

March 20, 1951

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2,545,936

CIGARETTE DISPENSER AND LIGHTER

Filed Nov. 10, 1947

5 Sheets-Sheet 1

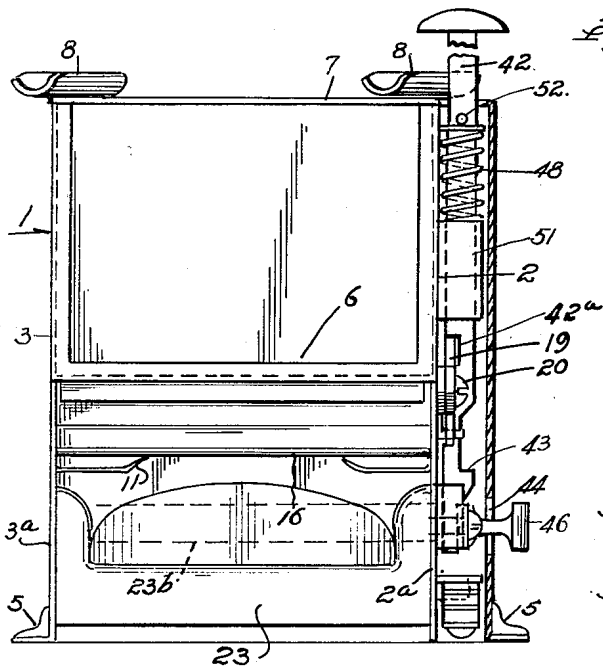


Fig. 1

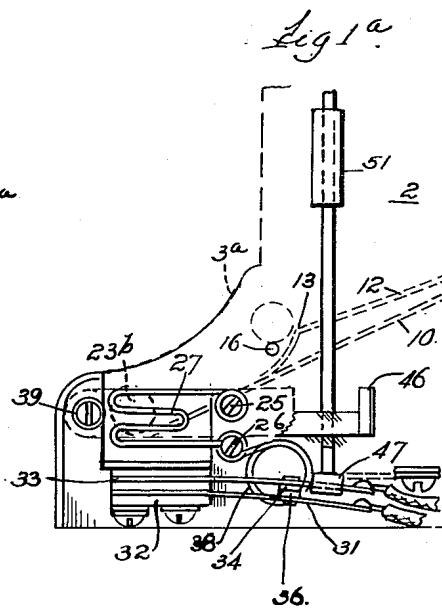


Fig. 1a

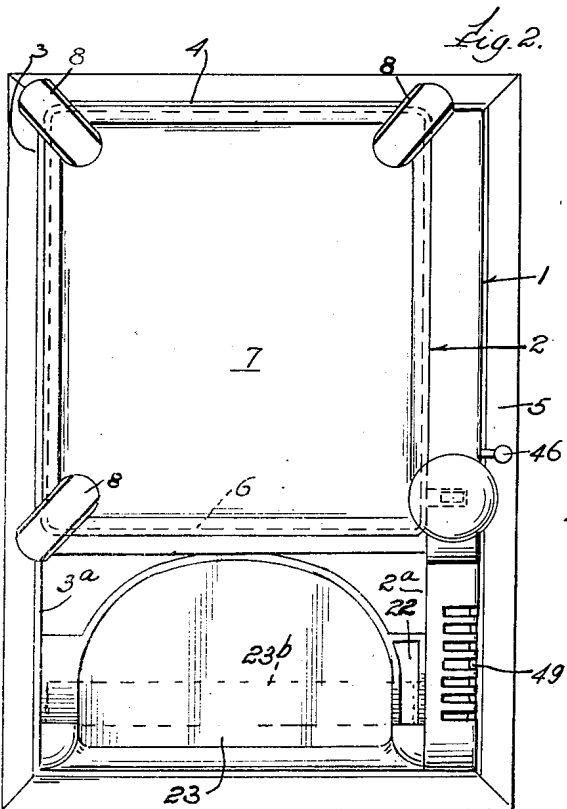


Fig. 2

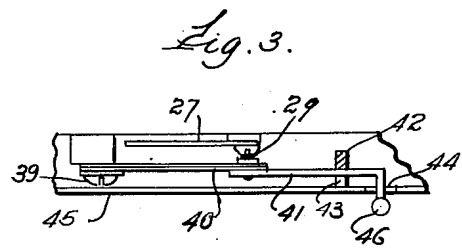


Fig. 3

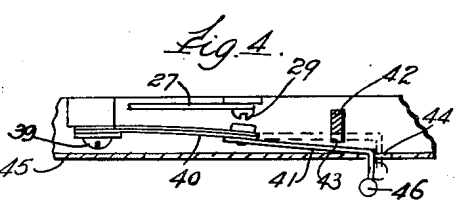


Fig. 4

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Fig. 7

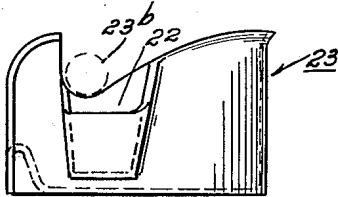


Fig. 8

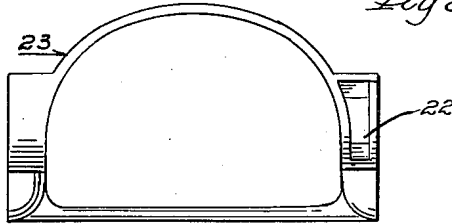


Fig. 5.

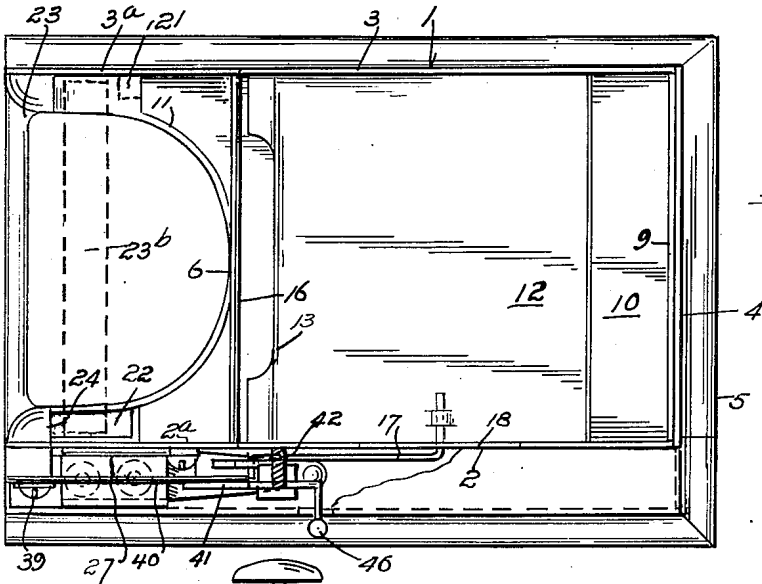


Fig. 9

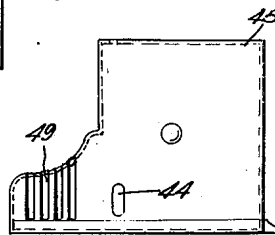


Fig. 6.

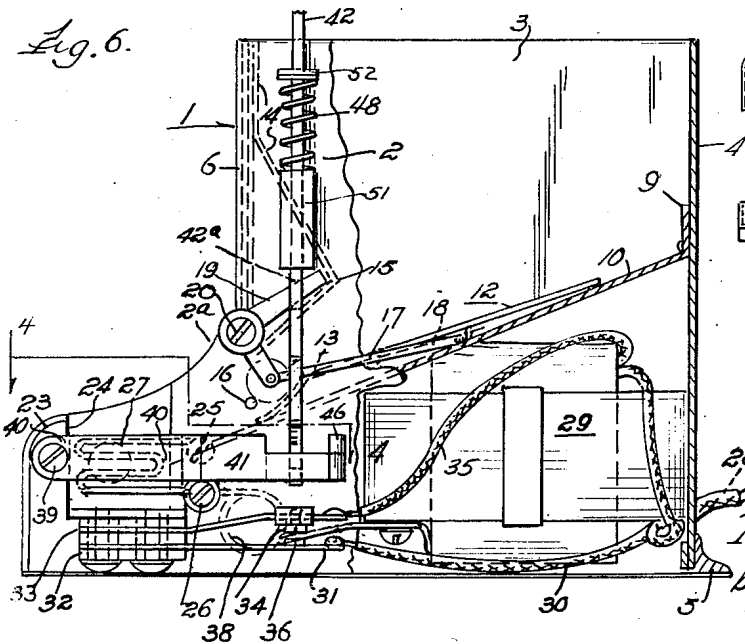


Fig. 10.

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Fig. 11.

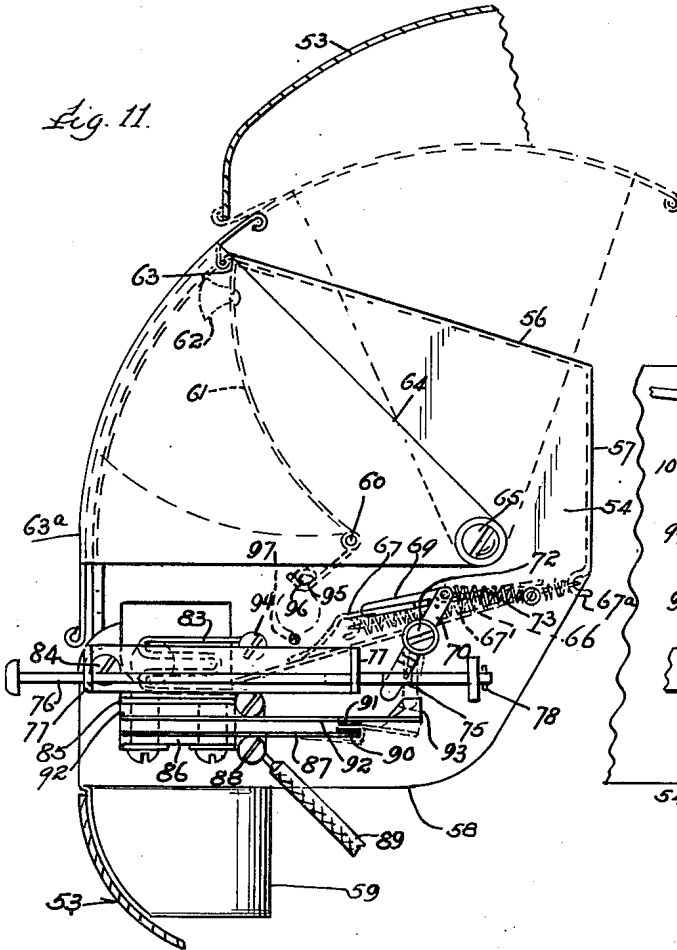


Fig. 13.

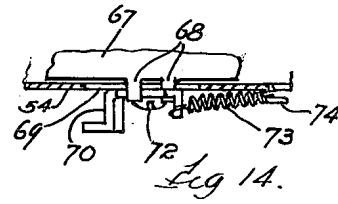
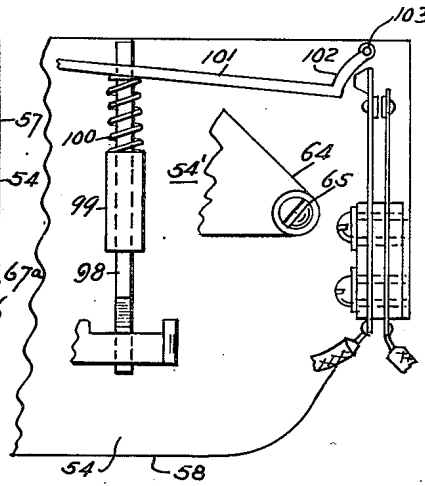
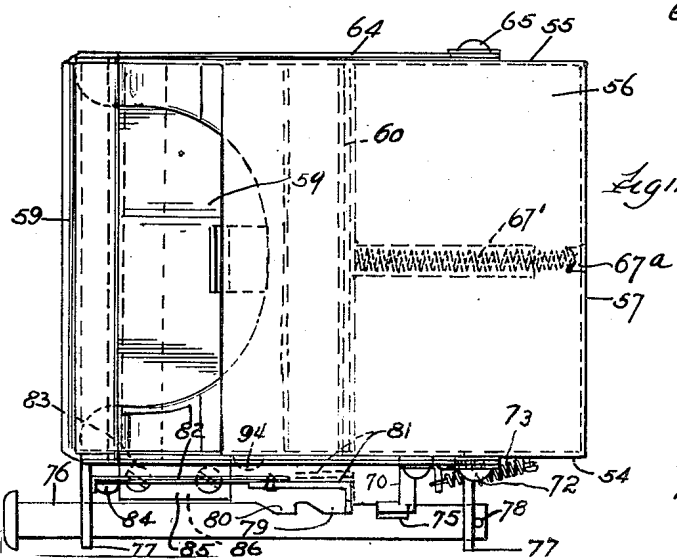


Fig. 12.



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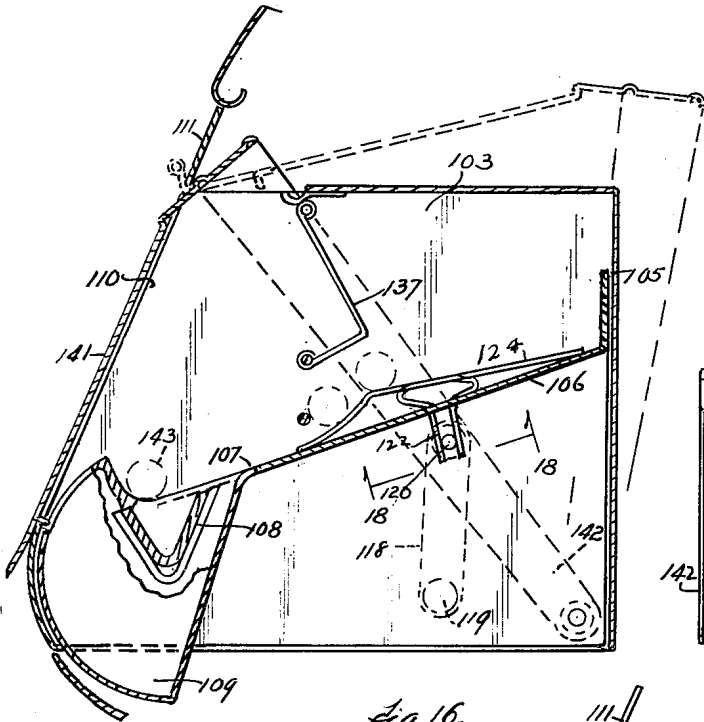


Fig. 15.

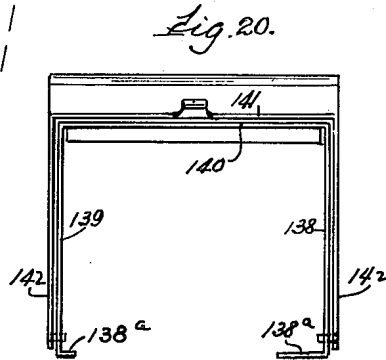


Fig. 20.

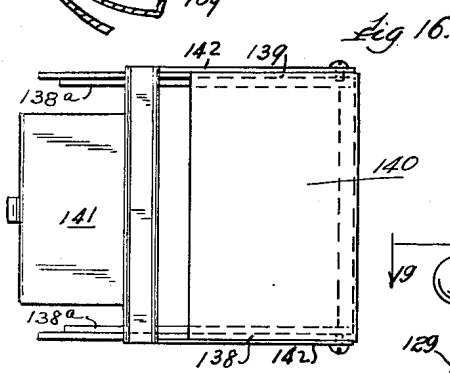


Fig. 16.

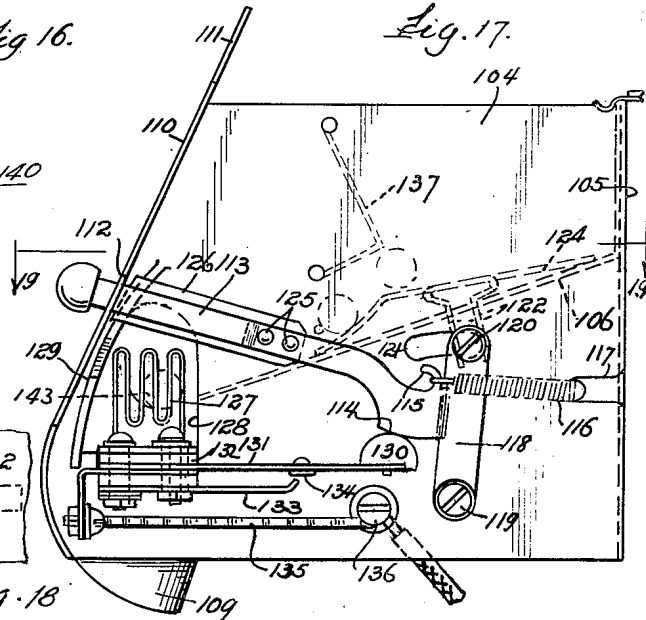


Fig. 17.

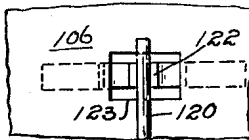


Fig. 18.

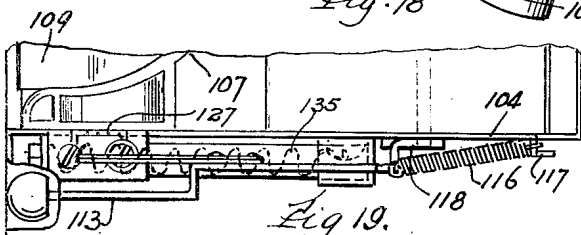


Fig. 19.

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Fig 21.

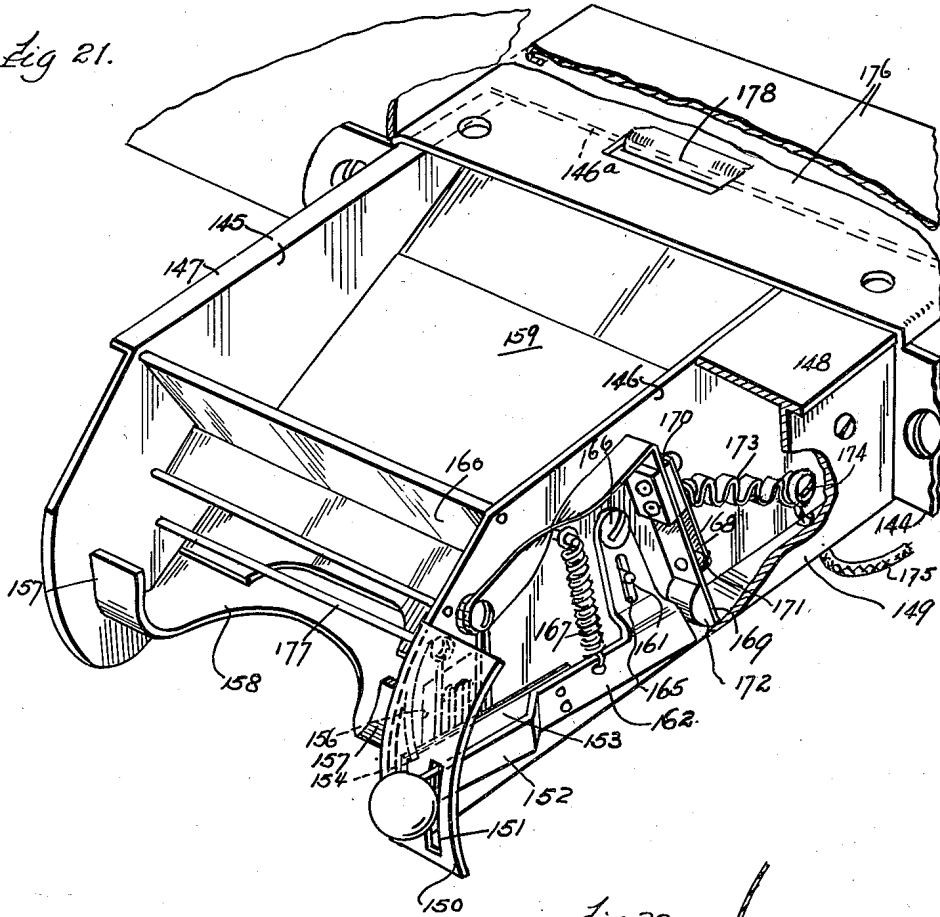


Fig 23.

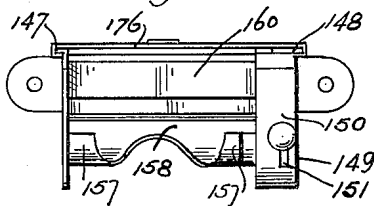


Fig 22.

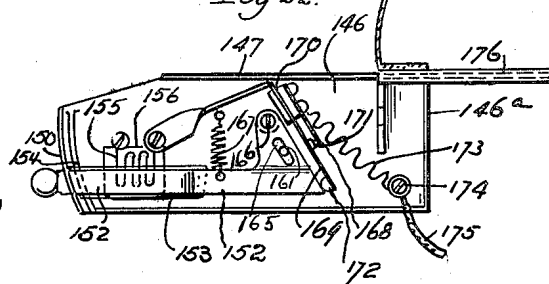
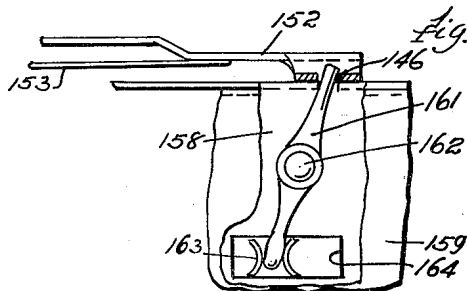


Fig 24.



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UNITED STATES PATENT OFFICE

2,545,936

CIGARETTE DISPENSER AND LIGHTER

Peter J. Zanardo, Chicago, Ill.

Application November 10, 1947, Serial No. 785,087

3 Claims. (Cl. 312-86)

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This invention relates generally to cigarette containers and dispensers and more particularly to new and useful improvements in combination cigarette containers, lighters and single delivery dispensers. An object of the invention is to provide such device that is positive and efficient in operation, safe and sanitary in use and that is not a fire hazard.

A further object is to provide a combination cigarette container, lighter and single delivery dispenser adapted for household use wherein the lighter is energized from the house electrical current; and a second type adapted for automobile use and the like, the lighter being operated from the vehicle battery.

With the foregoing and other objects in view the invention consists in the combination and arrangement of parts to be hereinafter fully described, pointed out in the claims and illustrated in the accompanying drawings which form a part of this disclosure and in which—

Fig. 1 is a view in front elevation and partly in section of a combination cigarette container, lighter and single delivery dispenser of the household type according to the instant invention.

Fig. 1a is a detail view in side elevation of the lighting mechanism in operative position.

Fig. 2 is a top plan view of Fig. 1.

Fig. 3 is a fragmentary plan view of Fig. 1a showing the electric switch closed to energize the lighter element.

Fig. 4 is a view similar to Fig. 3 but showing the switch in two positions, open and closed, the view being taken on the line 4-4 of Fig. 6.

Fig. 5 is a plan view of the structure similar to Fig. 2 but with the cover removed.

Fig. 6 is a view of the structure of Fig. 5 in side elevation and partly in section disclosing the electric lighting mechanism.

Fig. 7 is a view in side elevation of the ash container employed.

Fig. 8 is a top plan view of Fig. 7 in a position at right angles thereto.

Fig. 9 is a view in side elevation and on a reduced scale of a cover plate employed.

Fig. 10 is a top plan view of Fig. 9.

Fig. 11 is a view in elevation and partly in section of a modified form of the structure shown in Figs. 1 to 10 inclusive, adjustable parts being shown in two positions, this type adapted for automobile use.

Fig. 12 is a top plan view of Fig. 11.

Fig. 13 is a detail view showing a modified form of electric switch and operating arm therefor.

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Fig. 14 is a detail view partly in section of a slide lever employed.

Fig. 15 is a vertical sectional view of a further modified form of cigarette container, lighter and dispenser of the type adapted for automobile use.

Fig. 16 is a top plan view of Fig. 15, with cover, on a reduced scale.

Fig. 17 is an elevational view of Fig. 19.

Fig. 18 is a horizontal cross sectional view through Fig. 15 on the line 18-18.

Fig. 19 is a cross sectional view on the line 19-19 of Fig. 17.

Fig. 20 is a view in front elevation of the cover and hinge, the hopper being omitted.

Fig. 21 is a fragmentary perspective view, enlarged, of a further modified form for automobile use.

Fig. 22 is a side view of Fig. 21 on a reduced scale.

Fig. 23 is a front or end view of Fig. 22, and, Fig. 24 is an enlarged detail view of actuating mechanism.

Referring now to Figs. 1 to 10 inclusive the reference numeral 1 denotes a housing having side walls 2, 3 and a rear wall 4 that extends to the base 5 and a front wall 6 that extends from the top of the housing slightly more than one-half way to the base, all walls at their upper termination being in a common plane and receiving and supporting the cover 7 forming an ash tray and provided at its corners with somewhat trough shaped cigarette rests 8, the said side walls having forwardly extending diminished portions 2a, 3a. Within the housing and extending from side to side thereof and secured by its upturned end 9 to the rear wall 4 at a point slightly above the housing center is the forwardly and downwardly inclined partition 10 extending well beyond the front wall 6 and in materially spaced relation thereto and terminating therebeyond in the recessed forward edge 11.

Slidably disposed upon the partition 10 is the delivery plate 12 only the ends thereof engaging the partition, the plate proper being increasingly spaced from the partition from its rear termination to the point 13 and forwardly therebeyond inclined somewhat abruptly to the partition, the forward termination of plate 12 in the foremost position thereof being disposed substantially in line with the lower end of front wall 6, the rear edge of that plate disposed in spaced relation to the wall 4 at all times. Secured to the inner face of wall 6 at its upper end is the angular positioning plate 14 that extends downwardly and then rearwardly to a point 15 at approximately

the vertical center of the housing and therebeyond is bent forwardly and downwardly terminating substantially in line with wall 6 and in slight spaced relation thereto, said wall 14 end being spaced also from the forward end of the delivery plate 12 a distance but slightly greater than the diameter of a cigarette and spaced also from the thin rod or pin 16 connecting the side walls 2, 3 located slightly above partition 10 and inwardly of but contiguous to the plane of wall 6.

An angular link 17 works through slot 18 in wall 2 to connect plate 12 and bellcrank lever 19 fulcrumed to the outside of said wall upon the pin 20. The reduced portions 2a, 3a, of walls 2, 3 are formed inwardly from their forward terminations with recesses contiguous to the corners of the recessed forward edge 14 of partition 10 to receive a guide ear 21 and exterior pocket 22 of the removable cigarette receiver and ash tray 23 the wall of which coincides with the forward edge of partition 10, the wall extension 2a formed with a perforation 24 in line with the recessed upper edge of pocket 22 and contiguous thereto and secured to the wall extension by screws 25, 26 is the ignition element 27 grounded to stud 25. Lead 28 runs to a house current outlet from the transformer 29 from which lead 30 runs to switch arm 31 mounted to switch block 32 from which runs resilient switch arm 33 provided with contact 34, said switch arm 33 connected by lead 35 to the transformer. On switch arm 31 is contact 36 for engagement with contact 34 of switch arm 33. Running also from the transformer is the wire 38 to the insulated stud 26 to which lighter element 27 is secured disposed contiguous to pocket 22, also secured to ground stud 25. Secured to the extreme forward end of wall extension 2a by stud 39 is the bimetallic arm 40 extending rearwardly and having secured thereto the extension arm 41 extending rearwardly beyond the plunger 42 and in the normal position of same below the lug 43 releasably engaging same and passing out through a perforation 44 in plate 45 and provided with a head 46, said plunger recessed at 42a along its inner edge to provide clearance for bellcrank lever 19 and to actuate same back and forth in the up and down movements of the plunger, said plate 45 formed with a perforate or grille partition 49. Plunger 42 operates through a guide bracket 51 secured to wall 2 and is provided with the encircling spring 48 between bracket 51 and plunger pin 52. When the plunger is manually depressed it contacts insulated block 47 of switch arm 33 causing contacts 36, 34 of switch arms 31, 33 to engage and through the transformer to energize the lighting element.

This lights the cigarette which has passed from the hopper through the front opening therein, urged by the delivery plate 12, upon the receiver and ash tray 23 contiguous to the lighter element 27. The cigarette 23b now has its lighted end laterally disposed beyond the ash tray proper but directly over the pocket 22 into which sparks or ashes may fall, air circulation about the lighted end insuring good combustion. Should the cigarette not be manually removed until it burns up to the wall of the ash tray it will be extinguished thereby. The slots in grille 49 admit air to the cigarette while it is burning. As the plunger 42 moves downwardly it moves the bellcrank lever which moves the delivery plate which ejects a cigarette which rides over pin 16 and falls upon the tray or support. The lighting element not only lights the cigarette but also heats and ex-

pands the bimetallic arm 40 which disengages the plunger from same. The spring 48 now returns the plunger to normal position and through bellcrank lever repositions the delivery plate. Should it at any time be necessary or desired to disengage the extension arm from the plunger this may be done manually by means of head 46.

Referring now to Figs. 11, 12 and 14 a modification is shown adapted particularly for use on automobiles and the like. The cigarette dispenser and lighter here shown is adapted for application to the dash of the vehicle in easy convenient location for the occupants of the front seat. The dash 53 is partly cut away to provide for insertion and support of the housing having side walls 54, 55, top wall 56, rear wall 57, base wall 58 partially cut away to provide for removable reception of the ash tray 59 of Figs. 7 and 8. Extending transversely of the housing from side wall to side wall is a hinge pin 60 of door 61 provided with operating handle 62 and spring catch 63 adapted in the wide open position of door 61 to engage with the top wall 56 to yieldingly anchor the door.

The hopper may be readily filled with the door 61 in wide open position. A door 63a covers the open front face of the hopper as well as encasing door 61 in its closed position and is formed with integral lateral wings 64 mounted on the screws 65 secured to the hopper side walls. Within the hopper is a partition 66 similar to the partition 10 of Figs. 1a and 6 and disposed thereupon is the angular delivery plate 67 connected by spring 67' to hook 67a secured to wall 57, said plate 67 formed with spaced ears 68, 68' extending through an elongated slot 69 in side wall 54, said ears engaged by a substantially U-shaped lever 70 contiguous to wall 54, said lever pivotally secured by pin 72 to the hopper and connected by return spring 73 to a hook 74 secured to wall 54. The end of lever 70 remote from spring 73 is bent at an angle to engage the notched portion 75 of actuating plunger 76, operatively secured for axial movement in guides 77 carried by the hopper wall, and extending beyond the front end of the hopper, the rear end of said plunger carrying a pin 78 to limit the plunger movement in one direction by engagement with one guide 77, as shown in Fig. 12, said plunger formed also with spaced notches 79, 80 for releasable engagement with the extension arm 81 carried by the bimetallic arm 82 disposed alongside the lighting element 83 and secured by screw 84 to the hopper wall.

An angle piece 85 sweated or otherwise secured to the hopper wall 54 carries the switch block 86 carrying the insulated switch arm 87 engaging the screw stud 88 or the like secured to wall 54, said stud being connected to the lead 89 to the battery of the vehicle. The connection to the vehicle battery is, like other parts of the device, so placed as to be readily accessible for connection to the hopper, for tightening or for removal or replacement.

Switch arm 87 is provided with contact point 90 normally spaced from contact point 91 of the resilient switch arm 92 also carried by the switch block, said arm 92 beyond contact point 91 carrying a block 93 in the path of movement of lever 70 which upon engaging said block moves arm 92 to dotted line position, Fig. 11, engaging contacts 91, 90. The lighting element 83 is grounded to stud 94 carried by the wall 54 and connected to stud 84 so that engagement of contacts 91, 90 completes the circuit from the battery to the said element. Referring again to the hinge pin 60

same carries one end of the positioning plate 95 within the hopper, said plate extending forwardly and downwardly and being secured to the pin 96 below which and connecting the walls 54, 55 is the pin 97 spaced slightly from the end of the delivery plate 67 in the forward position of same. The pin 97 is quite similar to the pin 16 of Fig. 6. In operation the hopper is filled by opening the doors 61, 63a and depositing the cigarettes upon partition 66 and delivery plate 67. The doors may now be closed. By pushing the plunger 76 inwardly the extension arm 81, normally bearing against a notched portion thereof, prevents return of the plunger. At the same time the lever 70 is moved upon pin 72 to urge the plate 67 forwardly expanding return spring 73 and moving the foremost cigarette forwardly, up and over the pin 97, to gravitate into the tray 59 with one end disposed adjacent the igniting or lighter element. The movement of lever 70 has caused it to engage the block 93 carried by the switch arm 92 and to move that arm to cause the contact points 91, 90 to engage thus completing the electric circuit to energize the element 83 which lights the cigarette. The bimetallic arm is thus heated and caused to expand to dotted line position, Fig. 11, and release the lever 70 which will then be retracted by spring 73 permitting the contacts 91, 90 to separate and breaking the circuit to the element 83. The delivery plate has also been returned to normal position by lever 70 movement and the plunger 76 repositioned. Rattle of the moving parts has been prevented by the spring 67'.

Referring now to Fig. 13 a modified form is provided. The plunger 98 operates through the guide sleeve 99 secured to the hopper wall 54', the spring 100 encircling the plunger has one end received upon sleeve 99 while the opposite end engages a lever 101 perforated to receive the plunger and rest upon the spring, said lever formed with an angularly disposed heel 102 pivotally connected to the hopper. This form operates in the same manner as the form shown in Fig. 6 and previously described, this form having the operating lever extending upwardly rather than forwardly, and being depressed manually.

Referring now to Figs. 15 to 20 inclusive a further modified form of cigarette container, dispenser and lighter is disclosed adapted for automobile and like use also adapted for application to the vehicle dash. A hopper is here provided having side walls 103, 104 connected by a rear wall 105, the rear wall at a point well above the base line being engaged by a strip which is inclined forwardly and downwardly to form the inclined floor 106 terminating in the recessed forward edge 107 from each side of which an arm 108 depends that support the removable ash tray 109 of the same construction as the tray 23, Fig. 7. The forward ends of the side walls each terminate in a lateral flange 110 connected by the top flange 111, the flange 110 of side wall 104 being formed with an elongated slot 112 through which the angular operating lever 113 extends having a cam shaped heel 114 formed with a hook 115 engaged by return spring 116 connected to the ear 117 struck from side wall 104. The lever 113 extends alongside the outer face of wall 104 in slight spaced relation thereto and contiguous to the heel 114 is curved slightly inwardly and terminates in the integral link 118 pivotally connected at its lower end by stud 119 to the wall, the upper end of said link carrying a long pin 120 that extends through an arcuate slot 121

in the wall 104, said pin extending inwardly but beneath the floor 106 and substantially centrally thereof engaged by the prongs of a coupling 122 extending through a floor perforation 123, said coupling engaging the delivery plate 124 disposed upon said floor and movable back and forth thereupon.

Secured to the lever 113 by rivets 125 between its heel end and forward end is the bimetallic piece 126 disposed between said lever and the wall in a position immediately adjacent the lighting element 127 which is arranged adjacent a perforation 128 in the wall, said bimetallic piece in one position in engagement with the lower notched end of the lug 129 formed upon the wall adjacent flange 110, the normal lever position, however, being its raised position shown in Fig. 17 at the upper end of the flange slot 112, slightly above the lighting element. The heel of lever 113 is in engagement with the block 130 of switch arm 131 carried by switch block 132 that also carries the switch arm 133 the free end of which is adapted for engagement with the contact point 134 of arm 131 in the depressed position of the latter thus at that time energizing the lighting element. In this form a resistor 135, carried by insulated stud 136 secured to the wall, is in circuit with the lighting element to reduce the current thereto so that a small type element may here be employed which will cool more quickly than the elements ordinarily used.

A positioning plate 137 similar to the plate 14, Fig. 6 is provided in the hopper. The hopper is received in a substantially U-shaped casing having side walls 138, 139 each formed with a flange 138a and top wall 140, the forward edge thereof being spaced inwardly from the corresponding edges of the side walls to provide clearance for the door 141 that in normal position closes the space between the top and side flanges of the hopper, said door engaged and carried by the arms 142 pivotally secured to the hopper side walls. The operation is very similar to that of the types previously described. To fill the hopper the door 141 is moved rearwardly to the dotted line position, Fig. 15 clearing the hopper. The casing is then moved forwardly manually to clear the positioning plate 137 exposing the interior of the hopper and permitting the fill. The casing is then moved again to normal position. To deliver and light a cigarette the lever 113 is manually moved downwardly from its normal position, Fig. 17, past the notch of lug 129 and then released.

The bimetallic plate 126 will then retain it in this position. This movement has caused lever heel 114 to close the lighting element circuit energizing the element which will heat the bimetallic plate 126 expanding the same and so disengaging the bimetallic plate from the lug notch to allow the spring 116 to return the lever to normal position. The link 118 and connections, during this period, have ejected a cigarette 143, Fig. 15, upon the ash tray adjacent the lighting element and lighted it. The lever in raised normal position is clear of the lighting element and will cool very readily so that successive operations may be cause without delay and in an efficient manner. The hopper side walls slide on flanges 138a of the casing.

Referring now to Figs. 21 to 24 inclusive another type of cigarette container, dispenser and lighter is shown for application to the vehicle dash. This is a very compact type occupying but very little space and without provision of an ash

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tray. It is applied to the dash which is cut away to permit application of the support bracket 144 that carries the hopper having side walls 145, 146; rear wall 146a, the former having flanges 147, 148 respectively, the latter together with cover plate 149 protecting the actuating mechanism arranged upon wall 146, which at its forward end is provided with the arcuate flange 150 formed with elongated perforation 151 through which the angular lever 152 extends that carries the bimetallic arm 153 for releasable engagement with the notched lug 154 secured to wall 146 contiguous thereto, said arm 153 adjacent the lighting element 155 disposed at wall perforation 156 adjacent the upturned portions 157 of one end of housing partition 158 receiving thereupon the delivery plate 159 spaced beneath the positioning plate 160 at the forward end of the hopper. A connecting link 161 fulcrumed to pin 162 carried by partition 158 engages spaced lugs of delivery plate 159 that extend through a perforation 164 in partition 158.

The said link 161 extends through a small perforation in wall 146 and engages the slotted portion 165 of lever 152 pivoted at 166 to said wall, said lever engaged by return spring 167 secured to said wall, said spring yieldingly retaining lever 152 in normal raised position disengaged from the notched lug 154. Switch arms 168, 169 carried by block 170 each carry a contact point 171 which points are yieldingly separated. Switch arm 169 carries block 172 for engagement with the lever 152 in the operative or lowermost position of same to engage contact points 171 with each other closing the electric circuit to the lighting element. A resistor 173 connected to switch arm 168 is connected to the stud post 174 to which one end of the lead 175 is secured that leads to the battery of the vehicle. The hopper is slidably received in cover support 176 secured in the dash and when moved thereinto covers the top of the hopper which when moved forwardly may be filled with cigarettes which are disposed upon partition 158 and plate 159. The cigarettes when released singly from the hopper move over the pin 177 and lodge in the forward end of the partition and are there retained by the ends 157 immediately adjacent the lighting element. A lug 178 is pressed downwardly from the cover 176 for engagement with the rear wall 146a of the hopper to limit the extent of the forward or outward movement of the hopper to prevent separation of same from the cover. The sliding hopper is pulled forward sufficiently to expose its interior when it is desired to fill it with cigarettes. This invention may be considered a further development of my application for patent on single delivery cigarette dispensers, Serial No. 743,349, filed April 23, 1947, which matured into Patent No. 2,431,219.

What is claimed is:

1. In a cigarette dispenser and lighter, a casing having side walls and a top wall, the forward edge of said top wall spaced inwardly from the

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corresponding edges of said side walls, a hopper having side walls and a rear wall, lateral flanges terminating said hopper side walls, a top flange connecting said lateral flanges, a door normally closing the space between said lateral and top flanges, support arms for said door secured to said hopper side walls, inwardly disposed flanges for said casing side walls slidably carrying said hopper, and cigarette igniting and delivery mechanism associated with said hopper.

2. In a cigarette dispenser and lighter for automobiles, a cover support arranged in a perforation in the automobile dash, a hopper having side walls and a rear wall slidably received in said cover support, said hopper in one position being open at the top and in a second position being closed at the top by said cover support, a lug depending from said cover support for engagement with said hopper rear wall in one position of said hopper, an arcuate flange at the forward end of one hopper side wall, cigarette delivery and igniting means associated with said hopper, and energizing means for said delivery and igniting means associated with one hopper side wall, said energizing means including an operating lever extending along said last named hopper side wall and through said arcuate flange.

3. In a cigarette dispenser and lighter, a perforate hopper, a notched lug carried thereby, an igniting element carried by said hopper contiguous to the perforation therein, cigarette delivery mechanism in said hopper, cigarette supporting means in said hopper contiguous to the perforate portion thereof and to said delivery mechanism, actuating means for said delivery mechanism associated with said hopper, said means including a lever extending along one face of said hopper normally in upwardly spaced relation to said igniting element, a spring yieldingly retaining said lever in its upward position, switch means operative by said lever to energize said igniting element, said lever in an altered operative position disposed directly opposite said igniting element, and a bimetallic piece carried by said lever engaging said lug notch in the altered position of said lever, said bimetallic piece when heated by said igniting element releasing said lever from said lug notch.

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