Oct. 4, 1938. C. G. WIRT 2,132,253

ELECTRIC CIRCUIT CONTROL MECHANISM

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Fig. 1.

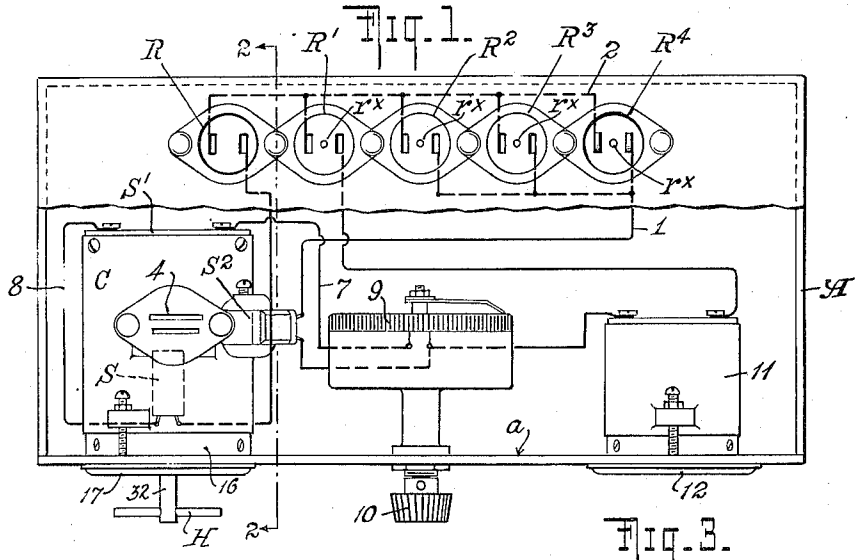


Fig. 2.

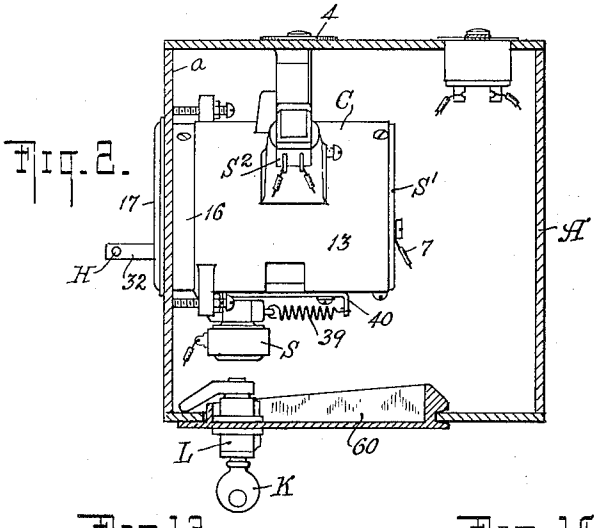


Fig. 3.

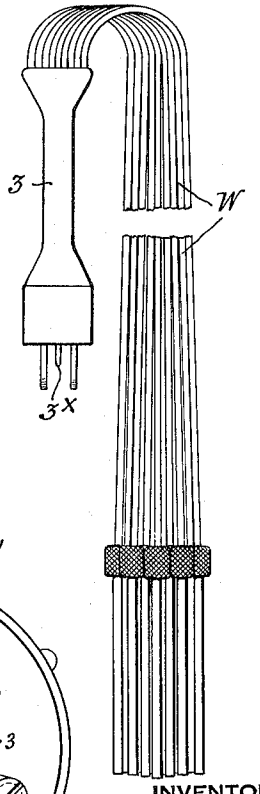


Fig. 13.

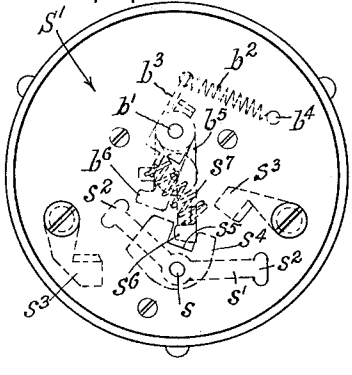
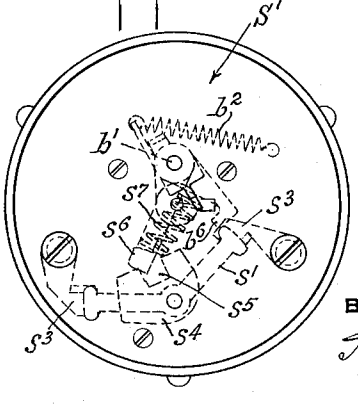


Fig. 14.



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FIG. 4.

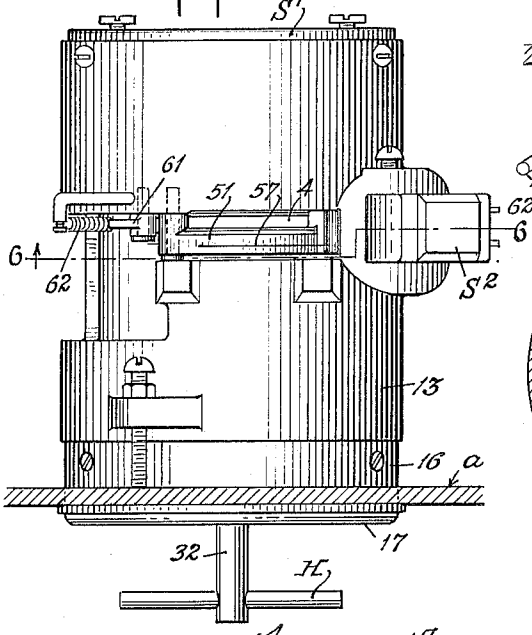


FIG. 6.

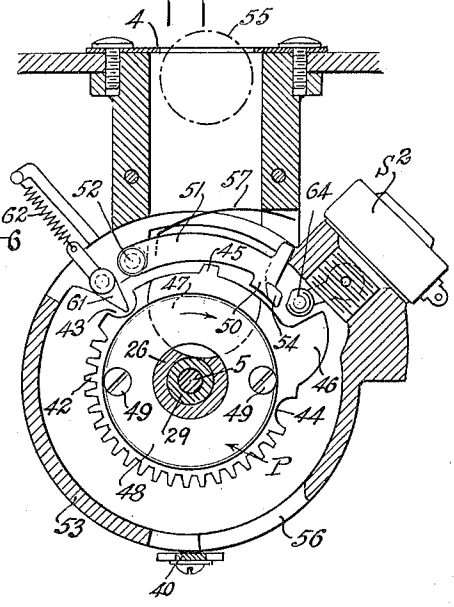


FIG. 5.

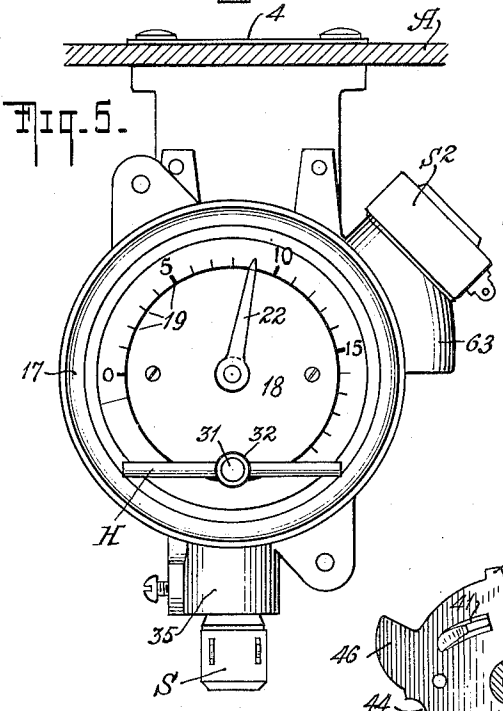


FIG. 7.

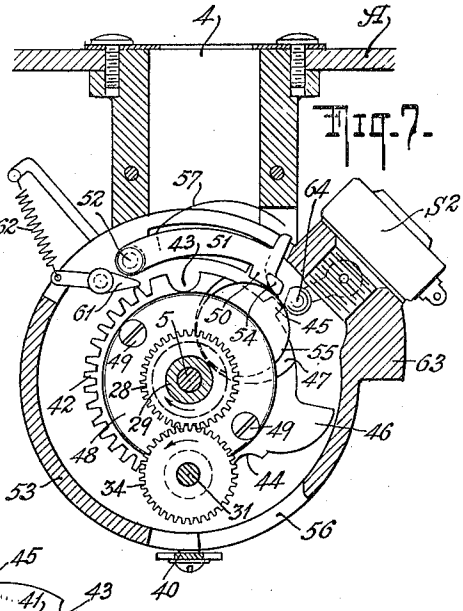
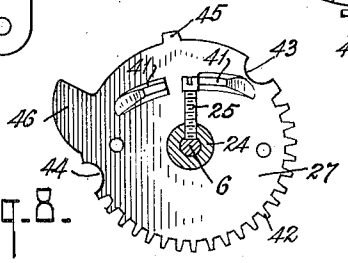


FIG. 8.



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Fig. 9.

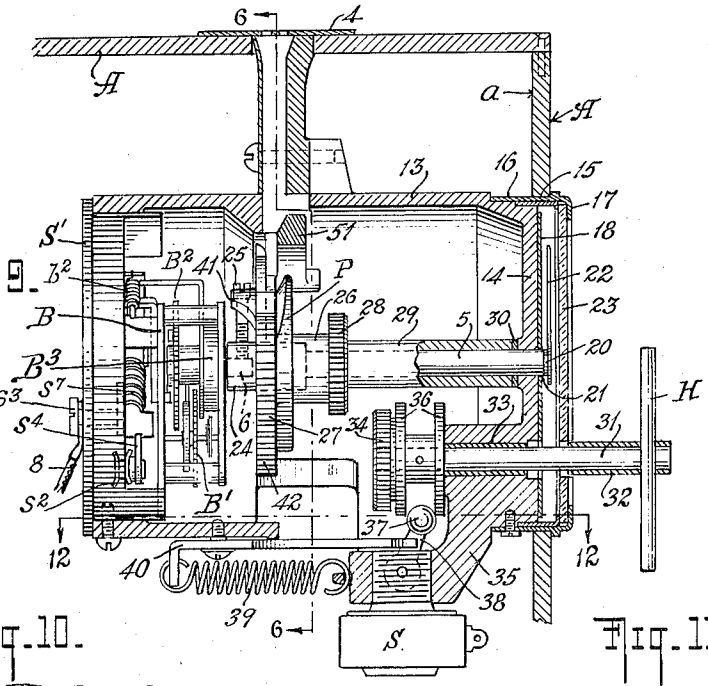


Fig. 10.

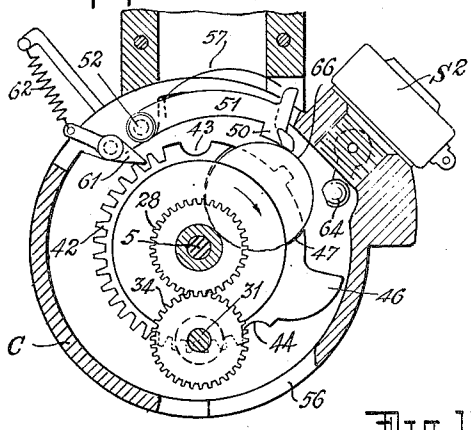


Fig. 11.

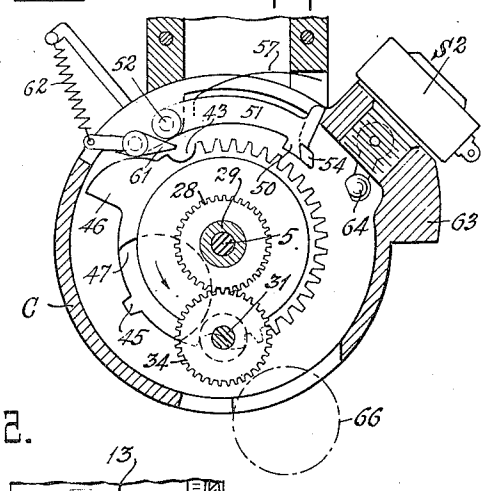
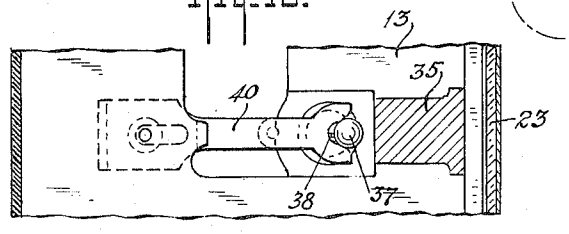


Fig. 12.



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UNITED STATES PATENT OFFICE

2,132,253

ELECTRIC CIRCUIT CONTROL MECHANISM

Carl G. Wirt, Jackson Heights, N. Y.

Application June 5, 1935, Serial No. 25,032

5 Claims. (Cl. 194—9)

This invention relates to a control box for electrical circuits; particularly to a portable box for controlling the supply from a main source of electric current to branch circuits for consumption, and especially for dispensing, to such branch circuits as those serving heating or equivalent appliances, a measured and prepaid quantity of current predetermined in quantity or amount selectively by the customer.

A principal object of the invention is to provide a type of control box having advantageous features of structure and of operation which include the provision for permitting a test operation of limited duration preliminary to utilization of current for a useful operation during another period on a prepaid basis, the instrumentalities being so organized that by exclusively rotative movements of a single handle, with which is associated conveniently an indicator pointer and dial, the user can set and re-set the mechanism for the test circuit and useful circuit seriatim, this type of control box being characterized by having this handle constitute, except for a rheostat control knob, the only projecting part available for manipulation.

Another of the principal objects of the invention is to provide such a portable control box with timing mechanism and with a coin-controlled dispensing mechanism, said mechanisms being so coordinated and protected that the selective operation of the current dispensing mechanism is held to certain prescribed limitations, primarily intended to avoid "beating" the controls, by various expedients which have heretofore been employed successfully by persons determined to make fraudulent, uncompensated use of current and of the various forms of appliances usefully energized by the current, in systems controlled by such boxes.

Contributory to the above general object, are such other objects as the provision of a lock-equipped protective housing which denies access to the mechanism therein contained, except by persons enabled by the possession of an appropriate key to unlock the control box, which latter has no exposed screws, nor any other fastening means that can be loosened from the outside of the box; another object being to prevent the coin-controlled dispensing mechanism from releasing the electric switches which form an essential portion of the provisions for dispensing the electric current in measured and regulated amounts duly paid for and therefore commercially profitable, until a coin of satisfactory denomination shall have been started irrevocably through the protective devices; and also to eliminate the possibility of re-setting the governing means to permit delivery of successive instalments of current until the coin shall have completed its control routine and been discharged into a locked compartment designed for the accumulation of the coins and from which they can only be collected by unlocking said compartment with the appropriate key; a cognate object being to provide coordinated means to prevent such re-setting until another coin of satisfactory denomination shall have been so introduced irrevocably; these provisions accordingly insuring that each coin shall pay only for a definite period of current supply of the selected amount, and no more, and that no current shall be utilized without prepayment.

As another protective measure, means are provided, according to the invention, to prevent the coin from being held by extraneous means, inserted within the coin-chute, or applied magnetically for example, or by means of an adhesive character, to hinder or retard progress of the prepayment coin through its control routine; also to provide means adapted to spring-bias to a normally controlling position one or more of the devices which have usually been only gravity-biased to such position, and which have, for that reason, been subject to a contra-bias movement induced by intentional reversal of the entire control box, top for bottom, whereby unauthorized, and unpaid-for, utilization of current, and/or appliances energized thereby, has been fraudulently achieved.

In addition to the above recited objects, which deal with the distinctively mechanical aspects of protection, an object is to combine the timing and coin-controlling devices in a unitary structure which includes an auxiliary casing member, mounted within the box proper, and which serves at one and the same time the purpose of added protection from tampering with the operating means and controlling means thus doubly encased, and seems also to make easy the assembly of the several more important parts, and their simultaneous removal or demounting for inspection, repair, and replacement in an expeditious manner by persons not necessarily charged with an intimate training in such operations.

Ancillary to the above objects is that of providing means, acting in cooperation with the already named timing mechanism, to insure breaking of the activating branch circuits during the performance manually of the selective setting

of the timing mechanism, so as to prevent holding of said timing mechanism and consequent unprofitable utilization of current.

Control boxes of the type hereinabove referred to are subject to the disadvantage that a fraudulently disposed user can, and frequently does, "beat" the control by holding the said handle in such a manner that the period of utilization of the current is prolonged beyond the proper, prepaid duration thereof. A further object of the present invention, accordingly, is to protect the control-box owner against such fraudulent use, by providing for an added, reciprocatory, co-axial movement of the aforesaid single projecting handle of a control box of this type, and by using this added movement to effect a coupling and uncoupling of the manually operable winding-up and setting handle with the cooperating mechanisms contained within and protected by, the casing, such that the above fraudulent use of a box so constructed is practically impossible.

This last-named provision includes a structural arrangement of coupling means by which it is necessary to move the operating handle positively by hand along its axis in one direction in order to couple the same with the winding-up and setting means; and further to provide for using this positive movement to break the electric energizing circuit in which the current-using appliances are included; also to provide that reverse movement of these parts shall be accompanied automatically by first uncoupling the handle from the timing and setting mechanism, and then reestablishing the last-named energizing circuit.

This retrograde movement is preferably spring-biased in pursuance of a basic purpose to make all the operations of the control box as convenient and automatic as possible, consistent with the high degree of protection assured by the improvements, but in any event the user can neither wind-up and set the appliance without breaking the energizing circuit, nor establish said circuit without uncoupling the manual means for winding-up and setting.

This protective provision is of a very important order, and is effective throughout each prepared period, special means being provided in the dispensing devices to permit great freedom in setting the timing mechanism, and even to permit cutting down the duration of the selected period of use, but to prevent any prolongation of the period for which prepayment has been made, when that time has been once selectively determined by manual operation of the handle.

Other objects and advantages will appear as the description of the particular physical embodiment selected to illustrate the invention progresses, and the novel features of the invention will be particularly pointed out in the appended claims.

In describing the invention in detail and the particular physical embodiment selected to illustrate the invention, reference will be had to the accompanying drawings, and the several views thereof, wherein like characters of reference designate corresponding parts, and in which:

In the drawings, Fig. 1 is a plan view of apparatus in the construction of which the invention has been embodied, the cover being broken away to reveal the interior structure; Fig. 2 is a view in vertical section on the line 2—2 of Fig. 1; Fig. 3 shows in elevation a group of hair-treating appliances adapted for use in connection with the apparatus; Fig. 4 is a plan view, on an enlarged scale, of the inner casing member and associated parts and showing in plan the coin-controlled switch mechanism associated with an operating clock; Fig. 5 is a front face view of the casing member looking toward the clock-dial; Fig. 6 is a view in vertical transverse section on the line 6—6 of Figs. 4 and 9; Fig. 7 is a sectional view similar to Fig. 6 but showing the coin-controlled switch mechanism partly advanced in its rotative movement; Fig. 8 is a detail rear view of the coin rotor; Fig. 9 is an assembly of substantially all of the operating parts embodied in the casing member, in which Figs. 10 and 11 are detail views in vertical section, similar to Fig. 6, showing the coin-controlled switch mechanism in successive positions during its rotation; Fig. 12 is a fragmentary detail view in plan of a switch-actuating member, with associated parts, taken on the line 12—12 of Fig. 9; and Figs. 13 and 14 are diagrammatic rear views in detail of the clock switch mechanism in which the switch is shown in open and closed position, respectively.

In the illustrative embodiment of the invention shown in the drawings, the part designated generally by the reference character A is a casing, hereinafter referred to as the "box" and preferably made of stout sheet metal and desirably of generally rectangular formation, serving to support a series of electrical receptacles R, R^1, R^2, R^3, R^4; also electrical circuit-controlling switches designated generally as S, S^1, S^2; an operating clock, designated generally by the reference character C; and the various electrical conductors, manually operated members, and other associated parts, which in their organized relation, to be hereinafter described, constitute with the box, a unitary, portable apparatus adapted and intended to function as an electrical supply and control "box" for lease to operators of beauty parlors, barber shops and others who use hair-waving appliances on a rental or royalty basis. The box is also susceptible, without essential alterations, for use in other applications, as will become evident from the following disclosure:

Before entering upon a detailed description of the drawings, it may be stated briefly that in the intended use for which the present embodiment of the invention is primarily designed, the box will derive its electrical operating current from any suitable source, such as a conventional "house circuit" by means of a connecting cord (not shown) plugged into any convenient wall or lamp socket, and having at its free end a socket adapted to fit upon the twin prong terminal R of the box, in accordance with requirements of the Board of Underwriters, the terminal R having one conductor leading to the main switch S of the box, and a conductor 2 which is connected with each of the supply receptacles R^1, R^2, R^3, and R^4, these being more or less conventional sockets in which any of the sets of hair-waving appliances to be used (such as that shown in Fig. 3 and designated generally by the reference character W) may be plugged in by means of a hand-plug 3.

In pursuance of already stated objects of the invention, the general purpose of the present embodiment of the invention is to provide for control of the supply of current to these hair-wavers in such a manner that a preliminary test of hair-waving may be made by the use of current derived from receptacle R^1 by a single heating unit of a cluster W during an adequate test period; and then all four of the receptacles R^1, R^2, R^3, R^4 are to be connected in to supply current for the treatment of the entire head of hair by a full

equipment comprising four sets or clusters W of heating units.

To this end, it is provided that an operative, using the appliance, may, by (*a*) dropping a coin of one size into a coin chute **4**, establish such connections that the operator can forthwith operate manually a handle H to set the clock B for an estimated test period, and concurrently establish electrical connections through receptacle R^1 to the test waver W plugged therein; and at the end of this test period the operator can (*b*) by dropping another (larger) coin through the appropriate opening into chute **4**, establish further connections so that the operator can then set the clock B by turning handle H to a position which provides a supply of operating current through all four of the receptacles R^1, R^2, R^3, R^4 to all the wavers W, for the period indicated as desirable by the test.

A now preferred combination of elements by which the above operations may be carried out includes, in the first place, the clock C to which reference has already been made briefly and which need not be described in detail, as the term "clock" is intended to include any suitable timing mechanism adapted to throw in and out an electric switch or switches at intervals of time which may be selectively predetermined. Such clocks are well known in the art, and in the present instance reference will be made specifically only to those parts which enter directly into the operative combinations claimed.

The clock C comprises the usual escapement, indicated generally by the reference character B^1, and a train of wheels B^2 which are interconnected with a front arbor **5** and a rear arbor **6**. The front arbor **5** is similar to the minute-hand arbor of a conventional time piece, and the rear arbor **6** corresponds to a conventional main arbor of a clock. It is actuated by a main spring B^3, one end of which is attached to the main arbor **6** and the other end of the spring is anchored to the clock frame. On the arbor b^1 is also fitted an arm b^5 at the free end of which is a finger b^6 extending at right angles to the plane of the sheet of drawings and which is moved in an arcuate path as the arm b^5 is swung.

Below the arbor b^1 is suitably mounted in the clock frame the rock shaft *s* of an electric snap switch S^1 carrying a movable switch arm s^1 having end knife-blade contacts s^2 adapted to complete electrical contacts with the fixed terminals s^3 in an electrical current which includes conductors **7**, **8**.

Incidentally, it is appropriate to note that this circuit preferably includes also the usual means **9**, **10** for varying current strength, and the ammeter **11** for measuring same, with a visible dial **12**, the bodies **9** and **11** of these devices being enclosed in the tamper-proof box A.

The rock-shaft *s* (see Fig. 13), is fitted with an actuating plate or member s^4, having a notch s^5 entered by the free end of an arm s^6 which is pivoted on arbor b^1 and is biased by a spring s^7 adapted to effect quick throw of the rock lever s^1 to the open position shown in Fig. 13 or to the closed position shown in Fig. 14, in well-known fashion.

It will be readily understood by those skilled in the art that Fig. 13 illustrates the normal, inoperative position of the parts just described, to which they are normally biased by the main spring B^3, the switch S^1 being a normally open switch. Fig. 14 shows the switch S^1 closed.

Without a detailed description of the train of gearing B^2 and escapement B^1, (Fig. 9) will be sufficient to state that when the front arbor **5** of the clock is rotated clockwise, by means to be described, the train of gearing B^2, interconnecting arbors **5** and **6**, acts to wind up or contract the main spring B^3, and conversely, when the arbor **5** is freed from the winding-up impulsion, the main spring B^3 tends, through the train B^2 and escapement B^1, to rotate arbor **6** counterclockwise, until the spring runs down.

The particular clock parts above described do not constitute an essential part of the invention but are merely shown as an illustrative specific embodiment for disclosure, and other timing mechanism may be adopted and employed.

In pursuance of the invention, a means is provided for winding up the clock mechanism and setting the same for a predetermined extent, for which purpose I have shown mechanism cooperating with the arbor **5**, which arbor may be regarded as the main axis of the appliance as well as of the clock mechanism.

For the sake of compactness, ease of installation and repair, and to afford maximum protection from unauthorized access to the vital parts of the box, the invention provides that the clockwork and its associated parts shall be enclosed in a cylindrical or barrel-like casing member **13** formed of metal, for the sake of strength, resistance to tampering, and convenience of assembly, and this casing has its forward end closed by a fairly thick wall **14**, fitted within an orifice **15** in the contiguous wall *a* of the box A. A bushing ring **16** of stamped sheet metal is provided, having a bead **17** extending over a dial **18** provided with suitable indices **19** (see Fig. 5) which may advantageously correspond to the minute divisions of a clock, for the present use.

The free end **20** of the arbor **5** is of sufficient length to protrude through the central opening **21** of the dial **18**, and is furnished with a pointer **22**, the latter being protected by a thick sheet of glass **23**, also held by the ring **17**.

In further assembly with, and coaxially disposed upon, the arbor **6**, are the following instrumentalities, viz, a hub **24**, fixed to the arbor **6** by a set-screw **25**; and a rotor P comprising a body part **26**, also a flange or collar **27** and a pinion **28**; these active members being held in position by a spacing sleeve **29**, which has a bearing at **30** against the front wall **14** of the barrel casing member.

For the purpose of "winding up" the main spring B^3, through the clock train B^2, and arbor **5**, I have provided a countershaft **31**, provided with a handle H at its forward end, which projects through the glass plate **23**, being there surrounded by a sleeve **32**. The inner part of the shaft **31** has a bearing in a bushing **33** supported solidly in a boss **35** formed integrally with the front end **14** of the barrel **13**, and the shaft **31** is both rotatable and movable coaxially in the bushing **33**.

At its inner end the shaft **31** is fitted with a pinion **34** of suitable size to be meshed with the pinion **28** on the rotor, when the shaft is pushed inwardly by the handle H. A pair of collars **36** on the shaft **31** are adapted to receive loosely the ball-end **37** of the operating lever **38** of a conventional snap-switch S, to which reference has already been made as the "main" switch. This is a normally closed switch, and is maintained in its closed position, indicated in Fig. 9, by action of a tension coil spring **39** upon a slide **40** (see Figs. 9 and 12) which tends normally to bias

the switch lever toward the front of the appliance, and at the same time to throw the pinion 34 out of mesh.

When the handle H has been pushed inwardly until the pinions 34 and 28 are in mesh, rotation of the handle H counterclockwise will turn the rotor P clockwise, and a split lug 41 on the rear face of the flange 27 will act upon the screw 25 to turn it around the main axis and thereby cause clockwise rotation of the arbor 6, and consequent contraction of the main spring B^3 as already described, accompanied by throwing "in" of the switch S^1 and closing of the branch circuit to the test receptacle R^1 and its waver.

The main energizing circuit is still interrupted at main switch S as above described, however, so that current will not flow until the handle H shall have been released, when the spring 39 will automatically throw "in" the switch S and throw "out" the pinion 34, so that the clock escapement B^1 will be freed to operate in the retrograde sense as the main spring B^3 actuates it.

The rotor P embodies a time controlling mechanism which will now be described. The rotor flange 27 (see Figs. 6–10) has a series of peripheral teeth 42 extending around somewhat more than half of its periphery, and has peripheral gouges or gaps 43, 44, one at each of the respective ends of the toothed segment. The flange is further characterized by a projection or stop tooth 45, and a cam shoulder 46, in the peripheral portion away from the teeth. Its web has a peripheral socket 47 of generally discoidal shape, and is of such thickness that a coin entering the socket radially will not project beyond the face of the web, but will be held between the web and a ring 48 provided for that purpose, being attached to the web by screws 49. The coin will revolve with the rotor P (see Fig. 7) when the latter is turned by the action of handle H communicated to the rotor through pinions 34 and 28 as already described. The socket 47 will not be in coin receptive registry with the chute until the cam shoulder 46 has thrown the switch 64.

When the rotor P is rotated in the absence of a coin its stop projection 45 is adapted to engage with the foot 50 of a detent lever 51 mounted pivotally at 52 on the casing part 53, and the rotor can only be turned a fraction of an inch from the normal position shown in Fig. 6. The detent is biased by spring 57 into the path of stop projection 45, and its foot has a bevelled toe 54 extending laterally into the path of any coin which may be at the time carried in the socket 47 of the rotor, so that when a coin is dropped into the chute opening 4 and passes down into the socket 47, and the rotor is rotated by handle H, the coin (see Fig. 7) will have its forward rim portion 55 engaged with the toe 54 of the detent 51, and the detent will be raised so that its foot 50 will be clear of the stop projection 45 and the rotor can be turned further by the action of handle H, until the coin reaches the region of a slot 56 in the casing part 53, where it drops out from the socket 47 and into the body of the casing A or into such a compartment of a lock L, so that only authorized persons having a key K can remove accumulated coins.

As the rotor P turns, a pawl 61 (see Figs. 6–11) is actuated by spring 62 to fall in behind each tooth 42 successively, and retrogressive movement of the rotor is thus prevented by the teeth until the gap 44 (see Fig. 11) at the end of the toothed segment comes into the position shown in Fig. 11. Switch S' is not turned on until recess 44 reaches the pawl 61. Thereupon the rotor can be turned retrogressively by the handle H until the timing mechanism is set at the position where current will be supplied for the desired period, as indicated by the position of pointer 22.

It is to be noted that even when a relatively small coin, such as that shown at 55 in Fig. 7, has been introduced, it is of sufficient diameter to throw off the detent 51, so that the handle H can be turned to wind up the clock, and as the main switch S which controls the general box connection is thrown in automatically by spring 39 upon release of the handle H after the setting operation, current will be supplied to the testing waver plugged into receptacle R^1 during the period determined by the timed rotation of the clock mechanism.

This, however, does not provide for activation of the receptacles R^2, R^3, and R^4, as the circuits thereof are controlled by a switch S^2 which will now be described (see Figs. 6–11) and which is so mounted on the case part 63 that its handle 64 lies just outside of the arcuate path of the rim 55 of a small coin of the size shown in Fig. 6, but near enough to be operated by a coin of the size shown in Figs. 10 and 11, and when such a larger coin is introduced through the chute opening 4, and the parts are operated manually to set the timing mechanism, the larger coin 66 will be caused, by clockwise movement of rotor P, to contact with the switch handle 64 as indicated in Fig. 10, and will throw the switch S^2, and cut-in the receptacles R^2, R^3, R^4 connected to the switch S^2 by conductor 1; and since the receptacle R^1 is already in circuit, an entire battery of wavers W can be used for the timed period.

At the expiration of such period, the retrogressive movement of the rotor P will cause lug 46 to engage handle 64 and operate it in reverse direction, as shown in Fig. 6, so that receptacles R^2, R^3, and R^4 will be cut out; and at the same time receptacle R^1 will be cut out by the action of lever S^6 under the bias of spring S^7 in throwing off switch S^1 as hereinbefore described with references to Figs. 13 and 14.

A feature of the invention which adds notably to its usefulness, is the novel provision on each of the waver handles 3 of a prong 3x, between the conventional circuit-making prongs, and which so modifies this form of conventional plug that it can be used only with a receptacle of the form shown at R^1, i. e., having, in accordance with this feature of my invention, an orifice *rx* to receive such a control prong.

With but little alteration of existing plugs this feature can be applied generally to such plugs, permitting a degree of control in the operation of appliances of this and a similar character that has not been possible with the ordinary plugs.

In general, the box, as constructed in accordance with the above disclosure, affords many improvements in operation, and a much greater prevention of unauthorized use than earlier structures of this general type.

Among these improvements, attention is called to the action of the rotor coin control, which can only be operated when a coin of suitable size to lift the detent 51 has been inserted and allowed to function in the intended manner. For example, the detent 51, being biased by spring 57 cannot be released by turning the box upside down; nor can a coin with a thread attached be used. If a coin, as 66, to which a thread has

been attached, be inserted in the slot 4, and allowed to travel around within the pocket 47 with the rotor P, when the said coin comes opposite the discharge slot 56, the thread will not prevent the coin from dropping into the slot sufficiently to bridge the space between the rotor and the inner wall of the surrounding casing, where the presence of the coin will act to lock the rotor, and as the coin can not be drawn back by the thread, the thread will have to be broken by the person trying to "beat" the apparatus, and the broken bit of thread will be left on the coin within the casing when the coin drops into the coin box, and will be found by the inspector, so that appropriate measures may be taken to deal with the person so tampering with the control mechanism.

It may also be noted at this stage of the description, that if adhesive be applied to the coin, to hold it in socket 47, the foot 54 will prevent the coin from passing by the foot in the course of counterclockwise rotation of the rotor P, and as the pawl 61 acts to prevent clockwise rotation of the rotor during this phase of the cycle, the mechanism will be jammed and the presence of the adhesive on the coin will reveal the attempted deception when the box is opened for repairs.

The handle H is the only projecting part accessible, except the rheostat knob 10, and must be operated in the intended manner, and positively, to cause the switch-throwing mechanism to function, viz, it must be first pressed in, then turned, and eventually released. If it is held in, the main switch remains thrown off and no current passes.

The handle H must be turned through its intended range before the clock escapement will be released, and once released, there is no way of suspending movement of the rotor, so current will be cut off when the selected period has elapsed.

After the rotor has returned to its normal position, a proper coin must be inserted before it will again function.

The appliance is not subject to the influence of magnetic fields of force, when, as contemplated, the moving parts are made of non-magnetic material. Nor can it be affected by pneumatic influences.

When used properly, it affords a satisfactory service, operable by persons having little mechanical skill.

The parts are not subject to extraordinary strain or wear in use, and are readily accessible for inspection, repair and replacement by authorized servicing operatives. For example, the entire clock assembly with rotor, etc., can be easily removed as a unitary structure with the inner cylindrical casing 13, and replaced by another such structure, so that the replacement of a defective part need not put the appliance out of commission for any great length of time.

While I have described the particular embodiment of my invention as applied to use in connection with the control of current to a plurality of heating units, it will be obvious to those skilled in the art that my invention may be utilized in a large variety of applications, for instance in the control of gas and liquid metering devices, the control of rented household appliances like washing and ironing machines, and for predeterminate control of telephone communication apparatus.

I claim:

1. In a control box of the class described, conductors arranged to constitute a supply circuit in connection with a suitable source of current supply, and a plurality of branch circuits for dispensing usefully the currents so supplied, of which circuits one is adapted to be used as a test circuit independently of the other circuits; a plurality of electric switches adapted to interconnect and break said circuits; and a coin-controlled mechanism adapted to move coins of different dimensions for operating selectively at least one of said electric switches; said coin-controlled mechanism being further characterized by a main shaft element; a timing mechanism having a prime mover adapted to be wound up to actuate said main shaft element; a rotor having a coin pocket; and a coin chute adapted to receive coins of different dimensions and to deliver the same successively to said coin pocket.

2. In a control box of the class described, conductors arranged to constitute a supply circuit in connection with a suitable source of current supply, and at least one branch circuit for dispensing usefully the current so supplied; a plurality of electric switches adapted to interconnect and break said circuits; and a coin-controlled mechanism for operating said electric switches; said coin-controlled mechanism being further characterized by a main shaft element; a timing mechanism having a prime mover adapted to be wound up to actuate said main shaft element; a rotor having at least one coin pocket; and a coin chute having coin apertures adapted to receive coins of different dimensions and to deliver the same successively to said coin pocket, a detent arranged in peripheral proximity to said rotor and biased into position to prevent rotation thereof, said detent having a portion adapted to be engaged with a coin carried around in said pocket by rotation of said rotor, so that, upon release of said detent, further rotation of said rotor is permitted; one of said switches having an operating member presented toward the path of a coin in said pocket revolved by rotation of said rotor, and said switch operating member being adapted to be operated by traversal of a coin of suitable denomination or dimensions, in excess of the diameter sufficient to trip said detent, and means on said rotor to engage said last-named switch-operating member to open the switch operated thereby, when said rotor has substantially completed its return rotation.

3. In a control box of the class described, conductors arranged to constitute a supply circuit in connection with a suitable source of current supply, and at least one branch circuit for dispensing usefully the current so supplied; a plurality of electric switches adapted to interconnect and break said circuits; and a coin-controlled mechanism for operating said electric switches; said coin-controlled mechanism being further characterized by a main shaft element; a timing mechanism having a prime mover adapted to be wound up to actuate said main shaft element; a rotor having at least one coin pocket; and a coin chute having coin apertures adapted to receive coins of different diameters and to deliver the same successively to said coin pocket, a detent arranged in peripheral proximity to said rotor and biased into position to prevent rotation thereof, said detent having a portion adapted to be engaged with a coin carried around in said pocket by rotation of said rotor, so that, upon release of said detent, further rotation of said rotor is permitted; one of said switches having an operating

member presented toward the path of a coin in said pocket revolved by rotation of said rotor, and said switch operating member being adapted to be operated by traversal of a coin of suitable denomination or dimensions, in excess of the diameter sufficient to trip said detent, and means comprising a pawl supported adjacent to the periphery of said rotor and a series of teeth formed peripherally upon the rotor and flanked at each end by a gap, said pawl being biased into engagement successively with said teeth to prevent retrograde movement thereof until said rotor has completed a sufficient rotative movement to complete the control routine of said coin and its discharge into the intended place of accumulation; whereupon said pawl arrives at a peripheral gap flanking the last of said series of teeth and reversal of said pawl thereupon occurs, followed by retrograde rotation of said rotor under the action of the wound up prime mover of the timing mechanism, said rotor being further provided with a peripheral projection adapted to engage said switch operating member and to break the circuit controlled by said switch automatically upon completion of the normal retrograde rotation of said rotor through a period controlled by said timing mechanism.

4. In a control box for a circuit adapted to dispense electric current, said box being characterized by an electric switch included in said circuit adapted to dispense electric current and having a switch operating handle, a rotor having a peripheral pocket to receive a coin and adapted when rotated to move said coin revolubly in a peripheral orbit intersected by said switch operating handle and thereby to cause said coin to throw said operating handle to close said switch; said rotor having also a projection adapted to be moved through a portion of said orbit; means to rotate said rotor manually in one direction to cause said coin to operate said switch and complete said circuit when a coin of proper size is present in said pocket, and means adapted to rotate said rotor in reverse direction to restore said coin pocket to position for reception of another coin; said projection being first effective when moved in reverse direction to operate said switch to break said circuit before a coin can be introduced to said pocket, and said switch being solely operable by said user to establish the circuit when a coin of proper size is present in said pocket.

5. A control box having a main current supply circuit, a branch dispensing circuit including a current utilizing appliance, a rotatable shaft, a timing mechanism associated with said shaft, means mounted to rotate with said shaft for winding said timing mechanism, a countershaft arranged in parallelism to said first-named shaft, means mounted on said counter-shaft for operating said winding means, a handle for rotating said counter-shaft, said timing mechanism and winding means being enclosed in a protective casing including a bearing in which said countershaft is capable of rotative movements for winding and setting said timing mechanism; said counter-shaft having means for coupling and uncoupling said winding means; a circuit breaker having electrical connections with the supply circuit and the dispensing circuit; means upon said counter-shaft for respectively opening said circuit breaker preliminary to coupling said winding means, and for closing said circuit breaker only after uncoupling of said winding means.

CARL G. WIRT.