

Sept. 10, 1935.

W. P. FLEMING
MECHANICAL GOLF TEE

2,013,881

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4 Sheets-Sheet 1

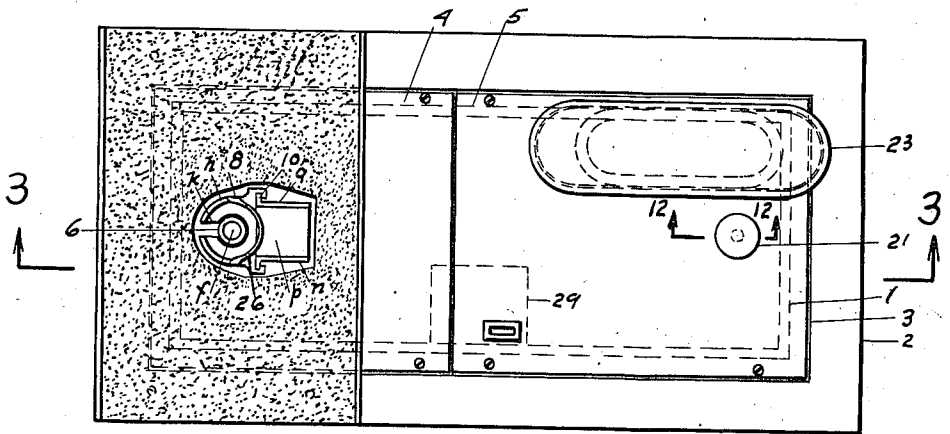


Fig. 2

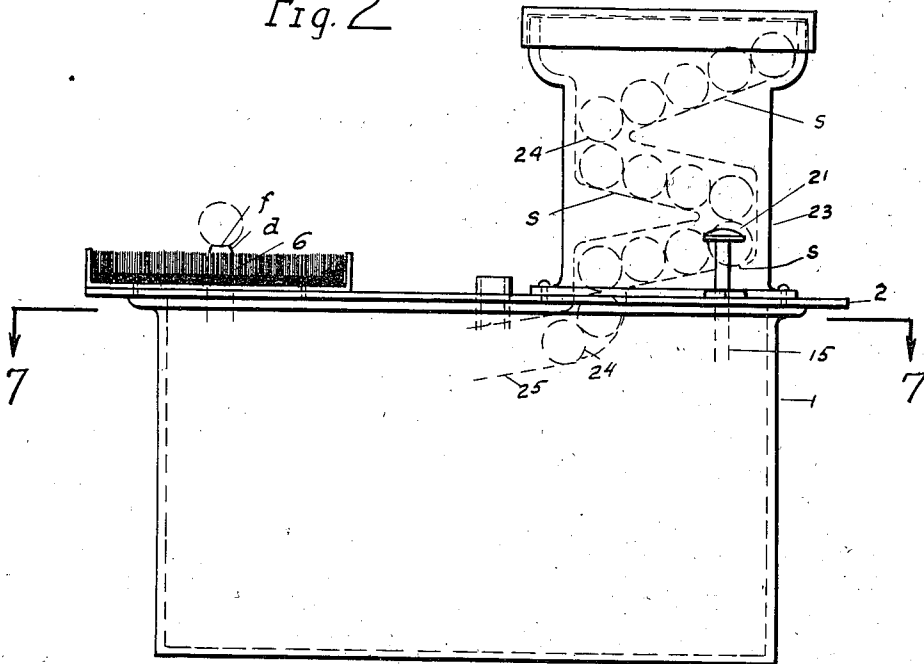


Fig. 1

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4 Sheets-Sheet 3

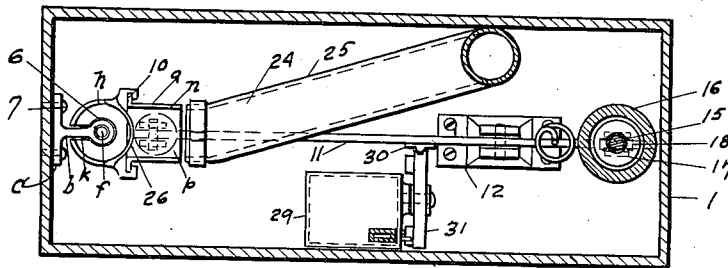


Fig. 7

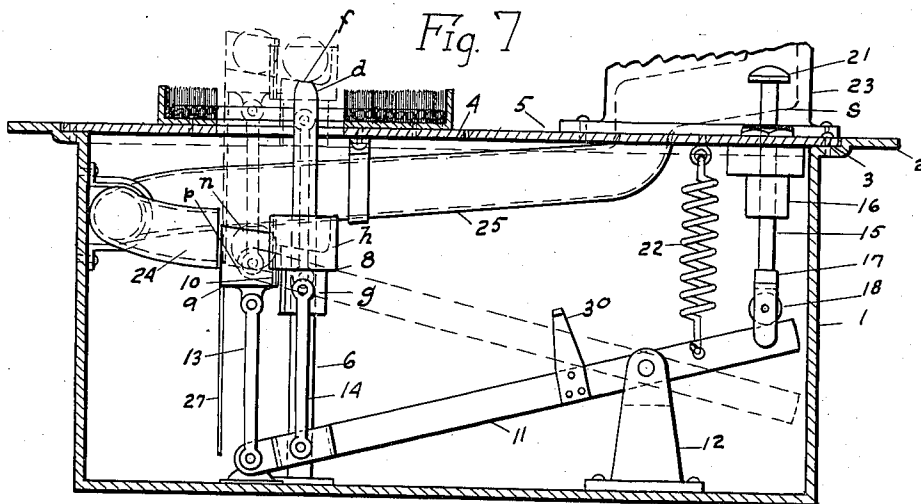


Fig. 8

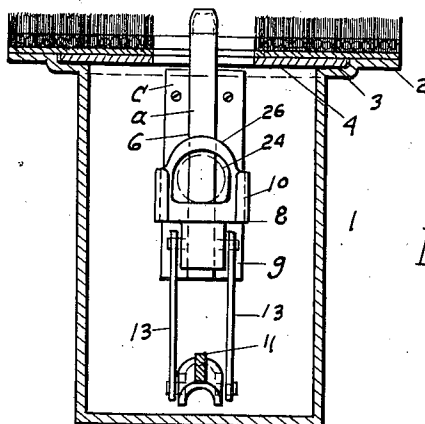


Fig. 6

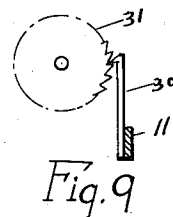


Fig. 9

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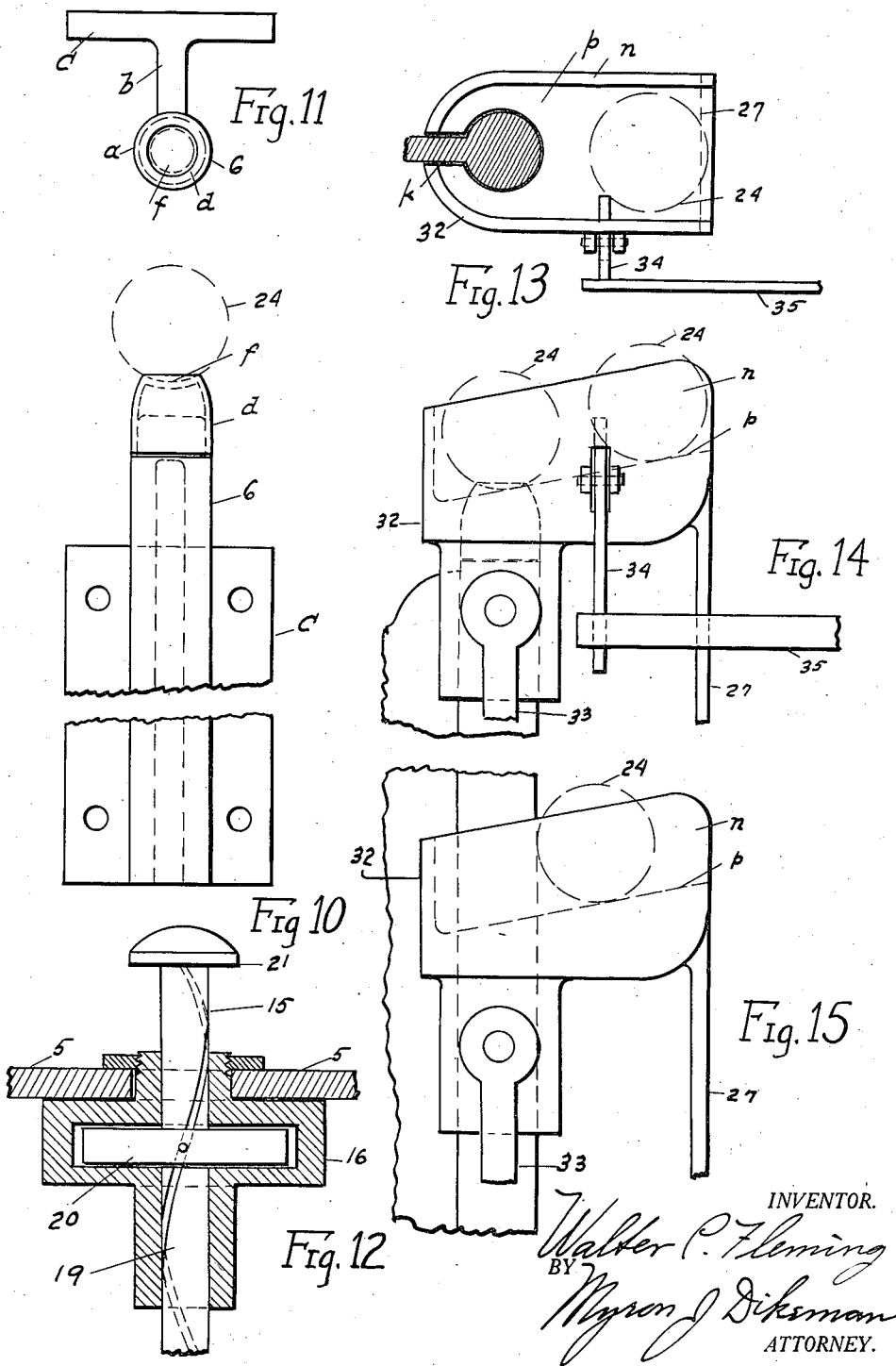
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4 Sheets-Sheet 4



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MECHANICAL GOLF TEE

Walter P. Fleming, Detroit, Mich.

Application July 7, 1930, Serial No. 465,840

11 Claims. (Cl. 273—33)

This invention relates to automatic golf ball teeing devices, and more specifically to an improvement upon the device disclosed in my previously filed copending application, Serial Number 462,357, filed June 19, 1930.

The invention has for one of its objects the provision of an improved and simplified device for automatically and repeatedly teeing golf balls as frequently as may be desired by the mere pressing of a foot pedal or plunger, the balls being supplied to the teeing mechanism, also automatically, from a magazine incorporated in the device.

A further object of this invention lies in the provision in such machine of a fixed tee, to the top of which the balls are raised and upon which they are deposited by novel lifting mechanism, without the necessity of providing a movable tee, as is usual in the construction of such machines.

A still further object of this invention is the provision of improved regulating means for preventing too rapid movement of the ball-elevating parts.

Another object of this invention lies in the provision of separate ball-lifting and guiding members for elevating the balls and depositing them upon the tee, and automatic means for retaining the ball in the elevating member until it and the guiding member have reached approximately the upper limit of their possible movement, at which time the ball is permitted to fall into the guiding member, which positions the same upon the tee.

It is also an object of this invention to associate coin-controlling means with such a machine.

Other objects and advantages will be apparent from the following description, wherein reference is made to the accompanying drawings illustrating preferred embodiments of my invention, and wherein similar reference numerals designate similar parts.

In the drawings:

Figure 1 is a side elevational view of a preferred form of my invention.

Figure 2 is a top plan view thereof.

Figure 3 is a vertical sectional view taken substantially on the line 3—3 of Figure 2 and looking in the direction of the arrows, showing the ball-lifting mechanism in lowered position, and part of the ball magazine being broken away for economy of space.

Figure 4 is a view similar to Figure 3 but showing the ball-elevating mechanism in raised position.

Figure 5 is a vertical cross-sectional view taken substantially on the line 5—5 of Figure 3 and

looking in the direction of the arrows there shown.

Figure 6 is a vertical cross-sectional view taken substantially on the line 6—6 of Figure 3 and looking in the direction of the arrows there shown.

Figure 7 is a horizontal sectional view taken substantially on the line 7—7 of Figure 1 and looking in the direction of the arrows there shown.

Figure 8 is a view similar to Figure 3 showing a somewhat modified form of my invention.

Figure 9 is a fragmentary detail view of part of the coin-controlled locking mechanism.

Figure 10 is an enlarged fragmentary detail view of my preferred tee construction, showing the same in side elevation and partly centrally broken away.

Figure 11 is a top plan view thereof.

Figure 12 is an enlarged detail sectional view of the governing mechanism, taken substantially on the line 12—12 of Figure 2 and looking in the direction of the arrows there shown.

Figure 13 is a top plan view of a modified form of ball-lifting and guiding mechanism, the tee member being also partly shown in horizontal section.

Figure 14 is a fragmentary side elevational view thereof showing the mechanism in raised position.

Figure 15 is a similar side elevational view showing another slightly modified elevating mechanism in lowered position.

Referring now to the drawings; I preferably enclose my device in a tight, box-like casing 1, which may be of sheet metal, adapted to be sunk to the flange 2 in an excavation in the earth, or set in a suitable aperture in a floor. Cover plates 4 and 5 are provided for the open top of the casing, set flush with the flange 2 in a rabbet 3. The cover plate 4 is apertured adjacent one end of the casing for the upward projection therethrough of the tee, *d*, and the ball-elevating mechanism. The tee may be of soft rubber, carried by the partly cylindrical portion *a* of the support 6, integrally with which are formed the web *b* and wall flange *c*, by means of which the cylindrical tee-carrying portion is secured to the end wall of the casing, as by screws 7. The tee *d* is of such size as to project to a desired height above the coconut fibre or other suitable mat or playing surface which is provided upon the casing surrounding the tee, and the tee is of course suitably cupped at its top, as at *f*, to receive the balls.

Slidably mounted upon the cylindrical section *a* of the tee-supporting member 6 is the ball-guid-

ing cup member 8, which is vertically movable by means of the link 13 pivotally secured at its upper end thereto, and at its lower end to the operating lever 11. The cup member 8 is interiorly hollowed, as at *h*, and provided with a hub portion *g*, through which a keyhole-shaped aperture for slidable reception of the tee support extends. The operating lever, which is of the first class, is fulcrumed on a bracket 12 secured to the floor of the casing. A ball-lifting cup 9 is provided which is also vertically movable by means of the lever, being secured thereto by the link 14, and also secured and slidable relatively to the guide cup 3, as by means of flanges 10 engaging opposed inwardly opening slideways formed integrally with and projecting from the guide cup (note Figure 7).

Power is applied to the lever to lift the cups 8 and 9 by means of the plunger 15 projecting upwardly through the cover plate 5 and carrying at its lower extremity the clevis member 17 in which the roller 18 is journaled. The roller engages the top of the lever and is maintained in alignment therewith by the downwardly projecting sides of the clevis which extend one on each side of the lever. The foot plunger carries the cap 21 at its top. The ball-lifting and guide cups are normally urged downwardly by the tensile spring 22, one end of which is secured to the cover plate 5, and the other to the lever 11 on the power side of the fulcrum. The ball-lifting cup 9 is open at its right side as viewed in Figures 3, 4 and 7, and is formed with a sloping floor *p*, which inclines downwardly toward the tee member and guide cup, which latter is also open on its side adjoining the lifting cup. It will be seen that since the guide cup is connected to the lever at a point farther from the fulcrum than the lifting cup, the latter travels the more rapidly of the two, and these members are so arranged that their inclined floors are in substantial alignment when the mechanism is in raised position. The balls are prevented from dropping from the lifting cup into the guide cup before the cups have reached the top of their travel by the segmental guard member 26 secured to the guard cup and adapted to retain the ball in the lifting cup until the guard cup has raised sufficiently relatively to it (note Figures 3, 4 and 6).

Balls are consecutively fed to the lifting cup from the magazine 23, which is carried by the cover plate 5, and comprises a hopper portion and a sinuous feeding tube *s*, the lower end of which registers with an opening in the cover plate. The delivery tube 25, within the casing, from there conveys the balls to a point adjacent the lifting cup when the latter is in lowered position, as shown in Figure 3.

The cup 9 will be seen to be of such size that only one ball can enter it at a time. The movements of the balls are additionally controlled by the dog 28, which is pivoted on a horizontal axis adjacent the bottom of the open end of the supply tube, and by the baffle plate 27 carried by the cup 9, which, as shown in Figure 4, closes the end of the supply tube when the elevating mechanism is in raised position, and while it is being raised. As the cup 9 rises, due to depressive force exerted on the plunger 15, it swings the dog 28 upwardly. The dog is maintained in raised position by the baffle plate and serves to keep the leading ball at a point spaced slightly from the end of the tube, so that it cannot by rubbing against the baffle plate increase frictional resistance of the machine, and thus the force required to operate it. The

guard member 26 carried by the guide cup of course serves a similar purpose, as, except for the undesirable additional friction which would thereby be set up, the balls could be allowed to drop into the guide cup and rub against the tee-supporting member while being raised.

As shown in Figure 8, by reversing the positioning of the ball-lifting cup and guide cups the wall of the latter may be made to serve as a guard to prevent the ball from dropping thereinto before the fully raised position is reached, thus doing away with the special guard member 26. When the lifting cup has risen far enough relatively to the guide cup, the ball is free to roll upon the top of the tee, as in the previously described embodiment. The only additional modification is the necessary change in the shape of the delivery tube, to deliver the balls in the opposite direction.

If desired also the ball-lifting and guide cups may be formed as a single unit, as shown in Figures 13 and 14. In this event a swinging detent 34 may be provided to maintain the ball 24 at the upper end of the sloping floor of the cup away from the tee member while the cup is rising. The detent may be tripped when the raised position is reached to allow the ball to roll upon the tee, as by the fixed trip 35, supported by the casing and adapted to engage the dog when the desired elevated position has been reached, as shown in Figure 14. As shown in Figure 15, such tripping mechanism may be omitted and the ball allowed to slide against the tee pin while being lifted, as the friction thus set up is slight.

In order to prevent unduly rapid operation of the device, which might cause the balls to jump from the cup or tee, I provide a governor in the form of a disc or fly-wheel 20 (Figure 12), which both by reason of its inertia and its frictional resistance to rotation serves to retard the plunger 15. The disc will be seen to be housed in a small casing 16 secured to the cover plate 5 and axially apertured for passage of the plunger 15 therethrough. A spiral groove or thread 19 is cut in the plunger, in which the pin 37 carried by the disc 20 slidably engages, forcing the disc to rotate as the plunger rod travels relatively to it.

The coin-controlled locking apparatus, forming no part of this invention, need not be described in detail here. It comprises essentially a coin receptacle 29 and a coin slot extending through the cover plate 5. A ratchet wheel 31, which, when released by a coin, may be allowed to rotate to a predetermined degree and a spring pawl 30 secured to the lever 11 and adapted to rotate the ratchet wheel 31 one notch for each depression of the lever.

It will be seen that my invention provides a greatly improved and simplified teeing device in which a fixed tee is provided, to the top of which balls are elevated, and deposited thereon in a simple and efficient manner; and the entire device will be seen to be markedly rugged, simple and fool-proof. Many equivalents for the various parts herein shown and described in connection with my preferred constructions will doubtless occur to those skilled in the art, and I contemplate as within the scope of this invention and of the appended claims all such variations and modifications thereof as are reasonably based upon their spirit and scope.

Having fully described my mechanical golf tee, what I claim as my invention and desire to secure by Letters Patent is:

1. In a device for teeing golf balls, a casing, a tee 75.

pin fixedly mounted within and projecting above the top of the casing, a ball lifting frame slidable on said tee pin for receiving and raising a ball to the top of said tee pin and depositing same thereon, means mounted within said casing for depositing balls consecutively within the said ball lifting frame, and lever operating mechanism mounted within said casing and connected to the lifting frame for operating same.

2. A device for automatically teeing golf balls, comprising a casing, a vertically positioned ball tee fixedly mounted within one end of said casing and projecting above the casing top, a lifting cup vertically slidably mounted on the tee for receiving and raising a ball above the tee top and depositing same thereon, a ball feed pipe mounted within said casing for depositing balls consecutively within the said lifting cup, an operating lever mounted therein and connected to said lifting cup for moving same on its supporting slides.

3. A mechanical golf tee comprising a casing, a vertically positioned tee pin fixedly mounted within and projecting above the top of the casing, a ball lifting member associated with and vertically slidable relatively to said tee pin, for receiving and raising a ball to a position above the tee pin and depositing same on the tee top, means mounted within said casing for feeding balls consecutively into the lifting member when same is in lowered position, a pivoted lever connected to said lifting member for raising and lowering same adjacent the tee pin, a foot operating member connected to said lever for moving same and locking means mounted for automatically locking the movements of the operating mechanism.

4. A mechanical golf tee adapted for automatically placing golf balls, consecutively, in a driving position in a game of golf, comprising a suitable casing inclosure, a vertically positioned tee fixedly mounted within one end of said casing and projecting to a position above the casing top, a guard member slidably mounted around the said tee, a lifting cup slidably mounted adjacent said guard member, means mounted within said casing for introducing balls consecutively into the said lifting cup, lever mechanism mounted in the casing and connected to both the guard member and lifting cup and capable of raising same with a ball in said cup to a position above the tee top and depositing said ball on the tee top, and means for returning said lever mechanism with the attached member and cup to its lowered position.

5. A mechanical golf tee adapted for automatically and consecutively placing golf balls in a driving position, comprising a suitable casing, a vertically positioned tee pin fixedly attached to the casing end and projected above the casing top, a ball guard cup vertically slidably mounted on said tee pin, a ball lifting element associated with said guard cup and also vertically slidable, an operating lever pivotally mounted within said casing and so connected to both of said cups as to enable raising them with an inclosed ball to a point above the tee top and depositing said ball thereon, a ball magazine mounted on said casing for delivering balls consecutively to the ball lifting cup when said lifting cup is in lowered position, and a foot pedal connected to said operating lever.

6. In an automatic golf ball teeing device, a

tee, a ball-lifting member appurtenant said tee and movable from a point below to a point substantially above the same, said lifting member being adapted to deposit a ball raised thereby on the tee when in elevated position, means for feeding balls to the lifting member, a lever for actuating the lifting member, and a member adapted to serve as a gate for retaining the balls in the lifting member until fully elevated and for freeing the same when so raised, said gate member being connected to the lifting member and adapted to be raised therewith, but at a different relative speed.

7. A golf ball teeing device comprising a tee, means for placing a ball thereon from below the normal position of the tee, a lever for raising the ball from such lowered position, means yieldably urging the lever in one direction, and a retarding element comprising a screw threaded member connected to the lever, and a rotatable member cooperating with the threaded member and relatively to which the latter travels, for by its resistance to rotation preventing too rapid movement of the lever.

8. In a teeing device, the combination with a stationary tee, of a substantially horizontal support having an opening therein adjacent said tee, a golf ball positioning member movable through said opening to positions above and below said support, means for supplying golf balls to said member when said member is below said support, and means for positioning said balls on said tee after said member is moved above said support.

9. In a teeing device, the combination with a support having an opening therein, a tee having the top thereof above said support, an elevator movable through said opening to positions above and below said support, means for feeding balls onto said elevator while the same is below said support, means for releasing said balls from said elevator when said elevator is above said support, and means for directing the balls onto said tee after they are released from said elevator.

10. In a teeing device, the combination with a tee arranged in playing position and elevated above the surrounding surface, of a support having an opening therein adjacent said tee, a golf ball positioning member movable through said opening to positions above and below said support, said positioning member being adapted to receive a golf ball while below said support, and means for positioning said ball on said tee after said member is moved above said support.

11. A mechanical golf tee adapted for automatically placing golf balls, consecutively, in a driving position in a game of golf, comprising a suitable casing inclosure, a vertically positioned tee fixedly mounted within one end of said casing and projecting to a position above the casing top, a guard member slidably mounted around the said tee, a lifting cup slidably mounted adjacent said guard member, means mounted within said casing for introducing balls consecutively into the said lifting cup, lever mechanism mounted in the casing and connected to both the guard member and lifting cup and capable of raising same with a ball in said cup to a position above the tee top and depositing said ball on the tee top, and means for returning said lever mechanism with the attached member and cup to its lowered position.

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