Aug. 9, 1932. R. SAUSE 1,870,874

SYSTEM FOR CONTROLLING REFRIGERATION

Filed March 6, 1930 3 Sheets-Sheet 1

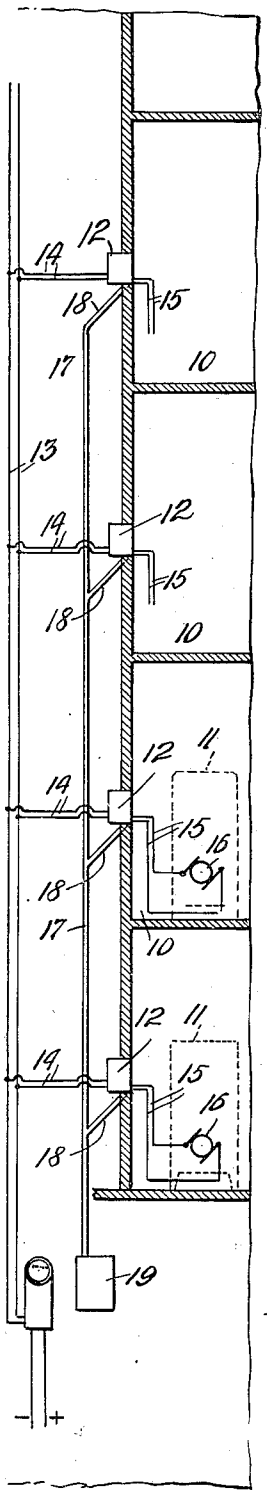


Fig. 1.

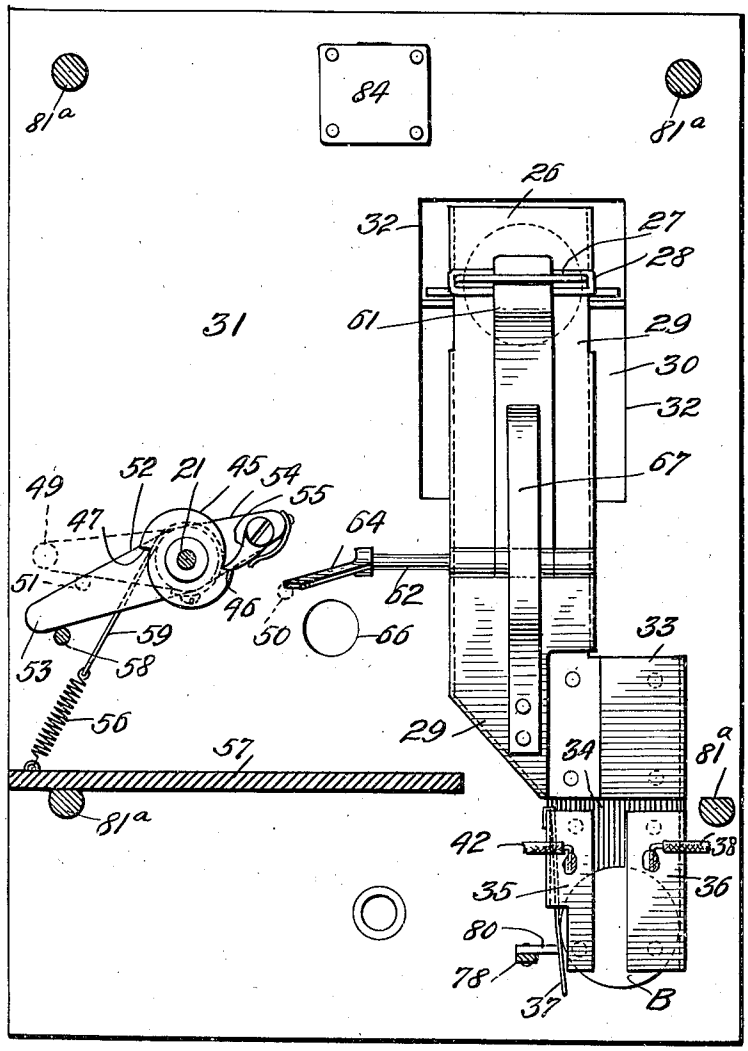


Fig. 4.

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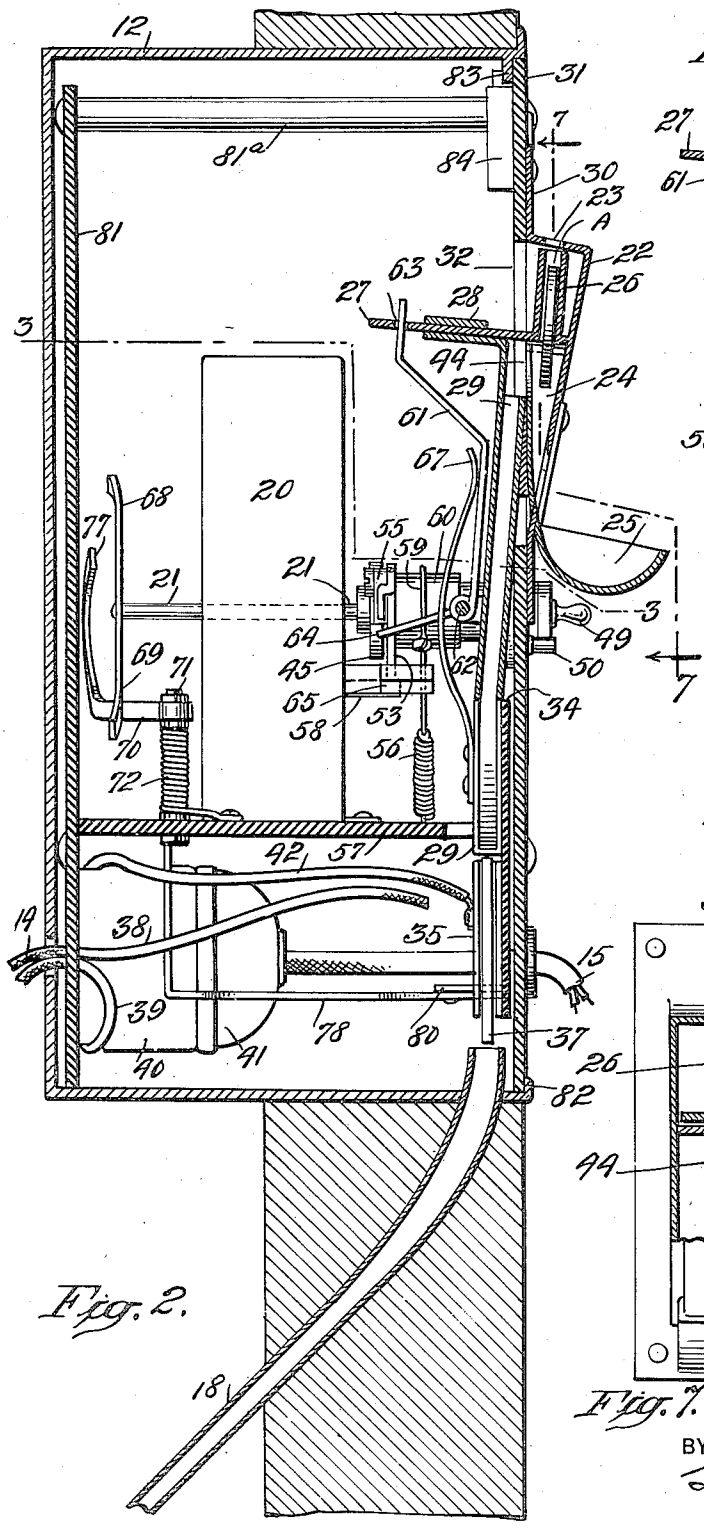


Fig. 2.

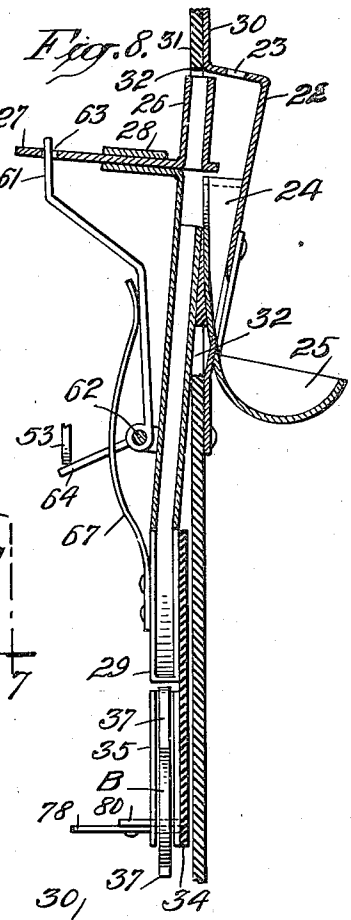


Fig. 8.

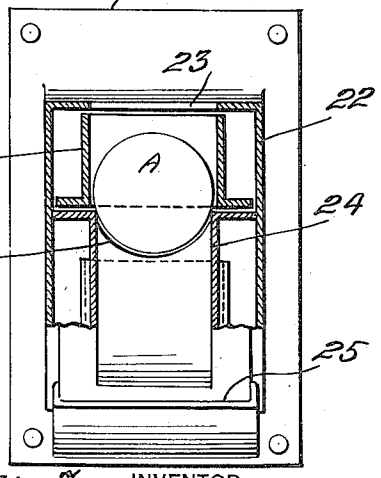


Fig. 7.

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SYSTEM FOR CONTROLLING REFRIGERATION

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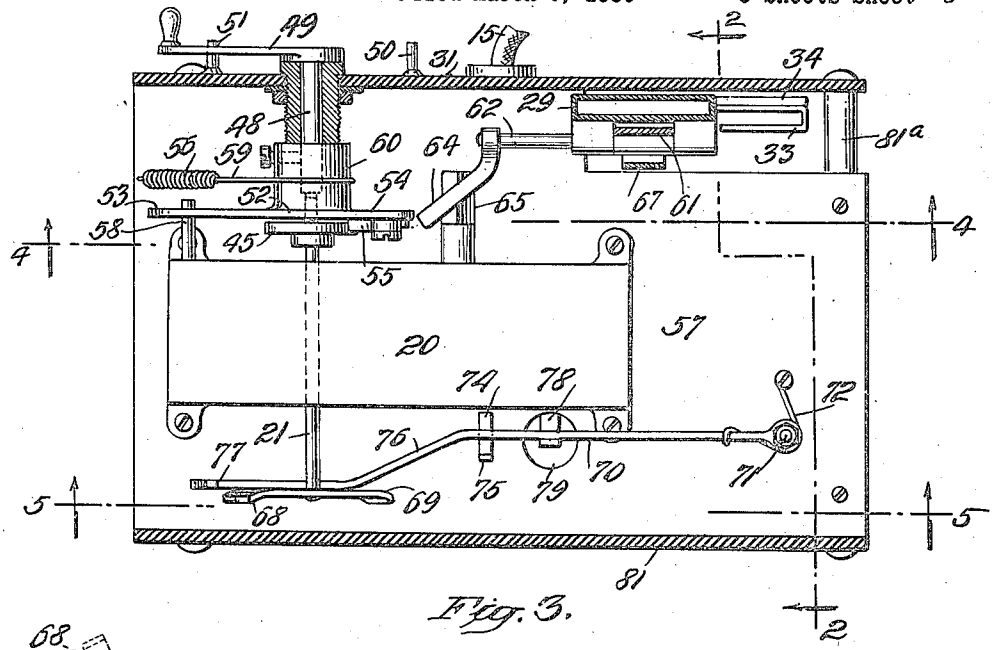


Fig. 3.

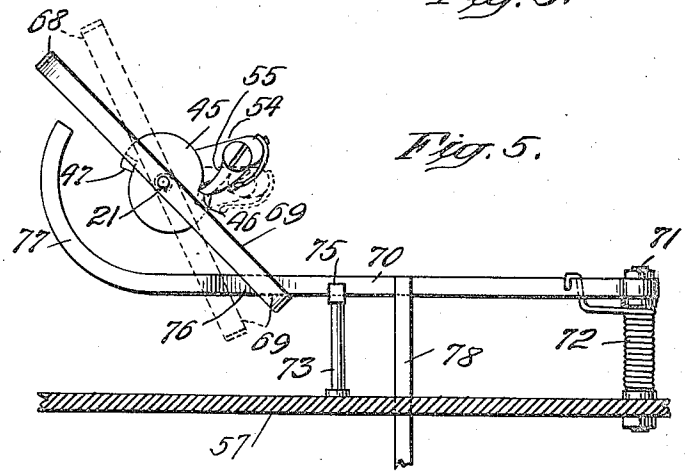


Fig. 5.

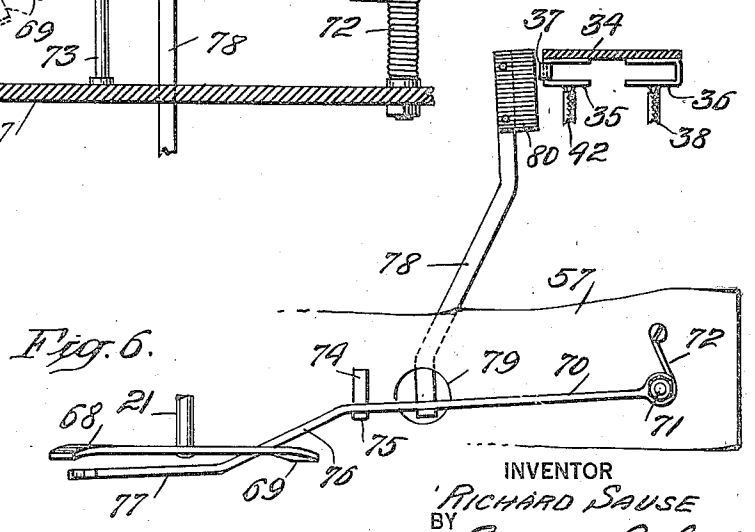


Fig. 6.

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Patented Aug. 9, 1932 1,870,874

UNITED STATES PATENT OFFICE

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SYSTEM FOR CONTROLLING REFRIGERATION

Application filed March 6, 1930. Serial No. 433,541.

The present invention relates to a system for controlling refrigeration and more particularly to a system adapted for use in apartment houses, by which each apartment may be provided with means whereby the occupant may obtain refrigeration during a definite period of time, so that the occupant may pay a given amount on the spot for such service, and not have to rely on bills rendered.

The invention lends itself more particularly to a use with electric refrigerators, and contemplates coin controlled means which are operated for example by a twenty-five cent piece or quarter in United States currency, or by a token of equivalent value, for enabling the apartment occupant to obtain an amount of service measured by the period of time during which the service is rendered by the refrigerator in the apartment, such coin or token acting to control the circuit of the motor of that refrigerator. And the invention also contemplates a common collecting box for the coins or tokens which come from a plurality of apartments and which have been used in the coin controlled measuring means, such coins or tokens being conducted to such common collecting box after the service has been supplied.

The invention also contemplates the provision of means whereby the time measuring means may be set in each apartment, so as to commence the period of time during which the service is desired, and means for maintaining the service through the intended period of time until the completion of such service, whereupon any given coin or token is automatically released from the time measuring means and conducted to the collecting box. The invention also contemplates certain improved means and mechanism of a comparatively simple, inexpensive and convenient type for performing the service.

The above being among the objects of the present invention, the same consists of certain features of construction and combinations of parts to be hereinafter described and then claimed, reference being had to the accompanying drawings illustrating a preferred embodiment of the invention, and wherein

Figure 1 is a diagrammatic section through different floors of an apartment house for example, showing the general system as applied to two or more refrigerators in different apartments;

Fig. 2 is a vertical section through one of the coin controlled measuring means and its enclosing casing in situ, taken on the line 2—2, Fig. 3;

Fig. 3 is a transverse section on the line 3—3, Fig. 2;

Fig. 4 is a vertical section on the line 4—4, Fig. 3, in the direction of the arrows therewith;

Fig. 5 is a section on the line 5—5, Fig. 3 showing certain details of the timing mechanism;

Fig. 6 is a top plan view partly in section showing certain other details of the timing mechanism associated with the coin chute;

Fig. 7 is a section of the coin receiving portion or the coin introducing portion of the coin chute on the line 7—7, Fig. 2, and

Fig. 8 is a similar section of the coin introducing and concomitant parts showing another position of the coin carrier.

Referring more particularly to Fig. 1 there are a plurality of floors 10 of an apartment building and each apartment is provided with an electric refrigerator 11, two only being indicated in broken lines. The wall common to the apartments has suitably set therein boxes or casings 12 containing the control mechanism for the respective refrigerators. Line wires 13 are led from a suitable source of electricity, as for example the house supply wires for electric service in the building, and branch wires 14 lead from supply wires 13 to the mechanism in the respective boxes or casings 12. Wires 15 in each apartment lead from the boxes or casings 12 to the electric motor 16 of a refrigerator 11, located one in each apartment.

It is intended that the mechanism in each box or casing 12 be controlled by the occupant of any given apartment through the medium of a coin or equivalent token which sets the electric motor in operation and keeps it operating for a definite period of time. When such period of time has been completed

the coin or token is automatically released. In order to provide means for collecting the coins or tokens when released, the invention contemplates the use of a collecting coin chute 17 in common with the respective apartments, branch chutes 18 leading from the boxes 12 to the common chute 17, which in turn conducts the released coins or tokens into a collecting box 19 which is in common with the apartments provided with this kind of service. The common collecting box for the coins is preferably located in the basement of the apartment house and is sealed against access, except by those authorized to remove the collections which are in the box 19.

It is perfectly obvious without the need of illustration that instead of applying the system to apartments located one above the other, the system may be applied to apartments which are all located on one floor of the apartment house, in which case there would be a collecting box such as 19 in common with such apartments.

Referring more particularly to Figs. 2, 3 and 4, each box or casing 12 contains a clock 20 or other suitable time measuring means, and the clock may if desired be an electric clock. The interior mechanism of such time measuring means is not disclosed, as any suitable construction and type of clock adapted for the purpose may be employed. The arbor 21 of the clock and from which the time is taken off preferably extends beyond both the front and back of the clock 20 for reasons which will clearly appear herein.

The same Figures 2, 3 and 4 show the coin introducing or receiving portions associated with the clock and the same include a coin receiving portion 22 of the coin chute, and which is provided with a coin slot 23. These features are also shown in Fig. 7 from which it will be observed that the coin introducing portion 22 is somewhat wider than the short discharge chute 24 which is located below it, this contracted chute 24 being adapted to receive coins or slugs which are smaller than the coin or token which is adapted to operate the apparatus. The contracted discharge chute 24 is adapted to eliminate and discharge undesired coins, etc. into a tray 25 which projects in front of the box 12.

Arranged within the coin receiving or introducing chute portion 22 is a coin carrier 26 which is somewhat wider than that of the eliminating chute 24 and is normally located between the upper end of said chute 24 and the coin slot 23. Said coin carrier is provided with a throat which is of the approximate size of the coin or token, as for example a twenty-five cent piece which is to be used. Coin carrier 26 is supported upon a slide 27 which is mounted so that it may slide in a guide 28, which with said slide extends inwardly into the box 12. Said guide 28 is fixed to the upper end of the main coin receiving chute 29 which extends downwardly on the inside of the box 12, as shown more clearly in Figs. 2 and 4. The main coin receiving chute 29 is supported from a plate 30 (see also Fig. 7) which by suitable fastenings, is secured rigidly to the front plate 31 of the box 12. Plate 30 also supports the coin introducing portion 22 having the coin slot 23, at the front of the plate, as well as the tray 25, and also supports other parts associated with the coin chute portions of the device. There is an aperture 32 in the front plate 31 over which the coin introducing chute 22 is fixed, and through said aperture the slide 27 extends inwardly into the box 12.

Now referring more particularly to Figs. 2, 4 and 6, the coin receiving chute 29 is provided at its lower end with a laterally deflected chute portion 33, and to that surface thereof which is adjacent the face plate 31 there is rigdly fastened to such deflected portion an insulating plate 34. To the lower portion of the insulating plate 34 there are firmly fastened two metallic contact portions 35, 36, forming contacts for furnishing a break in the electric circuit and providing the lower terminal section of the coin receiving chute 29.

These contacts 35, 36 are of trough shape formation in cross-section, and the troughs thereof are presented mutually towards one another, so that a passage is provided for the coin or token which has been inserted into the apparatus for the purpose of operating it. The trough shaped contact 35 has fixed to one side thereof so as to lie in the bottom of the trough, a spring metal finger 37, the lower end of which is free to be moved in one direction or the other, the natural tendency of the free end of the spring being to move slightly outwardly away from the other contact 36, and the spring serving for the purpose of acting as a detainer for the coin which has passed in between the contacts 35, 36. In the detaining position of the spring finger 37 it engages with one edge of the coin or token.

One of the current transmitting wires 14 is provided with a lead 38 to contact 36, as shown in Figs. 2, 4 and 6, and a lead 39 goes from the other of said wires to a socket 40, which may be of any common type, and mounted in a fixed position in the back part of the box 12. An electric connector 41 of any suitable type is attached to the leads 15 of one of the electric motors and may be plugged into the socket 40, to form suitable electric connection. A lead 42 from socket 40 forms the terminal end of that wire 14 which is connected with the socket and is connected electrically with the contact 36. In other words, one of the wires 14 is connected directly by a lead 38 with contact 36, while the other of such pair of wires is connected through the electric motor and the common electric connections 40, 41, to the other con-

tact 35 through the medium of the lead 42.

Referring now to the coin introducing and receiving chutes, and the electrical connections at the lower end of the receiving chute, it will now briefly be described how a coin or token is introduced and received into the apparatus for operating it. The proper coin or token is introduced through the coin slot 23 and it will pass into the coin carrier 26 and come to rest upon the upper end of the contracted discharge chute 24 for coins of smaller diameter. The coin will then be in the position A as shown in Fig. 2. In suitable manner to be hereinafter described the said coin is shifted from the position shown in Fig. 2 to the position shown in Fig. 8, when it will immediately drop to a position B as indicated in Fig. 8. The coin or token being of metal, will act to close a circuit between the leads 38 and 42, because the coin at the position B (see Fig. 4) will be detained by the spring finger 37 until such time as it is released. At the upper end of the main coin chute 29 there is provided at the front a segmental recess 44 so as to allow the coin to pass from the position A to a position so that it may drop down the chute 29.

Before the coin or token has been moved from the position A to such position as to drop through the chute 29, the period of time must be set so as to start to operate the motor just as soon as electrical connection is made by the coin. To that end time setting mechanism is provided. The forward end of the arbor 21 of the clock mechanism has firmly secured thereto a double toothed ratchet 45, provided with teeth 46 and 47 as shown in Fig. 4. Referring to Figs. 2 and 3 also, a rotary shaft 48 is journalled in the face plate 31 of the enclosing box, said shaft being positioned in alignment with the arbor 21. A hand crank 49 is secured to the shaft 48 for turning it in either of two directions. Projecting forwardly from the front plate 31 are two stops for the crank 49, one of them constituting a front stop 50 and the other a back stop 51.

A bar 52 is rigidly secured intermediately of its length to the shaft 48, so that one end thereof provides an arm 53 and the other end a shorter arm 54. A spring pressed pawl 55 is pivoted to the shorter arm 54 so as to then cause the toe of the pawl to engage with one or the other of the ratchet teeth or shoulders 46, 47. A helical spring 56 is secured at one end to a shelf 57 on which the clock 20 is supported, while at the other end it is secured to a cord or the like 59, which in turn is secured at its corresponding end to a winding drum 60, which may be formed as the hub of the bar 52 mounted on the shaft 48. It will be seen that the tendency of the spring 56 when placed under tension is to cause the toe of the pawl 55 to ride over one of the ratchet teeth 46, 47, if the spring has been put under tension by the turning of the hand crank 49.

Before describing the operation of the time setting mechanism, other parts thereof will first be referred to.

Referring to Figs. 2 and 4 a lever arm 61 is mounted to swing with a pivot 62 which is journalled on the coin chute 29, the upper end of the arm 61 extending into a hole 63 in the inner end of the coin carrier slide 27. There is a lateral projection 64 from one end of the pivot 62 for engagement by the arm 53 before mentioned, for a purpose to be presently described. A stop 65 is provided for any forward oscillatory movement of the arm 53, as also shown in Fig. 3, and such stop may be provided by the winding arbor of the clock. A hole 66 in the front plate 31 provides for the entrance of a key to engage the winding arbor 65 to wind up the clock, unless the clock be an electric clock. The projection 64 is normally held in raised position by means of a leaf spring 67 (Fig. 2) which is fixed to the coin chute 29 at its lower end, and which is free at its upper end, so as to bear upon the lever arm 61. Therefore, said spring 67 also tends to throw the coin carrier 26 into normal forward position, shown in Fig. 2.

The described time setting mechanism is operated as follows: It being assumed that a coin or token has been placed in the carrier 26, previously to setting the time for beginning operation of the electric motor, the operator turns the hand crank 49 from right to left until it comes in contact with the stop 50. This movement of the hand crank results in turning the ratchet wheel 45 a partial revolution less than the distance from the tooth 46 to the tooth 47. The pawl 55 then carrying the ratchet wheel around with it for a partial turn, the spring 56 is placed under tension, and the arm 53 turned a partial revolution until it strikes the stop 65. The arm 53 in moving towards the stop 65 hits the projection 64 on its way and causes the swinging of the lever arm 61, thereby operating the slide 27 to move the introduced coin inwardly so as to be over the coin chute 29. As soon as this occurs, the coin immediately drops into the chute 29 to its position between the contacts 35, 36, thus establishing an electrical connection to the motor. When the operator releases the hand crank 49, the spring 56 immediately returns the arm 53 to normal position against the stop 58 which projects from the clock 20, and at the same time the spring 67 moves the coin carrier 26 back to normal position in registration with the coin slot 23. The spring 56 will then have caused the pawl 55 to be carried in opposite direction and it will ride freely over the tooth 46 and will then instantly engage behind the tooth due to the action of its own spring.

To properly cooperate with the time set-

ting mechanism it is necessary that suitable time measuring means and elements be coordinatd therewith.

Referring to Figures 2, 3, 5 and 6, trigger arms 68, 69 are provided, the same being preferably formed from a single bar of metal rigidly secured at about its mid-length to the rearwardly extending end of the arbor 21. These trigger arms serve as time measuring elements, for the purpose of controlling the making and breaking of the electric circuit to the motor for the definite period of time during which the motor so operates. A lever 70 is mounted at one end so as to pivot on a stationary pin 71 on the shelf or partition 57. A spring 72 is coiled upon the pin 71, it being fixed at its lower end to the shelf 57 and at its upper end being bent and hooked over the lever 70, so that the tendency of said spring is to move the lever 70 in the direction shown in Fig. 6. A post 73 is fixed on the shelf 57, between the ends of the lever 70, and said lever is adapted to be moved in one direction or the other upon a supporting guide 74, at the upper end of post 73, said guide being provided at its outer end with a stop lug 75, which limits the outward movement of the lever 70 as caused by the tension spring 72.

Lever 70 is formed intermediately of its ends with a camming portion 76, while that end of the lever is terminated by a curved or arc shaped portion 77. The camming portion 76 is positioned on the arc shaped portion 77 outwardly a considerable distance with respect to the main body of the lever, so as to be in substantial parallelism therewith. The position of the arc shaped portion 77 is such that the arbor 21 serves substantially as the center from which the curve of the arc is struck, as shown more clearly in Fig. 5. Whatever may be the shape of the camming portion 76 or the portion 77, the portion 77 nevertheless is intended to serve as the time measuring portion of the lever 70. It will be seen that the relation of the camming portion 76 and the time measuring portion 77 are such with relation to the arbor 21 that the rotation of the trigger arms 68, 69 by clock mechanism will cause said arms to engage with the said portions of lever 70, due to the fact that each of said arms may move the lever inwardly toward the clock when it presses upon the camming portion 76. It is intended that when one of the arms 68, 69 had deflected the lever 70 by engaging and then leaving the camming portion, that the length of the time measuring portion 77 correspond with the time during which one of said arms shall ride over the surface of said portion 77.

In Fig. 6 is shown the coin releasing device, which is really a part of the lever 70. An L-shaped arm 78 extends through a hole 79 in the shelf 57 and its upper end is secured to the lever 70. The lower forward end of the L-shaped arm 78 is positioned adjacent the electrical contact 35 and also shown in Fig. 2. This free end of the arm 78 carries a toe 80 composed of insulation material, and which constitutes means for pressing upon the spring finger 37 so as to move the same into the position shown in Fig. 4 for intercepting the coin, in the position B. In Fig. 6 the toe 80 has been caused to move away from or release the coin from the spring finger 37, when the spring 72 is free to act upon the lever 70.

The operation of time measuring means is briefly as follows: The mechanism having been set so as to drop the coin into electrical contact with the contacts 35, 36, thus setting the time to commence the period of service of the motor, one of the trigger arms 68, 67 has been caused to cam the lever 70 so as to press the toe 80 against the finger 37, so that the coin will be held when dropped to contact position. The movement of one of said arms 68, 69 during this camming action is from approximately the position shown in full lines in Fig. 5 to the position shown in broken lines in said figure, and when say the arm 69 has reached the end of the cam 76, said arm will be then positioned upon the starting point of the time measuring portion 77 of said lever 70. The clock mechanism being now free to act in its own way is allowed to rotate the arm 69 from the position shown in broken lines in Fig. 5, during the period of time selected for operation, until the arm 69 snaps off from the free end of the measuring portion 77. Then the spring 72 instantly acts to free the coin detaining finger from the action of the pressure toe 80, whereupon the coin in the apparatus instantly drops into the chute 18. In Fig. 5 the arm 68 is shown as having just left the terminal of the lever 70, and it will serve for engaging the camming portion 76 when it comes around thereto, but it will simply run idly upon the time measuring portion 77 in the event that no coin has been introduced into the apparatus.

For the purpose of assembly of the coin controlled mechanism in the casing or box 12, a back plate 81 may be provided, connected with the front plate 31 by means of rods or bolts 81*a* which pass through both plates and may be riveted or removably secured to the plates. The clock mechanism would then be mounted between the plates, and carried by the shelf 57 suitably supported between the plates. The entire controlled mechanism could then be removed from the box 12 when desired or replaced therein. To this end the box 12 is provided with a bottom shoulder 82 at the front and with an inset shoulder 83 at the top. When the entire unit is to be placed in the box 12, the lower edge of the front plate 31 is caused

to engage behind the shoulder 82, the upper edge of the front plate being engaged with the top shoulder 83. The bolt of a lock 84 may then be caused to be projected behind the shoulder 83, thereby retaining the entire unit in position in the casing, so that it cannot be removed except by one who has a key which will operate the lock 84.

It should here be stated that each tooth of the ratchet wheel 45 and a corresponding one of the trigger arms 68, 69 are fixed on the arbor 21 in such relative positions that when the shaft 48 is given a partial rotation until the handle 49 strikes the stop 50, one of said arms will be caused to first depress the lever 70 by engaging with the camming portion 76 and to then bear upon the adjacent extreme end of the time measuring portion 77 of said lever. After this setting of such parts has been done, the clock or the like carries around the so set arm 68 or 69, as the case may be, the arm traveling on the portion 77 until it passes off therefrom, at which moment the lever 70 instantly springs back to its original position.

The entire operation of the system will now be briefly described. Assuming that the occupant of an apartment desired refrigeration for a definite period of time, say twelve hours, the arbor 21 of the clock will be timed to rotate so as to carry one of the trigger arms 68, 69 from end to end of the time measuring portion or element 77 in a corresponding period of time. The proper coin or token for such period of service is inserted into the carrier 26. Then the hand crank 49 is turned in anti-clockwise direction until it strikes the stop 50, during which time the carrier 26 has been moved inwardly so as to drop the coin or token down to a position in contact with the electrical contacts 35, 36, and at the end of which rotation of the hand crank one of the trigger arms 68, 69 will be brought to a position to correspond with the commencement of the period of operation of the apparatus and the service desired. The hand crank 49 is released as soon as it strikes the stop 50 so that the spring 56 reacts to turn the crank in clock-wise direction until it strikes the other stop 51.

While the coin or token is making an electrical connection through the contacts 35, 36, the motor 16 operates and in turn causes the refrigerator 11 to supply the necessary refrigerating service, until said coin or token has been dropped from between the electrical contacts. At the moment that the arm 68 or 69 passes off from the time measuring portion or element 77, the devices between the same and the detaining finger 37 at the bottom of the coin chute act to allow the said finger to release the coin, and the coin passes through the corresponding branch chute 18 and through the main chute 17 into the coin collecting receptacle 19.

Of course it will be understood by those skilled in the art that although a simple motor circuit is illustrated and no special construction and arrangement of electrical means is disclosed for variably controlling a refrigerator according to the requirements thereof, the present invention is applicable in such cases. In such a case the average cost of refrigeration during say 24 hours would be approximated, and a coin or token including that value will be chosen by the one who is to receive the revenue, and in spite of any variations in the degree of the desired refrigeration the apparatus of the present invention will provide means for giving desired refrigeration during the period for which it is set.

Obviously the described and illustrated invention is susceptible to various modifications, which may be resorted to by those skilled in the art without departing from the spirit of the invention and the scope of the appended claims.

What I claim as new is, —

1. In refrigeration of the class wherein an electric circuit supplies current for operating the apparatus which effects the refrigeration; the combination with contacts forming a break in the circuit, of a coin retaining and releasing element having a cooperative relation with the contacts, means for positioning the coin so as to be retained by such element for closing the circuit through the contacts, time measuring means, and means operable by the time measuring means for acting on the retaining element to maintain the coin in retained position during a definite period of time and for releasing the coin so as to break the circuit at the completion of such period, the coin maintaining and releasing means including a timing member operable by the time measuring means, and a spring pressed device operable in one direction by the member and in the opposite direction by the spring, whereby to maintain the coin in position and to release it when the time period is completed.

2. In refrigeration of the class wherein an electric circuit supplies current for operating the apparatus which effects the refrigeration; the combination with contacts forming a break in the circuit, of a coin retaining and releasing element having a cooperative relation with the contacts, means for positioning the coin so as to be retained by such element for closing the circuit through the contacts, time measuring means, and means operable by the time measuring means for acting on the retaining element to maintain the coin in retained position during a definite period of time and for releasing the coin so as to break the circuit at the completion of such period, the coin maintaining and releasing means including a rotary member

mounted on and operable by the time measuring means, and a device operable on the element in one direction by the member, such device having means tending to urge it in the opposite direction, whereby to maintain the coin in position and to release it when the time period is completed.

3. In refrigeration of the class wherein an electric circuit supplies current for operating the apparatus which effects the refrigeration; the combination with contacts forming a break in the circuit, of a coin retaining and releasing element having a cooperative relation with the contacts, means for positioning the coin so as to be retained by such element for closing the circuit through the contacts, time measuring means, and means operable by the time measuring means for acting on the retaining element to maintain the coin in retained position during a definite period of time and for releasing the coin so as to break the circuit at the completion of such period, the coin maintaining and releasing means including a timing member operable by the time measuring means, an oscillatory device oscillatible in one direction by the member to maintain the coin in position, and means for oscillating the device in opposite direction to release the coin when the time period is completed.

4. In refrigeration of the class wherein an electric circuit supplies current for operating the apparatus which effects the refrigeration; the combination with contacts forming a break in the circuit, of a coin retaining and releasing element having a cooperative relation with the contacts, means for positioning the coin so as to be retained by such element for closing the circuit through the contacts, time measuring means, and means operable by the time measuring means for acting on the retaining element to maintain the coin in retained position during a definite period of time and for releasing the coin so as to break the circuit at the completion of such period, the coin maintaining and releasing means including a member rotatable by the time measuring means, and a device having an arcuate portion on which the rotary member may travel to hold the device in one direction and having means to operate it in the opposite direction, whereby to maintain the coin in position and to release it when the time period is completed.

5. In refrigeration of the class wherein an electric circuit supplies current for operating the apparatus which effects the refrigeration; the combination with contacts forming a break in the circuit, of a coin retaining and releasing element having a cooperative relation with the contacts, means for positioning the coin so as to be retained by such element for closing the circuit through the contacts, time measuring means, and means operable by the time measuring means for acting on the retaining element to maintain the coin in retained position during a definite period of time and for releasing the coin so as to break the circuit at the completion of such period, the coin maintaining and releasing means including a member rotatable by the time measuring means, and a device having a cam portion engageable by the member and also having an arcuate portion on which the rotary member may travel, and respectively to shift the device and to hold the device in one direction, and the device having means to operate it in the opposite direction, whereby to maintain the coin in position and to release it when the time period is completed.

6. In refrigeration of the class wherein an electric circuit supplies current for operating the apparatus which effects the refrigeration; the combination with contacts forming a break in the circuit, of a coin retaining and releasing element having a cooperative relation with the contacts, means for positioning the coin so as to be retained by such element for closing the circuit through the contacts and including a movable coin carrying device, time measuring means, means operable by the time measuring means to maintain the coin in retained position during a definite period of time and for releasing the coin so as to break the circuit at the completion of such period, and including a timing member rotatable by the time measuring means and means operable by the timing member to act on the retaining element, means for setting the timing member to commence the definite time period, and a rotatable arm operable by the setting means to actuate the coin carrying device and cause the positioning of the coin substantially simultaneously with the setting of the timing member.

7. In refrigeration of the class wherein an electric circuit supplies current for operating the apparatus which effects the refrigeration; the combination with contacts forming a break in the circuit, of a coin retaining and releasing element having a cooperative relation with the contacts, means for positioning the coin so as to be retained by such element for closing the circuit through the contact and including a movable coin carrying device, time measuring means, means operable by the time measuring means to maintain the coin in retained position during a definite period of time and for releasing the coin so as to break the circuit at the completion of such period, and including a timing member mounted on and rotatable by the arbor of the time measuring means and mean operable by the timing member to act on the retaining element, means for setting the timing member to commence the definite time period, and an arm mounted on a rotary shaft aligned with the arbor, and operable by the setting means to actuate the coin carrying device

and cause the positioning of the coin substantially simultaneously with the setting of the timing member.

8. In refrigeration of the class wherein an electric circuit supplies current for operating the apparatus which effects the refrigeration; the combination with contacts forming a break in the circuit, of a coin retaining and releasing element having a cooperative relation with the contacts, means for positioning the coin so as to be retained by such element for closing the circuit through the contacts and including a movable coin carrying device, time measuring means, means operable by the time measuring means to maintain the coin in retained position during a definite period of time and for releasing the coin so as to break the circuit at the completion of such period, and including a timing member mounted on and rotatable by the arbor of the time measuring means and means operable by the timing member to act on the retaining element, means for setting the timing member to commence the definite time period, and an arm mounted on a rotary shaft aligned with the arbor, and operable by the setting means to actuate the coin carrying device and cause the positioning of the coin substantially simultaneously with the setting of the timing member, and means for automatically returning the setting means to normal position.

9. In refrigeration of the class wherein an electric circuit supplies current for operating the apparatus which effects the refrigeration; the combination with contacts forming a break in the circuit, of a coin retaining and releasing element having a cooperative relation with the contacts, means for positioning the coin so as to be retained by such element for closing the circuit through the contacts and including a movable coin carrying device, time measuring means, means operable by the time measuring means to maintain the coin in retained position during a definite period of time and for releasing the coin so as to break the circuit at the completion of such period, and including a timing member rotatable by the time measuring means and means operable by the timing member to act on the retaining element, means for setting the timing member to commence the definite time period, an arm operable by the setting means, and swingable means operable by the arm to actuate the coin carrying device and cause the positioning of the coin substantially simultaneously with the setting of the timing member.

10. In refrigeration of the class wherein an electric circuit supplies current for operating the apparatus which effects the refrigeration; the combination with contacts forming a break in the circuit, of a coin retaining and releasing element having a cooperative relation with the contacts, means for positioning the coin so as to be retained by such element for closing the circuit through the contacts and including a movable coin carrying device, time measuring means, means operable by the time measuring means to maintain the coin in retained position during a definite period of time and for releasing the coin so as to break the circuit at the completion of such period, and including a timing member rotatable by the time measuring means and means operable by the timing member to act on the retaining element, means for setting the timing member to commence the definite time period, an arm operable by the setting means, and swingable means having a lateral projection located in the path of movement of the arm for engagement by the arm, whereby to actuate the coin carrying device and cause the positioning of the coin substantially simultaneously with the setting of the timing member.

11. In refrigeration of the class wherein an electric circuit supplies current for operating the apparatus which effects the refrigeration; the combination with contacts forming a break in the circuit, of a coin retaining and releasing element having a cooperative relation with the contacts, means for positioning the coin so as to be retained by such element for closing the circuit through the contacts and including a movable coin carrying device, time measuring means, means operable by the time measuring means to maintain the coin in retained position during a definite period of time and for releasing the coin so as to break the circuit at the completion of such period, and including a timing member rotatable by the time measuring means and means having a cam portion engageable by the timing member to act on the retaining element, means for setting the timing member to commence the definite time period, and a rotatable arm operable by the setting means to actuate the coin carrying device and cause the positioning of the coin substantially simultaneously with the setting of the timing member.

12. In refrigeration of the class wherein an electric circuit supplies current for operating the apparatus which effects the refrigeration; the combination with contacts forming a break in the circuit, of a coin retaining and releasing element having a cooperative relation with the contacts, means for positioning the coin so as to be retained by such element for closing the circuit through the contacts and including a movable coin carrying device, time measuring means, means operable by the time measuring means to maintain the coin in retained position during a definite period of time and for releasing the coin so as to break the circuit at the completion of such period, and including a timing member rotatable by the time measuring means and means having a

cam portion engageable by the timing member to act on the retaining element, and beyond the cam portion being prolongated for a distance substantially corresponding with the duration of the definite time period, and the timing member riding thereupon, means for setting the timing member to commence the definite time period, and a rotatable arm operable by the setting means to actuate the coin carrying device and cause the positioning of the coin substantially simultaneously with the setting of the timing member.

13. In refrigeration of the class wherein an electric circuit supplies current for operating the apparatus which effects the refrigeration; the combination with contacts forming a break in the circuit, of a coin retaining and releasing element having a cooperative relation with the contacts, means for positioning the coin so as to be retained by such element for closing the circuit through the contacts and including a movable coin carrying device, time measuring means, means operable by the time measuring means to maintain the coin in retained position during a definite period of time and for releasing the coin so as to break the circuit at the completion of such period, and including a timing member mounted on and rotatable by the arbor of the time measuring means and means operable by the timing member to act on the retaining element, means for setting the timing member to commence the definite time period, and comprising a shaft and a pawl and ratchet device for connecting the shaft with the arbor of the time measuring means when setting the position of the timing member, and a rotatable arm operable by the setting means to actuate the coin carrying device and cause the positioning of the coin substantially simultaneously with the setting of the timing member.

14. In refrigeration of the class wherein an electric circuit supplies current for operating the apparatus which effects the refrigeration; the combination with contacts forming a break in the circuit, of a coin retaining and releasing element having a cooperative relation with the contacts, means for positioning the coin so as to be retained by such element for closing the circuit through the contacts and including a movable coin carrying device, time measuring means, means operable by the time measuring means to maintain the coin in retained position during a definite period of time and for releasing the coin so as to break the circuit at the completion of such period, and including a timing member mounted on the arbor of the time measuring means for rotation by the time measuring means and means operable by the timing member to act on the retaining element and having an arcuate portion substantially concentric with the arbor and on which the timing member travels during the definite period of time, means for setting the timing member to commence the definite time period, and a rotatable arm operable by the setting means to actuate the coin carrying device and cause the positioning of the coin substantially simultaneously with the setting of the timing member.

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