Feb. 6, 1934. W. A. LLOYD 1,946,406

AUTOMATIC CIGARETTE LIGHTER AND EJECTOR

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Fig. 1.

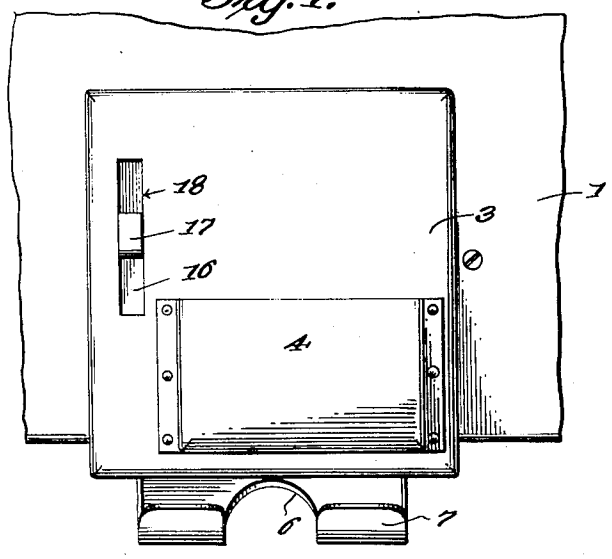


Fig. 2.

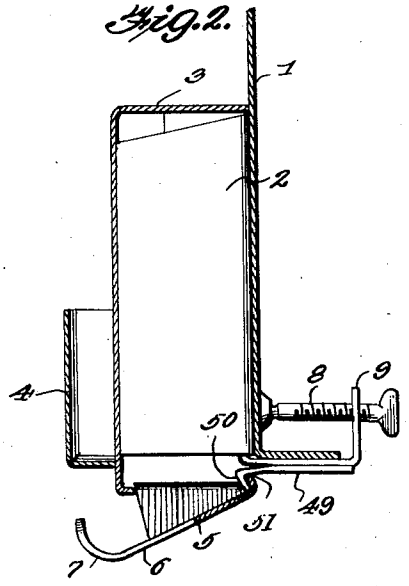


Fig. 3.

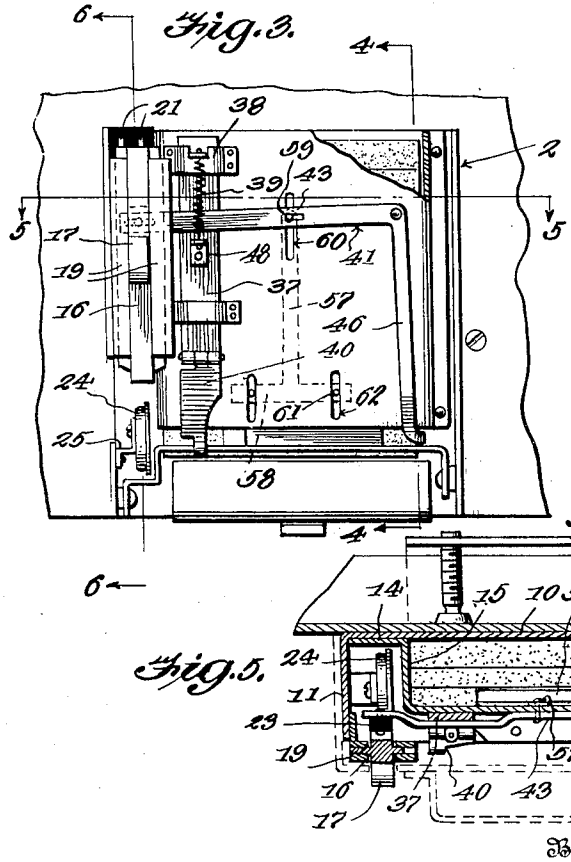


Fig. 4.

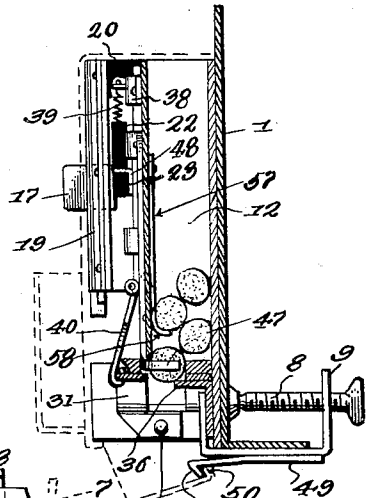


Fig. 5.

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Fig. 6.

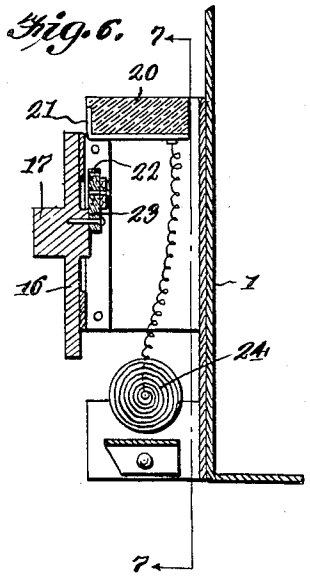


Fig. 8.

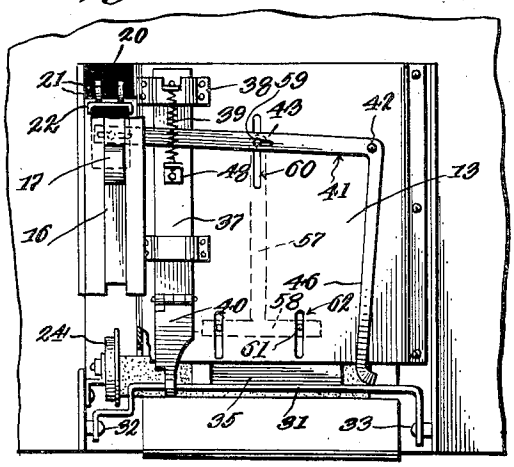


Fig. 9.

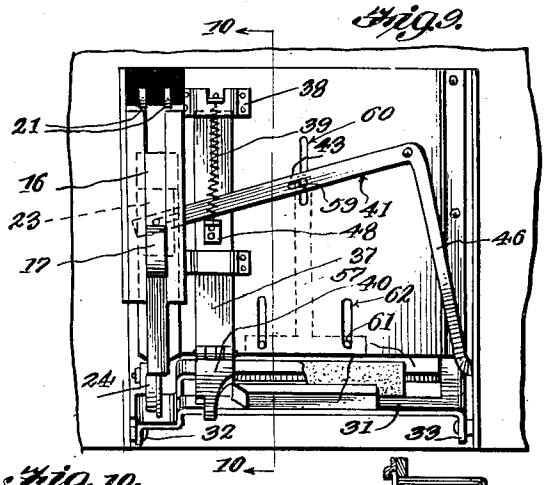


Fig. 7.

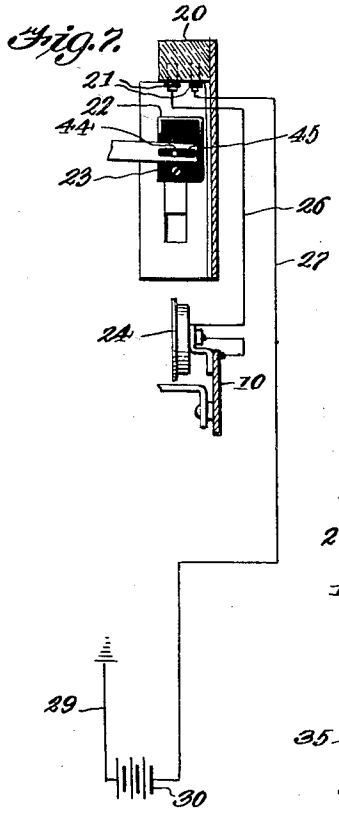


Fig. 10.

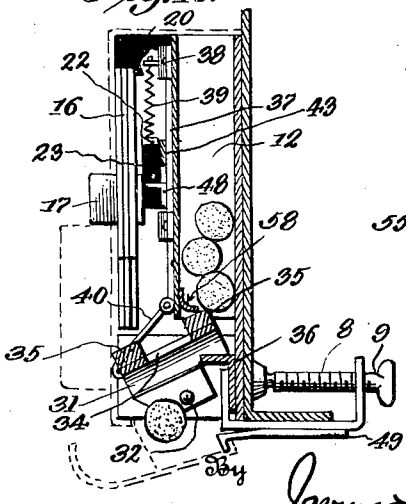
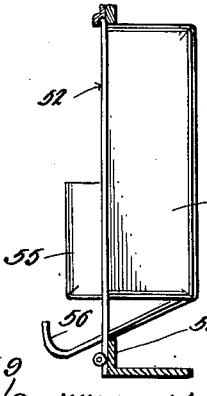


Fig. 11.



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UNITED STATES PATENT OFFICE

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AUTOMATIC CIGARETTE LIGHTER AND EJECTOR

William A. Lloyd, Baltimore, Md.

Application November 11, 1931
Serial No. 574,422

8 Claims. (Cl. 312—86)

This invention relates to a combination cigarette lighter and ejector, and has for its object the production of a simple and efficient means for lighting the cigarette and then ejecting the cigarette from the container, after the cigarette has been lighted.

Another object of this invention is the production of a simple and efficient cigarette lighter and ejector which may be mounted upon the dash of an automobile or other vehicle in such a manner as to permit the operator to throw the switch for lighting the cigarette and then eject the lighted cigarette from the container when opening the circuit and rendering the lighting means inoperative.

A still further object of this invention is the production of a simple mechanism for lighting and ejecting a cigarette from a container, the parts of which may be manufactured at a minimum cost.

With these and other objects in view, the invention consists in the novel construction, arrangement and formation of parts as will be hereinafter more specifically described, claimed, and illustrated in the accompanying drawings, in which drawings:—

Figure 1 is a front elevation of the casing for the lighting and ejecting mechanism;

Figure 2 is a vertical sectional view through the casing;

Figure 3 is a front elevation of the lighting and ejecting mechanism;

Figure 4 is a section taken on line 4—4 of Figure 3;

Figure 5 is a section taken on line 5—5 of Figure 3;

Figure 6 is a section taken on line 6—6 of Figure 3;

Figure 7 is a vertical sectional view through the circuit closing switch looking at the rear face thereof and showing the electric switch in diagram;

Figure 8 is a front elevation of the lighting and ejecting mechanism showing the various parts in the position for lighting the cigarette;

Figure 9 is a view similar to Figure 8, the parts being shown in the position for ejecting the cigarette;

Figure 10 is a section taken on line 10—10 of Figure 9; and

Figure 11 is a section of a modified form of the invention showing the ejecting and lighting mechanism projecting inwardly of the dashboard having the front face of the casing substantially flush with the dashboard.

By referring to the drawings, it will be seen that 1 designates the dash of any suitable or desired structure to which is secured the operating mechanism 2. A cover 3 fits over the mechanism 2 and carries on the front face thereof an ash tray 4. An ejecting chute 5 is formed on the lower end of the cover 3 having a notched finger receiving portion 6 intermediate the ends and upturned cigarette receiving fingers or jaws 7, in which the cigarette is held in a position ready to be lifted by the operator. The operating mechanism 2 may be secured to the dash 1 by means of the clamping screws 8 which pass through the upstanding flange 9, which flange extends under the dash 1 as shown in Figure 2, and is carried by the mechanism 2.

In fact the mechanism 2 may be secured in any suitable or desired manner to the dash without departing from the spirit of the invention.

The operating mechanism is indicated in general by the numeral 2, and comprises a frame 10 which is provided with outwardly projecting side flanges 11. A cigarette containing compartment 12 is provided through the medium of the auxiliary casing 13 which is provided with laterally extending flanges 14 formed along the edge of the side walls 15, these flanges 14 being secured in any suitable or desired manner to the inner face of the casing or housing 10.

An operating slide 16 having a finger-engaging lug 17 which projects through the aperture 18 formed in the cover 3, is slidably mounted upon the trackways 19 which are supported in any suitable or desired manner upon one of the side walls 11 of the casing or frame 10. A block 20 is carried above the trackways 19 and this block 20 carries a plurality of contact pins 21, which contact pins 21 are adapted to be engaged by means of the switch member 22 carried by the slide member 16. The switch member or bridge 22 is carried by a block 23 preferably secured to the rear face of the slide member 16, as shown clearly in Figure 6.

A lighting coil 24 is supported below the sliding member 16 upon a suitable bracket 25 and is electrically connected to one of the contacts 21 by means of a wire 26, the other contact being connected to a wire 27 which is electrically connected to a suitable source of electric supply or battery 30, one side of the battery 30 being grounded as is the custom with the electrical system of a motor vehicle, as clearly illustrated in Figure 7 of the drawings. The lighting coil 24 is also grounded upon the casing or frame 10, as shown in Figure 7. It will therefore be

seen that as the switch 22 carried by the sliding block 23 is moved into contact with the contact members 21, the lighting coil 24 will be lighted through the medium of the current which passes from the battery 30, through the wire 27, across the contact members 21, through the wire 26', to the lighting coil 24 and then to the ground. The entire casing is grounded when it is clamped on the dash by the screws 8.

As shown clearly in Figure 10 the trap or dumping door 31 is pivotally mounted upon the pivots 32 having the depending flanges 33 of the trap door or dumping gate 31 pivotally secured through the medium of the pivots 32 to the side walls or flanges 11 of the casing or housing 10. This dumping gate or trap door 31 is provided with a longitudinally extending slot 34, and a plurality of closure ribs 35 extended longitudinally of and upon either side of the slot 34 as shown clearly in Figures 9 and 10. A ledge portion 36 is arranged below the longitudinally extending aperture or slot 34 formed in the dumping gate or trap door 31, which is adapted to normally extend over the bottom of this longitudinally extending slot when the trap door or gate is in a closed position, such as is shown in Figure 4. When the trap door or gate is swung however, the slot will clear the ledge portion 36 and permit a cigarette to be discharged from the longitudinally extending slot 34 as shown in Figure 10.

Slidably mounted upon the front wall of the casing 13 is a dumping gate controlling member 37 which passes through the brackets 38. This dumping gate controlling member 37 is normally held in a raised position by means of a coil spring 39 which is anchored upon one of the brackets 38 and engages the sliding member 37, as shown in Figure 8. A hinged leaf 40 is secured to the lower end of the dumping gate controlling member 37 and the end of this hinged leaf is connected to the outer edge of the dumping gate 31, as shown clearly in Figures 4 and 10 of the drawings. As this dumping gate controlling member 37 is moved downwardly against the tension of the spring 39, the hinged leaf 40 will cause the gate 31 to be rocked outwardly to the position shown in Figure 10, thereby permitting a cigarette to pass from the compartment 12 through the slot 34 and drop upon the chute 5 along which it will roll until it rests upon the fingers 7 from which it can be easily lifted.

The operation of the dumping gate controlling member 37 is controlled by means of a bell crank lever 41 which is pivotally mounted at 42 upon the casing 13, and the upper arm 43 of this bell crank lever 41 projects across the face of the dumping gate controlling member 37 and is pivotally connected to the sliding block 23 by means of a pin 44 which passes through the slotted end 45 of the arm 43. The bell crank lever 41 also comprises a depending pusher arm 46 which is provided with a rearwardly curved end 47 which extends under the casing 13 and is adapted to engage one end of a cigarette and push the opposite end of the cigarette firmly against the lighting coil 24 as shown in Figure 8. Referring to this figure it will be seen that as the switch 22 is closed or moved upwardly, the bell crank lever will be swung into position to cause the pushing finger 47 to engage one end of the cigarette and force the opposite end of the cigarette into engagement with the lighting coil 24. Then after the cigarette has been lighted, the finger-engaging portion 17 of the slide 16 may be pushed downwardly in the slot 18 and this movement will swing the bell crank lever 41 so as to move the pushing finger 47 out of contact with the cigarette which it has engaged, and at the same time the upper arm 43 of this bell crank lever will engage the bracket 48 of the dumping gate controlling member 47 to which the lower end of the spring 49 is attached and push the same downwardly thereby forcing the hinged leaf 40 outwardly and rocking the dumping gate 31 to the position shown in Figure 10. In this way, the cigarette will be ejected and will be dropped in a lighted condition upon the chute 5 and roll forwardly upon the receiving fingers or jaws 7.

As shown in the drawings, the cover 3 may be held in position in any suitable or desired manner but for purpose of this illustration a spring latch 49 has been employed having a tongue 50 which engages the flange 51 of the cover 3, for detachably securing the cover in position. By releasing the spring 49, the cover may be readily removed from the mechanism for the purpose of repair, or for the purpose of re-loading the compartment 12 with cigarettes.

In Figure 11, there is shown a modified form of the invention wherein the outer face of the housing 52 extends substantially flush with the dash 53, in this structure the dash being cut-out to provide room for the mechanism 54, as illustrated. A suitable ash-tray 55 is mounted upon the front of the housing just above the cigarette receiving fingers 56.

From the foregoing description it will be seen that a very simple and efficient means has been produced for lighting the cigarette and firmly holding the same in contact with the lighting coil as the operating slide is moved to an upwardly extending position in contact with the contact pins 21. By waiting a few seconds the cigarette will be lighted and by forcing the finger engaging members 17 downwardly and moving the slide 16 downwardly, the bell crank lever 41 will be rocked, releasing the cigarette from contact with the lighting coil, this movement also rocking the dumping gate and permitting the cigarette to drop upon the receiving fingers or jaws 7. As shown in the drawings, the longitudinally extending closure ribs 35 will constitute a pocket for holding the cigarette which is being lighted and this permits only one cigarette to drop into lighting position where the same will be firmly engaged by the pushing finger 47.

For the purpose of lifting the cigarettes within the compartment 12 and causing the cigarettes to be raised within the compartment to facilitate the feeding of the cigarettes into the dumping gate, there is provided a lifting arm 57 which is provided with a transversely extending lifting hook 58, which lifting hook 58 is adapted to fit under the cigarette and lift the same for feeding the cigarette, as illustrated in Figure 4, into the dumping gate. The lifting arm 57 is connected to the bell crank lever 41 by means of a suitable securing pin 59 which passes through the vertically extending slot 60. The transversely extending lifting hook 58 is guided in its vertical movement through the medium of the pins 61 which pass through the parallel slots 62, as shown in Figure 3, these slots 62 being formed in the front wall of the compartment 12. As the finger engaging portion 17 is lifted for the purpose of lighting the cigarette lighter, the lifting finger or arm 57 will be raised, thereby agitating the cigarettes within the compartment 12 through the lifting action of the hook 58. As

soon as the finger member is forced downwardly or released, the lifting finger 57 will assume its normal position. This action will prevent the cigarette from jamming within the container and prevent the cigarette from failing to properly feed through the dumping gate.

From the foregoing description it will be seen also that the ledge portion 36 by extending under the longitudinally extending aperture or slot 34 formed in the dumping gate, will cause the cigarette to be held from dropping out through the bottom of the container until the dumping gate has been rocked through the operation of the slide as heretofore described.

It should be further understood that certain detail changes in the mechanical construction may be employed without departing from the spirit of the invention so long as these changes fall within the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. A cigarette lighting and ejecting mechanism comprising a casing, a lighting coil, a switch having an actuating member movable into and out of position to close the switch, an electric circuit connecting said switch and coil whereby said coil will be lighted as said switch is closed, means associated with and actuated by the actuating member of said switch for forcing a cigarette into engagement with said lighting means as said actuating member is moved in a direction to close the switch, and means actuated by the last mentioned means for ejecting a cigarette when the actuating member is moved in a direction to open the switch.

2. A combination cigarette lighting and ejecting means comprising a container, a switch having an actuating member movable into and out of position to close the switch, a lighting coil substantially aligned with the bottom of said container, means electrically connecting the switch with said coil, means operated by the actuating member of said switch and prior to ejection of a cigarette for forcing a cigarette into engagement with said lighting means when the switch is closed, and other means controlled by the last mentioned means for ejecting a lighted cigarette from the container after the switch has been opened.

3. A cigarette lighting and ejecting means comprising a container having an outlet, a lighting coil adjacent the outlet, an actuating member slidably mounted in said container, insulated contacts, a bridge for said contacts carried by said actuating member, conductors connecting said contacts with said lighting coil for energizing said lighting coil when the contacts are bridged, a bell crank lever having one arm engaging said actuating member and its other arm constituting a cigarette engaging arm for forcing one end of a cigarette at the outlet of the container into engagement with said lighting coil as the actuating member is moved in one direction, a trap door for controlling passage of a cigarette through the outlet, and means operable from said bell crank lever for moving said trap door to an ejecting position when said actuating member is moved in an opposite direction beyond a normal position.

4. A cigarette lighting and ejecting means comprising a casing, a plurality of trackways, an actuator slidably mounted in said trackways, insulated contacts in said casing, a bridge carried by said actuator for engaging the contacts when the actuator is moved in one direction out of its normal position, a cigarette lighting means, means electrically connecting the lighting means in circuit with the contacts, means connected to said actuator for forcing a cigarette into engagement with said lighting means when said actuator is moved in a direction to bridge the contacts, and means actuated by the last mentioned means for ejecting the lighted cigarette when the actuating means is moved in an opposite direction beyond its normal position.

5. A cigarette lighting and dispensing device comprising a housing, a dumping gate rockably mounted upon said housing and adapted to eject cigarettes therefrom, a dumping gate controlling slide mounted upon said housing and provided with a hinged leaf connected with said dumping gate whereby said dumping gate will be rocked outwardly as said slide is moved longitudinally in one direction, means for normally holding the slide in a retracted position, a lighter, a lever for moving a cigarette into engagement with said lighter before being ejected when the lever is moved in one direction, said lever having a portion for engaging said slide and moving the slide to a position permitting dumping of the gate when the lever is moved in an opposite direction, and an actuator for moving said lever in one direction to force the cigarette against the lighter and in an opposite direction for moving the lever into position to impart movement to the slide and actuate the gate to eject the cigarette.

6. A device of the class described comprising a housing provided with a reservoir open at its bottom, a dumping gate positioned below the open bottom of the reservoir and provided with a longitudinally extending pocket for receiving the article to be dispensed from said reservoir, a sliding member mounted upon said housing and provided with a hinged leaf connected to said dumping gate for rocking said dumping gate outwardly as said slide is moved longitudinally of said casing in one direction, a lighter, a bell crank lever having a cigarette-engaging arm and an operating arm extending across said sliding member, an actuator movable in opposite directions out of a normal position and engaging the operating arm to move the lever in a direction to force a cigarette toward the lighter when moved in one direction, and an abutment carried by said sliding member and engageable by the operating arm of the bell crank lever when the actuator is moved in an opposite direction to cause the gate to move to an ejecting position.

7. A device of the class described comprising a casing, said casing being provided with a cigarette containing compartment, a vertically extending arm slidably mounted within said compartment and provided with a cigarette lifting hook at the bottom end thereof for lifting cigarettes and facilitating the feeding of a cigarette from said compartment, a dumping gate for receiving the cigarette located at the bottom of said compartment and adapted to feed cigarettes therefrom, actuating means including a sliding member engaging said gate, a lighter, and a lever movable in one direction for shifting a cigarette into engagement with said lighter and movable in an opposite direction to impart movement to the sliding member in a direction to move the gate to a discharging position, said arm being connected with said lever and moved thereby when the lever is moved.

8. A device of the class described comprising an operating lever, a casing for supporting said operating lever, said casing defining a cigarette

containing compartment, a lifting arm slidable vertically in said compartment and connected to said lever and adapted to be raised and lowered thereby, said lifting arm being provided with a transversely extending cigarette lifting hook, guiding means engaging said arm and hook for guiding the vertical movement of said arm and hook within said compartment, a dumping gate for feeding cigarettes from said compartment, a sliding member connected with said gate and yieldably held in a raised position to normally retain the gate closed, said sliding member being moved downwardly by said lever to permit movement of the gate to a discharging position when the lever is swung downwardly and returning to a raised position to close the gate when the lever swings upwardly, and an actuating member for controlling movement of the lever.

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