F. L. MORSE.

GOLF PRACTISING MACHINE.

APPLICATION FILED AUG. 29, 1913.

1,229,309.

Patented June 12, 1917.

3 SHEETS—SHEET 1.

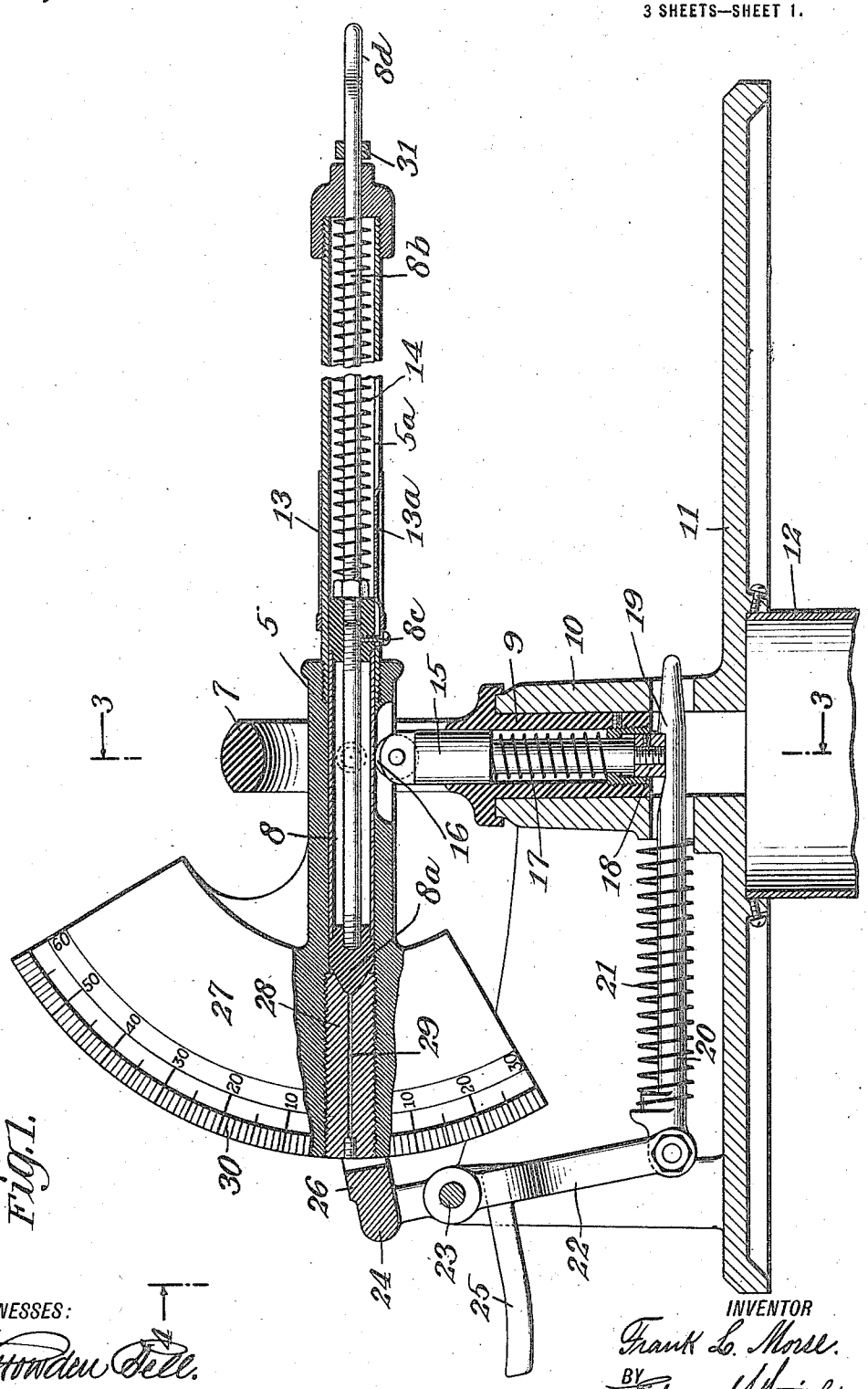


Fig. 1.

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INVENTOR

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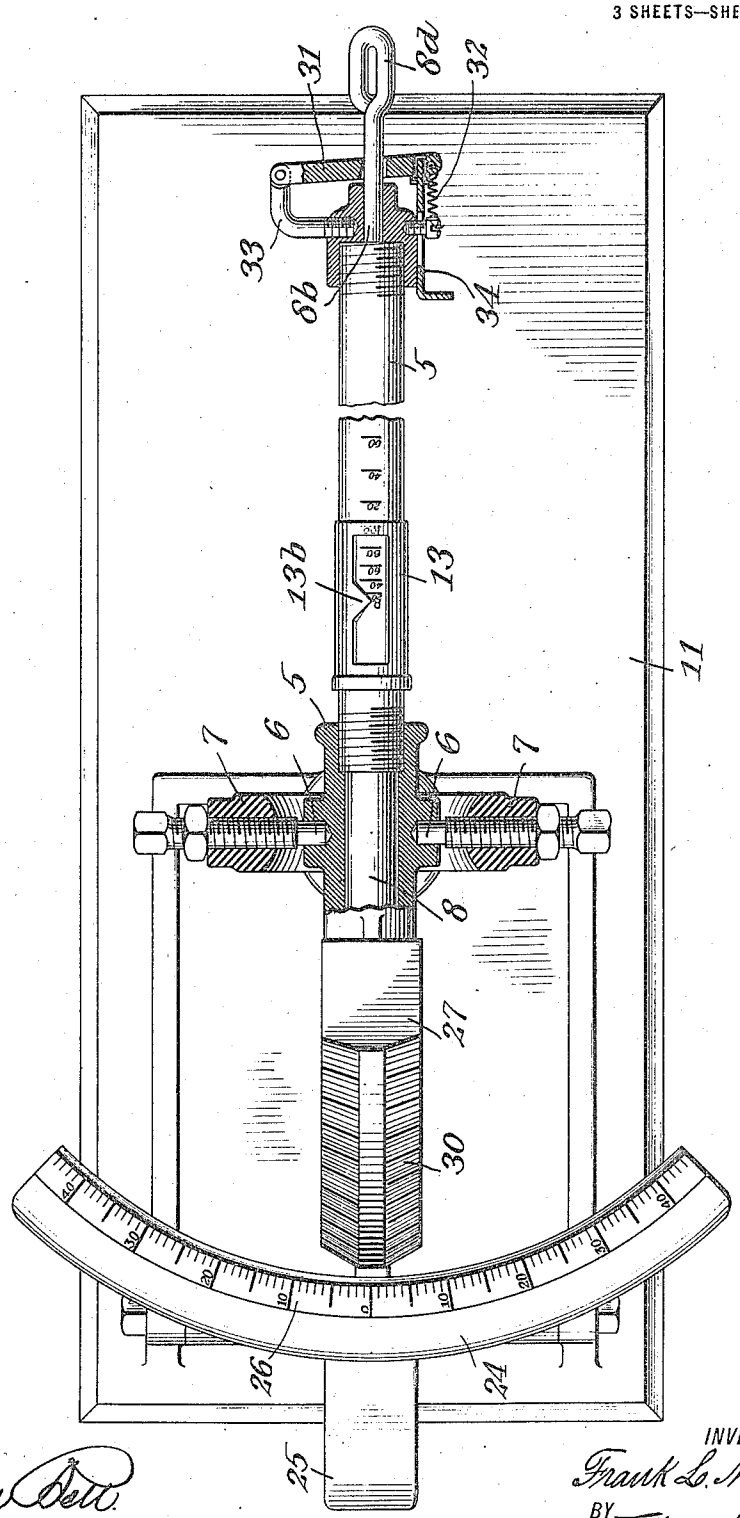


Fig. 2.

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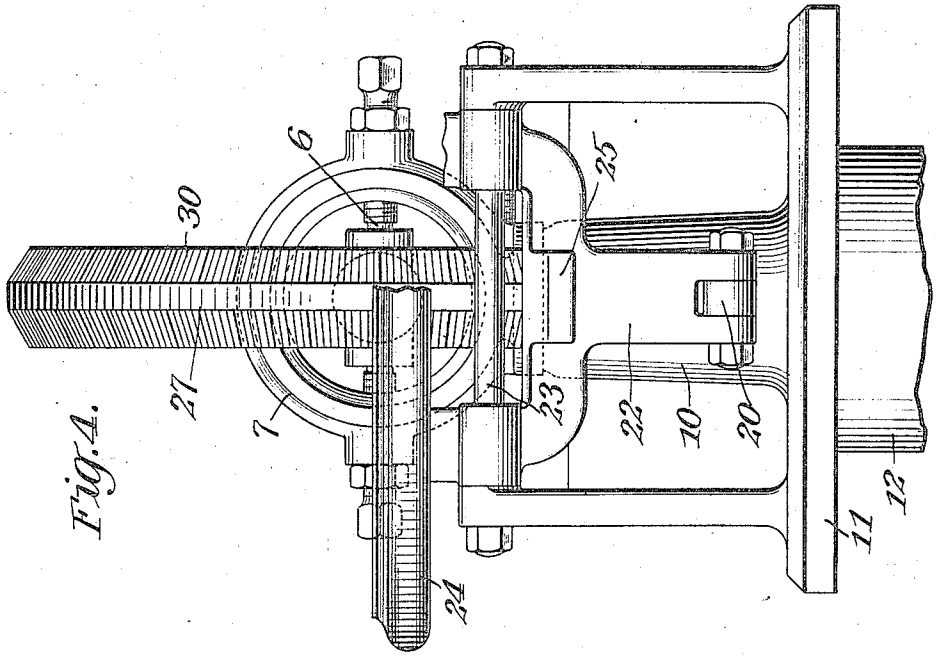


Fig. 4.

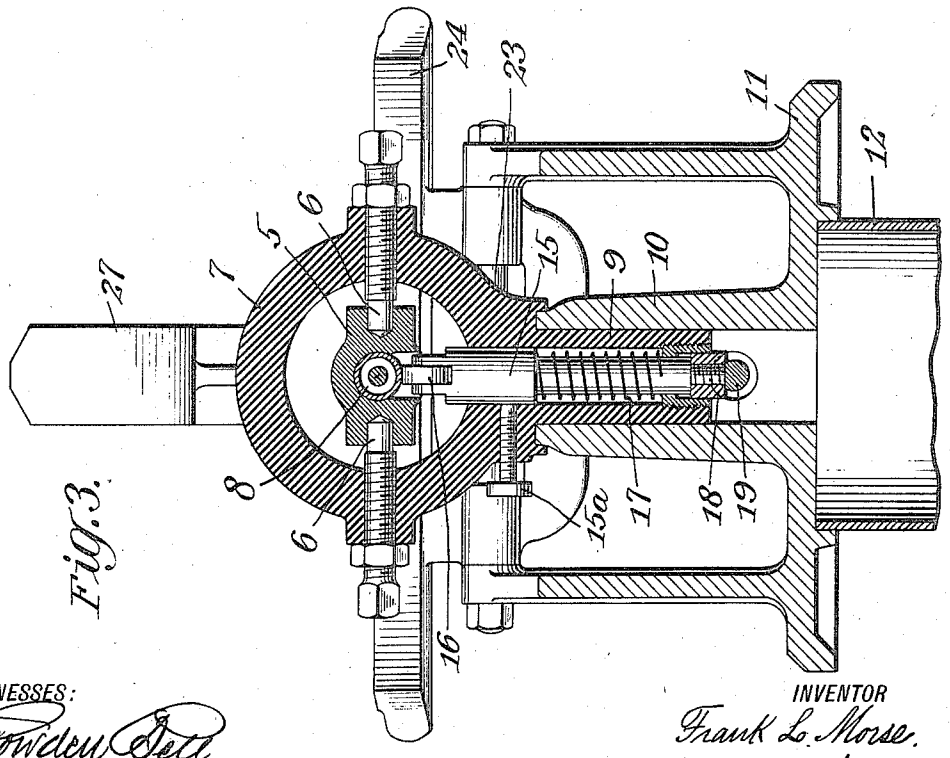


Fig. 3.

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FRANK L. MORSE, OF ITHACA, NEW YORK.

GOLF-PRACTISING MACHINE.

1,229,309. Specification of Letters Patent. Patented June 12, 1917.

Application filed August 29, 1913. Serial No. 787,268.

To all whom it may concern:

Be it known that I, FRANK L. MORSE, a citizen of the United States, residing at Ithaca, in the county of Tompkins and State of New York, have invented a certain new and useful Improvement in Golf-Practising Machines, of which improvement the following is a specification.

This invention relates to apparatus for practising the driving shots in the game of golf, and has for its object to provide an improved machine which will accurately register the distance, the angle of elevation, and the angle of deflection, or any one of these factors, of a driving stroke made in the usual way with a golf club.

By means of my improvement, a player may practice all of the driving or mid-field shots of the game of golf at his home, or any convenient place where the machine may be used, and by observing the results of his strokes as to distance, elevation, and deflection, he is enabled to overcome defects of form, correct other errors, and greatly improve his ability in driving.

The improvement claimed is hereinafter fully set forth.

In the accompanying drawings: Figure 1 is a vertical longitudinal central section of a machine embodying my improvement; Fig. 2, a plan of the same with portions of the horizontal trunnions, and the clamp device indicated in horizontal section; Fig. 3, a transverse section taken on the line 3—3 of Fig. 1; and, Fig. 4, a rear end elevation with a portion of the brake ring broken away.

According to the construction shown in the drawings, the improved apparatus comprises a longitudinal guide member or barrel, 5, which may be preferably in the form of a tube, and having slidably mounted thereon or therein a movable head or plunger, 8, formed in any suitable manner, and having a rod portion, 8^b, extending out through the end of the tube, 5, and adapted to be attached to a golf ball, by any preferred means, such as a cord or wire of several feet in length fastened at one end to the loop, 8^d, of the plunger rod, and at the other end to the ball. The barrel, 5, is pivotally mounted to swing vertically on the trunnions, 6, carried by the yoke, 7, which is provided with a vertical shank, 9, rotatably mounted in the hollow pedestal, 10, of the base, 11, of the machine. A member, 12, may be secured to the bottom of the base for holding the same in the ground.

The resistance spring, 14, opposes the outward movement of the plunger, and this movement, which indicates the distance or length of flight of the ball, is registered by the indicator, 13, which is shown in the form of a sliding sleeve actuated by a projection or screw, 8^c, carried by the plunger and extending through a slot, 5^a, in the barrel or tube, 5. A portion of the sleeve is depressed into the slot, 13^a, in order to prevent the sleeve from rotating and for providing sufficient friction between the parts to hold the sleeve at any point to which it may be pushed by the plunger. The pointer, 13^b, indicates upon a scale marked upon the tube, 5, the distance which would be made by the ball as the result of the stroke.

For the purpose of holding the plunger in the position to which it moves in compressing the spring, 14, in order to avoid danger to the operator by the quick return of the ball through the reaction of the spring, a clamp is provided, such as the plate, 31, pivoted upon an arm, 33, at the outer end of tube, 5, and having an opening through which the plunger rod may slide freely through the same upon its outward movement, the plate turning slightly outward on its pivot, as permitted by spring, 32, but upon the return movement of the rod, the edge of the opening through the plate, 31, binds tightly against the rod and clamps the same, thus holding the plunger in its outer position. The clamp may be released by pushing out the slide, 34, and plate, 31, whereupon the spring, 14, returns the plunger to its normal inner position.

In order to cushion the plunger upon its return stroke, the inner end of the tubular chamber is closed by a plug, 28, having a restricted outlet port, 29, regulated by an adjustable screw, and the plunger may have a suitable packing, whereby the air in the end of the cylinder is compressed by the return movement of the plunger, and forced out through the restricted port, thus serving as a dash pot for cushioning the action of the plunger. The inner end of the barrel carries a curved vertical flange, 27, which may act as a counterweight for balancing the

tube in a horizontal position upon its trunnions, and a scale, 30, laid off upon a vertical arc, is employed for measuring the angle of elevation.

A braking device in the form of a curved shoe, 24, is mounted upon a lever, 22, pivoted at, 23, upon its frame and attached at its lower end to a rod, 20, having a latch, 19, engaging a detent, 18, on the stem, 15, mounted to move vertically within the hollow bearing, 9, in the pedestal, 10. The stem, 15, has a roller, 16, at its upper end, and is normally forced up against the under side of the plunger, 8, by a spring, 17. In this position, the detent engages the latch and holds the braking shoe, 24, out from contact with the curved surface of the flange, 27.

When, however, the plunger, 8, moves outward far enough to clear the roller, 16, the spring, 17, releases the detent, 18, from the latch, and the spring, 21, acting on lever, 22, throws the curved shoe, 24, against the surface of the vertical flange carried at the end of the barrel. The inner end of the plunger is tapered at 8^a, for the purpose of engaging the roller, 10, upon the return stroke of the plunger and forcing the stem, 15, and detent, 18, downward. The braking shoe may then be released and the latch reset by pressing downward upon the arm, 25, which returns the lever, 22, and the latch, 19, to the normal position shown in Fig. 1.

When a driving stroke is made, the force and also the direction of the flight of the ball is transmitted to the plunger rod, with the result that the barrel or tube is turned in its universal bearings to indicate the angle of elevation, and the angle of lateral deflection which would be made by the path of the ball, and the plunger is drawn out against the resistance spring to a point corresponding with the force of the stroke and the distance which would be traversed by the ball. The clamp, 31, then holds the plunger in this position with the spring, 14, compressed and the pointer of the indicator sleeve, 13, registers the distance upon the scale on the tube. When the plunger, 8, starts upon its outward movement, and as soon as it has cleared the roller, 16, of the stem, 15, the spring, 17, raises the stem, and detent, 18, from the latch, 19, thereby permitting the spring, 21, to turn the lever, 22, and apply the curved braking shoe, 24, against the surface of the curved flange, 27, of the barrel. These two curved surfaces or arcs are preferably at right angles to each other, one being horizontal and the other vertical, and have the same center which coincides with the center of the universal joint on which the barrel is mounted. The friction between the shoe and the flange at the end of the barrel is then sufficient to hold the tube in the position, as to elevation and angle of deflection, to which it is turned by the ball in starting its flight as the result of the stroke. The elevation is then registered on the scale, 30, while the deflection is indicated on the scale, 26.

In order to reset the machine for the next stroke, the player merely pushes out the slide, 34, with his club, thus releasing the clamp and returning the plunger to its inner position, the plunger being cushioned at the inner end of its return stroke, and pushing down the detent, 18, as before described. The braking shoe may then be released and the latch reset by pressing upon the lever arm, 25, and the barrel again turned to its central horizontal position, the sleeve, 13, at the same time being pushed back along the tube to engage the plunger screw, 8^c. If it is desired to prevent the braking device from being applied, the clamping screw, 15^a, may be turned, thus holding the stem, 15, and preventing the release of the detent from the latch.

It will now be seen that by means of my improvement a player may continue to practice making driving strokes at any convenient time and as often as desired, and by comparing the results of the successive strokes, as registered on the machine, he may greatly improve his ability and skill in the driving strokes of the game.

The machine also serves as an excellent exercising apparatus, and contests may be held between two or more players, if desired.

While I have shown and described a preferred form of device, it will be evident that my invention is not limited to such specific construction, but covers broadly any movably mounted member adapted to be attached to the golf ball, and provided with a resistance means and an indicator for registering the distance.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a golf practising machine, the combination of a pivotally mounted barrel, a movable member mounted on said barrel and adapted to be attached to the golf ball, and means for indicating the angle to which the barrel is turned during the flight of the ball.

2. In a golf practising machine, the combination of a barrel or support mounted in universal bearings, a movable member mounted on said support and adapted to be attached to the golf ball, and means for indicating the angles of deflection and elevation of said barrel.

3. In a golf practising machine, the combination of a longitudinal tubular guide, a plunger mounted to slide therein, and adapted to be attached to the golf ball, a resistance spring for said plunger, an indicator slidably mounted on said guide but detached from

the plunger, and a clamp at the outer end of said guide for locking the plunger in its projected position.

4. In a golf practising machine, the combination of a longitudinal guide, a plunger mounted to slide on said guide, and adapted to be attached to the golf ball, a resistance spring for said plunger, and a dash pot for cushioning the return of the plunger.

5. In a golf practising machine, the combination of a longitudinal guide, a plunger slidably connected with said guide, and adapted to be attached to the golf ball, a resistance spring for said plunger, a clamp for locking the plunger in its outer position, and a dash pot at the inner end of the barrel for cushioning the return of the plunger when the clamp is released.

6. In a golf practising machine, the combination of a longitudinal guide pivotally mounted to swing vertically, a plunger slidably connected therewith and adapted to be attached to the golf ball, and means for indicating the angle of elevation of the guide.

7. In a golf practising machine, the combination of a tube pivotally mounted to swing vertically, a plunger in said tube adapted to be attached to the golf ball, a resistance spring for the plunger, and a scale for measuring the angle of elevation of the tube.

8. In a golf practising machine, the combination of a longitudinal guide mounted to swing horizontally, a plunger slidably connected therewith and adapted to be attached to the golf ball, and means for indicating the angle of deflection of the guide.

9. In a golf practising machine, the combination of a longitudinal guide mounted to swing horizontally and vertically, a plunger slidably mounted thereon and adapted to be attached to the ball, and means for indicating the angle of deflection and the angle of elevation of the guide.

10. In a golf practising machine, the combination of a tube mounted to swing horizontally and vertically, a plunger in said tube adapted to be attached to the ball, a resistance spring for the plunger, and scales for measuring the angle of deflection and the angle of elevation of the tube.

11. In a golf practising machine, the combination of a pivotally mounted longitudinal guide, a plunger slidably mounted thereon and adapted to be attached to the ball, means for indicating the angular movement of said guide, and a braking device for opposing the angular movement.

12. In a golf practising machine, the combination of a pivotally mounted longitudinal guide, a plunger mounted slidably thereon and adapted to be attached to the ball, means for indicating the angular movement of said guide, and a braking device controlled by the sliding movement of the plunger for opposing the angular movement of the guide.

13. In a golf practising machine, the combination of a pivotally mounted longitudinal guide, a plunger slidably mounted thereon and adapted to be attached to the ball, means for indicating the angular movement of said guide, a braking device for opposing the angular movement of the guide, a latch mechanism for holding the braking device released, and means governed by the sliding movement of the plunger for releasing the latch and applying the brake.

14. In a golf practising machine, the combination of a longitudinal guide mounted to swing vertically and horizontally, and having a curved flange carrying a scale, a plunger slidably mounted on said guide and adapted to be attached to the ball, and a curved braking shoe also carrying a scale, for engaging said curved flange.

15. In a golf practising machine, the combination of a longitudinal guide pivotally mounted to swing horizontally and vertically and having a curved vertical flange carrying a scale, a sliding plunger on said guide and adapted to be attached to the ball, a curved horizontal braking shoe also carrying a scale, and means for applying said shoe to the curved flange of the guide.

16. In a golf practising machine, the combination of a longitudinal guide pivotally mounted to swing horizontally and vertically and having a curved vertical flange carrying a scale, a sliding plunger on said guide and adapted to be attached to the ball, a curved horizontal braking shoe also carrying a scale, a latch device for holding said shoe out of contact with the curved flange of the guide, and means governed by the sliding movement of the plunger for releasing the latch and applying the brake.

In testimony whereof I have hereunto set my hand.

FRANK L. MORSE.

Witnesses:
D. B. PERRY,
P. C. COLT.