

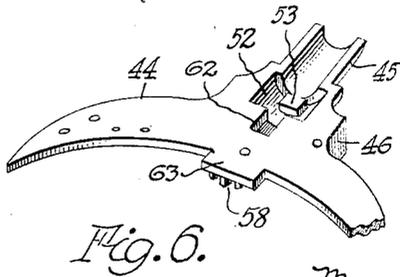
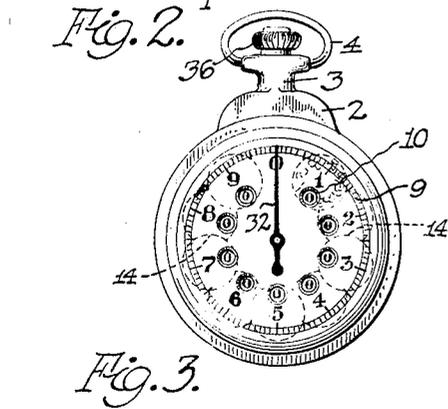
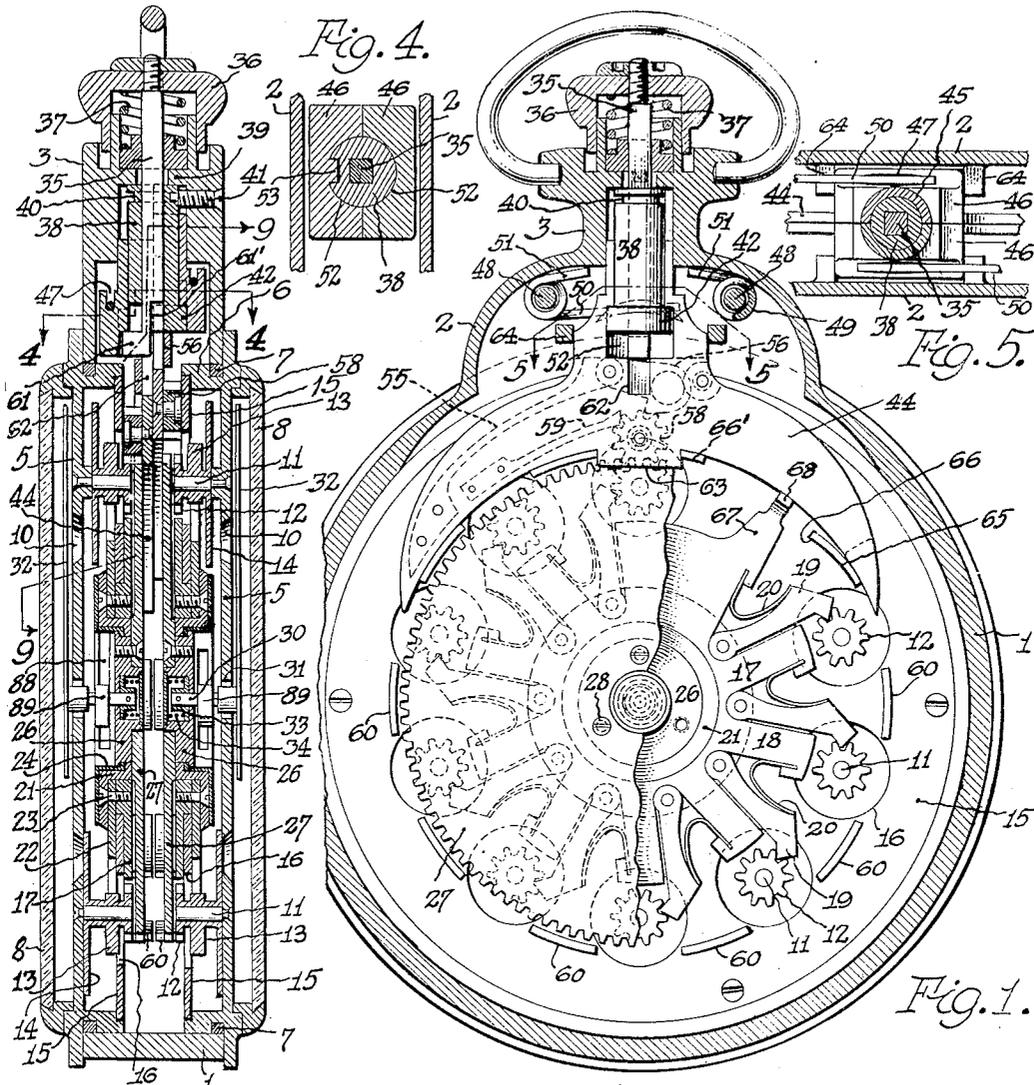
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GOLF REGISTER

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## GOLF REGISTER

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2 Claims. (Cl. 235—111)

The present invention pertains to a novel golf register designed for mechanical counting of the strokes taken in a game of golf.

The principal object of the invention is to eliminate the errors incident to the usual method of relying on memory for the strokes taken on each hole and then mentally adding the hole scores to determine the total score. The counting device herein described has the general appearance of a watch so that it may conveniently be carried in the pocket of the player. This device includes a stem similar to a watch stem, which is pressed inwardly for each stroke.

A part of the device is manually rotatable and carries a series of counting dials, preferably nine in number, corresponding to the holes of a small golf course. Two such devices are preferably provided, one on each side, to provide for eighteen holes. The several dials are separately and successively operable by the stem, and only one dial at a time may be operated. After each hole the rotatable part is shifted to bring the next dial into operative position with respect to the stem. Each dial, after being shifted out of operative position, still maintains the score registered thereon, and such score is visible through a main dial which covers the several dials previously mentioned. The main dial shows the total score at all times and has associated therewith a pointer which also is operable by the stem. The movements of this pointer are cumulative regardless of the shifting of the dial units for the respective holes, whereby it becomes unnecessary to add the scores for the holes, but these scores however are retained for reference purposes.

The invention is fully disclosed by way of example in the following description and in the accompanying drawings, in which—

Figure 1 is a longitudinal section of the device taken at right angles to the axis of rotation;

Fig. 2 is a longitudinal section at right angles to Figure 1;

Fig. 3 is a front elevation;

Fig. 4 is a section on the line 4—4 of Figure 2;

Fig. 5 is a section on the line 5—5 of Figure 1;

Fig. 6 is a perspective view of one of the pawl carriers;

Fig. 7 is a sectional view taken in a plane parallel to that shown in Figure 1;

Fig. 8 is a section on the line 8—8 of Figure 7;

Fig. 9 is a section on the line 9—9 of Figure 2; and

Figs. 10 and 11 are detail perspective views.

Reference to these views will now be made by

use of like characters which are employed to designate corresponding parts throughout.

The device is enclosed principally in a cylindrical case 1 formed with a peripheral enlargement 2 and a neck 3 constituting the top of the device. In the neck 3 is mounted a ring 4 as in the usual pocket watch.

The structure housed within the case 1 is of a twin or double unit character, and inasmuch as both units are alike, a description of only one of them will suffice. Each unit includes a main dial 5 having an annular wall 6 fitted into one of the open sides of the case 1. Between the wall and the case is inserted a spring ring 7 permitting manual rotation of the frame and at the same time exerting sufficient friction on the frame and the case to prevent unintended slipping or turning. The dial is covered by a crystal or glass 8 suitably attached to the frame.

The dial 5 is graduated at 9 and moreover is formed with a circular series of apertures or sight holes 10 equal in number to the holes comprised in a small golf course, namely nine. Adjacent each such hole is a shaft 11 having one end fixedly secured in the dial as shown more clearly in Figure 2. On the shaft is rotatably mounted a compound member consisting of a pinion 12, cam 13, and a secondary dial or indicator 14 formed as a unitary member. The dial 14 passes the corresponding aperture 10, so that the numerals depicted on the dial are successively displayed through the aperture as the dial is turned by the means which will presently be described.

Within the case 1 is fixed a carrier plate 15 provided for the support of various other parts of the device. This plate has a circular series of openings 16 to accommodate the shafts 11 and associated parts extending therethrough. Within the plate is concentrically mounted a spider 17 having a series of radial arms 18 as shown more clearly in Figure 1. Between the arms are pivotally mounted detent members 19 held in engagement with the pinions 12 by means of flat springs 20 which bear against the fixed arms. The spider in turn receives a concentric hub or filler member 21, and on this member is mounted a zeroizing wheel 22 which is partly in surface contact with the plate 15. The members 17, 21 and 22 are bound together by screws 23. Into the hub member 21 is fitted a thin metal annular member 24 of angular cross section and having an arm or shield 25 (Figures 7 and 8) extending radially therefrom for a purpose which will presently appear. In the center of this member is

inserted still another hub 26, and to the rear or inner face of the hub is secured a large gear 27 by means of screws 28.

A shaft 30 has one end received in the hub 26 and the other end passed through an aperture 31 in the dial 5. The shaft carries a pointer 32 exposed at the face of the dial to cooperate with the graduations 9 thereon. The end of the shaft 30 within the hub 26 carries a head 33 in surface engagement with part of the hub and held in such engagement by means of a spring 34, whereby a friction drive between the hub 26 and the shaft is established. This friction drive however permits resetting of the pointer 32 whenever necessary. That is, relative movement between the shaft 30 and the hub 26.

A square stem 35 is passed through the neck 3 and has a cap 36 fixed on its upper end. Between the cap and the top of the neck, the stem is surrounded by a spring 37 which normally tends to raise the stem. The lower portion of the stem is surrounded by a sleeve 38, the upper end of which is adapted to engage an inward ledge 39 (Fig. 2) formed integral with the stem. The upper end of the sleeve is formed with a groove 40 which receives the end of a guide screw 41 carried by the neck. This structure maintains the sleeve 38 in the position shown in Figure 2 and further permits turning thereof when the square shaft 35 is turned by means of the cap 36. The sleeve has an enlarged lower end 42 in which is formed a slot or notch 43 (Fig. 10) for a purpose which will presently be described.

A carrier member 44 for each unit is mounted in the upper part of the case and is formed with a semi-cylindrical neck 45 engaging half the periphery of the sleeve 38. At the base of the neck is an enlargement or shoulder 46 with a groove 47 (Fig. 5). For each unit, the wall of the case carries a stud 48 on which is wound a spring 49 having one end 50 received in the groove and the other end 51 bearing against the case. The spring tends to hold the carrier in a down position.

The shoulder 46 has a cavity 52 in which is provided a lug 53, the vertical surface of which is tangential to the concave wall of the neck 45 as shown more clearly in Figure 6. In one position of the carrier, the lug 53 is adapted to rest upon the enlargement 42 of the stem 38, as illustrated at the righthand side of Figure 2.

To the carrier member 44 is fixed one end of a spring 55, the other end of which is free and has a pawl 56 pivoted thereto. The swinging end of the pawl is guided by a button 57 on the carrier. The carrier further supports a pinion 58 meshing with the large gear 27 and with the uppermost pinion 12 of the series, as shown more clearly in Figure 2. The pawl is normally in engagement with the pinion which in turn is retained against reverse motion by a detent 59. The carrier 44, which has an arcuate lower edge, rests upon certain members of a circular series of spaced lugs 60 extending from the carrier plate 15, around the gear 27.

At the lower end of the square stem 35 is a foot 61 receivable in a notch 62 formed in the carrier 44 beneath the lug 53. The foot is receivable in this position in only one of the carriers at a time, the unit associated with such carrier being at this time operative, while the other carrier is raised to an idle position upon the shoulder 42 by means which will presently appear, as illustrated at the righthand side of Figure 2. The foot 61 is therefore operative upon

the pawl 56 of the lefthand unit. Depression of the stem causes rotation of the pinion 58 through the medium of the pawl, resulting in a turning movement of the large gear 27 and the uppermost pinion 12 on their respective axes. The large gear turns counterclockwise as viewed in Figure 1 and clockwise as viewed in Figure 9. The heel of the stem is formed with a notch 61' to prevent the sliding movement of the stem from being interrupted by the member 44 of the idle unit.

Each time a stroke is made in a game of golf, the stem 35 is depressed and the secondary dial 14 associated with the pinion 12 in mesh with the pinion 58 is advanced one unit. The meshing of the pinions is maintained by a lug 63 formed on the lower edge of the carrier 44 and received between two adjacent lugs 60. After each hole, the stem 35 is pulled out, and the foot 61 thereof raises the holder 44 to such an extent that the lug 63 is pulled out of the above mentioned space. In this movement, the holder is guided by lugs 64 projecting from the side walls of the enlargement 2 into engagement with the ends of the shoulder 46 as clearly shown in Figure 5. The dial 5 of the unit in use is now manually turned clockwise with respect to Figure 1. After a short movement, the stem 35 may be released to allow the lug 63 to rest upon the lug 60 which comes beneath it. The turning movement is continued in the same direction until the last named lug 60 passes out of contact with the lug 63 and the latter drops into the next space between adjacent lugs 60. Another of the pinions 12 is thus brought into mesh with the pinion 58, and the score for the next hole is registered in the manner already described. This operation is repeated for each of the nine holes. It is observed that the movement of the large gear 27 by the pinion 58 is cumulative, so that the pointer 32 indicates the total score. As the several pinions 12 are successively brought into engagement with the pinion 58, the large gear and pointer move together but not relatively, since both turn with the carrier plate 15, so that the total score indicated on the dial 5 is not disturbed.

As shown in Figure 1, an additional lug or recess 65 is included in the series of lugs 60 projecting from the plate 15. This member however is not exactly concentric with the other lugs and has its trailing end 66 dropped inwardly towards the center of rotation. After the ninth hole, the holder 44 is raised as described and the dial turned slightly in clockwise direction with respect to Figure 1, after which the carrier 44 is released so that the lug 63 thereof drops upon the leading or higher end of the lug 65. On continued turning of the dial, the lower edge of the lug 63 descends into a position within the circle formed by the lugs 60.

The spider 17 has a radial arm 67 at the outer end of which is a finger 68 disposed at such distance from the center of the spider as to engage one of the lugs 63 on continued turning of the dial and while the lug rests on the lower end of the member 66. Still further movement of the dial moves the pinions 12 out of engagement with their respective pawls 19, since the pawl-carrying spider is retarded by the engagement between the members 68 and 63. One of the lugs 66' of the series 60 is of shorter length than the others to permit ample relative movement between the plate 15 and the spider 17, for a purpose which will presently appear.

The zeroizing wheel 22 shown more clearly in Figure 7, has a series of fingers 70 positioned to

cooperate simultaneously with the cams 13 associated with the pinions 12 on the shafts 11. The wheel 22 is also held by the engagement between the lugs 68 and 63, since this wheel is secured to the spider 17 by the screws 28. The turning of the dial 5 after engagement of these lugs (clockwise in Figure 7) causes the cams 13 to ride over the ends of the fingers 70. The fingers 70 are so related to the cams, that, in this movement, the lower points of the cams are caused to ride over the ends of the fingers, the cams and the shafts 11 are thereby turned, and the relation of parts is such that each secondary dial 14 is returned to zero when the lower part of the corresponding cam rides over a finger 70. During this motion, however, the total score registered by the pointer 32 is undisturbed, but the pointer may be returned to zero at this time or after nine more holes have been registered on the unit which has previously been idle. The zeroizing of the pointer 32 will now be described.

The zeroizing wheel 2 has an arm or extension 75 (Figure 7), carrying a stud 76. A lever 77 is laid upon the arm 75 and has a slot 78 receiving the stud 76 to permit a pivotal and slight sliding movement of the lever 77. The upper end of the lever 77 is pivotally held by a pin 79 fastened in the carrier plate 15 as shown in Figure 8. The arm 25 of the thin annular member 24 is fastened to the plate 15 by a screw 80 surrounded by a spacer 81. The arm 75 carries a stud 82 and a similar member 83 is carried by the plate 15. A wire spring 84 is wound on a stud 85 mounted on the plate 15 and has its ends engaging the members 82 and 83. This spring induces relative movement between the carrier plate 15 and the zeroizing wheel 22 or spider 17 fixed thereto, whereby normally to hold the pawls 19 in engagement with the pinions 12. While the members 17 and 22 are held and the plate 15 turned counter-clockwise with respect to Figure 7 as above described, the lever 77 is turned on the stud 76 as a pivot, and the lower end 86 of the lever is swung inwardly towards the shaft 30. The hub 21 is notched at 87 and the annular member 24 is slotted at 88 (Fig. 2) to permit this movement. The shaft 30 carries a cam 89 which is thus engaged by the end 86 and turned until the end rides over the low point of the cam. The cam is so related to the shaft 30, pointer 32 and dial 9 that this movement returns the pointer to zero on the dial.

In order to bring the dial unit into operation, the stem 35 is raised, carrying with it the previously active member 44 by engagement of the foot 61 beneath the lug 53. The stem is now turned through an arc of 180°, and the foot 61 moves out of the cavity 52. The shoulder 42 of the sleeve 38 which turns with the square stem is thus brought beneath the lug 53 of the previously active member 44 to hold it in raised or idle position,

while the slot 43 of the sleeve 38 is brought beneath the lug 53 of the previously idle member 44, permitting this member to drop into active position. The foot 61, having been turned through an angle of 180° is now directly over the pawl 56 of the previously idle unit and in position for operation thereon in the manner described. The separate scores for the holes are registered in the manner indicated.

It will be seen that, prior to zeroizing the secondary dials 14, the scores for all holes played are separately visible through the sight openings 10, while the total appears on the dial 5. By merely pressing the cap 36 after each stroke, the player avoids the need of mentally recording the strokes of each hole and finally adding the scores for the several holes. The well known errors resulting from the usual mental method are thus entirely eliminated by a mechanical device which correctly indicates any hole score and the total score at all times.

Although a specific embodiment of the invention has been illustrated and described, it will be understood that various alterations in the details of construction may be made without departing from the scope of the invention, as indicated by the appended claims.

What I claim is:—

1. A counting and scoring device comprising a case, a rotary dial frame mounted therein, an apertured sight plate carried by said frame, a circular series of dial shafts mounted in said frame, dials and pinions mounted on said shafts and behind said plate, a stem slidably mounted in said case, a carrier member mounted in said case beneath said stem, an operating pinion and driving pawl carried by said member, said operating pinion being adapted to mesh with a selected one of said first named pinions, said stem being adapted to operate said driving pawl.

2. A counting and scoring device comprising a case, a rotary dial frame mounted therein, an apertured sight plate carried by said frame, a circular series of dial shafts mounted in said frame, dials and pinions mounted on said shafts and behind said plate, a stem slidably mounted in said case, a carrier member mounted in said case beneath said stem, an operating pinion and driving pawl carried by said member, said operating pinion being adapted to mesh with a selected one of said first named pinions, said stem being adapted to operate said driving pawl, a carrier plate mounted in said case to rotate with said dial frame, a circular series of spaced lugs formed on said plate, and a lug extending from said carrier member and adapted for reception selectively in the spaces between said lugs, whereby to bring said pinions selectively in mesh with said operating pinion.

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