April 6, 1937. J. D. McCLURE 2,076,409

GAME COUNTER

Filed March 1, 1935 2 Sheets-Sheet 1

Fig. 1

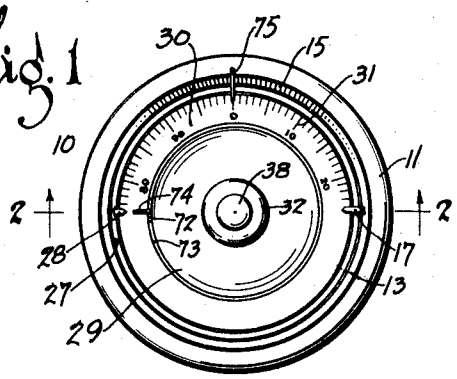

Fig. 4

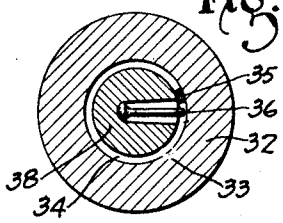

Fig. 2

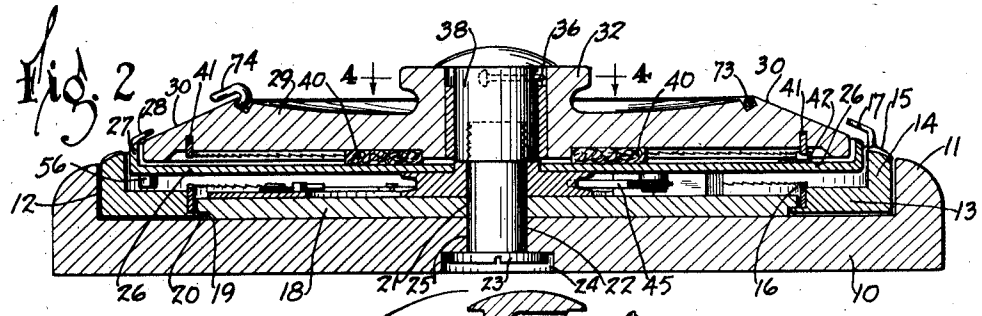

Fig. 3

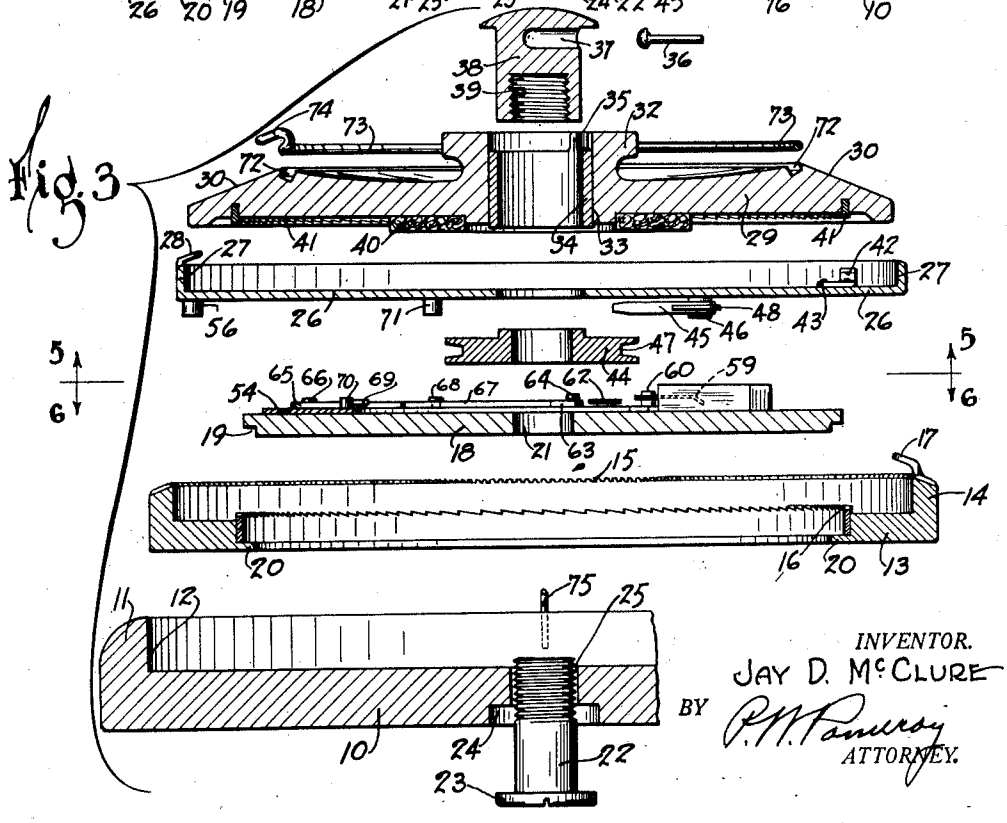

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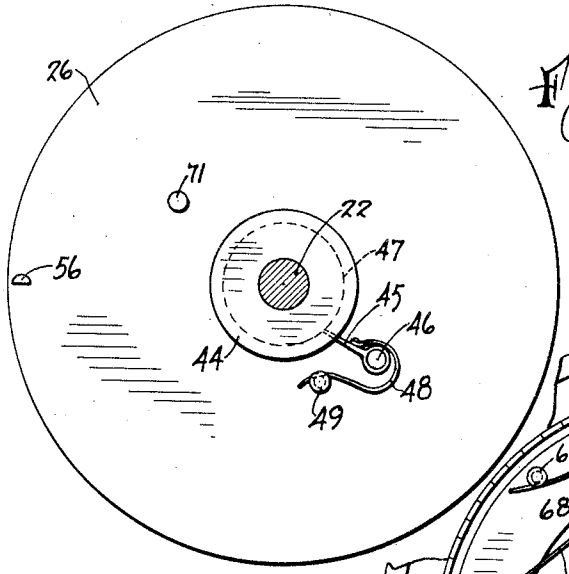
Fig. 5



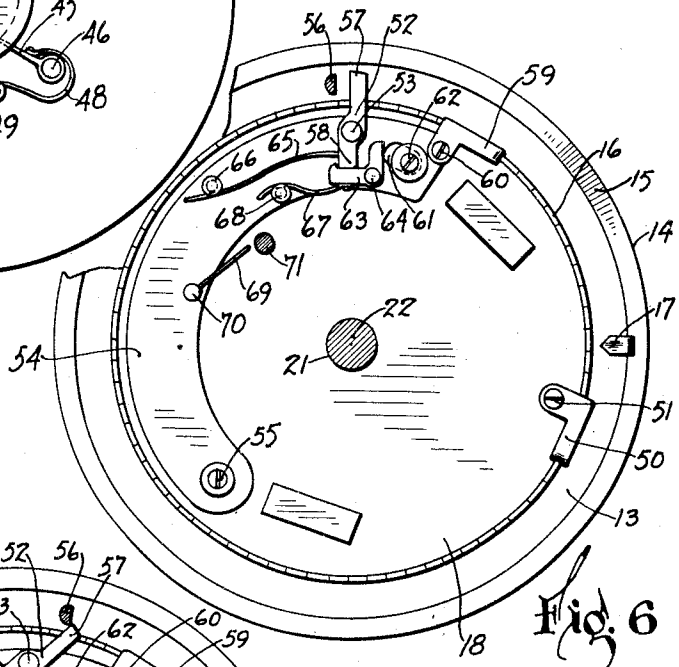


Fig. 6

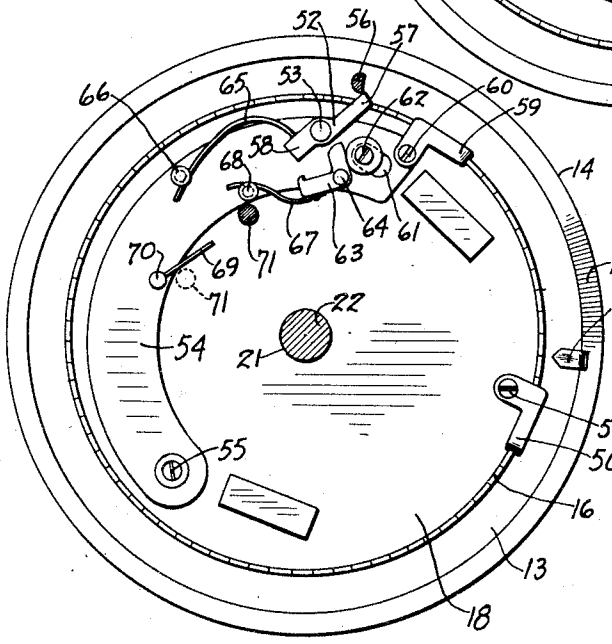


Fig. 7

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2,076,409

GAME COUNTER

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Application March 1, 1935, Serial No. 8,820

7 Claims. (Cl. 235—116)

This invention relates to a mechanical device for adding numbers which will accurately display the total of the numbers so added; which is accurate in its movement; which is easily operated; which has few operating parts; which is convenient in use; and which is economical to manufacture.

The principal object of my invention is to provide an adding device or counter which will accurately display totals from one to ten thousand, and be re-set to zero at any time without carrying through the full total for which the device is capable of computing.

Another object is to provide a counter for games as, for example, cribbage, auction bridge and hearts, in which the points scored are counted by turning a knob counter-clockwise the number of points to be scored and then turning the knob clockwise to zero, the clockwise movement carrying with it an indicator to register the total points scored in the game.

Another object is to provide a counter for games and the like in which is provided a plurality of indicators, one of which registers the points scored up to one hundred and the other of which registers in hundreds up to ten thousand.

The above objects, and other objects relating to details of construction, methods of operation, together with advantages to be derived therefrom will be apparent from the detailed description to follow and the accompanying drawings which are illustrative only and not as limiting the scope of the invention.

In the drawings:

Fig. 1 is a plan view showing an approved form of my invention.

Fig. 2 is an enlarged detailed sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a view similar to Fig. 2, showing the several parts in spaced relation to better illustrate the manner in which they are assembled.

Fig. 4 is a sectional view through the operating knob, looking in the direction of the arrows 4—4 of Fig. 2 showing the knob on the cover slightly rotated counter-clockwise from the position shown in Fig. 1.

Fig. 5 is a bottom plan view of the plate comprising the unit rotor with the brake thereon, looking in the direction of the arrows 5—5 of Fig. 3.

Fig. 6 is a view looking in the direction of the arrows 6—6 of Fig. 3.

Fig. 7 is a view similar to Fig. 6, showing the mechanism in position at the time the indicator which totals in hundreds is moved forward one graduation.

Referring to the numbered parts of the drawings in which like numerals refer to like parts throughout the several views, I have shown a base 10 having a flange 11 extending therearound to provide a circular depression 12 to receive the rotatable member 13, hereinafter referred to as the hundreds rotor, which has an upstanding flange 14 formed thereon preferably provided with a knurled surface 15 to assist in rotating the member 13 by hand if desired and for a purpose to be hereinafter described. A rack or ratchet 16 is firmly secured to the inner face of the member 13 and as illustrated in the drawings is provided with one hundred teeth so that as the same is moved the distance of one tooth, the hundreds rotor 13 will be moved a like amount and carry with it the indicator 17 which is firmly secured in the flange portion 14 of the member 13 in any desired manner. The circular disk or plate 18 is recessed at 19 to fit over and seat on the flange 20 formed on the inner face of the hundreds rotor 13, as is clearly shown in Figs. 2 and 3. The plate or disk 18 has an aperture 21 in the center thereof through which extends a cap screw 22 having its head 23 seated in a recess 24 formed in the bottom face of the base 10 and with its shank extending through an aperture 25 in the base in axial alignment with the aperture 21 formed in the plate 18.

Positioned above the plate 18 and concentric therewith is the disk 26, hereinafter referred to as units rotor, having a flange 27 around the periphery thereof on which is secured an indicator 28 for indicating, in a manner hereinafter to be described, the units up to one hundred to be added to the predetermined amount which may show on the device. Positioned above and concentric with the units rotor 26, is a cover 29 which preferably has a sloping outer face 30 on which is embossed, printed or otherwise displayed graduations ranging from zero to one hundred. The graduations may be as indicated in Fig. 1 or in any other manner suitable for the purpose, which graduations will be referred to by the numeral 31. The cover 29 is provided with an operating knob 32 which is apertured at 33 to receive the bushing 34 having a tongue 35 extending upwardly therefrom to form a stop member when the cover is rotated to bring the tongue 35 into engagement with the pin 36. Referring to Fig. 4, it will be seen that the slot 37 in the button 38 is somewhat wider than the pin 36 which permits the pin to have limited move-

ment therein to enable the cover 30 to rotate further relative to the button 38 than if the pin 36 were stationary in the button. Fig. 4 shows the knob 32 rotated counter-clockwise from the "stop" position shown in Fig. 1 and the knob can be rotated a full revolution because the pin 36 will also move in the slot 37 in the same direction far enough to permit the stop 35 to be in alignment with the longitudinal axis of the slot. Upon clockwise rotation of the knob 32, the stop 35 will at the end of its movement push the pin 36 to the opposite side of the slot 37, in which position the stop 35 is again in alignment with the slot 37 but on the opposite side of the pin 36. The pin 36 is inserted in a slot 37 extending transversely of the button 38 which is screw-threaded at 39 to receive the screw-threaded end of the cap screw 22 to provide therewith means for clamping the cover 29, the units rotor 26, and the disk 18 mounted in the hundreds rotor 13, against displacement relative to the base 10. The cover 29 and with it the tongue 35 is permitted to rotate substantially a full revolution relative to the pin 36 to enable the operator to turn the cover in a counter-clockwise direction as a part of the operating cycle for a purpose which is to be hereinafter described. The cover 29 is preferably maintained in spaced relation to the units rotor 26 by the spacing ring 40 which also provides a drag against involuntary counter-clockwise movement of the cover 29, space for the ratchet 41 which also is formed with a hundred teeth therein, and the pawl 42 which is secured to the units rotor 26 by the screw or rivet 43 and which is adapted to yieldingly engage with one of the teeth in the ratchet 41.

Immediately below the units rotor 26 and above the disk 18 is a brake sheave 44 which has integrally formed on its uppermost portion a bearing to support the rotor 26. The brake sheave 44 is clamped between the button 38 and the plate 18 and is maintained stationary with the base so that it does not rotate with the cover 29 or the units rotor 26. A brake finger 45 is pivotally attached at 46 onto the bottom face of the units rotor 26 with its free end engaging in the recess 47 formed in the brake sheave 44 to prevent counter-clockwise movement of the units rotor 26. The brake finger 45 is maintained in position against the brake sheave 44 by the spring 48 which is secured at one end thereof to the brake finger 45 and has its free end positioned behind the stop 49 formed on the bottom of the units rotor 26 in a manner to exert sufficient pressure on the brake finger 45 to maintain the same in proper engagement with the brake sheave 44 to prevent any backward or lost motion between the respective members in the event any pressure is brought on the units rotor 26 tending to cause it to rotate in a counter-clockwise direction.

From the foregoing description of the parts, it will be seen that if it is desired to indicate a certain number or total on the dial 31, that the cover 29 can be rotated in a counter-clockwise direction by the knob 32 the number of points desired at which time the pawl 42 will ride over the ratchet teeth 41 to permit the counter-clockwise movement and then when the cover 29 and with it the dial 31 is moved in a clockwise direction carrying with it the units rotor 26 the same number of points which it has been moved in the counter-clockwise direction, the indicator 28 on the flange 27 of the unit rotor 26 will be moved forward in a clockwise direction the number of points indicated, thus showing in the first instance the number of points which the cover was moved in a counter-clockwise direction.

On repeating the operation in adding further units to the total, the indicator 28 will be moved in a clockwise direction the total number of points added; to illustrate, if the first number to be registered is ten, the knob 32 would be rotated in a counter-clockwise direction ten points and then rotated in a clockwise direction until the dial comes to rest against the stop pin 36; that is, when the tongue 35 on the bushing 34 abuts against the pin. At that time the indicator 28 will have been moved in a clockwise direction ten points and stop on the numeral 10 of the dial. Then, if it is desired to add nine more points to the total, the knob would be turned nine points in a counter-clockwise direction and then rotated in a clockwise direction until the tongue 35 comes to rest against the pin 36 during which time the indicator 28 will be moved forward the nine points registering on the dial at 19. This operation can be repeated any number of times up to 100 at which time the hundreds indicating mechanism presently to be described will operate to show the hundred as well as the units to be added to the total.

The disk 18 is maintained against rotation relative to the base 10 and the hundreds rotor 13 is prevented from moving counter-clockwise relative to the base by the spring finger or pawl 50 which is firmly attached to the disk 18 by the screw or rivet 51 and which has its free end engageable with one of the teeth formed in the ratchet 16.

The mechanism for moving the hundreds rotor 13 in a clockwise direction comprises a trigger or trip member 52 pivotally supported at 53 on a swinging arm 54 which is pivotally mounted at 55 on the disk 18. A pin 56 on the bottom face of the units rotor 26 is adapted to move against the outer arm 57 of the trip member 52 to swing the arm 54 on its pivot 55 and carry forward with it, the spring finger 59 which engages one of the teeth of the rack 16 at its free end and which is secured to the swinging arm 54 at 60. The swinging arm 54 is slotted at 61 to receive a pin 62 on the disk 18 to limit the pivotal movement of said arm. The slot 61 in the arm 54 is of the proper size and proportion so that the finger 59 carried thereon is permitted to move the hundreds rotor the distance of one tooth formed in the ratchet 16 so that when the arm 54 and with it the finger 59 have moved to the position shown in Fig. 7, the pin 56 will be permitted to move past the outer arm 57 of the trip member 52.

I provide a latch member 63 which is pivoted at 64 on the arm 54 adapted to engage against the free end of the inner arm 58 of the trip member 52 to maintain the trip member in the position shown in Fig. 6 until the mechanism has been carried forward in a clockwise direction to carry forward the hundreds rotor 26 the distance of one tooth formed on the rack 16. When in that forward position the head of the pin 62 will rotate the bell crank latch 63 against the spring 67 to release the end 58 of the trip member 52 so that the pin 56 will pass the trip member 52, against the action of the spring 65 which has its free end behind the post 66 carried on the swinging member 54. When the trip member 52 has snapped out of engagement with the latch 63 or is released therefrom, the spring 67 having one

end secured to the latch 63 and the other end back of the post 68 will maintain the latch 63 in proper position to again engage the arm 58 of the trip member 52 upon the same being returned to the position shown in Fig. 6 by the spring 65. A spring finger 69 carried in a post 70 on the swinging arm 54 is adapted to be engaged by a pin 71 on the bottom face of the units rotor 26 as the same is rotated toward the end of its circuit to swing the arm 54 outwardly on its pivot 55 and thus carry the pawl or spring finger 59 backwardly or in a counter-clockwise direction a sufficient amount to permit it to engage with the preceding tooth formed in the rack 16 and thus be in a position to again permit the pin 56 to engage with the trip member 52 to again carry the spring finger 59 forwardly in a manner heretofore described to move the hundreds rotor 13 forwardly one graduation or one numeral. In moving the hundreds rotor forwardly in the manner heretofore described, the indicator 17 thereon will be carried forwardly in a clockwise direction to thereby indicate on the dial 31 the hundreds that are to be added to the total at the time the dial is again at rest on its stop. In other words, the total score can be read at any time the dial is at rest against its stop.

In the playing of some games, it is desirable to provide a further indicator in which case I prefer to recess the cover 29 at 72 to receive the spring ring 73 on which is an indicator 74 which may be moved manually either in a counter-clockwise or clockwise direction. This indicator has been found to be of an advantage when it is desired to indicate the total by units and hundreds on the dial as heretofore described and it is also desired to indicate a separate score which may or may not be added to the total at any time during the computation of the totals which are to be added.

Having now described the numbered parts of my invention, the operation of the same should be readily understood. As previously stated the cover 29 may be rotated by the knob 32 in a counter-clockwise direction any number of points up to 100 relative to the units and hundreds rotors and then may be rotated by the knob 32 in a clockwise direction the same number of points it has been rotated in a counter-clockwise direction rotating the units rotor 26 therewith. At the end of the clockwise rotation, the tongue 35 on the sleeve 34 rotatable with the cover 29 will abut against the pin 36 extending outwardly from the recess 37 formed in the button 38 so that the cover 29 and with it the dial thereon is caused to come to rest at a fixed stop which preferably is indicated at zero. Now, if it is desired to show ten points scored, the knob 32 will be rotated in a counter-clockwise direction until the numeral 10 is opposite the indicator 75 fixed on the base 10 whereupon the knob 32 will then be rotated in a clockwise direction so that the rack 41 carried by the cover 29 will cause the pawl 42 in engagement therewith to rotate the units rotor 26 the ten points, thus carrying the indicator 28 forwardly to come to rest at the numeral 10 when the cover 29 has been rotated to its stop position. This operation may be repeated any number of times until 100 points are registered at which time the pin 56 on the bottom face of the units rotor 26 will engage with the trip member 52 carried by the swinging member 54 pivotally mounted at 55 on the disk 18 and cause the spring finger 59 carried by the swinging member 54 to move the ratchet 16 and with it the hundredth rotor one hundredth part of a revolution, thus causing the indicator 17 carried by the flange face thereof to move one hundredth part of a revolution and indicate on the dial that one hundred points have been added to the sum total. This operation may be repeated again and again, thus providing a mechanism for giving a total up to 10,000 points.

If at any time it is desired to set the mechanism at zero or at the starting point, either or both of the units rotor 26 and the hundreds rotor 13 can be rotated manually in a clockwise direction to the zero position. It will thus be seen that the mechanism can be set at any time for a new game or for the addition of new totals without carrying through the adding mechanism to the capacity of the device.

While I have shown and described my invention as comprising mechanism which adds totals in units and hundreds, it will be well understood to those skilled in the art that the dial can be modified to fractions of an inch and that the ratchets 16 and 41 can then each have 64 teeth therein in which case totals may be had in inches and in fractional parts thereof without in any way changing the operating parts previously described except the change of the ratchets from 100 teeth to 64 teeth. In like manner, if even coarser graduations are desired, 32 teeth, for example, may be provided in the ratchet thus measuring the larger fractions of an inch. Also, it may be understood that if desired I may provide a counting device for adding totals in units in which case I would dispense with the hundreds rotor 13 and the operating parts therefor and then mount the units rotor 26 directly on the base 10 to operate in the same manner as previously described.

The terms "clockwise" and "counterclockwise" are used herein merely for convenience to indicate opposite relative directions and claims containing these terms are intended to be thus broadly construed.

While I have shown and described one preferred mechanical embodiment of my invention, it will be understood by those skilled in the art that various changes in details of construction and methods of manufacture may be resorted to without departing from the spirit and substance of my invention, the scope of which is to be measured entirely by the scope of the sub-joined claims.

What I claim is:

1. A game counter comprising, a base, a hundreds rotor supported by said base rotatable relative thereto, a units rotor rotatable relative to said base on an axis common to said hundreds rotor, a cover having a dial thereon rotatable on an axis common to said rotors and rotatable counter-clockwise relative to said rotors, means cooperating with said cover and units rotor to cause said units rotor to rotate clockwise in unison with said cover, means cooperating with said units rotor and hundreds rotor to cause said hundreds rotor to rotate one point upon each full revolution of said units rotor, and means for registering on said dial the number of points each of said rotors has been rotated.

2. A game counter comprising, a base, a units rotor, a hundreds rotor, a cover having a dial thereon, said rotors and cover being rotatable on a common axis on said base, and said cover being rotatable counter-clockwise substantially a full revolution, stop means to limit the clockwise rotation of said cover at a predetermined point,

means to cause said units rotor to rotate in a clockwise direction in unison with said cover and register on said dial the number of points so rotated, and means to cause said hundreds rotor to rotate in a clockwise direction one point upon each full revolution of said units rotor and register on said dial the total number of points so rotated.

3. A game counter comprising, a base, a units rotor, a hundreds rotor, a cover having a dial thereon, said rotors and cover being rotatable on a common axis on said base, and said cover being rotatable counter-clockwise substantially a full revolution, stop means to limit the clockwise rotation of said cover at a predetermined point, a ratchet supported by said cover and a pawl supported by said units rotor to cause said units rotor to rotate in a clockwise direction in unison with said cover, means to cause said hundreds rotor to rotate in a clockwise direction one point upon each full revolution of said units rotor, and means to register on said dial the total number of points each of said rotors is rotated.

4. A game counter comprising, a base, a units rotor, a hundreds rotor, a cover having a dial thereon, said rotors and cover being rotatable on a common axis on said base, and said cover being rotatable counter-clockwise substantially a full revolution, means to prevent counter-clockwise movement of each of said rotors, stop means to limit the clockwise rotation of said cover at a predetermined point, means to cause said units rotor to rotate in a clockwise direction in unison with said cover, means to cause said hundreds rotor to rotate in a clockwise direction one point upon each full revolution of said units rotor, and means to register on said dial the total number of points each of said rotors is rotated.

5. A game counter comprising, a base, a units rotor, a hundreds rotor, a cover having a dial thereon, said rotors and cover being rotatable on a common axis on said base, means to prevent counter-clockwise rotation of each of said rotors, a ratchet on said cover and a pawl on said units rotor operable whereby said cover may be rotated counter-clockwise substantially a full revolution, stop means to limit the clockwise rotation of said cover at a predetermined point, said pawl and ratchet causing said units rotor to rotate in unison with said cover in said clockwise direction, a ratchet carried by said hundreds rotor, and means cooperating therewith to cause said hundreds rotor to rotate one point upon each full revolution of said units rotor, and means to register on said dial the number of points each of said rotors is rotated.

6. A game counter comprising, a base, a units rotor, a hundreds rotor, a disk fixed against rotation relative to said base, a cover having a dial thereon rotatable on an axis common to said rotors and rotatable counter-clockwise substantially a full revolution, stop means to limit the clockwise rotation of said cover at a predetermined point, means cooperating with said cover and units rotor to cause said units rotor to rotate in unison in a clockwise direction with said cover, a pin on said units rotor, a rack on said hundreds rotor, means supported by said disk operated by said pin on said units rotor to cause said hundreds rotor to rotate one point upon each full revolution of said units rotor, and means to register on said dial the number of points each of said rotors is rotated.

7. A game counter comprising, a base, a units rotor, a hundreds rotor, a disk fixed against rotation relative to said rotors, a cover having a dial thereon rotatable on an axis common to said rotors and rotatable counter-clockwise substantially a full revolution, stop means to limit the clockwise rotation of said cover at a predetermined point, means to cause said units rotor to rotate in a clockwise direction in unison with said cover, a pin carried by said units rotor, trip mechanism carried by said disk, a ratchet carried by said hundreds rotor, said pin acting upon said trip mechanism to cause rotation of said ratchet and hundreds rotor one point upon each full revolution of said units rotor, and means to register on said dial the number of points each of said rotors is rotated.

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