

Sept. 19, 1939.

G. H. J. BAULE

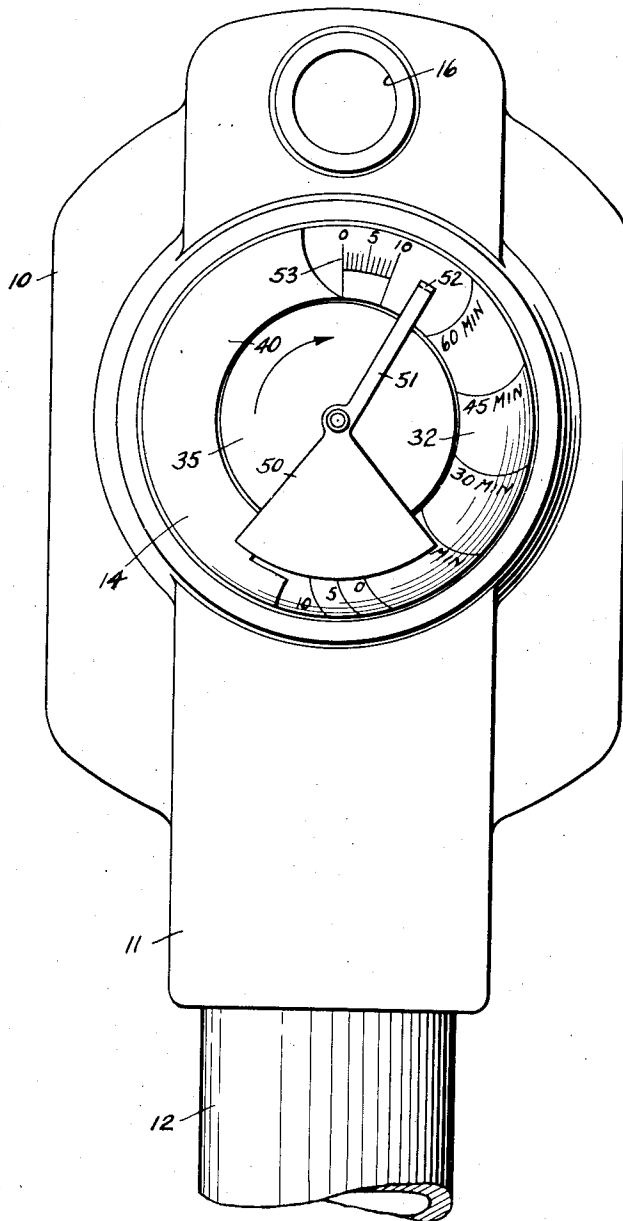
2,173,326

COIN OPERATED TIME INDICATING DEVICE

Filed Jan. 12, 1937

4 Sheets-Sheet 1

FIG. 1.



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FIG. 2.

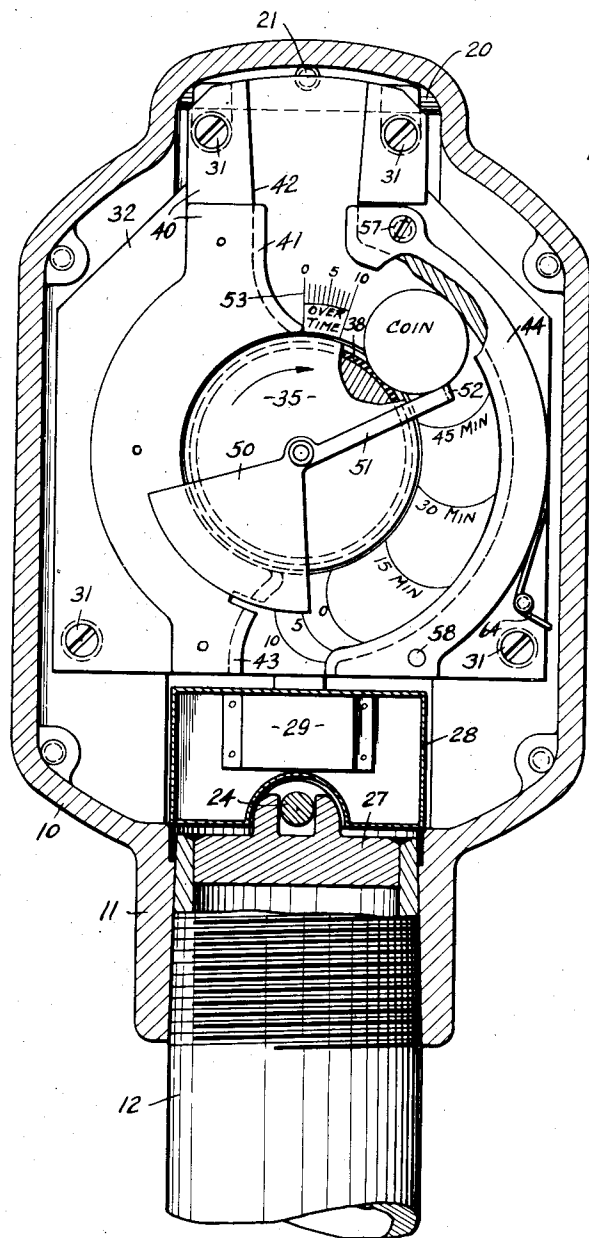
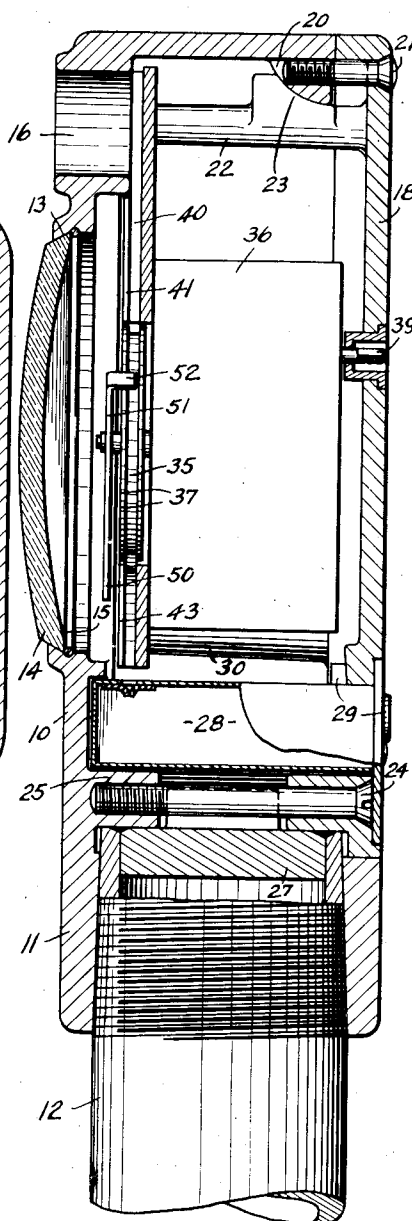


FIG. 3.



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FIG. 4.

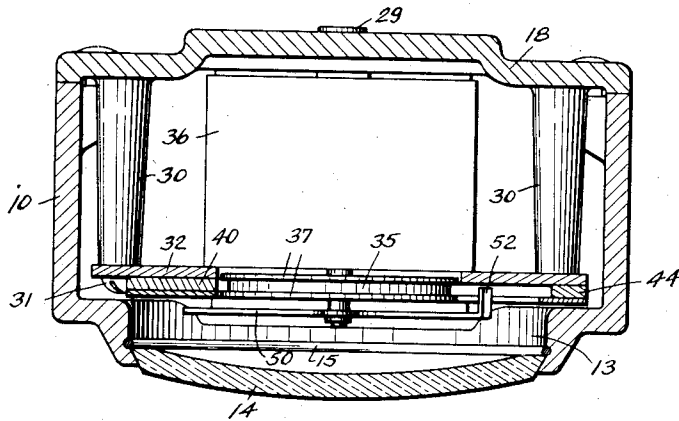


FIG. 5.

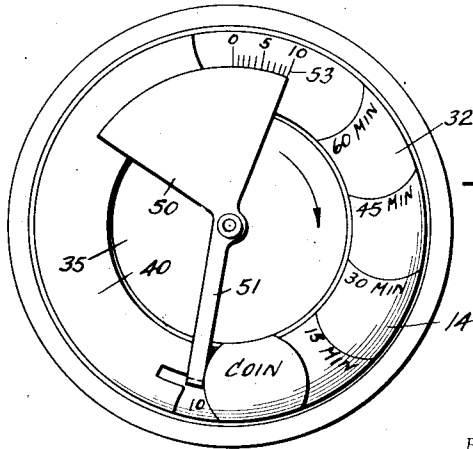
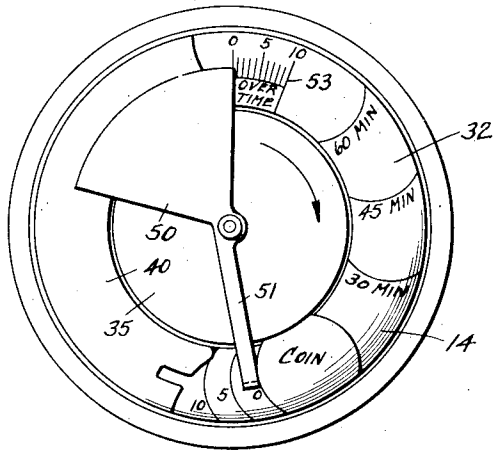


FIG. 6.

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FIG. 7

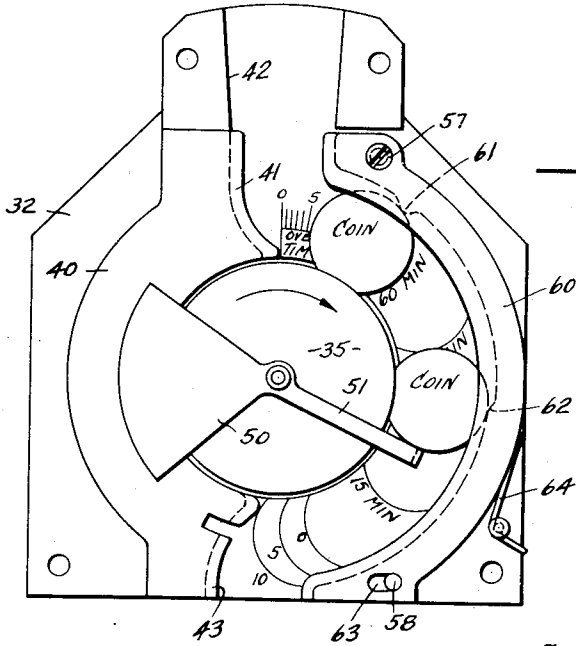
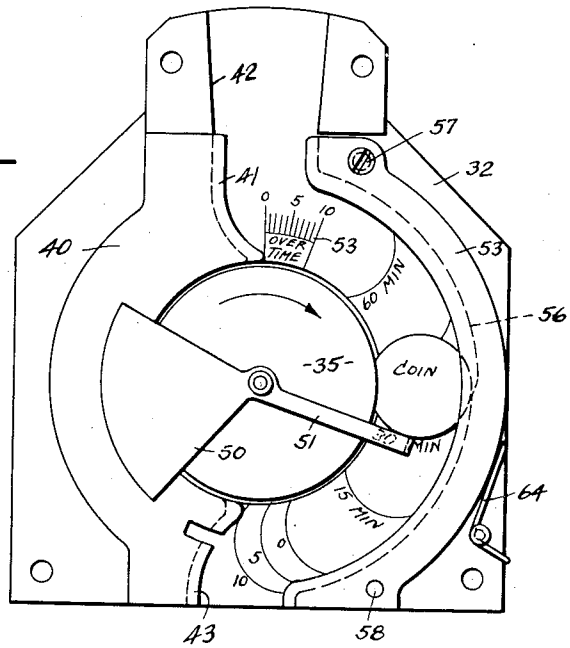


FIG. 8

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UNITED STATES PATENT OFFICE

2,173,326

COIN OPERATED TIME INDICATING DEVICE

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Application January 12, 1937, Serial No. 126,258

2 Claims. (Cl. 194—93)

This invention relates in general to time indicating devices which are operated by, or the operation of which is initiated by, the insertion of a coin, token, or the like. The embodiment of the invention herein referred to is intended particularly as a parking meter. These parking meters are installed along the curb of the sheet and motorists who desire to park their automobiles drive to the curb adjacent one of the parking meters and deposit a coin in the meter. The meter indicates that the coin has been deposited and the length of time that has elapsed since the coin was deposited.

The invention has as an object a particularly simple and economical construction comprising a minimum number of parts, and which is rugged and durable in operation.

The invention has as a further object a construction by which the coin deposited is acted upon by the mechanism in the meter to measure time, and the coin itself visibly indicates the time measured.

The invention has a further object indicating means, in addition to the coin per se, to indicate during operation of the meter the position of the coin and accordingly the measured time.

The invention further includes a construction by which the entire operating mechanism of the meter is readily removable as a unit, and which also includes provision for quickly and conveniently changing the mechanism in the event it is desired to change the operating characteristics of the device.

The invention further includes the provision of novel means for interlocking the meter with its support to prevent theft of the meter, or tampering with the interior of the same by unauthorized persons.

The invention consists in the novel features and in the combinations and constructions hereinafter set forth and claimed.

In describing this invention, reference is had to the accompanying drawings in which like characters designate corresponding parts in all the views.

Figure 1 is a front elevational view of a parking meter embodying my invention.

Figure 2 is a view, similar to Figure 1, with the forward or front side of the housing and parts broken away.

Figure 3 is a vertical, sectional view looking to the left, Figure 1.

Figure 4 is a sectional view looking downward in Figure 1.

Figures 5 and 6 are fragmentary front eleva-

tional views looking through the window opening in Figure 1, and illustrating the coin at different positions of its path of travel.

Figure 7 is a front elevational view of the time indicating mechanism illustrating a modified type of coin guide.

Figure 8 is a view, similar to Figure 7, of still another modified form of coin guide.

In its broader aspects, the invention comprises a housing provided with a coin receiving aperture, motor operated mechanism mounted in the housing and arranged to receive a coin deposited in the aperture, and to advance the coin along a path at a predetermined rate of speed. One side of the housing, for example the front side, is provided with an opening preferably windowed with a piece of heavy glass, or other transparent material, and which is arranged in register with the path traveled by the coin, whereby the position of the coin at all times during the major portion of its travel along the path is visible and accordingly, indicates the elapse of time since the coin was deposited.

The motor operated means referred to, more specifically comprises a disk rotating at a fixed speed, and a coin guide or track arranged substantially concentric with the disk and in spaced apart relationship thereto, so as to maintain the edge of the coin in frictional engagement with the periphery of the disk, whereby upon rotation of the disk a combined rotary and orbital movement is imparted to the coin, and the coin accordingly advanced along its path at a predetermined rate. With the above as a nucleus, the invention comprehends further structural features to render it more flexible and useful for the purpose for which it is intended.

The housing 10 is preferably formed of light cast metal, such as aluminum, and is substantially box-shaped being provided at its lower end with a hub portion 11 here shown as threaded internally so that the housing may be threaded upon a support or pipe 12. The front wall of the housing is provided with a circular opening 13 in which is preferably mounted a transparent window 14 as by the snap ring 15. The front side of the housing 10 is also provided, adjacent the top thereof, with a coin receiving aperture 16. The rear side of the housing is in the form of a detachable plate 18. The top wall of the housing is provided with an inwardly extending rib or flange 20 threaded to receive a fastening screw 21.

The back plate 18 is formed or provided with, adjacent its upper end, a pair of inwardly ex-

tending posts 22 which are formed or cut away as at 23 to receive the rib 20. That is, when the back plate 18 is applied to the housing the posts 22 engage the rib 20 and, as the lower end of the plate 18 is swung inwardly toward the housing, the posts 22 interlock with the rib 20, the screw 21 being used to tightly draw the back plate against the rear edge of the housing to prevent the entrance of moisture or dirt. The lower end of the back plate 18 is secured to the housing by a bolt 24 which extends through the back plate 18 and threads into an inwardly extending boss 25 on the front wall of the housing. In addition to securing the lower end of the back plate 18 to the housing, the bolt 24 passes through a bifurcated plug 27 welded, or otherwise firmly secured, to the end of the pipe 12. Accordingly, the housing can not be detached, or unscrewed, from the pipe or support 12 until after the bolt 24 is first removed. It will be observed that removal of the upper screw 21 does not afford access to the housing, inasmuch as the upper end of the plate, or the posts 22 thereof, is interlocked with the rib 20.

In order to prevent unauthorized access to the bolt 24, the outer end wall of the coin receiving receptacle 28 extends downwardly and covers the head of the bolt 24. Accordingly, when the coin receptacle is secured in place by a lock 29, the meter can not be removed from the supporting pipe 12, nor can the interior mechanism be tampered with, but such access is available only to authorized persons possessing the key to the lock 29.

The back plate is also provided with a pair of lower posts 30 and a plate 32 is detachably secured to the inner ends of the posts 22, 30, by means of screws 31.

A disk 35 is rotatably mounted upon the plate 32, or upon a shaft of the clockwork or motor 36 which in turn is mounted upon the plate 32. The disk 35 is provided with spaced radial flanges 37, and the periphery of the disk intermediate the flanges 37 is preferably provided with an anti-friction surface 38 of rubber, or the like, and the disk is arranged in substantially vertical alignment with the inner end of the coin receiving aperture 16. Any suitable clockwork or motor may be employed which will rotate the disk 35 at a uniform predetermined rate of speed. As here shown, the motor 36 is in the nature of a spring actuated clockwork which is wound by the application of a key to the shaft 39 accessible at the rear side of the housing.

A plate 40 is mounted upon the plate 32, and the upper portion of the plate 40 is formed with a flange 41 to form one side of an upper coin chute 42, and being arranged to direct a coin deposited in the aperture 16 to the top of the disk 35. The plate 40 extends to the left of the disk 35, see Figure 2, and encircles a major portion of the disk, and the lower portion 43 of the plate 40 is formed to provide one side of a lower coin chute which is arranged to direct the coin into the coin receptacle 28. A plate 44 is detachably mounted on the plate 32 on the opposite side of the disk 35, see Figure 2. The plate 44 is in the nature of a coin guide or track, and is arranged substantially concentric with the disk 35 and in spaced apart relationship thereto, the spacing being such that the coin is not permitted to readily pass or fall between the disk 35 and the guide 44, but to maintain the edge of the coin in frictional engagement with the surface 38 of the disk. The upper end of the coin guide 44

also forms the opposite wall of the upper coin chute from the aperture 16, and the lower end of the coin guide 44 terminates so as to permit the coins to drop away from the disk 35 into the coin receptacle 28 after they have traveled through an arc of approximately 180°. It will be observed that as the disk 35 rotates clockwise, a combined rotary and orbital movement is imparted to the coin. As an analogy, the disk 35 may be considered a sun gear, and the coin a planet gear. That portion of the face of the plate 32, exposed between the disk 35 and guide 44 and which is coextensive with the path of travel of the coin, is preferably graduated, see Figure 2. For example, the relative size of the disk 35 and its speed of rotation in connection with the size of the coin, or token, used may be such that the coin consumes a period of one hour from the time it comes in contact with the top of the disk 35 until it is released at the bottom and permitted to fall in the receptacle 28. In this instance, the path of the coin is graduated to indicate the time remaining before the coin will pass out of engagement with the disk 35.

In the event the device is used as a parking meter, and it is desirable to permit a short over-time period, the coin guide 44 may be arranged to effect an extension beyond a given time, say one hour, for example five or ten minutes, before the coin is released. It will be observed that the path traveled by the coin is in register with the opening 13 and accordingly, the position of the coin can be viewed at any time through the window 14.

This construction possesses two advantages. First, the traffic officer in making his rounds can instantly tell how long the car has been parked and what portion of the allotted time remains. Second, this construction materially discourages the use of slugs, or illegal tokens, inasmuch as they are in full view during the parking period, and it is obviously a simple matter to detect such practice and apprehend the violator. Furthermore, it will be observed that the mechanism is of extreme simplicity, inasmuch as there are no pawls, latches, catches, or other mechanism necessary to be operated in order to continually indicate the elapse of time since the coin was deposited. If desired, the window 14 may be in the nature of a magnifying glass to more conveniently detect the use of illegal tokens or slugs.

In the event an officer, walking down one side of the street, can not readily distinguish the position of the coin in meters located on the opposite side of the street, the device may be provided with a flag or visible indicator 50 which is in the nature of a semaphore pivoted coaxially with the disk 35 and provided with an arm 51 which terminates in the path of travel of the coin and is provided with an angular end portion 52 which is engaged by the coin. Accordingly, the indicator 50 is rotated during the orbital movement of the coin and as it is of appreciable dimensions, is readily visible at an appreciable distance. The device may likewise be provided with suitable overtime graduations 53 used in conjunction with the indicator 50.

In Figure 5, the coin has traveled over a path representing the consumption of sixty minutes of time, and the coin and the indicator 50 are both about to indicate the beginning of the over-time period, if such is used.

In Figure 6, the coin has traveled the extent of the over-time period and is about to drop into the receptacle 28 releasing the indicator 50, the

quadrant portion of which exceeds the arm 51 in weight, and causing the indicator to assume initial position for engagement with a subsequent late deposited coin.

In Figure 7, the coin guide or track 44 has been replaced with a track 53, the upper portion of which is relieved as at 56 to permit the coin to freely pass around the periphery of the disk 35 to the position shown in Figure 7. In this instance, the guide 53 is relieved to a point where the coin will contact the disk 35 and move along its path for a period of thirty minutes. Obviously, the coin guide may be relieved to any desirable point depending upon the allotted time the device is to indicate. The coin guides are detachably mounted upon the plate 32 at their upper ends by screw 57 and at their lower ends by pin 58, all whereby the guides may be changed without consuming any appreciable amount of time.

In Figure 8, the coin guide 60 is provided near its upper end with a short projection 61 extending toward the periphery of the disk 35 and is relieved from this point toward the bottom of the guide to a point as at 62. The remainder of the guide, from the point 62 to the lower end thereof, is formed to maintain the edge of the coin in peripheral contact with the disk 35, as in Figures 2 and 7. The object of this construction is to prevent any appreciable extension of the allotted parking time by inserting two or more coins at the same time. The projection 61 holds the coin in contact with the disk 35 for only a minute or two, and after the coin passes from under the projection 61, it drops to a position at point 62. From there on, the movement of the coin will measure the allotted parking time. However, if a second or succeeding coin is inserted in the device, it will engage the projection 61 and, because of the relative formation and arrangement of the parts, will press the coin guide 60 outwardly from the disk, permitting the first coin to pass freely through the remaining or lower portion of the guide and drop into the coin receiving receptacle, and the function of this coin as a time indicator is terminated, and is replaced by the second or following coin, and inasmuch as this second coin is the only one visi-

ble to the officer the allotted time is measured thereby and the only extension obtained is the time consumed by the first coin passing under the projections 61.

It will be observed, Figure 8, the lower end of the coin guide 60 is provided with an elongated slot 63 to permit outward movement of the lower end of the coin guide relative to the pin 58. The coin guide 60 is yieldingly maintained in its inward or operated position by a torsion spring 64.

What I claim is:

1. A coin controlled time indicating device comprising a housing provided with a coin receiving aperture, a disk rotatably mounted in the housing, a motor mounted in the housing and being operatively connected to said disk to rotate the same at a predetermined speed, a coin guide arranged substantially concentric with said disk and in spaced apart relationship thereto, said disk and coin guide being arranged to receive coins deposited in said aperture, means yieldingly urging said coin guide toward the disk to maintain the edge of the coin in frictional engagement with the periphery of the disk, whereby a combined rotary and orbital movement is imparted to the coin upon rotation of the disk, said housing being provided with an opening in one side in register with the orbital movement of the coin, and means cooperable with said coin guide to release a coin from between the disk and coin guide upon insertion of a second coin in said aperture.

2. A coin controlled time indicating device comprising a housing provided with a coin receiving aperture, motor operated means mounted in the housing and operable to advance a coin deposited in said aperture along a path at a predetermined rate of speed, a visible indicator movably mounted in said housing and being arranged to engage the coin upon movement of the same along said path, and being movable in proportion to the movement of the coin to visibly indicate the position of the coin at all times during the major portion of its movement along said path, and means operable to return said indicator to its initial position when said coin has traveled to the end of its path.

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