

Oct. 21, 1941.

H. C. YOUNG

2,259,918

GOLF PRACTICING APPARATUS

Filed Feb. 19, 1941

5 Sheets-Sheet 1

Fig. 3.

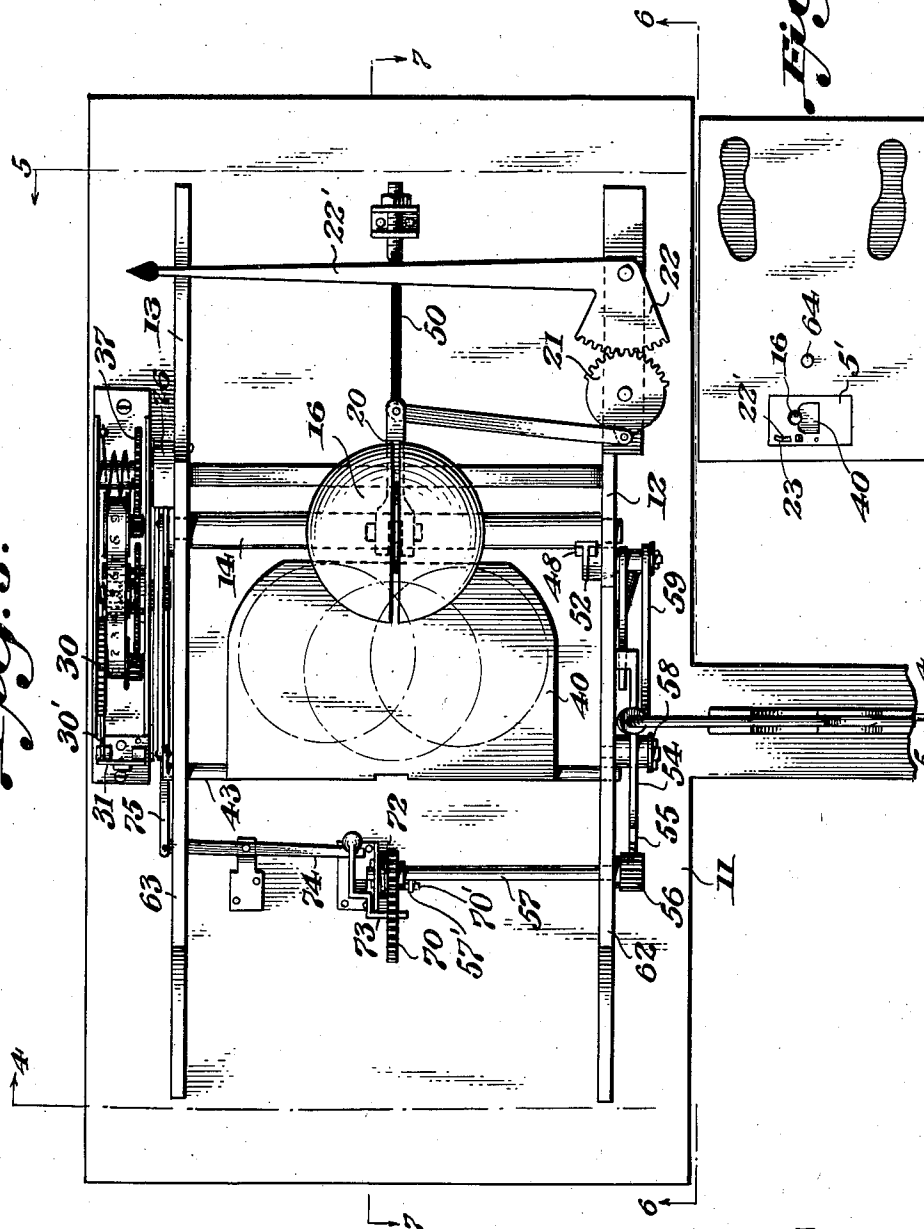


Fig. 1.

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5 Sheets-Sheet 2

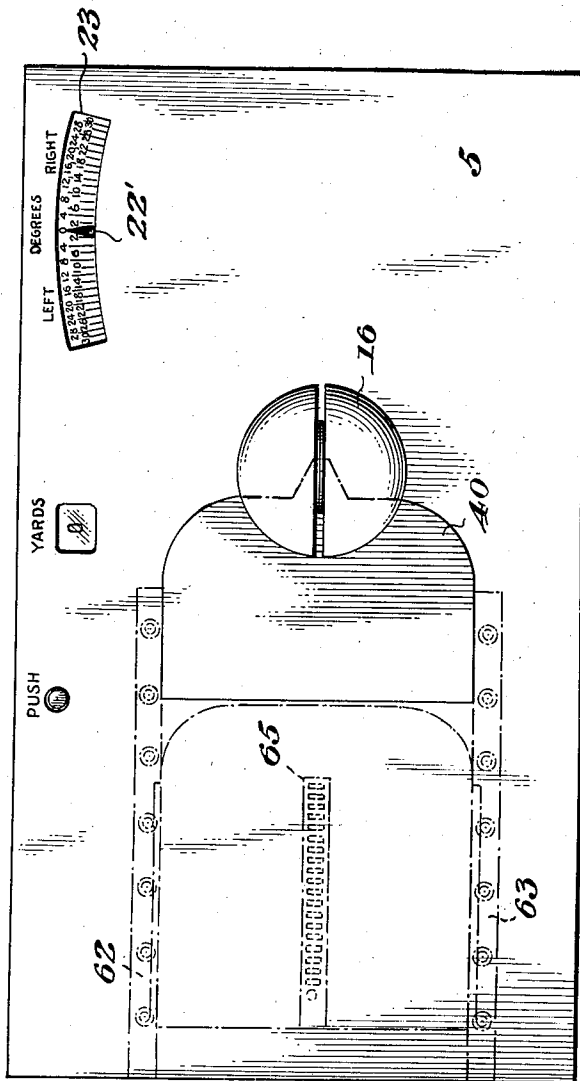


Fig. 2.

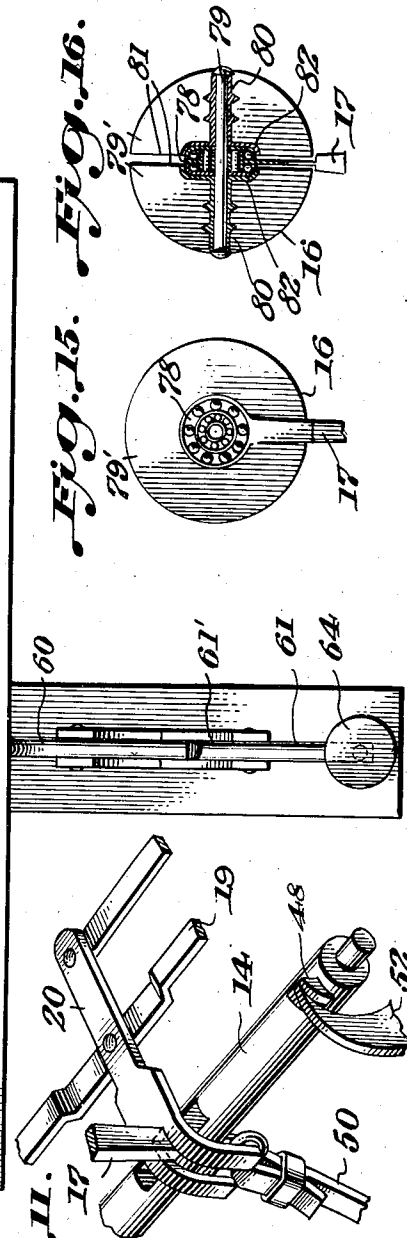


Fig. 11.

Fig. 15.

Fig. 16.

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Oct. 21, 1941.

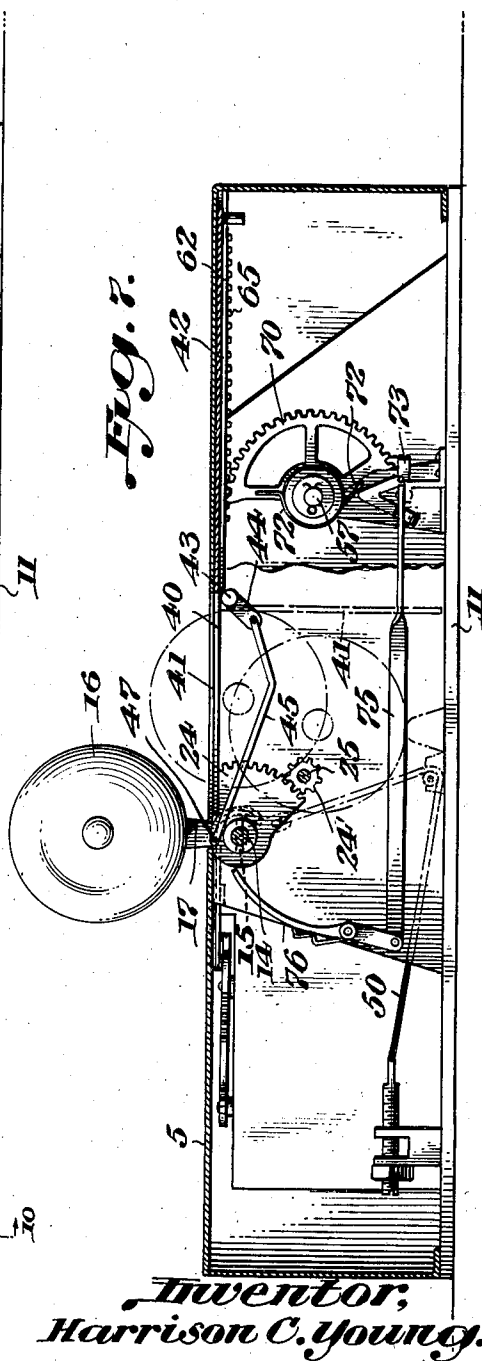
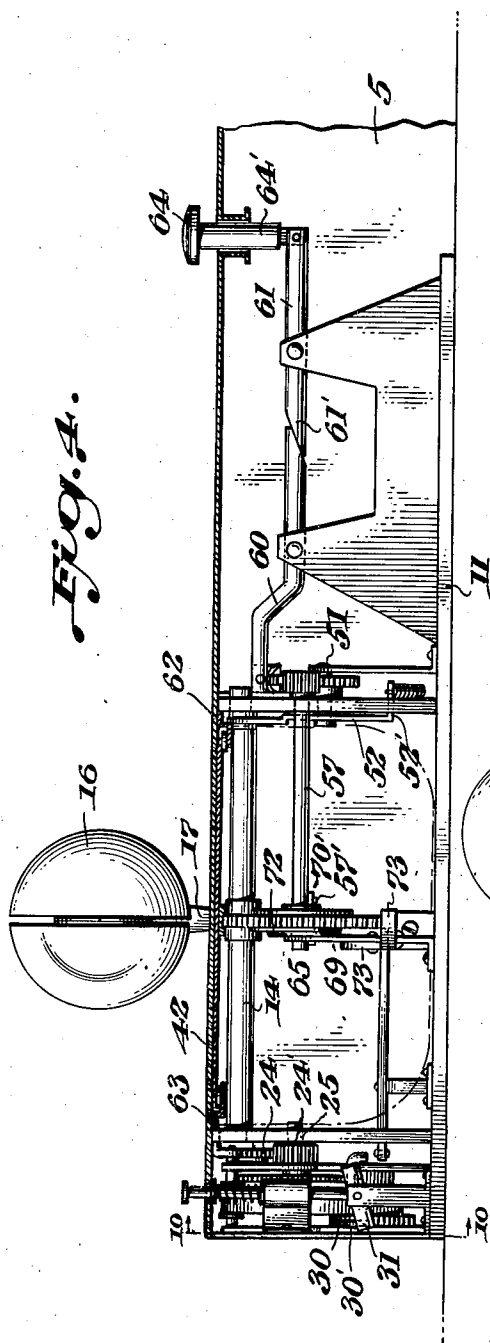
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5 Sheets-Sheet 3



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5 Sheets-Sheet 4

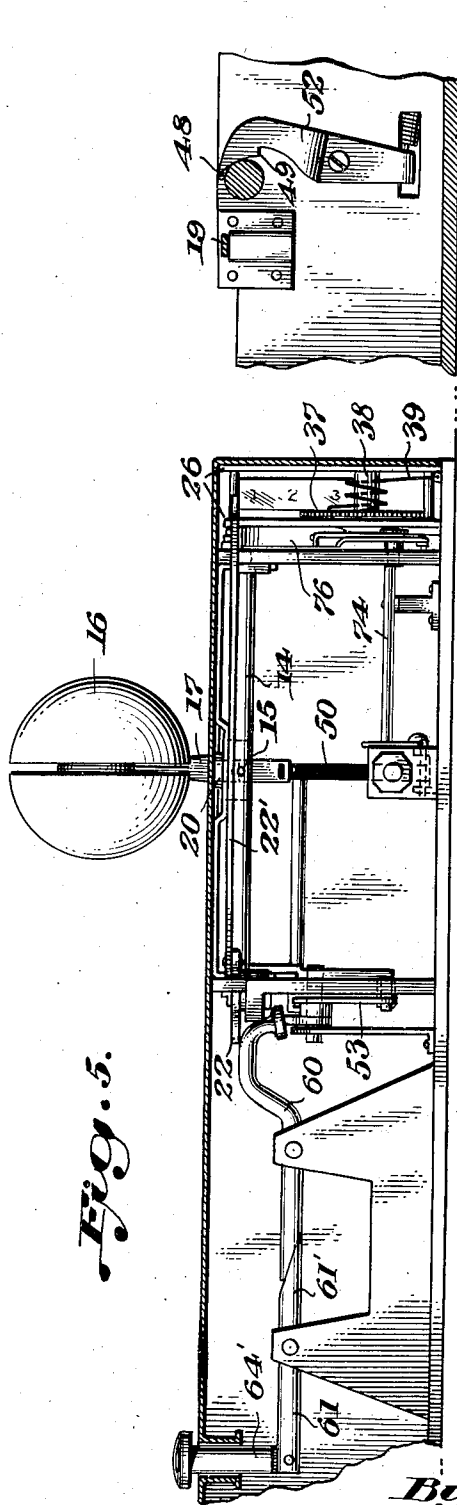


Fig. 5.

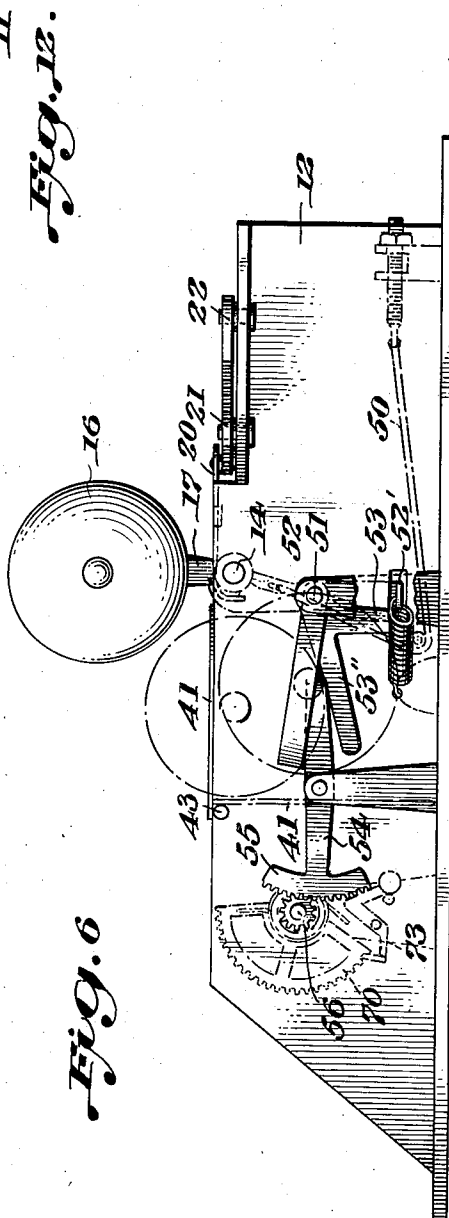


Fig. 12.

Fig. 6.

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GOLF PRACTICING APPARATUS

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Fig. 8.

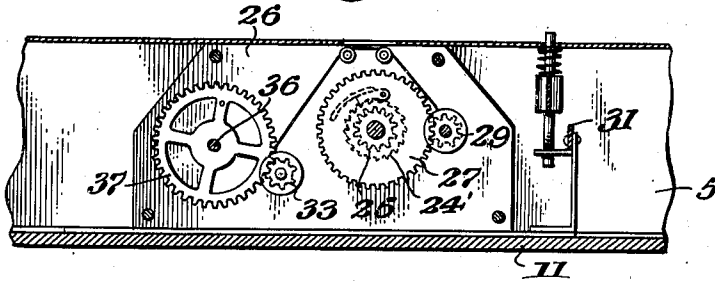


Fig. 9.

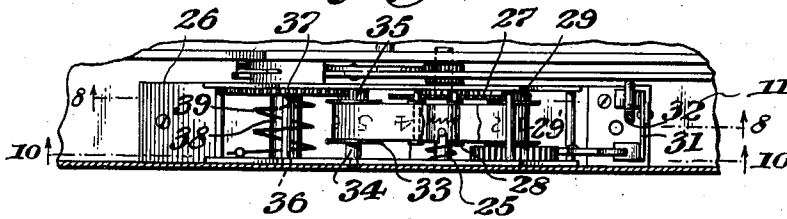


Fig. 10.

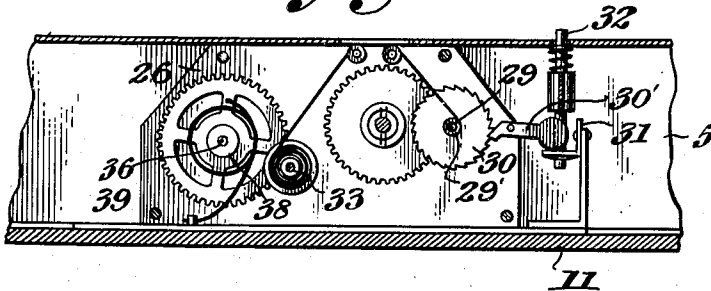


Fig. 13.

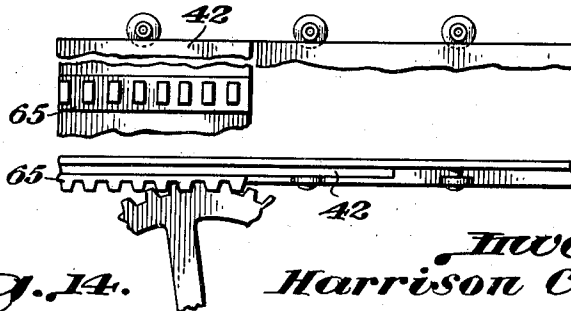


Fig. 14.

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UNITED STATES PATENT OFFICE

2,259,918

GOLF PRACTICING APPARATUS

Harrison C. Young, Hoxsie, R. I.

Application February 19, 1941, Serial No. 379,700

20 Claims. (Cl. 273—35)

This invention relates to an apparatus, a device, or machine for practicing golf or to a golf game and particularly to a mechanism to enable persons interested in improving their game to practice driving and to become proficient therein.

Among the objects of the invention is to produce a device that will clearly indicate the force of impact and effect on the ball when struck by the golf club in the hands of the player.

Another object of the invention is to provide a device that will show if the ball is driven true and straight towards its objective or to cause a departure from a good drive to one side or the other as a hook, or a slice, and to indicate in yardage or other units the distance from the tee toward the objective made by the flight of the driven ball, and to indicate, by degrees, if a hook or slice the amount of divergence, and to which side.

Another object of the invention is the production of a novel golf ball comprising two separate halves or hemispheres, and means for mounting the ball to be struck or driven by the golf club.

With these and incidental objects in view, the invention consists of certain novel features of construction, arrangement, formation of and combination of parts, and a preferred form of embodiment of which is more specifically described hereinafter with reference to the drawings which accompany and form part of the specification.

In the drawings:

Fig. 1 is a top plan view of the device set in a platform, or a hole in a floor for inside use, or in the ground when used out of doors.

Fig. 2 is a top plan view of the device.

Fig. 3 is a top plan view partly in section of the apparatus with the housing or cover portion removed.

Fig. 4 is a transverse cross section on line 4—4 of Fig. 3.

Fig. 5 is an end view partly in section on line 5—5 of Fig. 3 looking forwardly from the rear of the apparatus.

Fig. 6 is a longitudinal side view of the apparatus partly in section and with certain parts broken away on line 6—6 of Fig. 3 in the direction of the arrows.

Fig. 7 is a side view of the apparatus partly in section and with certain parts broken away on line 7—7 of Fig. 3 in the direction of the arrows.

Figs. 8, 9 and 10 are detail views of the distance-recorder mechanism.

Fig. 8 is a side sectional detail view of the recorder mechanism on line 8—8 of Fig. 9. In Fig. 8 is shown an old form of pawl and ratchet as a modification of the crown ratchet mechanism shown in Fig. 9.

Fig. 9 is a top sectional plan view with the

top plate removed, of the distance recorder mechanism.

Fig. 10 is a side sectional detail view of the distance-recorder mechanism on section line 10—10 of Fig. 9.

Fig. 11 is a fragmental detail view of mechanism for controlling the hook and slice recorder.

Fig. 12 is a detail view of the locking mechanism of shaft 14.

Fig. 13 is a fragmental view of the toothed structure on the bottom of the sliding door.

Fig. 14 is a fragmental side view of the toothed segment in engagement with the toothed structure on the bottom of the sliding door. See Figs. 7 and 13.

Figs. 15 and 16 are detail views of the two part golf ball and the mounting therefor.

Detail description, etc.

The device comprises a rectangular box-shaped structure, including a housing cover portion and a body or base portion. The body or base portion has a base plate 11 provided along each of its two longer sides with an upstanding wall or plate 12 and 13 respectively. The cover portion for said body or base portion has a top plate 5 and depending walls or plates for substantially enclosing the ends and sides of the body or base and supporting the top plate 5. The top plate 5 has a hole 40 there-through provided at its rear portion with converging extending side guide edges, in the path of the ball when driven large enough in area to permit the ball 16 and its carrying arm or lever 17 to pass downwardly through it until the ball is stopped by a cushioning abutment on the bottom of the device when the ball is moving directly forwardly and downwardly in a vertical plane or diverging to one side or the other of said plane as a result of a hook or a slice stroke. A main shaft 14 extends transversely across the base portion and is supported for oscillatory or rocking movement by its bearings in walls 12 and 13 below top plate 5 and above the base plate 11 and its abutment a distance sufficiently greater than the diameter of the ball and less than that from the shaft to the outermost surface of the golf ball carried by the lever 17 so that the abutment on base plate 11 may act as a stop for the ball and shaft when the ball is below the top plate 5 and thereby permit the player's club after contacting the ball to complete its swing unobstructed by said ball 16.

For purposes of description the end of the device toward which the ball moves when struck is called the front or forward end and the opposite end the rear end, and the side wall nearer to a right handed player is referred to as the left hand wall 12 and the other as the right hand wall 13.

The distance indicator and its operating mech-

anism are located and secured on the right hand side of the device or apparatus adjacent to wall 13. Near the middle of its length the main shaft 14 has a rectangular opening or slot extending through it transversely and for a distance lengthwise of it and a pivot pin 15 extending transversely through the slot with its ends secured in the side walls thereof.

A single one piece lever 17 with a golf ball 16 secured to one end of it extends transversely to the shaft and through the slot and is pivoted on pin 15. The lever is substantially the same thickness in the slot as the width of the slot shown in Fig. 11 while transversely it is narrow enough to permit substantial movement about pin 15 longitudinally of the slot. The ball secured to the end of one arm of lever 17 is, when the lever is vertical, normally and yieldingly held above the plane of top plate 5 in position to be struck by the golf club. When the ball is hit, it and its lever supporting arm move forwardly and downwardly about the axis of the shaft and the lever arm on the opposite side of the shaft moves upwardly and rearwardly.

The ball is normally, yieldingly held as above stated by the tension of an elastic or spring means attached at one end to the arm of the lever on the opposite side of shaft 14 from the ball carrying arm and which passes downwardly and forwardly about a guiding means located forwardly of shaft 14 and is secured at its other end to the base portion of the device whereby the downward tension on the lever arm will pull the arm laterally, if it has been displaced, and downwardly into a vertical plane passing transversely at a right-angle through main shaft 14 and through pivot pin 15 of lever 17 and cause the axis of the arm of lever 17 to extend in a substantially vertical direction through top plate 5 and support the ball above said top plate in a tee position similar to that of a golf ball on its tee on the golf links and to thus return the lever and ball to said position after the ball has been struck by the golf club. When the ball is struck by the club in the hands of the player the ball and its supporting lever arm and main shaft 14 are moved in an anti-clockwise direction about the axis of said shaft 14. A bar or support 19 to the rear of shaft 14 extends across the device below top plate 5 and is secured to side walls 12 and 13 for up and down adjustment thereon. A lever 20 extending lengthwise of the device is pivoted for horizontal movement near its middle to the bar or support 19 on a vertical pivot. The arm of the lever 20 extending forwardly beyond shaft 14 is curved downwardly about it and is provided with a parallel sided longitudinal slot in which the arm of lever 17 carrying the ball 16 moves forwardly when the ball is driven, and backwardly when it returns to its original or starting position.

The rear arm or tail of lever 20 extends rearwardly horizontally of the device and near its extreme end is provided with a pin to which a link is pivoted and which extends to an eccentric pin on a gear 21 mounted on wall 12 to move in a horizontal plane. The teeth on gear 21 engage teeth on a gear sector 22 mounted on wall 12 in the same horizontal plane as gear 21. A pointer 22' extends across the device and is rigidly secured to gear sector 22 at its pivot to move with the sector. The end of the pointer moves along an arc-shaped indicating plate 23 in one direction from zero to indicate the degree of divergence of the slice and in the opposite direction to that

of the hook. Pointer 22' for indicator plate 23 is visible through an opening in top plate 5.

The main shaft 14 extends through its bearing in wall 13 a short distance on which a gear sector plate 24 is fixedly mounted to turn with the shaft and in meshing engagement with a small gear 24' fixedly secured on a shaft 25.

A housing for the distance indicator comprising two parallel, spaced upwardly extending walls 26 secured to base 11 and wall 13 are located spacedly adjacent and extend parallel to wall 13.

Shaft 25 supported in bearings in walls 26 carries loosely mounted thereon a comparatively large gear 27 provided on one of its faces with a ratchet crown clutch member and a cooperating ratchet crown clutch member 28 keyed to and slidable yieldingly and resiliently lengthwise on the shaft to cause the ratchet teeth of the two members to engage.

The ratchet teeth are so shaped and directed as to move gear 27 positively a certain distance in one direction and permit it by its momentum and because of yieldingly held member 28 to continue to move an additional distance and to permit its direction of rotation to be reversed relatively to member 28 by the teeth on its clutch member on gear 27 riding over those on member 28.

The gear 27 engages a small gear on shaft 29 provided with a winding drum 29' to which one end of a distance graduated measuring tape is secured and which causes it to pass over idler rollers and beneath an observation opening in top plate 5 having an indicator point or mark to show in yardage graduations the estimated distance of travel of the ball made by the drive or stroke.

Through the freely mounted gear 27 and the ratchet construction above described the harder the ball is struck the more the tape is wound on its winding drum 29' on shaft 29 and the greater the distance of flight indicated. The winding shaft 29 has secured to it the ratchet wheel 30 and a weighted cooperating pawl 30' pivoted on wall 26 and located to engage the ratchet wheel to prevent the reversing of the winding shaft and hence hold the indicator tape to permit observation of the distance indication.

A detent lever 31 to raise the pawl 30' is pivoted between its ends to a fixed portion of the stand, one arm of the detent lever normally rests below the pawl 30' when it is engaged with ratchet wheel 30 and the opposite arm of the detent extends to a position beneath and in the path of a vertically slidable push rod 32 normally spring held in its upper or retracted position with its end passing through the cover plate 5 a short distance so that when depressed it will operate detent 31 to move pawl 30' to disengage it from ratchet wheel 30.

The indicator comprises a tape provided with a graduated scale to indicate the estimated distance in yardage the golf ball would be driven if hit by the player on the golf links. At one end the tape is secured to and wound about its drum 29' on shaft 29 and passes upwardly and rearwardly over idler rollers beneath an observation opening in the top plate 5 of the device to a rewinding drum 33 secured on shaft 34 carrying a pinion 35 also secured to said shaft having its ends journaled in the side plates or walls 26 of the housing. To the rear of shaft 35 is located a parallel shaft 36 also journaled in the side walls 26. Shaft 36 carries resiliently and loosely mounted thereon a comparatively large gear 37

in mesh with pinion 35 and a spring held drum 38 fixed for movement with said gear 37.

A rewinding spring 39 is fixedly attached to the base of the device at one end; at the other end to drum 38 so that when the tape is unwound or pulled from drum 33 by the drum 29' on shaft 29 to indicate the distance the spring 39 will be put under tension by being coiled about drum 38. When the winding pull on the tape is released the spring 39 will on account of its tension uncoil and reverse the movement of drum 38 and through the action of gear 37 and pinion 35 rewind the tape on its drum 33 to its original position.

When the golf ball is at rest, ready to be hit by a golf club it is held vertically above main shaft 14 and above the cover top plate 5 on its arm or lever 17 and its position is similar to that of a golf ball resting on its tee on the golf links. The device is also provided with two cover door plates, 41 a swinging or pivoted door plate and 42 a sliding door plate to close the hole 40 in the top plate 5. Door 41 is rigidly secured along its side to a transversely oscillating shaft 43 at the front edge of opening 40 or the edge facing rearwardly toward shaft 14 to move to an open or closed position as said shaft 43 turns in its bearings in side walls 12 and 13 of the base plate 11. One end of the shaft 43 extends beyond its bearing in wall 13 and is offset forming a crank or excentric 44. Main shaft 14 has on its end beyond wall 13 a gear sector plate 24 with an excentric wrist pin 47, and a link 45 connects this wrist pin with the crank 44 to move the cover section plate 41 to close opening 40 and to turn it down into the device to uncover said hole. The wrist pin 47 is so arranged that when the ball is hit by the golf club the plate section 41 will turn downwardly out of its path and when the ball is moved back to its original position it will turn upwardly into its closing position.

A vertically disposed, somewhat elongated rocking and locking plate 52 is fixedly secured intermediate its ends to the end of, and with its plane transverse to a short shaft 51 parallel to shaft 14 below and slightly in advance thereof which is journaled in side wall 12 and in a support mounted on the base portion and located parallel to and outwardly spaced from said side wall. Main shaft 14 is provided with a longitudinally extending rib 48 inside wall 12 near its end.

Plate 52, at its upper end, has a cam edge resting normally against said rib 48. Below the cam the edge of plate 52 is cut away to form a track for the rib, as shaft 14 turns when the ball is driven. At the lower end of said track the arm is further cut away sharply horizontally and then downwardly to form a recess with a shoulder or stop 49 on its edge to engage rib 48 to lock shaft 14 from reverse rotation under the retractive influence of a resilient means 50 one end of which is secured to base plate 11 and the other end to shaft 14 through intervening mechanism as previously explained to reverse rotation of shaft 14.

The lower end of plate 52 is bent outwardly at a right angle to its plane to form an arm 52' which extends through an elongated slot in wall 12 and a tensioned resilient means is attached to the arm and extends forwardly and is secured to the base portion to press the upper end of plate 52 against shaft 14 in the path of rib 48.

To move plate 52 from its locking position a bellcrank lever 53 loosely mounted at its angle on the shaft carrying the locking plate 52 but on the outside of the wall 12, has one of its arms extending downwardly into the path of and in con-

tact with the forward edge of the outwardly extending arm 52' of plate 52 and the other bell crank arm 53 extends forwardly substantially horizontally alongside wall 12 so that when it is depressed the downwardly extending bell crank arm moves arm 52' rearwardly and withdraws the upper part of plate 52 from and out of locking engagement with the rib 48 on shaft 14, thereby permitting its reverse rotation by its retractive resilient means 50.

A lever 54 rigidly provided at its forward end with a gear sector 55 to engage a pinion 56 on shaft 57 is loosely mounted between its ends on stub shaft 58. The rear arm of said lever 54 extending parallel and adjacent to arm 53' is provided with a transversely overhanging projection above and normally resting on the forward end of arm 53' of the bell crank lever 53 so that when the rear end of lever 54 is depressed the forward end of arm 53' is forced down and when the lever arm 53' is raised the rear arm of lever 54 is also raised. A lever arm 59 is mounted on the shaft which carries arm 53' and is parallel thereto and has its free end laterally bent to project over the rear end of lever 54 so that when the free end of arm 59 is depressed the locking plate 52 is retracted permitting main shaft 14 to reversely rotate to its normal position, thereby placing the ball in position to be driven by the player's club.

The lever 59 is depressed by the enlarged front end of a lever 60 pivoted between its ends on a support laterally extending from the device, when the other end of lever 60 is raised, which is done by elevating the front end 61' of a lever 61 also pivoted on said lateral support acting on the rear or tail end of lever 60. The lever 61 is actuated in one direction by a push rod 64' and starting pedal 64 secured thereto, and in the other direction by lever 59 actuating lever 60.

Slideable door 42 for closing the opening 40 slides on spaced parallel side guide ways 62 and 63 carried by and disposed beneath top plate 5 but above the pivoted door 41 and extending longitudinally thereof.

Anti-friction rolls are arranged along the guideways for engaging the side edges of plate 42 to insure its easy and accurate reciprocation. On its bottom surface plate 42 is provided with a toothed bar or rack means 65 extending along its middle portion from front to rear. A transverse shaft 57 at the front of the device is mounted to turn in horizontal bearings. One of the bearings is mounted on a support 69 secured to and projecting upward from base plate 11 about midway between the side walls 12 and 13. A gear sector 70 cooperating with rack 65 on sliding cover plate 42 is loosely mounted for oscillation on shaft 57. Sector 70 is motivated by a pin 57' on shaft 57 engaging a pin 70' carried by sector 70. Support 69 is provided at one side with a stop upstanding from base plate 11 to limit the oscillations of sector 70. A pinion 56 is fixedly secured to the opposite end of shaft 57 adjacent to its bearing near the front end of side wall 12 and engages the gear sector 55 on the forward end of lever 54 so that when the gear sector 55 is raised the pinion 56 and shaft 57 will be rotated anti-clockwise (see Fig. 6) and the gear sector 70 driven through its clutch connection will also be so rotated and as the gear sector 70 engages rack 65 on plate 42 it will be drawn forwardly from closing the opening 40 and held stationary by a pawl 73 carried on the support 69 engaging the teeth on gear sector 70, and upon release of

said pawl the gear sector 70, acted upon by a resilient or elastic means 72 connecting it to a fixed portion of the device, will be drawn back to its original position and retract door cover plate 42 covering opening 40.

The pawl 73 located on support 69 comprises a pivoted bell crank lever with an offset engaging tooth on the arm at one side of the pivot and a weighted arm on the other side. A rod 74 mounted loosely near its middle on a vertical pivot pin secured on base plate 11 extends on one side under the weighted arm of the pawl 73 on support 69 to hold it up and depress the pawl tooth out of engagement with sector 70 and when moved to its forward position to release said weighted arm and permit it to drop and swing or raise the arm carrying the tooth on the pawl 73 to engage sector 70 to lock it against backward movement.

The arm or rod 74 extends transversely through wall 13 and is loosely connected to the forward end of a link 75 which extends rearwardly and is connected to the lower end of a lever 76.

The lever 76 is resiliently pivoted between its ends, in an upright position, on a stub shaft extending outwardly from wall 13, with its upper end normally in the path of the edge of gear sector plate 24. When the link 75 is moved it actuates the rod 74. The upper end of lever 76 is actuated rearwardly by the gear sector 24 and in the opposite direction by a spring when the lever is tripped by movement of the gear sector plate 24 to move and release the weighted pawl 73 as above described.

Near the free end of the ball carrying arm 17 it is provided with an enlarged hollow hub 78 (Fig. 16) or cylindrical portion extending from both sides to accommodate a roller bearing structure, a small shaft 79 extends through the roller bearing and laterally projects on each side thereof upon which the ball is mounted for rotation.

The ball 16 comprises two separate and independent halves 79' secured on sleeves 80 with their flat surfaces 81 adjacent and facing each other and provided with a recess 82 to accommodate ball bearing structure to cooperate with the roller bearing of arm 17. The anti-friction mounting of the ball as above described and illustrated in the drawing permits the ball to spin easily as a whole and each half to spin independently when hit by a golf club and thereby prevents mutilating the ball by chipping it or tearing it to pieces.

In using the device after a drive has been made and the distance and angular indications have been observed, push pin 32 should be depressed to permit the distance tape to be rewound; after this has been done, pedal 64 should be depressed to return the mechanism to its original position to be ready for another drive.

I have described a preferred embodiment of my invention but I wish it to be understood that such alterations and modifications including the use of different materials and the relation and form of parts and details of construction and arrangement of parts are herein reserved as fall within the scope of the appended claims without departing from the spirit of the invention claimed.

What I claim is:

1. In a golf practicing apparatus, a stationary base, a horizontal shaft journaled in immovable bearings in said base, a ball, an upstanding lever carrying said ball, means for securing it to said shaft for arcuate movement in a plane transverse thereto in response to a correct and direct drive

and also to swing bodily longitudinally of the shaft to an inclined path in response to a hook or slice drive, upon rotation of said shaft.

2. In a golf practicing device, a ball, a normally upstanding single-piece lever, means for securing the ball to one end of the lever, a horizontally disposed stationary body, bearings immovably fixed relatively thereto, a main rockshaft journaled in said bearings, means for securing said ball carrying lever to the rockshaft whereby the ball when correctly struck travels in a transverse plane perpendicular to the rockshaft, or if struck incorrectly to travel laterally either to the right or left of the perpendicular plane.

3. In a golf practicing apparatus a rectangular base, a transverse rockshaft carried by the base, a lever, means for mounting said lever between its ends transversely on said shaft to positively turn with the shaft and also to permit said lever to swing bodily to either side longitudinally of said shaft, a ball carried by one end of said lever and resilient means connecting said lever to the base to reposition the ball normally in its initial uppermost position.

4. In a golf practicing apparatus, a base, a rockshaft journaled to turn in said base, a ball, a lever having an arm to support the ball and hold it above the top of the device in position to be hit by the club, said lever extending radially from said shaft, means for mounting said lever on the shaft to turn positively with the shaft in a plane transverse thereto when the ball is fairly hit straight ahead by the club and also to permit it to swing sidewise longitudinally of the shaft when the ball is hit by a slice or hook stroke, a shock absorbing abutment secured to the device in the path of the struck ball to limit its forward movement and the turning movement of the ball carrying lever and shaft.

5. In an apparatus of the class described, in combination a rockshaft, a lever carried thereby, a spindle and anti-friction means therefor mounted on said lever near its outer end and extending parallel to said shaft, a golf ball, comprising two semi-spherical independent portions each anti-frictionally mounted on the spindle and having their plane faces adjacent to each other in a plane transverse to the axis of the spindle whereby the ball as a whole is free to revolve and the halves of the ball are free to rotate independently of each other.

6. In an apparatus of the class described, in combination a rockshaft, a lever carried thereby, a roller bearing located transversely in said ball lever, a spindle extending through said roller bearing and parallel to the shaft, a golf ball mounted on said spindle carried by the roller bearing comprising two semi-spherical portions carried loosely on said spindle, having their plane faces adjacent to each other in a plane transverse to the axis of the spindle and anti-friction means carried by each half of the ball whereby the ball as a whole is free to revolve and the halves of the ball are free to rotate independently of each other on said spindle.

7. In a golf practicing apparatus, a stationary body, rockable support carried by the body, a ball, a ball carrying lever, means securing said lever to the support to extend transversely therefrom to swing in a transverse plane to the support when the ball receives a straight and true drive, distance indicating mechanism, including a forwardly and backwardly traveling distance indicating tape, a toothed segment member actuated by the rockable support and means driven

by the segment to positively advance the tape during the movement of the driven ball and including means to allow the inertia of the moving parts to further advance the tape after movement of the ball is stopped, means for locking the distance indicating mechanism upon stopping of the friction drive, and means for releasing the lock, and independent resilient means for withdrawing the tape to original position upon release of said lock.

8. In a golf device, a stationary body provided with bearings immovable with respect thereto, a rockshaft journaled in said bearings, immovable except about its longitudinal axis, a ball, a ball carrying lever, means for securing said lever to the rockshaft to extend transversely thereto to swing in a transverse plane thereto when the ball receives a straight and true drive and to swing bodily toward one side or the other of said plane in response to a hook or slice drive, a hook and slice angle indicating mechanism and means operated by the sidewise movement of the ball carrying lever bodily out of its normal transverse plane of movement to operate said hook or slice indicating mechanism to indicate the angle at which the ball is driven.

9. In a golf device, a body having side supports, a rockable shaft in said body, a ball, a ball carrying unitary lever secured intermediate its length to said shaft to rotate with said shaft in a transverse plane to said shaft and to swing bodily lengthwise of the shaft to one side or the other of the transverse plane upon a hook or slice drive of the ball, a bar secured to the body side supports at the rear of the shaft, a lever pivoted on said bar with its forward end engaging the ball carrying lever and a link pivotally secured to its rear end and engaging a means pivoted to a side support on the body, an arcuate angle graduated indicator plate, a pivotally supported pointer adapted to move along said plate to indicate the angle of the hook or slice drive, and means for controlling said pointer engaging the link actuated pivoted means on the side support.

10. A stationary body or base, bearings immovably fixed with relation thereto, a main rockshaft journaled in said bearings, a ball, a normally upstanding ball carrying lever secured to the shaft to turn it when the ball is hit, resilient means tending to hold the ball and lever in its normally upright position, stop means to positively limit the distance the driver ball travels to the same predetermined amount irrespective of the force of the blow locking means for holding the rockshaft against reverse movement, cooperating indicating means, one provided with distance graduations located forward of the shaft, and the other arc shaped and having angle graduations, and located to the rear of the shaft, the distance indicator comprising a resiliently held tape, means comprising gear mechanism connecting the shaft and indicator to advance the tape and resilient means to retract the tape, sliding and pivoted doors, means for moving them into and out of the path of the ball, means for controlling said doors from the rockshaft, and player operated means to release the locking means for the rockshaft and retract the slide door and co-operating resilient means to return the rockshaft and lever and ball secured thereto to their original positions to be ready for a new drive by a player.

11. In a golf practicing apparatus, a rectangular horizontal base portion having a base plate and upstanding side walls, a housing cover por-

tion having end and side walls and a top plate provided with a large hole therein covering said base portion, a transverse rockshaft mounted in said side walls below the top plate and under the rear portion of said hole, a transverse shaft mounted to rotate in said side walls, under the forward portion of said hole, a pivoted door secured to said shaft to close said hole when in its upper position and to open the same when swung downwardly and forwardly away from said hole, and eccentric and link means connecting the rock shaft and the door shaft to actuate the door.

12. In a golf practice device, a base plate, bearing supports at opposite side edges of the base plate, a cover top plate above said base plate having a hole therein, a rockshaft mounted in said bearing supports below and at the rear portion of said opening, a golf ball, a carrying lever therefor to move through said opening secured to said rockshaft and normally upstanding therefrom to turn the same when the ball is hit and driven forwardly and downwardly through the opening, a door to normally close said opening pivoted at the forward part of said opening, means connecting the rockshaft and the pivoted door to actuate the same to open or closed position.

13. In a golf practice device, a base portion, a cover portion therefor having a top plate with a large hole therethrough, a rockshaft mounted in the base portion and a lever, a ball secured to one end of the lever, means for securing the lever to the rockshaft to normally extend upwardly through the opening and to travel forwardly and downwardly through the opening when the ball is hit a door in the path of the ball pivoted adjacent the hole, means controlled by the rockshaft to open it in advance of the ball as it is struck, a shock-absorbing stop means located in the path of the ball to limit the travel of the ball to the same distance regardless of the degree of force with which the ball is struck, and locking means for holding the ball in its lowermost position means to release the locking means and reverse the rockshaft, lever and ball and means controlled by the shaft to close the pivoted door as the ball moves upwardly through the hole to tee position.

14. In a golf practice device, a base portion, a cover portion therefor having a top plate with a large hole therethrough provided at its rear portion with converging extending side edges to guide the ball carrying lever into upright position above the rockshaft, a rockshaft mounted in the base portion and a lever, a ball secured to one end of the lever, means for securing the lever to the rockshaft to normally extend upwardly through the opening and to travel forwardly and downwardly through the opening when the ball is hit a slide door to close and open said hole, a shock-absorbing stop means located in the path of the ball to limit the travel of the ball to the same distance regardless of the degree of force with which the ball is struck and locking means for holding the ball in fixed stopped position means operating the slide door to close the hole over the ball, and means controlled by the player to withdraw the slide door to open the hole to release the locking means and resilient means associated with the rockshaft to reverse it and return the ball to its tee position.

15. In a golf practice device, a base portion, a cover portion therefor having a top plate with a large hole therethrough, a rockshaft mounted in

the base portion and a lever, a ball secured to one end of the lever, means for securing the lever to the rockshaft to normally extend upwardly through the opening and to travel forwardly and downwardly through the opening when the ball is hit, a shock-absorbing stop means located in the path of the ball to limit the travel of the ball to the same distance regardless of the degree of force with which the ball is struck, a longitudinal rib on said rockshaft, a spring actuated locking member to engage said rib to lock the shaft and hold the ball in fixed stopped position at the end of the stroke.

16. In a golf practice device, a base portion, a cover portion therefor having a top plate with a hole therethrough, slideways secured in spaced relation to the bottom of said top plate, a door adapted to slide below the top plate in said slideways to close and open said hole, a rockshaft mounted in said base portion and below the hole in the top plate, provided with a ball carrying lever secured to the rockshaft with the ball in normal position above the top plate; a shaft journaled in the base portion forward of the hole in the top plate and provided with means on and driven by the shaft engaging the slide door and means connecting the rockshaft and forward shaft to reciprocate the slide door to close and open the hole in the top plate.

17. In a golf practice device, a base portion, a cover portion therefor having a top plate with a hole therethrough, opposing slideways secured in spaced relation to the bottom of said top plate, a door provided with rack teeth and adapted to slide below the top plate in said slideways to close and open said hole, a rockshaft mounted in said base portion and below the hole in the top plate and provided with a ball carrying lever secured thereto with the ball in normal starting position above the top plate, a shaft journaled in the base portion forward of the hole in the top plate and provided with a gear segment on and driven by the shaft engaging the rack teeth on the slide door, a locking pawl engaging the gear segment, and rockshaft actuated means for releasing said pawl and means connecting the rockshaft and the forward shaft to withdraw the slide door and spring means to close the slide door upon release of the locking pawl.

18. In a golf practicing apparatus a base portion comprising a base plate, a cover portion having a top plate with a hole therethrough to permit passage of a golf ball, a golf ball carrying rockshaft journaled in the base portion, a door pivoted to the base portion at the forward part of the hole, means connecting the door and rockshaft to positively open and close said hole upon oscillation of the rockshaft, a sliding door mounted on the top plate beneath said top plate and above said pivoted door, means connecting the sliding door and rockshaft to open and close said hole in timed relation to the movements of the ball and said pivoted door.

19. In a golf practice device a rectangular box structure comprising a lower base portion having a base plate and walls upstanding from its sides a rockshaft journaled in said walls, a golf ball, a lever carrying said ball and secured to said rockshaft, distance and angle indicators carried by said lower base portion, an upper cover portion having depending end and side walls to enclose the lower base portion, and a top plate provided with observation apertures disposed over the distance and angle indicators located below the same, means controlled by the rockshaft to op-

erate the indicators, said top plate is also provided with a hole forming a passage for the golf ball, resilient means tending to hold the rockshaft in position with the ball above the rear portion of the hole in position to be driven, a door to open and close the hole pivoted in the side walls of the base portion below and near the forward edge of the hole, means operated by the rockshaft to swing the door to open and close said hole in the top plate, slideways carried by the top plate adjacent the front of the hole, a slide door mounted to slide therein to open and close the hole, means locking the slide door open when the ball is in its tee position and out of the path of, and during the movement of the driven ball through the hole, means controlled by the rockshaft when the ball is hit for releasing the locking means, and resilient means to close the door immediately after the ball has passed downwardly entirely through the hole and means to lock the rockshaft when the ball has reached its lowermost position, thereby permitting reading of the indicators through the observation apertures.

20. A stationary horizontally disposed body comprising a base portion and a cover portion therefor having a top plate provided with a hole therethrough for the passage of the ball and also with an aperture for observing a distance indicator, a main rockshaft mounted horizontally transversely of the body adjacent the hole, a ball, a lever carrying said ball and secured to the rockshaft to turn said shaft, resilient means holding the lever upwardly extending with the ball in tee position above the top plate so that when the ball is hit it moves forwardly and downwardly through the hole in the top plate, a stop abutment in the path of the ball to limit the turning of the shaft and travel of the ball, means for locking the ball in said position, a segment gear mounted to turn with the shaft, a distance indicating means, a train of mechanism including a one-way clutch, driven by said segment gear to move said indicator forwardly positively until the driven ball is stopped and allow additional forward movement of the indicator by the momentum of the driven mechanism upon stoppage of the ball, a rib on said main rockshaft extending longitudinally thereof, a plate resiliently held against said shaft and provided with a locking slot located to receive the rib when the ball is stopped in its lowest position to hold the shaft fixed against reverse movement, a slide door to open and close the hole, means for locking the slide door open out of the path of and during the movement of the driven ball downwardly through the hole, means controlled by the rockshaft to release the locking means holding the door retracted and permit observation of the indicator, and resilient means to actuate the door to close the hole over the ball in its lowermost position, a pivoted door to open and close the hole, eccentric and link mechanism operated by the main rockshaft to positively move the pivoted door from closing position downwardly out of the path of and during the movement of the driven ball, and hold it open while the ball is in its lowest position, and player controlled means to retract the slide door to open position, and retract the resilient locking plate to release the rib on the rockshaft, and resilient means to return the rockshaft, ball and pivoted door to their respective positions ready for another drive by the player.

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