

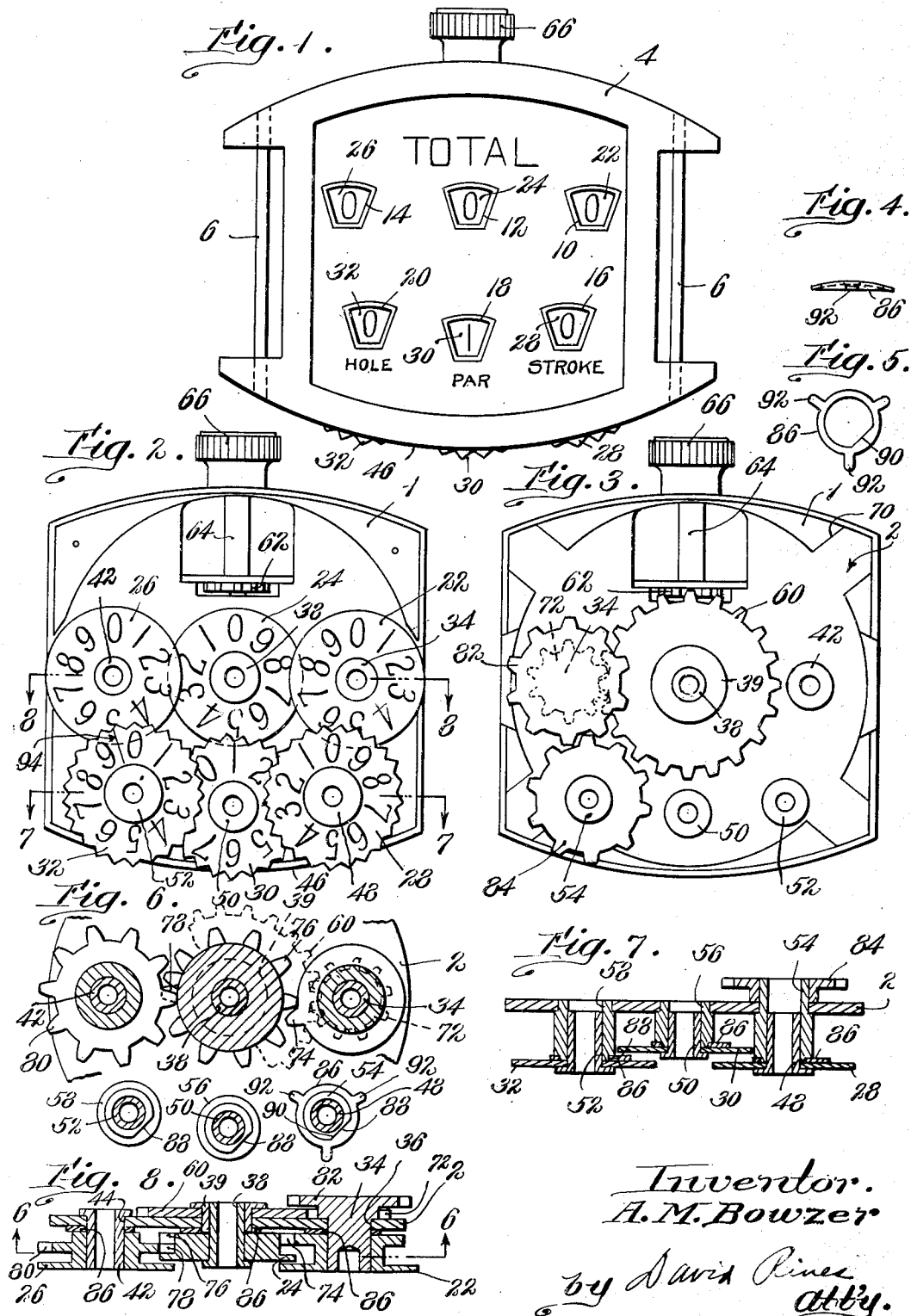
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GOLF-SCORING DEVICE

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GOLF-SCORING DEVICE

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The present invention, though certain features thereof have more general fields of utility, is more particularly related to golf-scoring devices, and its chief object is to provide a new and improved golf-scoring device that shall be efficient in operation, compact, and cheap to manufacture. Other and further objects will be explained hereinafter and will be particularly pointed out in the appended claims.

10 The invention will now be described more fully in connection with the accompanying drawing, in which Fig. 1 is a front elevation of a preferred embodiment of the new golf-scoring device; Fig. 2 is a similar view, with the front cover plate removed; Fig. 3 is a similar view, looking from the rear, with the rear cover plate removed; Fig. 4 is an elevation and Fig. 5 a plan of a detail; Fig. 6 is a section taken upon the line 6—6 of Fig. 8, looking in the direction of the arrows; and Figs. 7 and 8 are sections taken upon the line 7—7 and 8—8, respectively, of Fig. 2, looking in the direction of the arrows.

The novel golf-scoring device of the present invention comprises a casing 1, a front cover plate 4 and a rear cover plate (not shown). The operative mechanism of the device is carried by a frame 2 and is housed between the front and rear cover plates, except for certain parts that extend beyond the frame for manipulative purposes, as will be described hereinafter. The frame may be in the form, shape and size of a wrist watch, as shown, members 6 being provided at its sides for securing to a wrist-watch chain or the like. The front cover plate 4 is provided with openings 10, 12, 14, 16, 18 and 20 through which are visible, respectively, the successive numbers 0 to 9 carried upon the indicator discs 22, 24, 26, 28, 30 and 32 that are rotatably mounted upon the frame 2 as will presently be described. The discs 22, 24 and 26 constitute a total indicator, marked Total upon the front cover plate 2. Together they indicate the total register. The disc 28 constitutes a Stroke indicator, so marked upon the cover plate 4. It indicates the number of strokes required by the player to cover the distance between successive holes. The discs 30 and 32 similarly constitute, respectively, a par indicator and hole indicator, marked Par and Hole on the cover plate 4. The disc 22 constitutes the units disc, the disc 24 the tens disc, and the disc 26 the hundreds disc of the total indicator.

The units disc 22 is mounted upon a shaft 34 that is journaled on the frame 2 at 36, as shown more particularly in Fig. 8. The shaft 34 may

be solid or it may be tubular, as is the case with other shafts hereinafter described. The units disc 22 may be mounted upon the shaft 34 in any desired way, as by means of a drive fit, after the shaft 34 has first been journaled in the frame 2 at 36. The tens disc 24 is rotatable about a preferably tubular shaft 38, fixed to, by pressing on, a tubular member 39 that, in turn, is fixed in the frame 2. The hundreds disc 26 is rotatable about a preferably tubular disc 42 journaled on the frame 2 at 44. The shafts 34, 38 and 42 are shown disposed side by side, on the upper part of the frame 2, so that the discs 22, 24 and 26 may similarly be disposed side by side, so as to show their suitable numbers 0 to 9 through the respective openings 10, 12 and 14, thus showing the total at a glance. The discs 28, 30 and 32 are likewise disposed side by side, below the respective discs 22, 24 and 26, so as to show their numbers 0 to 9 through the respective openings 16, 18 and 20. Though the discs 22, 24 and 26 are disposed along substantially a straight line, the discs 28, 30 and 32 are disposed with their centers along an arc substantially parallel to the lower boundary arc 46 of the casing 1 and the front and back cover plates, in order that the peripheries of the discs 28, 30 and 32 may all project substantially the same slight distance below the said lower boundary arc 46, as clearly illustrated, more particularly in Fig. 2. The disc 28 is mounted upon a preferably tubular shaft 48; the disc 30 upon a preferably tubular shaft 50; and the disc 32 upon a preferably tubular shaft 52; all as clearly illustrated in Fig. 7. The tubular shafts 48, 50 and 52 are loosely mounted in tubular members 54, 56 and 58, respectively, so as to be rotatable therein about the axes thereof. By reason of this loose connection, it is possible to set the shafts 48, 50 and 52 in their shafts 54, 56 and 58, respectively, so as to occupy any desired initial position, so as to cause any desired numbers 0 to 9 to appear in the respective openings 16, 18 and 20. By rotatably adjusting the position of the tubular shaft 48 in the tubular shaft 54, for example, the disc 28, that is rotatable with the shaft 48, will be caused to occupy any desired initial position, so as to expose any desired number 0 to 9 through the opening 16. The tubular members 56 and 58 are fixed in the frame 2, but the tubular member 54, as will hereinafter be explained, is rotatable about its axis.

The frame 2 that carries these various parts as a unit may, for simplicity and ease of assembly, be in the form of a plate, pressed at 70 into

properly shaped recesses of the casing 1. No screws or other attaching means are needed to hold the frame 2 in its casing 1. The indicator discs are disposed on the front side of the frame plate 2, between the frame plate 2 and the front cover plate 4. The hereinafter described gearing is disposed at the rear side of the frame plate 2, between the frame plate 2 and the rear cover plate. A very compact structure is thus provided.

Journalled about the tubular member 39 is a gear 60 meshing with a gear 62 at the lower end of a stem 64 that is mounted on the frame 2 and the upper end of which extends through the frame and is provided with a manipulative knob or other member 66 that may be turned in the same way as the stem of a wrist watch. By turning the member 66, therefore, the gear 62 will be turned, effecting turning movement of the gear 60 and, therefore, of a gear 72 upon the shaft 34 and provided with ten teeth. In this manner, the units disc 22, that is carried upon the shaft 34, may be turned to any desired degree to show any number 0 to 9 through the opening 10.

The shaft 34 is further provided with a single tooth 74 that engages one of ten teeth of a gear 76 mounted upon the disc 24. At the end of each revolution of the disc 22, therefore, the disc 24, fixed to the tubular shaft 38, will be turned one tenth of a revolution to expose one of the numbers 0 to 9 on the disc 24 through the opening 12. The tubular shaft 38 carries a further single tooth 78 that engages, once corresponding to each revolution of the disc 24, the successive teeth of a gear 80 that is mounted upon the tubular shaft 42 and that is provided with ten teeth. Corresponding to every complete revolution of the tens disc 24, therefore, the hundreds disc 26 will be turned through one tenth of a revolution to expose one of the numerals 0 to 9 thereon through the opening 20. In this way, by turning the member 66, it will be possible to expose the total count through the openings 14, 12 and 10.

The shaft 34 carries a further gear 82, provided with ten teeth, that meshes with the ten teeth of a gear 84 that is fixed to the tubular shaft 54. The stroke disc 28 that is fixed to the tubular shaft 54, therefore, turns in synchronism with the units disc 22. It has before been explained that, by rotatably adjusting the tubular shaft 48 in the tubular shaft 54, the disc 28 will be caused to assume any desired position, so as to expose any desired number 0 to 9 through the opening 16. There will, therefore, be a constant difference in the numbers exposed through the openings 16 and 22, depending on this initial adjustment of the disc 28. If the disc 28 is adjusted to read 7, for example, at a time when the disc 22 reads 3, that constant difference will be four. At the beginning of the play, the disc 28 will be manually adjusted so that it will read the same zero as the disc 22, the same constant difference at that time being zero. After each hole has been played, however, the disc 28 will be manually readjusted to the zero position, but without altering the value of the total indicated through the openings 10, 12 and 14. There will thus be a different constant difference between the numbers appearing through the openings 10 and 16, depending upon the new adjustment of the disc 28 after each hole played. The numeral exposed through the opening 16, therefore, will always, throughout the play for any one hole, be

the said constant plus the number indicated by the totals indicator, depending upon the initial setting of the stroke-disc indicator. Such initial setting may be effected merely by turning the tubular shaft 48 in the tubular shaft 54, such turning being permitted by the loose connection of the tubular shaft 48 in the tubular shaft 54. To permit such turning of the disc 28 with respect to the tubular shaft 54 and the gear 84, one needs merely rub one's finger or thumb against the peripheral portion of the disc 28 that projects below the arc boundary 46, illustrated more particularly in Fig. 2.

The hole-indicator disc 32 and the par-indicator disc 30 may similarly be turned by means of the finger or thumb engaging the similar lower projecting peripheral portions of these discs, as is also clearly illustrated in Fig. 2. The operation is identical with that already described, except that the tubular shaft 48 rotates in the rotatable tubular shaft 54, while the tubular shafts 50 and 52 are slip-connected to rotate in the fixed tubular shafts 56 and 58, respectively.

To prevent accidental rotation of the tubular shafts 48, 50 and 52 on the respective tubular shafts 54, 56 and 58, they are held frictionally in place by means of spring washers 86. The forward ends of the tubular shafts 54, 56 and 58 are each provided with an irregular, shown as a flattened, portion 88 upon their exterior peripheries, as shown more particularly in Fig. 6 and the washers 86 are similarly provided with an irregular, shown as flattened, portion 90. The portions 88 engage against the portions 90 to prevent rotation of the washers upon their respective shafts. The body portions of the washers engage against their respective shafts and they are each provided with one or more spring fingers 92 for yieldingly pressing against the respective discs 28, 30 and 32. In this manner, the discs 28, 30 and 32 are tightly held against accidental rotation, are freely movable by manipulation of their peripheries below the arc boundary 46 and are firmly held against accidental movement away from their adjusted position except when so manipulated. The discs 30 and 32 will move only when so manipulated and the disc 28 will be moved in addition synchronously with the disc 22 through manipulation of the member 66 and the gears 62, 60, 72 and 84.

In Fig. 6, one of the washers 86 is shown mounted upon the shaft 54 but is shown omitted from the shafts 56 and 58.

One manipulates the hole-indicating disc 32 and the par-indicating disc 30 and one sets the stroke-indicator disc 28 by hand therefore and automatically keeps a record of the total through the medium of the discs 22, 24 and 26 through manipulation of the member 66 at the same time keeping a proper record of the stroke-disc indicator 28. All this is effected without any manipulation other than manipulating the member 66. The stroke-disc indicator 28, of course, as before stated, is initially set by hand.

The stroke disc indicator 28, indicating the number of strokes for each hole, is actuated by the same knob 66 that actuates the units disc indicator 22 of the total register, which shows the units of the strokes. Due to the above-described loose-fit or slip connection between the tubular shaft 54 and the tubular shaft 48 mounted therein, and as the disc 28 is fixedly mounted upon the shaft 48, it is possible, after each hole, to effect the above-described turning of the stroke disc 28 back to its zero position without interfer-

ing with the gearing connection between the gears 60, 34, 82 and 84. This may be effected, as before explained, merely by rubbing manually against the peripheral portion of the disc 28 below the arc 46. To facilitate such turning movement, the peripheral portion of the disc 28, as well as the peripheral portions of the discs 30 and 32, which are similarly mounted upon their respective tubular shafts 50 and 52, may be corrugated or roughened. Owing to the fact that the discs 28, 30 and 32 constitute, in effect, flanges for the respective tubular shafts 48, 50 and 52 upon which they are mounted, and as the spring washers 86 press against these flanges, there is no lost motion; and there is no accidental changing of the total. The disc indicator 32 shows the number of the holes and the disc indicator 30 shows the part for the hole.

After the player has passed the ninth hole, such manipulation will cause to come into view, through the opening 20, a red line or other indication 94, between the numerals 9 and 0 of the indicator disc 32. The player is thus notified that he has passed the ninth hole and is on his way to the tenth. Such information, of course, is of value on a full course of 18 holes, and is thus automatically supplied on the indicator 32 for holes.

The scoring device of the present invention may be no larger than an ordinary wrist watch; say, one inch by one and three-eighths inches. It is exceedingly simple and compact, requires no additional scoring aids, and is never in the way, as it is carried on the wrist. To keep score, one needs merely to lower the wrist of one hand and to manipulate the other hand after each play.

Modifications will occur to persons skilled in the art and all such are considered to fall within the spirit and scope of the present invention as defined in the appended claims.

What is claimed is:

1. A device of the character described comprising a casing provided with front and rear cover plates and a frame plate housed in the casing between the cover plates, the front cover plate being provided with two openings, two shafts rotatably mounted in the frame plate adjacent to the respective openings, an indicator disc mounted on each shaft on the front side of the frame plate between the frame plate and the front cover plate, each indicator disc being provided with markings that are respectively rendered successively visible through the respective openings as the respective indicator discs are rotated on their respective shafts, one of the indicator discs being rigidly mounted upon its shaft, the other indicator disc being loosely mounted upon its shaft and its periphery projecting beyond the casing in order that it may at any time be manually adjusted with respect to its shaft, means in the casing on the rear side of the frame plate between the frame plate and the rear cover plate for rotating the shaft provided with the rigidly mounted indicator disc, means exterior of the casing and manually operable to render the rotating means effective to rotate the shaft provided with the rigidly mounted indicator disc, and means in the casing continuously connecting the shafts together to cause the shaft provided with the loosely mounted indicator disc to be rotated continuously from the shaft provided with the rigidly mounted indicator disc.

2. A device of the character described comprising a casing provided with front and rear cover plates and a frame plate housed in the casing

between the cover plates, the front cover plate being provided with two openings, two shafts rotatably mounted in the frame plate adjacent to the respective openings, an indicator disc mounted on each shaft on the front side of the frame plate between the frame plate and the front cover plate, each indicator disc being provided with markings that are respectively rendered successively visible through the respective openings as the respective indicator discs are rotated on their respective shafts, one of the indicator discs being loosely mounted upon its shaft and its periphery projecting beyond the casing in order that it may at any time be manually adjusted with respect to its shaft, a gear rotatable with the other indicator disc disposed in the casing on the rear side of the frame plate between the frame plate and the rear cover plate, a gear on the shaft provided with the loosely mounted indicator disc disposed in the casing and continuously meshing with the first-named gear to cause the shaft provided with the loosely mounted indicator disc to be rotated continuously from the first-named gear, a rotatable stem in the casing having a portion projecting beyond the casing for turning the stem, and a gear attached to the stem in the casing meshing with the first-named gear.

3. A device of the character described comprising a casing provided with front and rear cover plates and a frame plate housed in the casing between the cover plates, the front cover plate being provided with three openings, three shafts rotatably mounted in the frame plate side by side adjacent to the respective openings, an indicator disc mounted on each shaft on the front side of the frame plate between the frame plate and the front cover plate, each indicator disc being provided with markings that are respectively rendered successively visible through the respective openings as the respective indicator discs are rotated on their respective shafts, one of the indicator discs being loosely mounted upon its shaft and its periphery projecting beyond the casing in order that it may at any time be manually adjusted with respect to its shaft, means in the casing on the rear side of the frame plate between the frame plate and the rear cover plate for rotating one of the other two indicator discs, means exterior of the casing and manually operable to render the rotating means effective to rotate the said one of the other two indicator discs, means in the casing connecting continuously together the said one of the other two indicator discs and the shaft provided with the loosely mounted indicator disc to cause the shaft provided with the loosely mounted indicator disc to be rotated continuously from the said one of the other two indicator discs, and means on the casing on the rear side of the frame plate between the frame plate and the rear cover plate for intermittently actuating the other of the other two indicator discs from the said one of the other two indicator discs.

4. A device of the character described having a total indicator, a shaft upon which the indicator is mounted, means for driving the shaft, a gear fixed to the shaft, a tube rotatable about its axis, a gear fixed to the tube in continuously meshing engagement with the gear fixed to the shaft, whereby the tube is continuously driven through the gears from the shaft, a further indicator mounted in one end of the tube with a loose fit to permit rotation of the further indicator in the tube, the further indicator having a flange,

a spring washer between the flange and the said end of the tube for holding the further indicator against accidental rotation relative to the tube, and means for preventing the spring washer from turning.

5 5. A device of the character described comprising a casing, two rotatable discs disposed side by side in the casing and having cooperating gearing in the casing to cause one of the discs to be
10 rotated from the other disc, the said one disc being slip-connected in the casing to the cooperating gearing, the said other disc having a further gear in the casing, a gear in the casing meshing with the further gear, a rotatable stem in the casing having a portion projecting beyond the casing for turning the stem, and a gear attached thereto in the casing meshing with the gear meshing with the further gear.

6. A device of the character described having
20 a total indicator comprising a tens indicator and a units indicator, a tens-indicator shaft upon which the tens indicator is mounted, a units-indicator shaft upon which the units indicator is mounted, a further indicator, a further indicator shaft upon which the further indicator is mounted, a gear loosely mounted about the tens-indicator shaft, a gear for driving the units-indicator shaft meshing with the first-named gear, means for driving the first-named gear, a gear for driving the further indicator shaft, a gear movable with the second-named gear for driving the further indicator-shaft gear, and means for driving the tens-indicator shaft from the units-indicator shaft.

7. A device of the character described comprising a plate, a total indicator and a further indicator on one side of the plate, the total indicator comprising a tens indicator and a units indicator, a tens-indicator shaft upon which the tens indicator is mounted, a units-indicator shaft upon which the units indicator is mounted, a further indicator shaft upon which the further indicator is mounted, the said shafts being mounted in the plate, gears disposed upon the other side of the plate, the said gears comprising a gear loosely mounted about the tens-indicator shaft, a gear for driving the units-indicator shaft meshing with the first-named gear, a gear for driving the further indicator shaft, and a gear movable with the second-named gear for driving the further indicator-shaft gear, means for driving the first-named gear, and means for driving the tens-indicator shaft from the units-indicator shaft.

8. A device of the character described having
55 a total indicator, a total-indicator shaft upon which the total indicator is mounted, a further indicator, a further-indicator shaft upon which the further indicator is mounted, a gear for driving the total-indicator shaft, means for driving the gear, a gear fixed to the further-indicator shaft for driving the further-indicator shaft, a gear fixed to the total-indicator shaft in continuously meshing engagement with the gear fixed to the further-indicator shaft, whereby the

further-indicator shaft is continuously driven from the gears fixed to the total-indicator shaft and the further-indicator shaft, and means for actuating the further indicator independently of the further-indicator shaft.

9. A device of the character described having a total indicator comprising a tens indicator and a units indicator, a tens-indicator shaft upon which the tens indicator is mounted, a units-indicator shaft upon which the units indicator is mounted, a further indicator, a further indicator shaft upon which the further indicator is mounted, a gear loosely mounted about the tens-indicator shaft, a gear for driving the units-indicator shaft meshing with the first-named gear, means for driving the first-named gear, a gear fixed to the further indicator shaft for driving the further indicator shaft, a gear fixed to the units-indicator shaft in continuously meshing engagement with the gear fixed to the further indicator shaft, whereby the further indicator shaft is continuously driven from the gears fixed to the units-indicator shaft and the further indicator shaft, means for driving the tens-indicator shaft from the units-indicator shaft, and means for actuating the further indicator independently of the further indicator shaft.

10. A device of the character described having a total indicator comprising a tens indicator and a units indicator, a tens-indicator shaft upon which the tens indicator is mounted, a units-indicator shaft upon which the units indicator is mounted, a further indicator, a further-indicator shaft upon which the further indicator is mounted, a gear loosely mounted about the tens-indicator shaft, a gear fixed to the units-indicator shaft for driving the units-indicator shaft and meshing with the first-named gear, means for driving the first-named gear, a gear fixed to the further-indicator shaft for driving the further-indicator shaft, a gear fixed to the units-indicator shaft in continuously meshing engagement with the gear fixed to the further-indicator shaft, whereby the further-indicator shaft is continuously driven from the gears fixed to the units-indicator shaft and the further-indicator shaft, means for driving the tens-indicator shaft from the units-indicator shaft, and means for actuating the further indicator independently of the further-indicator shaft.

11. A device of the character described comprising a plate, a total indicator and a further indicator on one side of the plate, a total-indicator shaft upon which the total indicator is mounted, a further-indicator shaft upon which the further indicator is mounted, the said shafts being mounted in the plate, gears disposed upon the other side of the plate, the said gears comprising a gear for driving the total-indicator shaft, a gear for driving the further-indicator shaft, a gear movable with the first-named gear for driving the further-indicator-shaft gear, and means for driving the first-named gear.

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