up manually, the golfer must move his feet, shift his stance, and release his grip on the golf club, hence prohibiting the benefit of practicing with a uniform stance and grip.

(b) Ball Retriever: Reference is made to Wittek Golf Supply Company, Inc., 1997 Catalog No. 100, page 115, Stock Nos. 93820, 93830, 93840, 93845, Tel: 1-800-869-1800. These devices have a cup or pinching mechanism at the end of a pole by which a golf ball may be retrieved from a water trap, inaccessible or problem location. These devices can pick-up a golf ball but most likely require that the golfer release his grip on his golf club to take hold of the pole and operate the device. In addition, these devices do not have the capacity to place a golf ball on a tee since: the pinch mechanism can not release the golf ball; the cup can only drop the golf ball with no useful fidelity in aiming or stabilizing the golf ball on the tee.

(c) Automatic Tee-Up Devices: Reference is made to Wittek Golf Supply Company, Inc., 1997 Catalog No. 100, page 119, Stock No. 77705, Tel: 1-800-869-1800. These devices are bulky with a number of moving parts, and, in some cases, electronic parts. They work by placing a number of golf balls in a hopper, activating a feeder mechanism which isolates and guides a golf ball along a rail to position the golf ball above the tee, releasing the golf ball onto the tee, and withdrawing all parts from the tee and hitting area. In addition, some models require the tee to be lowered and raised, while other models require a long rail to be lowered and raised. These automatic tee-up devices are complicated, expensive to buy and to maintain; they are bulky and inconvenient to store and transport; and some require electrical power. The referenced Automatic Tee-Up Device (as seen in the photocopy) has a semi-loop at the end of two rails. Since the purpose of the semi-loop is intended for the ball to fall through, this semi-loop can not hold and carry a golf ball. None of these devices can be attached to a golf club for ease and convenience of use.

(d) Putter Finger Ball-In-Cup Retriever: Reference is made to Wittek Golf Supply Company, Inc., 1997 Catalog No. 100, page 114, Stock No. 93216, Tel: 1-800-869-1800. This device has a suction cup at one end and the other end attaches to the grip end of a putter. When a golf ball is in the hole on the green, the golfer turns the putter upside down and presses the suction cup down on the golf ball in the hole. The golf ball sticks in the suction cup and can be raised out of the hole. The suction cup must be moistened regularly to maintain its suction function, and it must be cleaned regularly to remove dirt that interferes with its suction function. This device requires that the golf ball be taken from the suction cup manually, as it has no release mechanism to allow the golf ball to be placed and left on a tee. Also, this device has no guides to aid in the placement of a golf ball on a tee.

(e) Ball Pickers: Reference is made to Wittek Golf Supply Company, Inc., 1997 Catalog No. 100, page 2, Stock No. 71850, Tel: 1-800-869-1800. These machines are rolled over driving ranges to pick-up golf balls by the hundreds. While they can pick-up golf balls, they are very large and could not be attached to a golf club, and they have no means which would enable them to place a golf ball on a tee.

The Dahlmann-device of U.S. Pat. No. 5,772, 533 attaches to the grip end of a golf club so that the golfer can place a tee in the ground and tee-up a golf ball without bending over. The Dahlmann-device suffers from these accounts:

1. The Dahlmann-device is not designed to pick-up golf balls from the ground and there is no practical way to do so. Thus, the Dahlmann-device can not be used without bending over to repeat the operation of teeing-up for a group of golf balls that sit on the ground or in another platform such as a tray set on the ground, as might be found at a driving range.

2. The Dahlmann-device requires that the golfer release his grip on the golf club since the golfer must manually insert both the golf ball and the tee into the device as part of operating it. The golfer must then turn the golf club upside down to finish the operation of teeing-up. Thus, the Dahlmann-device does not allow the golfer to tee-up the golf ball without altering his grip on the golf club, thus prohibiting the golfer from practicing at a driving range with the same grip on consecutive strokes.

3. The Dahlmann-device will likely cause the golfer to move his feet or shift his stance while retrieving the tee and the golf ball which would be located beyond the range of his swinging golf club. Thus, the Dahlmann-device does not allow the golfer to tee-up without moving his feet or shifting his stance, thus prohibiting the golfer from practicing his stroke with uniformity on consecutive strokes.

4. The Dahlmann-device attaches to the golf club shaft-grip. This protrusion of several inches would likely interfere with the golfer's natural grip and inhibit the motion of the golfer's natural swing.

5. The Dahlmann-device could not be effectively redesigned to attach to the bottom of the golf club shaft or the golf club head. To hold a tee, the Dahlmann-device must extend below the golf ball, thus there would not be enough ground clearance to allow a natural swing of the golf club. In addition, the weight and bulk of the Dahlmann-device would both present air drag and unbalance the golf club.

6. The Dahlmann-device requires a golf ball release mechanism called a "delayed urging means".
The Dahlmann-device was designed to be used with a regular tee and can not be used with a permanent tee (such as is found at many driving ranges with mat tees, or as found at some golf courses with persistent tees at each hole’s tee-up site). The Dahlmann-device must use a regular tee which is manually placed in a slot. This slot is specifically designed to be beveled so as to conform to the tapered profile of a regular tee. (The tapering of a regular tee is needed so that the tee comes to a point so that it can puncture into the ground.) This very design feature prohibits the Dahlmann-device from being used with a mat tee which is not tapered but instead has a uniform diameter from top to bottom (this diameter itself being wider than the width of the Dahlmann-device slot). Such a mat tee can not fit into the Dahlmann-device’s slot. Furthermore, the Dahlmann-device could not be used with any tee whatsoever that is already inserted in the ground.

The Dahlmann-device holds the tee firmly in a slot and holds the golf ball snugly in a housing. Thus, withdrawing the Dahlmann-device from the tee-up golf ball without disturbing the golf ball by nudges from the slot or housing requires a high degree of dexterity.

The Dahlmann-device must be vertical when operated and thus has unforgiving operational properties.

The Dahlmann-device is relatively unsightly and a detractor for those golfers who use fashion as a criteria when purchasing golf equipment.

**SUMMARY**

The device of the present invention, in any of it’s embodiments, is referred to herein as a ball-tee-up-device or tee-up-device. This term will be used for both the ball pick-up and the ball tee-up embodiments, structures, functions, and operations. The context and proximate language will supply the necessary distinctions.

In accordance with the present invention and the principal embodiments thereof, the ball-tee-up-device comprises: a seat in the form of a C-shape that picks-up a golf ball and exposes the golf ball to be set on a golf tee; a pair of tips curling up at each end of the C-shape that reduce snagging and act as guides and supports; a gap in the seat between the tips by which the tee-up-device withdraws from the golf tee area; a mount opposite the gap by which the seat interfaces with a golf club, a set of accessories by which the mount secures the seat to the golf club.

The tee-up-device attaches to the golf club head or shaft so as to allow the golfer to pick-up and tee-up a series of golf balls. The golf club acts as a kind of extended hand so that the golfer can tee-up and hit golf balls without: bending over, squatting down, moving his feet, shifting his natural stance, releasing or adjusting his natural grip on the golf club, altering his natural swing, or interfering with the natural striking of the tee-up golf ball.

Alternative embodiments will demonstrate that some of the elements, such as the tips and the accessories, can be eliminated as essential elements of the invention and the shape of the generally C-shaped seat can be altered. Also note that the seat and the mount can be merged as a single element. Furthermore, the alternative embodiments demonstrate the variety in variations of the application of the seat in conjunction with the golf club or other elongate members or extensions.
Tee-Ball where a baseball is teed-up and hit off a torso-high tee, or picking-up ping pong balls, or tennis balls.

[0043] Further objects and advantages of the present invention will become apparent from a consideration of the drawings and the following description including description of the operation and use of the device.

[0044] Depending on the context, the term “tee-up” can mean both picking-up a ball and teeing-up that ball.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0045] FIG. 1A is a perspective view (front-elevated) of a shaft-mountable tee-up-device constructed according to the teachings of the present invention.

[0046] FIG. 1B is a perspective view (front-side-elevated) of the shaft-mountable tee-up-device.

[0047] FIG. 1C is a top-down view of the shaft-mountable tee-up-device.

[0048] FIG. 2A is a perspective view (rear-side-elevated) of a club.

[0049] FIG. 2B is a top-down view of a club.

[0050] FIG. 2C is a zoomed-in perspective view (rear-side-elevated) of a club with cutaway cross section of the shaft (though the entire shaft is understood to be intact).

[0051] FIGS. 3(A, B) are views showing wrapping and sticking the loop-fastener to the bottom of the shaft.

[0052] FIGS. 3(C, D) are views showing sandwiching of the mount leg between the hook-fastener and the tape.

[0053] FIG. 3E is a view of the attached tee-up-device mounted to the shaft via the hook-and-loop-fasteners.

[0054] FIG. 4 shows the driving range or green setup: ball, tee, mat or ground, tee shadow, ball shadow, and a bunch of balls.

[0055] FIG. 5A shows raising the club so the seat is directly over the ball.

[0056] FIG. 5B shows lowering the club so that seat engages the ball.

[0057] FIG. 5C shows pushing the club down so that the ball is forced through the seat.

[0058] FIG. 6A shows raising the club and picking-up the ball in the seat.

[0059] FIG. 6B shows moving the club so that the ball is above the tee.

[0060] FIG. 7A shows lowering the club so the ball sits on the tee and the tips touch the ground.

[0061] FIG. 7B shows withdrawing the club so that the tee-up-device is free of the tee.

[0062] FIG. 8A shows lowering the club so the tips touch the ground with the gap facing the ball.

[0063] FIG. 8B shows moving the club and sliding the tips towards the ball so that the ball splits the gap and the seat is below the ball.

[0064] FIG. 9A is a perspective view (front-elevated) of the head-mountable tee-up-device.

[0065] FIG. 9B is a perspective view (front-side-elevated) of the head-mountable tee-up-device.

[0066] FIG. 9C is a top-down view of head-mountable tee-up-device.

[0067] FIG. 10A shows accessories of the head-mountable tee-up-device.

[0068] FIG. 10B shows how the head-mountable tee-up-device is attached.

[0069] FIG. 11A shows a lightweight embodiment of the device.

[0070] FIG. 11B shows a device built into a head.

[0071] FIG. 11C shows a clip mount embodiment of the device.

[0072] FIG. 12A shows a rubber-T-shape flexibility insert, two seat-halves, and a mount.

[0073] FIG. 12B shows a connected rubber-T-shape tee-up-device.

[0074] FIG. 12C shows a cup retriever device having a tee-up-device at the end of a pole.

[0075] FIG. 13A is a top-down view of the cane-mountable tee-up-device.

[0076] FIG. 13B is a perspective view (front-elevated) of the cane-mountable tee-up-device.

[0077] FIG. 13C is a perspective view (side-elevated) of the cane-mountable tee-up-device mounted to cane.

[0078] FIG. 13D is a close-up perspective view (side-elevated) of the bottom part of the cane-mountable tee-up-device mounted to a cane-bottom.

[0079] FIG. 14A shows a bent rod construction.

[0080] FIG. 14B shows a wide seat band construction.

[0081] FIG. 14C shows a toe mount to club head.

[0082] FIG. 14D shows a rubber seat construction.

[0083] FIG. 14E shows a notched bent rod.

[0084] FIG. 14F shows a notched bent rod with rubber-band.

[0085] FIG. 15A is a perspective view (front-elevated) of tilted tee-up-device.

[0086] FIG. 15B is a side view of tilted tee-up-device.

[0087] FIG. 15C shows a view of a tilted operation.

[0088] FIG. 16A is a perspective view (front-side-elevated) of C-clamp and hinged-head-mountable tee-up-device.

[0089] FIG. 16B shows a C-clamp clip for a hinged-head-mountable tee-up-device.

[0090] FIG. 16C shows an assembled club, bolt, C-clamp, and hinged-head-mountable tee-up-device.
FIGS. 17(A-E) show a narrow gap tee-up-device and illustrate a sequence of operations upon being drawn across the upright tee as shown from above and without ball in place.

FIG. 18A shows a rectangular seat with tips and gap; bottom view of head with tracks shown unassembled.

FIG. 18B is a front view of club head and tracks.

FIG. 18C shows a seat mounted in tracks pushed back in strike position.

FIG. 18D shows a seat mounted in tracks pushed forward in pick-up/tee-up position.

FIG. 18E is a top view of ball held in seat on club head with shaft shown cut off for illustrative purposes.

FIG. 19A is a perspective view (front-elevated) of the loop-strap shaft-mounted tee-up-device.

FIG. 19B shows a loop-strap attached to rectangular-loop with sticky-side.

FIG. 19C shows a loop-strap engaging a rectangular-loop.

FIG. 19D shows a loop-strap shaft-mounted tee-up-device attached to club shaft.

FIGS. 20(A-E) show a three-prong cage tee-up-device and a sequence of operation of same. FIGS. 21(A, B) illustrate a cage tee-up-device mounted to a club shank.

Parts List

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Description</th>
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<tbody>
<tr>
<td>101</td>
<td>shaft-mountable tee-up-device</td>
</tr>
<tr>
<td>102</td>
<td>head-mountable tee-up-device</td>
</tr>
<tr>
<td>103</td>
<td>cane-mountable tee-up-device</td>
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<tr>
<td>104</td>
<td>hinged-head-mountable tee-up-device</td>
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<td>105</td>
<td>bottom-head-mountable tee-up-device</td>
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<td>cage tee-up-device</td>
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<td>loop-strap shaft-mounted tee-up-device</td>
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<tr>
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<td>T-joint</td>
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<tr>
<td>114</td>
<td>post</td>
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<tr>
<td>115</td>
<td>L-joint</td>
</tr>
<tr>
<td>116</td>
<td>leg</td>
</tr>
<tr>
<td>117</td>
<td>hole</td>
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<td>118</td>
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<tr>
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<tr>
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The Shaft-Mountable Tee-Up-Device Embodiment of FIG. 1

FIG. 1A shows a front-elevated view of a shaft-mountable ball-tee-up-device 101 which comprises: the seat 110, the tips 114, the gap 118, the mount 120, and the accessories 123. (These terms—seat, tips, gap, mount, accessories—were first introduced in the summary.)

FIG. 1B shows a perspective view with details of the mount 120 and the accessories 123.

FIG. 1C shows a top-down view.

The mount 120 comprises: a T-joint 142, a post 144, a L-joint 146, and a leg 148.

The accessories 123 comprises: a loop-fastener 172, a hook-fastener 174, and a piece of tape 178. All three of these elements have sticky back sides.

The seat 110 is generally in the form of a C-shape having an arc spanning about 240 degrees. The seat 110 can be thought of as a cradle for a golf ball. The interior diameter across the opening of the C-shape is about 41 millimeters (1.6072 inches; about 95.6 percent of the diameter of a golf ball). This diameter across the C-shape is chosen smaller than the diameter of a golf ball so that the golf ball can sit cradled in the C-shape seat 110 and be carried. This diameter across the C-shape of seat 110 is chosen just a small amount less than the diameter of a golf ball so that the golf ball can be pushed through the C-shape with a small force. The exact diameter across the C-shape is determined by many factors including the following properties of the embodiment material: weight, rigidity, flexibility, resiliency.

This embodiment can be made of aluminum. Aluminum is lightweight so that the weight of the tee-up-device 101 when attached to a golf club does not adversely affect the feel of the golf club. Aluminum is rigid enough to carry a golf ball that sits in the C-shape seat 110. Aluminum has enough flexibility so that the golf ball can be pushed through the C-shape with a little force. Aluminum is resilient so that the C-shape will return to its original shape after flexing when the golf ball is pushed through it. An aluminum rod (or wire) with cross-section diameter of about 2 millimeters (0.0788 inches) when bent into a C-shape has the appropriate combination of these properties: light weight, rigidity, flexibility, resiliency. Other materials, metallic and plastic, are contemplated.

The seat 110 allows a golf ball to sit in the C-shape so that the bottom of the golf ball is exposed. This exposure allows the bottom of the golf ball to be lowered onto an oolf tee.

The tips 114 are curled to prevent snagging in the ground and to act as golf ball guides during operation (see FIG. 5-FIG. 8).

The gap 118 is about 35 millimeters (1.38 inches) at it’s narrowest distance between the tips 114. The gap 118 provides a means for the tee-up golf ball to exit the seat 110 when the tee-up-device 101 withdraws laterally from the tee area (see FIG. 7(A, B)).

The following terms were introduced at the beginning of this section: T-joint, post, L-joint, leg.

The post 144 is rigidly connected to the seat 110 at the T-joint 142 (see FIG. 1(A-C)). The leg 148 is rigidly connected to the post 144 at the L-joint 146. Rigid connections can be accomplished by molding the entire tee-up-device 101 as one piece, or by welding at the joints, or by other rigid connections, e.g., gluing, soldering, bending.

The post 144 lies approximately in the plane defined by the C-shape of the seat 110.

The leg 148 lies approximately in the plane perpendicular to the plane defined by the C-shape of the seat 110. The leg 148 is tilted about 20 degrees (angle A in FIG. 1A) from the line perpendicular to the plane defined by the C-shape of the seat 110. This tilt is at angle A so that the leg 148 aligns with the tilt of a golf club shaft when the C-shape is parallel to the ground.

The Golf Club Elements of FIG. 2

FIG. 2A shows a club 600 that comprises: a head 620, a shaft 630, and a shaft-grip 634.

FIG. 2B shows finer details of the club 600.

The head 620 comprises: a toe 622, a heel 624, a face 626, a rear 628, a bottom 629, and a set of grooves 638 (see FIG. 2B).

The shaft 630 has a shaft-bottom 632.

FIG. 2C shows a cutaway club 610 (or simply: club 610) with the shaft 630 cutaway leaving visible only the shaft-bottom 632, though the entire shaft 630 is understood to be intact. This cutaway view is only used to eliminate clutter in the description of the figures to follow. This will allow a close-up of the operational steps without the top of the shaft 630 dominating the figures.

The Mounting of the Shaft-Mountable Tee-Up-Device in FIG. 3.

FIG. 3(A, B) shows the loop-fastener 172 and how its sticky back side is wrapped around the shaft-bottom 632.

FIG. 3(C, D) shows how the leg 148 is sandwiched between the sticky back sides of the hook-fastener 174 and the tape 178.

FIG. 3E shows how the ball-tee-up-device 101 is mounted to the shaft-bottom 632 by wrapping the hook-fastener 174 tightly around the shaft-mountable loop-fastener 172.

The tee-up-device 101 is mounted so that the tips 114 are about 1.5 centimeters (0.0591 inches) above the ground when the golfer addresses the ball in his natural stance and then lowers the head 620 to touch the ground.

This procedure of attachment can be performed quickly, and is reversible.

This embodiment has been designed for a right-handed club 600. A mirror image of this embodiment would work for a left-handed golf club.
Operation: FIG. 4-FIG. 8

The Golf Ball, Tee, Mat, Shadows, and Bunch of Balls of FIG. 4.

FIG. 4 shows elements used in the operation: a ball 700, a tee 800, a mat (ground, green, or platform) 900, a shadow-of-tee-on-mat 914, a shadow-of-ball-on-mat 910, a bunch 710 (of balls). These elements are arranged in a common setup found at many driving ranges. The bunch 710 (of balls) sit on the other side of the tee 800 on the mat 900 (or in a tray).

The golfer takes up his natural stance before the tee 800, gripping his club 600 so that he is ready to swing with his natural grip and natural stroke. Then the golfer draws one ball 700 from the bunch 710 with the head 620. The bunch 710 is close enough so that the golfer need only extend his arms slightly to reach them without disturbing his natural stance or grip. Yet the bunch 710 is far enough away so not to interfere with the golfer hitting a tee-up golf ball.

The Push-Through Method of Operation of FIGS. 5, 6 and 7.

FIG. 5-FIG. 7 explain the push-through-method of operation.

FIG. 5A shows how the club 610 is raised so that the seat 110 is above the ball 700.

FIG. 5B shows how the club 610 is then lowered so that the C-shape of the seat 110 engages the ball 700.

FIG. 5C shows how the club 610 is then pressed down gently so that the seat 110 spreads apart so it opens (due to the flexibility) and the ball is pushed through the C-shape. The seat 110 is now under the ball 700.

FIG. 6A shows how the club is then raised with the ball 700 cradled in the seat 110 so that the ball 700 is picked-up from the mat 900.

FIG. 6B shows how the ball 700 is cradled in the seat 110 so the golfer can carry the ball 700 over to hover in alignment above the tee 800. The seat 110 cradles the ball 700 such as to expose the bottom of the ball 700 by means of the openness beneath the C-shape. This exposure allows the ball 700 to be set onto the tee 800 by lowering the seat 110. When the top of the tee 800 engages the bottom of the ball 700, the ball 700 rests on top of the tee 800.

FIG. 7A shows how the club 610 is lowered so that the seat 110 touches the mat 900, whereas the ball 700 is now tee-up. If the ball 700 hits the tee 800 off-center, then the seat 110 may act as a guide (such as in the manner of a guide rail) and hold the ball 700 while the golfer maneuvers the club 610 up and laterally, correcting the alignment, so to reposition the ball 700 onto the tee 800. This operation requires remarkably little hand-eye coordination.

FIG. 7B shows how the club 610 and seat 110 are withdrawn while the tee 800 exits through the gap 118.

The ball 700 is now tee-up and the golfer may take his natural stroke without removing the ball-tee-up-device 101 from the club. The tee-up-device 101 has ample clearance so not to interfere with a natural golf swing.

The Scoop-Method of Operation of FIG. 8.

The scoop-method of operation will now be explained.

FIG. 8A shows how the tips 114 are touching the mat 900 with the gap 118 facing the ball 700.

FIG. 8B shows how the club 610 is slid so that the bottom of the ball 700 passes through the gap 118. The seat 110 is now under the ball. The configuration is now identical to FIG. 5C and the operation proceeds from this point exactly as for the push-through-method as shown in FIG. 6 and FIG. 7.

The ball 700 is now tee-up and can be struck with a normal golf swing. This operating procedure (teeing-up, swinging at the ball 700) can be repeated for the entire bunch of balls 710 (as seen in FIG. 4).

The scoop-method can be used to good effect in concert with a tray (not shown) in which a bunch of golf balls 710 rest. If the gap 118 engages the ball 700 off-center, then the ball 700 will be shoved up against the wall of the tray where it will be held while the gap 118 can be shifted to slide under the ball 700.

Golfers may practice a variation on the scoop-method which proceeds without the ball-tee-up-device 101 touching the mat 900. The club 610 rests on the mat 900 with the tips 114 slightly above the mat 900. The club 610 is moved laterally so that the ball 700 passes through the gap 118. The club 610 being grounded, stabilizes the operation.

Another variation on the scoop-method proceeds with no part of the club 610 or the tee-up-device 101 touching the mat 900. The club 610 and seat 110 are merely held low enough so the ball 700 may pass through the gap 118.

These variations in operation demonstrate that the tips 114 are not essential elements as will be shown later in the section titled: Further Embodiments Descriptions and Operations.

These operational methods—the push-through-method and the scoop-method—have been thoroughly tested under real-world conditions. In these tests, both methods have proven to require remarkably little manual dexterity. The skill and dexterity required is less than that required to swing and hit a tee-up ball. A handicapped person, with extreme right side paralysis and with partial paralysis of the left arm and hand, perfected the techniques in ten minutes of practice. At that point, this handicapped person was able to hit dozens of balls on his own while easily teeing-up each ball by himself. Thus, the invention has been demonstrated to work with the ease explained. Thus, the tee-up-device 101 has genuine practical value.

The Head-Mountable Tee-Up-Device Embodiment of FIG. 9.

FIG. 9A shows a perspective view (front-elevated) of a head-mountable ball-tee-up-device 102 and the seat 110, tips 114, and gap 118 which are about the same as for the preferred embodiment, and the mount 120 which is a modification of the preferred embodiment.

FIG. 9B shows a perspective view (front-side-elevated) of tee-up-device 102 and the mount 120 that
comprises: the T-joint 142, the post 144, a post-hole 150. The post 144 is angled about 30 degrees up from the plane defined by the C-shape of the seat 110 to accommodate the slope of the rear 628 of the club 610.

[0221] FIG. 9C shows a top-down view of tee-up-device 102.


[0223] FIG. 10A shows the accessories 123 of tee-up-device 102 comprising: a bolt 182, a bolt-hole 184. The bolt-hole 184 is a threaded hole in the head 620. This bolt-hole 184 can be manufactured into the head 620 or tapped in later.

[0224] FIG. 10B shows how the tee-up-device 102 is attached to the head 620. The bolt 182 is put through the post-hole 150 and screwed into the bolt-hole 184 and tightened down. The bolt 182 could have a wing nut head for easy assembly and disassembly.

[0225] This assembly (FIG. 10B) places the tee-up-device 102 in about the same configuration as the preferred embodiment so that the operations by the push-through-method and the scoop-method are about the same.

[0226] This embodiment can be used for either right-handed or left-handed golf clubs.


[0228] FIG. 11: Small Arc, Reduced Tips, Modified Head, Clip Mount, and Shaft Modified Tee-Up-Device Embodiments

[0229] FIG. 11A shows a modified head-mountable ball-tee-up-device 102. The seat 110 has a C-shape sweeping an arc of less than 200 degrees and blunted-bulb tips 114 about 38 millimeters (1.4896 inches) apart. Less material in the arc of the seat 110 and minimizing the tips 114 reduces weight.

[0230] The mount 120 is offset from the center of the C-shape of the seat 110. Thus, the seat 110 is asymmetric with respect to the mount 120. This asymmetry presents the gap 118 at a skewed aspect where addressing the ball which allows for personalized variations in operation. The tips 114 can be reduced so to become nothing more than the ends of the C-shape of the seat 110.

[0231] FIG. 11B: Modified Head Embodiment

[0232] FIG. 11B shows a head 620 modified with a C-shaped cavity 930 that forms a hole in its rear 628. This hole is slightly larger than a golf ball. A rubber-tube 932 is glued around the bottom edge of the cavity 930. This rubber-tube 932 forms the seat 110. This rubber-tube 932 is thick enough so that when glued to the cavity 930 the diameter across the seat 110 is slightly less than the diameter of a golf ball. The rubber-tube 932 is firm enough to carry a golf ball but compressible (flexible) so that a golf ball can be pushed through with a slight force so that the golf ball is cradled in the C-shaped cavity 930.

[0233] Note that the head 620 itself becomes the mount 120, and the rubber-tube 932 forms the seat 110. Note also that this embodiment eliminates the need of any distinct attachment element. Thus, there is no accessories associated with this embodiment. Furthermore, the cavity 930 is integral to the redesigned head 620. The cavity 930 plays the role of the mount element. Thus, the design of the mount element has been significantly simplified, and the concept of the mount element has been significantly broadened. The mount 120 can be eliminated as an element altogether if the seat 110 itself is defined as the C-shaped cavity 930. Such an embodiment is possible where there is no rubber-tube at all. The C-shape can have diameter almost exactly the same as a golf ball but just slightly less. The golf ball itself would provide the flexibility property since the cover of a golf ball is compressible. The golf ball could then be squeezed through the rigid hole.

[0234] The scoop-method also works—naturally with this embodiment since the head 620, having a wide bottom, can be slid easily along the ground.

[0235] Another variation on this embodiment would both eliminate the flexibility element altogether and reduce the diameter of the C-shape to much less than the diameter of a golf ball. This embodiment would no longer permit the push-through-method and thus is operated by the scoop-method exclusively. Such an embodiment allows for less dramatic alterations in the head 620.

[0236] FIG. 11C: Clip Mount, and Shaft Modified Embodiment.

[0237] FIG. 11C shows a shaft-mountable ball-tee-up-device 101 with the leg 148 modified with a clip 934. This clip 934 has a square cross-sectional profile. To receive the clip 934, the shaft-bottom 632 is modified. The shaft-bottom 632 has a pair of flanges 936. These flanges 936 resist vertical slippage. Between the flanges 936, the shaft-bottom 632 has a square-cross-sectional-profile-shaft 938 to resist rotational slippage. In this embodiment, the mount 120 is integrated into the shaft-bottom 632.

[0238] FIG. 12: Rubber-T, Ball-in-Cup and Hazard Retriever Pick-Up-Device Embodiments.

[0239] FIG. 12(A, B): Rubber-T Embodiment

[0240] FIG. 12(A, B) show a head-mountable ball-tee-up-device 102 with a rubber-T-shape 950 glued between two seat-halves 952. The result is then glued to the post 144. This embodiment is used when the seat-halves 952 are made of a rigid material with little flexibility as can occur with metals such as stainless steel, titanium, or beryllium. Thus, the rubber-T-shape 950 provides the flexibility.

[0241] FIG. 12C: Ball-in-Cup and Hazard Retriever Embodiments.

[0242] FIG. 12C shows that the ball-tee-up-device 101 is attached to a handle such as a pole 954 (or the top of a golf club) to pick-up the ball 700 from a cup 966. The cup 966 is about 114.3 millimeters (4.5 inches) in diameter. The ball 700 is about 42.871 millimeters (1.68 inches) in diameter. After the ball 700 has been extracted it can be removed from the tee-up-device 101 by either a reverse application of the scoop-method or by merely tapping the ball 700 on the ground and letting the ball bounce out of the seat 110. Thus, the golfer may continue practicing putting with that ball as is done on putting greens. This embodiment can also be used to retrieve golf balls from hazards.
**FIG. 13** Cane-Bottom Tee-Up-Device Embodiment.

**FIG. 13A** shows a top-down view of a cane-mountable ball-tee-up-device 103 that attaches to a cane 968 (seen in FIG. 13C), as is used by handicapped persons, having a cane-bottom 970. The previous shaft-mountable and head-mountable embodiments could be easily mounted to the cane 968. But to show some of the diversity in designs, the embodiment shown in FIG. 13(A-D) is offered. The mount 120 is generally a C-shape having a set of three points 956. The seat 110 is formed by the two straight-girders 958 and the tips 114 which are pointed and made of rubber.

**FIG. 13B** shows a front-elevated view. The tips 114 are slanted up, out of the plane of the seat 110 and mount 120.

**FIG. 13C** shows how the tee-up-device 103 attaches to the cane 968. The straight-girders 958 are pulled apart slightly so that the C-shape of the mount 120 surrounds the cane-bottom 970. The C-shape is then squeezed so that the three points 956 dig into the cane-bottom 970 so as to anchor the tee-up-device 103.

**FIG. 13D** shows how the ball 700 sits cradled in the seat 110. The tips 114 help to hold the ball 700 and provide two points of contact. The cane-bottom 970 provides the third point of contact. Three points of contact hold the ball 700. In operation, the ball 700 is pushed through the tips 114 which bend up and back. Then the ball 700 rests on the tips 114. Thus, the tips 114 act somewhat like a one way valve.

**FIG. 13(A-D)** shows how the seat 110 need not be exactly a C-shaped.

**FIG. 14** Bent Rod, Wide Seat, Tee Attached, Nub, and Notched Seat with Rubber-Band Tee-Up-Device Embodiments.

**FIG. 14(A-F)** Show 5 Embodiment Variations.

**FIG. 14A** shows ball-tee-up-device 101 made entirely of a bent rod (or wire form). This embodiment distributes the flexibility action along the entire rod hence reducing metal fatigue and stress points.

**FIG. 14B** shows tee-up-device 101 with the seat 110 being about 10 millimeters (0.4 inches) wide. This allows the ball 700 to be lightly gripped in the C-shape (perhaps tapered also) which reduces the chances of the ball 700 sprouting up and out of the seat 110. This embodiment stabilizes operation in the case that the golfer pushes down too aggressively while using the push-through method or if he bobbles the operation accidentally.

**FIG. 14C** shows how tee-up-device 102 can be attached to other parts of the club 610, in this case, the toe 622.

**FIG. 14D** shows a nub 980 made of silicon and glued to the seat 110 adjacent to the T-joint 142. The C-shape of the seat 110 is slightly larger than the diameter of the ball 700 so as to accommodate the extra width of the nub 980. This nub 980 compresses during the push-through-method and thus substitutes for the aluminum flexibility. This allows for using more rigid materials that don’t flex adequately. Also, by compressing, the nub 980 relieves the stress that aluminum endures under repeated acts of flexing. An additional benefit is that rubber has better gripping properties than aluminum.

**FIG. 14E** shows the tee-up-device 102 with two notches 982 for holding a resilient band.

**FIG. 14F** shows how a rubber-band 984 is stretched across the seat 110 and moored in the notches 982. The rubber-band 984 acts in a similar way to the nub 980 of FIG. 14D.

One of the special features of this invention is the generous latitude by which the tee-up-device 101 can be tilted and remain operationally useful. The embodiment in FIG. 14B can be turned entirely upside-down while holding the ball 700 securely.

**FIG. 15** Large Tilt Operation.

**FIG. 15(A-C)** show that the original preferred embodiment of ball-tee-up-device 101 can be tilted and remain operational.

**FIG. 15A** shows a front view of the tee-up-device 101 cradling the ball 700 securely at a steep angle of about 65 degrees of tilt inclination (in the sense that the tee-up-device 101 is pitched forward).

**FIG. 15B** shows a side view of this same 65 degrees of tilt inclination.

**FIG. 15C** shows this severe tilt in operation over a tee 800.

**FIG. 15D** shows the tee-up-device 101 can be turned entirely upside down and still hold the ball in place. This feature is due to the friction between the ball 700 and the seat 110. In effect, the ball 700 sticks in the seat 110 even though there need not be any added tacky property to the materials. The flexibility and natural friction of the materials act like fingers gripping the ball 700.

**FIG. 16** This wide range of angles of tilt allows the golfer great versatility in usage. Instead of having to adapt his grip or stance to orient the seat 110 parallel to the ground, he can address the ball 700 at a wide range of angles and positions when picking-up, carrying, and tee-up the ball 700.

**FIG. 17** Note that nearly all the bottom of the ball 700 is exposed underneath the seat 110 at even large tilt angles. This allows for a forgiving lie away in finding the tee 800 when lowering the ball 700. The golfer need not search blindly by repeatedly lowering and raising the club 610
trying to mate the exact bottom of the ball 700 with the tee 800. Instead, as soon as any part of the underside of the ball 700 touches the tee 800, the golfer can see and feel how to move the tee-up-device 101 laterally in order to center the ball 700 over the tee 800. The seat 110 will act as guide-rails and guide the ball 700 onto the tee 800.

[0269] FIG. 16: Hinged-Head-Mountable Tee-Up-Device Embodiment.

[0270] FIG. 16(A-C) shows a hinged-head-mountable ball-tee-up-device 104.

[0271] FIG. 16A shows a C-clamp 974 and a cylinder-mount 972.

[0272] FIG. 16B shows how the C-clamp 974 is clipped over the cylinder-mount 972.

[0273] FIG. 16C shows how the bolt 182 is screwed into the club 610 and locks the tee-up-device 104 in place. The cylinder-mount 972 has a rough surface like the texture of sandpaper to avoid slippage.

[0274] The benefit of this embodiment is that it allows the golfer to customize the orientation of the tee-up-device 104 to fit his personal style. There are two degrees of rotational freedom available since the tee-up-device 104 can be pivoted around the bolt 182 axis and rotated about the cylinder-mount 972 axis before locking the bolt 182 down.

[0275] FIG. 17: Narrow Gap Tee-Up-Device Embodiment

[0276] FIG. 17(A-E) show ball-tee-up-device 102 with a narrow gap 118. It allows the seat 110 to have additional support by minimizing the chances of the ball 700 falling through the gap 118. The gap 118 appears as an actual opening only during operation.

[0277] FIG. 17A is a top-down view that shows tee-up-device 102 where the gap 118 is such that the tips 114 touch.

[0278] FIG. 17B is a top-down view that shows how tee-up-device 102 encircles a tee 800. A golf ball would be teed-up but is removed here so as to see how the operation works.

[0279] FIG. 17C shows how, as the tee-up-device 102 withdraws, the tee 800 engages the gap 118.

[0280] FIG. 17D shows how the tee 800 acts like a wedge and opens the gap 118. This is possible since the bottom of a mat tee 800 is rigidly held by the mat 900 and because the seat 110 has flexibility.

[0281] FIG. 17E shows the tee-up-device 102 removed from the tee 800 and the gap 118 returned to a closed state.

[0282] This embodiment is for the push-through-method of operation.

[0283] FIG. 18: Bottom-Head-Mountable Tee-Up-Device Embodiment.

[0284] FIG. 18(A-E) show a bottom-head-mountable tee-up-device 105. This embodiment attaches to the bottom 620 of the head 620 of the club 610.

[0285] FIG. 18A shows the seat 110 in the shape of a partial rectangle with straight-girders 958, with tips 114, and gap 118. This seat 110 is made of a bent aluminum rod. Also shown in the FIG. 18A is a bottom view of the head 620 with a pair of tracks 990 built into the bottom 629. The tracks 990 run parallel to each other.

[0286] FIG. 18B shows a front view of the head 620 with the tracks 990 in profile. The right track 990 has an L-shaped profile, and the left track 990 has a reverse-L-shaped profile.

[0287] FIG. 18C shows (from beneath) how the seat 110 fits into the tracks 990. The seat 110 can be spread wider than the tracks 990. Then the aluminum rod's flexibility snaps the seat 110 down inside the tracks 990. Thus, the tracks 990 play the role as the mount 120. The seat 110 can ride back and forth in the tracks 990. Additionally, FIG. 18C shows the seat 110 pushed back to the rear 628. This is called the strike position since there is no encumbrance to striking the ball 700.

[0288] FIG. 18D shows (from beneath) how the seat 110 can be pushed forward into the pick-up-tee-up position. The seat 110 is pushed forward by dragging the bottom 620 along the ground. The side of the seat 110 opposite of the gap 118 will catch in the ground and the entire seat 110 will slide forward in the tracks 990. The bottom 620 can also be dragged backwards across the top of the tee 800. The tee 800 will catch and push the seat 110 forward. The amount of friction between the seat 110 and the tracks 990 is determined by design for the golfer's personal preference.

[0289] FIG. 18E shows that the ball 700 can be pushed through the seat 110 and come to rest on the straight-girders 958 on the sides of the seat 110, on the tips 114, and against the face 626. Thus the ball 700 can be picked-up and teed-up. After the ball 700 is teed-up, the seat 110 is pushed back by angling the head 620 towards the ground and pushing on the tips 114 against the ground so that the seat 110 slides along the tracks 990 back into the strike position. The teed-up ball 700 would then be ready to hit.

[0290] FIG. 19: Loop-Strip Shaft-Mounted Tee-Up-Device Embodiment.

[0291] FIG. 19(A-D) show a loop-strap shaft-mounted tee-up-device 107. This embodiment is a modification to the bent rod embodiment of FIG. 14A.

[0292] FIG. 19A shows how the rod is bent outward to form a rectangular-loop 921.

[0293] FIG. 19B shows where the loop-strap 922 is attached to the rectangular-loop 921 (by gluing, for instance). The inside surface of this loop-strap 922 is made of a sticky material such as is found in the product Sticky Pad™ (Sticky Pad™ reference is made to Handstands™ by American Covers, Inc., (P.O. Box 587, Draper, Utah 94020, or at handstands.com)). This sticky surface remains sticky after hundreds of applications, and only occasionally needs to be rinsed with water or cleaned with soap and water to restore its stickiness. This is unlike most tapes, such as duct tape, that lose stickiness after a few applications. This sticky-side 923 surface will cling to the club shaft 630.

[0294] FIG. 19C shows how the loop-strap 922 is looped around in as circle and threaded through the rectangular-loop 921 opening. Part of the outer surface of the loop-strap 922 has a swath of hook-fastener 174 that is pulled tight around the rectangular-loop 921 and pressed down on a swath of loop-fastener 172 which makes the other part of the outer surface of the loop-strap 922.
FIG. 19D shows the loop-strap shaft-mounted tee-up-device 107 secured to the club 610 at the shaft-bottom 632. The loop-strap 922 surrounds the shaft-bottom 632. The loop-strap 922 is threaded through the rectangular-loop 921 opening. The loop-strap 922 is pulled back and pulled tight hence pressing the loop-strap's 922 sticky-side 923 tightly against the shaft-bottom 632. The loop-strap 922 is then pressed down on itself thus engaging the hook-fastener 174 swath to the loop-fastener 172 swath. The loop-strap shaft-mounted tee-up-device 107 is thus secured to the club 610.

FIG. 20: Cage Tee-Up-Device Embodiment.

FIG. 20A shows that the seat 110 of tee-up-device 106 comprises three bars 994. The three bars 994 are connected at the mount 120 at the top. The three bars 994 are spaced about 120 degrees apart, which makes the three bars 994 evenly spaced in a circle around the mount 120. The three bars 994 are each identical in shape—that shape being much like a parenthesis. With the bars 994 spaced 120 degrees apart in a circle, they form a cage that bulges in the middle and is pinched at the bottom. The bulge in the middle of the cage is wide enough so that the ball 700 can pass through any two of the bars 994. The pinch at the bottom of the cage is more narrow than the diameter of the ball 700 so that the ball 700 can be carried on top of the tips 114. Also, the cage has no bottom so that the ball 700 can enter through the bottom.

FIG. 20A shows the tee-up-device 106 above the ball 700 on the mat 900.

FIG. 20B shows the tee-up-device 106 lowered so the tips 114 engage the ball 700.

FIG. 20C shows the tee-up-device 106 is pushed down on the ball 700. The ball 700 acts like a wedge and pries open the tips 114. The tips 114 spread open due to the flexibility in the bars 990 and the ball 700 passes through the tips 114 into the cage.

FIG. 20D shows how the tee-up-device 106 carries the ball 700 above the tee 800. Note that the weight of the ball is less than the force required to spread the tips 114.

FIG. 20E shows how the tee-up-device 106 is lowered and the ball 700 comes to rest on the tee 800. Since the bars 990 are tapered inward, the ball 700 will fall against the bars 990 and can be guided back onto the tee 800 (if the initial touchdown of the ball 700 onto the tee 800 is initially off center). Then the tee-up-device 106 is lowered until the tips 114 touch the mat 900. In this configuration, the ball 700 sits on the tee 800 at the level of the bulge in the cage. The tee-up-device 106 can be withdrawn laterally so that the ball 700 passes between any two of the bars 990.

FIG. 20F shows that the ball 700 is thus teed-up.

The three tips 114 act as points of contact of the seat 110 with the ball 700. The opening in the seat 110, by which the ball 700 is exposed to the tee 800, is the space between these three tips 114.

When withdrawing the tee-up-device 106 laterally, the ball 700 exits through the opening between the two of the bars 990, and the tee 800 exits between the opening between the two tips 114 associated with those two bars 990. This differs slightly from the preferred embodiment of tee-up-device 101 shown in FIG. 1. In the preferred embodiment of FIG. 1, the tee-up-device 101 has a gap 118 by which the tee 800 alone exits. Thus, in the present embodiment, the gap 118 will be understood to comprise the opening between the bars 990 and the opening between the tips 114. Thus, the present embodiment has generalized the definition of the gap 118 to mean an exit-means by which the tee-up-device of any embodiment withdraws from the teed-up ball 700.

The advantage of the three bar 990 configuration of this embodiment is that there are three gaps 118—one gap 118 between each pair of bars 994. The benefit of three gaps 118 is that these gaps 118 are at 120 degrees to each other and thus allow the golfer the leeway to withdraw the tee-up-device 106 in any of three distinct directions.

Another advantage of this embodiment is that it can be used for both right and left handed golfers without a mirror image embodiment.

Note that, even though this embodiment looks bulky, it is made primarily of only three lightweight aluminum bars.

FIG. 21: Cage Tee-Up-Device Mounted to Club.

FIG. 21A shows how the cage ball-tee-up-device 106 can be attached to the club 610 so that the club 610 can be swung with adequate ground clearance. The attachment is made by the same type of clip 934 as shown in FIG. 11C.

FIG. 21B shows how the club 610 can be fitted on the cage tee-up-device 106 down to the ball 700. Thus the ball 700 can be picked-up and teed-up as shown in FIG. 20(A-E).

In summary, the tee up device of the present invention permits practice and participation in golf for the healthy and handicapped.

The ball-tee-up device has enormous benefits for both the healthy and handicapped golfer alike. A serious golfer can engage in uniform practice sessions at any driving range. A handicapped person can participate where before he was left out.

Benefits in a Normal Round of Golf.

Beyond practicing at driving ranges, the tee-up-device can be useful in a normal round of golf. This is so since the ball-tee-up-device can be used to better set up the golfer’s stance and stroke when teeing off at each hole. The golfer can insert a regular tee in the normal manner and take up his stance imagining an imaginary golf ball above the tee. He can then test out his stance by swinging the head of the club directly over the tee. By doing this, the golfer can both precisely measure the distance to the tee and see how the club face will pass through the ball. By making these test passes of the club head over the tee, the golfer can adjust his stance accordingly. The alternative and customary method for adjusting one’s stance is to guess at the distance by grounding the club near the teed-up ball, making test swings above the teed-up ball, and cocking the club head behind the ball. This method is inherently inaccurate since the club head can never be positioned exactly where the club face will follow through the ball above the tee. After the golfer is satisfied with his stance, he can tee-up with the tee-up-device and swing with the confidence that he has taken a
good stance. Furthermore, when a golfer addresses a teed-up ball and goes through the motions of adjusting his stance, he runs the risk of accidentally touching the ball before he is ready. This can cost him a stroke. Whereas with the tee-up-device, the golfer can complete his preparation first then tee-up when his is ready to hit the ball.

[0317] Handicapped Participation.

[0318] Handicapped people are becoming more active. Many people can stand but can’t bend over. Many are confined to wheelchairs and can’t reach down. Many are hand amputees or partially paralyzed and find the inconvenience of having to switch objects in and out of their grip a deterrent to participation. There is a great deal of tenderness in having to use one’s only good hand or prosthesis or orthosis to put down the club, tee-up a ball, then pick-up the club again. The tee-up-device provides a means for many handicapped persons to practice and play golf. Even a double hand amputee could enjoy practicing driving by strapping a club to his forearm and using the tee-up-device at the end of the club. If he found he didn’t have the fidelity in his arms to tee-up, then he could attach the tee-up-device to his shoe and use his foot to tee-up. Furthermore, practicing putting on a putting green requires repeatedly retrieving balls from the cup. When attached to a putter, the tee-up-device can help a handicapped person enjoy this activity.

[0319] Other Activities.

[0320] Other sports require that a ball be picked-up and handled. By attaching the tee-up-device at the end of a bat a wheelchair bound person could tee-up as series of baseballs and practice hitting as in the sport of Tee-Ball. A person with use of only one arm could attach the tee-up-device to the end of a ping pong paddle. He could pick-up a ball off the table and then toss that ball up out of the seat with a flick of the paddle and perform a serve (an act that might otherwise require two hands). A tennis player could use the tee-up-device similarly to pick-up a ball from the ground with his racquet and start a point or rally.

[0321] Extensions or Elongate Members, Conjunctive.

[0322] The ball-tee-up-device can be attached or built into many other devices for picking-up or teeing-up or retrieving balls. The tee-up-device could even be used as the ball pick-up/tee-up mechanism in an automatic tee-up machine. Any of the possible devices that the tee-up-device can be attached to or built into are called elongate members or extensions. Some such elongate members or extensions are: golf clubs (drivers, wedges, putters), poles, canes, crutches, bats, racquets, tee-up machines, shoes, prostheses, orthoses.

[0323] These elongate members or extensions can have the tee-up-device attached to them, or the elongate members or extension can have the tee-up-device built into it, or the elongate members or extension can be designed or modified to have the tee-up-device attached to it. Therefore the tee-up-device is said to be conjunctive to the elongate members or extension.

[0324] Right-Handed and Left-Handed Embodiments

[0325] A single shaft-mountable design can be made for both right-handed and left-handed clubs. One way to accomplish this is to employ a hinged L-joint that can be rotated and locked-down with a bolt. Thus, the angle between the leg and the post can be customized to any club no matter the angle between the shaft and the head.

[0326] Flexibility Variations.

[0327] The flexibility can be customized in a variety of ways.

[0328] In FIG. 12(A, B) a bolt could pass through the sandwiched joint, that is, the rubber-T sandwiched between the seat-halves. By tightening the bolt, the seat-halves pull together so that the rubber is squeezed and the flexibility is adjusted.

[0329] There can be no flexibility at all. The scoop-method works for a seat that is perfectly rigid. As explained in the discussion of FIG. 11B, the golf ball itself can provide the flexibility action since it has a compressible surface. Thus, the push-through method can work for a seat with no flexibility if the diameter of the C-shape is almost the same as the diameter of the ball.

[0330] Thus, the flexibility can be eliminated as a necessary element.


[0332] The tips can provide a means to: reduce snagging, act as guides, and act as supports. FIG. 11A shows an embodiment where the tips can be eliminated as a necessary element. Both the push-through-method and the scoop-method can be performed easily without them.


[0334] A golf club driver can weigh about 14 ounces (give or take a few ounces). Prototypes of the shaft-mountable embodiment of FIG. 1, including the accessories, weigh less than ½’s of an ounce. Thus, this embodiment adds less than 2.8 percent to the weight of the club.

[0335] Prototypes of the head-mountable embodiment of FIG. 9, including accessories, weigh less than ½’s of an ounce. Thus, this embodiment adds less than 1.4 percent to the weight of the club.

[0336] The weight of these embodiments can be reduced further by eliminating materials such as the tips or by using lighter weight materials such as hollow aluminum tubing instead of solid aluminum rods. Some other materials for reducing weight and/or making the device are: titanium, beryllium, other metals, rods, tubing, nylon, rubber, fiberglass, PVC, ABS, polystyrene, acrylic, other plastics and synthetics, even wood.

[0337] By designing the club head and tee-up-device together, the ball-tee-up-device can be attached so that it will not increase the normal weight of the club at all. For instance, the modified head embodiment of FIG. 11B could be designed to have the same weight or use the same amount of material in the head as a normal head design.

[0338] Another design that leaves the club weight unchanged used the straight-girders of FIG. 13. Two straight-girders can be welded to the rear of the head. This would position the seat in the rear exactly opposite to how the seat protrudes from under the face in FIG. 13. To compensate for the weight of the straight-girders, material of equal weight can be shaved off the body of the club head. In this way, the combined unit of the girders and the shaved head will not gain any weight. Additionally, the new distri-
bution of mass will be evenly distributed behind the face where the ball makes contact. Thus, the feel of the club will be essentially the same as before the modification.


[0340] Another way to allow for the weight of the club to remain unchanged is to design a release mechanism into the tee-up-device. Thus, after teeing-up, the golfer would remove the ball-tee-up-device from the club, and the club would be swung without any attachment at all. Many release mechanisms are possible. One such mechanism could utilize magnetism. The tee-up-device’s mount could be magnetized and stick to the rear of the club head. After the golfer has teed-up, he could hook the tips of the tee-up-device under a bar anchored to the ground (low and parallel to the ground and away from the tee, perhaps as part of the ball tray or base of a golf cart) and pull off the tee-up-device from the club by overcoming the force of magnetic attraction. After hitting the ball, the golfer could re-attach the tee-up-device by merely touching the rear of the club head to the magnetic mount and then disengaging the tips from the bar by reversing the motion that was used to originally hook the tips to the bar.

[0341] Mount and Accessories Variations

[0342] The mount can be built into the club in surprising ways. In FIG. 11B, the club head itself was completely redesigned so that the seat was the head itself. In FIG. 11C, the shaft has been modified with a square cross-section. But, in FIG. 1, the club requires no modification. Thus, the mount covers both methods of attachment and modifications to the club or elongate members or extension.

[0343] Additional mounting elements and methods include: oval shaft cross-sections, clasps, clamps, mounting pins, slots, flanges, grooves, holes, glues, solder, welds.

[0344] In FIG. 11B there really are no accessories. The seat is merely glued to the head. In this case, the only valid definition for the accessories would be the glue. But the rubber-tube could have been attached without glue. The rubber-tube could have a groove along the side. The C-shaped rim of the cavity 930 in the head could have a flange. The groove of the rubber-tube would slide over the flange, joining the two together. In this case, there are no accessories to aid in mounting. Thus, the accessories are not a necessary element of the invention.

[0345] Seat Variations

[0346] The seat can come in many shapes and sizes. For instance, the seat does not have to lie primarily in a plane. Non-planar shapes, such as the wide seat of FIG. 14, can cradle the ball well. Weight can be eliminated from this wide seat embodiment by using a zigzag design. Such a zigzag, going up and down and around the ball, can hold the ball securely by making many contact points. Such a zigzag design also offers a variety of ways to execute the flexibility property. The ball need be supported by at most three points in order to be held. These points can include contact points with the club. This permits a great variety in both functional design and artistic design.

[0347] The seat of FIG. 11B is a rubber-tube. The function of this rubber-tube is to perform the flexibility function by compressing so that the ball can push-through the C-shape in the mount while being firm enough to hold the weight of the ball. Instead of a rubber-tube, this function could be performed by other elements such as the nub of FIG. 14D made out of silicon. Three such nubs glued around the C-shape could form the seat.

[0348] Objects and advantages.

[0349] Accordingly, the reader will see that the ball-tee-up-device of this invention provides a useful attachment to a golf club that allows a golfer to pick-up and tee-up a golf ball.

[0350] The tee-up-device has many advantages such as:

[0351] it can both pick-up balls and tee-up balls;

[0352] it can be used with permanent tees, or regular tees, or automatic tee insertion/setter devices;

[0353] it allows for a virtually normal feel and swing of a golf club by providing a lightweight attachment that does not unduly unbalance the golf club or create undue air drag while swinging;

[0354] it allows for a normal feel and swing of a golf club by providing a tee-up-device built into the golf club that does not change the weight or balance of the golf club;

[0355] it allows the golfer to practice driving a series of golf balls without bending over, squatting down, moving his feet, shifting his natural stance, releasing or adjusting his natural grip on the club, altering his natural swing, or interfering with the natural striking of the teed-up ball;

[0356] it allows for consistent and uniform and efficient practice sessions;

[0357] it can help reduce boredom, fatigue, stress, and possible injury from the repetitive act of manually teeing-up;

[0358] It can help speed up play and thereby increase player enjoyment, increase customer turnover, and increase proprietor revenues;

[0359] it provides a proprietor an additional item to sell as opposed to having to own and maintain his own automatic tee-up machines;

[0360] it provides a variety of embodiments and features that can be customized to suit an individual's needs, style, and personality;

[0361] it provides a variety of forgiving operational methods of use;

[0362] it provides a small, simple, reliable, durable, convenient, low cost, highly portable, reversible attachment, and easy to use alternative to other manual and automatic tee-up devices which are more costly to manufacture, clumsy to operate, awkward to transport, inconvenient to store, made of moving parts, and require maintenance;

[0363] it provides for easy assembly and disassembly;

[0364] it provides a marketable product that offers a useful, sleek, and cool addition a golfer's equipment accessories;

[0365] it can be attached to a putter grip-end and used to easily retrieve balls from the cup and easily place that ball back on the green for further putting;
it can be attached to a pole and used to retrieve balls from hazards or pick-up a series of balls as would be necessary after practicing chipping a bunch of balls onto a green;

it provides a pick-up and/or tee-up device that can be used for other activities such as the children's sport of Tee-Ball where a baseball is tee-ed-up and hit off a torso-high tee, or picking-up ping pong balls, or tennis balls.

Unobviousness Benefits

With regard to golf alone, the fantastic novelty of this invention's function can not be overstated. This invention provides a revolutionary, sensational new means to pick-up a ball and/or tee-up a ball without significantly altering any aspect of a golfer's natural play. It does this by eliminating the need to bend down to tee-up by hand or the need of unsuitable tee-up devices. Instead, it uses the golf club itself as a natural extended hand. And it can be transported conveniently and used at virtually any golfing site. By doing so, this invention makes golf easier, more enjoyable, and offers beneficial aid even to healthy and expert golfers. For handicapped persons, and golfers with physical problems such as bad backs, the benefits are enormous. It can get people involved where before they could were left out.

Scope.

The execution of the specific embodiments, by the new use of materials and structures, realize the invention's intended function. But the invention has a broader scope beyond the specific examples provided. Thus the scope of the invention should be determined by the appended claims and their legal equivalents, rather than by the examples.

1. A device which is used in aiding in picking-up or placing a ball and which is attachable to an elongate member, said device comprising: a support structure for supporting the ball including a seat and an attachment structure for attaching said support structure to an elongate member.

2. The device of claim 1 being attached to a golf club.

3. The device of claim 1 wherein said attachment structure includes means for releasably attaching the support structure to the elongate member.

4. The device of claim 3 wherein said support structure includes an upwardly extending leg and said means for releasably attaching the support structure to an elongate member includes a strap or tape which is releasably wrapped around said leg and the elongate member.

5. The device of claim 4 wherein said strap or tape includes fastening structure.

6. The device of claim 6 wherein said fastening structure includes hooks and loops.

7. The device of claim 3 wherein said support structure includes an upwardly extending loop and said means for releasably attaching the support structure to an elongate member includes a strap or tape which is releasably inserted through the loop and wrapped around the elongate member.

8. The device of claim 7 wherein said strap or tape includes fastening structure.

9. The device of claim 7 wherein said fastening structure includes an adhesive or an adhering material.

10. The device of claim 3 wherein said attachment structure includes one of a tab, post or clamp which is connected to the device and which has a through hole and a fastener which is received through said through hole for releasably fixing said device to an object.

11. The device of claim 10 wherein said fastener is one of a screw or bolt.

12. The device of claim 10 combined with the object and wherein said object is a golf club head.

13. The device of claim 12 wherein said golf club head is provided with a threaded hole in one of the top or side of the head for receiving said fastener for releasably mounting said device on the golf club head.

14. The device of claim 1 wherein said support structure is fixed to a golf club shaft.

15. The device of claim 1 wherein said support structure is releasably attached to a golf club shaft.

16. The device of claim 1 wherein the support structure is attached to a golf club head.

17. The device of claim 1 wherein said seat of said support structure has a generally central opening through which a tee can extend when said support structure is lowered over the tee.

18. The device of claim 17 wherein said seat includes an open area or gap which permits said support structure to be moved generally laterally away from the ball set on the tee.

19. The device of claim 1 wherein said seat is selected from one of: a) generally C-shaped structures, b) bars and girders, c) rectangular shaped structures, d) rubber-tubes or e) nubs.

20. The combination of a golf club and the device of claim 1 attached thereto.

21. A method for picking-up and/or placing a ball with the aid of a device comprising: a support structure for supporting the ball including a seat and attachment structure for attaching the support structure to an elongate member, comprising the steps of:

- picking-up the ball with the device;
- setting the ball; and,
- withdrawing the device from the ball.

22. The method of claim 21 wherein the ball is tee-ed-up and said method includes the step of picking up the ball from the ground.

23. The method of claim 21 including the step of placing a ball with the support structure on a tee.

24. The method of claim 21 wherein the support structure is one of flexible for flexing over a ball or dimensioned for accommodating a ball such that the ball is picked up by the step of pressing the support structure downwardly over the ball after which the ball is supported by the seat.

25. The method of claim 21 wherein the support structure has a generally spoon or cradle shaped configuration and said method includes the step of scooping up of the ball resting on the ground.

26. A device for aiding in picking up or placing a ball comprising a generally C-shaped structure mountable to an elongate member, and said C-shaped structure comprising support(s) which form a seat for carrying a ball.

27. The device of claim 26 wherein said C-shaped structure comprises C-shaped, resilient, flexible, arcuate, wires or rods which can be pressed down over the ball and be deflected outwardly from the ball and then flexed back under the ball to form a seat for the ball.
28. The device of claim 26 wherein said C-shaped structure has a gap such that when the ball is placed on a tee said device can be retracted generally laterally from the ball on the tee.

29. The device of claim 26 combined with and releasably mounted to an elongate member.

30. The device of claim 26 combined with and releasably mounted to a golf club head.

31. A device for adding in picking up a ball comprising an elongate member having an elongate axis and at least three tines at one end of said elongate member, each tine being spaced from an adjacent tine and extending outwardly from said elongate axis and then inwardly toward said elongate axis to form a ball receiving cage for picking up a ball.

32. The device of claim 31 wherein said tines each have a nub at an outer end thereof for facilitating pushing of said tines down over a ball resting on a supporting surface.

33. The device of claim 31 wherein at least two adjacent tines are spaced apart at a junction between the outwardly extending portion and the inwardly extending portion thereof a sufficient distance to allow the tines to be moved laterally of a ball which had been picked up and then placed on a tee to remove the device from the ball on the tee.

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