March 21, 1933. S. VERNET 1,902,599

CIGARETTE DISPENSING AND LIGHTING MACHINE

Filed Jan. 13, 1926 3 Sheets-Sheet 1

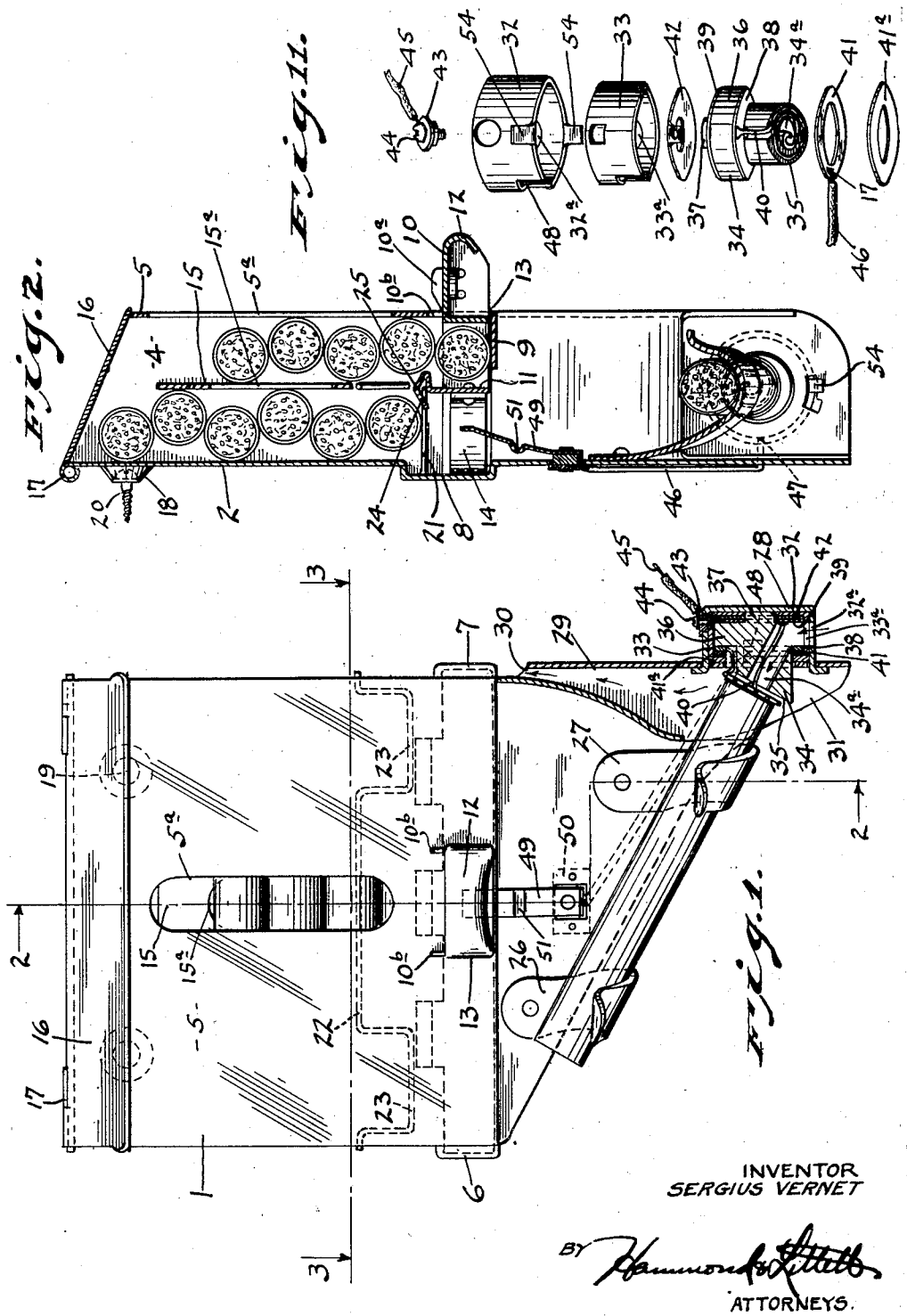


Fig. 1.

Fig. 2.

Fig. 11.

INVENTOR
SERGIUS VERNET

BY Hammond & Littell
ATTORNEYS.

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Filed Jan. 13, 1926 3 Sheets-Sheet 2

Fig. 4.

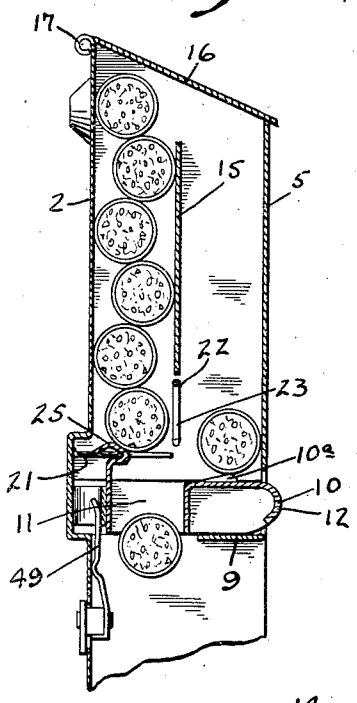
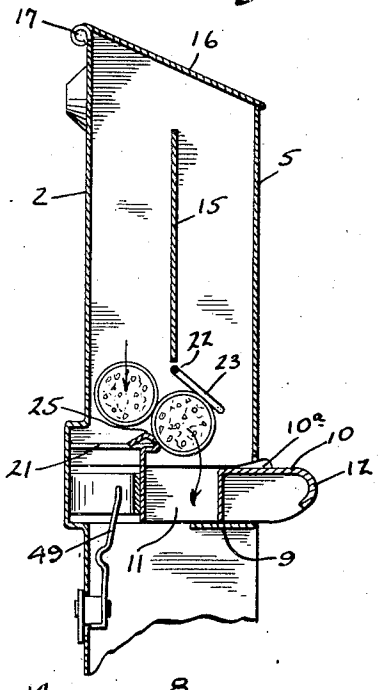


Fig. 5.



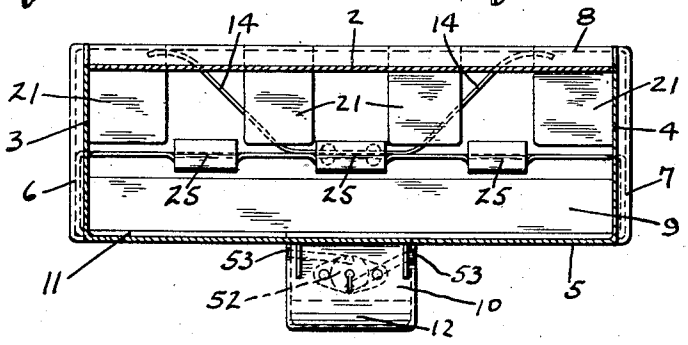


Fig. 3.

INVENTOR
SERGIUS VERNET
BY Hammond & Littell
ATTORNEYS

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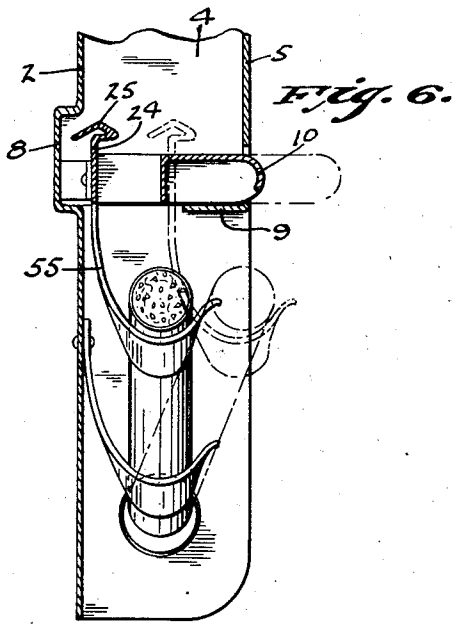


Fig. 6.

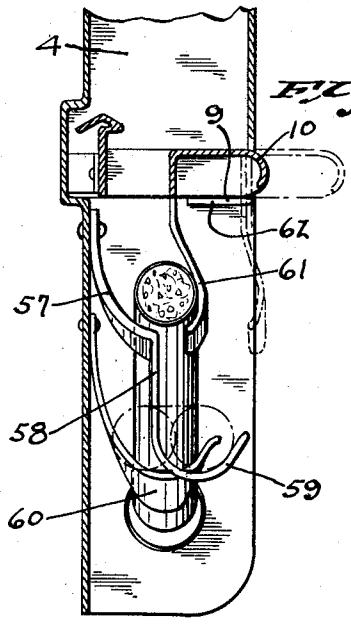
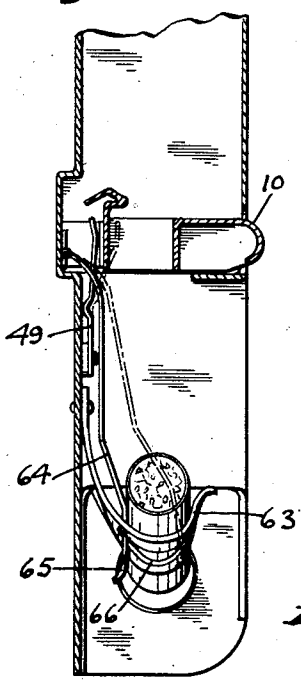


Fig. 7.

Fig. 9.



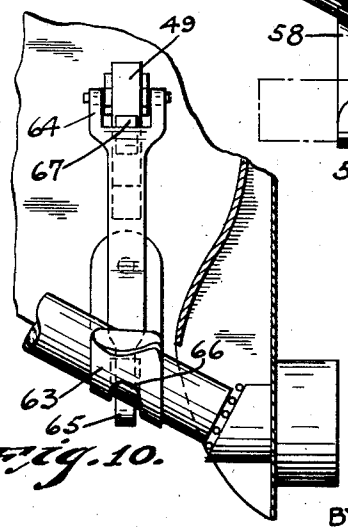


Fig. 10.

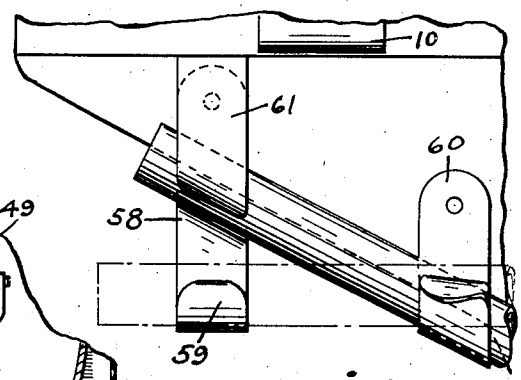


Fig. 8.

INVENTOR
SERGIUS VERNET
BY Hammond & Littell
ATTORNEYS.

Patented Mar. 21, 1933 1,902,599

UNITED STATES PATENT OFFICE

SERGIUS VERNET, OF BROOKLYN, NEW YORK

CIGARETTE DISPENSING AND LIGHTING MACHINE

Application filed January 13, 1926. Serial No. 80,881.

This invention relates to machines for automatically delivering and lighting cigarettes, cigars, or the like.

One of the cigar and cigarette lighters which has been used heretofore for automobile use comprises an electrical ignition element on the end of an automatically rewinding extension cord. The element must be drawn out and held in contact with the end of the cigarette, which is held in the mouth of the smoker while the smoker puffs thereon in order to light the cigarette. It requires considerable attention to hold the igniting element at the end of the cigarette so that it is difficult for the driver of the automobile to light his cigarette and still keep his attention on the road. Other devices have been developed which will deliver and light a cigarette by automatically applying an ignition element to one end and suction from the intake manifold of the engine to the other. These machines, because of the suction connections, are necessarily expensive to manufacture and install and are therefore prohibitive from the average consumer's point of view.

It is one of the objects of my invention to provide a machine for dispensing and lighting cigarettes, cigars, or the like, which will automatically deliver and light a cigarette with a single, simple, and natural movement of the hand.

Another object of the invention is to provide a cigarette dispensing and lighting machine which may be simply made at a low cost, it being possible to press substantially all the parts out of sheet metal.

Another object of the invention is to provide a machine for lighting cigarettes or the like without the use of artifically applied suction at the end of the cigarette.

Another object of the invention is to provide a machine for lighting cigarettes in which a natural draft, produced by the construction of the parts and by the heating element, is sufficient to light the end of the cigarette.

Another object of the invention is to provide a dispensing and lighting machine for cigarettes in which the cigarette rests against the igniting element by its own weight, thereby eliminating the danger of damaging or breaking the cigarette, as often occurs in machines heretofore used for this purpose.

Other objects of the invention will be apparent as the description proceeds.

In the drawings, which show a preferred form of embodiment of the invention—

Fig. 1 is a front elevational view, partly in section, of a cigarette dispensing and lighting machine embodying my invention;

Fig. 2 is a sectional side elevation of the machine, taken on the line 2—2 of Fig. 1;

Fig. 3 is a sectional plan view of the machine, taken on the line 3—3 of Fig. 1;

Figs. 4 and 5 are sectional side views corresponding to Fig. 2 and showing successive cigarette delivery positions of the machine;

Fig. 6 is a sectional side view of another embodiment of the invention, in which the cigarette is more easily accessible after the delivery and lighting operations;

Fig. 7 is a sectional side view of still another embodiment of the invention, in which the cigarette is more easily accessible after the delivery and lighting operations;

Fig. 8 is a front view of the device shown in Fig. 7;

Figs. 9 and 10 are a sectional side view and a front view, respectively, of a further embodiment of my invention, wherein the cigarette itself holds the switch which controls the ignition element to insure the proper lighting of the cigarette; and

Fig. 11 is a perspective view of the ignition element, with the various parts separated for clearness.

In the form of embodiment of the invention illustrated in Figs. 1 to 5, the cigarette dispensing and lighting machine comprises a casing 1 which consists of a back plate 2, side plates 3 and 4, and a front plate 5. These plates may be held together in any desired manner, as by soldering, to form the casing, or they may be stamped out of a single sheet of metal and bent to the proper shape. The side members 3 and 4 have an enlargement 6 and 7 respectively, near the bottom of each plate, which extends trans-

versely across the plate. The rear plate 2 has an enlargement 8 extending transversely across the plate, the bottom edge of the enlarged portion being even with the bottom edges of the enlargements 6 and 7 of the sides 3 and 4. The front plate 5 has its lower portion bent backward to form a shelf 9, upon which is adapted to rest the cigarette dispensing slide 10. This slide 10 is composed substantially of a single piece of sheet metal bent to form a rectangular shell 11, which is large enough to accommodate a cigarette and which is open at both the top and the bottom, to allow the cigarette to pass therethrough. The ends of the shell 11 rest in the extended portions 6 and 7 of the side plates 3 and 4 which provide a track or guide so that the shell 11 may be moved backward and forward therein. A finger piece 12 is bent at right angles to the front wall of the shell 11 and extends through a hole 13 in the front plate 5. A leaf spring 14 is attached to the rear wall of the shell 11 by any suitable means, such as rivets, and bears against the rear wall 2 of the machine, the ends of the spring resting on the ledge formed by the enlarged portion 8 in the rear plate 2, and urges the slide 10 toward the front wall 5. A partition 15 extends between the two side plates 3 and 4, midway between the front and rear plates 5 and 2, and separates the inside of the machine into two cigarette containing compartments. The front plate 5 and partition 15 may be provided with openings 5a and 15a through which the cigarettes in the container may be seen. A cover plate 16 is attached to the rear plate 2 by means of a hinge 17, and keeps the casing 1 covered by its own weight. The rear plate 2 may contain depressions 18 containing holes 19 through which screws 20 may be driven to attach the machine to some support such as the instrument board of an automobile. The top of the front plate 5 is preferably a little lower than the top of the rear plate 2, so that with the cover 16 raised, access may be had to the screws 20 to attach the machine to a support. The rear plate 2 is provided with inwardly extending ledges 21, which provide a shelf on which the lowermost cigarette in the rear compartment may rest. The partition 15 extends downwardly to a point a little above the top of the lowermost cigarette in the rear compartment and below this partition a bent wire 22, forming a swinging door between the front and rear compartments, is pivotally supported between the sides 3 and 4. This wire has downwardly extending portions 23, which serve to prevent the lowermost cigarette in the rear compartment of the casing 1 from moving forwardly in the casing when any cigarettes are contained in the forward compartment. A plurality of upstanding strips 24 are formed integral with the rear wall of the rectangular shell 11 of the slide 10 and are bent so as to form noses 25, which extend slightly above and between the ledges 21, so that when the slide 10 is moved backward and forward the noses 25 engage the lowermost cigarette in the rear compartment to urge it toward the front. Uprights 10a are attached to the slide 10 at either side of the finger piece 12 and pass through slots 10b in the front plate when the slide is operated.

A pair of cigarette receiving hooks 26 and 27 are attached to the rear plate to catch the cigarette when it is dropped from the container. These hooks are arranged on an incline, so that the cigarette is allowed to slide downwardly in the hooks toward the ignition element 28 which is attached at one side of the machine and in line with the inclination of the hooks. The lowermost edge of the rear plate 2 is preferably cut to follow the inclination of the hooks. The side plate 4 is extended downwardly and bent to form a chimney 29 which is closed on four sides and has an opening 30 at the top and 31 at the bottom.

The ignition element 28 comprises a cup-shaped metallic container 32 into which is fitted a cup-shaped insulator 33 and the element supporting block 34. This block 34 may be made of lava, porcelain, or other heat resisting materials, and is cylindrical in shape, one end being cut off at an angle at 35 to support the heating element perpendicular to the end of the cigarette. An integral annular rim 36 extends around the block 34 and fits snugly against the inside of the insulating cup 33. An extension 37 on the rear of the block 34 passes through a hole in the cup-shaped insulator 33 and rests against the container 32. Conducting rings 38 and 39 are attached to the ends of the heating element 40 and are slipped on the block 34 at either side of the rim 36, and rings 41 and 42 contact with rings 38 and 39, respectively. Ring 42 is attached through an insulator 43 to a binding post 44, to which a wire 45 leading to the battery may be connected. A wire 46 is attached to ring 41 at 47 and passes through an opening 48 in the side of the container 32, and up in back of the rear wall 2 of the machine to the switch 49. An opening 34*a* is provided in the element supporting block 34 which passes from the angular face thereof to the bottom of the annular rim 36 and cooperates with a hole 32*a* in the container 32 and a hole 33*a* in the insulator 33 to permit a current of air to pass therethrough. The container 32 is attached to the side wall of the chimney 29 by bayonet joints 54, and when removed therefrom, the ring 41 may be removed and the element supporting block 34, together with the rings 38 and 39 and the elements 40, may be removed and replaced.

The ring 41 is insulated from the wall of the chimney 29 by means of the insulating ring 41*a*. The switch 49 is mounted on and insulated from the rear plate 2 by means of an insulating strip 50 which is attached to the rear plate 2. The switch 49 is composed of a spring strip which passes up behind the slide 10 and is adapted to be pushed toward the rear wall 2 when the slide 10 is pushed in. Natural tension of the spring normally keeps it away from the rear wall 2. A projection 51 on the switch 49 provides a positive contact with the rear wall 2 and to ground through the frame of the machine when the slide is pushed in. If the machine is attached to a wooden instrument board or other insulated support, the casing may be grounded by connecting a grounded wire to one of the screws 20 used to attach the machine to the support.

The operation of the machine is as follows: Both the forward and the rear compartments of the container being full of cigarettes, the lowermost cigarette in the forward container will rest upon the shelf 9 forming part of the front plate and within the shell 11 comprising the slide. When the slide is pushed in with the finger, the cigarette is moved by the front wall of the shell 11 toward the back of the machine and drops from the shelf 9, falling upon the hooks 26 and 27. When the lowermost cigarette in the front compartment is moved on the shelf 9 as the slide is moved rearwardly, the uprights 10*a* contact with the next cigarette in the front compartment and raise it slightly, thereby preventing another cigarette from falling into the shell 11 of the slide before the slide has returned to its normal position. The spring 49 is pressed rearwardly by the slide and projection 51 contacts with the rear plate 2. This forms a circuit from the battery through wire 45, rings 42 and 39, the heating element, rings 38 and 41, wire 46 and switch 49, to ground through the frame of the machine. The heating element becomes hot and the cigarette which has fallen on the hooks 26 and 27 and is resting lightly thereagainst is lighted. In order to hasten the lighting of the end of the cigarette the chimney 29 is provided, in which a natural draft is generated by the heat arising from the ignition element 40. The opening 34*a* in the element supporting block 34, permits air to enter through the hole 32, as indicated by the arrows, up through the block 34 and around the heating element 40, and up the chimney 29, coming out of the opening at the top thereof. This provides sufficient draft to ignite the tobacco at the end of the cigarette in a minimum time without requiring suction to be applied at the opposite end of the cigarette. When the pressure on the finger piece 12 is released, the slide 10 is returned to the front of the machine, the contact of the switch 19 broken, and the current to the element 40 cut off. The lighted cigarette may then be removed from the hooks 26 and 27 and placed in the mouth by the same hand which was used for operating the slide 10. By repeating this operation, all the cigarettes in the forward compartment of the container will be dropped down one by one on the hooks 26 and 27 and lighted. When there are no more cigarettes in the forward compartment, the outward movement of the slide 10 will cause the noses 25 to engage the lowermost cigarette in the rear compartment and urge it toward the front. The swinging door 22 being freely pivoted between the side plates 3 and 4, will readily rotate, as indicated in Fig. 5, so that the portions 23 will raise and permit the lowermost cigarette in the rear compartment to move into the forward compartment and down into the shell 11 of the slide. The inward movement of the slide will then cause this cigarette to drop on to the hooks as described before, and the return of the slide will urge another cigarette from the rear compartment under the swinging door 22, into the shell 11 of the slide 10. A repetition of the operation of the slide will cause all of the cigarettes in the rear compartment to be dropped one by one from the machine.

If desired, a lock 52 may be placed in the finger piece 12 of the slide 10 to extend pins 53 at each side of the finger piece 12, to lock the slide 10 in a nonoperative position.

The ignition unit 28 is made removable so that the element 40 and block 36 may be renewed if the element should burn out.

In the modification shown in Fig. 6, the uppermost hook 55 for catching the cigarette as it drops from the container, is attached to the slide 10 and moves back and forth therewith. When the slide is pushed in, therefore, and a cigarette is dropped out of the container, the hook 55 is in a position directly under the container, similar to the hook 26 shown in Fig. 1. When the slide is allowed to move outwardly, the hook 55 moves also, as indicated in dot-and-dash lines, moving the upper end of the cigarette toward the front of the machine, where it may be more easily grasped to remove the cigarette from the machine.

In Fig. 7 another embodiment is shown, in which the hook 57 is composed of two parts, one, 58, attached to the frame of the machine and having an extended hook portion 59, which is at substantially the same level as the lower or right hand hook 60. The other part, 61, is attached to the slide 10 and moves back and forth therewith through a slot 62 in the shelf 9 forming part of the front wall. When the slide is pushed in, the parts 61 and 58 of the hook 57 close together, so that the cigarette is caught in light-

ing position at an angle similar to the position in which the hooks 26 and 27 of Fig. 1 hold it. Upon the slide moving outwardly, the portion 61 of the hook 57 is moved outwardly and the end of the cigarette is dropped down to the hook 59, leaving the cigarette in substantially a horizontal position, as indicated in dot-and-dash lines in Figs. 7 and 8, with one end nearer the front than the other, so that it may be more easily removed from the machine.

In these modifications, as well as in the preferred embodiment shown in Figs. 1 and 2, it is necessary to hold the slide in its innermost position until the cigarette has been lighted, as contact is made by the switch only when the slide is held in. In order to provide for lighting the cigarette by a single inward push and immediate release of the slide, the device shown in Figs. 9 and 10 is provided. The switch 49, which is similar to the switch shown in Figs. 1 and 2, is placed directly above the lowermost hook 63, and an arm 64 is pivotally attached to the rear wall above the contact point of the switch 49. The arm 64 is bifurcated at the top to straddle the switch 49 and the bottom is narrowed down at 65 to pass through a slot 66 in the hook 63. An insulating strip 67 is mounted on the switch 49 adjacent the bifurcated portion of the arm 64, so that the arm 64 will not contact with the switch 49 but will press against the insulating strip 67. When the switch 49 is pressed inwardly by the slide 10, the arm 49 falls of its own weight, so that the hook 63 is open and ready to receive a cigarette. The cigarette having been deposited in the hook, holds the arm 64 at one side thereof, which, in turn, holds the switch 49 in contacting position, though the slide 10 is allowed to return to its normal position. The ignition element will, therefore, remain heated until the cigarette is withdrawn from the hook 63, at which time the spring switch 49 will cause the arm 64 to move into the position indicated by the dot-and-dash lines of Fig. 9. The long leverage of the arm 64 prevents the arm from crushing the cigarette due to the tension of the spring, as very little pressure at the bottom of the arm 64 is necessary to hold the switch 49 in contact. In case the cigarette is allowed to remain in the hook 63, the ignition element will remain lighted and the cigarette will gradually burn up. When such burning passes the arm 64, the arm will fly out and the current will be automatically cut off. This modification is advantageous also where it is desired to light a cigarette of a different brand, for instance, from that contained in the machine. The arm 64 may be pressed in with the finger and a cigarette inserted in the hooks and lighted without moving the slide 10.

From the foregoing it will be evident that I have provided a machine which is easy and simple to manufacture, substantially all the parts being stamped and pressed out of sheet metal, and which will deliver and light a cigarette by merely a pressing movement of the finger on the finger piece, without the use of any suction applied to the end of the cigarette.

While I have described the device as a machine for delivering and lighting cigarettes, it is understood that by slight changes in the size of the machine, it would work equally well with cigars, and although I have described the machine as particularly advantageous for use in automobiles, it may also be used in the home, in cigar stores, or, by providing coin-controlled mechanism for operating the dispensing slide, in cigarette or cigar dispensing slot machines.

Although I have described the chimney in connection with the modifications illustrated, it is to be understood that the lighter will work without the chimney, but that the chimney, by providing a circulation of air, shortens the time required to light the cigarette.

Many modifications and changes in the embodiments shown and described may be made without departing from the spirit of the invention, and I do not desire to limit myself to the embodiments shown and described but to interpret the invention broadly within the scope of the appended claims.

I claim:

1. In a cigarette dispensing and lighting machine, a container for a supply of cigarettes comprising front and rear compartments, a dispensing slide mounted at the bottom thereof and having an opening extending therethrough large enough to accommodate a cigarette, means to close the bottom and open the top of said opening when said slide is in its normal outer position and to open the bottom and close the top when said slide is in its inner position, and means connected with said slide to urge a cigarette from said rear compartment to said front compartment when said front compartment is empty.

2. In a cigarette dispensing and lighting machine, a container for a supply of cigarettes comprising front, side and rear plates, a partition midway between said front and rear plates dividing said container into front and rear compartments, inwardly extending portions integral with said rear plate forming a bottom support for the cigarettes in said rear compartment, an inwardly extending shelf integral with said front plate and below the plane of the inwardly extending portions of said rear plate, said front plate having an opening substantially in the center thereof and adjacent said shelf, outwardly bulged portions from said side plates form-

ing ledges even with the top of said shelf, an outwardly bulged portion from said rear plate forming a ledge even with the top of said shelf and side ledges, a dispensing slide having an opening therethrough slidably mounted on said shelf and side ledges, a finger piece integral with said slide and adapted to protrude through said opening in said front plate, a spring attached to said slide and adapted to rest on the ledge in said rear plate aud urge said slide toward said front plate, a swing door pivoted between said side plates below said partition and providing a passage between the bottom of said rear compartment and the bottom of said front compartment, and a plurality of noses integral with said slide and slightly higher than and adapted to move between said inwardly extending portions of said rear plate.

3. In a cigarette dispensing and lighting machine, a container for a supply of cigarettes, dispensing means slidably mounted at the bottom of said contianer to drop cigarettes, one at a time, from said container, means to lock said dispensing means in an inoperative position, an ignition element, means to catch each cigarette and guide one end thereof against said ignition element where it rests by its own weight, and means operated by said dispensing means to actuate said ignition element.

4. In a cigarette dispensing and lighting machine, means to dispense a cigarette and means to light the dispensed cigarette including a flue, an ignition device comprising a wire heating element, a non-conducting support therefor having a duct therethrough, and means to releasably secure said support and heating element at the bottom of said flue to provide a path for a current of air through said duct, across said heating element and up said flue.

5. In a cigarette dispensing and lighting machine, a container for a supply of cigarettes, a dispensing means at the bottom of said container to drop one cigarette at a time from said container, a hook attached to said container, a second hook attached to said dispensing means, said hooks being substantially in line and cooperating to receive a cigarette when said dispensing means is operated and inclined forwardly when said dispensing means is released to bring one end of said cigarette into more easily removable position.

6. In a cigarette dispensing and lighting machine, a container for a supply of cigarettes, a dispensing means at the bottom of said container to drop one cigarette at a time from said container, a pair of hooks to receive said cigarette, one of said hooks comprising a stationary hook portion attached to said container and a movable portion attached to said dispensing means and cooperating with said stationary portion at a point above said hook when said dispensing means is operated, to catch and hold a cigarette therebetween and adapted to move forward from said stationary portion to release one end of said cigarette and allow said end to drop into the hook of said stationary portion when said dispensing means is returned to normal position.

7. In a cigarette dispensing and lighting machine, a container for a supply of cigarettes comprising front and rear compartments, a swinging gate separating the lower ends of said compartments, dispensing means to remove cigarettes, one at a time, from said front compartment, and means connected with said dispensing means to move cigarettes, one at a time, from said rear compartment beneath said swinging gate into said front compartment when said front compartment is empty.

In testimony whereof I have affixed my signature to this specification.

SERGIUS VERNET.