Oct. 1, 1940. C. A. PRESCOTT ET AL 2,216,675

CIGARETTE DISPENSER AND IGNITER

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Fig. 1.

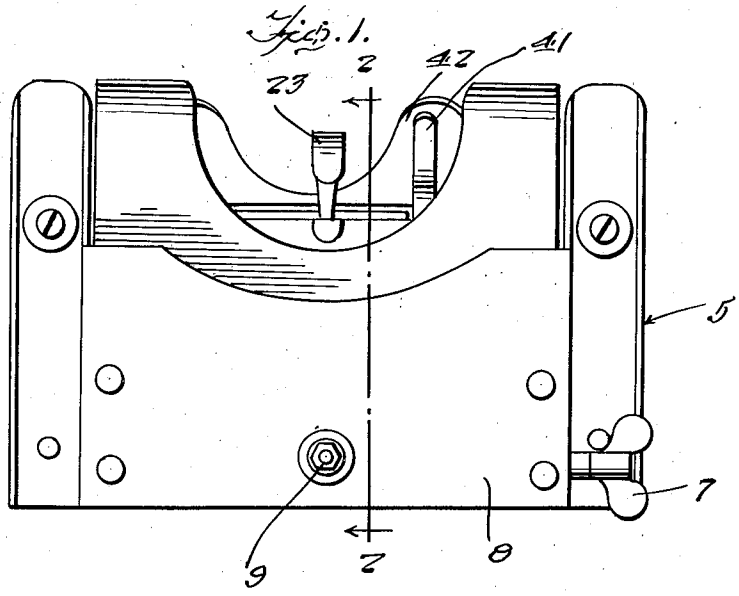


Fig. 5.

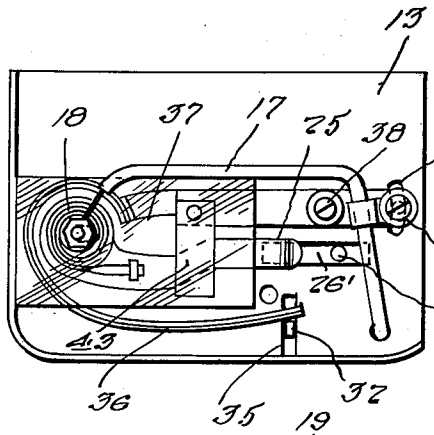
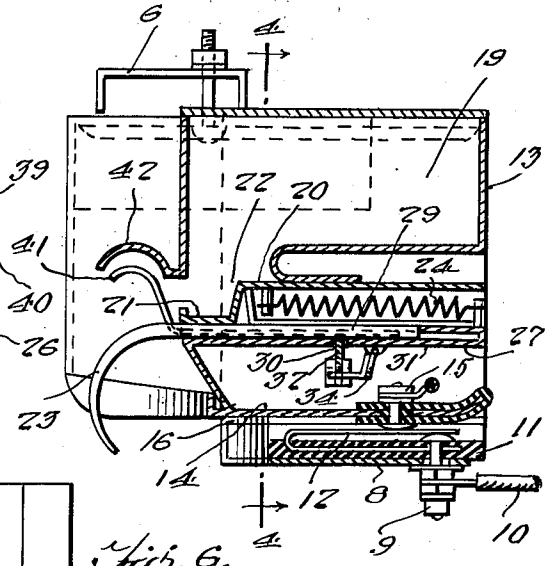


Fig. 2.



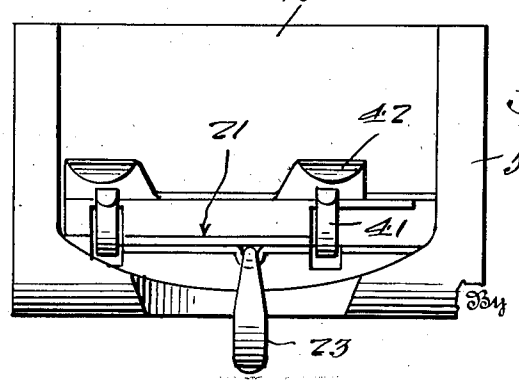


Fig. 6.

Inventors
Clyde A. Prescott
Luther M. Jackson
By W. E. Beck, Jr.
Attorney

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CIGARETTE DISPENSER AND IGNITER

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Fig. 3.

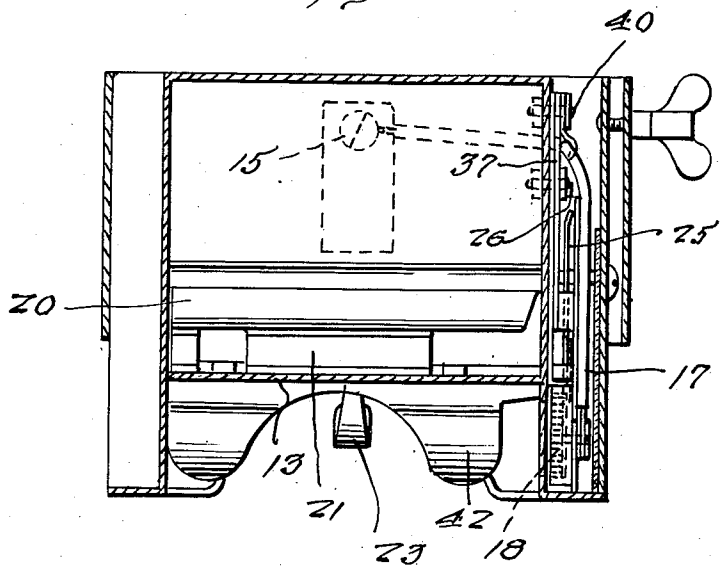
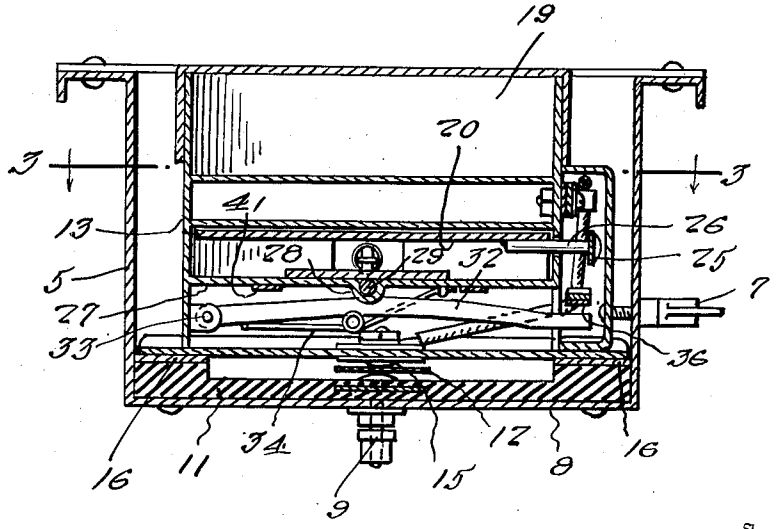


Fig. 4.



Inventors

Clyde A. Prescott

Luther M. Jackson

By W. E. Beck, Jr.

Attorney

Patented Oct. 1, 1940

2,216,675

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CIGARETTE DISPENSER AND IGNITER

Clyde A. Prescott and Luther M. Jackson,
Middletown, Pa.

Application September 26, 1939, Serial No. 296,702

7 Claims. (Cl. 312—86)

The present invention relates to automatic cigarette igniters and has for its primary object to provide a manually operable ejector for ejecting the cigarettes singly from a hopper, providing a catch for releasably retaining the ejector in ejecting position with one end of the cigarette in engagement with an igniting element which is electrically energized by the ejector and also providing thermostatic releasing means for the catch to de-energize the igniting element and return the ejector to its original position.

A further object is to provide means for adjusting the thermostat to vary its catch releasing responsiveness.

An additional object is to provide a device of this character of simple and practical construction, which is neat and attractive in appearance, relatively inexpensive to manufacture and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which

Figure 1 is a bottom plan view,

Figure 2 is a vertical sectional view taken substantially on a line 2—2 of Figure 1,

Figure 3 is a horizontal sectional view taken substantially on a line 3—3 of Figure 4,

Figure 4 is a vertical sectional view taken substantially on a line 4—4 of Figure 2,

Figure 5 is a detail in side elevation of the thermostatic control mechanism, and

Figure 6 is a front elevational view.

Referring now to the drawings in detail, the numeral 5 designates an outer casing having a pair of attaching clamps 6 at its upper edge for securing the casing to the underside of an automobile instrument panel, or other suitable supporting structure (not shown). A clamping wing-nut 7 is also provided at one side of the casing. The casing is open at its front and rear ends and the bottom 8 is cut away at its front edge as shown in Figure 1.

A terminal 9 extends through the bottom 8 for connecting a circuit wire 10, the terminal being insulated from the casing by an insulation plate 11, and the inner end of the terminal is engaged by a leaf spring 12 embedded in the plate adjacent its center.

An inner casing 13 is slidably mounted in the outer casing 5 through the open front end of the latter, the inner casing including a bottom 14 through which a terminal 15 extends, the bottom end of the terminal 15 engaging the spring 12 to provide a circuit connection with the terminal 9. Leaf springs 16 also arranged in the bottom of the outer casing at each side are frictionally engaged by the inner casing to releasably retain the latter in position. From the terminal 15 a circuit wire 17 extends to a heating coil 18 positioned on the outer side wall of the inner casing 13 and inwardly of the side wall of the outer casing 5 as shown in Figures 3 and 4.

Slidably mounted beneath the hopper 19 in the upper portion of the inner casing 13 is an ejector 20 which includes a trough 21 in its forward end positioned beneath an opening 22 in the hopper to receive the cigarettes from the hopper. A handle 23 projects forwardly from the ejector for manually moving the same forwardly and outwardly of the casing and a coil spring 24 attached at one end to the ejector and at its other end to the inner casing 13 yieldably urges the ejector inwardly and rearwardly.

A spring switch arm 25 is connected at one end to the heating coil and has its free end disposed in the path of a pin 26 projecting outwardly from the side of the ejector and slidable in a slot 26' in the casing for grounding the circuit with the casing when the ejector is moved forwardly to thus energize the coil. The coil 18 and switch arm 25 are constructed as a unit for convenient replacing and is secured in position in the casing by an insulation block 43.

The ejector 20 is slidable on a horizontal partition 27 in the inner casing 13, said partition having a channel 28 therein within which is slidably positioned a rod 29 on the underside of the ejector. The channel is formed with an opening 30 and the rear portion of the rod 31 is adapted to register with the opening when the ejector is moved forwardly.

A catch 32 is pivoted at 33 to the casing 13 beneath the partition 27 and yieldably urged upwardly by a spring 34 for moving one edge through the opening 30 for engaging the end 31 of the rod to releasably retain the ejector in its forward position. The free end of the catch projects outwardly from the side of the inner casing through a vertical slotted opening 35 and is engaged under the free end of a bi-metallic thermostatic responsive bar 36 which has its opposite end coiled around the heating coil 18, as shown in Figure 5. Said coiled end of the bar is attached to one end of an adjusting bar 37 pivoted intermediate its ends as at 38, and having an arcuate slotted opening 39 in its other end

for receiving a set screw 40 to secure the bar 37 in its adjusted position for swinging the coil end of the thermostatic bar toward or away from the heating coil 18 to increase or decrease the time interval at which the thermostat responds to the heat. The expanding action of the thermostat will exert a pressure on the catch 32 at release the catch from the ejector.

The trough 21 moves forwardly between a pair of spring clips 41 projecting forwardly from the partition 27 and cooperates with a pair of arcuate rigid stops 42 for clamping the ejected cigarette in a fixed position with one end closely adjacent the heating coil when the ejector is moved forward, the clips 41 also retaining the cigarette when the ejector is returned to its original position. It will be noted that the clips 41 spring upwardly close to the stops 42 so that should the ignited cigarette burn until it reaches the nearest stop the clip will spring upwardly across the consumed end of the cigarette and extinguish the same.

From the foregoing it will be apparent that upon the forward movement of the ejector by the handle 23, the cigarette will be held in position for igniting by the coil 18, the coil being energized by the switch 25. After the coil remains energized a predetermined time the thermostatic bar 36 will release the catch 32 and the ejector will be moved rearwardly by the spring 24 and at the same time de-energizing the coil.

It is believed the details of construction and manner of operation of the device will be readily understood from the foregoing without further detailed explanation.

Having thus described the invention, what we claim is:

1. A cigarette dispenser and igniter comprising a casing having an electric coil mounted therein, a hopper in the casing, an ejector adapted to dispense the cigarettes singly from the hopper with one end of the cigarette held in close proximity to the coil, a catch releasably securing the ejector in dispensing position, a thermo-responsive element having one end exposed to the heat generated by the coil and its other end engaging the catch to releasably actuate the same, and spring means for retracting the ejector.

2. A cigarette dispenser and igniter comprising a casing having an electric coil mounted therein, a hopper in the casing, an ejector adapted to dispense the cigarettes singly from the hopper with one end of the cigarette held in close proximity to the coil, a catch releasably securing the ejector in dispensing position, a thermo-responsive element having one end exposed to the heat generated by the coil and its other end engaging the catch to releasably actuate the same, means for adjusting the exposed end of the element relative to the coil, and spring means for retracting the ejector.

3. A cigarette dispenser and igniter comprising a casing having an electric coil mounted therein, a hopper in the casing, an ejector adapted to dispense the cigarettes singly from the hopper with one end of the cigarette held in close proximity to the coil, a catch releasably securing the ejector in dispensing position, a thermo-responsive element having one end exposed to the heat generated by the coil and its other end engaging the catch to releasably actuate the same, a switch for the coil moved into circuit closing position upon a dispensing movement of the ejector, and spring means for retracting the ejector.

4. A cigarette dispenser and igniter comprising a casing having an electric coil mounted therein, a hopper in the casing, an ejector adapted to dispense the cigarettes singly from the hopper with one end of the cigarette held in close proximity to the coil, a pivoted catch bar, spring means yieldably urging the catch bar into engagement with a portion of the ejector to releasably secure the ejector in dispensing position, spring means adapted to retract the ejector, and a thermo-responsive element exposed to the coil and arranged to releasably actuate the catch bar.

5. A cigarette dispenser and igniter comprising a casing having an electric coil mounted therein, a hopper in the casing, an ejector adapted to dispense the cigarettes singly from the hopper with one end of the cigarette held in close proximity to the coil, a pivoted catch bar, spring means yieldably urging the catch bar into engagement with a portion of the ejector to releasably secure the ejector in dispensing position, spring means adapted to retract the ejector, a thermostat comprising a bar having one end coiled around the electric coil and its opposite end free and engaging the free end of the catch bar to releasably actuate the latter, and an electric switch operated by the ejector.

6. A cigarette dispenser and igniter comprising a fixedly attached outer casing having an electric terminal projecting through a wall thereof, a leaf spring in the casing and insulated therefrom, one end of the spring being free and spaced from the inner end of the terminal, an inner casing arranged for sliding movement into position in the outer casing, a contact on the inner casing having wiping engagement with the spring upon insertion of the inner casing to move the spring into engagement with the terminal, said spring frictionally retaining the inner casing in the outer casing, a hopper in the inner casing, an ejector operable in the inner casing to dispense cigarettes singly from the hopper, an electric coil connected to the contact for igniting the cigarette, a catch releasably retaining the ejector in dispensing position, spring means for retracting the ejector, a switch operated by the ejector, and a thermostat responsive to the heat generated by the coil and operatively engaging the catch to release the catch.

7. A cigarette dispenser and igniter comprising a casing having an ejector slidably mounted therein, a support for receiving the ejected cigarette, a movable contact member carried by the ejector, a spring switch arm having one end free and disposed in the path of the movable contact, an electric heating coil at the other end of the arm and disposed adjacent one end of the ejected cigarette and an insulation block for securing the switch arm and coil in the casing for removal as a unit.

CLYDE A. PRESCOTT.
LUTHER M. JACKSON.