April 26, 1938. C. KLEMT 2,115,024

PARKING METER

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Fig. 2.

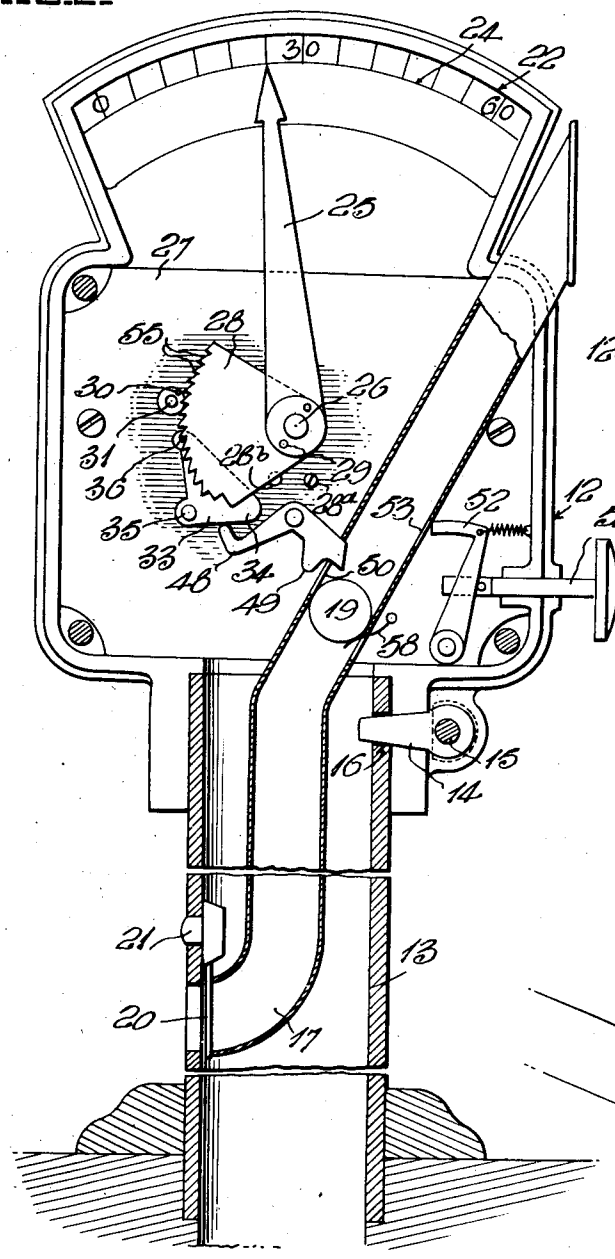
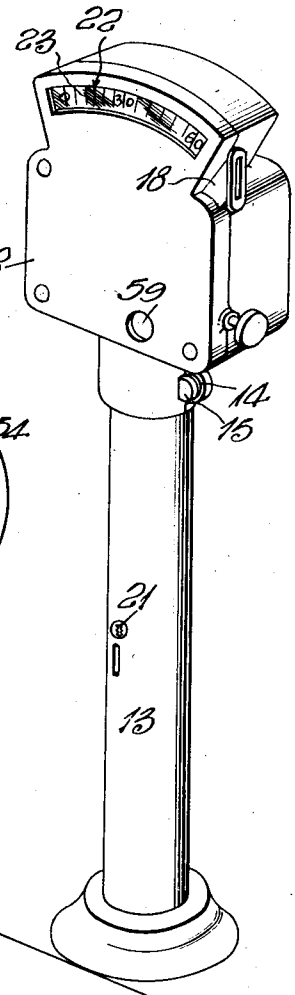


Fig. 1.



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FIG. 8

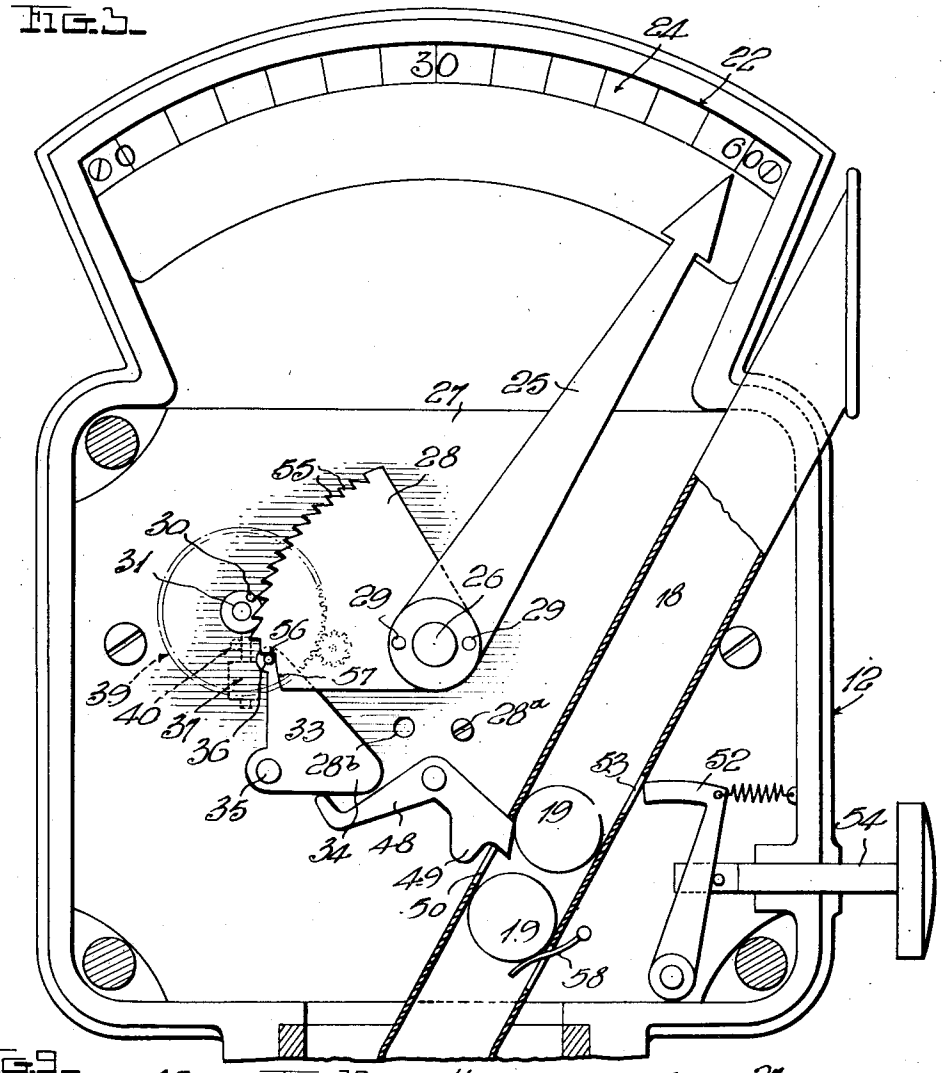


FIG. 9

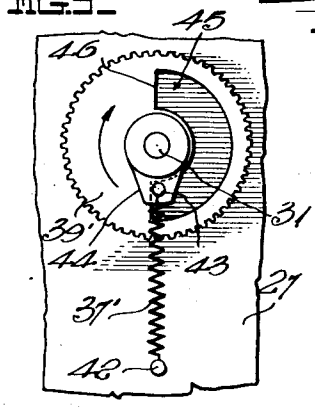


FIG. 10

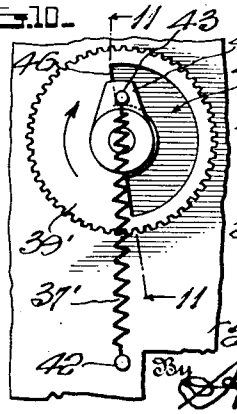
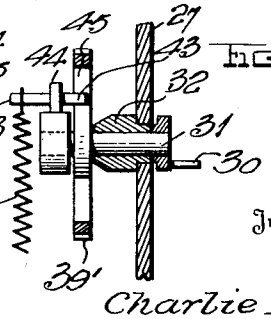


FIG. 11



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Fig. 4.

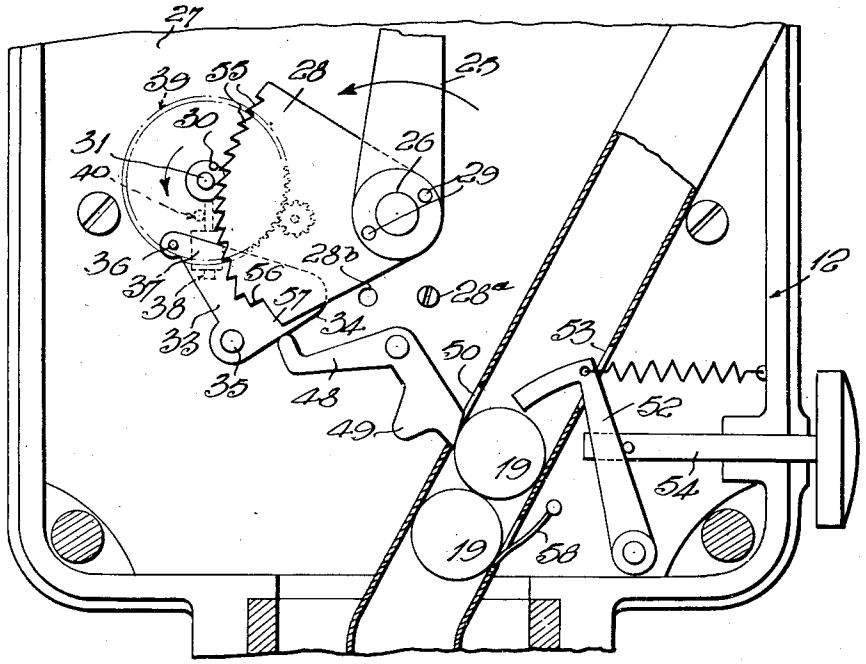


Fig. 5.

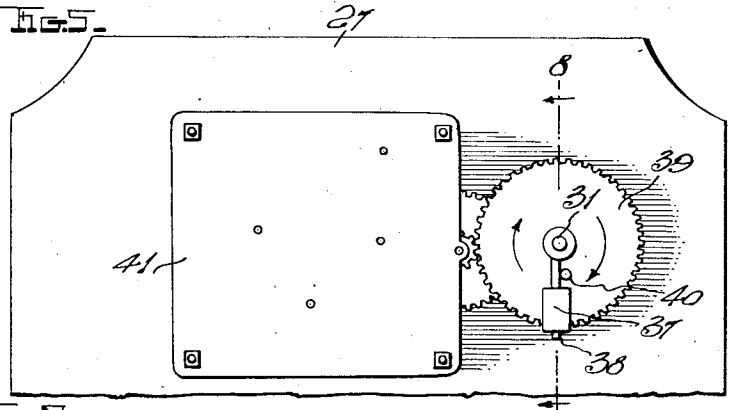


Fig. 8.

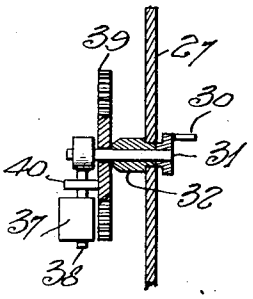


Fig. 7.

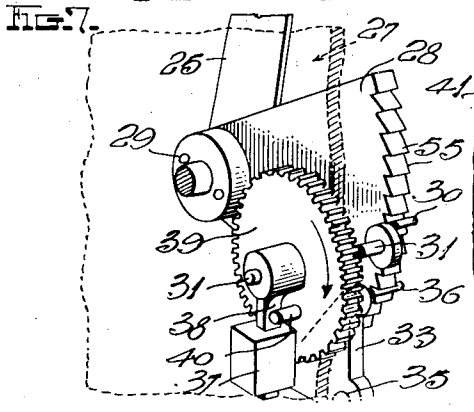
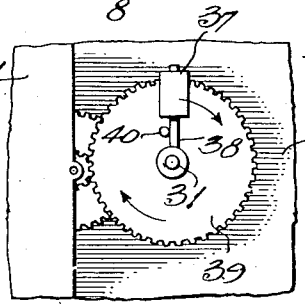


Fig. 6.



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Patented Apr. 26, 1938 2,115,024

UNITED STATES PATENT OFFICE

2,115,024

PARKING METER

Charlie Klemt, San Antonio, Tex.

Application September 5, 1936, Serial No. 99,655

7 Claims. (Cl. 161—15)

The invention relates to coin or check-controlled meters used along curbs in cities, or at other locations, and of such construction as to be brought into operation by insertion of a coin or check and adapted to give some sort of an indication a predetermined time after insertion of the coin or check. When this indication is given, if the car parked by the meter has not been moved, another coin or check should be inserted for continuation of the parking privilege for a like period. If this be not done however, anyone looking at the meter may ascertain that the car has been parked beyond the allotted time and the meter is therefore of great advantage to traffic and police officers.

The principal object of the invention is to provide a relatively simple and inexpensive parking meter which may be easily brought into play by anyone wishing to park by said meter.

A further object is to provide a novel construction whereby if the person previously using the meter has not used his allotted time completely, the next user will neither gain nor lose thereby, for provision is made whereby any person inserting a coin and operating the control will effect resetting of the time-indicating means at zero position so that he will benefit for the entire period paid for by the coin or check but will not have any "left-over" time paid for by the previous user, either added to or subtracted from the time for which the last coin or check inserted, has paid.

The time-indicating means is operated in a step-by-step manner, for example, at five minute intervals, and another object of the invention is to provide a novel mechanism whereby each step imparted to said time-indicating means is performed instantaneously, the operating means being then freed from said time-indicating means until the latter is to be moved another step. By thus instantaneously moving the time-indicating means and immediately freeing it from the operating means after such moving, it is insured that said operating means shall not interfere with resetting of the indicating means from any time-indicating position to which it has been moved.

With the foregoing and minor objects in view, the invention resides in the novel subject matter hereinafter described and claimed, description being accomplished by reference to the accompanying drawings.

Fig. 1 is a perspective view.

Fig. 2 is a vertical sectional view partly in elevation showing the relation of parts after the time-indicating pointer has been advanced a number of steps along the coacting scale.

Fig. 3 is an enlarged view similar to Fig. 2 but showing the relation of elements when the indicator has been moved to the maximum along the scale, and illustrating a coin in position for effecting resetting of said indicator to zero position.

Fig. 4 is a fragmentary view similar to a portion of Fig. 3 but illustrating the manner in which the coin operates in effecting indicator resetting.

Most of the movable parts shown in Figs. 2, 3 and 4 are mounted upon one side of a supporting plate and Fig. 5 discloses the mechanism mounted at the other side of said plate, including a weight which effects indicator operation when raised and released, the raising means for said weight being shown in the act of starting to raise said weight.

Fig. 6 is a detail view similar to a portion of Fig. 5 but showing the raised weight about ready to descend by gravity to effect instantaneous movement of the indicator one step.

Fig. 7 is a perspective view showing the manner in which the mechanism of Figs. 2, 3 and 4 and that of Figs. 5 and 6, are connected with each other to cause descent of the weight to effect indicator operation.

Fig. 8 is a detail sectional view on line 8—8 of Fig. 5.

Figs. 9 and 10 are views similar to Figs. 5 and 6 but showing a construction in which a spring takes the place of the weight.

Fig. 11 is a sectional view on line 11—11 of Fig. 10.

Preferred features of construction have been shown in the drawings and while these structural features will be rather specifically explained, it is to be understood that the present disclosure is illustrative rather than limiting, and that various changes may be made within the scope of the invention as claimed.

A casing 12 is provided supported by an appropriate post 13, said casing being preferably secured to said post by a key 14 riveted at 15 to the casing and projecting into an opening 16 in said post. This post is preferably hollow and contains the lower end 17 of a coin chute 18 into which the coins 19 for bringing the meter into play, are dropped. The lower end portion of the chute constitutes a receptacle for the used coins and they may be removed from said receptacle by opening a key-controlled gate 20, the lock for said gate being indicated at 21.

The upper portion of the casing 12 is provided

with either one or two arcuate windows 22 having suitable transparent coverings 23, and a time-indicating scale 24 is visible through each window. This scale may be of such length and so divided as to represent any desired parking period and fractions thereof, a sixty-minute scale being shown for illustrative purposes. Cooperable with this scale is an indicator 25 which is pivotally mounted in the casing as denoted at 26, said indicator and scale jointly forming the time-indicating means of the meter. The pivot 26 may be mounted in any preferred way but for illustrative purposes, it is carried by a vertical plate 27 mounted between the front and rear sides of the casing 12, and I utilize said plate 27 also, in the present disclosure of the invention, to mount most of the movable parts hereinafter described.

A toothed sector 28 is secured to the indicator 25, if the latter be loose upon the pivot 26, or may be secured to said pivot if the latter be loose in the plate 27 and secured to said indicator. In the present showing, the pivot 26 is fixedly carried by the plate 27, the indicator 25 is loose upon said pivot, and the sector 28 is secured by pins 29 to the hub of said indicator. The sector 28 is cooperable with a crank pin 30 on one end of a short shaft 31 which passes rotatably through a bearing 32 carried rigidly by the plate 27. Whenever the indicator 25 is at rest, either at zero or at one or another time-indicating position, the crank pin 30 occupies about the position shown in Fig. 2 and in Figs. 4 and 7 and provision is made for slowly rotating the shaft 31 in the direction of the arrows in said views, until said crank pin 30 is in readiness to engage a tooth of the sector 28. At this time, the shaft 31 is rapidly turned in the same direction so that the crank pin 30 instantaneously engages the sector tooth and immediately disengages from said tooth, again arriving at the position shown in Figs. 2, 4 and 7. By having the crank pin 30 only instantaneously engage the sector 28, it cannot interfere with reverse movement of said sector (except possibly for an instant) when resetting the indicator 25 from any of the positions to which it has been moved. During the instant in which crank pin 30 engages the sector 28, it turns the latter one tooth to advance the indicator 25 along the scale 24, and in the present showing, each step or movement thus imparted instantaneously to the pointer, advances the latter five minutes upon the aforesaid scale.

An appropriate dog 33 is provided for coaction with the toothed sector 28 to hold it against return movement after each operation, thereby holding the indicator 25 against return to its zero position until said dog is released. This dog may be engaged with the sector under the influence of gravity or a spring and in the present showing, it is provided with a weighted portion 34. The pivot of the dog, mounting it upon the plate 27, is shown at 35 and the tooth-engaging portion of said dog is shown in the form of a pin 36. In Figs. 2 and 7, the pin 36 is engaged with the sector 28 and thus holds the indicator 25 against retrograde movement, but in Fig. 4, the dog has been released by coin-controlled mechanism hereinafter described, for the purpose of accomplishing resetting of the indicator 25 to its zero position. In the present disclosure, this indicator is biased toward its zero position by the weight of the sector 28, but a spring could be used if desired. By having the indicator biased toward zero, as soon as the dog 33 is released from the sector 28, said indicator will return to its zero setting, being limited by a stop screw 28a.

The shaft 31, except in Figs. 9, 10 and 11 hereinafter explained, is provided with an off-center weight 37 preferably secured to an arm 38 projecting from said shaft. When the crank pin 30 is in the position shown in Figs. 2, 3, 4 and 7, the weight 37 occupies the lowered position shown in Figs. 2, 3, 4, 5, 7 and 8, but provision is made for slowly swinging said weight upwardly until it is slightly past the dead-center position shown in Fig. 6, and for then releasing said weight, allowing it to descend rapidly by gravity. During the relatively slow raising of the weight 37, the crank pin 30 moves from the position shown in Figs. 2, 3, 4 and 7 to a point at which it is in readiness to engage the sector 28 and during the rapid descent of the weight 37 by gravity, said crank pin instantaneously engages said sector 28 to move the same one tooth and immediately disengages from said sector, thereby advancing the indicator 25 one step along the scale 24 and then immediately freeing said indicator from the operating means, preventing said operating means from interfering when said indicator is to be reset to zero from any of its time-indicating positions. Should a coin be inserted in the chute 18 at the moment pin 30 starts to engage the sector 28, said pin will have completed its movement and operated the sector before the coin can be used to release the dog 33 and the only time at which pin 30 can interfere with indicator-resetting is when the dog is released at the exact moment the pin is turning the sector, but this will be only a negligible interference of too short duration to prevent return of the indicator to zero.

For swinging the weight 31 upwardly from the position of most of the views to that shown in Fig. 6 and slightly past this latter position, any preferred means may be employed. For illustrative purposes, I have disclosed a driven wheel 39 having a pin 40 which engages the arm 38 when the weight is lowered (see Fig. 5) and frees said arm when it has been swung slightly past the dead-center position shown in Fig. 6. The wheel 39 may be operated by a synchronous electric motor, an electric clock, or a spring-driven clock, the latter being indicated at 41, said clock being mounted upon the plate 27.

In Figs. 9, 10 and 11, a spring 37' performs the same office as the weight 37, in that this spring is slowly moved to store energy and then rapidly moved under the influence of this energy to effect instantaneous movement of the indicator 25. The spring 37' is shown of the tension type, anchored to the plate 27 at one end, as indicated at 42, and connected at its other end to a pin 43 on an arm 44 secured to the shaft 31. Loose upon this shaft 31 is a wheel 39' corresponding to the wheel 39 and driven in the same way, said wheel having an arcuate slot 45 into which one end of the pin 43 projects. When the parts stand as shown in Fig. 9, the crank pin 30 is in the position shown for instance in Figs. 3 and 4 and said crank pin remains in this position until the wheel 39' has rotated sufficiently to cause the end 46 of the slot 45 to abut the pin 43. When this occurs, the wheel 39' starts to slowly turn the shaft 31 and when the parts have been turned slightly past the dead-center position shown in Fig. 10, the spring 37' acts to quickly turn the shaft 31, causing instantaneous movement of the crank pin 30 to operate the indicator 25 one step along the scale.

While the spring 37' is shown of the tension type, a compression spring could obviously be used instead and whenever I refer to tensioning the spring, it is to be understood that this language is intended to be sufficiently broad to cover stretching a tension spring or compressing a compression spring.

A releasing lever 48 is provided for the dog 33, said lever being held against said dog by a suitable spring or by weight 49. One end of this lever 48 passes through a slot 50 in the coin chute 18 to be struck and actuated by any coin or check 19 dropped into said chute (see Fig. 3). A swingable arm 52 is movable through a slot 53 in the chute 18, under the influence of a hand-actuated plunger 54, for the purpose of so forcing against the coin or the like (if its weight does not move the parts) as to swing the releasing lever 48 to the position shown in Fig. 4, thus releasing the dog 33 from the sector 28 and allowing the indicator 25 to return to its zero position. Except after moving the pointer 25 to its final position (see Fig. 3), the pin 36 coacts with the teeth 55 of the sector 28, but a special shoulder 56 is preferably provided on said sector to rest upon said pin when the indicator 25 has reached the final time-indicating position shown in Fig. 3, and said sector is provided with an arcuate edge 57 extending downwardly from said shoulder 56. If, after the indicator 25 reaches the end of the scale, the meter be not promptly reset, all successive quick movements of the pin 30 will move the sector 28 and move said indicator slightly past the last reading on the scale to an overtime position, but each time said pin clears the sector, the latter drops until the shoulder 56 again rests on the pin 36, returning the indicator to said last reading on the scale. During any such movement of the indicator 25 past the last reading on the scale, the pin 36 merely rides upon the edge 57. It will thus be seen that while the indicator is advanced in a normal manner to its succeeding time-indicating positions, it will be moved in an abnormal oscillatory manner after reaching the final time-indicating position. This abnormal movement is not only of advantage to prevent injury or jamming of any parts, but it attracts attention to the fact that the parking period has more than expired. When constructing the meter to move the indicator at more frequent intervals, the abnormal movement will, of course, be more conspicuous.

After the coin or check 19 has performed its duty, its further descent in the chute 18 is arrested by a spring 58 and it is then visible at a small window 59 in the casing 12. When the next coin has performed its duty, it forces the previously used coin past the spring 58 and it descends into the lower end 17 of the chute with the previously used coins.

While the operation will be clear from the foregoing, it may be briefly stated for the benefit of those not wishing to read the entire specification. We will assume that one person has made use of the parking meter and has used say forty-five minutes of the allotted one hour. The next person, we will assume, enters the parking space as soon as the previous user leaves it. He deposits a coin or other check into the chute 18 and pushes the plunger 54. The result is that the dog 33 which previously held the indicator 25 in the last position to which it was moved, is released, and said indicator being biased toward its zero position, automatically returns to said position upon release of said dog. The continuously driven wheel 39' now lifts the weight 37 to the position shown in Fig. 6, or the corresponding wheel 39' tensions the spring 37' to the position shown in Fig. 10, and immediately thereafter either the weight or the spring as the case may be, quickly turns the shaft 31, causing the crank pin 30 to instantaneously engage the sector 28 and then immediately disengage from said sector, advancing the sector one notch and in the present disclosure, advancing the indicator 25 five minutes along the scale 24. These operations are repeated until another coin is finally inserted to reset the indicator 25 at zero, and if no other coin or check be inserted promptly after arrival of the indicator at the end of the scale, the pin 36 of the dog 33 will merely ride upon the edge 57 of the sector 28 each time said sector is engaged and moved by the pin 30. Obviously, the releasing lever 48 will release the dog whether the pin 36 be engaged with one of the teeth 55 of the sector 28 or with the shoulder 56 thereof.

From the foregoing taken in connection with the accompanying drawings, it will be seen that novel and advantageous structure has been provided for carrying out the objects of the invention, and while preferred features have been illustrated as above mentioned, attention is again invited to the fact that the present disclosure is illustrative rather than limiting.

The stop screw 28[a] may be shiftable into different openings if desired, one of said openings being shown at 28[b]. This is done if it be desired to adjust the meter for a shorter period. For instance, if one-half hour instead of a full hour is to be allotted to the parker, the screw 28[a] will be so positioned that the zero setting of the indicator 25 will be half way between the ends of the time scale 24. Under such circumstances, a shorter properly divided and numbered scale is preferably substituted for the scale 24.

I claim:—

1. A parking meter comprising time-indicating means, driving means, operating mechanism for said time-indicating means interposed between the same and said driving means and including an energy-storing element, and a member which is periodically moved slowly by said driving means to store energy in said element, said member being rapidly moved under the influence of said energy after each energy-storing operation, said operating mechanism also including means for operatively connecting said member with said time-indicating means each time said member is rapidly moved but only for an instant, to instantaneously operate said time-indicating means and then free the same, releasable holding means for holding said time-indicating means against return when it has reached any of its time-indicating positions, and means for effecting release of said holding means to accomplish resetting of said time-indicating means to zero position whenever desired.

2. A device of the class described comprising indicating means, driving means, operating mechanism for said indicating means interposed between the same and said driving means and including an energy-storing element and a member which is periodically moved slowly by said driving means to store energy in said element, said member being rapidly moved under the influence of said energy after each energy-storing operation, said operating mechanism also including means for operatively connecting said member with said indicating means each time said member is rapidly moved but only for an instant, to instantane-

ously operate said indicating means and then free the same, releasable means for holding said indicating means against return when it has reached any of its indicating positions, and means for effecting release of said holding means to accomplish resetting of said indicating means to zero position whenever desired.

3. A device of the class described comprising a pivotally mounted pointer having a toothed segment, a rotatable shaft parallel with the pivotal axis of said pointer and having a tooth-engaging element for turning said segment to advance the pointer, said tooth-engaging element being normally disengaged from said segment, a lateral arm secured to said shaft, a driven wheel rotatable on said shaft near said arm and having a lateral projection positioned to abut said arm for the purpose of turning said shaft a half revolution and then freeing the same at each revolution of said wheel, and a quick-acting shaft-turning member connected with said arm, said member being moved by means of said arm to store energy each time said shaft is turned said half revolution, said member being then movable under the influence of the stored energy to rapidly turn the shaft, said tooth-engaging element engaging a tooth of said segment only during the rapid turning of said shaft.

4. A parking or similar meter comprising a casing, a movable time indicator visible at a portion of said casing, and indicator-actuating means in said casing, said indicator-actuating means including means for moving said indicator in a normal manner until it reaches its final time-indicating position, said indicator-actuating means also including means for oscillating said indicator if it be not promptly reset to zero after reaching said final time-indicating position.

5. A parking or similar meter comprising a casing, a time indicator visible at a portion of said casing, intermittently acting means in said casing for advancing said indicator to its succeeding time-indicating positions and for advancing said indicator beyond its final time-indicating position to an overtime position, releasable means for holding said indicator against return from any position except said overtime position, and means constantly urging said indicator toward zero, whereby if said holding means be not promptly released after the indicator reaches said final time-indicating position, said indicator will be alternately moved to said overtime position and returned therefrom to said final time-indicating position.

6. A parking or similar meter comprising a time indicator having a toothed sector, said indicator being constantly biased toward zero, intermittently acting means cooperable with the teeth of said sector for advancing said indicator to its succeeding time-indicating positions and beyond its final time-indicating position to an overtime position, and a releasable dog engageable with the teeth of said sector to hold said time indicator against return to zero from any of said time-indicating positions, said sector having no tooth capable of engaging said dog to hold said time indicator in said overtime position, whereby if said dog be not promptly released after the indicator reaches said final time-indicating position, said indicator will be alternately moved to said overtime position and returned therefrom to said final time-indicating position.

7. A parking or similar meter comprising a casing, a movable time indicator visible at a portion of said casing, and indicator-actuating means in said casing, said indicator-actuating means including means for moving said indicator in a normal manner until it reaches its final time-indicating position, said indicator-actuating means also including means for repeatedly moving said indicator in an abnormal manner if it be not promptly reset to zero after reaching said final time-indicating position.

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