Oct. 22, 1963 J. B. EDWARDS 3,108,172

ELECTRIC CIGARETTE LIGHTER AND PROCESS

Filed March 6, 1961

Fig. 1

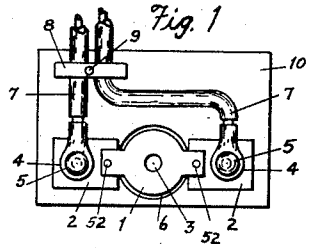


Fig. 2

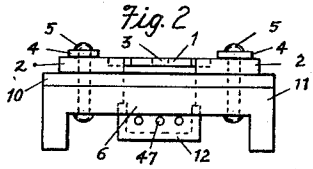


Fig 3

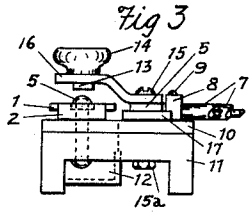


Fig. 4

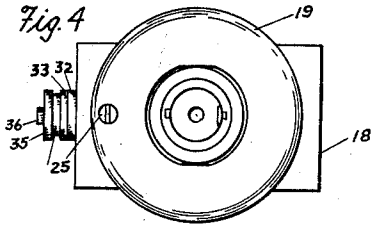


Fig. 5

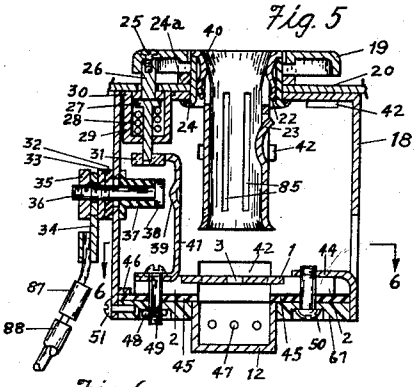


Fig. 6

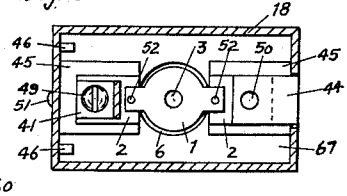


Fig. 7

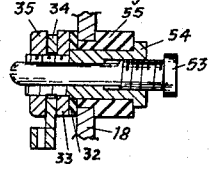


Fig. 9

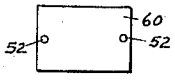


Fig. 17



Fig. 8

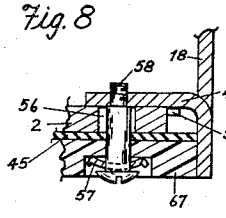


Fig. 10

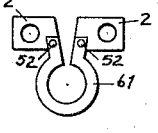


Fig. 11

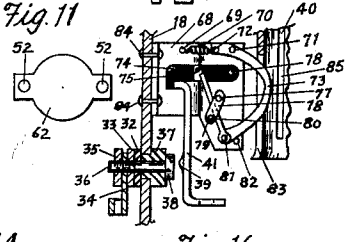


Fig. 12

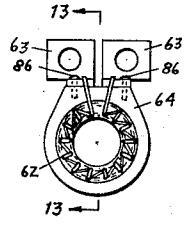


Fig. 13

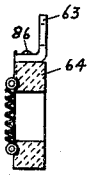


Fig. 14

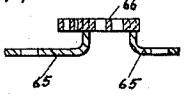


Fig. 16

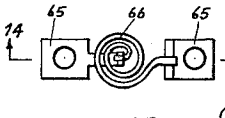


Fig. 15

INVENTOR.

Jones B. Edwards

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3,108,172

ELECTRIC CIGARETTE LIGHTER AND PROCESS

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Filed Mar. 6, 1961, Ser. No. 93,801
8 Claims. (Cl. 219—32)

This is a new application covering the invention disclosed in applicant's prior application, Serial No. 380,922, filed September 18, 1953, the claims of which were rejected by the Board of Appeals of the Patent Office, this rejection having been affirmed by the United States Court of Customs and Patent Appeals, in Patent Appeal No. 6583, decided January 13, 1961, as certified February 20, 1961, by the Clerk of Court.

This invention relates to improvements in cigarette lighters, and more particularly the application of a method embodying newly discovered principles for preventing tobacco sticking to the igniting element in automatically lighting a cigarette by electricity.

The current most widely used electric cigarette lighter for use principally on automobiles is the pop-out or manual type. Manually pressing the knob of an igniting element connects same to a source of electricity, which heats the igniting element to maximum temperature of approximately 1600–1800 degrees Fahrenheit (in the past it is probable that temperature was employed up to 2200 degrees Fahrenheit) and causes it to automatically disengage from the electrical connection. The heated element may then be withdrawn from its socket and applied to the tip of a cigarette held in the mouth, and when the cigarette is drawn on while the tip is in contact with the heated element, the cigarette becomes lighted, whereupon the igniting element may be returned to its socket or holder.

This manual type of lighter for use on automobiles thus is often hazardous to life and property when used by a driver while the vehicle is in motion. It is difficult to perform all of the motions necessary to obtain a light, especially putting the heated element to the tip of a cigarette, without taking eyes from the road. Frequently the highly heated element in contact abruptly with the cigarette tip results in tobacco sticking to the element, and upon separation pulling of burning tobacco from end of the cigarette. This condition creates the fire hazard of glowing embers of tobacco burning clothing or upholstery. At least two manufacturers of the pop-out type of lighter have provided "ash-guards" to catch the sparks and ashes that may frequently fall when using this type lighter.

A number of designs of automatic type lighters for use on automobiles have been noted. In these the cigarette is disposed in a holder with the cigarette tip resting on the igniting element which, when electrically energized, becomes heated and ignites the cigarette tip. The cigarette can readily be placed in the holder, electric contact established, and the lighted cigarette removed and smoked without removing eyes from the road.

In this respect, evidently the automatic type lighter should be safer and more convenient to use on automobiles than the pop-out or manual type lighter. In practice, however, this has not been the case. It is commonly observable that no automatic type light has ever come into wide use on automobiles. I attribute this to the fact that automatic type lighters have generally exhibited the same defect as noted above of the manual type lighter, viz, tobacco frequently sticking to the igniting element and the consequent pulling of burning embers of tobacco from end of the lighted cigarette when removed from the holder. An additional effect of this defect in automatic lighters has been to foul the igniting element and in such accumulative effects to render the automatic lighter inoperative and useless after a short time.

It is a principal object of this invention, therefore, to

provide an automatic type electric cigarette lighter for use on automobiles, and also suitable for table or desk use in homes and offices, that is simple in construction, economical to manufacture, and durable or long-lasting in use.

In furtherance of this object, it is also the object of this invention to provide a method of operation in automatic electric cigarette lighters which makes practical the utilization of the obviously more advantageous automatic type lighter over the manual type lighter.

In the accomplishment of the above objects it is specifically the object of this invention to provide a method of operation in automatic electric cigarette lighters which simply and effectively eliminates the defect of tobacco sticking to the igniting element and the ill-effects arising therefrom.

Other advantages and desirable features will become apparent in the description and principles of operation hereinafter disclosed.

With reference to the accompanying drawing, which illustrates several species and modifications of the invention:

FIGURE 1 is a plan view of one form of the invention.

FIGURE 2 is a front elevation of the form of the invention shown in FIGURE 1.

FIGURE 3 is a side elevation of the form of the invention shown in FIGURES 2 and 3, but with switch for connecting and disconnecting a source of electricity.

FIGURE 4 is a plan view of FIGURE 5.

FIGURE 5 is a sectional elevation of a preferred form of the invention.

FIGURE 6 is a sectional plan view along the line 6—6 of FIGURE 5.

FIGURE 7 is a sectional detail of adjustable means for calibrating automatic disconnection of electricity.

FIGURE 8 is a sectional detail of self-adjusting means for compensation of expansion and contraction of the heating element.

FIGURE 9 is the plan view of an optional rectangular solid igniting element of resistance material, without hole in center.

FIGURE 10 is the plan view of an optional flat cut-out igniting element of resistance material, with mounting plates.

FIGURE 11 is the plan view of an optional semi-circular solid igniting element of resistance material, without hole in center.

FIGURE 12 is the plan view of an optional wire-coil igniting element mounted on refractory base, with mounting lugs.

FIGURE 13 is a sectional view along the line 13—13 of FIGURE 12.

FIGURE 14 is a sectional view along the line 14—14 of FIGURE 15.

FIGURE 15 is the plan view of an optional spiral igniting element of ribbon resistance material, with mounting lugs.

FIGURE 16 is a sectional detail of automatic means for connecting and disconnecting electricity.

FIGURE 17 is a plan detail of a bracket which is used in the structure shown in FIGURE 16.

Considerable experiment has disclosed that when the tip of a cigarette is abruptly contacted to a highly heated igniting element at temperature of 1600–1800 degrees Fahrenheit and upwards, many times the tobacco adheres to the element and upon separation burning embers of tobacco are pulled from the cigarette tip.

Experiments further disclosed that a cigarette tip placed on an igniting element at ambient temperature, which was then gradually raised to approximately 1100 to 1400 degrees Fahrenheit temperature within approximately 5 to 8 seconds, became ignited and the tobacco did not stick

to the igniting element, eliminating the ill-effects of such condition.

According to the circumstances described, apparently moisture very quickly driven from the tobacco by abrupt or simultaneous contact with a very hot igniting element caused the sticking. In the method which eliminated sticking of tobacco to the igniting element, the gradually or slow raising of temperature of the igniting element from ambient to igniting temperature within approximately 5 to 8 seconds, more slowly dries out moisture in the tobacco, the dry tobacco has become heated, and combining with oxygen becomes ignited. This method does not noticeably dry out the tobacco in the cigarette except just at the tip being lighted.

It is obvious to me that in prior automatic type lighters subject to the defect of tobacco sticking to the igniting element, the temperature of the igniting element has been raised too quickly to high temperature, for instance, on the order of 1800 degrees Fahrenheit within 3 or 4 seconds. Evidently, too quick application of high igniting temperature to a cigarette tip already in contact with an igniting element in an automatic lighter is equivalent in ill effects to abrupt contact of the tip to an already highly heated igniting element, as with the method of operation in manual type lighters.

The range of temperatures, approximately 1100 to 1400 degrees Fahrenheit in approximately 5 to 8 seconds, includes such specific applications as ambient to 1100 degrees Fahrenheit in 8 seconds, ambient to 1400 degrees Fahrenheit in 8 seconds, ambient to 1400 degrees in 5 seconds, ambient to 1250 degrees in 7 seconds, etc., according to the type and size or B.t.u. output of the igniting element used, and the preferences of the designer or manufacturer. My method of preventing tobacco sticking to the igniting element consists of subjecting the tobacco at tip of the cigarette in contact or near-contact with the igniting element to gradually rising temperatures over a sufficient period of time (in seconds) that moisture in the tobacco at the tip will become dried out at the lower temperatures before the higher igniting temperature is reached rather than be expelled abruptly, as occurs when the temperature is raised too quickly such as, for instance, 1800 degrees Fahrenheit in 3 or 4 seconds.

After the tobacco at the cigarette tip is sufficiently dried out the temperature may rise quickly to any reasonable maximum temperature sufficient to ignite the cigarette. The heating of the igniting element being a continuous process in drying out the tobacco and igniting the tip, a specific application can be stated in temperature-time terms, in which the rate of temperature rise would occur according to characteristics of materials and electric current used. I have found that a specific application of temperatures from ambient to 1400 degrees Fahrenheit in 8 to 10 seconds, using a solid-surfaced igniting element, will light the cigarette without tobacco sticking to the igniting element.

It is evident from my explanation that an inseparable temperature-time relation is involved in the herein disclosed method of preventing tobacco sticking to the igniting element in an automatic lighter. The overall time must be sufficient that tobacco at the cigarette tip will dry out at the lower temperatures before igniting temperature is reached, and the maximum temperature to be attained by the igniting element within that time may be a matter of preference depending on other conditions. The life of an igniting element will be much longer at maximum temperature of 1400–1600 degrees Fahrenheit than at 1600–1800 degrees Fahrenheit and upwards. Also, when the maximum temperature above 1600 degrees Fahrenheat is permitted, it has been found that the cigarette tip has a tendency to burst into flame before being removed from the holder of the lighter.

The heating coil or igniting element of a principal pop-out or manual type lighter currently in wide use on automobiles operates at 1600–1800 degrees Fahrenheit, according to the manufacturer. This temperature is attained in about 10 seconds, and several seconds more are required to remove the heated igniting element from its socket and apply it to obtain a light for a cigarette held in the mouth. The total time required to obtain a light is about 15 seconds or more. On the other hand my studies of prior automatic type lighters discloses that in general the designers contemplated lighting the cigarette in contact with the igniting element as quickly as possible. As one designer states, his automatic or semi-automatic lighter would operate at 1800 degrees Fahrenheit within 3 seconds. My own experiments have disclosed that at this rate tobacco will often stick to the igniting element.

In general, it appears to me that designers of prior automatic type lighters have had as principal objects structural design features of apparatus, and have considered heating characteristics mainly in terms of quick lighting of the cigarette, as exemplified by the final step in the use of manual type lighters, applying the highly heated igniting element abruptly to the tip of a cigarette. This impression is borne out in the most pertinent literature on the subject, in which, when heating characteristics are mentioned, quick heating of the igniting element to the high igniting temperatures and quick lighting of the cigarette are the terms used.

I have not found any mention of the defect, tobacco sticking to the igniting element, or a method of overcoming it, in any form of literature pertaining to electric cigarette lighters, prior to my discovery in 1953 of the method herein disclosed and described. The worth of my method for overcoming the defect of tobacco sticking to the igniting element in automatic type lighters resides in the disclosure of knowledge of how this defect may be overcome, which includes pointing out a vital difference in method of operation between manual and automatic type lighters.

Currently used pop-out or manual type lighters operate at 1600–1800 degrees Fahrenheit within about 10 seconds, but apparently automatic lighters have been designed to operate much quicker, for instance on the order of 1800 degrees Fahrenheit within about 3 seconds. The difference in method of operation between manual and automatic type lighters represents a difference in effective results as hereinbefore described. I have found no evidence that anyone disclosed the knowledge of this difference prior to my own original discovery thereof in relation to the defect of tobacco sticking to the igniting element.

The range of temperatures-time I have mentioned, from ambient to approximately 1100 to 1400 degrees Fahrenheit in approximately 5 to 8 seconds, therefore, is not critical or absolute in my method of relatively slowly drying out moisture in tobacco at tip of the cigarette before the higher igniting temperature is reached. In the lighting operation as a whole for an automatic type lighter the range of temperatures-time may be more inclusively stated as from ambient to 1100–1600 degrees Fahrenheit in 3 to 10 seconds.

Several specific applications within this range to meet various conditions as hereinbefore pointed out will perform my method. There seems to have been in the past no recognition that higher temperatures attained too quickly will cause the defect of tobacco sticking to the igniting element in automatic type lighters, nor that the rate of 1600–1800 degrees Fahrenheit in 10 seconds, as employed in manual type lighters, would overcome this defect if employed in automatic type lighters, considering the difference in method of operation between manual and automatic type lighters.

The principles outlined are the basis for design and operation of the lighter embodied in this application. It is believed that they have not been heretofore recognized or knowingly utilized.

With the foregoing purposes in mind, a preferred form of the invention is shown in FIGURES 4, 5 and 6.

The heating element 1 is disk-shaped preferably, with a small hole 3 in the center, and has short opposed lugs for attachment, preferably by welding, to mounting plates 2. The heating element 1 is preferably of substantially solid and homogeneous construction, and made of suitable resistance material. The element mounting plates 2 have mica insulation 45 between them and a dielectric base 67. One element mounting plate 2 is secured to the base 67 by bolt 49 and nut 48, which also secures a bimetallic strip 41 which is hereinafter explained. The other element mounting plate 2 is secured to the base 67 and to the case member 44 by a threaded bolt 50 engaging a hole in the case member 44. Bolt 51 secures the other side of the base 67, bearing against lugs 46 on the case 18. This construction facilitates replacement of a burned out heating element whenever this might become necessary.

A stem 24 passes through the case 18 and mounting panel 20 to which it is fastened by nut 2a. Holder 40 fits inside the stem 24 and is firmly held therein by springy prongs 22, but may be readily removed for cleaning whenever desired. The holder 40 has a springy prong 23 which lightly holds a cigarette in place when one is inserted in the holder.

Positive terminal 36 is mounted on one side of case 18 and is insulated therefrom, and the head 38 constitutes a contact to engage with contact 39 of bimetallic strip 41. The terminal 36 passes through insulating member 37, insulating washer 32, retaining nut 33, terminal lug 34, and terminal nut 35.

A connecting switch consists of case 29 affixed to case 18 by lugs 30 passing through holes in case 18, spring 28, plunger 26 which has a washer 27 bearing against a shoulder, and insulating and heatproof operating disk 31. Panel plate 19 is fastened to plunger 26 by screw 25.

A removable cleanout is friction-fitted in base 67, and preferably has ventilating holes 47. Other ventilating holes, such as 42 in case 18, and 85 in holder 40 preferably should be provided.

Positive lead 88 is attached to termianl lug 34, and may be a resistance cord, or a suitable resistor 87 may be provided, when it is necessary to adjust the source of electricity to desired electrical value for heating the element 1. It is preferred to use a resistor having higher temperature coefficient of resistance than the igniting element for regulating the rate of temperature rise in the igniting element 1 according to the method hereinbefore described. I have used a nickle wire-wound resistor (other wire, such as iron, having similar or suitable electrical-temperature coffiecient characteristics would be effective) for this purpose, and also additionally to obtain limitation of the maximum temperature to be attained by the igniting element, such as 1400–1600 degrees Fahrenheit, even if there should be considerable delay in de-energizing the igniting element. With a register of this type, temperature rise in the resistor will act to adjust the values of the electric current used to the maximum temperature to be attained in the igniting element within the desired overall time period.

One of the element mounting plates 2 is grounded to case member 44 of the case 18 which in turn is grounded to the mounting panel 20 of an automobile, which provides negative connection to source of electricity. The positive lead 88 may be attached to any suitable positive terminal at the instrument panel.

In operation, a cigarette held between the thumb and forefinger is inserted in holder 40, and with the same motion the thumb presses down lightly on panel plate 19. Plunger 26 is thereby depressed against action of spring 28, end of bimetallic strip 41 under some tension against disk 31 slips atop disk 31, and contact 39 on bimetallic strip 41 engages contact 38, which establishes a current through the heating element 1 and bimetallic strip 41.

Bimetallic strip 41 is so designed and calibrated that when the element 1 has been heated sufficiently to ignite the cigarette, bimetallic strip 41 becomes sufficiently heated to warp its end from engagement atop disk 31 and release plunger 26 to return to normal unoperated position through action of spring 28. This will cause an audible "click" and lighted cigarette may then be removed and smoked. As the bimetallic strip 41 cools it comes to rest again on disk 31 which withholds it from engaging positive contact 38 until the switch is again operated.

If desired, the positive terminal and contact may be made adjustable to permit ready calibration of the automatic disconnection of electricity, as shown in FIGURE 7. Terminal and contact 53 is in two parts, having a sleeve 54 through which terminal 53 passes, being adjustably secured therein by tight threads. The structure is otherwise as shown in FIGURE 5. In this way adjustment of contact 53 in relation to contact 39 of the bimetallic strip 41 will provide precise calibration at any time.

Should it also be desired to provide self-adjusting means to allow for expansion and contraction of the heating element 1, this may be done as shown in FIGURE 8. The case member 44 has turned-down edges 59 which provide a channel in which element mounting plate 2 may slide. Plate 2 has a slot 56, and the base assembly is secured by threaded bolt 58 engaging case member 44. The assembly is spring-loaded by spring washer 57, which maintains good electrical contact between mounting plate 2 and case member 44, yet permits slight movement of mounting plate 2 to compensate for expansion and contraction of the heating element 1. If further desired, element mounting plate 2 may be bonded to the case by a flexible conductor.

Automatic connection of electricity by insertion of a cigarette in holder 40 may be accomplished as shown in FIGURES 16 and 17. Bimetallic strip 41 is held in tension by latch 74 hinged on pin 76 affixed to mounting plate 68. A trip lock 75 is affixed to latch 74. A trip 73 extends into holder 40, and being depressed against light action of spring 70 when a cigarette is placed in holder 40, forces trip lever 80 to raise latch 75 and permit contact 39 to engage contact 38, which establishes the electrical circuit. Trip lever 80 disengages from trip lock 75 through action against pin 79. The latch 74 and trip lever 80 so coact as to properly reengage regardless of whether the cigarette is removed before or after bimetallic strip 41 warps and disengages.

When this arrangement is used instead of manual connection, panel plate 19 may be friction-held on stem 24 or threaded thereon.

The most simple form of the invention for practical use is shown in FIGURES 1 and 2. This consists of element 1, mounted on plates 2, and this heating assembly mounted on base 11, with mica insulation 10 in between. Electric leads 7 may be plugged in on a suitable source of electricity. A resistance cord or a resistor may be used to adapt a source of electricity to the heating element. Expansion and contraction of the element may be compensated by slight modification of means illustrated in FIGURE 8. A removable cleanout 12 may be provided.

FIGURE 3 shows this form of the invention fitted with means for connecting and disconnecting the element to a source of electricity. A formed spring 16 is secured by terminal bolt 15, has an insulating knob 14 and a contact 13. Element mounting plate 2 is secured by bolt or rivet having a contact head 5. With a cigarette held between thumb and forefinger and the cigarette tip resting on element 1, the middle finger may be used to depress knob 14 and engage contacts 5 and 13, establishing the electrical circuit. When the lighted cigarette is removed spring 16 separates contacts 5 and 13, disconnecting the electricity.

The substantially solid and homogeneous form of heating element designated at 1 is preferred. It will put out more heat for overall size than the open type elements, which is desirable in the method herein described, and has no crevices in which ash may accumulate and require more frequent cleaning than the solid type igniting element.

However, other forms of igniting element which would perform the method are shown in FIGURES 9 to 15, inclusive, and are self-explanatory.

Although the preferred form of the invention illustrated in FIGURES 4, 5 and 6, is depicted in upright position, this model may be made with the holder 40 in a slanted position, which may have some advantages over the upright position. The automatic lighting method disclosed and described herein will function in either of these or any position.

Having thus fully described the invention and the principles of operation, it will be seen that there has been provided a very simply constructed automatic lighting device for cigarettes suitable for automobile, table and desk use, which may be economically manufactured, and will be durable and practically foolproof in operation.

It will be appreciated that these results are attained in connection with the method of preventing tobacco sticking to the igniting element as herein disclosed, the application of some new principles thought not to have been heretofore recognized or utilized, and that combinations of the essential parts other than the combinations herein illustrated may be made.

Therefore, variations and modifications may be made within the scope of this invention, some portions of the improvements may be combined with other portions, and portions of the improvements may be used without others.

While there have been disclosed in this specification species which are specific with several modifications in details, it is to be understood that these forms are shown and described for the purpose of illustration only, and that the invention is not to be limited to the specific disclosures but may be further modified and embodied in various other forms without departure from its spirit.

As a matter of fact, the invention includes all the modifications and embodiments coming within the scope of the following claims.

Having thus fully described the invention, what is claimed as new, and for which it is desired to secure Letters Patent, is:

1. The herein described method of lighting a cigarette with an electrically heated igniting element, comprising holding the tip of the cigarette in contact with the unenergized igniting element, and effectually concurrent with thus disposing the cigarette, electrically energizing the said igniting element in a manner subjecting the cigarette tip gradually to temperatures within the temperatures-time range from ambient to 1100 to 1400 degrees Fahrenheit in 5 to 8 seconds, whereby moisture in the tobacco at tip of the cigarette is dried out at the lower temperatures before the higher igniting temperature is reached and thus preventing tobacco sticking to the igniting element, and removing the cigarette from the said igniting element when the cigarette becomes lighted.

2. The herein described method of lighting a cigarette with an electrically heated igniting element, comprising holding the tip of the cigarette in contact with the unenergized igniting element, and effectually concurrent with thus disposing the cigarette, electrically energizing the said igniting element in a manner subjecting the cigarette tip gradually to temperatures within the temperatures-time range from ambient to 1100 to 1400 degrees Fahrenheit in 5 to 8 seconds, whereby moisture in the tobacco at tip of the cigarette is dried out at the lower temperatures before the higher igniting temperature is reached and thus preventing tobacco sticking to the igniting element, and thermostatically de-energizing the said igniting element when the cigarette becomes lighted and before the said cigarette tip flames, and removing the cigarette from the said igniting element when the cigarette becomes lighted.

3. The herein described method of lighting a cigarette with an electrically heated igniting element, comprising holding the tip of the cigarette in contact with the unenergized igniting element, and effectually concurrent with thus disposing the cigarette, electrically energizing the said igniting element in a manner subjecting the cigarette tip gradually to temperatures from ambient to 1400 degrees Fahrenheit in 10 seconds, whereby moisture in the tobacco at tip of the cigarette is dried out at the lower temperatures before the higher igniting temperature is reached and thus preventing tobacco sticking to the igniting element, and removing the cigarette from the said igniting element when the cigarette becomes lighted.

4. The herein described method of lighting a cigarette with an electrically heated igniting element, comprising holding the tip of the cigarette in contact with the unenergized igniting element, and effectually concurrent with thus disposing the cigarette, electrically energizing the said igniting element in a manner subjecting the cigarette tip gradually to temperatures from ambient to 1400 degrees Fahrenheit in 10 seconds, whereby moisture in the tobacco at tip of the cigarette is dried out at the lower temperatures before the higher igniting temperature is reached and thus preventing tobacco sticking to the igniting element, and thermostatically de-energizing the said igniting element when the cigarette becomes lighted and before the said cigarette tip flames, and removing the cigarette from the said igniting element when the cigarette becomes lighted.

5. The herein described method of lighting a cigarette with an electrically heated igniting element, comprising holding the tip of the cigarette in contact with the unenergized igniting element, and effectually concurrent with thus disposing the cigarette, electrically energizing the said igniting element in a manner subjecting the cigarette tip gradually to temperatures from ambient to 1600 degrees Fahrenheit in 7 seconds, whereby moisture in the tobacco at tip of the cigarette is dried out at the lower temperatures before the higher igniting temperature is reached and thus preventing tobacco sticking to the igniting element, and thermostatically de-energizing the said igniting element when the cigarette becomes lighted and before the said cigarette tip flames, and removing the cigarette from the said igniting element when the cigarette becomes lighted.

6. The herein described method of lighting a cigarette with an electrically heated igniting element, comprising holding the tip of the cigarette in contact with the unenergized igniting element, and effectually concurrent with thus disposing the cigarette, electrically energizing the said igniting element in a manner subjecting the cigarette tip gradually to temperatures from ambient to 1400 degrees Fahrenheit in 8 seconds, whereby moisture in the tobacco at tip of the cigarette is dried out at the lower temperatures before the higher igniting temperature is reached and thus preventing tobacco sticking to the igniting element, and thermostatically de-energizing the said igniting element when the cigarette becomes lighted and before the said cigarette tip flames, and removing the cigarette from the said igniting element when the cigarette becomes lighted.

7. The herein described method of lighting a cigarette with an electrically heated igniting element, comprising holding the tip of the cigarette in contact with the unenergized igniting element, and effectually concurrent with thus disposing the cigarette, electrically energizing the said igniting element in a manner subjecting the cigarette tip gradually to temperatures from ambient to 1350 degrees Fahrenheit in 9 seconds, whereby moisture in the tobacco at tip of the cigarette is dried out at the lower temperatures before the higher igniting temperature is reached and thus preventing tobacco sticking to the igniting element, and thermostatically de-energizing the said igniting element when the cigarette becomes lighted and before the said cigarette tip flames, and removing the cigarette from the said igniting element when the cigarette becomes lighted.

8. The herein described method of lighting a cigarette with an electrically heated igniting element, comprising holding the tip of the cigarette in contact with the unenergized igniting element, and effectually concurrent with thus disposing the cigarette, electrically energizing the

said igniting element in a manner subjecting the cigarette tip gradually to temperatures from ambient to 1300 degrees Fahrenheit in 10 seconds, whereby moisutre in the tobacco at tip of the cigarette is dried out at the lower temperatures before the higher igniting temperature is reached and thus preventing tobacco sticking to the igniting element, and thermostatically de-energizing the said igniting element when the cigarette becomes lighted and before the said cigarette tip flames, and removing the cigarette from the said igniting element when the cigarette becomes lighted.

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