July 3, 1951 A. H. RIEBSCHLAGER 2,559,229

INCINERATOR

Filed June 21, 1948 2 Sheets-Sheet 1

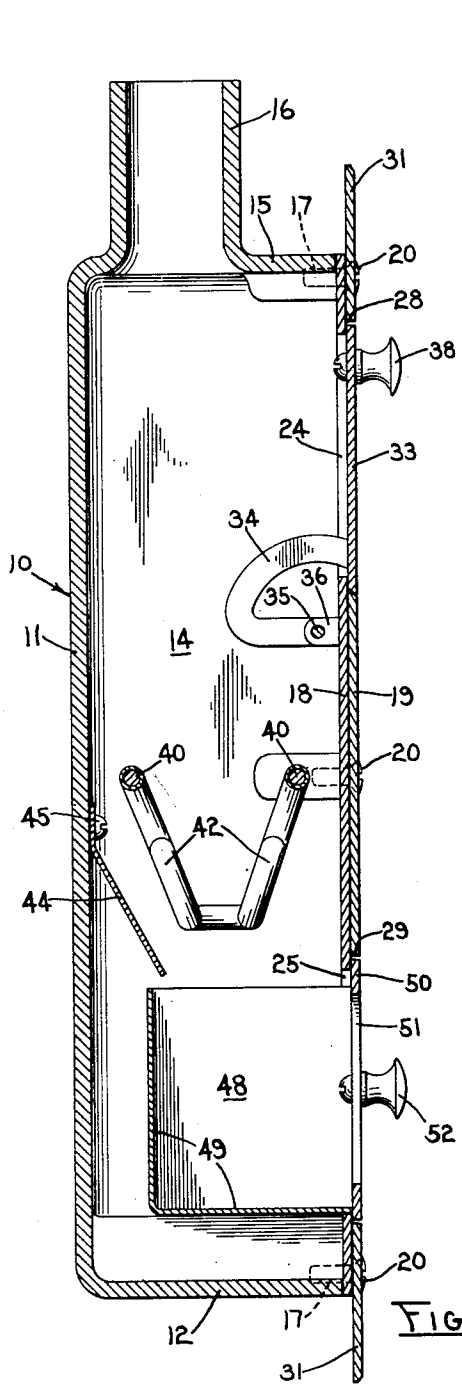


FIG. 2.

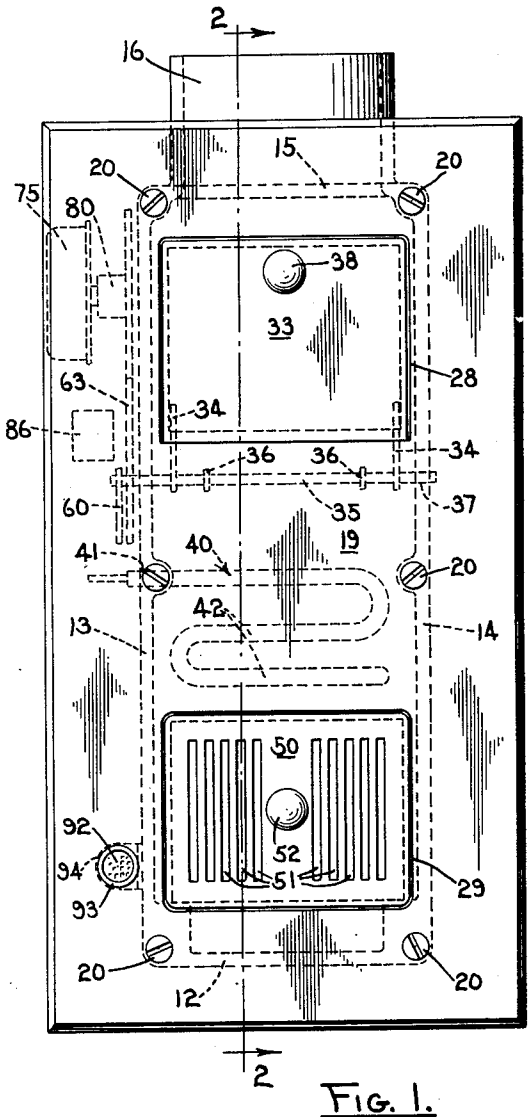


FIG. 1.

INVENTOR
ANTON H. RIEBSCHLAGER
BY
Kuebner, Maltby & Beadle
ATTORNEYS

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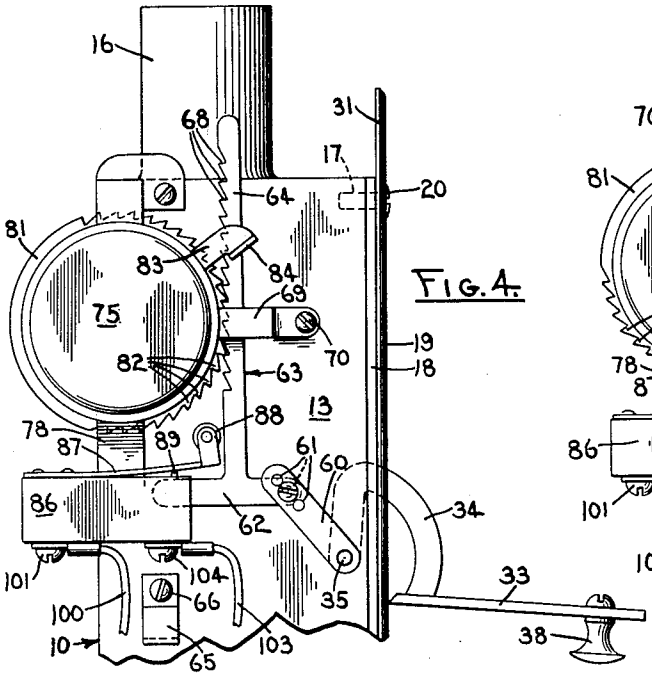


FIG. 4.

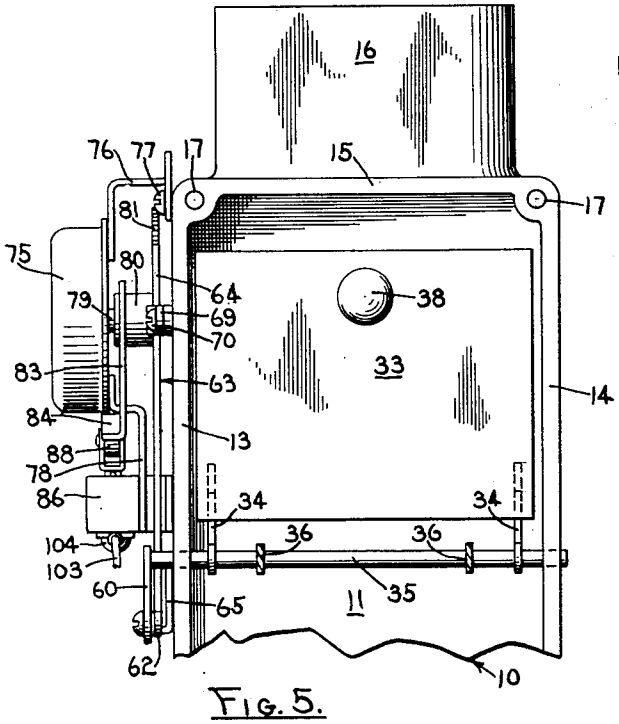


FIG. 5.

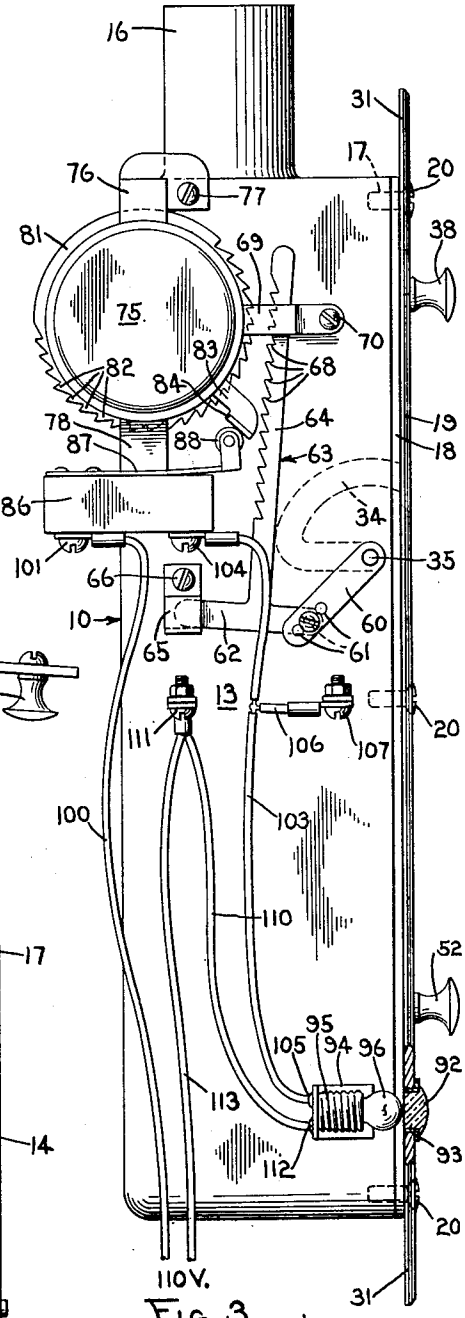


FIG. 3.

INVENTOR
ANTON H. RIEBSCHLAGER
BY
Huebner, Matthy & Beadle
ATTORNEYS

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UNITED STATES PATENT OFFICE

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INCINERATOR

Anton H. Riebschlager, Fresno, Calif.

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2 Claims. (Cl. 219—19)

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This invention relates to incinerators and more particularly to incinerators adapted for use in rest rooms, bathrooms and the like for the disposal of catamenial devices such as sanitary pads and disposable tissues of the type employed for feminine hygienic purposes.

The disposal of such material in an efficient, sanitary, and convenient manner has long constituted a serious feminine problem. When placed in water closets and removal effected by flushing action of the closet, clogging of the drain almost always results. When placed in waste baskets, in wrapped or unwrapped condition, an unsanitary condition is created.

It is an object of the present invention to provide an incinerator in which sanitary pads and the like may be quickly and conveniently consumed by burning, effecting their disposal in a convenient and sanitary manner.

Another object is to provide means whereby sanitary pads and other disposable tissue may be burned or incinerated so as to leave only a clean, sanitary ash.

Another object is to provide an incinerator adapted to receive and consume quantities of such material successively deposited therein having an ignition means activated for periods of predetermined length in response to frequency of depositing of additional quantities of the material.

Another object of the invention is to provide means in an incinerator for electrically burning such material combined with means by automatically activated insertion of the material into the incinerator and automatically controlling the period of energization of the burning means.

Another object of the invention is to provide, in a device of the character described, means for automatically predetermining duration of ignition period in response to the opening of a door of the incinerator through which door opening insertion of such material is effected.

Another object of the invention is to provide means for the additive effect of successive opening of a door in the incinerator resulting in an accumultion of time for the burning period.

A further object is to provide for the easy removal of the ashes from the incinerator.

A still further object is to provide a pilot light or other means to indicate operative or non-operative condition of the incinerator.

Other objects and purposes of the present invention will become apparent in the following description taken in connection with the accompanying drawings, in which:

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Fig. 1 is a front elevational view of an incinerator embodying the principles of the present invention.

Fig. 2 is a vertical sectional view through the incinerator taken along line 2—2 in Fig. 1, looking in the direction of the arrows.

Fig. 3 is a left side elevational view of the incinerator showing elements thereof in rest, or non-operating, position.

Fig. 4 is a fragmentary, side elevational view of the incinerator, as shown in Fig. 3, but with a door thereof in open position and a timing mechanism and electrical switch in operating position for the energizing of an ignition means thereof.

Fig. 5 is a fragmentary front elevational view of the incinerator with a front cover plate removed therefrom to reveal additional details of structure.

Referring to the details of the drawings, the incinerator comprises a cast housing 10 having back portion 11, a bottom portion 12, side portions 13 and 14, and a top portion 15 having an integral flue 16 extending upwardly therefrom. This flue 16 is adapted to have a stack, or the like, telescoped thereon for the removal of gas and fumes from the interior of the incinerator. The housing is provided with a flattened face having a plurality of tapped openings 17 formed therein. A plate 18 is located against this flat face and constitutes a forward wall for the housing. A finishing plate 19 overlays the outer face of the plate 18 and a plurality of screws 20 extend through both of the plates 18 and 19 into the plurality of tapped openings 17 thereby holding the plates in place against the front face of the housing. The inner plate 18 is provided with an upper rectangular opening 24 therethrough near the top of the housing and a lower rectangular opening 25 therethrough near the bottom of the housing. The outer finishing plate 19 likewise has an upper rectangular opening 28 therethrough coincident with the opening 24 in the plate 18 and a lower rectangular opening 29 therethrough coincident with the opening 25 in the inner plate 18. The outer plate 19 has a portion 31 which radially extends from the housing of the incinerator at all sides whereby an opening in a wall through which the incinerator may be installed will be covered by the overhanging portion 31 to give a finished appearance.

The upper openings 24 and 28 in the inner plate 18 and the outer plate 19, respectively, are closed by means of a door 33 hingedly supported on a pair of arcuate hinge members 34 secured

in spaced relationship to the rear face of the door 33 and extending rearwardly, then downwardly and then forwardly relative to the door. A pair of horizontally spaced ears 36 are secured to and extend rearwardly from the rear face of the plate 18 and a pivot rod 35 is extended through the ears 36, through the arcuate hinge members 34, and through openings 37 in the side portions 13 and 14 of the housing 10. The rod 35 is secured to the hinge members 34 and adapted to rotate therewith. The door 33 has an outwardly extending knob 38 secured thereto near its upper edge whereby the door may be conveniently opened and closed manually.

Means are provided for burning sanitary pads, disposable tissues and the like after insertion into the housing. Said means conveniently comprises an electric heating element or ignition means 40 extended through openings 41 in the side portion 13 of the housing 10 and arranged in flake configuration, as shown at 42, in such a manner as to constitute a grate adapted to support combustible material deposited in the housing.

When combustible material is burned on the heating elements 40, the ashes therefrom gravitate downwardly to an ash receptacle 48, the rearward most of the ashes being guided downwardly and forwardly into the receptacle by means of an angular plate 44 attached to the rear inner face of the back 11 of the housing 10.

The ash receptacle 48 in its inserted position is located beneath the electric heating element 40 and comprises a rectangular, sheet metal, casing 49 open at its upper side and attached at its forward edge to an ash receiver door 50, which door has a plurality of vertical slots or openings 51 therethrough for the passage of air into the interior of the housing for the complete oxidation of the material by the heating element. The ash receptacle is provided with a knob 52 whereby it may be easily and conveniently withdrawn for the emptying of the accumulated ashes therefrom.

Means are provided for electrically energizing the heating element 40 for the ignition of material deposited in the housing and for automatically controlling the period of energization of the element in response to frequency of opening of the door 33 for the insertion of material therein. This means comprises an arm 60 secured to one end of the door operated rotatable rod 35. The arm has a series of radially spaced openings therethrough for the adjustable pivotal connection at 61 of one end of a cross head 62 of a T-shaped ratchet member 63 thereto. The opposite end of the cross head 62 is supported, in rest position, on a U-shaped bracket 65 secured to the outer side of the side portion 13 of the housing 10 by means of a single screw 66 threadedly received therein. The long leg 64 of the T-shaped ratchet member 63 is provided along one side with a plurality of ratchet teeth 68 in rack gear arrangement and the upper end of this leg 64 is guided for movement substantially parallel to the side of the housing 10 by means of a guide bar 69 attached to the side of the housing 10 by means of a screw 70.

A timing mechanism 75 is rigidly mounted in spaced relation to the side 13 of the housing 10 on a bracket 76 secured thereto and attached to the side 13 of the housing 10 by means of a screw 77. The timing mechanism has an inwardly extended rotatable winding shaft 79 which is rotatable by means of a clockwork mechanism to a rest or stop position with the clockworking mechanism still wound, and is also rotatable to a position with the clockwork mechanism in a still further wound position. An escapement, not shown, is employed for the slow unwinding of the mechanism and the consequent rotation of the shaft 79. A hub 80 is securely attached to the winding shaft 79 having a flat circular ratchet wheel 81 attached thereto. The ratchet wheel has a plurality of ratchet teeth 82 formed in its periphery. An arm 83 is also securely attached to the hub 80 and extends radially outwardly therefrom beyond the timing mechanism housing 75 and has an axially extended finger 84 at the outer end thereof formed at right angles thereto. This finger 84 is adapted to operate a switch hereinafter described.

A normally-closed micro-switch 86 is mounted on a bracket 78 closely adjacent the timing mechanism 75 and has a spring member 87 attached by an end portion to the upper side thereof with a roller 88 rotatably mounted at its outer end, the spring member 87 when released allowing a pin 89 to move upwardly causing the switch 86 to close. When the roller 88 and spring member 87 are moved downwardly the pin 89 is forced downwardly thereby opening the switch 86. The micro-switch structure is in itself well known and thus not described in greater detail at this point. The arm 83 is movable by the clockwork mechanism to a rest position, as shown in Fig. 3, in which position the spring member 87 is depressed thereby opening the switch 86. The arm 83, is also movable by means of the ratchet mechanism 64, to a position, as shown in Fig. 4, in which position the switch 86 is permitted to move to its normally closed position.

A pilot light is provided for the incinerator to indicate the energized or de-energized condition of the heating element 40. A window 92, preferably of colored, transparent material, is located in an opening in the outer plate 19 and held therein by means of a bezel 93. An angle bracket 94 is attached to the side 13 of the housing 10 with a lamp socket 95 attached thereto adapted to threadedly receive an electric-light bulb 96 therein. This bulb is juxtapositioned the window 92 whereby when it is energized the light therefrom will appear through the window 92.

A source of electrical energy having the usual 110-volt potential commonly found in homes, service stations, and the like, is indicated generally at 110V of Fig. 3. An electrical conductor 100 is energized from the source of electrical energy and is connected to the micro-switch 86 at a pole 101 thereof. A second conductor 103 interconnects a second pole 104 of the micro-switch and a contact 105 of the lamp socket 95. A lead wire 106 for the ignition means 40 is interconnected the conductor 103 and a terminal 107 of the ignition means. A second lead wire 110 is interconnected a second terminal 111 of said ignition means and a second contact 112 of the lamp socket 95. So connected it will be apparent that the switch 86 and the ignition means 40 are connected in electrical series between opposite poles of the source of current supply indicated at 110V, the pilot light bulb 96 being connected in parallel with said ignition means.

Operation

The incinerator described above is adapted to be mounted in an opening in a wall, not shown, of a rest room or bathroom with the overhanging portion 31 of the plate 19 against the outer side

of the wall. A chimney, also not shown, is telescoped over the flue 16 to effect escape of the fumes and gasses from the interior of the incinerator and direct the same outwardly of a building in which the device of the present invention is mounted. When it is desired to insert a sanitary pad or the like into the incinerator, the door 33 is opened by means of the knob 38 thereby pivoting the door 33 and rod 35 in the bearing members 36. While the door is open the pad may be inserted through the openings 24 and 28 into the interior of the incinerator where it descends to and is supported by the heating element 40.

While the door 33 is being opened the arm 60 is rotated by the pivot rod 35, whereby on the first rotative motion thereof the teeth 68 of the ratchet member 63 first engage the teeth 82 on the periphery of the ratchet wheel 81, with the opposite end of the head 62 of the ratchet member 63 supported in the U shaped bracket 65 during this movement from rest position to the engagement with the ratchet teeth on the ratchet wheel. On further opening motion of the door, the ratchet member 63 rotates the ratchet wheel 81 in a counterclockwise direction, as viewed in Figs. 3 and 4, until the door is fully open. On the first rotative motion of the ratchet wheel 81, the finger 84 at the outer end of the arm 83 moves counterclockwise with the ratchet wheel thereby removing the downward pressure on the roller 88 and allowing the micro-switch to move to its closed position, whereby the electrical circuit including the pilot light 96 and to the heating element 40 is closed.

After the pad is inserted into the interior of the incinerator, the door is moved to closed position leaving the timing mechanism in the partially wound condition with the electrical circuit to the heating element closed. The return spring escapement, built into the timing mechanism 75, permits the timed return of the arm 83 and the ratchet wheel 81 to their normal rest position, as shown in Fig. 3 of the drawing. When the arm 83 approaches this rest position the finger 84 thereon contacts the roller 88, depresses the roller, moves the micro-switch to open position, and thereby interrupting the circuit to the electrical heating element 40. The timing mechanism is operated, wound by the movement of the ratchet member 63, to such an extent that a single catamenial device of conventional material and moisture content located on the heating element will be properly burned to an ash during this interval of time.

Means are provided for increasing the period of heating time when successive insertions of combustible material into the incinerator are made. When one pad is inserted into the incinerator the timing mechanism is moved to cause the heating element to be energized for a certain period of time. If before this time has elapsed another pad is inserted into the incinerator, on opening the door to insert the pad therein, the ratchet member 63 engages the teeth of the ratchet wheel and rotates the ratchet wheel and clockwork mchanism to the same extent that it would have rotated the same, had there been no remaining time on the timing mechanism. This additional opening of the door subjects the timing mechanism to further winding and results in an accumulation of time during which the ignition means will remain energized.

To protect the timing mechanism, means are provided to limit the total time that can be accumulated. This is done by limiting the ratchet teeth 82 to a portion of the wheel 81 and providing the remainder of the wheel with a smooth periphery. When the timing mechanism has been wound sufficiently to present the smooth periphery of the wheel for engagement by the teeth 68, said teeth slip on the wheel and excessive winding precluded. Obviously the wheel is provided with teeth for a sufficient arcuate extent to enable the device of the present invention to accommodate a plurality of catamenial devices and effectively to consume the same.

From the foregoing description it will be seen that I have devised an incinerator in which sanitary pads, disposable tissue, and the like, may be conveniently disposed of in a sanitary manner and in which the operation thereof, for the incineration of such material, is accomplished automatically on opening the door for the insertion thereof and providing an increased period of operation of time when a subsequent insertion is effected while previously inserted material is being consumed. From the construction described it will be seen that the incinerator accomplishes all of the foregoing objects and advantages.

Although I have herein shown and described my invention in what I have conceived to be the most practical and preferred embodiment, it is recognized that departures may be made therefrom within the scope of my invention, which is not limited to the details disclosed herein, but is to be accorded the full scope of the claims so as to embrace any and all equivalent devices.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A timing device responsive to the elevational pivotal reciprocation of a lever arm adapted to accumulate increments of time of individually selected duration dependent upon extent of pivotal movement of the lever arm and in predetermined ratios of response thereto comprising a clockwork mechanism having a substantially horizontal winding shaft rotatable in one direction to wind the mechanism and rotated in the opposite direction through an escapement in response to unwinding of the mechanism, a ratchet wheel mounted on the shaft in a substantially erect plane having peripheral ratchet teeth adapted for driving rotation of the wheel to rotate the shaft in a winding direction, an inverted T-shaped ratchet bar having an erect leg with teeth formed along an edge thereof engageable with the ratchet wheel and a cross head at the lower end of the leg, means for supporting one end of the cross head adjacent and below the clockwork mechanism for slidable pivotal movement, and means pivotally interconnecting the opposite end of the cross head and the lever arm in adjustably spaced relation to the pivotal mounting thereof whereby upward pivotal movement of the lever arm elevates the end of the cross head connected thereto a distance determined by extent of elevational movement of the lever arm and adjusted connection of the cross head thereto pivots the crosshead about the slidably supported end thereof to move the erect leg into ratchet wheel engagement, continued upward pivotal movement of the lever arm elevates the T-shaped ratchet bar rotating the ratchet wheel to wind the clockwork mechanism and downward pivotal movement of the lever arm lowers the T-shaped ratchet bar and pivots the erect leg away from the ratchet wheel about the slidably supported end of the cross head.

2. In a wall incinerator having a vented housing adapted to be mounted in a wall and having an opening in a side thereof, a door mounted on the housing for reciprocal pivotal positioning between open and closed positions relative to the opening, an electrical ignition means mounted in the housing below the opening closed by the door, and an electrical circuit for energizing the ignition means; the combination of a normally closed switch electrically connected in series with the ignition means in the energizing circuit, a clockwork timing mechanism having a winding shaft, an arm radially extended from the shaft adapted to hold the switch in open position when the clockwork mechanism is unwound and rotated from the switch when the mechanism is wound, a ratchet wheel mounted on the shaft having peripheral ratchet teeth adapted for driving rotation of the wheel to rotate the shaft in a winding direction, an inverted T-shaped ratchet bar having an erect leg with teeth formed along an edge thereof engageable with the ratchet wheel and a cross head at the lower end of the leg, a U-shaped bracket mounted on the housing supporting one end of the cross head adjacent and below the clockwork mechanism for slidable pivotal movement, an arm mounted for unitary pivotal movement with the door having an end portion adjacent to the end of the cross head opposite to that rested in the U-shaped bracket, and means pivotally interconnecting said end of the cross head opposite to that rested in the bracket pivotally to the radially extended end of the lever arm in adjustable positions radially of the pivotal mounting thereof whereby opening of the door pivots the erect leg of the T-shaped ratchet bar inwardly against the ratchet wheel and moves said leg upwardly winding the clockwork mechanism to an extent determined by the adjustable radial connection of the cross head to the lever arm and extent of door opening and successive door openings successively wind the clockwork mechanism in accumulated increments of correspondingly determined duration.

ANTON H. RIEBSCHLAGER.

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