United States Patent

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[54] **GOLF BALL DISPENSER**
10 Claims, 4 Drawing Figs.

[52] **U.S. Cl.** **273/201,** 221/298
[51] **Int. Cl.** **A63b 57/00**
[50] **Field of Search** 221/289, 292, 293, 298, 299, 301; 273/33, 201, 207, 209; 209/98, 121

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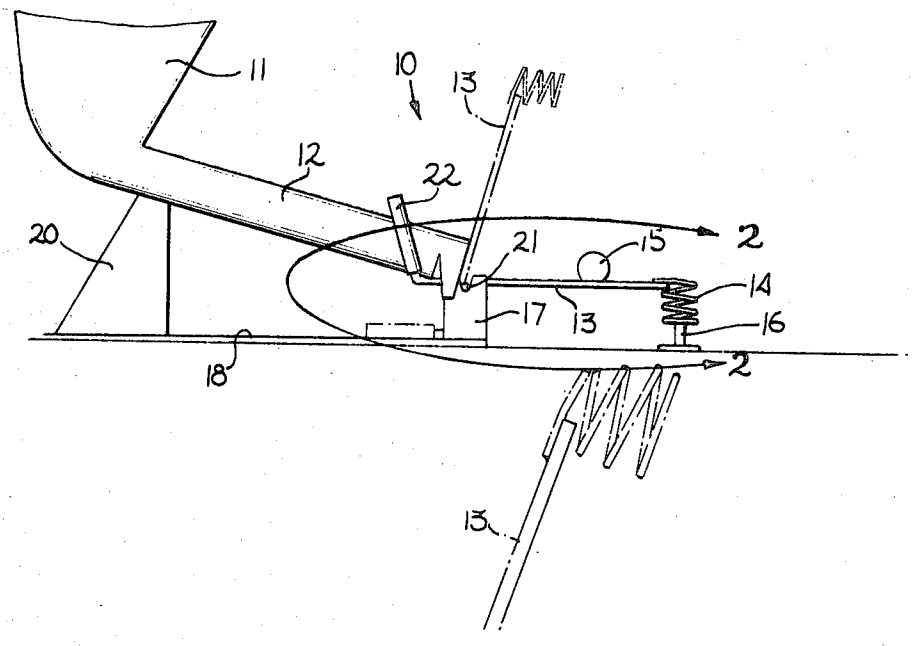
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ABSTRACT: A golf ball dispenser disclosed herein having a hopper for storing a quantity of balls and a pivoting ramp mounted on a fulcrum base for receiving a ball from the hopper for delivering to a playing tee. The device includes a selector means for introducing one ball at a time to the ramp and the end of the ramp mounts a helical guide for placing the selected ball directly onto the tee. Counterweights are carried on the ramp on one side of the fulcrum base so as to pivot the ramp to an upright position out of the club-swinging path.



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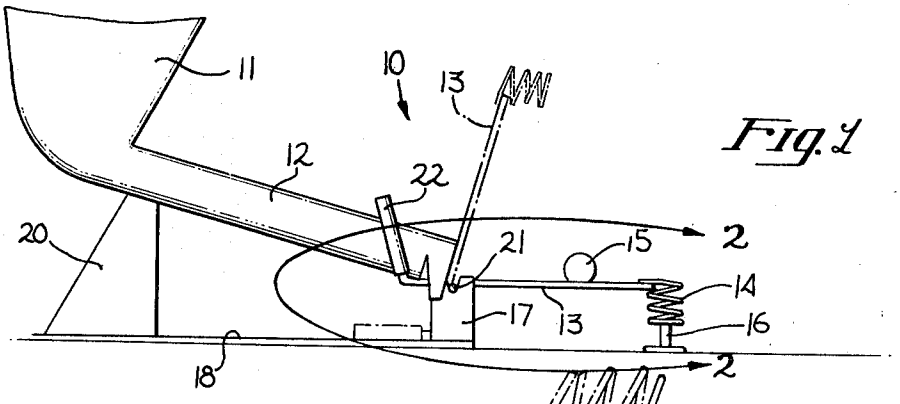
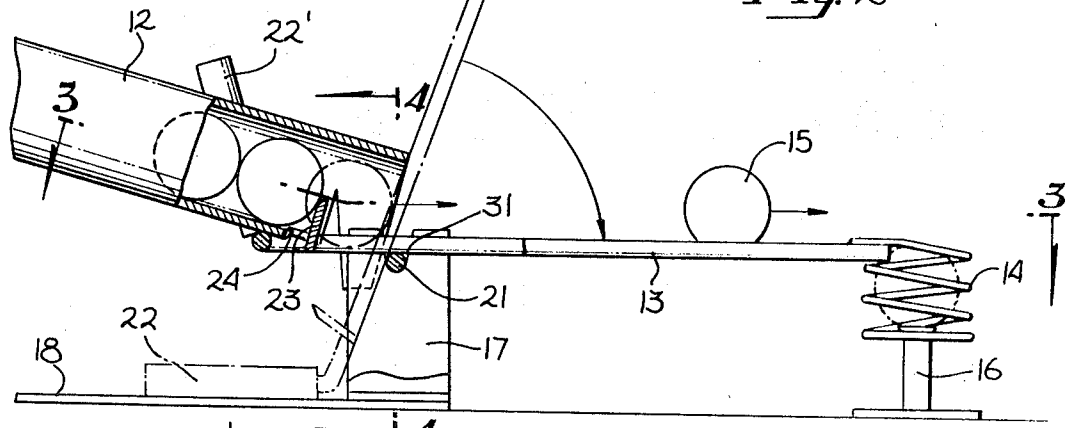


Fig. 1



Fig. 2



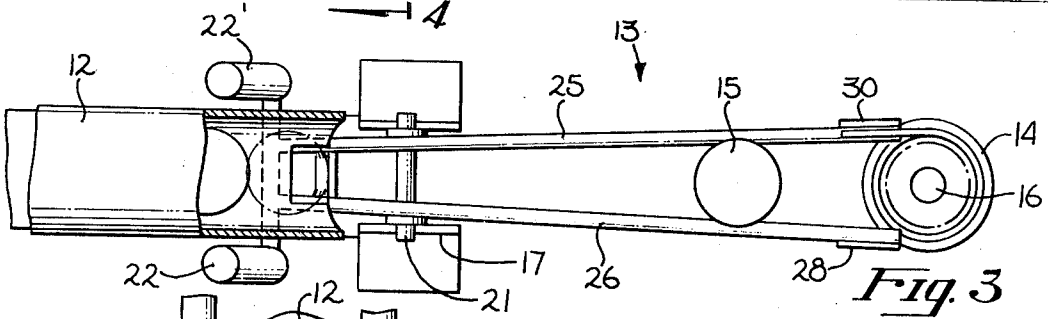


Fig. 3

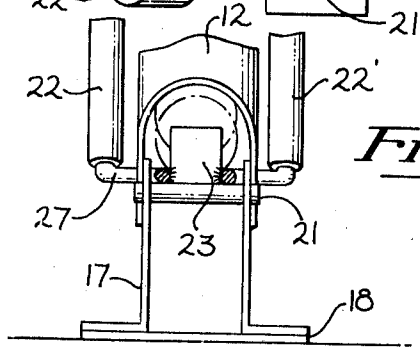


Fig. 4

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GOLF BALL DISPENSER

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to golf-ball-dispensing apparatus and, more particularly, to a novel golf ball dispenser for selecting a single ball from a plurality and for delivering the selected ball to an upright tee where the selected ball is mounted directly thereon so as to be stable and balanced.

2. Description of the Prior Art

In practice procedures for improving a golfer's skill in hitting or driving a golf ball, it is the customary practice to provide a driving range wherein a player can repeatedly drive a plurality of golf balls for improving his skill and "swing." In this conventional practice, the golfer generally purchases a bucket of golf balls and carries the bucket to a driving station along the edge of the driving range. The station is provided with a permanently mounted golf tee and the golfer manually selects a ball from the bucket and manually places the ball on the tee. Next, the golfer will assume his driving stance and swing the club so as to strike the ball and drive it down the range. Once the ball has been struck and has left the tee, the golfer then manually selects another ball and again manually places the ball on the tee. This practice is repeated until the bucket of balls have been used.

Although this manual arrangement has proven satisfactory, it is a time-consuming and energy-expending procedure which is inefficient from the driving range operator's point of view. The inefficiencies of operation are increased during times wherein use of the driving range is in great demand by a multiplicity of people.

Therefore, a need has long existed to provide an automatic golf ball dispenser requiring only the minimum of manual effort to transfer a selected golf ball from the bucket to proper mounting on the awaiting tee. Such a device should be located in such a manner as to avoid interference with the golfer's swing during driving and the apparatus should be selective so as to deliver a single ball at a time from the plurality.

SUMMARY OF THE INVENTION

Accordingly, the problems and difficulties encountered with the prior practice of mounting a golf ball on a golf tee are obviated by the present invention which provides a semiautomatic golf-ball-dispensing apparatus which, in general, includes means for storing a plurality of golf balls, means for selecting a particular golf ball from the plurality and means for delivering the selected golf ball to the awaiting tee.

In one form of the invention, a fulcrum base is provided for pivotally mounting a ramp which includes counterweights so as to normally bias the ramp in an upright position out of the way of the player's club swing. The ramp includes guide means for rollably directing a selected ball to be delivered to the golf tee and such guide means includes a resilient helical member carried on the end of the ramp for stabilizing and balancing the ball on the tee. The opposite end of the ramp is positioned adjacent the opening of a tubular member connected to a hopper containing the plurality of golf balls. The tubular member is angularly disposed with respect to the ramp so that a series of balls from the hopper are delivered one at a time to the ramp.

The ramp may be manually pivoted so that its incline slopes with respect to the end of the tubular member whereby a selected ball will be gravity fed to the ramp for delivery to the tee. Selector means in the form of a tooth cooperating with an opening in the tube effectively permits the leading ball of the plurality in the tube to be introduced to the ramp while preventing the balls behind the leading ball from leaving the tube. By this means, only a single selected ball is introduced to the ramp for delivery to the tee. Therefore, it is among the primary objects of the present invention to provide a novel golf-ball-dispensing apparatus capable of selecting a single ball from a plurality for delivering the selected ball to a tee whereby the ball is mounted thereon in a stable and balanced condition.

Another object of the present invention is to provide a novel golf-ball-dispensing device employing the effects of gravity to deliver a selected ball to an awaiting tee which employs a counterbalanced ramp pivotally supported on a base in such a manner that the ramp is momentarily placed adjacent the tee during seating of the ball thereon and normally biased away from the tee by means of the counterweights after the ball has been seated on the tee.

Another object of the present invention is to provide a semiautomatic golf ball dispensing machine designed in such a manner that repair, maintenance and disassembly can be made in the event of inadvertent striking by a golf club occurs which renders the device economic and practical to be used on a commercial driving range.

Still another object of the present invention is to provide a novel golf-ball-dispensing apparatus including selector means for automatically releasing a single ball from a series for automatic delivery to an awaiting golf tee via a sloping ramp.

Yet another object of the present invention is to provide a novel golf-ball-delivering apparatus which is economical to manufacture, easy to use and convenient to assemble or disassemble for repair, maintenance or storage purposes.

BRIEF DESCRIPTION OF THE DRAWINGS

The features of the present invention which are believed to be novel are set forth with particularity in the appended claims. The present invention, both as to its organization and manner of operation, together with further objects and advantages thereof, may best be understood by reference to the following description, taken in connection with the accompanying drawings, in which:

FIG. 1 is a side elevational view of a novel golf ball dispenser of the present invention;

FIG. 2 is an enlarged side elevational view, partly in section, of the dispenser illustrating alternate ramp positions in solid and broken lines respectively;

FIG. 3 is a top plan view, partly in section, of the dispenser shown in FIG. 2 as taken in the direction of arrows 3–3 thereof; and

FIG. 4 is a transverse sectional view of the dispenser taken in the direction of arrows 4–4 of FIG. 3.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIG. 1, the novel golf-ball-dispensing apparatus of the present invention is indicated in the general direction of arrow 10 which includes a hopper 11 for holding a plurality of golf balls, an elongated tubular member 12 opening at one end to the bottom of hopper 11 whereby the golf balls are introduced thereto by gravity feed, a ramp 13 for receiving a selected ball from the series held in the tubular member 12 and a guide means 14 carried on the end of the ramp for delivering a selected golf ball 15 to a Stationary tee 16. The golf ball tee 16 is normally a permanent installed tee at most driving ranges and may be mounted on a pad or other suitable support. The tubular member 12 is angularly disposed with respect to the ramp 13 whereby the balls in hopper 11 are introduced to one end of the ramp in an end-to-end series.

The ramp 13 is pivotally mounted on a fulcrum base 17 which is fixed to a support plate 18 adapted to be placed on the ground in spaced relationship to the tee 16. The spacing of the fulcrum base 17 with respect to the tee 16 is approximately the length of the ramp 13 so that the guide means 14 is coaxially disposed with respect to the tee and so that the shank of the tee lies along the central access of the circular guide means. The opposite end of the support plate 18 from its end supporting fulcrum base 17 includes a support bracket 20 for bracing the hopper 11 and elevating the end of tube 12 with respect to its opposite end opening adjacent the ramp 13.

The ramp 13 is shown in solid lines in its position for delivering ball 15 to the tee 16. The ramp slopes downwardly

from its pivot connection 21 to the base 17 so that the ball will travel from the end of tubular member 12 to the guide means 14 under the force of gravity. Furthermore, the weight of ball 15 will maintain the ramp in solid line position until the ball drops off the end thereof onto the tee 16. At such time, counterweights 22 will rotate the ramp 13 about its pivot connection 21 to its upright position as shown in broken lines. When the ramp 13 is in its upright position, it is removed from the path or field of club swing and the ball 15 is seated on tee 16 preparatory for hitting by the golf club.

Referring now in detail to FIG. 2, it is more clearly illustrated that the golf balls in tubular member 12 are arranged in an end-to-end row wherein the leading ball of the plurality is adjacent the end opening of the tubular member and engages with the ramp 13 immediately to the left side of the pivot connection 21. The lead ball will remain in this position due to the fact that the ramp 13 will be in its upright position as indicated in broken lines. However, when it is desired to seat the lead ball on to the tee 16, the player may place the end of his golf club against the ramp 13 and push the ramp so as to pivot on the fulcrum base 17 to its position shown in solid lines. During the rotation of ramp 13, a selector means taking the form of a tooth 23 carried adjacent the end of the ramp will be projected through an opening 24 in the tubular member 12 to separate the lead ball in the series from the adjacent ball immediately therebehind. This action releases the lead ball 15 to roll down the ramp 13 while the balls in the tubular member 12 are held in the tubular member by the tooth 23. The weight of ball 15 will maintain the ramp in its downwardly sloping position and once the ball has dropped off the end of the ramp through the guide means 14, the counterweights 22 and 22' will automatically cause the ramp to pivot into its initial position as shown in broken lines.

Referring now in detail to FIGS. 3 and 4, it can be seen that the ramp may take the form of diverging rods 25 and 26 defining an area or space therebetween so as to accommodate the rolling movement of ball 15. The cantilevered end of ramp 13 spaces the rods 25 and 26 further apart than the opposite end of the ramp. Also, the tooth 23 is preferably mounted between the rods 25 and 26 by any suitable means, such as welding for example. Also, the counterweights 22 and 22' may be slidably mounted on the ends of a U-shaped member 27 so that weights of either less or more load can be interchanged in the event it is desired to use more or less weight load.

Also, it is to be noted that the guide means 14 takes the form of a helical spring having a pair of clips 28 and 30 secured to the top rung of the spring for detachably securing the spring to the extreme ends of the rods 25 and 26 respectively. Such construction permits ready replacement of the springs should the spring become worn or damaged during the use of the device. Also, it is to be noted that the ramp pivot connection 21 is seated in an open slot 31, shown in FIG. 2, formed in the base 17. This permits the ramp to be readily lifted out of the slots and disassembled from the base when desired. Furthermore, should the ramp 13 inadvertently be struck by the player's club, the ramp will immediately disassemble which prevents damage to the ramp or to the device. Preferably, the diameter of the spring guide means 14 is slightly larger than the diameter of a golf ball so that when the ball drops from the end of the ramp, it will be guided to the top of the tee 16. The resilient nature of the guide 14 permits the ball to properly seat on the shank of the tee 16 even when the shank is slightly off center.

In view of the foregoing, it can be seen that the novel golf-ball-dispensing device of the present invention provides a convenient and operable device for delivering a selected ball to a tee. The device is semiautomatic in operation in that a slight effort is required to pivot the ramp into its position shown in broken lines by use of the player's club so that the ball 15 will progress down the ramp onto the tee 16. However, when ramp 13 has been relieved of the weight of the ball, the counterweights 22 and 22' will automatically rotate or pivot the ramp 13 to its position shown in broken lines. During this latter pivotting action, the guide 14 will slip over the periphery of ball 15 so that the ball will remain seated on the tee in position for striking by the player's club.

While particular embodiments of the present invention have been shown and described, it will be obvious to those skilled in the art that changes and modifications may be made without departing from this invention in its broader aspects, and, therefore, the aim in the appended claims is to cover all such changes and modifications as fall within the true spirit and scope of this invention.

What I claim is:

1. A golf ball dispensing apparatus comprising:
a base;
a ramp pivotally mounted on said base;
a ball storage tube angularly carried on said base for holding a quantity of balls in a row and having an opening immediately adjacent said pivot mounting in alignment with said ramp so as to receive the balls stored therein in a serial manner;
stop means carried on a selected end of said ramp and cooperatively engageable with the underside of said tube for restricting pivotal movement of said ramp so as to maintain said ramp parallel with the ground and extending normal to the perpendicular;
means cooperatively disposed between a selected end of said ramp and said tube for permitting the leading ball stored in said tube to pass through said opening onto said ramp and under the force of gravity so that said ramp is cantilevered outwardly from its base; and
counterweight means carried on said selected end of said ramp for normally pivoting said ramp into a substantially vertical position to hold the balls stored in said tube from passing through said opening.

2. The invention as defined in claim 1 wherein
said ramp includes a pair of spaced apart rods, said selected end of said ramp defining a narrow separation between said rods and the opposite end of said ramp defining a wider separation than first mentioned narrow separation; and
neither end of said ramp being higher in elevation than its opposite end when said ramp is rollably supporting a ball.

3. The invention as defined in claim 2 including
an elongated resilient guide means detachably carried on said opposite ramp end and having an extended central passageway for guiding the leading ball from said ramp onto a stationary tee.

4. The invention as defined in claim 3 wherein
said guide means includes a helical spring downwardly depending from the end of said ramp in spaced relationship to the ground and coaxially disposed with respect to said tee.

5. The invention as defined in claim 1 wherein
said means for selecting said leading ball includes an aperture formed in the end of said tube adjacent said opening and a tooth carried on said selected end of said ramp adapted to pass through said aperture to separate the leading ball from following balls in said rows.

6. The invention as defined in claim 5 wherein
said ramp is flatly extended outwardly from said pivot mounting in a cantilevered position when said tooth is inserted through said aperture whereby the leading ball will roll across said ramp under the force of gravity; and
said ramp includes a pair of spaced rods for supporting the ball and extending in diverging relationship from said pivot mounting.

7. The invention as defined in claim 6 wherein said ramp includes a pair of spaced apart rods, said selected end of said ramp defining a narrow separation between said rods and the opposite end of said ramp defining a wider separation than first-mentioned narrow separation.

8. The invention as defined in claim 7 including
resilient guide means detachably carried on said opposite ramp end for guiding the leading ball from said ramp onto

a stationary tee, said guide means including a helical spring downwardly depending from the end of said ramp and coaxially disposed with respect to said tee; and

said spring having a plurality of coils defining a central passage for transferring the ball therethrough and having its free end terminating in spaced relationship when said ramp is rollably supporting the ball.

9. The invention as defined in claim **1** wherein

said ramp includes a pair of rods differentially spaced apart so as to provide widest separation at its end opposite to

said selected end so that the leading ball is rollably supported between said rods; and

said ramp lies in a substantially horizontal, noninclined plane when rollably supporting the ball.

10. The invention as defined in claim **1** wherein

said ramp and its pivotal mounting on said base are responsive to position said ramp from its vertical position to its horizontal, noninclined position in response to manual override of said counterweights.