

April 16, 1935.

W. JAY

1,997,796

CIGARETTE LIGHTER AND DISPENSER

Original Filed Nov. 20, 1930 4 Sheets-Sheet 1

Fig. 1.

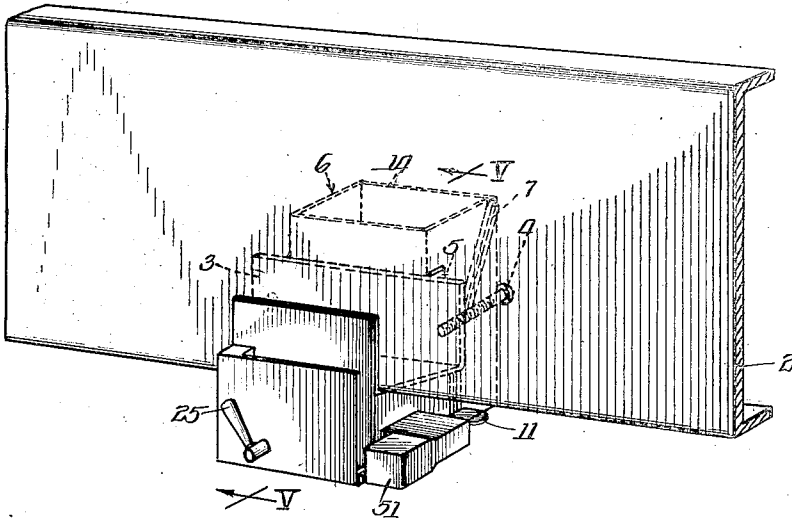


Fig. 2.

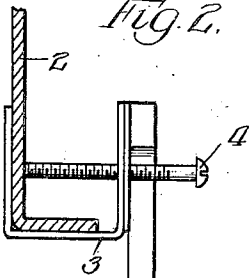


Fig. 3.

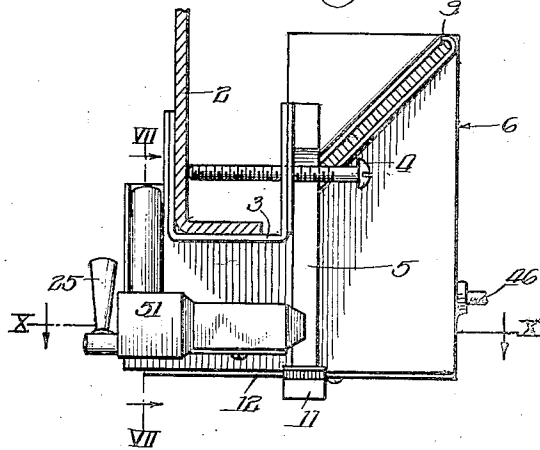
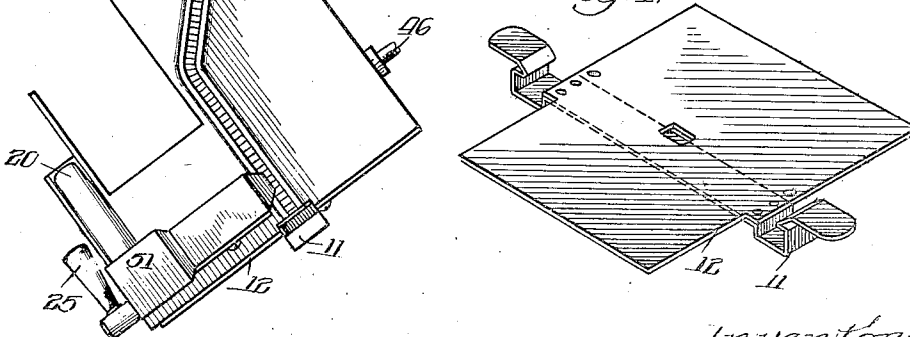


Fig. 4.



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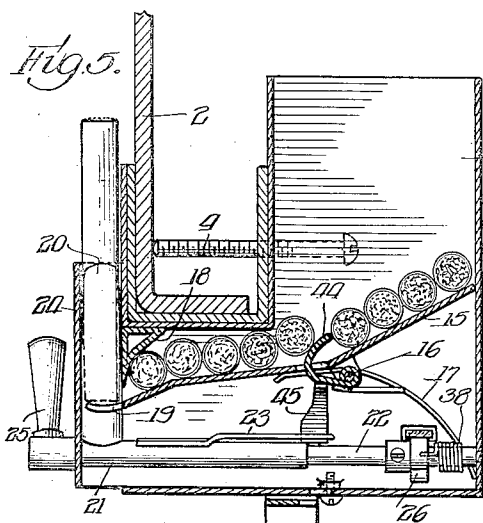
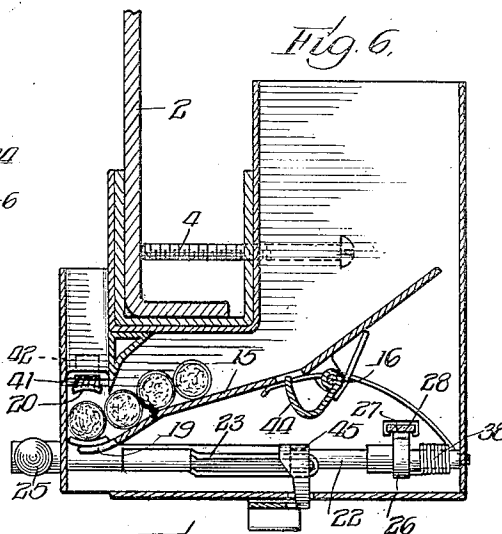
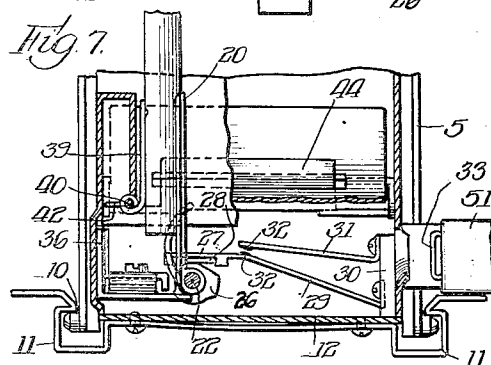
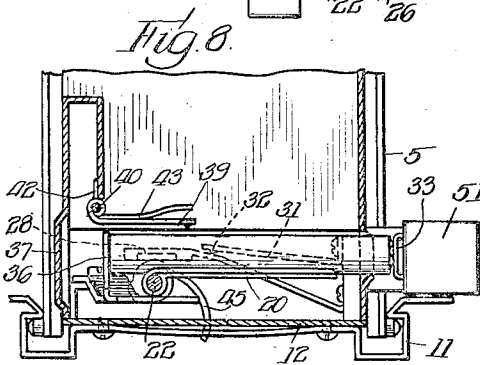
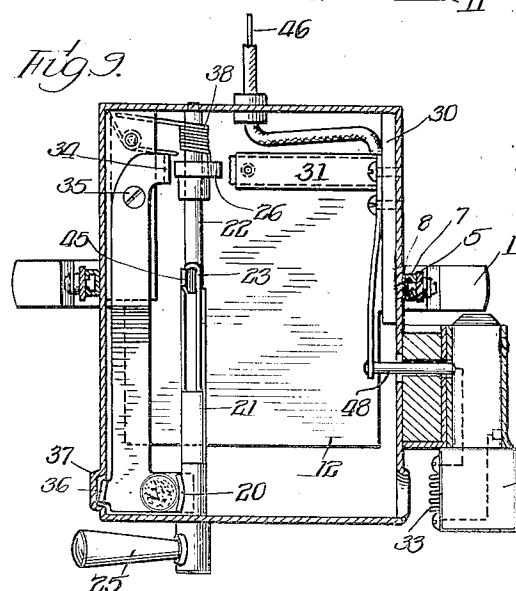
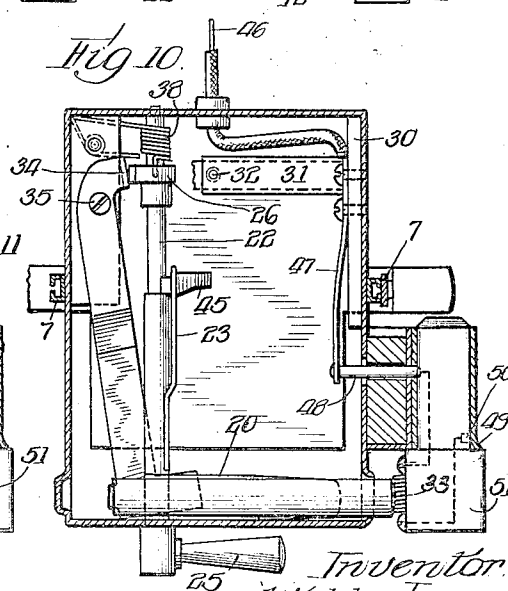
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CIGARETTE LIGHTER AND DISPENSER

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CIGARETTE LIGHTER AND DISPENSER

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Fig. 11.

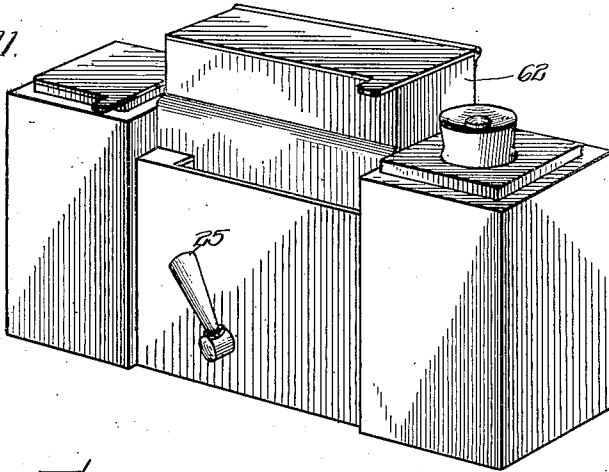


Fig. 12.

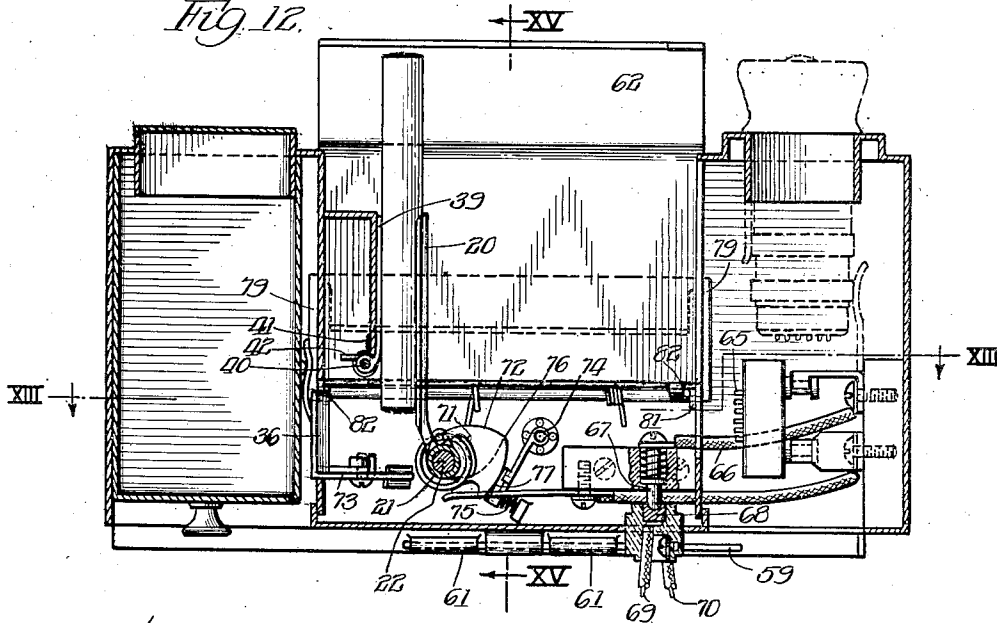
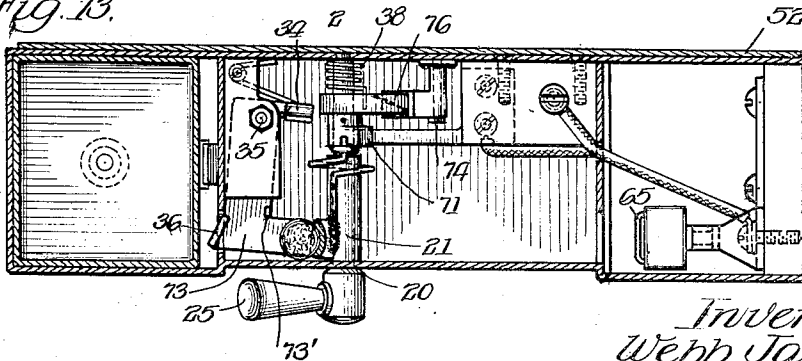


Fig. 13.



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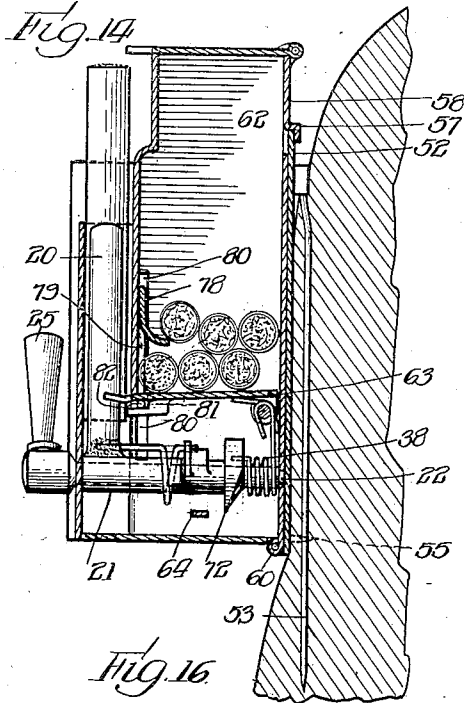
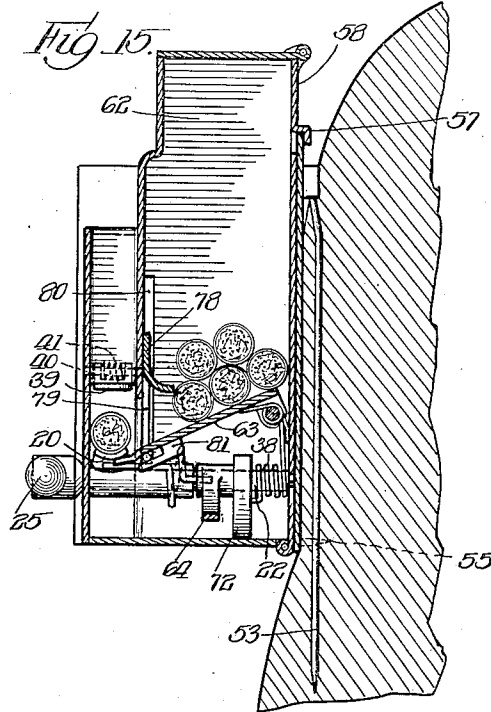
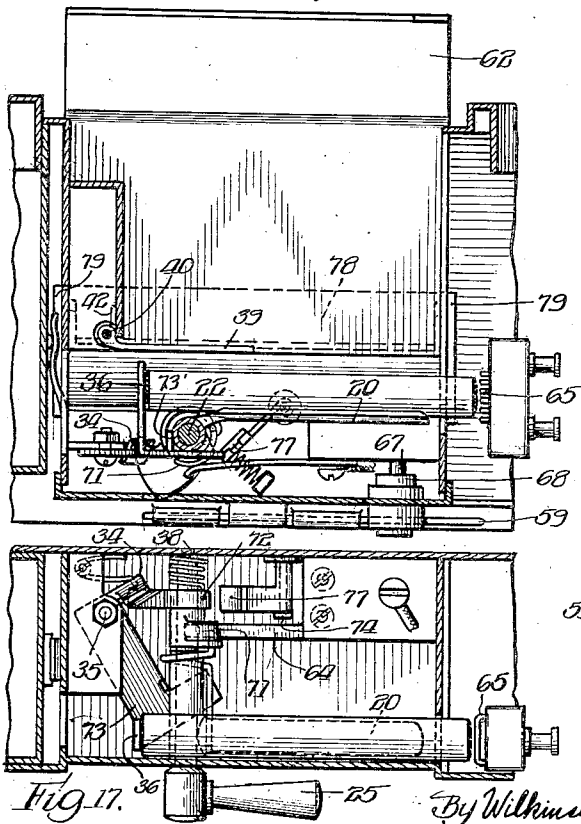
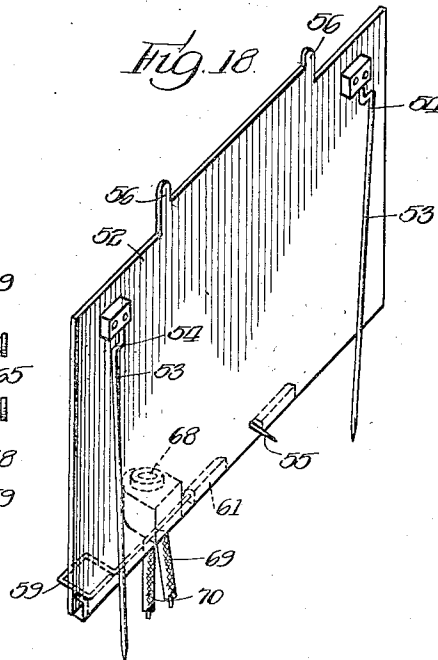
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CIGARETTE LIGHTER AND DISPENSER

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UNITED STATES PATENT OFFICE

1,997,796

CIGARETTE LIGHTER AND DISPENSER

Webb Jay, Miami Beach, Fla.

Application November 20, 1930, Serial No. 496,849

Renewed August 29, 1934

11 Claims. (Cl. 312—86)

This invention relates to cigarette lighters and dispensers, together with the racks therefor, and is illustrated as embodied in forms especially suitable for use in automobiles, though in most of its aspects the invention is equally suitable for desk sets and the like.

The apparatus has been shown in two forms, one for attachment to a dashboard of an automobile and the other for attachment as by long hooks to automobile or other upholstery. In both forms, the cigarette is removed from a reservoir, lit without suction, and is then rotated to project its end upwardly to a position of ready accessibility. The lighting without suction, is accomplished by holding the cigarette adjacent to but out of contact with the heating element, in a position where it gets plenty of air.

One object of the invention is to provide a process and apparatus for satisfactorily lighting cigarettes without the aid of suction, or other positive air currents.

Another object of the invention is to provide apparatus for removing cigarettes from a container and after lighting them shifting them to a position of ready accessibility.

An additional object of the invention is to provide suitable racks for securing the cigarette dispensing and lighting units in desirable places on automobiles and in a conveniently detachable or semi-detachable manner.

With these and various other objects in view, the invention may consist of certain novel features of construction and operation as will be more fully described and particularly pointed out in the specification, drawings and claims appended hereto.

In the drawings, one embodiment of my invention has been illustrated in Figures 1 to 10, and another in Figures 11 to 18 respectively.

Figure 1 is a perspective view illustrating the appearance of the first form attached to an automobile dashboard;

Figures 2 and 3 are side elevations of the apparatus shown in Figure 1, showing it in position for filling and for use, respectively;

Figure 4 is a perspective view showing the construction of the bottom plate and retaining clips;

Figures 5 and 6 are views taken mainly through the line V—V of Figure 1, showing the operative parts of the device in two different positions;

Figures 7 and 8 are sectional views taken through the line VII—VII of Figure 3, showing the working parts in positions corresponding to those shown in Figures 5 and 6 respectively;

Figures 9 and 10 are sectional views taken through the line X—X of Figure 3, also showing the parts in the same two positions;

Figure 11 is a perspective view illustrating a modified form of the invention;

Figure 12 is a vertical section of the apparatus shown in Figure 11, looking rearwardly;

Figure 13 is a horizontal sectional view taken on the line XIII—XIII of Figure 12;

Figures 14 and 15 are sectional views taken on the line XV—XV of Figure 12;

Figure 16 is a fragmentary sectional view similar to Figure 12, but showing the parts in a different position;

Figure 17 is a fragmentary view similar to Figure 13 but showing the parts in position as shown in Figure 16; and

Figure 18 is a perspective view showing the rack to which the apparatus is attached.

In both of the illustrated species of the invention, the turning of a single handle removes a cigarette from the reservoir, connects a heating element to a source of electricity, shoves the cigarette adjacent to but not in contact with the heating element, and after lighting turns the cigarette end up into a position of ready accessibility. However, as each of the devices differs in some particulars, the form shown in Figures 1 to 10 will be described first.

To the dashboard 2 of an automobile, or to any other suitable support, a bracket 3 may be secured as by a screw 4. Projecting downwardly from the bracket, are the arms 5 which are spaced apart sufficiently to insert between them the cigarette dispenser unit 6. On the sides of the dispenser are the grooved and flanged tracks 7 in which slide suitable keys 8 which are attached to the arms 5, the upper end of the track 7 being closed as at 9 so that the unit may be suspended by this track from the keys 8, as shown in Figure 2. When the reservoir 14 of the dispenser has been filled, it is slid upwardly on the arms 5, guided by track 7 to the position shown in Figure 3. On the outside of the arms 5 are provided retaining pegs 10 and to cooperate with these there is provided a spring clip 11 which is secured to the bottom plate 12 of the lighter. A mere upward pressure of the lighter unit presses the clips 11 over the pegs 10 to retain the unit in the position shown in Figure 3. The clips 11 are strong enough, and together with the pegs 10 are so shaped, as shown in Figure 7, that the unit is held in place except when the spring clips 11 have first been sprung downwardly.

There are of course many devices whereby the

unit may be removably or semi-removably held in place. The one shown is merely the preferred form. The unit may of course be used entirely independently of an automobile, such as one made into a desk stand.

For use in an automobile, however, the unit includes a reservoir 14 adapted to lie behind the dashboard. The bottom of the reservoir is formed by the tilting plate 15 which is suitably pivoted as on the shaft 16 and is normally forced to the position shown in Figure 5, as by spring 17. The front end of the bottom plate 15 either contacts the lip 12 or comes sufficiently close thereto to prevent the passage of the cigarette between the lip and the bottom plate. The bottom plate 15 also has a forward extension or lug 19 by which the bottom member may be tilted to the position shown in Figure 6, to cause a cigarette to roll out from the reservoir 14. In tilting the bottom 15, the extension 19 is engaged by a tray 20 which is secured to and rotates on a sleeve 21. The sleeve 21 mounted on the shaft 22 is yieldingly connected therewith and moved thereby through a spring 23. The shaft 22 extends through the front 24 of the cigarette dispensing unit and bears a handle 25 by which the mechanism is operated. When the handle 25 is turned clockwise, as seen from the front (Figure 1) the shaft 22 is correspondingly rotated, and the sleeve 21 is also rotated sufficiently to move the tray 20 to the position shown in Figures 6 and 8, at which position the outlet of the cigarette reservoir has been opened by the tilting of the bottom plate 15, and the cigarette rolls on to the tray 20.

There is also located on the shaft 22, a cam 26, one suitable shape of which is best shown in Figure 7 and which may be of insulating material if desired. Engaging the cam 26, but insulated therefrom by a block 28, is an extension 27 carried by a contact arm 29 which is mounted on a suitable insulating block 30 secured to the side of the unit. An additional contact arm 31 is similarly secured, as shown best in Figure 7, so that the contact points 32 with two levers are normally out of contact. When the handle 25 is rotated clockwise, the cam 26 raises the arm 29 so that the contacts 32 meet. The arms 29 and 31 are connected by suitable circuits hereinafter described, to a source of current and to a heating element 33. This connection may be completed either prior to the opening of the reservoir 14 or after that opening in the movement about to be described.

When the tray 20 has lowered the bottom plate 15 to the position shown in Figure 6, its further movement is prevented when said plate strikes the sleeve 21. The handle 25 of the shaft 22 may be rotated further, the differential movement being permitted by spring 23. During this continued movement of the cam 26, the high point of the cam strikes the lever 34 and rotates it about a pivot 35 suitably supported by the wall of the unit. The forward end of the lever 34 bears an upright 36 normally held out of the way in recess 37 by a suitable spring as illustrated. However, when the tray 20 has been lowered and has received the cigarette, the cam 26 rotates further and operates the lever 34 so that the upright 36 meets the end of the cigarette and extrudes it to the right, to the position shown best in Figure 8.

The dimensions of the parts are such that even when the handle 25 is turned all the way down, a cigarette is not pushed quite into contact with the heating element 33. It has been formerly considered impossible to light a cigarette satis-

factorily without either drawing air through the cigarette or positively causing a blast of air onto it, but by holding the cigarette in a position slightly spaced from the element, the cigarette may get plenty of air so that if the element is sufficiently hot the cigarette will be satisfactorily and completely lit. By completely lit is meant sufficiently lit to continue burning for a reasonable time until it can be put into the mouth, or even longer when conditions are such that it would continue burning longer if it had been lit with the aid of suction. In other words, the cigarette has been completely lit, when it has been brought to a state of lasting combustion.

When the cigarette has been thus lit, the handle 25 in the shaft 22 is turned back to its normal position by means of spring 38. This motion of shaft 22 acting through spring 23 causes the tray 20 to swing to the vertical position shown in Figures 5 and 7, raising the cigarette end up. This projects the cigarette above the front 24 of the unit, so that it is in a position of ready accessibility.

In order to extrude the cigarette further, and to prevent its being thrown completely out of the tray, if the handle 25 is released suddenly, a pivoted lever 39 is provided which is mounted on a suitable spindle 40. A coil spring 41 is provided which normally urges the lever 39 downwardly to the position shown in Figure 8, at which position it may be stopped by any suitable means, such as the wing 42. The outer or upper end of the lever 39 is formed with a slight rib thereon to engage the cigarette more firmly. As the tray 20 starts turning to the vertical position under the influence of the spring 38, the cigarette almost immediately hits the lever 39 which engages a cigarette and causes it to slide outwardly and upwardly upon the tray 20, as the tray 20 is rotated vertically. This causes the cigarette to protrude further than it would if it were not for the lever 39, for in that case a cigarette would drop down to about the level of the shaft 22, or until it meets some part of the mechanism on which it would rest.

To prevent the cigarette from coming to such a sudden stop at the top of its movement as to jar it objectionably, a spring 43, or other cushion, is provided as shown best in Figures 7 and 8.

In order that the cigarettes may not become jammed in the reservoir 14, an agitator 44 is provided which may be pivoted about the shaft 16 in such a manner that it will normally swing to the position shown in Figure 6. Provided on the shaft 22 is an agitator cam 45 of such shape and location that when the shaft 22 returns to its normal position the cam 45 will meet the agitator 44 and raise it to the position shown in Figure 5. This will definitely separate any cigarettes which have been jammed together in an effort to pass through the opening adjacent the agitator, as well as dislodge single cigarettes which have been caught against the walls. When the handle 25 is turned clockwise the agitator 44 drops to the position of Figure 6 by its own weight. The cigarettes are further agitated by the tilting of the bottom member 15, so that it is almost impossible for the cigarettes to fall into such a position that they will not be straightened around to the proper feeding position by the repeated turning of the handle 25.

The electrical connections of the device are comparatively simple. A single wire 46 is led into the unit at a suitable point and connected to the contact arm 29. Another conductor 47 is

connected to the other contact arm 31 and also to the connector 48, which makes a suitable connection with the heating unit 49. Within the heating unit, a current passes to and through the heating element and back to a suitable contact 50 which grounds the return circuit. As illustrated, the heating unit 51 may be withdrawn from its socket and passed around as a lighter. It would of course first be heated as by turning handle 25 far enough to complete the circuit without turning it far enough to extrude a cigarette. The spring 23 aids in this, and also permits the cam to turn back and break the heater circuit, even when the tray is caught down.

The embodiment of the invention shown in Figures 11 to 18 is quite similar in operation, and in fact the operating features of the two embodiments are interchangeable. This second form however is designed for attachment to the upholstery of an automobile in the manner best illustrated in Figure 14. A back plate or rack 52 is provided preferably with long pointed pins 53. These pins are shaped with shoulders 54 at their tops and preferably with the points spaced slightly closer together than are the outer edges of the shoulders 54, so that when the pins are stuck into the upholstery they will pierce holes which are close enough together so that as the pins are pushed all the way down, they will first stretch the fabric and then let it contract over the shoulders 54 to hold the pins in place. An additional short pin 55 is provided in a convenient location for being pressed through the fabric perpendicularly when the back plate is in the proper position. This pin 55 is preferably rigid with the rack, and held in position by the resilience of pin 53. Of course, if desired, the rack may be screwed in place when there is a suitable support.

The rack is preferably provided at its top with projections 56 between which may be inserted a hook or hooks 57 mounted on the back 58 of the cigarette dispensing and lighting unit. The bottom of the unit may be held in place as by the retaining wire 59 which may be inserted through suitable loops 60 formed in a back 58 and corresponding loops 61 formed in the rack 52.

The reservoir 62 is normally maintained closed by the bottom plate 63, which is lowered for the removal of the cigarette in a manner similar to that explained in the foregoing description of the first form of the invention.

In place of the pair of contact arms 29 and 31, I have in this modification shown but a single arm 64. Current is supplied to the heating element 65 through a wire 66 which connects with the spring detent 67. This detent completes a connection with contact 68 which is connected to the battery by a suitable wire 69. An additional wire 70 connects the backing plate 52 and through it the metal frame of the dispenser with the frame work of the car, for a ground return circuit. When the tray 20 is rotated to the position shown in Figures 15 and 16, contact cam 71 rotates into the position shown in Figure 16 to complete the circuit by contact with the contact arm 64. Though the cam 71 may be mounted on the sleeve 21, it has been shown as mounted on the shaft 22. If the tray 20 is caught down, as by a cigarette in a cross position, the spring 23' will permit the cam 71 to be rotated sufficiently toward its normal position to leave contact arm 64 and break the circuit. This will avoid any danger from the heating element, and also prevent any fear of such danger. Since the contact

71 is grounded either by contact with the frame or through a suitable grounding wire the contact of the cam with the contact arm 64 completes the circuit through the heating element 65. The heating element 65 is attached by spring clips as illustrated so that it may be easily replaced.

As plenty of air is necessary to the suitable operation of the lighter, the casing of the unit is preferably left open at suitable places, as in the bottom below the heating element, and between the heating element and the space wherein the cigarette is swung to a vertical position.

An additional cam 72 is mounted on the shaft 22 for operating the extruding lever 73. The cam 72 is so shaped as to rotate the extruding lever 73 sufficiently to extrude the cigarette to a position adjacent to but out of contact with the heating element 65 and no further.

In order that the tray 20 when released will not fly back too fast, a brake lever 74 may be pressed against the cam 72 as by a spring 75 which may be arranged for adjustment without taking the unit apart.

Cam 72 is preferably provided with a high portion 76 at such a point on the cam that the brake lever 74 will have its greatest braking effect when the tray 20 is in the middle of its stroke. Thus when the tray is just beginning its upward movement, the braking will be small enough to let the tray get started, but it will then increase to prevent excess speed, and greatly decrease near the end of the stroke where the tray operating spring 38 is losing its tension. When such a brake or any other suitable retarding means such as a dash-pot is provided, the lever 28 need no longer be provided with a special cushioning spring. The brake lever 74 may be provided with a brake shoe 77 of a high coefficient of friction. In Figure 7 the block 28 may be made of a high friction material to increase its incidental braking effect.

In Figures 14 and 15 is illustrated a modified form of agitating means. The agitator 78 is provided in the reservoir 62 and is suitably operated as by the legs 79 which may be integrally formed and guided by recesses 80 in the sides of the dispensing unit. Also extending inwardly through these grooves 80 and resting on ears 81 are feet 82 formed on the legs 79. Ears 81 are located on the under side of the bottom plate 63, so that feet 82 and the agitator 78 are moved upwardly by ears 81 and downwardly by the bottom plate 63. When the bottom plate 63 is tilted by the tray 20 the agitator 78 is pulled down to the position shown in Figure 16, so that only one cigarette is permitted to drop out of the reservoir at a time. When the bottom plate is released, the agitator is shoved upwardly sufficiently to release any cigarettes which are jammed to permit a cigarette to roll between the agitator and the bottom plate, as shown in Figure 14.

The apparatus illustrated in Figs. 11 to 18 includes certain additional features which should be briefly described. The ash receptacle on the left is best shown in Figure 12 in which it can be seen that the inner ash tray can be readily removed, but is normally held in place by a spring clip.

On the right is mounted a hand lighter which may be heated by pressing the button on top and may then be removed and passed around.

The use of both the modifications is extremely simple. The reservoir is filled with cigarettes, removing the dispensing unit from the rack for this purpose if desired. When the unit is ready

for operation, the handle 25 is turned clockwise with a single motion, which removes the cigarette from the reservoir, connects the electricity to the heating element, and moves the cigarette to a position adjacent to but out of contact with said element. When the cigarette has been completely lit, the handle 25 is allowed to turn back to its original position, during which movement the tray 20 extrudes the cigarette with its end uppermost to a position of ready accessibility. The smoker can just push the handle down for a few seconds, and then take the cigarette out and smoke it. This simplicity is a luxury at any time, either at a desk or in an automobile, but in an automobile it is also a safety feature, for it need not appreciably divert the driver's attention.

There are of course almost an indefinite number of changes which may be made in this invention. Though it is impractical and useless to mention them all, a few may be described by way of example.

A thermostatic or other timing device may be provided so that when it is desired to light a cigarette the handle may be pushed to the lower position and released, the parts being retained in a position for lighting a sufficient time, and then automatically released. The thermostat may comprise an arm of the well known thermostatic metal (really a pair of metals), and is preferably arranged so that when heated by its own resistance, it flops from one catch to another, but does not release the parts completely until it is again cool.

Instead of sliding a cigarette longitudinally with respect to the tray, the lighter may be moved or may be located at such a position that when the tray is at any particular angle, the cigarette is in the proper position for lighting without longitudinal movement. Either with or without the longitudinal movement, the tray may be of the sliding kind to receive a cigarette at one position, move it to a second position for lighting and to a third position for releasing the cigarette.

There may be various devices for turning the cigarette to a vertical position, or some other position of ready accessibility. Examples of such devices are cams or relatively moving lugs. Also if desired, the cigarette may be moved so as to extrude its unlighted end instead of the lighted end. If it is wished to use matchless cigarettes, a suitable abrasive surface may be located in the path of movement of the cigarette and the heating element omitted.

Instead of having the apparatus designed to move the cigarette relatively toward the heating element but adjusted not to move it quite in contact therewith, a space may be provided adjacent the heating element so that the cigarette may contact with the spacer and be properly spaced from the heating element. In that event, delicate or exacting adjustments or calculations may be avoided by providing resilient means for pressing the cigarette against the spacer, or by letting it fall against the spacer by gravity. In any event, the spacer should be of very small area so as not to materially decrease the amount of the cigarette end which is exposed to the air. Such a spacer could take the form of a fine wire relatively unaffected by heat, or a fairly sharp edged projection of insulating material from the heating unit.

It is to be understood that I do not wish to be limited by the exact embodiments of the device shown, which are merely by way of illustration

and not limitation, as various and other forms of the device will of course be apparent to those skilled in the art without departure from the spirit of the invention or the scope of the claims. In the claims the term cigarette is always used as merely a convenient term to designate any smokable object. As the device could obviously be altered in dimensions to accommodate cigars the claims are not to be considered as limited to apparatus for dispensing and lighting cigarettes even where that word alone is used.

I claim:

1. Apparatus for handling cigarettes including a support for a single cigarette, means mounting the support at one end for rotation about a given axis from a horizontal to a vertical position, a lever mounted above the horizontal position of the support for rotation about a separate axis and means resiliently pressing said lever toward the support; the lever axis being above and horizontally offset from the axis of the support and beyond said support whereby when the support is raised to a vertical position, and with such raising, said lever will frictionally engage a cigarette on the support and cause the same to relatively slide up the support.

2. Apparatus for handling cigarettes including a support for a single cigarette, means mounting the support at one end for rotation about a given axis from a horizontal to a vertical position, a vertical wall beyond the axis of the support and spaced sufficiently from the latter when vertical to freely receive a cigarette therebetween, a lever pivoted at its lower end on said wall above the support pivot and movable between horizontal and vertical positions; said lever when horizontal being spaced from the support a distance greater than the diameter of a cigarette, means preventing movement of the lever below such horizontal position, and means yieldably resisting upward movement of the lever.

3. Apparatus for handling cigarettes and the like including a cigarette support movable between two positions, and means arranged to engage a cigarette on the support with the movement of the latter from one position to the other to alter the position of the cigarette on the support while maintaining the cigarette in firm engagement with the support as the latter is thus moved.

4. Apparatus for handling cigarettes including a support for a single cigarette, means mounting the support at one end for rotation about a given axis from a horizontal to a vertical position, and means mounted on the apparatus for engaging a cigarette on the support as the latter is turned to a vertical position and causing said cigarette to be raised relative to the support.

5. In a cigarette dispensing apparatus, a reservoir for cigarettes, a bottom for said reservoir tiltable downwardly toward the front of the same, a front wall on the reservoir normally forming a closure with the adjacent end of the bottom, an extension on said bottom projecting forwardly from the front wall, a movable support for a single cigarette disposed in front of and parallel to and adjacent said front wall, and means to depress the support against the extension whereby the bottom will be lowered to cause a cigarette to roll from the reservoir onto the support.

6. In a cigarette dispensing apparatus, a reservoir for cigarettes, a bottom for said reservoir tiltable downwardly toward the front of the same, a front wall on the reservoir normally forming

a closure with the adjacent end of the bottom, an extension on said bottom projecting forwardly from the front wall, a movable support for a single cigarette disposed in front of and parallel to and adjacent said front wall, a transverse shaft on one end of which the support is mounted, and means to turn said shaft whereby the support may first be depressed against the extension to lower the bottom and cause a cigarette to roll from the reservoir onto the support, and may then be raised with the supported cigarette to allow the bottom to again lift and close.

7. A cigarette dispenser for a motor vehicle comprising a casing structure formed intermediate the front and back with an upwardly facing channel extending from side to side to receive the lower portion of an instrument panel therein, a reservoir for cigarettes formed in the casing back of the channel, there being a passage for a single row of cigarettes from said reservoir under the channel to the front of the casing, and means for exposing a cigarette for withdrawal from the dispenser from the passage in front of the channel.

8. In a cigarette lighter and dispenser, a support for a cigarette, a shaft extending transversely of the support and on which the latter is turnable, an electric switch, a switch closing element on the shaft, and resilient connection means between the shaft and support to cause the support to turn with the shaft unless the support en-

counters resistance to such turning, and means to control the rotation of the shaft.

9. A structure as in claim 8, with means preventing turning of the support after it has reached a predetermined position; the switch closing element being arranged relative to the switch to only close the latter with a further rotation of the shaft.

10. A structure as in claim 8, with means preventing turning of the support after it has reached a predetermined position, a pusher member to engage one end of a cigarette on the support when the latter is in such position, and means functioning with a further rotation of the shaft to actuate said member.

11. A dispenser and lighter for cigarettes including a cigarette support, a shaft on which said support is turnable, spring means coupling said shaft and support for normal rotation together, an electric igniter positioned to engage a cigarette on the support when the shaft and support are turned from a normal position, means on the shaft for completing a circuit through the igniter when said shaft is thus turned and reaches a cigarette igniting position, and a spring stronger than said spring means acting on the shaft to return the same to its normal position after rotation therefrom whereby if said support is prevented from return movement with the shaft, said shaft can rotate sufficiently to render said circuit completing means inoperative.

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