Aug. 11, 1925. 1,548,941

O. E. GISET

GOLF SCORE REGISTER

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Fig. 1.

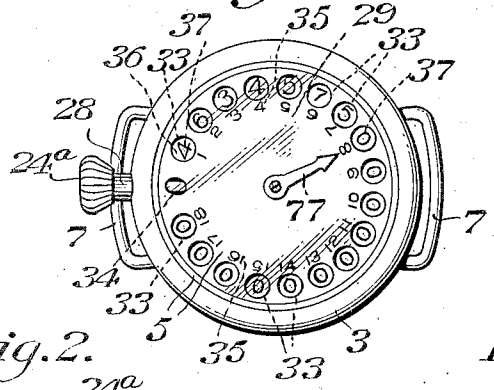


Fig. 2.

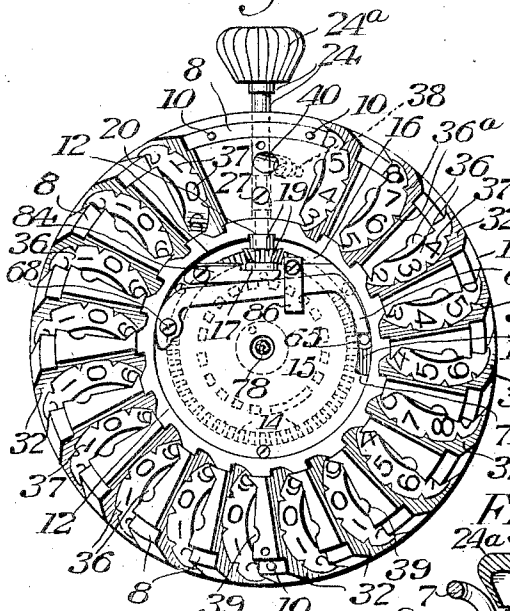


Fig. 3.

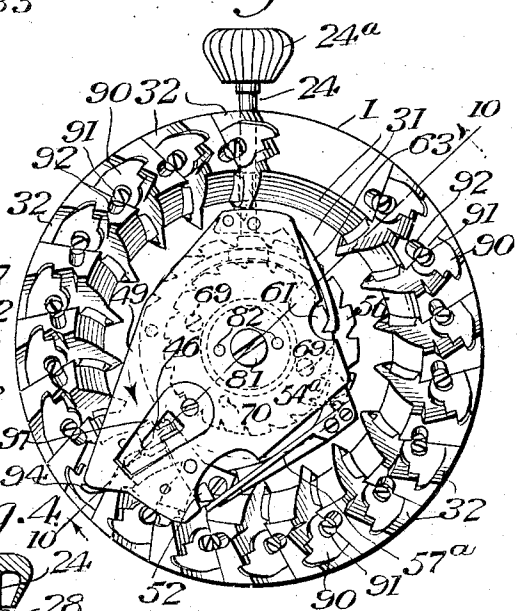


Fig. 4.

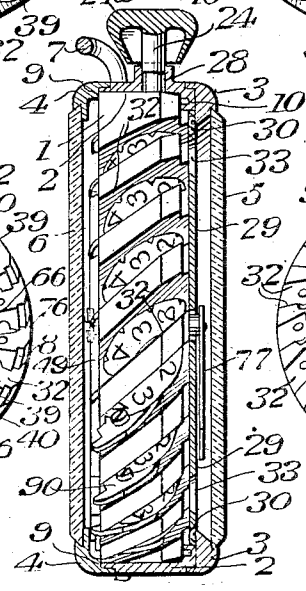


Fig. 5.

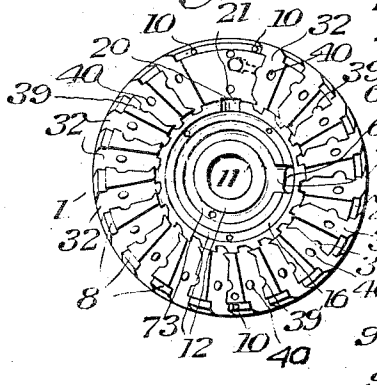
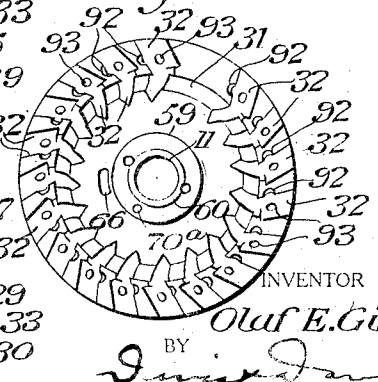


Fig. 6.



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Fig. 7.

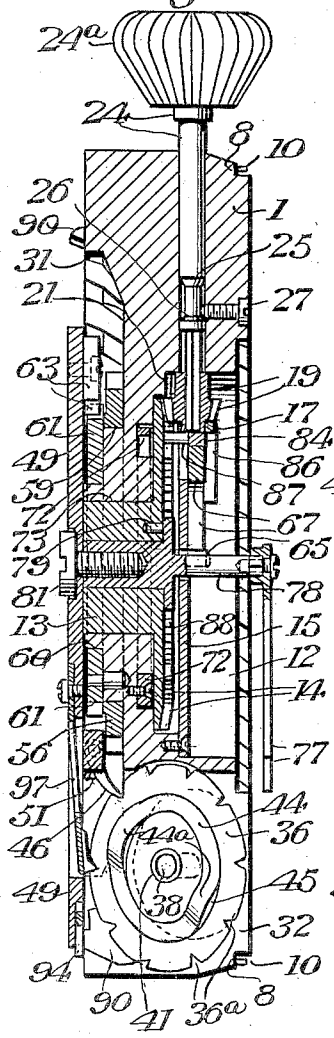


Fig. 8.

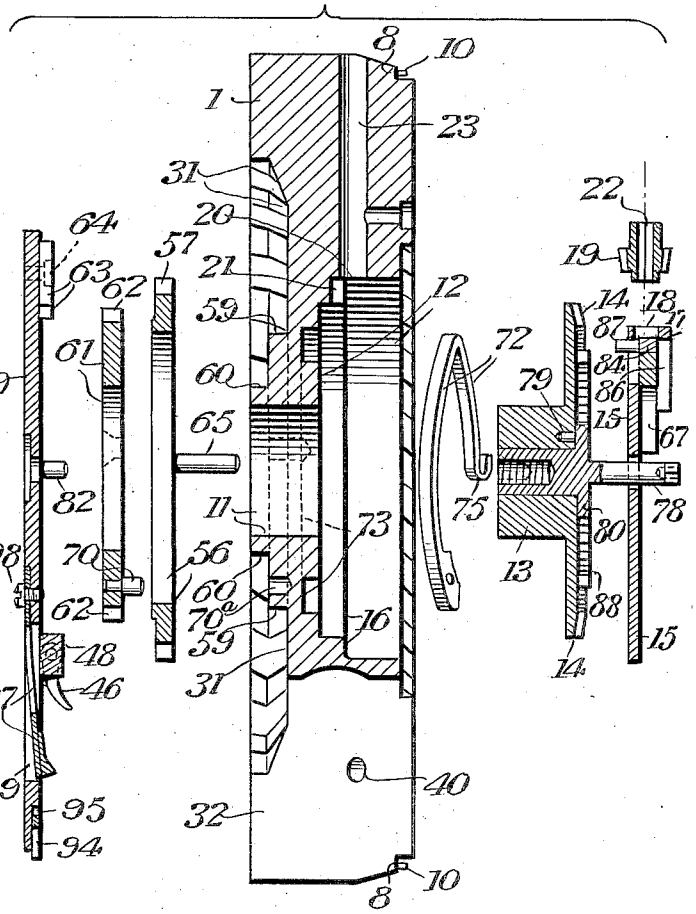
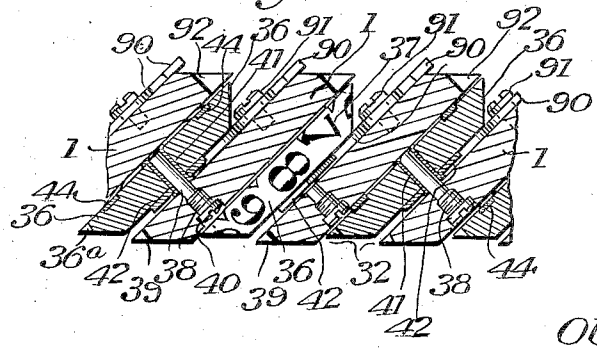


Fig. 9.



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Fig. 10.

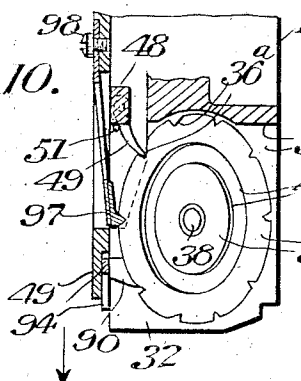


Fig. 11.

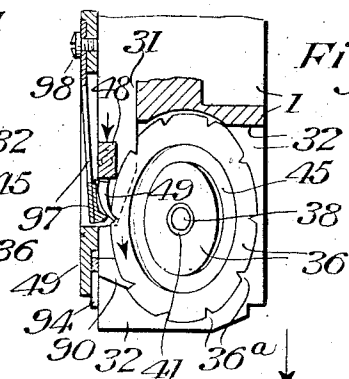


Fig. 12.

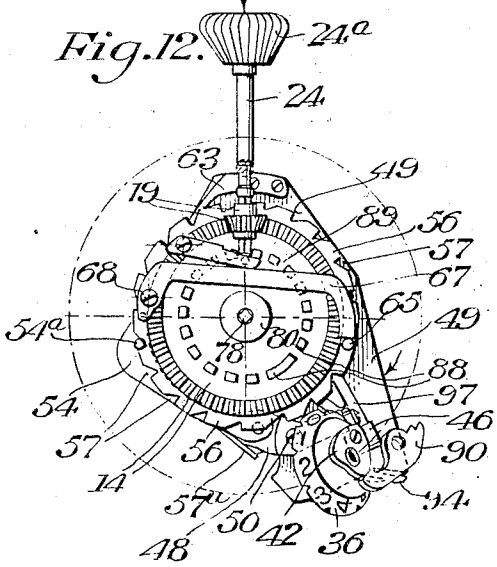


Fig. 13.

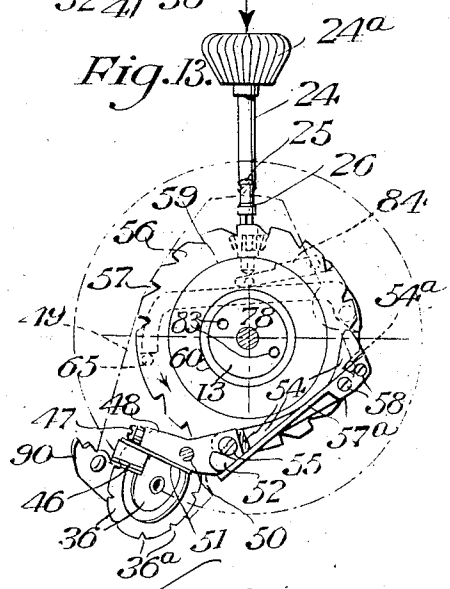
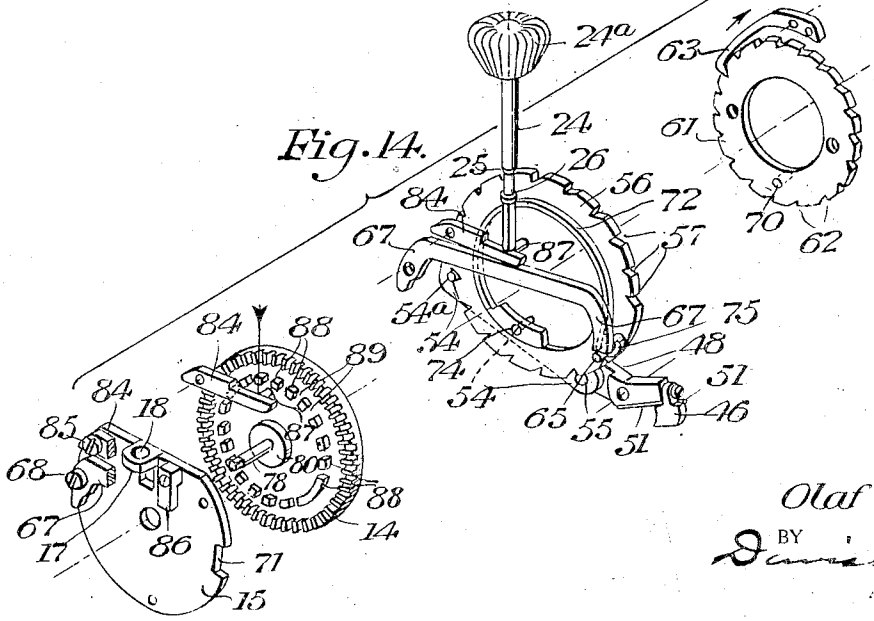


Fig. 14.



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Fig. 15

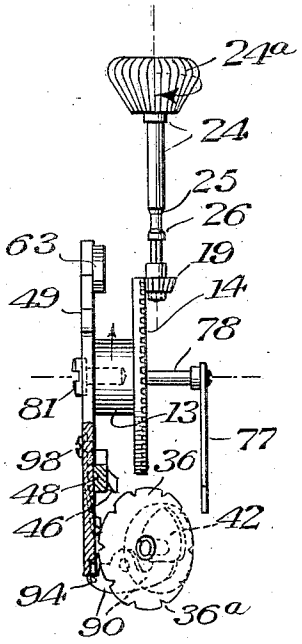


Fig. 16.

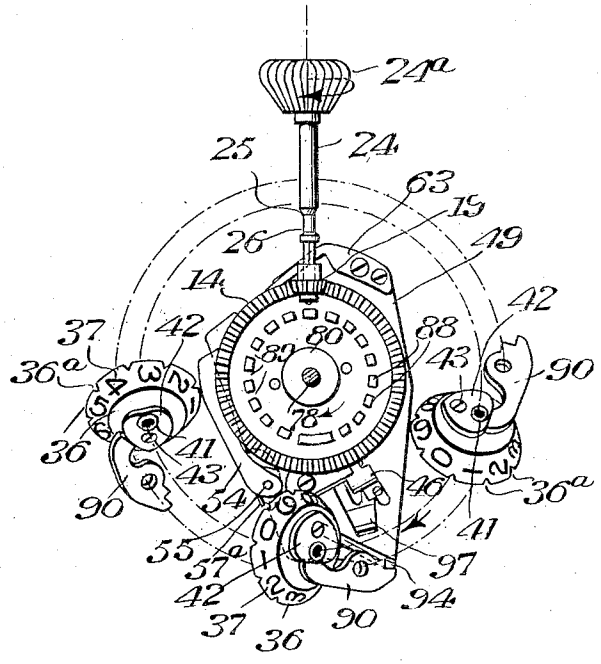
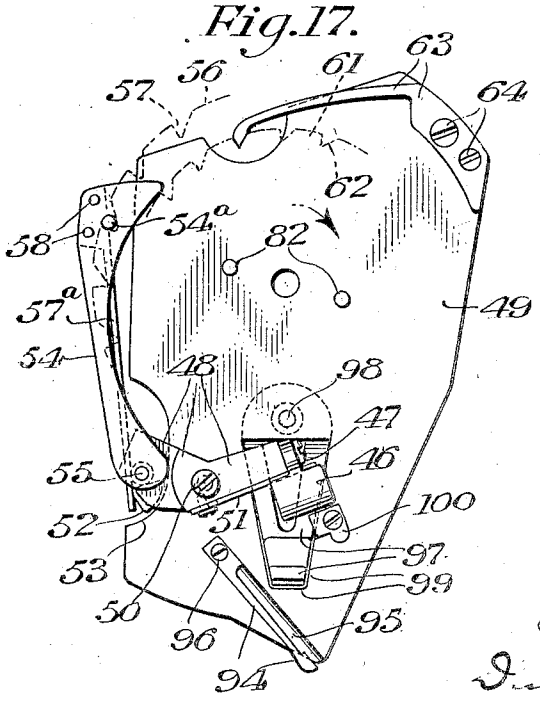


Fig. 17.



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Patented Aug. 11, 1925. 1,548,941

UNITED STATES PATENT OFFICE.

OLAF E. GISET, OF BROOKLYN, NEW YORK.

GOLF-SCORE REGISTER.

Application filed September 26, 1923. Serial No. 664,908.

To all whom it may concern:

Be it known that I, OLAF E. GISET, a citizen of the United States, and resident of the borough of Brooklyn, in the county of Kings, city and State of New York, have invented certain new and useful Improvements in Golf-Score Registers, of which the following is a specification.

This invention relates to improvements in golf score registers, and has for its objects to provide a device for registering the number of strokes for each hole of a course having a numeral wheel for each hole and a single operating means for all of said wheels; to provide a register of compact construction adapted to be carried on a player's wrist in the manner of a wrist watch; to provide a golf score register having a simple manually actuated register-wheel-operating mechanism manually settable to act on a series of numeral wheels successively and only capable of wheel-operating movement when in operative relation with a numeral wheel; and to provide a golf score register having a general operator rotatable in one direction only to progressively advance a register-wheel stepping device from wheel to wheel and reciprocable to actuate said stepping device only when said stepping device is in operative relation with a numeral wheel, said register having numeral wheel zero-setting means operable by a rotary movement of the general operator in the direction of its stepping device advancing movement.

To the foregoing and other ends which will hereinafter appear, the invention consists in the features of construction, arrangements of parts, and combinations of devices set forth in the following description and particularly pointed out in the appended claims.

In the drawings:

Fig. 1 is a front view of the register;

Fig. 2 a front view on an enlarged scale, the casing and pointer being removed;

Fig. 3 a rear view of the register on an enlarged scale, the casing being removed;

Fig. 4 a side view, the casing being shown in vertical section;

Figs. 5 and 6 are front and rear views of the cylindrical metal block upon which the working parts are mounted;

Fig. 7 a vertical sectional view of the register, the casing being omitted and the parts being shown in operative relation with the No. 10 hole register wheel;

Fig. 8 a detail view of various parts of the register separated to more clearly show the construction thereof, the parts being shown in section as in Fig. 7;

Fig. 9 a fragmentary side view, parts of the cylindrical supporting block and certain of the numeral wheels being broken away to show the manner of mounting the numeral wheels and re-setting levers in the block;

Figs. 10 and 11 are detail sectional views taken on the line 10—10 of Fig. 3, showing the operation of the detent pawl and stepping pawl of the numeral wheel rotating means;

Figs. 12 and 13 are front and rear views of the numeral wheel rotating means, said means being shown in operative relation with the numeral wheel for registering the score for the eighth hole as in Figs. 2 and 3, but with the general operator depressed;

Fig. 14 a detail view showing various parts of the numeral wheel rotating means in perspective;

Figs. 15 and 16 are side and front views showing the zero-setting operation; and

Fig. 17 a front view showing the rotatable plate and the parts of the numeral wheel stepping and zero-setting means carried thereby.

The working parts of the register are mounted on a short cylindrical metal block 1 which is removably held in an enclosing case of approximately the size and appearance of an ordinary wrist watch casing. The casing comprises a main annular central section 2 to the opposite ends of which two rings or bezel sections 3 and 4 are detachably held, said bezels carrying glass disks or crystals 5 and 6 respectively. The casing section 2 is formed with a pair of oppositely disposed attachment loop members 7 to which the usual straps for fastening the device upon the user's wrist may be attached. The block 1 is formed with a shoulder 8 held against an internal shoulder near the forward end of casing section 2 by a shoulder 9 on the rear bezel 4, a plurality of studs 10 projecting from the shoulder 8 engaging in sockets in the shoulder on section 2 to position the block in the casing.

The block 1 is provided with an axial cylindrical bore 11 extending from the rear face of the block to the inner end of a cen-

tral cavity or recess 12 formed in the front face of the block. The hub 13 of a bevel gear 14 is journalled in the bore 11, said gear being housed in the reduced inner end of recess 12 with its teeth facing the outer end of the recess. A metal plate 15 is rigidly held by suitable screws against the annular shoulder 16 in recess 12, said plate having an outwardly extending lug 17 formed with a bearing aperture 18 for one end of the hub of a bevel pinion 19. The pinion 19 meshes with gear 14 and the upper end of of the pinion hub extends close to the circular wall of recess 12 which is preferably flattened at 20 to form an abutment for the end of the pinion hub while shoulder 16 is formed with a radial groove 21 to afford clearance for the upper end of the hub.

The hub of pinion 19 has an axial passage 22 therethrough which is square in cross-section, said passage registering with a cylindrical passage 23 extending from the outer edge of block 1 to recess 12 radially of the axis of gear 14. The rod-like general operator 24 of the register is rotatably and slidably guided in passage 23 and resembles the stem of a watch in appearance having a grooved crown or finger knob 24ª at its upper end. The upper portion of operator rod 24 is cylindrical so as to revolve and reciprocate in the guide passage 23, while the lower portion of said rod is square in cross section so it may slide through the passage 22 in pinion 19 and will drive said pinion when the rod is rotated. The extent of reciprocable movement of the general operator is limited by engagement of shoulders 25 and 26 thereon with a set screw 27 tapped through block 1 into passage 23. The casing section 2 is formed with a flanged guide opening 28 for the general operator 24.

A disk-like metal dial plate 29 is held against the flat front face of block 1 by a pair of screws 30, the outer face of said plate being spaced from front crystal 5. The block 1 is provided with an annular recess 31 in its rear face concentric with the gear hub bearing aperture 11, and said block is provided around its outer edge with an arcuate series of eighteen slots 32 extending inwardly from the outer edge of the block and terminating a short distance within the outer annular wall of recess 31. The slots 32 lie in planes radiating from the axis of block 1 and oblique to the planes of the front and rear faces of the block. The first and last slots of the arcuate series are spaced apart a substantial distance and the ends of these two slots at the front face of block 1 are located at opposite sides of the general operator 24. The slots from the beginning to the end of the series are spaced an equal number of degrees apart and are substantially closer together than the two end slots of the series. Dial plate 29 is provided with an arcuate series of eighteen sight apertures 33 registering with the forward ends of slots 32 and also has printed or painted thereon the designation "0" as shown at 34 between the two end apertures in register with the relatively wide segment of the block between the two end slots of the series of slots 32. The apertures 33 are numbered 1 to 18 from right to left, the designating numerals 35 being printed, painted or stenciled on the outer face of dial plate 29 inside of the series of apertures.

A frusto-conical numeral or register wheel 36 is rotatably mounted in each slot 32, and each wheel 36 has printed or stamped on its periphery the ten arabic numerals "0" to "9", inclusive, as indicated at 37, which numerals are successively visible through apertures 33 in the dial plate when the wheels are rotated. Each wheel is journalled on the inner non-threaded end portion of a bearing screw 38. Each screw 38 for one wheel passes through the web or segment of the block in advance of the slot in which the wheel is mounted and is threaded in said web with the head of the screw countersunk in the web. The screws pass across the slots at right angles to the side walls of the slots and obliquely to the plane of the front face of the block, and the wheels are mounted on the screws with the smaller ends of the wheels nearer the heads of the screws, i. e. the small ends of the wheels face around the series in counter-clockwise direction. The peripheral part of each wheel opposite the sight openings is thus always substantially parallel with the plane of the dial plate. The oblique arrangement of the slots permits convenient assembly of the wheels therein, and permits the use of thin frusto-conical wheels having a relatively broad periphery so that relatively large numerals may be provided on small thin wheels which can be arranged in a block of small diameter and little thickness. One wall of each slot at the front face of the block is provided with a diagonal groove 39 in line with the screw hole 40 for screw 38 through the opposite wall to afford clearance for the shank of a screw-driver and to afford clearance for the long screw in inserting and removing the screws and wheels.

Each numeral wheel has a bearing sleeve 41 surrounding its bearing screw 38, one end of the sleeve being headed against the larger end of the wheel and the other end being headed or peened down against the outer face of a heart-shaped cam plate 42 held flat against movement relatively to wheel 36 by said headed sleeve and by a fastening screw 43 passing through the cam into the wheel. The larger end of the wheel 36 is formed with a circular groove 45 in which

is seated a resilient metal washer 44 humped or bowed at two diametrically opposite points as shown at 44ª so that said washer yieldably and frictionally engages one face of the wheel and the adjacent wall of the slot in which the wheel is mounted to thus hold the wheel against accidental rotation.

All of the numeral wheels are adapted to be rotated step by step by a single wheel stepping pawl movable by successive rotary movements of the general operator 24 into operative relation with the successive numeral wheels and also operable repeatedly by successive reciprocable movements of the general operator to rotate each wheel the desired number of steps to register the strokes required to cup the ball at each hole. The numeral wheel rotating push-pawl 46 is pivotally held by a screw 47 to one end of a lever 48 which is pivotally held intermediate its ends to a rotatable metal plate 49 by means of a pivot screw 50. A spring 51 secured to lever 48 normally presses the nose of pawl 46 against the inner flat wall of recess 31 in block 1. A stop 52 on lever 48 cooperates with the edge portion 53 of plate 49 to limit the movement of lever 48 in one direction, said lever being movable in the opposite direction by a pull-pawl 54 pivotally connected to one end of the lever at 55 and having a laterally extending pin or nosepiece 54ª adapted to ride around the periphery of an oscillatory notched ring 56 and snap successively into the eighteen notches 57 in said ring as the pawl 46 is brought successively into operative relation with the eighteen numeral wheels 36. The free end of pull-pawl 54 is normally urged in a direction to press pin 54ª into a notch in ring 56 by means of a spring 57ª which is fixed to the pawl at 58 and bears against stop 52 at its free end.

The inner circular wall of the annular recess 31 is stepped to provide a circular shoulder 59 forming a bearing for the notched oscillatory ring 56 and a circular shoulder 60 of less diameter on which is seated a fixed notched ring 61 having nineteen notches 62 in its periphery. A resilient check-pawl 63 rigidly affixed to the plate 49 at 64 has a nose adapted to ride around the periphery of ring 61 and snap successively in each of the 19 notches to hold the plate 49 against accidental turning when pawl 46 is brought in cooperative relation with either numeral wheel or is brought to the wide "0" space between the No. 1 and No. 18 numeral wheels. Ring 61 is rigidly held to block 1 by two screws 69 and a centering stud 70 which engages in a socket 70ª in block 1.

Pawl 63 extends in a direction opposite to that in which the plate 49 turns and the edge of each notch 62 engaged by the leading edge of the pawl nose is inclined to permit the nose to ride up out of the notch when the plate is rotated in a clockwise direction, while the other edge of each notch is in a radial plane so that engagement of the nose of the pawl therewith will prevent reverse rotation of plate 49. The notches 57 in ring 56 are similarly shaped, so that pin 54ª on pull pawl 54 will ride out of each notch as the plate 49 is rotated step by step, while said pawl will be pulled endwise when ring 56 is oscillated from its normal position by engagement of the radial edge of the notch with the pin.

Ring 56 has a forwardly extending pin 65 rigidly held thereto, and said pin projects through an arcuate slot 66 in block 1 and a registering notch 71 in plate 15 and engages under the free end of a lever 67 which extends across the outer face of plate 15 and is pivotally held to the plate at its opposite end by a pivot screw 68. The ring 56 is normally rocked in a counter-clockwise direction to hold pin 65 at the upper ends of slot 66 and notch 71 by means of an arcuate spring 72 seated in an annular groove 73 in block 1 at the inner end of recess 12. Spring 72 is secured to the block at one end by a screw 74 and has a hook-like free end 75 extending through a radial groove 76 in block 1 to slot 66 and bent around pin 65 on ring 56. An indicator hand 77 is fixed on the forward end of a shaft 78 which extends through the hub 13 of gear 14 and is locked to the hub to rotate therewith by means of a stud 79 which engages in a socket in the hub and is carried by a flange 80 on the shaft. A screw 81 threaded in a socket in the rear end of shaft 78 holds plate 49 against the rear end of hub 13 and a pair of studs 82 on said plate engage in sockets 83 in the rear end of said hub, thus locking the plate to the gear 14 to rotate therewith.

The lever 67 is adapted to be rocked against the tension of spring 72 by an inward thrust on the general operator 24, the inner end of which operator engages the free end of a lever 84 pivoted at 85 to plate 15 and interposed between lever 67 and the inner end of the operator shaft 24. The free end of lever 84 normally engages under lug 17 on plate 15, being held up by the lever 67 and spring 72. A guide arm 86 held to plate 15 overlies the front side of lever 67. The lever 84 is provided with a rearwardly extending projection or stud 87 the inner end of which is normally located between the teeth of gear 14 and a radially slotted annular flange 88 on the front face of said gear. The flange 88 is provided with an arcuate series of eighteen equally spaced slots 89 and a relatively long non-slotted portion between the first and last slots of the series. When locking pawl 63 engages in one of eighteen consecutive notches in ring 61 the free end of hand or pointer 77 on

shaft 78 is opposite one of the apertures 33 in the dial plate, pin 87 is opposite a slot 89 in flange 88, pawl 46 is in cooperative relation with the number wheel to which the hand points, and pin 54ª on pawl 54 is engaged in one of the eighteen notches in oscillating ring 56. When the pawl 63 engages in the nineteenth notch in ring 61 the pointer registers with the "0" character on the dial, pin 87 on lever 84 is opposite the relatively long non-slotted part of flange 88, and pawl 46 is opposite the wide non-slotted part of block 1 between the No. 1 and No. 18 numeral wheels. In this position not only is pawl 46 out of cooperative relation with any numeral wheel, but the general operator 24 cannot be pressed inward because pin 87 engages flange 88. Slots 89 only register with pin 87 when pawl 63 engages a notch in ring 61 and pawl 46 is in position to act on a numeral wheel. The user cannot therefore make a false or ineffective reciprocation of the general operator when the hand is at "0" or pawl 46 is between any of the numeral wheels or pin 54ª on pawl 54 is out of a notch in ring 56.

The numeral wheels are rotatable to zero position, i. e. to a position in which the character "0" thereon is in register with the sight openings 33 in the dial, by means of zero-setting levers 90 pivotally held by screws 91 against the side walls of slots 32 adjacent the smaller ends of the frusto-conical numeral wheels. Block 1 at its rear face is provided with diagonal grooves 92 in that side wall of each slot 32 opposite the wall against which the lever 90 in said slot is held, which grooves register with the screw holes 93 for screws 91 and permit ready assembly of levers 90 in the slots by means of a screw-driver. The forward ends of levers 90 rest on the peripheries of the heart cams 42 which are fixed on the smaller ends of the numeral wheels, while the rear ends of said levers project slightly beyond the rear face of block 1 between the periphery of the block and recess 31 in the path of the free end of a resilient zero-setting arm 94. Arm 94 is held at one end in a groove 95 in plate 49 by a screw 96 so as to rotate with said plate and the free end of said arm projects beyond the edge of said plate and rides around the rear face of the block 1 so as to successively engage the rear ends of levers 90. Said arm upon engaging a lever 90 first rocks the forward end of the lever toward the axis of the adjacent numeral wheel, thus exerting pressure on the periphery of the heart cam and causing the numeral wheel to rotate until the low point of the cam is under the forward end of the lever at which time the "0" character on the wheel registers with the adjacent sight opening in the dial and lever 90 is locked against further rocking movement (see Fig. 16). Continued rotation of plate 49 in clockwise direction will cause arm 94 to yield sufficiently to pass under the lever 90 thus rocked and pass on to the next lever. It will be obvious that by rotating the general operator 24 sufficiently to cause gears 19 and 14 to rotate plate 49 and dial hand 77 through one revolution from "0" position all the numeral wheels will be set at zero where they will be held by the friction washers 44.

To register the score as a game is played operator 24 is rotated slightly until hand 77 registers with the sight opening numbered "1" on the dial. This carries pin 54ª on pawl 54 into the first of the series of eighteen notches 57 in the oscillating ring 56 and carries pawl 46 in position to engage in the ten equally spaced notches 36ª in the periphery of the first numeral wheel 36, said notches being formed in the frusto-conical numeral wheels at the larger ends thereof. When the numeral wheels are at zero one of these notches stands just outside of the front wall of recess 31 against which pawl 46 is held by spring 51 as before described while the next adjacent notch stands just within the outer circular wall of said recess in the path of the free end or nose portion of a resilient check pawl 97 held at 98 to plate 49. Pawl 97 is so located on plate 49 that it only engages the notched edge of a numeral wheel after arm 94 has passed lever 90 and when pawl 46 is in operative relation with the wheel. It will thus be apparent that pawl 97 will not interfere with rotation of the numeral wheels in either direction by the resetting lever 90, and that in case a numeral wheel should have shifted slightly the act of bringing the stepping means in operative relation with the wheel will restore the wheel to its exact normal position before the check pawl 97 reaches the wheel and rides into the notch adjacent the outer circular wall of recess 31. The first numeral wheel may now be rotated one notch space for each stroke made by a player in making the first hole of the course by pressing general operator 24 inwardly once for each stroke. The pawl 97 is designed to prevent accidental reverse rotation of the numeral wheels by pawl 46 on its return stroke. The depression of operator 24 rocks levers 84 and 67 and oscillates ring 56 against the action of spring 72 causing said ring to pull on pawl 54 and rock pawl 46 from the position shown in Fig. 10 to that shown in Figs. 11, 12 and 13, thus rotating the numeral wheel one step. Upon release of the operator spring 72 restores the parts, pin 54ª on pawl 54 being held in the first notch in ring 56 by spring 57ª and said pawl 54 moving back to normal position with respect to plate 49 as ring 56 is rocked back to normal position, thus rock-

ing pawl 46 away from the numeral wheel.

After the player holes out at No. 1 he again rotates operator 24 until hand 77 registers with the No. 2 sight opening, thereby carrying pin 54ª on pawl 54 into the second notch of ring 56 and carrying pawls 46 and 97 into cooperative relation with the second numeral wheel. The score for the second hole may now be registered. The operations above described are repeated until the round of the course is completed, whereupon the wheels may be restored to zero as above described. The high point of the heart cam on each wheel is arranged to pass under the forward end of the adjacent lever 90 as the space on the wheel between the characters "5" and "6" is passing the sight opening. Lever 90 will therefore rotate the wheel in either direction to zero dependent upon the score registered by the wheel. It is thus necessary to rotate a wheel only approximately one-half a revolution at the most to set it at zero. An easy and rapid zero-setting operation is thus obtained. Abutments 52 and 53 lock the pawl and lever stepping means 54—48—46 to the plate 49 so as to cam pin 54ª out of one notch in ring 56 and carry it around to the next notch in said ring during the step by step rotation of the plate. The resilient pawl 97 normally flexes forward through the opening 99 in plate 49 against a limiting stop 100 secured to the front face of plate 49.

What I claim is:

1. A golf score register having a circular series of independent numeral wheels for registering the score for the several holes of a course, and a shiftable means common to all of said numeral wheels and adapted to rotate said wheels individually step by step in combination with a general operator mounted for manual rotation about an axis fixed in a radially disposed position with relation to the series of wheels, said general operator being adapted to be reciprocated along said axis, means operated by the rotation of the general operator to place the wheel-rotating means in co-operative relation with the said numeral wheels successively, and means operated by the reciprocation of the general operator to actuate the wheel-rotating means to cause a step-by-step rotation of any selected one of the numeral wheels in the series.

2. A golf score register having a circular series of independent numeral wheels for registering the score for the several holes of a course and a shiftable means common to all of said numeral wheels and adapted to rotate said wheels individually step by step in combination with a general operator mounted for manual rotation about an axis fixed in a radially disposed position with relation to the series of wheels, said general operator being adapted to be reciprocated along said axis, means operated by the rotation of the general operator to place the wheel-rotating means in co-operative relation with the said numeral wheels successively, means operated by the reciprocation of the general operator to actuate the wheel-rotating means to cause a step-by-step rotation of any selected one of the numeral wheels in the series and means adapted to be operated by said general operator simultaneously with the shifting of the wheel-rotating means from wheel to wheel to successively set the numeral wheels at zero in advance of the registering operation of said wheels.

3. A golf score register having a circular series of independent numeral wheels for registering the score for the several holes of a course and a shiftable means common to all of said numeral wheels and adapted to rotate said wheels individually step by step, in combination with a general operator mounted for manual rotation about an axis fixed in a radially disposed position with relation to the series of wheels, said general operator being adapted to be reciprocated along said axis, means operated by the rotation of the general operator to place the wheel-rotating means in co-operative relation with the said numeral wheels successively, means operated by the reciprocation of the general operator to actuate the wheel-rotating means to cause a step-by-step rotation of any selected one of the numeral wheels in the series, and means for preventing reciprocation of the general operator except when the wheel-rotating means is in co-operative relation with a numeral wheel.

4. A golf score register having a circular series of independent numeral wheels for registering the score for the several holes of a course and a shiftable means common to all of said numeral wheels and adapted to rotate said wheels individually step by step, in combination with a general operator mounted for manual rotation about an axis fixed in radially disposed position with relation to the series of wheels, said general operator being adapted to be reciprocated along said axis, mean operated by the rotation of the general operator to place the wheel-rotating means in co-operative relation with the said numeral wheels successively, means operated by the reciprocation of the general operator to actuate the wheel-rotating means to cause a step-by-step rotation of any selected one of the numeral wheels in the series, means for preventing reciprocation of the general operator except when the wheel-rotating means is in co-operative relation with a numeral wheel, means for releasably holding said wheel-rotating means in co-operative relation with each wheel and preventing reverse rotation

of the general operator, and means adapted to be operated simultaneously with the shifting of the wheel-rotating means from wheel to wheel by rotating the general operator to set the wheels at zero in advance of the registering operation of said wheels.

5. A golf score register comprising a cylindrical block provided with a series of radial slots oblique to the axis of the block, notched frusto-conical numeral wheels journalled in said slots to revolve about axes perpendicular to the side walls of the slots, a dial at one end of the block having sight openings opposite the slots, a hand movable around said dial, a radially-arranged rod-like general operator rotatably and reciprocably mounted in the block, a wheel stepping pawl adapted to engage the notches in the numeral wheels to rotate the wheels step-by-step, means rotatable by rotary movements of said operator for moving said hand from opening to opening in the dial and shifting said pawl in an orbit from wheel to wheel, and means operable by reciprocatory movements of said operator for actuating said pawl to rotate a wheel when said pawl is in cooperative relation with any numeral wheel.

6. A golf score register having numeral wheels for separately registering the score for each hole of a course and numeral wheel actuating means shiftable from wheel to wheel, in combination with means for operating said wheel actuating means one or more times while in co-operative relation with each wheel to rotate the wheel step-by-step to register the score, and means adapted to be operated by the shifting of the numeral wheel actuating means from wheel to wheel to successively set the numeral wheels at zero in advance of the registering operation of said wheels.

7. A golf score register having numeral wheels for separately registering the score for each hole of a course and numeral wheel actuating means shiftable from wheel to wheel, in combination with means for operating said wheel actuating means one or more times while in co-operative relation with each wheel to rotate the wheel step-by-step to register the score, and cam means connected to each wheel and adapted to be operated by the shifting of the numeral wheel actuating means from wheel to wheel to successively set the numeral wheels at zero.

8. A golf score register having a circular series of independent numeral wheels for registering the score for the several holes of a course, a wheel stepping pawl, and a rotatable carrier for said pawl, in combination with a general operator adapted to be rotated about an axis extending radially of the series of wheels to move the pawl from wheel to wheel and adapted to be reciprocated to cause the pawl to rotate the wheels step-by-step, and means connected to the pawl carrier and adapted to be rotated therewith by the general operator to set the numeral wheels successively at zero in advance of their rotation by the pawl.

9. In a portable registering device of the type wherein a series of numeral wheels for registering are rotated successively by a shiftable wheel-rotating means common to all of said wheels, a structure comprising a substantially flat circular block formed with a circular concentric series of radial slots oblique to the axis of the series, each of said slots extending inwardly from the periphery of the block and through the opposite faces of the block and having its end at one of said faces spaced around the block in advance of the end of the next adjacent slot at the opposite face, and a circular concentric series of frusto-conical wheels bearing numerals upon their conical surfaces and each located within one of said slots and mounted upon one of the walls thereof to rotate about an axis perpendicular to the direction of the slot, the conical surfaces of the wheels being all flush at one side with a plane parallel to the plane of the series and the numerals on said flush surfaces being exposed through the adjacent ends of the slots at one face of the block.

In testimony whereof I hereto affix my signature.

OLAF E. GISET.