

July 9, 1968

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3,391,865

SUB-TOTALLING AND GRAND-TOTALLING TALLY

Filed March 29, 1966

6 Sheets-Sheet 1

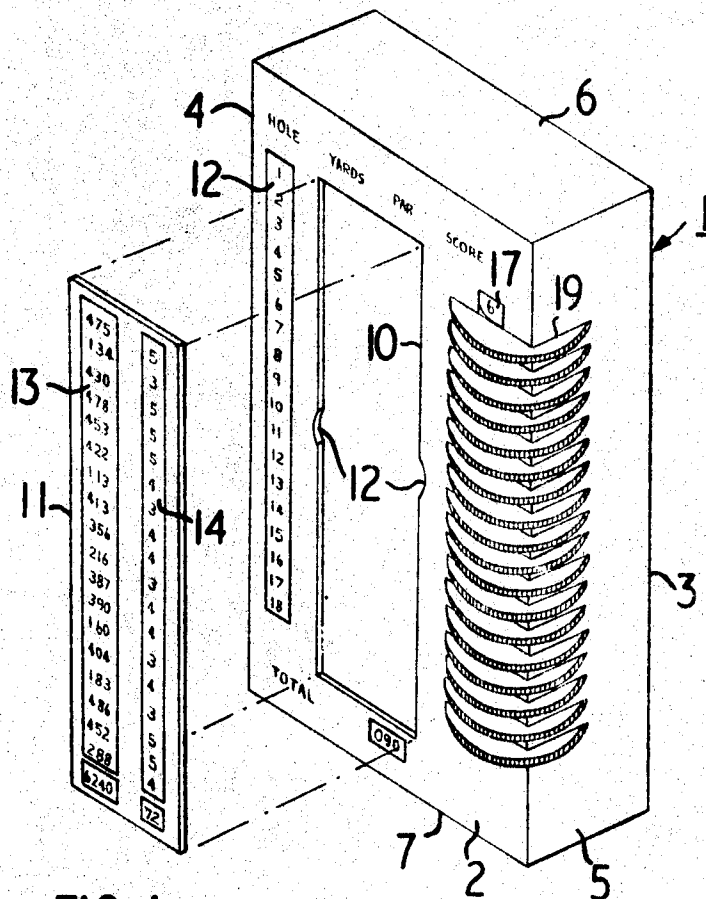


FIG. 1

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FIG. 2

HOLE	YARDS	PAR	SCORE
1	475	5	6
2	134	3	4
3	430	4	5
4	478	5	6
5	453	5	6
6	422	4	5
7	113	3	4
8	413	4	5
9	356	4	5
10	216	3	4
11	387	4	5
12	390	4	5
13	160	3	4
14	404	4	5
15	183	3	4
16	486	5	6
17	452	5	6
18	288	4	5
6240		72	
TOTAL 15		090	

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6 Sheets-Sheet 3

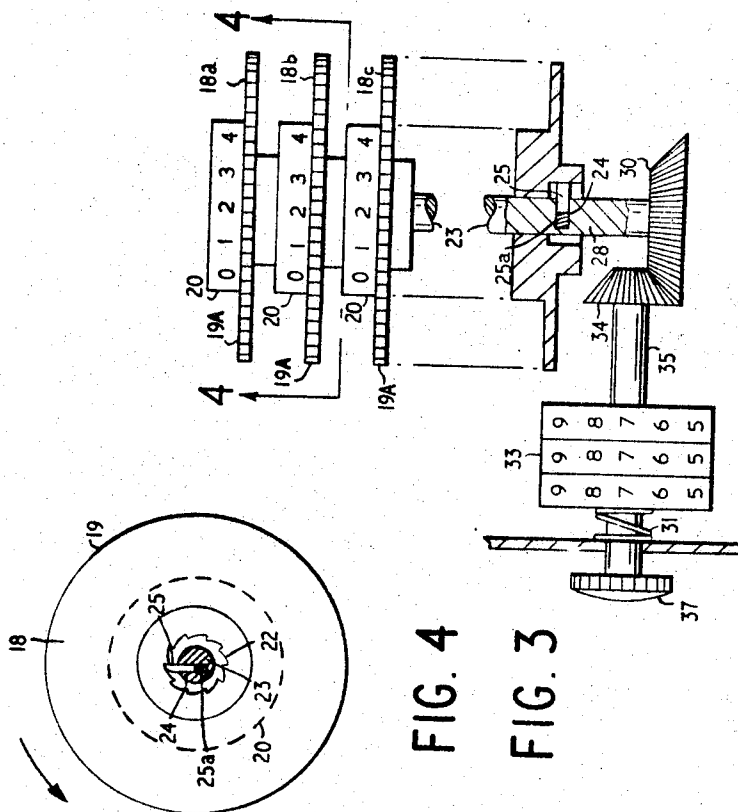


FIG. 4

FIG. 3

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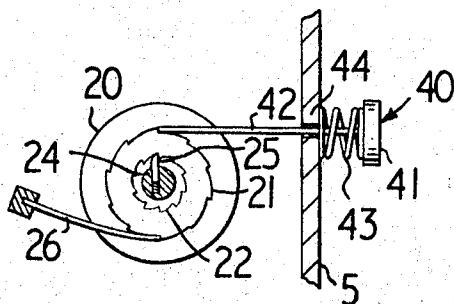


FIG. 5

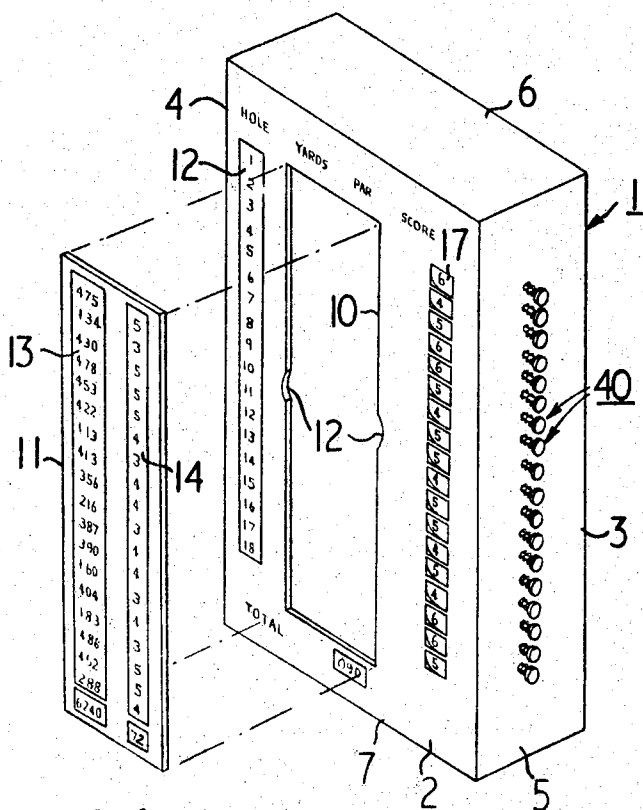


FIG. 6

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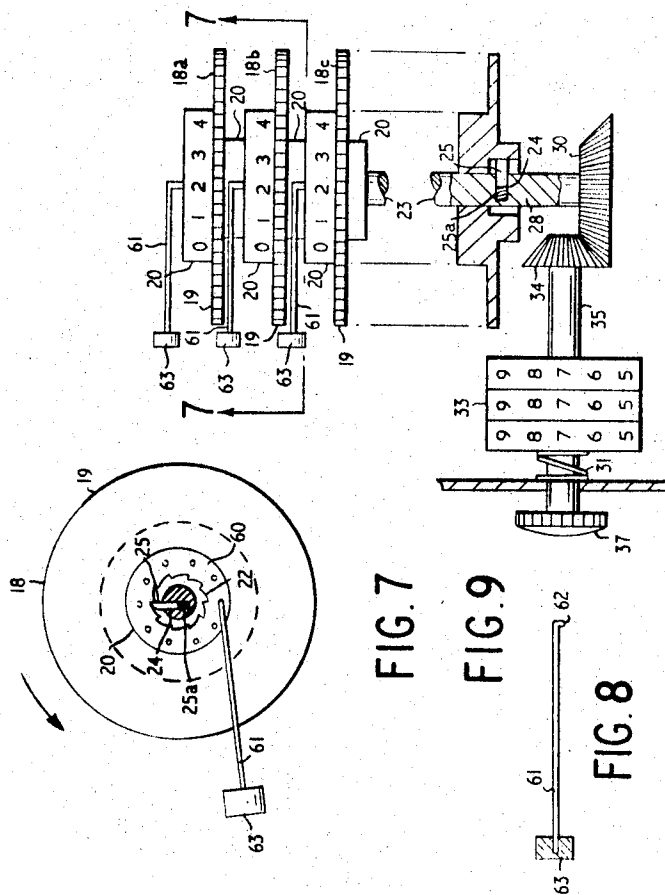


FIG. 7

FIG. 9

FIG. 8

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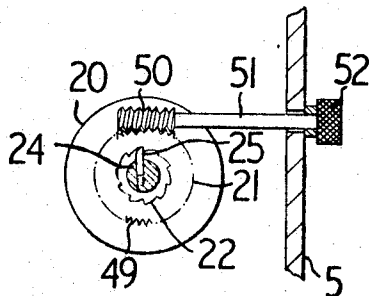


FIG.10

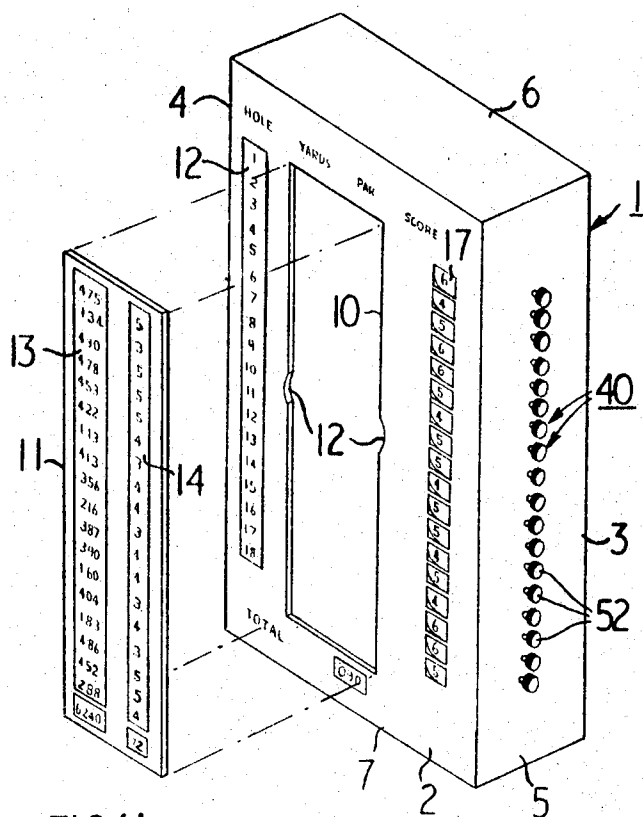


FIG. 11

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SUB-TOTALLING AND GRAND-TOTALLING TALLY

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Claims priority, application Canada, Jan. 6, 1966, 949,285

8 Claims. (Cl. 235—80)

This invention relates to a sub-totalling and grand-totalling tally. The invention may be applied to any game or sport wherein it is desired to record not only a total of points or penalties for the whole of the game but where it is desired to keep a record of such points for various parts of the game. For example, in the game of golf the player usually requires a record of the number of strokes for each hole and a total for the entire game. In particular, the invention not only provides a score register of the previously discussed type but further provides a means whereby the user may insert into the tally a simple card or plate which gives the yardage for the various holes on a given course and also the par strokes for that course. Thus, it is envisaged that a golfer may acquire the register and a supply of particular cards from the golf courses to be played on. Further, the invention enables a sportsman to keep a record of a certain game without the need for pen or pencils and in any kind of weather.

Golf tallies of the type giving not only totals for given holes and the total score for all holes are represented by United States Patents 1,119,256, 1,501,398 and 2,308,064. It will be seen that each of the devices shown in these patents has required indicate manufacture and a very large number of precision parts. Such devices would almost certainly have to be made by watch or clock makers and needless to say, the selling price would be quite considerable. In spite of the fact that these prior patents show devices of the wristwatch or pocketwatch size there is a tendency amongst golfers, in particular, to avoid cumbersome watches or the like particularly when worn on the wrist as, directly or psychologically, this interferes with their play. It is believed that most golfers would find that a lightweight tally would be acceptable and may be carried in the pocket or on the outside of a golf bag or caddy.

The present invention envisages a lightweight tally which utilizes the benefits of precision plastic molding and the comparative inexpensiveness of production by such molding. The tally device of the present invention is, in the game of golf for example, capable of keeping a record of the strokes taken for each hole right through to the end of the game but also automatically totalling the number of strokes necessary for the round. Further, the device provides a simple means for indicating to a player the number of yards and par for each hole. In spite of the various functions permissible with the present invention it is contemplated that the score register may be manufactured and sold for just a few dollars.

It is an object of one feature of the invention to provide a sub-totalling and grand-totalling tally capable of maintaining a visible record of sub-totals in a game and also to providing a total of the sub-totals without interference with the visual indication of the sub-totals.

In accordance with the foregoing aspect of the invention the invention comprises: a sub-totalizing and grand-totalizing tally comprising: (i) a hollow body member including; (a) a first column of spaced numerals or letters for identifying said sub-totals, said first column being externally visible, (b) a second column of sub-total windows disposed co-extensively and parallel with

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item (a) said sub-total windows being equal in number and similarly spaced to said numerals or letters, (c) activator apertures disposed coextensive and parallel with items (a) and (b) and equal in number and spacing therewith; (ii) a mainshaft pivoted for selective rotation within said body member about an axis parallel and substantially coextensive with item (i) (a) said mainshaft including a series of first drive means equal in number and spacing to said numerals or letters; (iii) sub-total indicator elements having apertures therein for the reception of and selective rotation about item (ii), said elements being equal in number and spacing to item (i) (a) and each including; (a) an arithmetic progression of digits disposed for individual viewing through its associated sub-total window, (b) manual activator means accessible through its associated activator aperture, (c) second drive means cooperating with its associated one of said first drive means to form a first unidirectional drive between said indicator element and said mainshaft, said first unidirectional drive enabling said manually activators to rotate thereby to change the digital value exposed thereon and to rotate said mainshaft concomitantly, and (iv) a grand-totalizing counter, including disengageable drive means between the counter and said mainshaft.

It is an object of another aspect of the invention to provide a sub-totalling and grand-totalling tally, particularly for the game of golf, whereby a preprinted sheet or card may be inserted into the tally in order to indicate the yardage and par for given holes on a particular course.

A preferred embodiment of the invention will now be described with reference to the accompanying drawings, in which:

FIG. 1 is a slightly enlarged isometric view of the golfer's score tally.

FIG. 2 is a front view of the score tally showing typical yardage, pars and scores.

FIG. 3 shows, to an enlarged scale, details of the individual hole tallies and also a totalizer.

FIG. 4 is a section along the lines 4—4 of FIG. 3.

FIG. 5 is another embodiment of the invention, wherein plungers are used to activate the hole score counters.

FIG. 6 is an isometric view of the tally incorporating the plungers of FIG. 5.

FIG. 7 is an end view of another embodiment of the invention using detents in place of ratchet and pawls.

FIG. 8 shows another view of the detent in FIG. 7.

FIG. 9 is a side view of the embodiment shown in FIG. 7.

FIG. 10 is a further embodiment using worm drives in place of the plungers shown in FIGS. 5 and 6.

FIG. 11 is an isometric view of the tally having the mechanism shown in FIG. 10.

Referring now to FIG. 1 the tally is generally indicated at 1 and comprises a hollow rectangular box having a front 2, and back 3, side walls 4 and 5, and a top and bottom 6 and 7, respectively.

FIG. 2 shows to a slightly larger scale, a front view of the score board showing a column of numbers 12 identifying particular holes on a golf course, and a column of numbers 13 which indicate the number of yards for a given hole as indicated in the column 12 on the left. A further column of numbers 14 indicates the par for given holes on the course. It will be seen at the bottom of the yards column 13 that there is provided a total of the yards for the entire course and this total is indicated at 15. Similarly, the numbers indicated in the par column 14 are totalled to give the total par for the course at 16. It will be appreciated that each golf course will have a different yardage for each hole and the par for each hole will be correspondingly different. The front panel 2, therefore, includes an aperture or recess 10 adapted to receive

a removable panel 11. The aperture or recess 10 is so proportioned as to resiliently retain the removable panel 11 and the recess or aperture 10 may include a pair of half-round recesses 12 by means of which the removable panel 11 may be sprung out of the score board 1. The front panel 2 contains both columns 13 and 14. Therefore, a player may have a removable panel 11 for each golf course upon which he wishes to play. It is envisaged that golfers may purchase tallies in accordance with the present invention and that blank panels 11 may be purchased at the same time or that they may be printed and made available for sale at various golf courses.

Referring again to FIG. 2 there is shown a further column of figures 17 identified under word "score." Individual numbers in the column 17 may be changed by manipulation of index wheels 18 where they are received in slots 19, recessed partly into the front face 2 and side 5.

Referring now to FIGS. 3 and 4, there is shown details of the individual hole sub-total index wheels 18a, 18b and 18c. Each of the wheels 18 comprises a rim 19A, a cylinder 20 having sequential digits marked thereon and an interior ratchet 22 as seen in FIG. 4. All of the wheels 18 are carried on a common mainshaft 23 which includes recesses 24 disposed for radial alignment with individual teeth on the interior ratchet 22. Into each of the recesses 24 there is provided a pawl 25 for engagement with the interior ratchet 22, and urged thereagainst by a pawl spring 25a.

In operation, when a given index wheel, for example 18a in FIG. 3 is rotated so as to increase the digit of the column 17, visible from the outside in FIG. 2, the pawl 25 engages interior ratchet 22 so as to rotate the shaft 23 by a corresponding amount. Counter rotation of the wheel 18a is possible by virtue of pawl 25 but such counter rotation will not rotate the shaft 23. When a player moves on to the next hole he then operates the next index wheel down in the series of wheels 18 and increasing the number indicated on the associated cylinder 20, likewise rotating the shaft 23 in the same direction.

The shaft 23 is provided with a mitre gear 30 which is firmly affixed to the shaft 23. The mitre gear 30 is adapted to rotate a veeder type counter 33 through a second mitre gear 34, mounted on the veeder counter shaft 35 and resiliently urged against gear 30 by a spring 31. The shaft 35 may be moved in a direction away from mitre gear 30 and against spring 31 by knob 37 so that the veeder counter 33 may be set back to zero. For convenience, the gear ratio between mitre gear 32 and mitre gear 34 may be unity.

In the above described embodiment negative corrections may be effected to the individual tallies 20, as discussed, however, the grand-total may be reduced by a corresponding amount by withdrawal and rotation of shaft 35 until the veeder counter is properly corrected.

The individual hole scores displayed on the cylinders 20 in column 17 may be set to zero by rotating each wheel 18 forward until its zero reads or is displayed in the column 17. The veeder counter may be zeroed by disengagement and rotation by a suitable amount.

For ease of production and cheapness the entire device may be manufactured from molded plastic components with the possible exception of the pawl spring 25a and the springs 31 although plastic material would be quite suitable for all items. It is also envisaged that the case 1 may be formed of a semitransparent material and that a lamp and battery be provided in the interior of the case so that the numbers may be readily observed when dusk is falling.

Referring now to FIG. 5 there is shown details of a further embodiment of the invention wherein the index wheels 18 have been dispensed with and the sub-total score cylinders 20 made individually actuable by a series of plungers generally indicated at 40.

In this embodiment drum 21 is provided with ratchet

teeth and a nonreturn pawl 26 provided to prevent contra rotation of the individual tallies 20.

The plungers comprise a head 41, a probe 42 attached to the head 41 and a spring 43 disposed between the head 41 and the side of the case 5. It will be seen that the probe 42 cooperates with the exterior ratchet 21 which may be turned one digit for each actuation of the plunger 40.

In this embodiment the presence of non-return pawls 26 prohibits the making of negative corrections to the individual tallies. Where such corrections are desired a provision is made in the embodiment shown in FIGS. 7-11.

Referring now to FIG. 6, there is shown a view of the tally modified in accordance with the plunger mechanism shown in FIG. 5. It will be obvious to those skilled in the art that the plungers 40 may be disposed, if necessary, on the front 2 of the scorer 1, always provided that the plungers may individually cooperate with associated ones of the exterior ratchets 21.

Referring now to FIGS. 7, 8 and 9 there is shown another embodiment wherein accidental movement of the individual tallies 18 is prevented. Each of the cylinders 20 have a series of dimples 60 for example, ten in number, spaced around the end surface of each, as shown in FIG. 7. Associated with each cylinder there is provided a resilient detent 61 having a protuberance 62 at the end thereof adapted to selectively engage the dimples 60. The detent 61 is attached, as at 63, to the interior of the body.

Referring now to FIGS. 10 and 11 there is shown a further embodiment wherein the cylinders 20 are rotated by means of a worm drive. The cylinders 20 are modified so that the periphery of the drum 21 is provided with gear teeth 49. A worm 50 is carried on a shaft 51 which passes through the side 5 of the case 1 where it is fitted with a knob 52. A selected knob 52 is rotated until the individual hole score has been increased by the desired amount. Since the worm drive is substantially irreversible no other frictional means is provided for inhibiting accidental movement of the tallies.

It is envisaged that the tally be made if necessary, without the yards and par columns in which case no removable panel 11 will be necessary. While apertures have been shown for viewing the sub-totals in column 17 it is to be understood that windows both "unglazed" or "glazed" may be used.

Other alternatives falling within the terms of the appended claims will be obvious to those skilled in the art.

I claim:

1. A sub-totalizing and grand-totalizing tally comprising:

(i) a hollow body member including:

- (a) a first column of spaced numerals or letters for identifying said sub-totals, said first column being externally visible,
- (b) a second column of sub-total windows disposed co-extensively and parallel with item (a) said sub-total windows being equal in number and similarly spaced to said numerals or letters,
- (c) activator apertures disposed co-extensively and parallel with items (a) and (b) and equal in number and spacing therewith;

(ii) a mainshaft pivoted for selective rotation within said body member about an axis parallel and substantially co-extensive with item (i) (a) said mainshaft including a series of first drive means equal in number and spacing to said numerals or letters;

(iii) sub-total indicator elements having apertures therein for the reception of and selective rotation about item (ii), said elements being equal in number and spacing to item (i) (a) and each including:

- (a) an arithmetic progression of digits disposed for individual viewing through its associated sub-total window,

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- (b) manual activator means accessible through its associated activator aperture,
- (c) second drive means co-operating with its associated one of said first drive means to form a first unidirectional drive between said indicator element and said mainshaft, said first unidirectional drive enabling said manual activators to rotate thereby to change the digital value exposed thereon and to rotate said mainshaft concomitantly, and
- (iv) a grand-totalizing counter, including disengageable drive means between the counter and said mainshaft.
2. A sub-totalizing and grand-totalizing tally as defined in claim 1 wherein each of said manual activator means comprises a wheel.
3. A sub-totalizing and grand-totalizing tally as defined in claim 1 wherein said first and second drive means comprise pawls carried in said main shaft and first ratchets on each of said sub-total indicator elements.
4. A sub-totalizing and grand-totalizing tally as defined in claim 1 further including detent means capable of being manually overridden during the operation of said manual activator means.
5. A sub-totalizing and grand-totalizing tally as defined in claim 1 wherein said disengageable drive means between the grand-totalizing counter and said mainshaft comprises a pair of selectively separable elements where-

by the reading of said grand-totalizing counter may be changed without influencing said mainshaft.

6. A sub-totalizing and grand-totalizing tally as defined in claim 1 wherein each of said sub-total indicator elements further include a second ratchet thereon and wherein said manual activating means comprises a selectively displaceable plunger extending from the exterior to interior of said body member, said plunger cooperating with said second ratchet to move said sub-total indicator by one digit for each displacement of said plunger.

7. A sub-totalizing and grand-totalizing tally as defined in claim 6 further including a plurality of springs for returning said plunger to a selected rest position after each operation.

8. A sub-totalizing and grand-totalizing tally as defined in claim 1 wherein each of said indicator elements further includes gear teeth thereon and wherein said manual activator means comprise rotatable shafts and worm gears thereon meshing with said gears on said indicator elements.

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