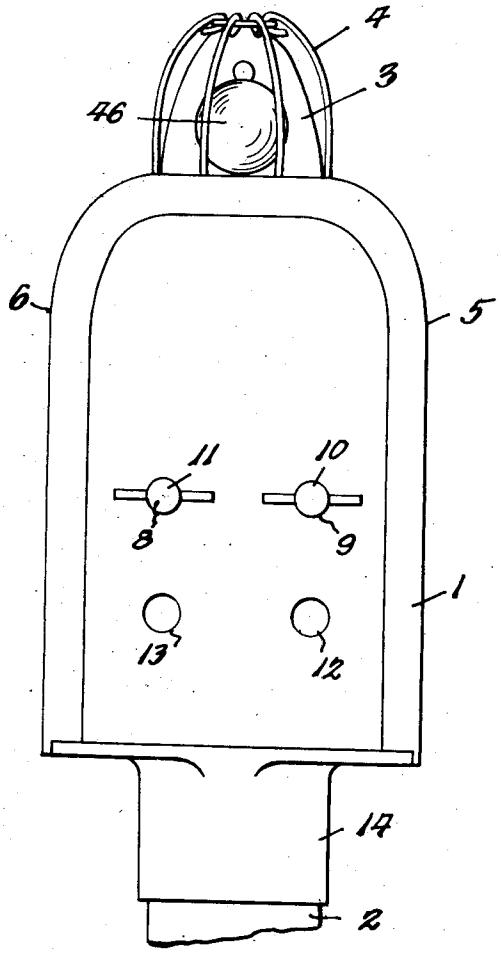
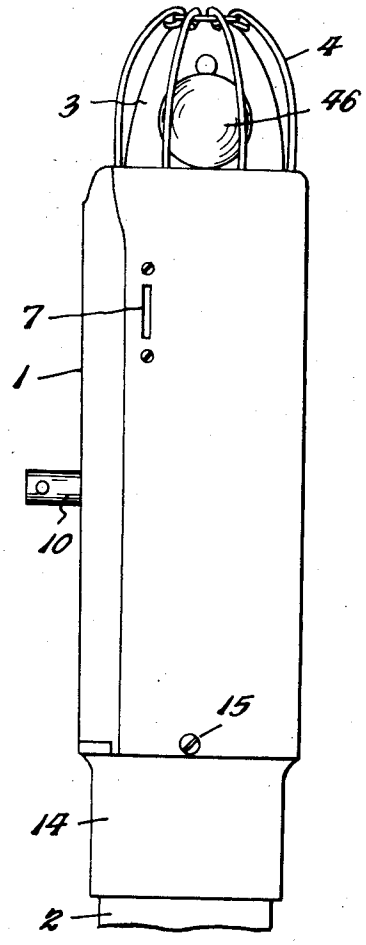
May 11, 1943. C. H. MARTIN 2,318,615

COIN CONTROLLED TIME OPERATED SIGNALING MECHANISM

Filed June 29, 1938 5 Sheets-Sheet 1

FIG. 1.





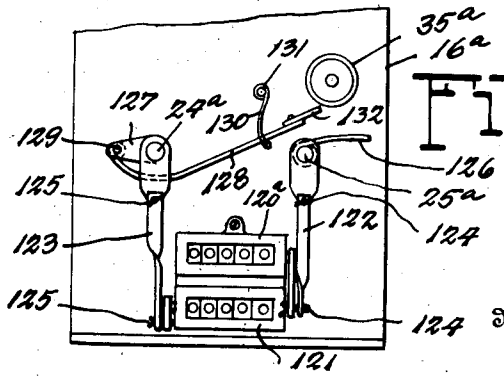


FIG. 3.

FIG. 2.

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COIN CONTROLLED TIME OPERATED SIGNALING MECHANISM

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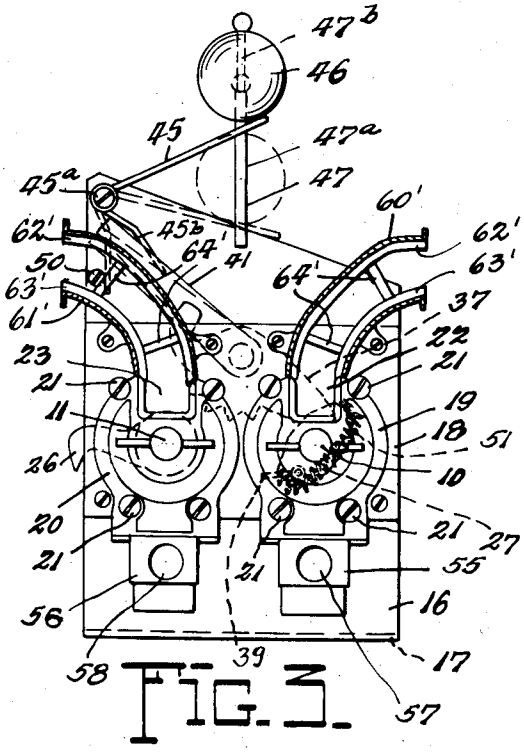


FIG. 3.

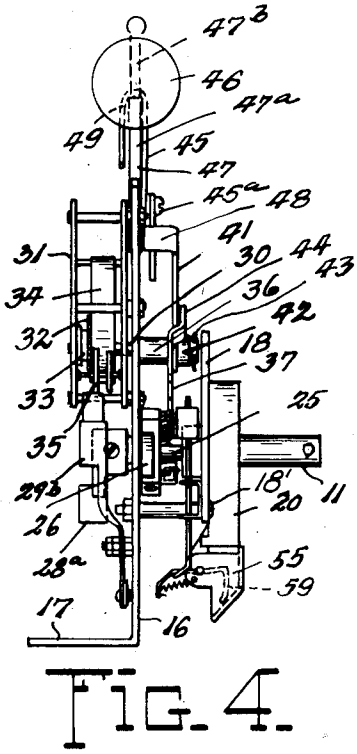


FIG. 4.

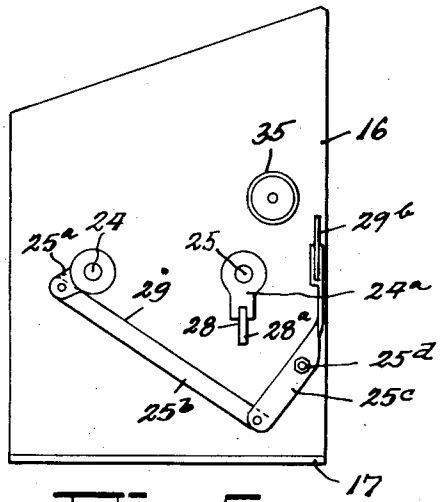


FIG. 5.

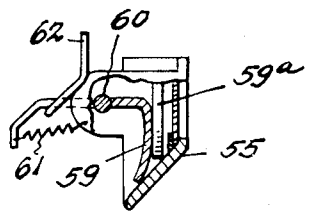


FIG. 9.

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COIN CONTROLLED TIME OPERATED SIGNALING MECHANISM

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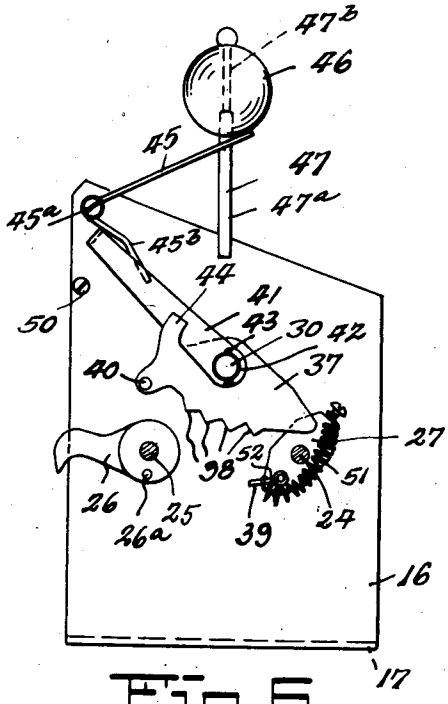


Fig. 6.

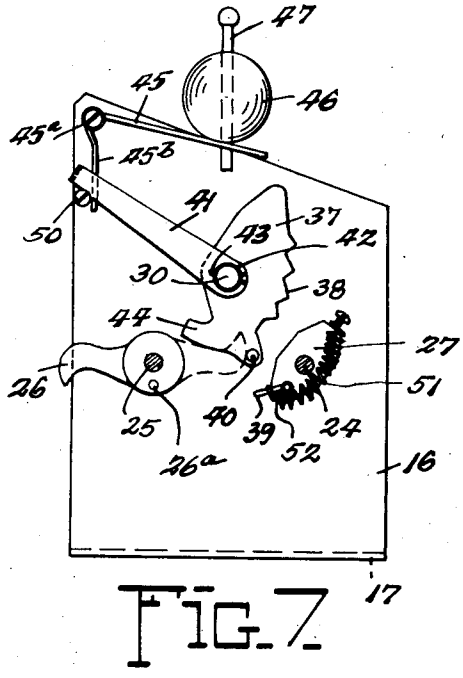


Fig. 7.

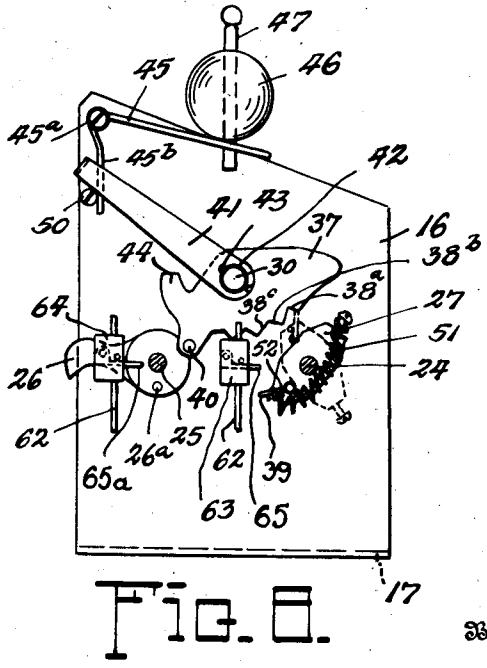


Fig. 8.

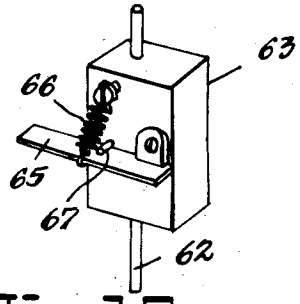


Fig. 10.

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COIN CONTROLLED TIME OPERATED SIGNALING MECHANISM

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Fig. 11.

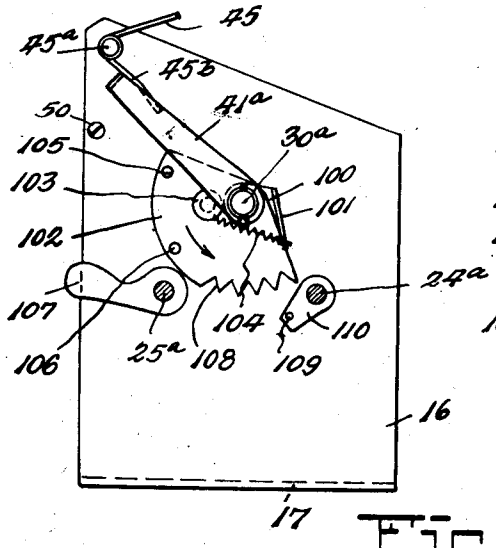


Fig. 12.

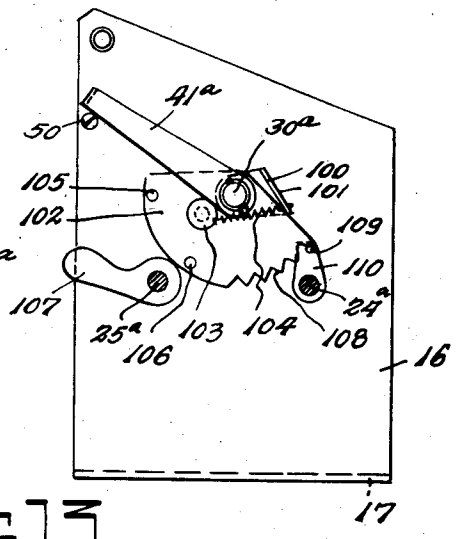


Fig. 13.

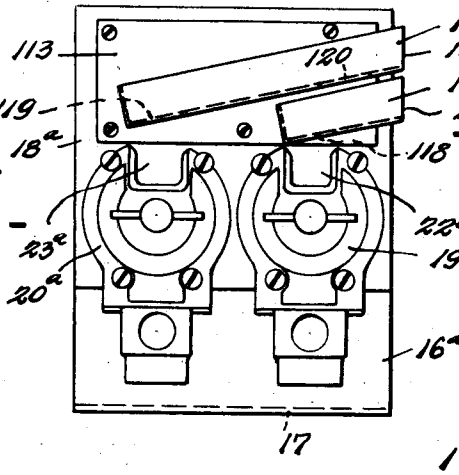


Fig. 15.

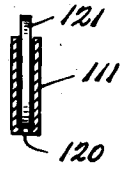


Fig. 16.

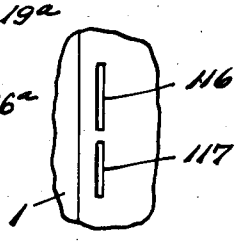
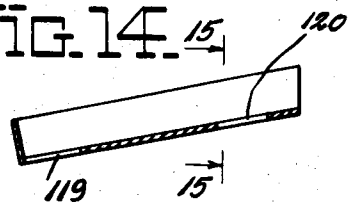


Fig. 14.



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COIN CONTROLLED TIME OPERATED SIGNALING MECHANISM

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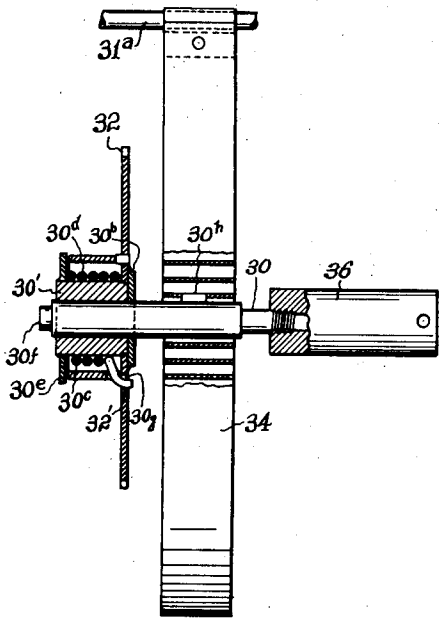


FIG. 18

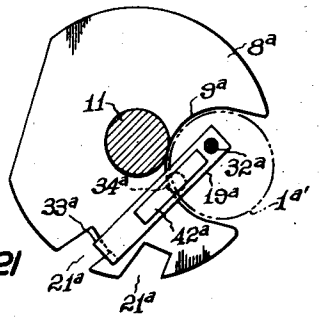


FIG. 21

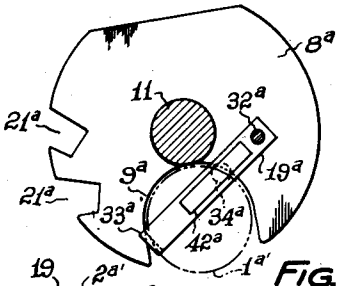


FIG. 22

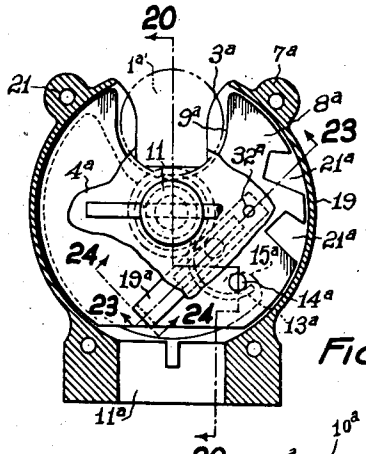


FIG. 19

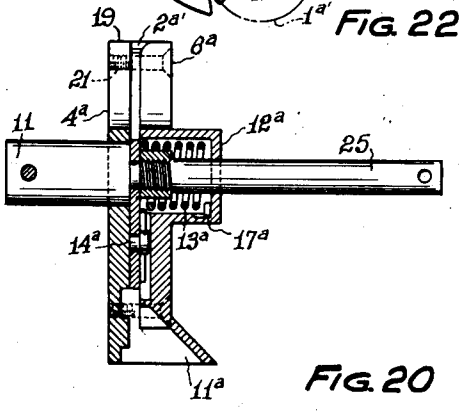


FIG. 20

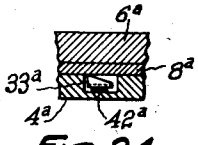


FIG. 24

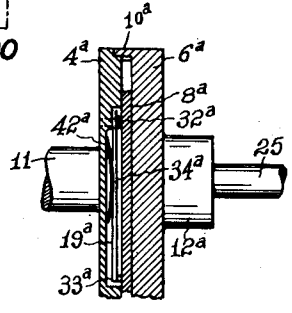


FIG. 23

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Patented May 11, 1943 2,318,615

UNITED STATES PATENT OFFICE

2,318,615

COIN CONTROLLED TIME OPERATED SIGNALING MECHANISM

Charles H. Martin, Springfield, Mass.

Application June 29, 1938, Serial No. 216,609

6 Claims. (Cl. 161—15)

The present invention appertains to coin controlled time operated signaling mechanism such as parking meters, or the like, as are widely employed today for controlling vehicle parking, and is a continuation in part of application Serial Number 165,305, filed September 23, 1937.

One of the primary objects of the present invention is to provide an apparatus of the nature referred to above, of improved and simplified construction and great flexibility of operation. Another object of the present invention resides in the provision of a coin controlled time operated signaling mechanism, adapted for operation by the use of coins of various denominations to set the time operated mechanism for indicating functions for various predetermined periods of time.

A further object of the present invention is the provision of coin controlled instrumentalities for causing operation of the time operated signaling mechanism for a certain predetermined maximum period of time upon insertion of a single coin of a certain denomination or upon insertion of a plurality of coins of smaller denominations.

The present invention contemplates further the employment of a plurality of coin mechanisms adapted to operate a single actuating mechanism of the time operated device to effect setting and operating of the latter, for the time indicating functions of various durations.

A further object of the present invention resides in the provision of certain instrumentalities for rendering a deposited coin visible until another coin has been deposited in the machine, and the coin mechanism is again operated for effecting another time indicating function of the device while means are provided to effect release of the coin rendered visible incident to the operation for setting the time operated device.

Other and further objects of the present invention will become more apparent from the following description and drawings, in which:

Figure 1 is a front elevation of the parking meter structure of the present invention.

Figure 2 is a side view of Figure 1.

Figure 3 is a front view of a coin controlled time operated mechanism illustrating also the signaling devices of the same.

Figure 4 illustrates a side view of the mechanism shown in Figure 3, certain parts being omitted.

Figure 5 shows a rear view of the mechanism shown in Figure 3, certain parts being omitted.

Figures 6 to 8 inclusive illustrate in a somewhat diagrammatic manner, the actuating mechanism for the time operated instrumentalities showing several positions of said actuating means, certain parts being omitted for the purpose of clarity; Figure 8 shows also certain parts of the coin release mechanism.

Figure 9 is a partial sectional view of the coin discharge chute illustrating certain coin retaining and releasing instrumentalities.

Figure 10 is a perspective view of certain parts of the coin receiving instrumentalities.

Figure 11 is an illustration of a modified structure of actuating device for the time operated mechanism, certain parts being omitted.

Figure 12 is a view similar to Figure 11 showing the actuating device for the time operated mechanism in operative position.

Figure 13 illustrates a modified arrangement of coin chute unit.

Figure 14 is a longitudinal sectional view of a coin chute as employed in the coin chute mechanism shown in Figure 13.

Figure 15 shows a cross section of the coin chute of Figure 14 together with a coin inserted in said chute.

Figure 16 shows the arrangement of the coin slots on the outer casing such as shown in Figure 2 when the use of the coin chute unit as shown in Figure 13 is availed of.

Figure 17 is a view similar to that of Figure 5 illustrating a modified arrangement of starting structure for the time operated mechanism which is interconnected with certain counting means for counting the operation of each coin controlled unit.

Figure 18 is a cross section of the main drive gear, main spring, and spring clutch, the main spring being shown in part as being broken away around the winding shaft of the clock mechanism.

Figure 19 is a face view of the coin handling mechanism with the face broken away outside the actuating handle, showing the coin receiver in its coin receiving position.

Figure 20 is a transverse section taken on the line 20—20 of Figure 19.

Figure 21 is a somewhat diagrammatic view showing the coin receiver with a coin engaging the lock and about released after advancing half way in the cycle.

Figure 22 is a somewhat diagrammatic view showing the coin receiver and the coin almost fully advanced in the mechanism, and the coin receiver as fully released for completion of the deposit of the coin.

Figure 23 is a transverse section about on the

line 23—23 of Figure 19, showing more fully details of the lock arm and associated spring.

Figure 24 is a detail section about on the line 24—24 of Figure 19, showing the end of the lock arm as riding on the coin receiver.

Referring now to the drawings, and especially to Figure 1, 1 indicates a housing preferably of a stream-lined configuration, so as to eliminate collection of dust and dirt upon the same, which is mounted upon the support 2 forming the supporting base or stand of the parking meter. The upper portion of the housing 1 is provided with a transparent dome structure 3, which is protected against damage by a guard member 4 secured to the housing 1, in any convenient manner.

The housing 1, at the sides thereof, as indicated at 5 and 6, is provided with coin slots generally indicated as at 7, one at each side of the housing. The front of the housing 1 is further provided with openings 8 and 9, through which handle members 10 and 11 extend, and windows 12 and 13 also on the front face of the housing 1 are provided for purposes to be related further on.

The housing 1 may be formed of a hood-like structure, which may be mounted on a base member 14, which is in turn attached to the supporting member 2 by means of screws 15, or the like. If desirable, however, the housing may be of a composite structure, as will be obvious to those skilled in the art. The supporting member 2, which may be preferably of a hollow or tube-like construction, may be utilized for the reception of a coin compartment or box removably mounted within said supporting structure for the reception of coins collected from the operation of the machine of the present invention.

Referring now to the mechanism of the device of the present invention, which is contained within the housing 1, reference is made first to Figures 3 and 4, which illustrate the complete interior structure of the device which comprises a supporting plate 16, comprising a horizontal portion 17 which is secured to the base 14, in any convenient manner.

Spaced with regard to the supporting plate 16 and positioned in front of the same and connected thereto by one or more tie bolts 18', is another supporting structure generally indicated at 18, upon which a plurality of coin handling mechanisms or units 19 and 20 are mounted by means of screws 21, or the like. These coin handling mechanisms may be of any conventional construction adaptable for the purposes of the present invention, such as for instance, that disclosed in Figures 19 to 24 inclusive. These coin handling mechanisms 19 and 20 are generally of such construction that upon insertion of a coin into their slots 22 or 23 respectively, they are unlocked, and the handle members 10 or 11 respectively may be operated so as to cause rotation of shafts 24 and 25 with which these coin handling mechanisms are provided.

The coin handling mechanism, above referred to and hereinafter described, shows in the figures a catch holding the coin receiver against full rotation toward the coin discharge slot, excepting when a coin of proper denomination is inserted, which is arranged to impinge the side of the coin, so that the thickness of the coin will provide the proper movement of the lock or catch with reference to the coin receiver, or in other words, the face of the coin pressing against the catch or parts connected therewith will deflect the catch out of engagement with the coin receiver so that said coin receiver may complete its revolution.

The coin, after being inserted in the coin chute 55 or 56, is shown at 1a in dotted lines in Figures 19, 21 and 22, deposited in a slot 2a' which is formed in the side walls and bottom of a U-shaped notch or passage 3a at the upper portion of the device.

The back plate 6a is formed so as to enclose the outer edges and form a complete closure when the face plate 4a is fastened thereto by screws 21 which also position the mechanism on the plate 18, by means of the lugs or bosses 7a formed on the back plate. Between the back plate 6a and the front plate 4a a narrow space is left and this space is in the same plane as the slot 2a. Located in this space is a coin receiver 8a in the form of a circular plate or disc, and which is provided with a U-shaped notch or recess 9a adapted to register with the slot or recess 2a for the insertion of the coin 1a. The notch is of sufficient depth to permit the coin to descend until its upper portion is clear of the inner periphery of the portion 10a of the back plate 6a, said portion constituting the outer edge of the coin passage, when the coin is being carried by the coin receiver 8a from the receiving slot 2a to the discharge slot 11a, said slot being placed adjacent the coin display holding mechanism shown in Figure 9 of the coin operated mechanism of my invention.

The disc or plate 8a is secured against relative rotation to the handle portion 11 in a suitable manner, said handle having the shaft 25, said shaft being an extension of the handle and passing through the coin handling device. The handle 11 is journaled in the face plate 4a and the shaft 25 connected therewith is journaled in an extension 12a of the back plate 6a as shown in Figure 20.

The handle 11 is secured to the disc 8a in such a way that the rotation of the handle 11 will effect rotation of the disc 8a is one direction, while its return movement or rotation in the opposite direction is produced by a suitable spring 13a bearing against a lug 14a, on the inner face of the disc 8a, said lug at the same time constituting a stop for limiting the return rotation of the said disc 8a and holding the U-shaped recess 9a in register with the recess 3a when the knob or handle 11 is released, said lug 14a being arranged to strike against the edge of a web portion on the rear plate of the mechanism as at 15a shown in Figure 19.

The spring 13a, as shown, is coiled about the shaft 25 in a recess 12a formed in the back plate and one end of the spring is inserted in a suitable notch or opening 17a in the recess 12a. The stop or lug 14a is so situated that it will constitute a limiting means in cooperation with another web on the back plate, for the rotation of the disc 8a, to prevent the rotation of the disc beyond the coin discharge position.

The inner face of the face plate 4a is provided with a recess in which is located a catch or lock 19a for locking the disc or coin receiver 8a against movement beyond a certain degree until the coin of the proper denomination is deposited. To effect this locking action of the catch on the disc, the disc is provided with two notches 21a and 21a' into one of which the catch or lock 19a is propelled by a spring 42a, said catch or lock 19a having one end pivoted to the face plate 4a at 32a and at the other end having an inwardly projecting lug 33a, see Figure 24, for engaging

the notches 21a and 21a' when the catch is forced inwardly by the spring 31a.

Also formed on the catch or lock 19a is an inwardly extending boss 34a adapted to engage the surface of the coin of proper denomination inserted in the slot 9a and force outwardly the lock or catch 19a against the inward force of the spring 31a and thus permit rotation of the coin receiving disc 8a for its complete action to deposit the coin and thus actuate the mechanism hereinafter to be described, through the shafts 24 and 25, to each of which a coin handling mechanism as above described has been applied.

These shafts 24 and 25 extend from their respective coin handling units through plates 18 and 16, and carry at positions intermediate said plates, actuating members 26 and 27, while their free ends which, as already explained above, extend through the plate 16, are cooperatively associated with timing device starting elements 28 and 29.

More specifically, shaft 25 carries at its free end a flexible rubber member 28a supported by lever 24a rigidly secured to shaft 25, in any convenient manner. Shaft 24 carries a lever arm 25a secured to the same, and operatively associated with the flexible rubber element 29b by means of an actuating mechanism comprising the lever arms 25b and 25c pivotally connected with respect to each other and lever arm 25a. The lever 25c is pivotally mounted upon plate 16, as shown at 25d.

Mounted upon the plate 16 at the rear of the same with its spring winding shaft 30 extending through plate 16, and forward of the same, is a clock mechanism generally indicated at 31. This clock mechanism may be of any conventional structure preferably such as employed in alarm clocks, or the like.

The details of the clock mechanism 31 having the main drive gear 32 are not shown in its entirety as the same are obvious to those skilled in the art. However, it shall here be mentioned that interposed between the spring shaft 30 and the main drive gear 32 of the clock mechanism is a spring clutch 33 of any suitable construction, which replaces the usual pawl and ratchet clutching mechanism of the conventional clock mechanisms of this nature, for the primary purpose of obtaining a more immediate clutching action between parts 30 and 32 without appreciable back lash which would cause considerable time indicating variations of the mechanism.

The spring clutch, generally designated at 33, shown in Figure 18, in detail, comprises means whereby the unwinding of the main spring 34 is prevented and the main spring 34 held at any given tension imparted by the winding of the shaft 30, without recourse to the pawl and ratchet type of construction through means hereinafter to be described.

The shaft 30 has an enlarged portion or barrel 30' which acts as a bearing for the gear 32, said gear being rotatable on the bearing or barrel. The gear 32 is held in alignment for coaction with the other parts of the clock mechanism by the shoulder 30b on the barrel 30'. The spring 30d of the spring clutch mechanism 33 is wound around the barrel 30a, one end being free on the barrel and the other end 30g positioned in an opening or hole 32' of the gear 32. The covering 30c is a substantially short piece of tube surrounding the spring 30d and is held adjacent the gear 32 by the washer 30e which is pressed on the end of the barrel 30a and provides an outer cover for the spring 30d and holds the collar or tube 30c against the gear, and through this collar, aids in maintaining the alignment of the gear.

An ear or lug 30h on the shaft 30 engages the inner end of the main coil spring 34, the outer end of the coil spring being suitably fastened to the tie bolt 31a of the clock mechanism frame.

When the main spring 34 is wound by the turning of the shaft 30 engaged with one end of the spring through the ear or lug 30h, the barrel 30a, being integral with the shaft 30, also turns. Since the gear 32 is free on the barrel, it does not turn being restrained by other gears in the clock mechanism and lacking driving connection in the winding direction to the barrel. Likewise, the spring 30d also remains stationary with respect to the barrel part of shaft 30 when the main spring 34 is wound. When the main spring 34 has been sufficiently wound for the purposes of actuating the clock mechanism for a predetermined period as far as permitted by the rotation of the actuating member 37, said member 37 being rotatively mounted on the shaft 36, the tension of the main spring 34 will be transferred on to the gear 32 by the wrapping of the clutch spring 30d around the barrel 30', the clutch spring transmitting the driving force to the gear 32 through the spring end 30g acting in the hole 32' in the direction in which the main spring unwinds. The clock mechanism 31 is thus driven through the gear 32 and its associated coacting gears.

Owing to the friction connection set up by the wrapping of the clutch spring 30d on the barrel 30a in one direction, it follows that the slightest winding movement will be maintained, in tension on the main spring 34, and thus transmitted through the main drive gear 32 to the other gears in the clock mechanism 31.

The numeral 34 indicates the spring of the clock mechanism, which is wound for actuation by rotation of the shaft 30, while 35 indicates the balance wheel of the clock mechanism. From Figure 5 it will be noted that the flexible rubber elements 29b and 28a are positioned in such a manner with regard to the same that upon rotation of the shaft 24 or 25 respectively, an engagement of these rubber members with the balance wheel 35 is effected to cause starting of the balance wheel 35.

More specifically, the rubber elements engage the wheel 35 in a sort of wiping action, thereby imparting movement to the balance wheel to start the clock mechanism, after the same has been conditioned for operation. The forward end of the shaft 30 is provided with a sleeve member 36 fixed thereto, which carries a spring shaft actuating member 37, forming an integral part with the said sleeve. This spring shaft actuating member or clock mechanism setting member 37 comprises a plurality of tooth portions 38 cooperating with a pawl 39 forming a part of cam member 27, while an abutment pin or member 40 secured to the spring shaft actuating member 37 is provided to cooperate with the cam 26 which is mounted upon shaft 25.

Mounted upon the sleeve 36 and freely rotatable thereon is a lever arm 41. This lever arm 41 is positioned directly adjacent the outer surface of the spring shaft actuating member 37, and retained in this position by means of a spacing member 42 retained on shaft 30 and sleeve 36 by means of cotter pin 43.

The spring shaft actuating or clockwork set-

ting member 37 is further provided with a somewhat offset portion 44, bent in such a manner as to engage lever arm 41 during the movement of the clock mechanism setting member 37 from the position of the same as shown in Figure 8, to the position as shown in Figure 6, so that the lever arm 41 is forced upwardly against an L-shaped signal actuating arm 45, which engages the signal member 46 to thereby raise the same from a position as shown in Figure 7 to a position shown in Figure 6.

The signal member 46, which is of a ball-like configuration, preferably of red color, is slidably mounted for upward and downward movement on a signal shaft 47 which comprises telescoping parts 47*a* and 47*b*. When the signal is raised to the position as shown in Figure 6, the members 47*a* and 47*b* telescope outwardly, as shown in this figure, while when the signal member 46 is permitted to be lowered on account of its gravitational action, the parts 47*a* and 47*b* telescope together as shown in Figure 7. This signal member when in a position as shown in Figure 6, enters the dome structure 3 of the parking meter, as shown in Figures 1 and 2, and is visible to an observer. It assumes this position when the time for which the parking meter was set has lapsed, and the signal disappears within the housing 1 when the device is set for the new time indicating operation.

The signal lever 45, which is of an L-shaped configuration, as previously mentioned, is pivotally secured at 45*a* to the front face of the plate 16, and its short arm 45*b* extends, as will be seen from Figure 6, into the path of the lever arm 41, which is provided with a bent portion 48 of a configuration and extent so as to cause cooperation of the same with the signal arm portion 45*b*. The other end of the signal arm 45 is formed into loop-like shape, as shown at 49, in Figure 4, so as to surround signal post 47, and to engage the lower portion of the signal member 46.

With the parts so far described, it will be seen that when a coin is deposited into the coin handling unit 20, and the handle member 11 on shaft 25 is rotated in a clockwise direction, actuating member 26 is swung into engagement with the abutment 40 on the spring shaft actuating member 37, and this latter member is caused to rotate from the position shown in Figure 6 (which is the normal position at the end of each timing cycle, before setting for another timing cycle), to the position as shown in Figure 7, thereby rotating shaft 30 to cause winding of the spring 34 to a certain predetermined extent to obtain the operation of the device for a certain length of time.

During such anti-clockwise movement of the member 37 part 44 of the same disengages from lever arm 41, which drops downward and rests against abutment 50 as shown in Figure 7, thereby disengaging from the signal lever 45 permitting downward movement of the signal 46 to a position as shown in Figure 7.

At this time, the red signal 46 moves downwardly and out of the transparent dome 3, and becomes invisible indicating that a coin has been deposited in the mechanism, and the same has been properly conditioned for operation.

During the movement of the member 37 from its position as shown in Figure 6, to the position as shown in Figure 7, the rotation of shaft 25 causes also movement of the flexible rubber element 28*a* into engagement with the balance wheel 35, and when the handle 11 is now released, shaft 25 moves automatically back by a force of the spring of the coin handling unit 20, which is not specifically shown. The rubber element 28*a* gives a quick wiping action to the balance wheel 35 before the member 28*a* returns to its original position, as shown in Figure 5, thereby starting the clock mechanism operating.

The coin handling unit 20 is designed to receive coins of a certain denomination, as for instance, five cent pieces, while the coin handling unit 19 may be preferably designed for handling coins of smaller denomination such as pennies. When a five cent coin is inserted into the unit 20 and handle 11 is operated in a manner as set forth in the above, the cam 26 will cooperate with the abutment member 40 of the spring shaft actuating member 37 in such a manner as to cause rotation of shaft 30 and a corresponding winding of spring 34 to condition the clock mechanism for operation, for instance for half an hour; while, when a penny piece is inserted into coin unit 19 and the same is operated in a like manner as unit 20 by turning the handle 10 a rotation of shaft 30 and a winding action of spring 34 is accomplished for a respective shorter period of time, as for instance, ten minutes, or the like, to condition the clock mechanism for operation for such shorter interval of time. In this way, a greater flexibility of the parking meter is accomplished because coins of various denominations may be inserted, which first permit a selection of length of time required for parking, and which furthermore, has the advantage that an operator of the device may set the same into action with either one of the two denominations of coins referred to above.

Describing now more specifically the operation of the coin handling unit 19 and associated parts, it will be apparent from the drawings that after insertion of a coin into this unit and operation of its handle 10 in a clockwise direction, the actuating member 27 mounted on shaft 24 will be rotated. This actuating member 27 carries a pawl 39 usually held in the position as shown in Figure 6 by means of a spring 51, which maintains the pawl 39 in contact with a stop 52 mounted on member 27.

When member 27 and pawl 39 are rotated as referred to above, pawl 39 will engage the surface 38*a* of the actuating member 37, and the same will be moved into a position as shown in Figure 8, at which time, the pawl 39 disengages the surface 38*a* upon further rotation of the shaft 24 in a clockwise direction.

When shaft 24 is released and returned by the force of the spring of the unit 19, pawl 39 is free to swing backward, and out of the way of any of the teeth 38 which may be in its path during the return stroke. With the member 37 in a position as shown in Figure 8, the clock mechanism is conditioned for the operation for a period of ten minutes or any like period for which the device is to be set, and the indicator 46 will be in its lower position as shown in Figure 8, in view of the fact that the lever arm 41 has been disengaged from the lever 45.

If an additional ten minute parking time is required, an additional coin of the same denomination may be inserted into unit 19 and the shaft 24 and pawl 39 actuated again. In this case, the pawl 39 will engage surface 38*b* of the next tooth of the member 37, and the latter will now be operated to assume a position somewhat intermediate between the positions of Figure 8 and Figure 7.

The insertion of still another coin and rotation of the shaft 24 will cause engagement of the pawl 39 with the surface 38c of the next tooth 38 of the member 37 and the actuating member 37 will be shifted still further toward the position of Figure 7. In this way by the use of several coins of the same denomination additional periods of parking time may be selected in a manner which will be quite obvious to those skilled in the art. The actuating member 37 for the spring shaft 30 may be provided with any plurality of tooth members 38, or pawl cooperating surfaces respectively, as required for the desired operation of the device.

In other words, while the operation of the unit 20 and actuating member 26 effects the setting of the time control device for a maximum length of time, an insertion of one or more coins of the same denomination into coin handling unit 19 permits setting of the time operated instrumentalities for any portion of such maximum period for which the apparatus is capable of functioning.

After the time operated device has been set for operation by winding of the spring 34, the clock mechanism is set into operation by means of the starting action of the rubber element 28a, or the rubber element 29b. The latter is operated incident to the operation of the shaft 24, as will be clearly seen from Figure 5. In view of the fact that the motion of the shaft 24 is transferred to the lever mechanism 25b and 25c to swing the rubber element 29b into contact with the balance wheel 35 and to impart a quick wiping action upon the balance wheel 35 upon the return of the shaft 24, the clock mechanism generally indicated at 31 will be set into operation and will run for the respective time period for which it has been set by the operation of the member 37.

Assuming that the coin handling unit 20 has been operated and the clock mechanism has been conditioned for the maximum period of operation of the time controlled device, the member 37 will be in the position as shown in Figure 7, and during the operation of the clock mechanism 31, which is accompanied by unwinding of the spring 34 and a rotation of the shaft 30 in a clockwise direction, the member 37 will slowly move backward from its position of Figure 7 to its original position as shown in Figure 6.

Shortly before the expiration of the period for which the time controlled mechanism is set in this instance, the portion 44 of the member 37 will engage the lever arm 41 and raise the same into engagement with portion 45b of the crank bell lever 45 to cause upward movement of the signal member 46 into the dome structure 3 to signal the expiration of the time for which the device has been set.

If the member 37 has not been actuated for the maximum time of operation, as for instance, shown in Figure 8, it will, of course, return in a much shorter period to its original position during the operation of the clock mechanism and the signal member 46 will then also be raised.

The coin handling units 19 and 20 are provided with coin discharge chutes 55 and 56 provided with vision openings or glass windows 57 and 58. The vision openings or windows 57—58 are arranged in alignment with the openings or windows 12 and 13 in the front of the casing 1.

The coin discharge chutes 55 and 56, which are of like construction and the detail of one of which is shown in Figure 9, are provided with a retaining lever 59 pivotally mounted at 60 and provided with a coil spring 61 to retain the same in a position as shown in Figure 9. A control rod 62 leads from the vicinity of the retaining lever 59 to a slide block 63 or 64 respectively.

The slide block 63 is associated with the coin chute 55, while the slide block 64 is associated with the coin chute 56. Mounted on slide blocks 63 and 64, which are of practically identical construction, is a pawl member 65 held in the position as shown in Figure 10 by means of a coal spring 66 in such a manner that the pawl 65 abuts against a stop 67. The pawl 65 is adapted to cooperate with pawl 39, see Figure 8, so that when the later is operated in a manner as previously described, the slide block 63 and rod 62 will be shifted upwardly to thereby cause movement of the coin retaining lever 59 away from the coin chute structure to thereby release a coin 59a held within the coin discharge chute in front of the window in a visible position. The coin 59a will then drop into a coin container which may be positioned as previously described within the supporting structure 2.

In a like manner, a coin within the coin chute 56 of the coin handling unit 20 may be released upon rotation of the actuating member 26 which is provided with an abutment 26a for engaging the pawl 65a to raise the same, and its corresponding slide block 64 and rod 62.

The last coin deposited in either the unit 19 or 20 remains visible in front of the windows 12 or 13 respectively, until the next coin is inserted in the respective unit, at which time the previously inserted coin is released from the coil discharge chute in a manner which has been already specifically described hereinbefore.

Interposed between the coin openings 22 and 23 of the coin units 19 and 20, and the coin slots 7 at the places 5 and 6 of the casing 1 are coin chutes 60' and 61' which each consist of the plurality of guide members 62' and 63' held in proper spaced position with regard to each other by means of spacing members 64'. When the coin is inserted into the coin slot 7, it falls down by gravity to the coin chute 60' or 61' into the respective coin handling units.

Figures 11 and 12 disclose a modified structure of actuating mechanism for the time operated device. While the operation of this modified structure is very similar to that as disclosed in Figures 6 to 8 inclusive, it distinguishes from the same, however, in that a spring shaft actuating member 100 is rigidly secured to the spring shaft 30a. This actuating member is provided with a flange portion 101 adapted to be engaged by a sector-like member 102 freely rotatable on shaft 30a. This sector-like member 102 is provided with an abutment pin 103 adapted to cooperate with the arm 41a, which is of the same construction as shown in Figure 6. The arm 41a is freely rotatably mounted upon the shaft 30a. Interposed between the abutment pin 103 and the flange 101 of the parts 102 and 100 respectively is a coil spring 104 maintaining the parts 100 and 102 in respect to themselves normally as in a position shown in Figure 11.

The sector-like member 102 is further provided with the abutment pins 105 and 106 positioned in such a way that the same may be engaged by the cam 107 in a manner as will be described later on. Additionally, the sector-like member 102 is provided with a plurality of teeth 108 cooperating with an actuating pin 109 of the actuating member 110. The cams 107 and 110 are

mounted on shafts 25a and 24a respectively, in the same manner as cams 26 and 27 are arranged on shafts 25 and 24 in Figure 6.

Upon operation of the shaft 25a in the same manner as shaft 25, cam 107 will be brought into engagement with pin 106 on the sector 102 and thereby force said sector-like member in the direction of the arrow indicated in Figure 11.

In view of the fact that the member 102 is in engagement with the spring shaft actuating member 100 by means of flange 101, the actuating member 100 will be correspondingly moved to effect a certain rotation of shaft 30a, thereby tensioning the spring of the time operated mechanism in a manner as already referred to hereinbefore.

The abutment pin 103 is at such time moved out of engagement with the lever 41a, moving the latter thereby out of contact with the signal lever 45 to thereby effect lowering of the signal member 46 previously referred to.

The actuating member 107 may, after operation of the member 102 as above described, be returned to its original position as shown in Figure 11 by any convenient means such as a spring contained in the coin controlled mechanism. If, during its backward stroke, actuating member 107 should contact the abutment pin 106, or 105, the sector-like member 102 is free to move backward in an opposite direction as that shown by the arrow in Figure 11. In this way, a free return of the cam 107 is assured.

As soon as pin 106 and actuating member 107, upon the return movement of the latter, are disengaged, the sector-like member 102 moves back into engagement with flange 101 due to the action of spring 104. Upon a second operation of cam 107 immediately preceding the first operation, pin 105, which is now opposite said actuating member, will be engaged and the sector 102 and spring shaft actuating member 100 will be moved an additional distance in the direction of the arrow in Figure 11.

It will, therefore, be seen that for instance two five cent pieces may be inserted, one after the other in the coin controlled mechanism 20 which controls the operation of the shaft 25a so that the time operated mechanism may be set for twice the allotted time as that possible in the mechanism as shown in Figure 6.

The operation of the actuating member 110 is substantially the same as that of member 27 shown in Figure 6, with this difference, however, that no pawl arrangement like that shown at 30 is necessary, because upon the return of the cam 110 the sector member 102 will move in the opposite direction from that as shown by an arrow in Figure 11 to thereby permit a free return of the actuating member 110 and its actuating pin 109.

Figure 13 illustrates a modified coin chute arrangement, wherein a plurality of coin chutes 111 and 112 mounted upon the supporting plate 113 are attached to the supporting plate 18a of the coin controlled mechanism in such a manner that coins discharged from said chute, will enter the coin receiving slots 23a or 22a of the coil controlled units 20a and 19a respectively. These coin chutes 111 and 112 are arranged in inclined position in a manner as shown in Figure 13, with their open ends 114 and 115, in alignment with coin slots 116 and 117, preferably arranged on the side of the housing or casing 1 in a similar manner as coin slot 7 in Figure 2. The coin chutes 111 and 112 are of a U-shaped channel-like formation, as shown in Figure 15. Coin chute 112 is provided at its lower end with a slot 118 to permit discharge of coins inserted into chute 112 to the coin receiving opening 22a of the unit 19a. In a like manner, the lower end of the coin chute 111 is provided with a slot 119 for discharge of coins inserted into the chute 111 in the coin receiving opening 23a of the unit 20a.

The coin chute 111, however, is further provided with a slot 120, which is very exactly machined, and not of sufficient width to permit the passage therethrough of a five cent piece 121, as illustrated in Figure 15. However, if by mistake, a one cent piece is inserted into the coin slot 116 and chute 111, the same will fall through slot 120 and into the lower coin chute 112, which is positioned directly underneath and from where it will be delivered to the coin receiving slot 22a of the unit 19a even though the coin has been placed into the wrong coin slot. Insertion of a five cent piece coin in the coin slot 117 is impossible because this slot is not large enough to receive a coin of such denomination. In this way, the coin chute mechanism is rendered absolutely fool-proof and a blocking of the coin receiving openings 22a and 23a with coins of the wrong denomination is impossible.

Figure 17, which shows a similar arrangement as that disclosed in Figure 5, illustrates further the provision of a plurality of counters 120a and 121. The counter 120a is connected with the shaft 25a by means of a crank arm and linkage arrangement 122, while the counter 121 is cooperatively interconnected with the shaft 24a by means of a similar linkage and crank arm arrangement 123. It should be noted, however, that at points 124 and 125, there is considerable play between the respective parts of the linkage arrangement of both counters so that a slight rotation of shafts 24a and 25a does not effect an operation of the counter.

In other words, the coin controlling devices have to be operated so as to cause turning of their respective shafts to the full extent to effect operation of the counters. In this way, indicating means are provided according to which the amount of money received by the device may be calculated.

The shaft 25a is provided with a rubber member 126, which is adapted to engage the wheel 35a to cause initiation of operation of the time controlling device, in a like manner as previously described in regard to Figure 5. The shaft 24a is provided with a crank arm 127 and an actuating member 128 pivotally secured to the member 127 at 129, and held in proper position by a wire rod 130 pivotally secured to the plate 15a in any convenient manner such as at 131.

The end of the actuating member 128 is provided with a flexible rubber member 132 adapted to engage the wheel 35a upon rotation of the shaft 24a and in this manner to initiate the operation of the time controlled mechanism, after the same has been set for operation.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States, is:

1. An apparatus of the character described, comprising, in combination, a time controlled spring actuated mechanism having a spring winding member, a plurality of coin controlled units, actuating means for said spring winding member common to and operable by said coin controlled units for conditioning the time controlled

mechanism for operation, means operable by said coin controlled units for starting the time controlled mechanism, a signal shiftable between signaling and non-signaling positions, and instrumentalities for operatively interconnecting said signal with the actuating means and time controlled mechanism for controlling shifting of the signal incident to the operation of the time controlled mechanism.

2. In apparatus of the character described, comprising, in combination, a time controlled spring actuated mechanism, having a spring winding member, a plurality of coin controlled units, actuating means for said spring winding member common to and selectively operable by either of said coin controlled units for conditioning the time controlled mechanism for a selected period of operation, means operable by said coin controlled units for starting the time controlled mechanism, a signal shiftable between signaling and non-signaling positions, and instrumentalities for operatively interconnecting said signal with the actuating means and time controlled mechanism for controlling shifting of the signal incident to the operation of the time controlled mechanism.

3. An apparatus of the character described, comprising, in combination, a time controlled spring actuated mechanism having a spring winding member, a plurality of coin controlled units, actuating means for said spring winding member common to and operable by said coin controlled units for conditioning the time controlled mechanism for operation, means operable by said coin controlled units for starting the time controlled mechanism, a signal shiftable between signaling and non-signaling positions, instrumentalities for operatively interconnecting said signal with the actuating means and time controlled mechanism for controlling shifting of the signal incident to the operation of the time controlled mechanism, and telescoping supporting means for said shiftable signal for facilitating shifting of said signal to non-signaling position.

4. A device of the character described, comprising, in combination, a time operated mechanism, a plurality of coin controlled units, setting instrumentalities for the time operated mechanism and common to said coin controlled units, operating means for said setting instrumentalities associated with said coin controlled units for conditioning the time operated mechanism for operation incident to the operation of the coin controlled units, starting devices operable by the latter for initiating operation of the time controlled unit, a signal shiftable to signaling and non-signaling position, and means engageable with the setting instrumentalities for effecting shifting of the signal incident to the operation of the time operated mechanism.

5. In a parking meter, in combination, a time controlled mechanism, setting instrumentalities for said mechanism for conditioning the latter to operate different predetermined periods of time, said setting instrumentalities including a shiftable member operatively connected to the time controlled mechanism and shiftable different distances for setting the time mechanism into action to operate for different periods of time, a coin controlled unit, and a device operable by said coin controlled unit for actuating the shiftable member variably to effect its cooperation with the time controlled mechanism, said coin controlled unit being operable incident to release thereof by separate deposited coins to shift the shiftable member through said device different distances to thus effect the operation of the time controlled mechanism for different periods of time.

6. A parking meter as claimed in claim 5, wherein the device referred to coacts directly with the shiftable member to effect movement of the same greater or less distances and thus set into action the time controlled mechanism for correspondingly greater or less periods of time.

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