March 25, 1930. C. C. DOYLE 1,752,071

MEANS FOR REGULATING THE USE OF STREET PARKING SPACE

Filed June 2, 1926 3 Sheets-Sheet 1

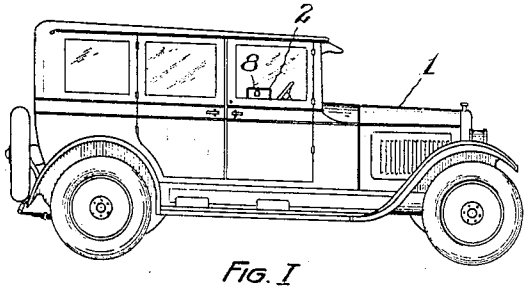


FIG. I

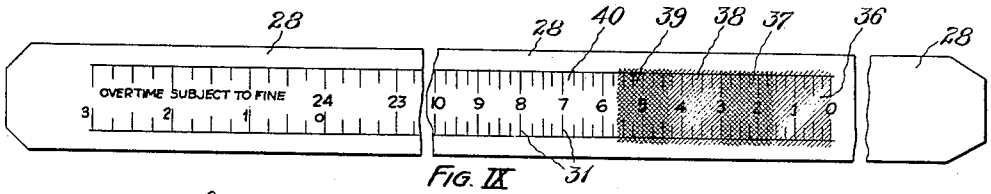


FIG. IX

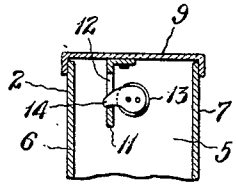


FIG. VII

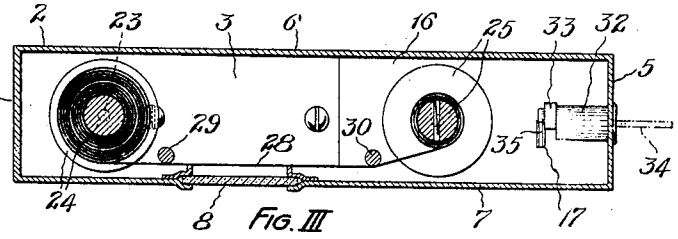


FIG. III

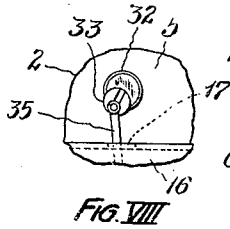


FIG. VIII

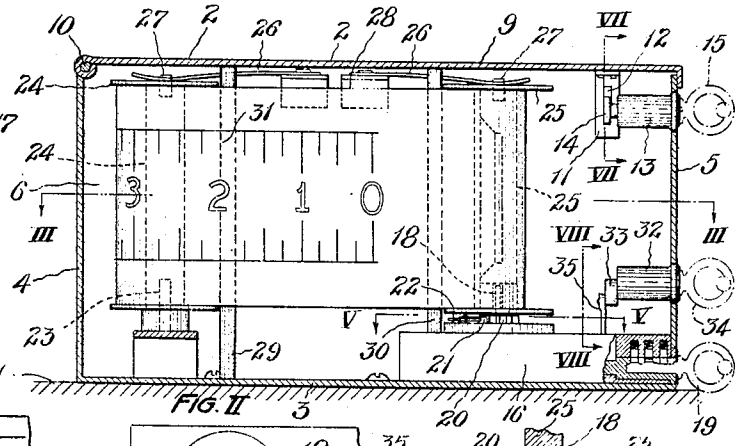


FIG. II

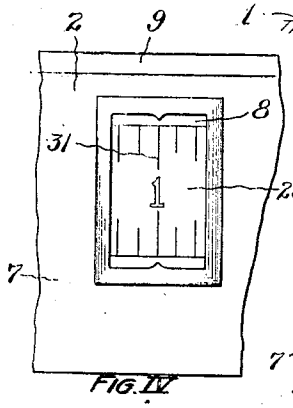


FIG. IV

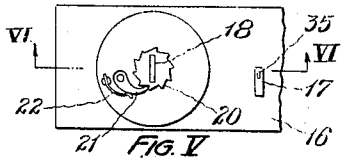


FIG. V

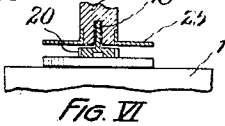


FIG. VI

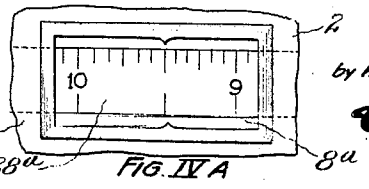


FIG. IV A

INVENTOR:
CHARLES C. DOYLE
by his att'y.
Carl B. Keller,

March 25, 1930. C. C. DOYLE 1,752,071

MEANS FOR REGULATING THE USE OF STREET PARKING SPACE

Filed June 2, 1926 3 Sheets-Sheet 2

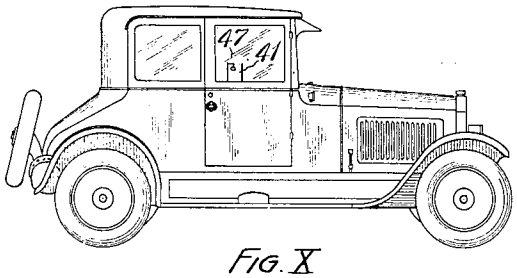


FIG. X

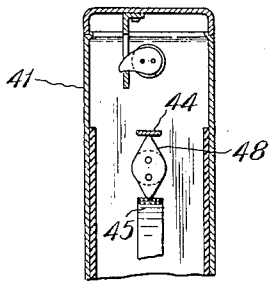


FIG. XII

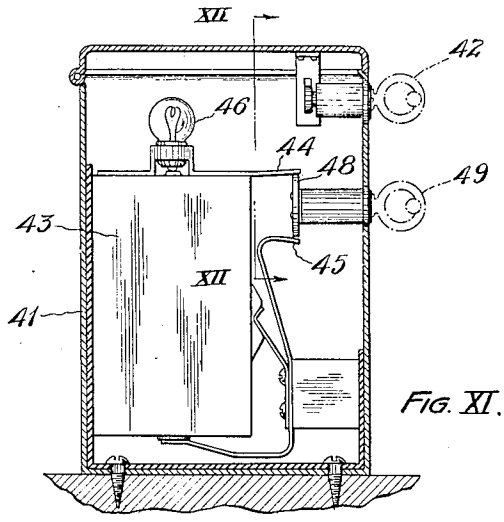


FIG. XI.

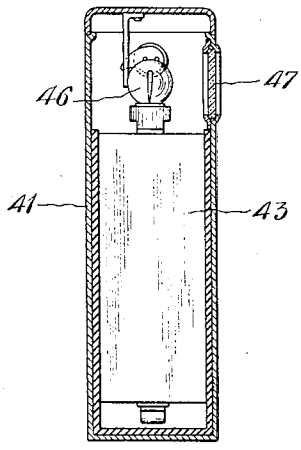


FIG. XIV.

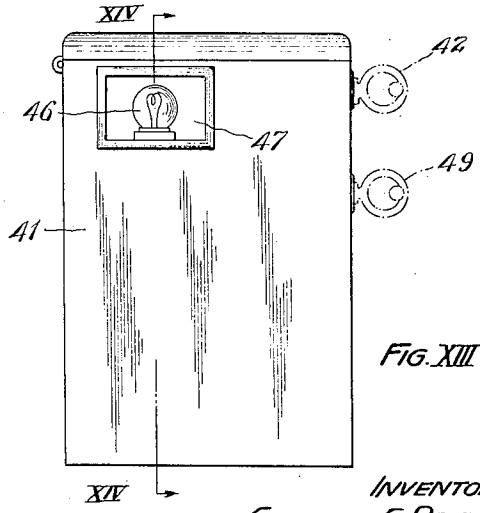


FIG. XIII.

INVENTOR:
CHARLES C. DOYLE

by his att'y.

Chas B. Mueller.

March 25, 1930. C. C. DOYLE 1,752,071

MEANS FOR REGULATING THE USE OF STREET PARKING SPACE

Filed June 2, 1926 3 Sheets-Sheet 3

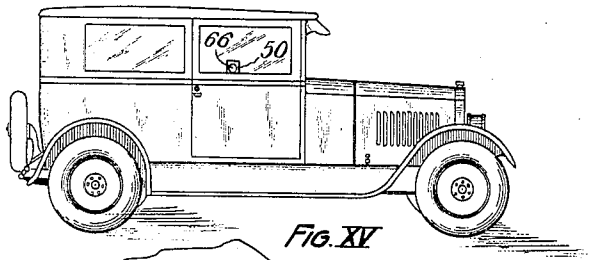


FIG. XV

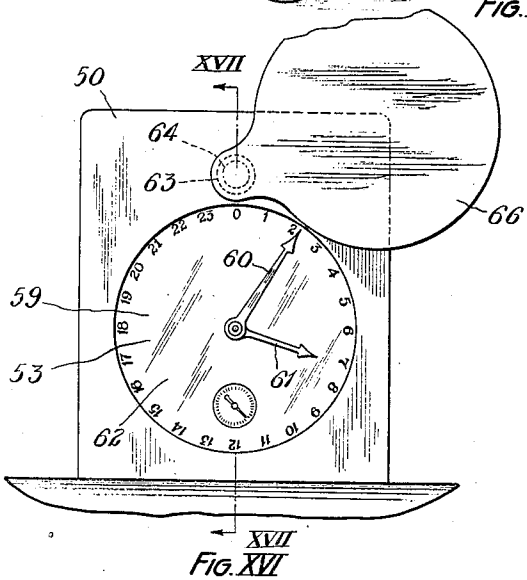


FIG. XVI

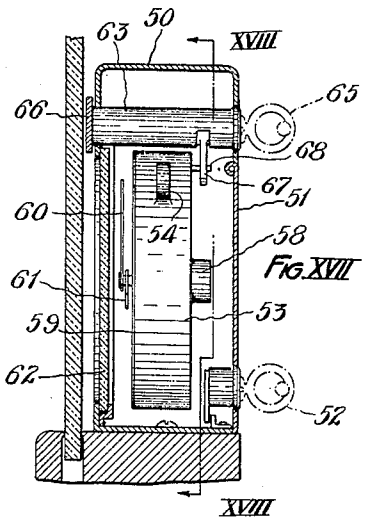


FIG. XVII

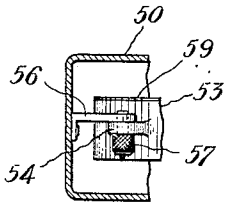


FIG. XIX

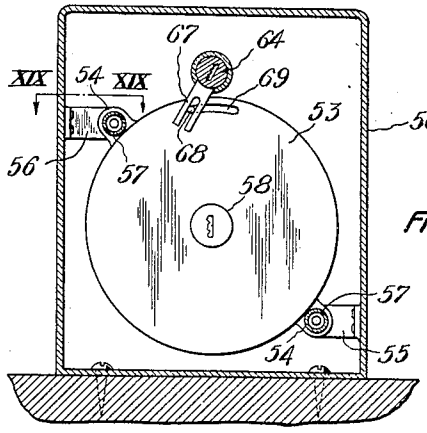


FIG. XVIII

INVENTOR:
CHARLES C. DOYLE

by his atty.

Patented Mar. 25, 1930

1,752,071

UNITED STATES PATENT OFFICE

CHARLES C. DOYLE, OF CLEVELAND, OHIO

MEANS FOR REGULATING THE USE OF STREET PARKING SPACE

Application filed June 2, 1926. Serial No. 113,240.

My invention pertains to means for regulating the privilege of street parking of vehicles and has for its object to provide a parking timer to restrict promiscuous and unnecessary parking in specified areas and also to provide a method for charging for the space occupied.

It will be assumed that streets in business districts are congested with parked vehicles and that relief from this condition is desirable. This relief can be accomplished by charging for the space occupied for the exact time which it is occupied. Several alternative methods equivalent in principle might be adopted; most simply perhaps, a clock mechanism which is adjusted to operate for 24 hours (or any other set period) and then stop. This clock or meter is to be fastened to the side or any visible part of a vehicle. Ordinarily the instrument is inactve. However, when the car is parked in certain restricted areas this mechanism must show that it is in operation so that any passerby or officer of law may readily see that the windings or other motive power is running down or exhausting itself. When the instrument reaches the end of the set period it ceases to show operation and the vehicle is then ineligible for parking in the restricted areas. Of course the instrument must be re-wound in order to show operation before the car may occupy further parking space. This winding is expected to be done at established central points by use of a special key by persons vested with specific authority, though that kind of service may be rendered gratis merely to record or limit promiscuous parking. Preferably it is to be done at some cost to the auto owner in order to realize payment in advance for parking in zoned districts. For instance if a twenty-four hour winding is made for twelve dollars it will cost the owner fifty cents for each hour he occupies space requiring the operation of this clock. This is a little less than one cent a minute and the charge is accurate and positive for the exact time used to the fraction of a second. The cost may be proportioned to the desirability of parking space in various cities until the desired relief is secured. It may be regulated to furnish sufficient financial punishment to abusers of parking privileges so as to discourage this practice. The operator of the vehicle shall put the unwinding mechanism in operation as soon as he parks in the restricted area. When he drives from this area, naturally, he will stop the unwinding mechanism to save unnecessary rewinding charge. The operation of the instrument will be visible to all passers-by and particularly to officers of the law. Anyone parked in a restricted or taxable space without a meter in operation is guilty not only of a traffic violation, but also of defrauding the public of the charge for occupying the space. Of course it is not necessary that the construction of this apparatus follow or even resemble a clock although this might be desirable if elapsed time of each individual parking period be required to be recorded, but this feature is considered. Further a mechanical chart of which a permanent record may be kept is also desirable. This may be used in connection with this system either by use of stylus, pen, pencil or markings with a point on waxed surfaces or otherwise treated papers. While this practice is common in many arts, I believe its association with this plan to be original.

As one exemplification of my ideas, mechanism may be employed which includes a meter box with a transparent window and within the box, two spools, one on each side. The axes of these spools are upright and on one spool is wound a full reel of sensitized paper which may be purchased, paid for in advance and loaded at leisure. Before operation the other spool is empty, but is threaded with the free end of the paper from the full spool. When the meter is in operation the roll is unwound at a certain rate of speed from the full spool to the empty spool and in so doing the paper passes behind the glass window where it is discolored by the light thus rendering it unfit for re-use. Operation is disclosed by the fact that if the mechanism stops the paper would be greatly darkened, for instance blue print paper would be discolored by excessive exposure. When in operation the paper will show a lesser discolora-

tion, but detection of operation will be certain because the coloring will be graded from pure white or the original color to a medium dark color. This will be caused by the fact that the paper has had varied exposure in its travel across the window towards the opposite spool. The paper may be printed or otherwise marked with the name of the city, or other distributor to avoid counterfeiting. It may be printed or marked off in sections for the purpose of timing the movement of the ribbon to permit of occasional verification of the accuracy of the movement and further as a record of individual parking periods. As a further precaution in the event of failure of daylight or other reasons that might prevent the necessary discoloration, the ribbon may be made to pass a marker such as a crayon, or stylus, or pen in such a way as to cancel it for further use. This may or may not be contrived to be visible through the window. This device may also make a ticking sound or visibly in any way show action whereby to render casual inspection sufficient to detect operation.

A few of the merits of my system are these:

(*a*) Public parking space is the property of all of the citizens and not only of auto owners. Therefore all of the citizens (that is the government, municipal or state) are entitled to the income from this desirable space.

(*b*) Owners of some autos should not freely and uselessly occupy desirable parking space to the exclusion of others equally entitled to such space when these others have business sufficiently important to warrant their paying for such space. Important business streets are for the transaction of important business and provision should be made to have space available for those who are willing to pay to transact their business expeditiously.

(*c*) Payment is made uniformly, positively, accurately, without trouble or delay and is made in advance.

(*d*) Short time parking is inexpensive. If space is available drivers will drive short distances of several blocks between parking spaces whereas at present they leave their cars parked for the time limit while they walk from place to place thereby increasing the congestion by parking in desirable space while they travel afoot.

(*e*) People without business will not be so likely to congest busy streets to the exclusion of business people and the detriment of traffic.

(*f*) Long time parking is financially punished without the costly procedure of arrest, involving the time of police, clerks, prosecutors, and judges. There is no means under this method for auto parkers to avoid this financial punishment without the responsibility of defrauding the government.

(*g*) The income of a municipality might be $2,000.00 per day from only one mile of restricted parking space.

(*h*) Merchants may supply meters for the temporary use of patrons while they shop, etc.

(*i*) People with urgent business will find more parking space.

(*j*) It need apply only to certain and limited areas.

(*k*) It will clear the streets of the vehicles of people who now take advantage of parking space for inconsequential purposes.

(*l*) It should cut down arrests for parking violation.

(*m*) It will speed up traffic by relieving congestion.

(*n*) The extent of relief may be regulated by the rate of charge. This rate may be such as to be nominal for short time parking and still discourage abuse of the privilege. It will in any event furnish a positive financial punishment for long time parking.

(*o*) Will relieve auto owners of the worry of arrest for overparking when their business warrants the expense of space occupied.

The elements may be:

(1) A square housing to contain a device similar to a clock.

(2) A clock like device to fit into the housing.

(3) Provision for fastening the housing to an auto (irremovable, both closed and open).

(4) Provision for locking the clock device into the housing with auto owner's key.

(5) Provision for winding the clock with a police key.

(6) Indication of movement or operation.

(7) Provision for starting and stopping the movement with the owner's key.

(8) Provision for making a permanent record of the operation.

I realize that the scope of my invention comprehends many equivalent methods and constructions. The showing of the drawings and the particular description are merely specific exemplifications of a plurality of mechanical embodiments and arrangements.

Adverting to the drawings:

Figure I is a side elevation of an automobile showing my appliance mounted interiorly thereof.

Figure II is an enlarged vertical section through a box showing mounted therein and in elevation various elements featuring the invention.

Figure III is a horizontal section on line III—III of Figure II.

Figure IV is an enlarged detail view of a portion of one side of the box.

Figure IV—A is a modified form in respect to the feature shown in Figure IV.

Figure V is a plan section on line V—V of Figure II.

Figure VI is a transverse section on line VI—VI of Figure V.

Figure VII is a transverse section on line VII—VII of Figure II.

Figure VIII is an end view taken on line VIII—VIII of Figure II.

Figure IX is a broken elevation on reduced scale of one detail.

Figure X is a view corresponding to Figure I showing an automobile equipped with a modified form of my invention.

Figure XI is an enlarged section showing a modified embodiment simplified by merely showing a signal device without a recording device.

Figure XII is a section on line XII—XII of Figure XI.

Figure XIII is a side elevation of Figure XI.

Figure XIV is a section on line XIV—XIV of Figure XIII.

Figure XV is an elevation of an automobile with still another modification.

Figure XVI is an enlarged front view of the second modification showing one part displaced.

Figure XVII is a section on line XVII—XVII of Figure XVI.

Figure XVIII is a section on line XVIII—XVIII of Figure XVII.

Figure XIX is a plan section on line XIX—XIX of Figure XVIII.

In the first modification, an automobile 1 carries interiorly a box 2 with which are associated the elements constituting various features of my invention. The box includes a bottom 3, end walls 4 and 5, side walls 6 and 7, the latter being provided with a small window 8, and a top 9 hinged to the end wall 4 at 10. A bracket 11 fashioned with a slot 12 depends from that end of the top 9 which is not hinged. Carried by the end wall 5, so as to project interiorly toward the bracket 11, is a hollow casing 13 in which is turnably mounted a member terminating as a catch 14 adapted to project through the slot 12 or to be withdrawn therefrom subject to the actuation of an inserted key 15, which is to be in the custody of a public official preferably employed by a city police department. The purpose of the catch 14 is manifestly to lock the lid of the box against unauthorized access to its contents.

Appropriately secured interiorly at one end of the bottom 3 is a casing 16 containing driving clock mechanism of any conventional type not necessary to be fully illustrated, because not in itself claimed. The top of the casing 16 is fashioned with a slot 17 for a purpose which will be hereinafter explained. Connected with the clock mechanism and located above the casing 16 is a rotatable shaft 18 terminating as of rectangular formation. A clock winding key 19 is likewise to be retained and employed by a public official for the purpose of periodically winding the usual main spring the tension of which is to be maintained by the common mechanism of a ratchet 20 carried by the shaft 18 and cooperating with the ratchet a pawl 21 held in its functioning position by a leaf spring 22. According to the exemplification of the several views shown on Sheet 1, the clock mechanism is adapted, when fully wound, to run for something over twenty-four (24) hours, but it is not intended to be permitted to run down in any twenty-four consecutive hours, rather to run down over a period of many days or possibly several weeks, depending upon the frequency of its intended intermittent action subject to control by the owner of the automobile of a contrivance to be later described.

Mounted near the further end of the box at substantially the same elevation as the shaft 18 is a cylindrical pin 23. A spool 24 is mounted to turn freely on the pin 23 and another spool 25 is operatively fitted to the squared end 18 so as to turn in unison whenever the clock mechanism is permitted to turn the shaft 18. A pair of leaf springs 26 carry each a journal 27 which axially intersect the opposite ends of the spools 24 and 25, respectively. The spool 24 is intended to be loaded with a winding of a sensitized strip 28, for instance, blue print paper which will travel across from the spool 24 to the spool 25, in which its free end was first threaded, after the manner in common use in film cameras. During its passage from one spool to the other the strip 28 is guided by upright rollers 29 and 30 which prescribe its straight line travel behind the window 8 as is clearly shown in Figure III. The strip 28 is to be sensitive to light so as to be discolored by exposure thereto while passing across the window 8, and the strip 28 is marked at regular intervals with numerals as shown in Figure IX. Between the numerals consecutively from zero to twenty-four, the strip 28 is additionally fashioned with hour division lines 31, as illustrated, four for each hour, in which case each would denote a measure of time of fifteen minutes.

Also carried by the end wall 5 is a lock casing 32 in which is turnably mounted a member carrying on its inner end a short crank 33 the turning of which may be accomplished by a key 34 to be kept in the possession of the owner. When the key 34 is inserted and turned, the crank 33 will cause a stop finger 35, which is carried thereby, to move laterally through the slot 17 and cause it to intersect the path of movement of some part of the clock mechanism, say, the balance wheel thereof, thereby causing a cessation of the winding and unwinding movement of the strip 28 till the key 34 is again turned in the opposite direction. It should be understood, that the clock mechanism is to be stopped whenever

the driver of the automobile is not occupying street parking space for which he is obligated to pay according to some established rate of charge per minute, and likewise that while the hour periods in Figure IX show division into only four measured spaces the number of divisions may be multiplied so that each represents some smaller fraction of an hour as for instance only five minutes each, as shown in the modification of Figure IV—A where a strip 28ª appears to view through the slightly longer window 8ª.

Directing attention to Figure IX it will be there observed that a portion of the strip 28 has been variously exposed and for different periods of time. One strip portion 36 being only partly discolored over a section of slightly over an hour and a half, indicates that the strip was moving past the window 8 and accordingly denotes a "pay" period of about an hour and thirty-seven minutes. Another strip portion 37 of darker hue indicates that the automobile was either moving or was privately parked if stationary, because in neither event was the owner obligated to have my appliance in operation. Since the strip 28 was not traveling, the portion 37 was longer exposed and represents a "no pay" period of time, as exemplified of about an hour and twenty minutes. The Figure IX also illustrates a second pay strip portion 38 of about an hour and twenty minutes and a second "no pay" strip portion 39 of perhaps an hour and twenty-five minutes. It should be understood that the discolored strip portions 36 and 38 represent longer periods of time than would ordinarily be expectable, but were merely so exemplified for conspicuousness in the drawing. The remainder 40 of the strip 28 is shown of lightest color and is to be supposed as not yet exposed.

As will now have probably been understood, the owner of the car will first purchase a loaded spool and subject to use of the box unlocking key 15, such loaded spool may be mounted on the spindles 23 and 27 preparatory to connection with and winding upon the empty spool 25. The box lid 9 is then locked by an official who will retain the key 15 and who will with another key 19 proceed to wind the clock mechanism 16. When the driver of the vehicle reaches his first place of intended public parking space he is to insert his private key 34 and by withdrawing the stop 35 set the clock mechanism in operation whereupon the strip 28 commences very slowly to move across the window 8. When the owner reenters his car to drive away he will reinsert the key 34 and cause it to actuate the stop 35 to its obstructing position for arresting the movement of the clock mechanism. After a certain length of time, when the owner shall discover that his purchased strip is entirely unwound he will be obliged to report at headquarters to deliver it for computation of his bill and for the purchase and installation of a new roll.

The modification shown on sheet 2 is simplified by the omission of a recording device. An automobile carries a box 41, access to which is controlled by manipulation of a key 42. Interiorly the box is supplied with a dry cell 43 carrying a pair of conventional spring terminals 44 and 45. Electrically connected at the top of the dry cell is an incandescent lamp 46 visible through a window 47 in one side of the box. A turnable switch 48 is adapted to make or break contact between the terminals 44 and 45 and its operation is dependent upon the insertion and turning of the proper key 49. According to this modification the illumination of the lamp 46 constitutes the required evidence that parking space time is being metered, it being understood that the filament of the lamp will be energized by the manipulation of the owner's key 49 only while his car is being parked at some space for which a rental charge is to be made. The dry cell 43 may be considered as capable of causing the lamp 46 to illuminate for say, 24 hours, after which a new dry cell would have to be purchased and the owner charged for 24 hours of parking time.

The modification disclosed on Sheet 3 illustrates an automobile supplied with a box 50 provided on one side with a hinged door 51 adapted to be locked and unlocked with mechanism corresponding to that shown in the preferred form by means of a key 52. Clock mechanism 53 is detachably supported in the box by means of diametrically opposite ears 54, one of which is keyed in any appropriate manner to a bracket 55 and the other detachably clamped to a bracket 56 by means of a knurled thumb screw 57. The winding of a main spring of the clock mechanism is to be effected by insertion of a suitable key, not shown, through the rear boss 58. The clock carries a 24 hour dial 59 in front of which move a minute hand 60 and an hour hand 61. Inasmuch as nothing is claimed for the clock mechanism by itself no further description thereof is necessary. The dial 59 will be visible through a window 62. Mounted across the box above the clock is a bearing 63 in which a rod 64 is mounted to turn in response to actuation of the owner's key 65. One end of the rod 64 carries a disk 66 adapted either to cover the dial of the clock or to be turned aside to the position in which it appears in Figure XVI and which position it will occupy when the vehicle is parked and the owner has complied with the requirements for registering the parking time. At the same time that the key 65 turns the disk 66 to its disclosed position it will actuate a fork 67 which straddles a pin 68 operatively connected with the clock mechanism and adapted to be reciprocated in an arcuate slot 69. In the position in which the pin 68 is shown in

Figure XVIII the clock mechanism is permitted to operate whereas when at its opposite limit of movement the pin 68 will function to stop the clock mechanism by intersecting the path of movement of some part thereof. According to the modification just described the owner is to pay for the aggregate time periods during which he has parked at street rental curb space. The clock mechanism is presumably, when fully wound, designed to run for a period of 24 hours for which the owner will be required to pay whenever an official rewinding of the clock becomes necessary and that operation can be accomplished only by the municipal officer in possession of the proper key 52.

It should be understood, that it is merely a matter of individual or public preference whether the owner of the automobile shall have possession of one, two, or all three keys, for instance, it is not unlikely that the owner would retain possession of both keys 19 and 34, in which event he could purchase a series of rolls at one time and thereby avoid the frequency of trips to headquarters for that purpose.

I claim:

1. A parking timer for vehicles comprising a key-controlled clock mechanism operable for a predetermined measure of time and adapted to furnish sense evidence of operation, together with an owner's key for effecting the operation of said mechanism whenever the vehicle is parked in a specified zone and an official key for effecting the rewinding of said mechanism.

2. The combination for use with a vehicle, of an appliance for furnishing a signal for a limited period of time and including; power-storage means, lock mechanism for controlling the restoration of power, a signaling device operated by stored power and lock mechanism for controlling the use of said power-storage means.

3. The combination for use with a vehicle, of power-storage means of limited capacity, lock mechanism for controlling access to said means, a signaling device adapted to be operated by said means and lock mechanism for controlling the operation of said device.

4. The combination with a vehicle, of a box and a signaling appliance therein including; power-storage means of limited capacity, lock mechanism for controlling access to said box, a signaling device adapted to be operated by said means, and lock mechanism for controlling the expenditure of power.

5. In an appliance of the character described, the combination of a box provided with an aperture, a lock for said box, a sensitized element fashioned with divisions denoting time intervals, power-storage means for moving said element past said aperture, and lock mechanism for controlling the movement of said element independently of the position of said lock box.

6. In combination, a box, an operation disclosing device including an element fashioned with divisions denoting time intervals, independent power-storage means having a predetermined approximate maximum duration of operation for actuating a part of said device, and lock mechanism including a stop for causing a cessation in the expenditure of power.

7. In an appliance of the character described for use with a vehicle, the combination of a box provided with an aperture, a light sensitive operation-disclosing device including an element fashioned with divisions denoting time intervals, power-storage means for actuating the light-sensitized part of said device at a predetermined rate of speed past said aperture whereby a portion thereof becomes darkened, a power-stopping device for arresting the movement of said element whereupon another portion of it becomes darker, and lock mechanism for controlling the stopping device.

8. An appliance for recording vehicle-parking time periods including; a box, a lock therefor, a window therein, a pair of spools mounted to turn in said box, a light-sensitive element fashioned with graduations denoting time periods and adapted to wind and unwind on said spools respectively and to pass said window, power-storage means for turning one of said spools and distinct and separate lock mechanism for controlling the operation of said means independently of the position of the box lock.

9. An appliance for recording vehicle parking time periods including; a box, a window therein, a pair of spools mounted to turn in said box, a light-sensitive element fashioned with graduations denoting time periods and adapted to wind and unwind on said spools respectively and to pass said window, power-storage means for turning one of said spools and lock mechanism for controlling the action of said power means.

10. An appliance for recording vehicle parking time periods including; a box, a window therein, a light-sensitive element fashioned with graduations denoting time periods, clock mechanism adapted to move said element past said window, a key-operated lock for controlling the action of said clock mechanism and a distinct key-operated lock for winding said clock mechanism.

11. A parking timer for vehicles comprising mechanism intended to be operated when the vehicle is stationary, said mechanism including; an element constantly on display and upon inspection adapted to furnish sense evidence of the use of said mechanism, said mechanism also including power storage means independent both of the vehicle motor and any auxiliary part of said motor for

causing said element to exercise its function, said means being purposely usable for only a predetermined measure of time and of a character necessitating power restoration by an authorized public official, and lock mechanism for controlling access to said means.

12. A parking timer for vehicles comprising the combination of clock mechanism operable for a predetermined measure of time and adapted to furnish sense evidence of operation, together with means in possession of the owner for controlling the operation of said mechanism whenever the vehicle is parked in a specified zone and means in possession of an official for effecting the rewinding of said mechanism.

13. A parking timer for vehicles comprising the combination of a signaling appliance carried thereby including; a driving clock having a predetermined approximate maximum duration of continuous operation, a signaling device adapted to be operated by said clock and lock mechanism for controlling the rewinding of said clock.

14. A parking timer for vehicles comprising the combination of a signaling appliance carried thereby including; power-storage means of limited capacity, a signaling device adapted to be operated by said means, lock mechanism for controlling the expenditure of power and lock mechanism for controlling the restoration of power-storage.

15. A parking timer for vehicles comprising the combination of an operation disclosing device including a signalling element, independent power-storage means having a predetermined approximate maximum duration of operation for causing said element continuously to function and lock mechanism including a shiftable member for causing a cessation in the expenditure of power.

16. A parking timer for vehicles comprising the combination of a box, an aperture therein, a light-sensitive element fashioned with graduations denoting time periods, means for moving portions of said element past said aperture and lock mechanism for controlling the action of said means.

17. A parking-time measuring appliance for motored vehicles and intended to be inoperative when the vehicle is moving and operative when the vehicle is stationary, said appliance including signal furnishing means having a predetermined approximate maximum duration of operation and an accessory independent of the operation of the vehicle motor whereby said signaling means may be caused to function subject to the will of the driver or authorized official whereby to lessen the limited period of purchased time for which the appliance is capable of functioning.

18. A parking-time regulatory mechanism for self-propelled vehicles comprising storage means capable of providing a perceivable record of use for only a predetermined approximate maximum duration of time, a signaling device operated thereby and a lock mechanism for controlling said signal independently of the movement of propelling parts of the vehicle whereby to permit of establishing intermittent time intervals of depleting use of the power-storage means to correspond with the periods of time when said vehicle is stationary and during which intervals to permit the obligatory functioning of the mechanism to be noticed by any passer-by.

Signed by me, this 26th day of April, 1926.

CHARLES C. DOYLE