Feb. 3, 1942. M. H. RHODES 2,271,953

TIMING DEVICE

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FIG.1.

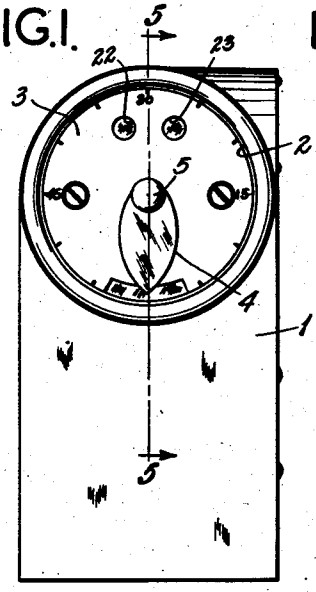


FIG.2.

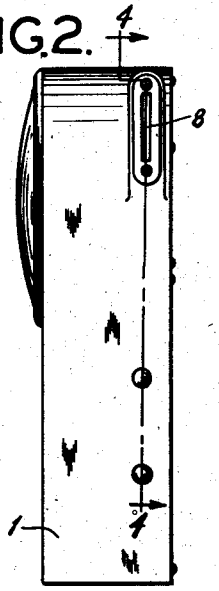


FIG.3.

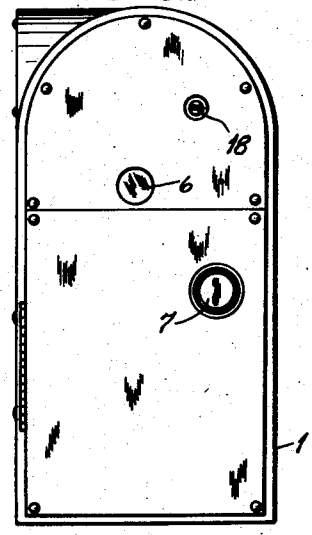
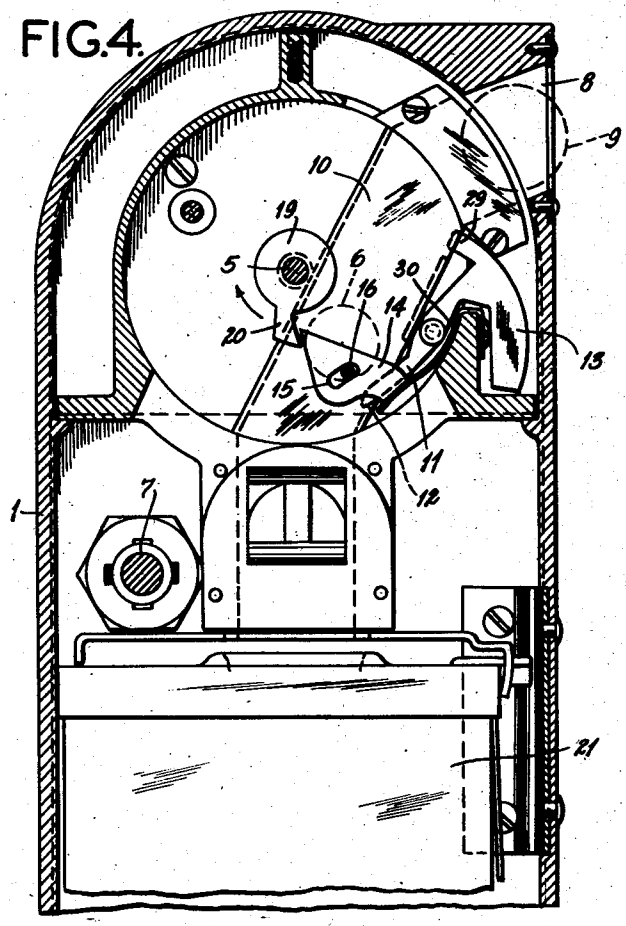


FIG.4.



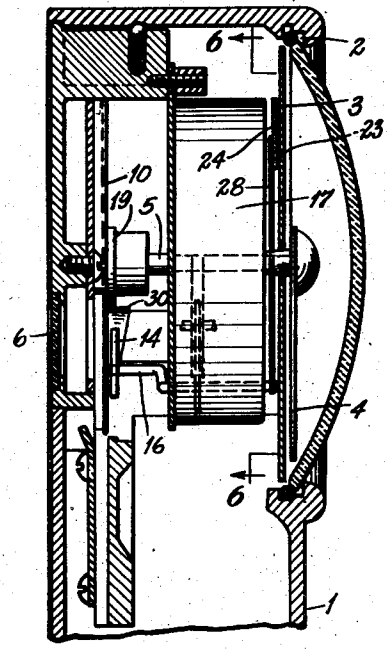


FIG.5.

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FIG.6.

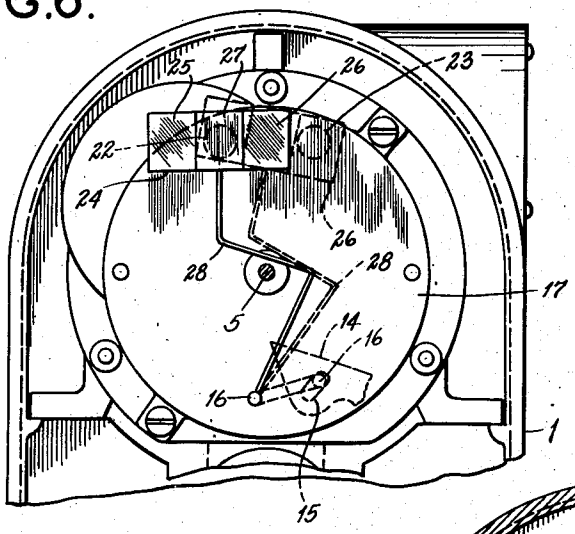


FIG.7.

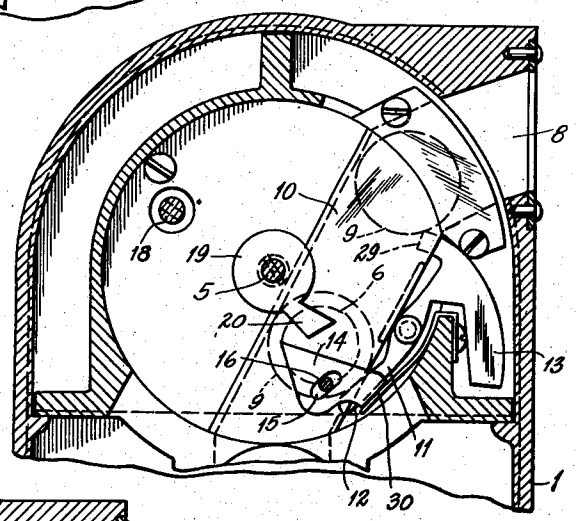
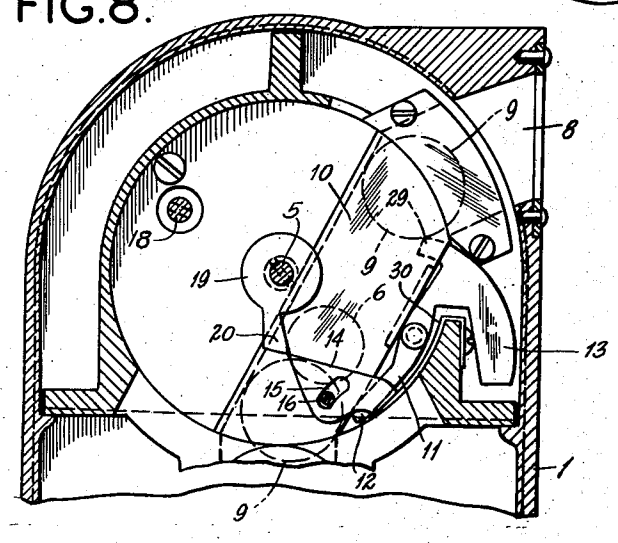


FIG.8.



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UNITED STATES PATENT OFFICE

2,271,953

TIMING DEVICE

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Application August 1, 1940, Serial No. 349,120

4 Claims. (Cl. 194—19)

This invention relates to timing devices, and with regard to certain more specific features, to coin-controlled timing devices for indicating the passage of a purchased length of time, as for parking automobiles or the like.

Among the several objects of the invention may be noted the provision of a coin-controlled timing device of the class described which is adapted to indicate at all times what portion of a purchased length of time has passed; the provision of a device of the class described which automatically begins operation upon the deposit of a coin therein; the provision of a device of the class indicated in which the user is not required to wind the timing mechanism or otherwise set the device; the provision of a device of the class indicated which, during the period of time which has been purchased, displays the coin employed in setting, but does not so display it after the purchased time has been exhausted; and the provision of a device of the class described which is substantially fool-proof in operation, simple in construction and which may be economically made. Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly comprises the elements and combinations of elements, features of construction, and arrangements of parts which will be exemplified in the structures hereinafter described, and the scope of the application of which will be indicated in the following claims.

In the accompanying drawings in which are illustrated one of various possible embodiments of the invention,

Fig. 1 is a front elevation of a device embodying the present invention;

Fig. 2 is a right side elevation;

Fig. 3 is a rear elevation;

Fig. 4 is a section on an enlarged scale taken along the line 4—4 in Fig. 2;

Fig. 5 is a section also on an enlarged scale taken along the line 5—5 in Fig. 1;

Fig. 6 is a section taken along the line 6—6 in Fig. 5;

Fig. 7 is a partial section similar to Fig. 4 showing a different position of the device; and,

Fig. 8 is a section similar to Fig. 7, but showing a still different position of the device.

Similar reference characters indicate corresponding parts throughout the several views of the drawings.

The device of the present invention is particularly adapted for use as a so-called "parking meter," which is usually installed in connection with designated parking spaces for automobiles along the curbs of city streets. The timing device itself is usually mounted on a post on the curb in proximity to the designated parking space. The device is adapted to receive a coin from a person parking his automobile in the designated space, and has means thereon for indicating a duration or period of time corresponding to the length of time a person is entitled to park in the designated space in return for the value of a coin presented.

One of the principal features of the present invention is that it begins operation immediately upon the deposit of a coin therein, and there is no setting operation or winding required of the parker.

Referring now to the drawings, numeral 1 indicates a rectangular casing which has a semi-circular top portion. The top part of the front of casing 1 has a circular opening 2 preferably holding a glass. Back of this is a scale 3, upon which are figures to indicate the amount of parking time received in exchange for the coin deposited. In front of the scale and movable thereover by the clockwork mechanism, is a pointer 4, which, upon initiating operation of the device, rotates to indicate at all times the amount of the purchased time remaining. Pointer 4 is attached to a shaft 5 which is rotated by the clockwork mechanism. The back of the device is preferably provided with a viewing disc 6 arranged opposite the place where the coin is held during operation of the device, and also with an appropriate lock, such as a screw lock 7.

Referring now to Fig. 4, the device has a coin slot 8 for reception of a coin shown at 9. The coin 9, after insertion, drops down a chute 10 until it contacts member 11. Member 11 projects sufficiently far into the coin slot 10 as shown at 12, to halt the descent of coin 9. Member 11 preferably is counterweighted, as shown at 13, to help to balance the weight of the coin. Member 11 likewise has a triangular portion 14 located outside of the chute which has an opening 15 therein which cooperates with a rod 16 to control the timing mechanism indicated generally at 17.

Operating rod 16 is arranged so that when the member 11 is in the position shown in Fig. 4, that is, with no coin resting thereupon, the clockwork mechanism 17 is not in operation. However, when member 11 has been depressed by the weight of a coin resting thereupon, lever 16 is positioned so that the clockwork mechanism operates.

The clockwork mechanism is preferably of the

type which does not require frequent winding; that is, it has a large capacity for storing energy supplied by winding. Winding means is shown at 18.

Likewise attached to shaft 5 is a member 19 having a cam 20 attached thereto. Member 19 and cam 20 are positioned so that cam 20 contacts the portion 14 of the member 11 only near the end of the time period.

Referring now to Figures 1 and 6, openings 22 and 23 in scale 3 are shown in Fig. 1. Behind these is located a colored rectangle 24, which is colored green in the segments numbered 25 and 26, and red in the segment 27. The portion of the case behind the openings 22 and 23 is likewise painted red. Rectangular member 24 is mounted upon a rod 28 attached to rod 16 to be movable therewith.

The operation of the device is as follows:

A coin 9 is inserted into coin slot 8, and drops into coin chute 10. Its fall is arrested by member 11, more particularly by the portion 12 of this member, aided by the counterweight 13 and spring 30 attached to the case 1. The weight of the coin is sufficient to move the member 11, including the portion 14 and the cooperating rod 16. The movement of rod 16 likewise moves rod 28 and the rectangular member 24, which has been in the solid-line position, assumes the dotted line position shown in Fig. 6. The effect of this last is that the openings 22 and 23, which, while the device was not operating, had shown red, now show green. The clockwork 17 now operates, it having been started by the movement of the rod 16. Member 19 carrying cam 20, thereupon rotates from the position shown in Fig. 4 in a clockwise direction until it assumes the position shown in Fig. 7. Pointer 4 is of course at the same time rotating over dial 3 to gradually show expiration of the purchased parking time.

When member 19 has reached the position shown in Fig. 7, the pointer is indicating that there is only a little more than five minutes of time remaining. Continued operation of the timing means 17 brings the cam portion 20 of member 19 into contact with the portion 14 of member 11. This moves member 11 out of engagement with coin 9, and permits coin 9 to continue its journey down through coin chute 10 and into permanent container 21. The cam 20 is shaped, however, so that it continues to contact the portion 14 of member 11 and thereby continue the operation of the timing means 17 because of the positioning of rod 16. This contact of cam 20 with the portion 14 of member 11 continues until the Fig. 8 position of the parts is reached. The pointer at this time has returned to zero, and the cam 20 is just ready to release the portion 14 of member 11.

As soon as member 11 is released, it returns to its Fig. 4 position, releasing rod 16 and permitting the latter to stop the timing mechanism 17. This same operation, by means of rod 28, moves rectangle 24 from the dotted-line position shown in Fig. 6 to the solid-line position, and the openings 22 and 23 thereupon show red.

Member 11 has a projecting portion 29, which in the Fig. 4 position is located out of the coin chute 10. However, the weight of a coin resting upon member 11 at 12, moves the member 11 so that the projecting portion 29 is located inside the chute 10. This prevents two coins from occupying the chute 10 at the same time, but a second coin 9 may be inserted in the coin slot 8 at any time. It will rest upon the projecting portion 29 while the former coin remains in position held by member 11 and continues there even after the mechanism assumes the Fig. 8 position. However, as soon as the cam 20 releases member 11 and permits this member to return to its original position, the portion 29 will be removed from chute 10, and permit the second coin to drop into position, restarting the cycle.

Accordingly, a parker who wishes to avoid the necessity of returning at the end of a comparatively short time, may deposit two coins at the same time. One will initiate operation of the device and continue this operation throughout the purchased period of time, the second remaining in reserve to come into operation as soon as the time purchased by the first one has been exhausted. In addition, the parker is not subjected to the necessity for returning to the device precisely when the time purchased by his first coin has become exhausted, in order to avoid a penalty for overtime parking. In fact, it has been found that parkers will return a short time before their purchased period has been exhausted, reset the device, and thus avoid the necessity of calculating precisely when their time will be completely gone. This is wasteful of the time purchased by the parker, and the present device does not require such a procedure. The parker may deposit an additional coin at any time before the originally purchased time has become exhausted. The coin will be held away from the mechanism until the purchased time is gone, and will then immediately come into operation to continue operation of the device. The parker legitimately in need of a longer parking period than that prescribed by ordinance may if able to locate a meter not in operation (coin dropped) insert two coins and obtain twice the ordinance period. However in actual practice he will seldom find a meter stopped but still may deposit a coin, thereby obtaining the balance of the previous parker's unexpired time plus a full ordinance time.

In order to assist the counterweight 13 in providing sufficient resistance to hold the coin suspended opposite the viewing window 6, a spring 30 is preferably provided. When the member 11 passes from the Fig. 4 position to the Fig. 7 position upon the deposit of a coin, it will be noted that the member 11 contacts spring 30. This aids in preventing movement of member 11 to a position sufficiently far as to permit the coin to continue on down chute 10 before the purchased time has substantially elapsed. Upon release of the portion 14 of member 11 by cam 20, the spring likewise assists member 11 in returning to its Fig. 4 position.

The present device, it will be noted, requires no operation by the parker, except the deposit of a coin. It thus avoids improper setting because of a willful desire to cheat the device. There is no opportunity to attempt a partial setting with the intention of returning at a subsequent time, completing the setting, and thus obtaining from the municipality a period of time which has not been paid for. In addition the present device will be more favorably received by the parking public since one need not return to deposit another coin at precisely the point when his previous time has become exhausted, but on the contrary, he can deposit an additional coin at any time, and yet still receive full value for his money. This last is not true where

it was necessary to re-set the device upon the deposit of another coin, since such re-setting operation inevitably wastes the unused portion of the purchased time, and smacks of an avaricious desire on the part of the municipality to extract every penny possible from the public by not permitting the public to have the unused time found left by a previous parker.

In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained.

As many changes could be made in the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. A timing device comprising a casing, clock mechanism therein, an exposed relatively movable dial and indicating means for indicating the passage of a predetermined period of time, the movable member being driven by said clock mechanism, an elongated chute having at its lower part a temporary coin holder, said coin holder including mechanical means actuated by the weight of a coin for initiating operation and stopping of the indicating means upon the expiration of said predetermined period of time, and means at the upper part of said chute connected with said mechanical means for preventing access of a second coin to the temporary coin holder at the lower part of said chute, said clock mechanism actuating said mechanical means to release the coin therein from the temporary coin holder just prior to the expiration of the predetermined time and admit a second coin to the temporary coin holder without stopping the clock mechanism.

2. A timing device of the character set forth in claim 1 in which the mechanical means and coin release will stop the clock mechanism if a second coin is not inserted in the chute.

3. A timing device of the character set forth in claim 1 in which the means and coin release will stop the clock mechanism if a second coin is not inserted in the chute, said means including a rod directly engaging the clock at one end and connected with the coin release at the other.

4. A timing device of the character set forth in claim 1 including signal means connected with the coin release showing whether the clock mechanism is working or not.

MARCUS H. RHODES.