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PATENT SPECIFICATION



Application Date: March 2, 1943. No. 3455/43.

560,621

Complete Specification Left: Sept. 27, 1943.

Complete Specification Accepted: April 12, 1944.

PROVISIONAL SPECIFICATION

Improvements in or relating to Electric Cigarette and Cigar Lighters

I, DAVID JOHN TIBBS, of "Carlisle," 33, Colcocks Road, Banstead, Surrey, being of British nationality, do hereby declare the nature of this invention to be as follows:—

The invention relates to the control of the supply of power to electric cigarette and cigar lighters.

The object of the invention is to make possible the lighting of a cigarette or cigar with the minimum possible difficulty or effort. To this end the supply of electric power to the heated element, from which the cigarette is to be lit, is controlled by a switch. This switch is so arranged that while the cigarette or cigar is being held in the proximity of the heated element or other means of ignition, the weight of the hand, wrist or some part of the arm rests upon the switch control mechanism. This

mechanism is so designed that under these conditions it causes the switch to complete the power supply circuit to the heater element.

Further the switch mechanism is retractive and will be returned to the open position by a spring or the like upon the release of the weight.

In order to facilitate the operations described above the switch control takes the form of a broad bar, dome or the like. This control surface should preferably be raised so as to provide a comfortable and naturally located cushion for the weight of the hand, wrist or part of the arm, during the period when the cigarette or cigar is held in the proximity of the heated element.

Dated the 22nd day of February, 1943.  
D. J. JIBBS, M.B., B.Sc.

COMPLETE SPECIFICATION

Improvements in or relating to Electric Cigarette and Cigar Lighters

I, DAVID JOHN TIBBS, of "Carlisle," 33, Colcocks Road, Banstead, Surrey, being of British nationality, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to lighters for cigarettes and cigars, and an object of the invention is to provide an electrically operated lighter which will rest on a table, desk or the like and can be operated entirely by one hand to light a cigarette or cigar so that the user, in lighting his cigarette, does not have to divert his other hand from any occupation in which he may be engaged, such as writing or holding a book.

According to the invention a device for lighting a cigarette or cigar is provided with a resiliently mounted member of substantial area arranged to be depressed by the user's wrist or the rear of his hand while holding, in the same hand, a cigar-

ette in position to be ignited by a heating element electrically operated by the depression of the said resiliently mounted member. The latter is made of substantial area so as to accommodate hands of various sizes ranging, for example, from a large man's hand to a small woman's hand. Thus, the electrical contacts associated with the resiliently mounted member are arranged so as to be closed when pressure is applied at substantially any point on the exposed surface of the said member. When the cigarette or cigar is to be lighted directly by an electrical resistance, the said resiliently mounted member may be mounted on a casing containing a transformer. This enables a suitable resistance to be supplied from the household mains. The heating element may then be mounted in the casing beneath an aperture through which the element is accessible and the casing may be so arranged as to permit a current of air to be induced by convection past the heating element. Advantageously a detach-

[Price 1/-]

able ash receptacle is mounted beneath the heating element and within the casing.

In order that the invention may be clearly understood and readily carried into effect, a cigarette lighting device or lighter in accordance therewith will now be described, by way of example, with reference to the accompanying drawings, in which:—

10 Figure 1 is a perspective view showing the cigarette lighter in use,

Figure 2 is a plan of the lighter as seen from above,

15 Figure 3 is a plan of the lighter as seen from below,

Figure 4 is a vertical longitudinal section on the line IV—IV in Figure 3,

Figure 5 is a section on the line V—V in Figure 4, and

20 Figure 6 is a plan of a heating element, shown on an enlarged scale, as used in the lighter of Figures 1 to 5, and

It will be seen from Figure 1 that the lighting device has a smooth and pleasing appearance and can be placed on a desk or table to enable anyone to light a cigarette quickly with one hand. If the lighting device is provided with flexible lateral extensions with weights at their ends, as are well known in association with ash-trays, it may be placed on one arm of an easy-chair, the lateral extension preventing the device from tumbling off.

The device comprises a casing 1 moulded from a thermo-setting synthetic resin and formed on top with an aperture 2 through which the user may pass one end of a cigarette 3, as shown in Figure 1. The end of the cigarette is allowed to rest for a short time on an S-shaped electrical element 4, shown in detail in Figure 6, which is mounted immediately beneath the aperture 2. The end of the cigarette should be allowed simply to rest on the heating element, and should not be pressed thereon because the element would then tend to cut through the cigarette.

To supply the heating element 4 with electric current so that it will rapidly become hot, the user, as he passes the cigarette through the aperture 2, rests the back end of his hand on a domed hand-rest 5, as shown in Figure 1, so that the hand-rest is depressed slightly against a helical spring 6 (Figure 4) interposed between the casing 1 and the hand-rest 5. The electric current is supplied to the heating element 4 through the medium of a transformer 7 concealed within the casing 1 beneath the portion thereof which is covered by the hand-rest 5. The transformer is necessary because the lighting device is designed to be supplied from the main electrical supply in a building and current at comparatively low voltage is necessary for the

efficient working of the heating element. It has been found convenient to form the latter from nickel-chrome wire approximately 0.036 inches in diameter. Thus, the primary winding of the transformer is connected to the main supply and the secondary winding is connected to the heating element, these connections being arranged as described presently.

As shown in Figure 4, the hand-rest 5, which is also moulded from synthetic resin, is formed on its undersurface with an annular projection 8 which passes through an upstanding projection 9 having an inwardly projecting flange 9a and formed on the casing 1. The annular projection 8 carries a metal ring 10 which normally bears against the flange 9a but, when any portion of the hand-rest 5 is depressed slightly against the action of the spring 6, a portion at least of the ring 10 makes contact with a conical contact ring 11 secured to the casing 1. Thus, alternating current supplied through a flexible connection 12, is caused to pass through the primary winding of the transformer. A thermal safety switch 13, such as a switch operated by a bi-metal strip, as well known in the art, is included in this circuit in case the hand-rest 5 is kept depressed for a prolonged period, as by the inadvertent placing of a book thereon. The safety switch 13 serves to prevent the transformer from becoming overheated.

Normally air is drawn through a cigarette as it is lighted, but in the present design this is impossible. However, the casing is so formed that air can pass upwards through the opening 2, and it will be seen from Figure 6 that the S-shape of the heating element 4 is not such as to restrict the flow of air. The casing 1 is open at its base beneath the aperture 2 and stands on small projections 14 so that air can find its way upwards in the direction of the arrows A, and it will be seen that the air flows round an ash receptacle 15 secured to a plate 16 fixed by screws 17 to the underside of the top wall of the casing 1. The said top wall of the casing is formed with a recess 18 to enable the air to pass over the plate 16 and through the heating element 4. The latter is mounted in the recess 18, just beneath the aperture 2, by screws 19 respectively passing through circular ends 4a (Figure 6) of the heating element 4 into metal plates 20 and 21 electrically connected respectively to the ends of the secondary winding of the transformer 7. It will be seen that the aforesaid plate 16 is formed centrally with a screw-threaded annular flange 16a and with a conical funnel 16b that constitutes the top of the ash receptacle 15, which is screwed to the flange 16a

and can readily be removed therefrom when it has to be emptied. By removing the screws 17 the plate 16 can easily be dismantled so that the heating element 4 becomes accessible for cleaning or replacement.

It will be seen that the design is such that a cigarette can be easily lighted with one hand, no matter whether the user's hand is large or small. It is merely necessary to rest the wrist or back end of the hand on any part of the domed hand-rest 5 while the fingers of the same hand hold the cigarette in the aperture 2. It has been found that a cold cigarette can be lighted almost certainly in seven seconds and certainly in ten seconds if a nickel-chrome heating element as aforesaid is supplied with a current of 30 amperes at 1.5 volts.

For convenience the forward end of the casing 1 is formed with an ash-tray 22. The casing is further formed with a partition 23 which separates the transformer 7 from the portion of the casing that contains the heating element and ash receptacle 15. A cover plate 24 may be secured to the bottom of the casing beneath the transformer 7 and a detachable bridge piece 25 may be provided to clamp the cable 12 in position.

The casing 1, the ash receptacle 15 and plate 16 are preferably moulded from a synthetic resin capable of withstanding high temperature. The cover plate 24 may be made from a synthetic resin bonded paper board with working instructions appearing thereon. The hand-rest 5 may be moulded in a different colour from the casing 1 and incidentally it is formed with a recess 5a which fits over a spigot 1a on the casing 1 to prevent the hand-rest from turning in a horizontal plane.

The material for the heating element and the voltage applied to the element are chosen according to the material used and, instead of the heating element, electric means for producing a spark may be employed, the cigarette being lighted from the spark. Yet again the spark or heating element may be used to kindle a flame such as a petrol flame, from which the cigarette or cigar is lighted.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to

be performed, I declare that what I claim is:—

1. A device for lighting a cigarette or cigar provided with a resiliently mounted member of substantial area arranged to be depressed by the user's wrist or the rear of his hand while holding, in the same hand, a cigarette in position to be ignited by a heating element electrically operated by the depression of the said resiliently mounted member.

2. A device according to claim 1, in which the said resiliently mounted member is carried by a casing containing a transformer through the medium of which the heating element is supplied.

3. A device according to claim 1 or claim 2, in which the resiliently mounted member is supported by a casing formed with an aperture through which the heating element is accessible.

4. A device according to claim 3, wherein the casing is so arranged as to permit a current of air to be induced by convection past the heating element.

5. A device according to claim 3 or claim 4, furnished with a detachable ash receptacle mounted beneath the heating element and within the casing.

6. A device according to any one of the preceding claims, in which the heating element consists of an S-shaped electrical resistance.

7. A device according to any one of the preceding claims, in which the resiliently mounted member is associated with contacts arranged so as to be closed when pressure is applied at substantially any point on the exposed surface of the said member.

8. A device according to any one of claims 2 to 7, furnished with a thermally operated switch operative to open the primary winding of the transformer when the latter becomes overheated.

9. A device according to any one of claims 2 to 8, in which the casing is formed with an ashtray.

10. A device for lighting a cigarette or cigar substantially as described with reference to the accompanying drawings.

Dated this 27th day of September, 1943.

For the Applicant:

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Chartered Patent Agents,

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FIG. 1.

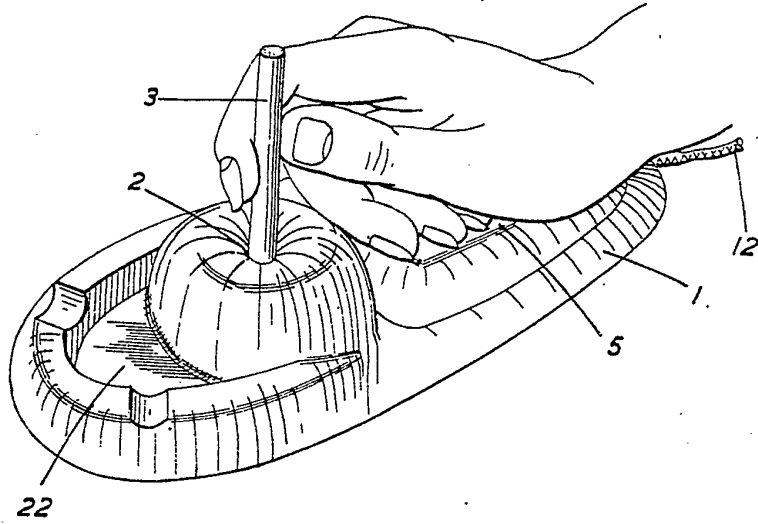


FIG. 2.

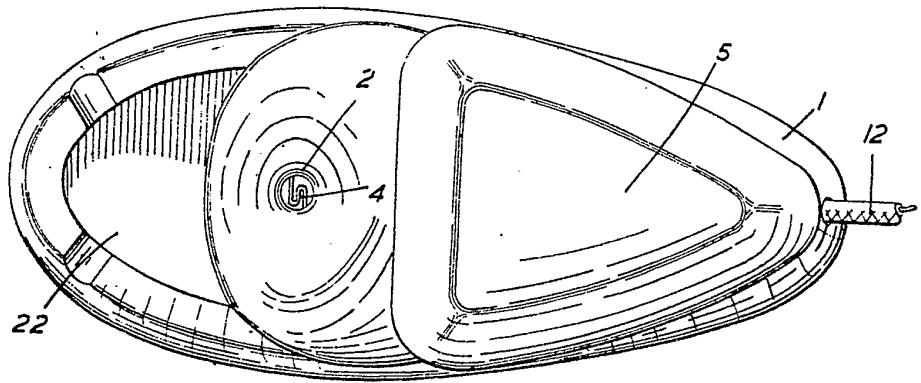
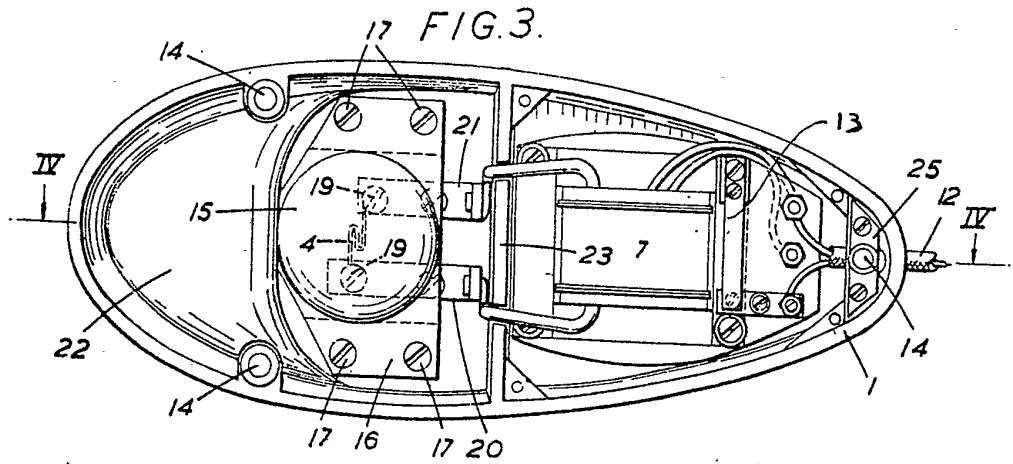


FIG. 3.



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FIG. 4.

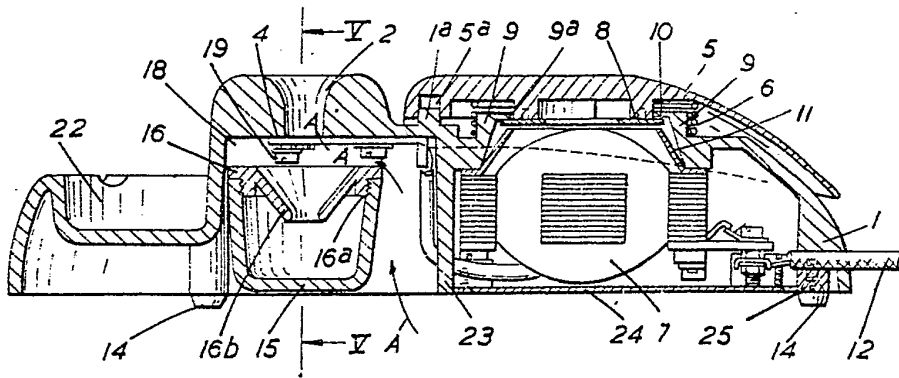


FIG. 5.

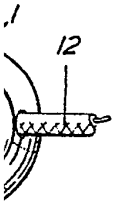
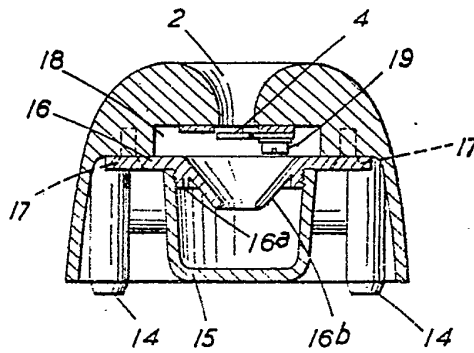


FIG. 6.

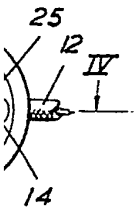
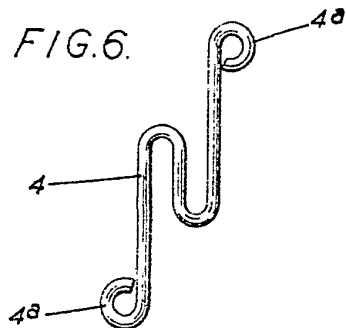


FIG. 1.

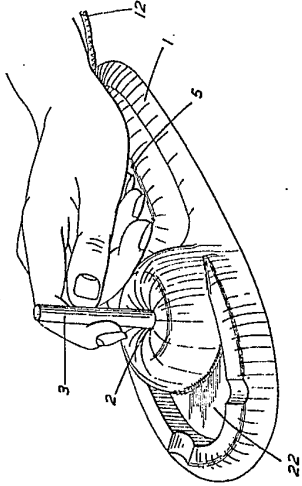


FIG. 2.

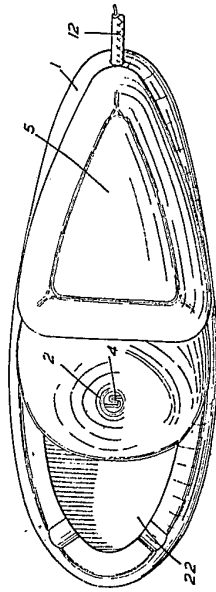


FIG. 3.

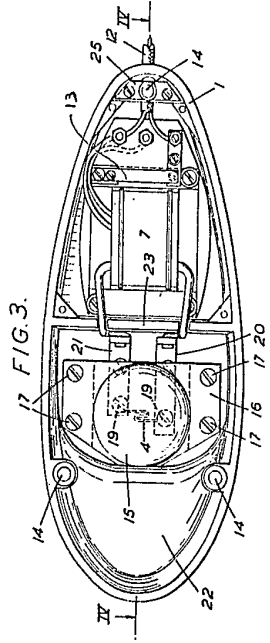


FIG. 4.

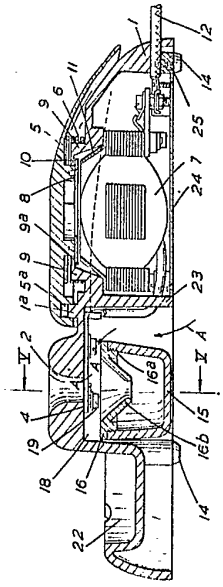


FIG. 5.

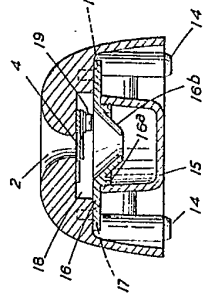
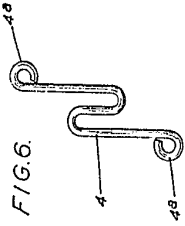


FIG. 6.



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