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ELECTRIC CIGARETTE LIGHTER

Filed May 23, 1958

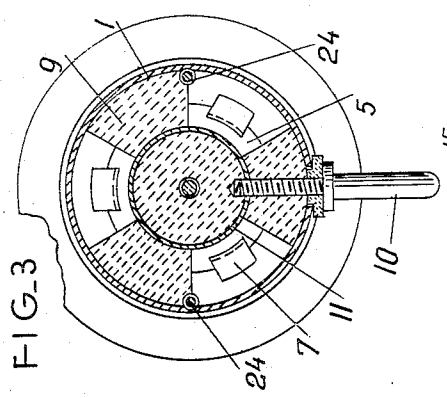


FIG_3

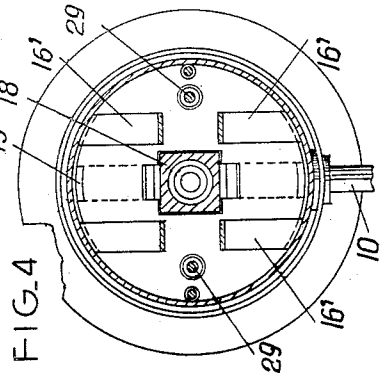


FIG_4

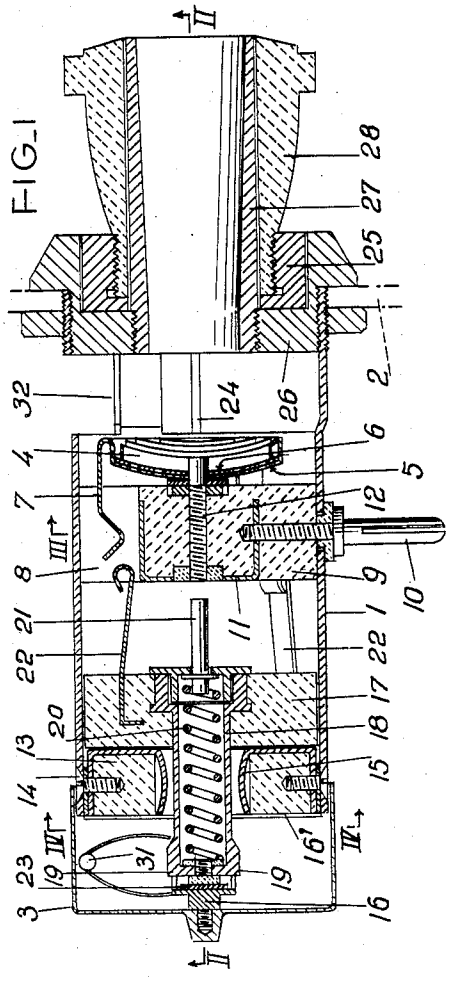


FIG_1

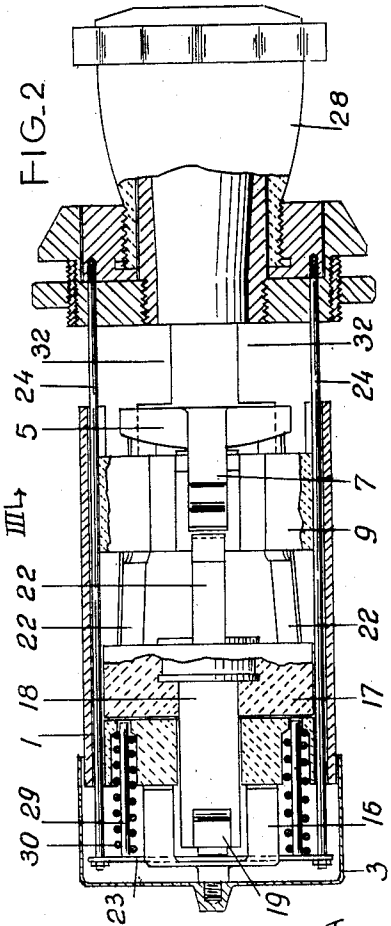


FIG_2

INVENTOR:
LUIGI PRAMAGGIORE
By: J. Chatwin ATTY.

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ELECTRIC CIGARETTE LIGHTER

Luigi Pramaggiore, Aosta, Italy

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3 Claims. (Cl. 219—32)

The present invention has for its object an electric safety device for the ignition of cigars and cigarettes, with acoustic and/or luminous indication, especially for motor vehicles.

The device according to the present invention, and a preferred form of embodiment with acoustic indication, is essentially constituted by a metallic tubular body with one end fixed to the dashboard and with the other provided with a cover acting as a bell, carrying on the interior, towards the dashboard, an igniting resistance situated in a small dished portion on which there are drawn out a plurality of small metallic blades or fixed contacts, intended to close the electric circuit when they make contact, and hooked to other corresponding small tongues, or movable contacts, fast with a core slidable in the tubular body, between the support of the resistance and a centrally bored end portion through which a spring casing passes, which is adapted to contain a spring intended to be compressed by a central pin for contact with the resistance, and carrying at its rear end two opposed enlarged portions intended to come into contact with as many small tongues placed in the passage orifice of the said casing when the latter is moved by traction by means of draw-rods united with one another by a cross-member and actuated by a handle situated outside the dashboard and sliding on a tubular sleeve coaxial with the resistance, by the introduction of the cigar or cigarette, elastic return means being provided for returning the whole of the movable elements into the original position when the resistance, after lighting the cigarette, and reaching a pre-determined temperature, causes the expansion of the blades, freeing the small tongues and thus opening the electric circuit.

Other features and advantages of the invention will appear in the course of the following description which, with reference to the accompanying drawing which is given purely by way of non-limitative diagrammatic example, will make it clearly understood how the present invention can be carried into effect, the features appearing either from the text or from the drawing naturally forming part of the invention.

Figure 1 represents the device, on an enlarged scale, in axial-longitudinal section and in the inoperative position.

Figure 2 shows the same device in partial axial-longitudinal section along the line II—II in Figure 1.

Figure 3 is a cross-section along the line III—III in Figure 1.

Figure 4 is a cross-section along the line IV—IV in Figure 1.

The device is constituted by a cylindrical, metallic, tubular body **1**, with the forward end carried by the dashboard **2** of the motor vehicle (not shown) and with the rear end provided with a bell **3**. Internally and on the front the body **1** is axially provided with a spiral ignition resistance **4** placed in a dished portion **5** insulated therefrom at **6** and provided with three metallic spring blades

7 disposed at 120° and housed in corresponding radial slots **8** cut in a support **9**, of insulating material, fixed to the body **1** of the pin **10**, insulated therefrom, which is intended to receive the electric current supply and to transmit it to the metallic cover **11**, embedded in the support **9**, the external surface of which is facing the base of the afore-mentioned slots **8**, in order to establish contact with the blades **7**, which are capable of expanding when a pre-determined temperature has been reached. The said cover **11** is insulated from the central metallic earthing pin **12**, which also supports the dished portion and the resistance **4**. In the opposite or rear part there is fixed an end piece **13** of insulating material, with square central hole, by means of screws **14** intended to fix the small contact tongues **15**, passing through the said hole, and the bridge portion **16** to which the bell dome **3** is screwed.

In the tubular body **1**, between the support **9** and the end piece **13**, there is placed, and moves, a core of insulating material **17**, provided centrally with a metallic casing **18** extending through the square hole of the end piece **13** and terminating with two opposed prominences **19**, in the vicinity of the bridge piece, which is mounted astride and the ends of its four branches **16'** are bent back and pushed between the end piece **13** and the tubular body **1**, in order to keep it in position. The casing **18** contains internally a helical spring **20** with one end insulated and the other pressing a central pin **21** which projects and travels therein. In the core **17** there are partially incorporated small tongues **22** or movable contacts, corresponding to the blades **7** or fixed contacts.

Between the rear part of the casing **18** and the bridge piece **16** there is interposed a metallic cross-piece **23**, insulated from the casing, and at the ends of which there are fixed two draw-rods **24**, passing longitudinally through the entire tubular body **1** and screwed with the opposite end to a metallic socket **25** situated on the dashboard, after having passed through the metallic counter-socket **26** to which there is screwed, with the possibility of dismantlement for cleaning, the metallic tubular seleeve **27**, coaxial with the resistance **4**, for the introduction of the cigarette. Upon the said sleeve there is fitted the handle **28** of insulating material, which in turn is screwed to the socket **25**.

On the cross-member **23** connecting the draw-rods **24** there are fixed, at the sides of the bridge piece **16**, two pins **29** surrounded by helical springs **30**, one part of which is housed in corresponding passing holes cut in the end piece **14**. In the bell dome **3** there is installed the clapper **31** actuated by the translational movement of the casing **18**.

When the cigarette is introduced into the casing **27**, the hole of which is internally conical in order to avoid smoke wrapping round it, the cigarette is thrust until it encounters the resistance **4**. By pulling upon the handle **28** the socket **25** screwed thereto, and the two rods **24**, are shifted. The latter, in turn, by means of the cross-member **23**, will shift the casing **18** in such fashion that the projections **19** of the casing come into contact with the small tongues **15**; during this movement, the pin **21** will strike against the pin **12** and the spring **20** will be compressed, while the tongues **22** will hook on to the tongues **7** forming contact with the cover **11** intended to receive the main current. At this moment the electric circuit closes, and the resistance **4**, becoming hot, lights the cigarette. When a pre-determined temperature has been reached the blades **7** expand, or become larger, and free the tongues **22**, so that the whole of the mobile part returns into the original position (Figures 1 and 2), being returned by the springs **30**. At the same time the prominences **19** will set the bell mechanism into action.

In order to permit a rapid cooling of the blades **7** and easy escape of the smoke, appropriate apertures **32** are cut in the tubular body **1**.

It is apparent that the indication can be luminous rather than acoustic, or both at the same time, while the bell mechanism can be provided with means different from those described and illustrated; thus the main current take-up can be solved differently, while if it is desired to install the luminous indication, an indicator lamp will be installed on the dash-board, the lighting and extinguishing of which lamp are caused by the shifting of the movable part respectively by means of pulling on the handle and automatic return to the original position.

Naturally the embodiment described and illustrated does not constitute a limitation of type, it being obvious that it is possible to introduce variants, modifications, and additions into the invention in question, without thereby departing from the fundamental criteria and principles upon which the invention is based and characterised.

I claim:

1. A cigarette lighter, particularly for automotive vehicles, comprising a hollow body, an electrical heating element mounted within the body, a guide secured on the body and positioned to guide the leading end of an introduced cigarette into contact with the heating element, first fixed contact means secured to the body in electrical connection with the heating element, other movable contact means slidably carried by the body and movable manually to abut against the fixed contact means, spring loading means arranged to act between the body and the movable contact means to urge said movable contact means away from the fixed contact means, and a resilient metallic catch member mounted in the body in heat-transfer relationship with the heating element and positioned to engage with and retain the movable contact means when said means is moved into contacting position, said catch member being expandible by the heat transferred from the element so as to release the spring-loaded movable contact means after a predetermined rise in temperature of the heating element.

2. A cigarette lighter, as claimed in claim 1, wherein the body carries a bell and a clapper for said bell, the clapper being disposed in the return path of the movable contact means for indication aurally of termination of the heating period.

3. A cigarette lighter, particularly for automotive vehicles, comprising a hollow body, an electrical heating element mounted within the body, a guide secured on the body and positioned to guide the leading end of an introduced cigarette into contact with the heating element, first fixed resilient metallic contact means mounted in the body in electrical connection and in heat-transfer relationship with the heating element, other spring-loaded movable contact means slidably carried by the body and movable manually to engage with the fixed contact means, said fixed contact means and said movable contact means being shaped to form a catch serving to retain the movable contact means against its spring-loading, said fixed contact means being expandible by heat transferred from the heating element so as to release the movable contact means, for return by its spring-loading to rest position, after a predetermined rise of temperature of the heating element, a bell carried by the body, and a clapper for said bell disposed in the return path of the movable contact means for indication aurally of the termination of the heating period.

References Cited in the file of this patent

UNITED STATES PATENTS

2,270,564	Schroeder	Jan. 20, 1942
2,381,726	Davis	Aug. 7, 1945
2,557,225	Hutchinson	June 19, 1951
2,630,517	Hiscar	Mar. 3, 1953
2,648,758	Kroll et al.	Aug. 11, 1953
2,701,836	Pavenick	Feb. 8, 1955
2,778,915	Jorgensen	Jan. 22, 1957