Sept. 13, 1966 L. D. SOLLENBERGER 3,272,299

TOKEN DISPENSING APPARATUS FOR PARKING METERS

Filed Oct. 19, 1964 2 Sheets-Sheet 1

FIG. 1

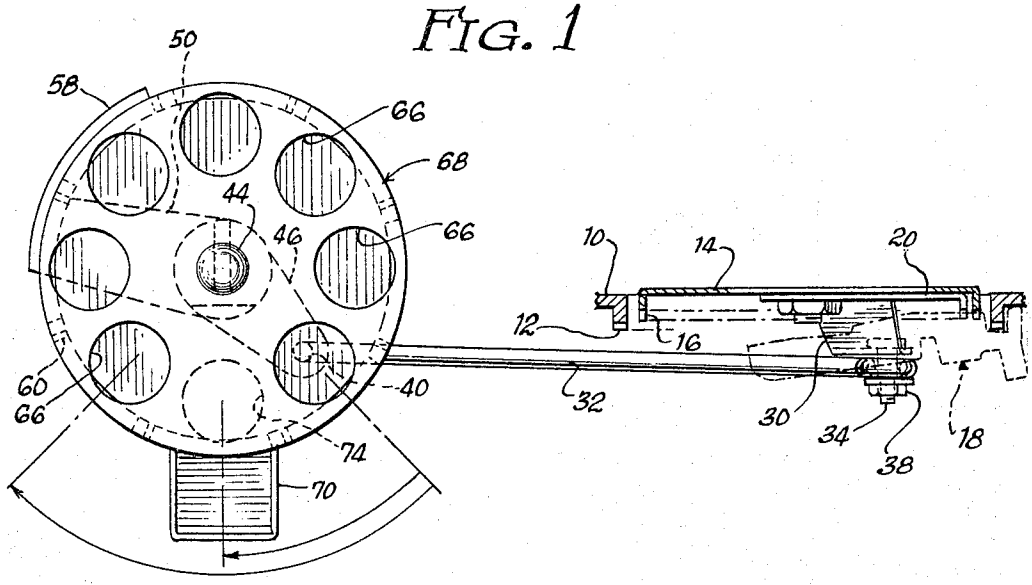
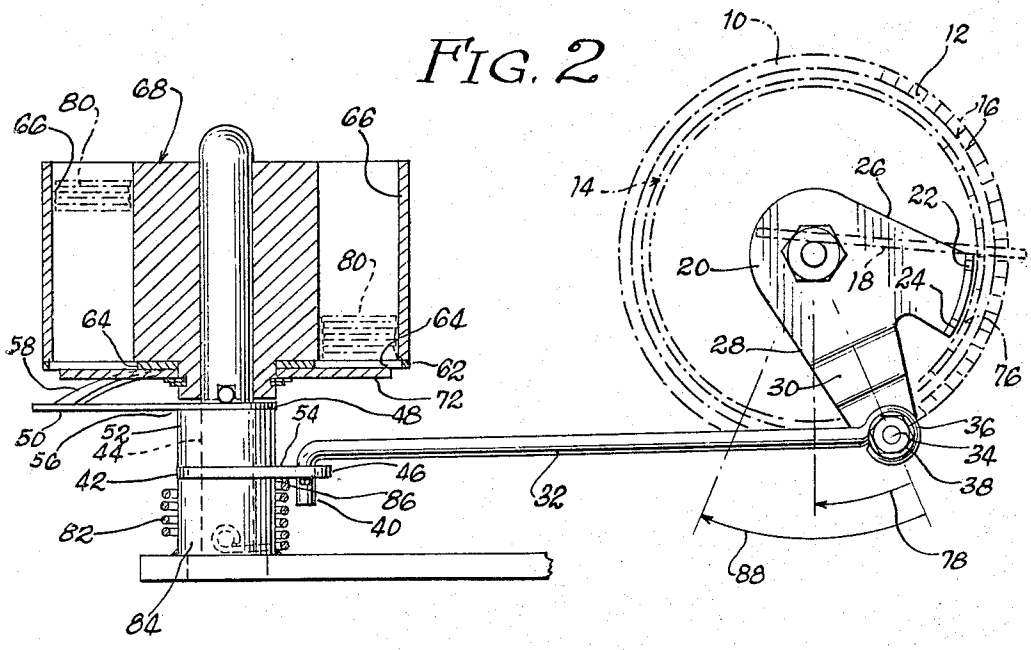


FIG. 2



INVENTOR
Lester D. Sollenberger

by McDougall, Hershkott
Attys

Sept. 13, 1966 L. D. SOLLENBERGER 3,272,299

TOKEN DISPENSING APPARATUS FOR PARKING METERS

Filed Oct. 19, 1964 2 Sheets-Sheet 2

FIG. 3

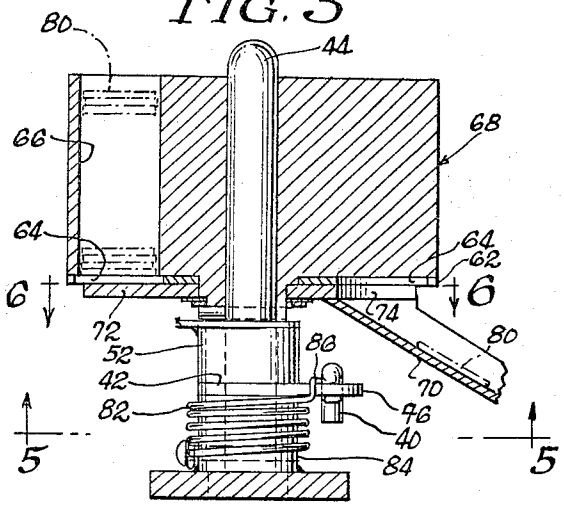


FIG. 4

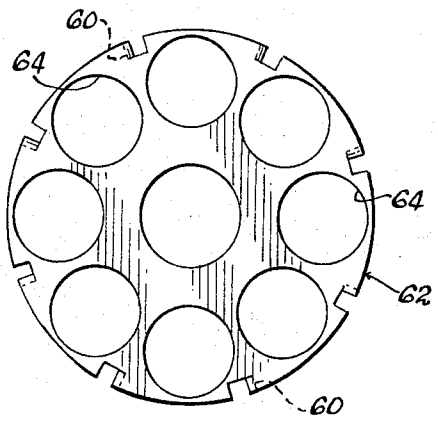


FIG. 5

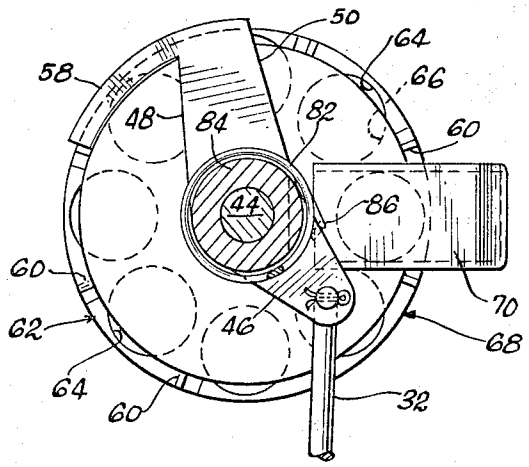


FIG. 6

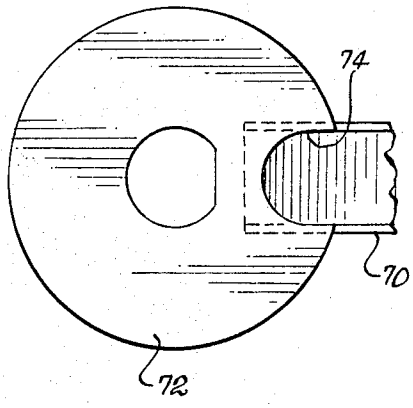
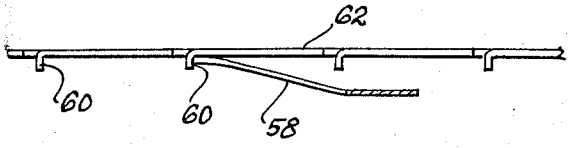


FIG. 7



INVENTOR
Lester D. Sollenberger

by McDougall, Hersh & Scott
Attys

United States Patent Office 3,272,299 Patented Sept. 13, 1966

3,272,299

TOKEN DISPENSING APPARATUS FOR PARKING METERS

Lester D. Sollenberger, Oak Park, Ill., assignor to Duncan Parking Meter Corporation, Chicago, Ill., a corporation of New York

Filed Oct. 19, 1964, Ser. No. 404,816
7 Claims. (Cl. 194—2)

This invention relates to a parking meter, and in particular, to parking meters of a type adapted to dispense tokens.

Means for dispensing of tokens from parking meters have previously been disclosed. Thus, United States Patent No. 2,070,445 provides a parking meter construction wherein tokens in the form of tickets were dispensed when money was inserted in the meter and time set thereon. In the particular structure described in this patent, the tokens were in the form of a small tickets, and the tickets were designed to provide a receipt for the money inserted in the meter. Such receipts were then redeemable in cash or trade at a store adjacent the location of the meter. In addition, it was contemplated that the tickets could be employed for safety slogans, advertising, or for purely informational purposes.

One difficulty involved with such meters concerned the inability of the meters to store a sufficient number of token within a reasonably small space. Thus, it is desirable to provide a large number of tokens to minimize the maintenance necessary for the meter operation. On the other hand, it is desirable to maintain the meters as small as possible to hold costs down and to maintain as neat an appearance as possible.

Constructions are available which permit the storing of substantial numbers of tokens within a relatively small space. In one such construction, a design not developed by the instant inventor, a magazine defining a plurality of vertical bores about its periphery is employed. All of the bores can be filled with tokens and a dispensing disc along with a plate comprising a shut-off for the bores is associated with the construction whereby tokens can be removed successively from the bores. With this arrangement, the dispensing discs will be continuously replenished with tokens as long as some tokens remain in the magazine.

In available token dispensing meters, the tokens are dispensed when the meter is operated to initially set time on the meter. It is important, however, to provide an operation wherein tokens will also be dispensed even when unelapsed time remains on the meter, but the individual parking his car wishes to add time to the meter. Thus, if only part of the time originally set remains, such an individual may wish to add time and receive a token, but it would be inconvenient if the individual had to wait for the meter to run down to a certain level before a token could be dispensed.

The general object of the instant invention is to provide a token dispensing parking meter which embodies previously discovered means for the holding of tokens and which includes a dispensing operation capable of dispensing tokens whenever time corresponding to the value of the coin inserted is set on the meter.

The general object of the instant invention is to provide a means for dispensing tokens which is directly operable by the mechanisms which set time on the meter and which will, therefore, provide for dispensing of tokens even irrespective of the amount of unelapsed time displayed by the meter.

These and other objects of this invention will appear hereinafter, and for purposes of illustration but not of limitation, specific embodiments of this invention are shown in the accompanying drawings in which:

FIGURE 1 is a detail plan view of the token dispensing mechanisms of this invention;

FIGURE 2 is an elevational view partly in section of the mechanisms of FIGURE 1;

FIGURE 3 is a vertical sectional view illustrating the token magazine and dispensing discs;

FIGURE 4 is a detail illustration of the dispensing discs of the token magazine;

FIGURE 5 is a cross-sectional view taken about the line 5—5 of FIGURE 3;

FIGURE 6 is a cross-sectional view taken about the line 6—6 of FIGURE 3; and,

FIGURE 7 is a detail view of the dispensing discs and actuating pawl used for moving the discs during a dispensing cycle.

The token dispensing means of this invention is designed for association with a parking meter of conventional design. Specifically, in such meters, time is usually set on the meter after insertion of a coin through rotation of a wheel associated with the time indicator. The coin will effect setting of the time in various ways, however, the instant invention will be described with reference to a meter of the type wherein the coin displaces a setting pawl upon rotation of an operating handle. The setting pawl will engage a ratchet wheel at some point during movement of the operating handle, and the ratchet wheel provides for actual setting of time on the indicator. It will be appreciated that the operation of the dispensing mechanisms to be described will be applicable to other conventional meter operations.

The means for effecting token dispensing in accordance with this invention involve lever means located for movement in response to movement of the wheel which effects setting of time on the meter. These movements are tied directly together so that the dispensing lever will operate each time a coin is inserted even if unelapsed time is on the meter. Means are attached to the lever whereby movement of the lever will drive the dispensing mechanisms associated with the magazine holding the tokens.

The accompanying drawings illustrate an example of the instant invention as applied to a conventional parking meter construction and to a particular magazine arrangement for holding of tokens. It will be appreciated that the parking meter operation and the particular token magazine do not comprise contributions of the instant inventor insofar as this application is concerned. As previously explained, the object of the instant invention is to provide a particular means for tying in setting of time on the meter with the token dispensing operation. In addition, the design and operation of the means adapted to actuate token dispensing are believed to be novel.

FIGURE 1 illustrates certain elements employed in the parking meter structure with which the instant invention is associated. These elements comprise a stationary ratchet member **10** having ratchet teeth **12**. Mounted coaxially with the stationary ratchet member is a rotary ratchet wheel **14** defining ratchet teeth **16**. A pivotally mounted pawl **18** is shown in position adjacent the respective ratchet elements.

The meter operation involved herein is described in detail in United States Patent Nos. 1,799,056 and 2,070,445. In such an operation, a coin is adapted to be inserted in the meter and thereafter, an operating handle is rotated to initiate the time setting operation. The coin inserted is rotated along with the handle and this coin directly engages a spring loaded pawl (not shown). The insertion of a coin moves the pawl a distance sufficient to provide engagement with the teeth **12** of the ratchet **10**. This arrangement is provided so that the handle will not return to its initial position even if the handle is released before the coin is removed. At a certain point, the coin operates to displace the second pawl **18** for engagement with the teeth **16** of the rotary wheel **14** whereby continued rotation of the handle will provide simultaneous rotation of the wheel **14**.

There are provided a plurality of points for displacement of the pawl **18** with each point being spaced apart from the other and with each being in line with the travel of a different coin. Thus, a meter may have separate coin slots for a nickel and a dime. The dime will cause displacement of the pawl **18** to effect a turn of greater distance for the ratchet wheel **14** thus providing more time on the meter.

The specific improvement of this invention involves the provision of a lever **20** mounted coaxially with respect to the ratchet wheel **14**. This lever defines spaced-apart ratchet teeth **22** and **24** on an arm portion **26**. A second arm portion **28** is bent upwardly at **30** and extends over the peripheral extent of the respective ratchets. A rod **32** is tied to the end of the arm **28**. In the embodiment shown, the arm defines an eyelet **36** at its end which is movably held in place around threaded pin **34** by means of nut **38**.

The other end of the rod **32** defines an in-turned portion **40** which is received in an opening defined in the element **42**. This element is movably positioned around a shaft **44**, and it will be noted when considering FIGURE 1 that the extension **46** of the element which holds the end **40**, extends a substantial distance away from the shaft **44**. A second element **48**, defining an extension **50**, is held in spaced-apart relationship from the element **42** by means of a sleeve **52**. The elements **42** and **48** are secured to the sleeve at **54** and **56**, respectively, whereby movement of the element **42** will impart corresponding movement to the element **48**.

A pawl member **58** is secured to the extension **50**, and this pawl member is positioned for engagement with the down-turned portions **60** defined by a rotary disc **62**. The disc **62** in turn defines a plurality of circular openings **64** which are located about its periphery. The openings **64** correspond in size with the size of bores **66** defined in a token magazine **68** and they are evenly spaced and positioned whereby direct communication is provided. It will be noted, however, that the magazine **68** does not have a bore in the location adjacent a token discharge chute **70**.

The token discharge chute comprises a member secured to a plate **72** which closes off each of the bores **66**. The plate **72** defines a cut out portion **74** which is dimensioned whereby a token held in an opening **64** will drop through the cut out **74** when the opening holding the token is moved into position over this cut out portion. The magazine **68** and the plate **72** are held in stationary positions with respect to the shaft **44**. Accordingly, the discharge chute is adapted to communicate with the outside of the meter so that an individual can retrieve tokens dispensed by the meter.

In describing the operation of the above structure, it will first be assumed that a nickel is the lowest denomination acepted by the meter and that one token is to be dispensed for the nickel. When the operating handle of the meter is turned after insertion of the nickel, the nickel will cause the pawl **18** to be displaced to the ratchet wheel operating position after a certain distance of travel. In the disclosed construction, this will result in engagement of the ratchet wheel at a point **76** adjacent the ratchet tooth **24** on the arm **26** of the lever **20**. As suggested by FIGURE 1, the displacement of the pawl will also result in the engagement by the pawl with the tooth **24** whereby continued rotation of the operating handle will move the lever **20** simultaneously with the movement of the ratchet wheel **14**. It will be appreciated that the ratchet wheel **14** is essentially a winding wheel for the timer mechanism. Other winding means, engageable by coin actuated mechanisms could also obviously be used in combination with the features of this invention.

The distance of movement of the lever **20** is shown at **78** in FIGURE 2. This movement results in transmission of movement to the pawl **58** through rod **32** and elements **42** and **48**. Accordingly, the pawl **58** will displace the disc **62**. The structures are designed whereby the movement imparted to the disc will index the openings **64** one position.

A plurality of tokens **80** are disposed in each of the bores **66** and the openings **64** are dimensioned whereby a single token will be easily received therein. The disc **62**, is however, dimensioned whereby two tokens cannot be received and, therefore, the individual tokens in the openings **64** will index one position along with the disc movement. It will be appreciated that the token in the opening **64** immediately adjacent the opening **74** in the plate **72** will be displaced into the chute **70** by the described action.

The magazine **68** is designed whereby a large number of tokens can be stored for dispensing purposes, and these tokens will be automatically displaced to dispensing position by means of the discs **64**. Thus, it will be noted that initially the most remote bore **66** (the bore to the left of the opening **74** in FIGURE 1) will be emptied of tokens before tokens begin to be removed from the next succeeding bore. The tokens will be progressively removed until the last bore **66** has been emptied.

The pawl **58** is designed whereby the lever **20** can be readily returned to its original position at the end of each cycle of oscillation. A spring **82** is wrapped around the sleeve **84** positioned below the element **42** and the end **86** of this spring is attached at the point of connection between the rod **32** and the extension **46**. The rod **32** is thus automatically forced back as soon as the pawl **18** releases the ratchet teeth upon removal of the coin into the cash box. The operation involving the coin removal and return movement of the pawl **18** is fully described in the aforementioned patents.

The operation involving the insertion of a dime is essentially the same with the exception that pawl **18** engages the forward tooth **22** on the lever **20**. Accordingly, the lever moves through a distance shown at **88** which is twice the distance of movement imparted after insertion of a nickel. Two tokens will, of course, be dispensed with this arrangement since two openings **64** will successively be moved into position over the opening **74**, and a token will be dispensed from each opening.

It will be appreciated when considering the foregoing description and the following claims that the reference made to a "coin" contemplates the use of other coin-like devices which are provided by municipalities or the like for use in parking meters.

It will also be understood that various changes and modifications may be made in the constructions described which provide the characteristics of this invention without departing from the spirit thereof particularly as defined in the following claims.

That which is claimed is:

1. In a token dispensing parking meter device wherein tokens are dispensed by the meter after the insertion of a coin for setting of time on the meter, and wherein setting of the time is effected through engagement of pawl means with a rotary ratchet wheel, the improvement in means for carrying out dispensing of the tokens comprising a lever mounted for oscillating movement, said lever being mounted coaxially with said ratchet wheel and being connected to said wheel for movement therewith, a dispenser operating extension operatively connected to said lever at a point on the lever remote from the axis thereof whereby oscillation of said lever effects movement of said extension and operation of said dispenser, and including ratchet teeth formed in said lever, said pawl engaging said ratchet teeth for movement of said lever simultaneously with the rotation of said ratchet wheel for dispensing of tokens when a coin is inserted.

2. In a token dispensing parking meter device wherein coins inserted operatively engage pawl means and wherein rotation of an operating handle results in displacing of the pawl means to a position for engagement of the pawl means with a ratchet wheel, and wherein continued rota-

tion of the handle causes rotation of the ratchet wheel for setting of time on the meter, the improvement in means for carrying out dispensing of tokens comprising a lever mounted for oscillating movement, said lever being mounted coaxially with said ratchet wheel, a token dispenser operating extension operatively connected to said lever whereby oscillation of said lever effects operation of said dispenser, said lever being positioned for engagement with said pawl when the pawl is displaced for engagement with said ratchet wheel, and including ratchet teeth formed in said lever, said pawl engaging said ratchet teeth of said lever for movement of said lever with said ratchet wheel, and the forward stroke of oscillating movement of said lever taking place simultaneously with the rotation of said ratchet wheel whereby said dispenser is adapted to be operated each time setting of time on the meter takes place, and wherein the token dispensing means includes a rotating disc having ratchet teeth formed therein and including a pawl for driving said disc, said dispenser operating extension comprising an elongated rod having one end tied to said lever and the other end tied to means for driving said last mentioned pawl, the forward stroke of said lever effecting rotation of said disc for dispensing of tokens.

3. A device in accordance with claim 1 wherein the token dispensing means includes a rotating disc having ratchet teeth formed therein and including a pawl for driving said disc, said dispenser operating extension comprising an elongated rod having one end tied to said lever and the other end to means for driving said last mentioned pawl, movement of said lever in one direction effecting rotation of said disc for dispensing of tokens and return movement of said lever operating to reset said last mentioned pawl with respect to said disc.

4. A device in accordance with claim 1 wherein said meter is of a type adapted to set time responsive to the insertion of a plurality of different coins into the meter, and wherein said lever includes a plurality of ratchet teeth adapted to be selectively engaged depending on the coin inserted whereby different numbers of tokens can be dispensed for different coins.

5. A device in accordance with claim 2 wherein the pawl for driving said disc is attached to one end of a first arm with the other end of said arm being mounted for movement about an axis, a second arm tied to the first arm and extending from said axis for attachment to the other end of said elongated rod, and resilient means associated with said second arm adapted to oppose the forward stroke of said lever to thereby force the return movement of said lever.

6. A device in accordance with claim 5 wherein said meter is of a type adapted to set time responsive to the insertion of a plurality of different coins into the meter, and wherein said lever includes a plurality of ratchet teeth adapted to be selectively engaged depending on the coin inserted whereby different numbers of tokens can be dispensed for different coins.

7. In a token dispensing parking meter device wherein tokens are dispensed by the meter after the insertion of a coin for setting of time on the meter, and wherein winding wheel means are provided for setting of the timer mechanism of the meter, the setting of the time being effected through engagement of a coin actuated element with drive mechanisms for said winding wheel, and wherein the winding wheel is adapted to be actuated for different winding distances depending upon the type of coin inserted in the meter, the improvement in means for carrying out dispensing of the tokens comprising a lever mounted for oscillating movement, a dispenser operating extension operatively connected to said lever whereby oscillation of said lever effects operation of said dispenser, and wherein said lever is oscillated simultaneously with the rotation of said winding wheel for dispensing of tokens when a coin is inserted, the distance of movement of said lever being proportional to the distance of movement of said winding wheel whereby one or more tokens are adapted to be dispensed depending upon the coin inserted, said dispenser comprising a cylindrical magazine defining a plurality of bores about its periphery, and wherein said disepnsing means comprises a rotary disc having openings communicating with said bores for receiving of tokens in said openings, pawl means operatively connected to said lever for engagement with said discs whereby the distance of rotation of said discs is directly dependent upon the forward portion of the oscillating cycle of said lever.

References Cited by the Examiner

UNITED STATES PATENTS

2,070,445	2/1937	Miller et al.	194—72
2,691,379	10/1954	Foushee	133—5
3,208,573	9/1965	Carrol et al.	194—2

ROBERT B. REEVES, *Primary Examiner.*

STANLEY H. TOLLBERG, *Examiner.*