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PARKING METER

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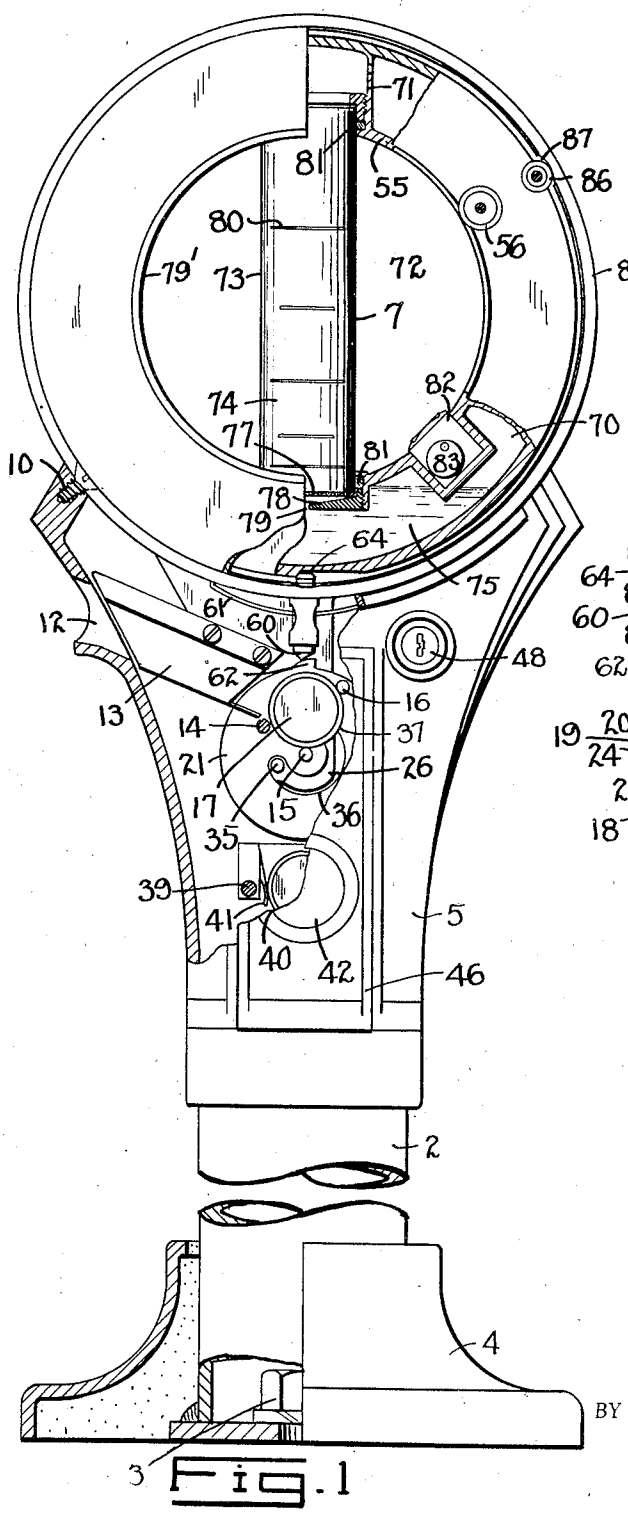


Fig. 1

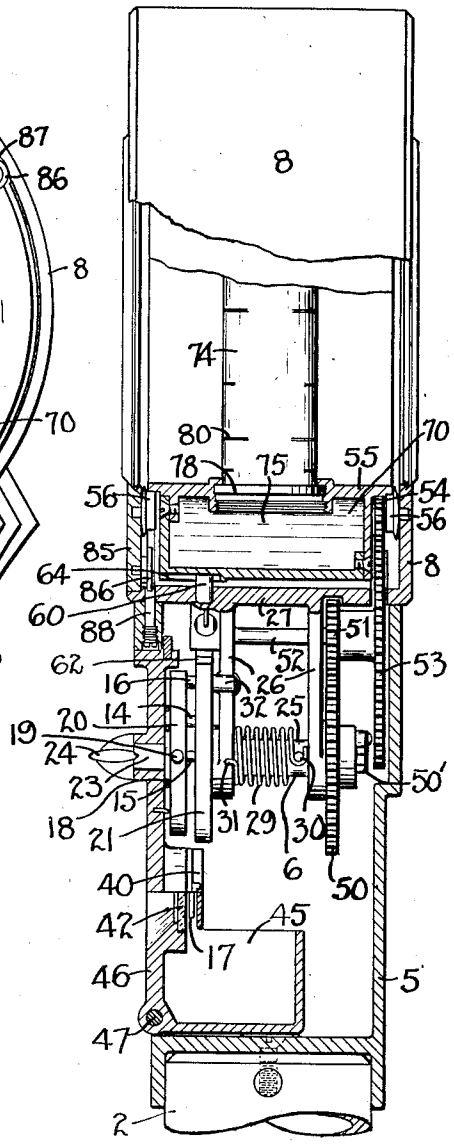


Fig. 2

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PARKING METER

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2 Claims. (Cl. 161—15)

The invention relates to an improvement in parking meters particularly of the type which are located in congested areas where it is desired to obtain a revenue and to regulate the parking of vehicles.

It is one of the objects of the invention to provide a parking meter which will be coin controlled and in which a substance which flows by gravity will pass through an orifice in a predetermined period of time in order to designate the lapse of the time for which the parker has paid.

Another object of the invention is to provide a simple and economical construction which will rely solely upon the force of gravity for its operation after it has once been set upon the insertion of a coin.

Another object of the invention is to provide a receptacle for a substance which will flow by gravity and in which the substance can be trapped so that its flow can be determined.

Another object of the invention is to provide a simple coin controlled mechanism for resetting the timing device.

Another object of the invention is to provide a counter on the mechanism so that the number of times that it is operated may be readily determined by the owner.

Another object of the invention is to provide a reduction gear for actuating the receptacle in order to reset the timing device.

Other and further objects of the invention will be readily apparent when the following description is considered in connection with the accompanying drawing wherein:

Figure 1 is a front elevation of the parking meter with certain parts broken away and shown in section to illustrate the internal construction and arrangement thereof.

Figure 2 is an edge elevation with certain parts broken away and shown in section to illustrate the construction.

In Figure 1 a support is indicated generally at 2 and made up in the form of a pipe or standard which can be anchored to the sidewalk or paving by an anchor bolt 3 and which construction may be enclosed by the foot plate 4. The support 2 may be of any desired elevation and has a yoke 5 at its top. This yoke is of hollow construction and is arranged to receive the mechanism 6 by which the timing device 7 is reset. The timing device is in turn enclosed in a housing 8 which is fixed to the yoke 5 by means of the set screws 10.

In parking meters of this type it is desirable to have a timing device which will indicate the lapse of a predetermined period depending upon the value of the privilege of parking to the vehicle owner. This time may vary and the present invention contemplates that the timing mechanism 7 can be so arranged that it will indicate any predetermined desired period of time.

In Figure 1 an opening 12 has been provided for the insertion of a coin and the chute 13 conducts this coin downwardly and inwardly inside of the yoke 5 until it passes over the pin 14 and drops on to another supporting pin 15. Further movement of the coin is prevented by the provision of a third pin 16. As seen in Figure 1, the coin 17 is thus trapped in the position shown by these three pins 14, 15 and 16. These three pins are also seen in Figure 2 as being disposed between the disks 20 and 21. The pin 14 is carried by the disk 20, whereas the pins 15 and 16 are carried by the inner disk 21. The disk 20 is mounted on a shaft 23 to which is also fixed a handle 24 which projects on the outside of the yoke 5 as seen in Figure 2.

The disk 20 is fixed to the shaft 23 by a stop in 19 which also projects from the edge of the disk and serves to stop the return movement of the disk. The return movement is caused by a small spring 18 anchored to the door 46 as seen in Figure 2.

The disk 21 is mounted upon the main shaft 25 which is carried by the bracket 26 projecting downwardly from the partition 27 on the base of the housing 8. This shaft 25 is normally urged in a counterclockwise direction by the coil spring 29 which is coiled about the shaft and as one end passes around the stop pin 30 the other end 31 thereof engages against the bracket 26 to hold that end of the spring stationary. It will thus be seen that when the disk 21 moves in a clockwise direction that the spring 29 is wound up. A stop 32 on the disk 21 engages the bracket 26 to place the disk 21 at a zero position.

With the parts in the position shown in Figure 1 when the coin 17 is inserted it will rest upon the various pins and when the person who desires to park, grasps the handle 24 and turns it in a clockwise direction it will turn the disk 20 which carries the pin 14. The pin 14 abuts against the coin 17 which, in turn, pushes upon the pins 15 and 16 and causes rotation of the disk 21. The turning of the disk 21 tends to cock the spring 29 in a manner which will hereinafter be described, to reset the timing device 7. Of course, when no coin is present there is nothing to transmit the movement of the pin 14 to the pins 15

and 16 so that turning of the handle does not set the device.

Inasmuch as the coin is the motivating element, it is necessary that the coin be moved out of its active position when it has once cocked the spring 29. To accomplish this, a pin 35 is carried by the lower end of the bracket 26 and projects through the slot 36 in the disk 21. This slot 36 is seen in Figure 1 as being substantially semicircular. As the disk 21 rotates in a clockwise direction and the pin 16 passes eccentrically about the pin 35 the front edge 37 of the coin will contact the pin 35 and, as rotation of the disk 21 continues, the coin 17 will be pushed out of its position on the pins 15 and 16 and will be forced into the pocket 40 as seen in Figure 1 where it will dislodge the coin which has preceded it. A small spring 41 will hold the coin in position in the pocket 40 until it is dislodged by the next succeeding coin. An opening 42 is present at the elevation of the pocket 40 so that the coin last inserted is visible and in this manner the use of slugs is discouraged. The opening is covered by a suitable glass held in place by a bolt 39 so that the coin rests against the glass. From the pocket 40 the coin will drop into a receptacle 45 which is carried by the door 46 which forms the face of the yoke 5 and which is pivoted on a cross bolt 37. A suitable lock 48 is provided to hold this door in position by means of a bar 49 which engages both the door and the yoke 5 as seen in Fig. 2.

The shaft 25 carries a driving gear 50 thereon which is freely rotatable on the shaft but a ratchet 50' picks up the gear when the shaft rotates in a counterclockwise direction. This gear 50 meshes with a pinion 51 which is, in turn, mounted upon the pin 52. The pinion 51 also has fixed to it a large driven gear 53 which extends upwardly into the housing 8 and meshes with a ring gear or teeth 54 which have been formed upon the periphery of the receptacle 55. This receptacle is mounted in the housing 8 upon a series of rollers 56 so that it may be readily rotated. The relative arrangement of the gears 50, 51 and 53 is such that when the handle 24 is turned a half revolution that it will cock the spring 29 so that the ratchet 50', by virtue of the spring 29, will serve to drive the shaft 25 and the gear 50 a half revolution. The size of the pinion 51, however, is such that the gear 53 will turn an amount such that it will compel the receptacle 55 to turn one complete revolution.

In order to fix the relative position of the receptacle 55 with respect to the housing 8 and with respect to the coin control mechanism a spring pressed pin 60 is seen in Fig. 1. This pin is normally urged downwardly by a leaf spring 61 so that it will engage the lug 62 on the periphery of the disk 21. This lug is so positioned on the disk 21 that when the mechanism is in neutral position the pin 60 will be raised upwardly so it is engaged in the recess 64 which is formed in the periphery of the receptacle 55. In other words, when the coin is inserted and the handle rotated the pin 60 will move out of position and release the receptacle for rotation. The release of the handle and the return of the disk 21 to its normal position will raise the pin 60 so that the receptacle will be stopped in its rotation when it has made one complete revolution.

The timing mechanism embodies the receptacle 55 which is in the form of a hollow annulus in order to provide the chamber 70. This chamber is annular but is broken by the partition or baffle 71 as seen in Fig. 1. The center of the receptacle is open at 72 and contains a cylinder 73 which forms a trap 74. This trap is provided in order to receive a body of any desirable substance which will flow due to the force of gravity. As seen in Fig. 1 a body 75 of such liquid is deposited in the receptacle 55 and particularly in the chamber 70. This substance may be liquid or granular as desired, or may take other forms as long as it will flow by gravity. With the parts shown in Fig. 1 if the disk 21 is rotated, the receptacle 55 carrying with it the trap 74 will rotate in a counterclockwise direction so that the partition 71 moves around to the left. As the body of substance 75 flows against the partition 71 as it passes the lowermost point of revolution, naturally this substance is then directed into the cylinder 73 where it is trapped when the cylinder moves to an upright position.

In view of the fact that the substance 75 will flow due to the force of gravity, it will settle down into the trap 74 to the lowermost point. A fine mesh screen 77 is positioned in the bottom of the cylinder 73 and below this an orifice plate 78 is positioned. The orifice 79 in this plate will be of a predetermined size depending upon the substance used and depending upon the predetermined period which it is desired will be necessary for the substance to flow back into the receptacle from the trap.

As an illustration, if a 60-minute period is to be the permitted time, the volume of the substance 75 provided and the size of the orifice 79 will be so arranged that it will take 60 minutes for the material to flow through the orifice back to the receptacle. The housing 8 is provided with an opening 79' which will be covered by a transparent plate so that the trap 74 will be visible. Suitable graduations or indicia 80 will be provided on the trap so that one may observe the proportion of the period which still remains by virtue of the elevation of the top of the substance still remaining in the trap. Suitable packing 81 will be disposed about the cylinder so that a seal will be maintained.

A counter mechanism is indicated generally at 82 and takes the form of an eccentrically mounted weight 83 which will remain in a downward position as the receptacle is rotated. The energy thus obtained is used to actuate a counter inside the device 82 so that the owner of the meter may observe the number of times that the device has been actuated in order to check up on the proceeds which he obtains from the meter.

The face 85 of the housing 8 is held in position by the enlarged head portions 86 thereon, but can be released when these head portions are rotated to a position opposite an opening such as 87 as seen in Figure 1. To prevent such movement, however, a locking bolt 87 is moved upwardly through the upper portion of the yoke and anchored in position. This bolt is covered by the face plate 46 when it is locked in position so that no unauthorized person may have access to the device.

It is believed that a simple and economical device has been provided in which the sole moving element during the elapse of the time period is the flow of the timing substance through the orifice. None of the parts are susceptible to breakage or strain and, broadly, the invention contemplates the provision of a device by which a time interval can be accurately determined.

What is claimed is:

1. A parking meter comprising a support, an actuating mechanism therein, a housing on said support, a timing device in said housing, said device comprising an annular channel, a body of material in said channel which will flow by gravity, a partition in said channel means operable by said actuating mechanism to move said channel so that said partition will elevate the material, a trap to receive the elevated material, and means to gauge the discharge of the material from the trap to indicate the parking period, said trap being visible in said housing.

2. In a parking meter a timing device, said device including a receptacle of annular configuration, a partition in said receptacle, a trap carried by said receptacle, an orifice at the base of said trap leading back to said receptacle, a body of substance in said receptacle which will flow through said orifice in a predetermined period of time, and means to rotate the receptacle so that said partition will carry the substance around to be deposited in said trap so that it may again flow through said orifice.

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