PATENT SPECIFICATION 463,834

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Complete Specification Accepted: April 7, 1937.

COMPLETE SPECIFICATION

Improvements in or relating to Electric Cigar or Cigarette Lighters

I, IRVING FLORMAN, a citizen of the United States of America, of Box 336, Grand Central Annex, New York City, New York, United States of America, 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:—

My invention relates to electric cigar or cigarette lighters and more particularly to a lighter in which a wick is adapted to be ignited through the heating of an electrical resistance element or wire.

According to this invention, I provide an electric cigar or cigarette lighter of the above kind characterised by a casing or container for a source of electric current and having contacts connected to said source and a separate torch unit carrying a wick, ignition fuel and resistance wire and normally carried by said casing or container, the said torch unit, for the purpose of igniting the wick, being made removable from the casing or container and engageable simultaneously with the said contacts whereby to complete a circuit through the resistance wire and ignite the wick.

The torch unit is preferably made of metal of tubular form to provide a reservoir for igniting fuel and carries a wick protruding from the lower end, and the resistance wire.

The resistance wire may be carried by an insulating block or plug removably housed in a recess in the said torch unit. A metallic guard or shield may advantageously be arranged at the lower end of said tubular torch unit adapted partially to surround the resistance wire and the wick.

The resistance wire may be connected to a pair of posts or pins, preferably of different lengths, carried by the said plug, one of the posts or pins being electrically connected to the casing of the torch unit.

The container may contain three batteries and a central tube for the reception of the torch unit and fixed to the lighter casing or container by means of a screw connected to the source of current.

One of the aforesaid contacts may be carried insulatedly by the lid of the casing or container and be disposed above and in direct connection with the current source, the other contact being formed by the casing or container itself.

In order that the invention may be fully understood, I will now describe one embodiment thereof by way of example, by reference to the accompanying drawings, in which:—

Fig. 1 is a plan view of a lighter made according to my invention.

Fig. 2 is a side elevation thereof, dotted lines indicating the active position of the torch unit.

Fig. 3 is a front elevation of the torch unit detached.

Fig. 4 is a vertical cross-section of the same.

Fig. 5 is a bottom plan view of the torch unit.

Fig. 6 is an enlarged section on line 6—6 of Fig. 3.

Fig. 7 is an enlarged perspective view of the replaceable resistance unit.

Fig. 8 is a section on line 8—8 of Fig. 2.

Fig. 9 is a vertical section on line 9—9 of Fig. 1.

Fig. 10 is a view of the top wall on the line 10—10 of Fig. 9, looking in the direction of the arrow.

Fig. 11 is a plan view of the insulating base, taken on line 11—11 of Fig. 9.

Fig. 12 is a plan view on the line 12—12 of Fig. 9.

Fig. 13 is a circuit diagram of part of my device.

In the drawings, 2 indicates what I term the torch unit. This unit comprises a tubular casing 4 of electrical conducting material. This tube has an annular shoulder 6 near one end for a purpose to be described below. The portion 7 between the shoulder 6 and the end of the tube 4 is used as a handle to manipulate the torch. This same end of the tube is closed by a screw-threaded plug 8.

The other end of the tube 4 is closed by a wall 10 having an opening 12 therein and having a stepped portion 14 adjacent the opening. Through the opening 12 a

[Price 1/-]

wick 13 extends to the interior of the unit, the wick being surrounded by cotton 16 or other absorbent packing. This packing is adapted to hold any usual type of volatile liquid fuel which may be supplied by removing the plug 8.

In the stepped portion 14 of the end wall of the torch unit a block of insulation 18 is slidably fitted. This block of insulation has mounted therein a short post 20 of conducting material and a longer post 22 also of conducting material. Between these posts is secured a fine resistance wire 24, preferably made of the alloy known under the registered Trade Mark "Nichrome." Such a wire is capable of being heated to a strong heat and will resist corrosion by volatile liquids of the type ordinarily used as a fuel for the wick.

The tubular portion 4 of the torch unit is extended as at 26 beyond the end wall 10 on the side adjacent the resistance unit. This extension partially surrounds the resistance unit and the posts which support the resistance wire. It is to be noted that the longer post 22 extends beyond the end of this shielding extension. This shield also protects the flame on the wick from draughts and partially shields the eyes of the user from the flame.

In order to secure the resistance unit to the torch unit a single screw 28 is used. This screw extends through the wall of the torch unit and through the insulation block 18, making contact with the short post 20 as at 30. By this simple expedient the short post is electrically connected to the casing of the torch unit and the resistance unit is secured in place upon the torch. To replace the resistance unit all that is necessary is to remove the screw 28 and pull out the unit which includes the two posts, the resistance wire and the block. This unit may then be replaced by another unit of like construction.

When not in use the torch unit is housed in a metallic tube 34, which is itself carried in the casing or container 32 and is closed by the wall 36 at one end. The shoulder 6 on the torch unit prevents this removable unit from being inserted too far into the housing tube. At the same time, this shoulder, due to the weight of the torch unit, will seal the exposed end of the wick from the atmosphere when the torch is placed within the housing.

The source of electric energy is also housed within the metallic container 32. The said metallic container has a top wall 40 and a bottom wall 42 electrically connected through the medium of tubular members 44 and the torch housing tube. The parts are fixed together by the screw 46 which holds the housing tube to the bottom wall and by the shoulder 48 on the outer end of the housing tube which engages the top wall 40.

The top wall contains sheets of insulation 50. At one point the top wall is provided with an aperture 52 through which a contact piece 54 extends. This contact piece is insulated from the top wall by means of the insulating pieces 56 and 58, being bent around the piece 56. These insulating pieces hold the contact piece in position and are held in place by wedging the sides of piece 56 into the aperture 52.

The bottom wall of the container is provided with apertures 60, 62 and 64. These apertures are provided so that dry batteries 66, 68 and 70 can be easily inserted in the container.

Fig. 13 shows diagrammatically the connections between the batteries, the contact piece and the casing or container. As shown, the contact piece is in direct connection with one end of the battery 66. The other end of this battery is connected by means of the spring strip 72 to the bottom of battery 68. The top of this second battery is connected to the top of the other battery 70 by conducting strip 74, the bottom of this last battery being connected to the casing through the spring strip 76.

The strips contacting the bottoms of the batteries may be conveniently located by mounting the same on a rigid sheet of insulation 78 which is secured to the bottom wall of the container by means of the screw 80. This insulation piece has secured thereto the spring strips 72 and 76 previously noted. The spring strip 76 is positioned to extend from a point adjacent the centre of the end of battery 70, to contact with the screw 46 which holds the parts of the container together. The strip 72 connects the batteries 66 and 68 when the piece 78 is in position.

The other connection between the batteries is made through the strip 74 which is positioned in the top of the container below the insulation 50. This strip 74 is carried by a strip of insulating material 82, the ends of the strip 74 being bent around the ends of the insulation 82 as at 84 and 86. These ends contact the batteries 68 and 70 when the batteries are inserted in place. The insulation 50 is held in place by the aforesaid tubular members 44 of the container.

When it is desired to use the device for igniting a cigarette or cigar the torch unit is withdrawn from the housing, the shield 26 is placed against the top wall of the container and the post 22 is pushed into contact with the contact piece 54. An

electric circuit will then be established as follows:

Starting with the contact piece 54 the current will flow through the battery 66, the spring strip 72, the battery 68, the strip 74, the battery 70, the spring strip 76, the screw 46, the container 32 including the top wall 40, the shield 26, the screw 28, the post 20, the resistance wire 24, the post 22 and contact 54.

The resistance wire will soon become heated to a sufficient degree to ignite the wick. The unit is then withdrawn from the container and contact piece and the flame from the wick is used to ignite a cigarette or cigar. It is to be noted that when the wick has been ignited and the unit withdrawn, the resistance unit is no longer heated. It should also be noted that the shield 26, besides shielding the resistance wire and the wick, is used to establish contact in bringing the resistance unit to igniting heat.

After the torch has been used it is extinguished by replacing it in the tube 34, the shoulder 6 cutting off air for combustion and preventing evaporation of the fuel.

Attention is called to the fact that the batteries 66 and 70 are in upright position while the battery 68 is in an inverted position. When the batteries are thus arranged the proper connections are assured.

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. An electric cigar or cigarette lighter in which a wick is adapted to be ignited by the heating of an electrical resistance wire, characterised by a casing or container for a source of electric current and having contacts connected to said source and a separate torch unit carrying a wick, ignition fuel and resistance wire and normally carried by said casing or container, the said torch unit, for the purpose of igniting the wick, being made removable from the casing or container and engageable simultaneously with the said contacts whereby to complete a circuit through the resistance wire and ignite the wick.

2. An electric cigar or cigarette lighter as claimed in claim 1, wherein the torch unit is made of metal of tubular form to provide a reservoir for igniting fuel and carries a wick protruding from the lower end, and resistance wire.

3. An electric cigar or cigarette lighter as claimed in either of the preceding claims, wherein the resistance wire is carried by an insulating plug, block or the like, removably housed in a recess in said torch unit.

4. A cigar or cigarette lighter as claimed in any of the preceding claims wherein the resistance wire is disposed adjacent the protruding wick end.

5. A cigar or cigarette lighter as claimed in any of the preceding claims wherein a metallic guard or shield is arranged at the lower end of the said tubular torch unit adapted partially to surround the resistance wire and the wick.

6. A cigar or cigarette lighter as claimed in claim 3 wherein the resistance wire is connected to a pair of posts or pins preferably of different lengths, carried by the said plug, block or the like.

7. A cigar or cigarette lighter as claimed in claim 6 wherein one of the said pins is electrically connected to the casing of the torch unit, for example by means of a screw.

8. A cigar or cigarette lighter as claimed in any of the preceding claims wherein the lighter casing or container is of metal and adapted to contain one or more, for example three, batteries for providing the heating current.

9. A cigar or cigarette lighter as claimed in claim 8 wherein the casing or container comprises three tubes between top and bottom plates of triangular shape having rounded corners and a battery is disposed in each tube.

10. A cigar or cigarette lighter as claimed in claim 8 or 9 wherein a centrally disposed tube is provided for the reception of the torch unit.

11. A cigar or cigarette lighter as claimed in claim 10 wherein the said tube is fixed to the lighter casing or container by means of a metallic screw.

12. A cigar or cigarette lighter as claimed in claims 5, 7 and 8 wherein one of the contacts is insulatedly carried by the lid of the lighter casing or container and is disposed above and in direct connection with the battery or one of the batteries, and the other contact is formed by the said casing or container itself, the wick being ignited by removing the torch unit from the casing or container, contacting one of the insulated pins, for example the longer, with the contact member on the lid and at the same time contacting the metallic shield with said lid whereby an electric circuit is completed through the said resistance wire and the wick ignited.

13. A cigar or cigarette lighter as claimed in claims 11 and 12, wherein the said screw is directly connected to the source of current.

14. A cigar or cigarette lighter as claimed in any of claims 8—13 wherein,

when more than one battery is employed, suitable metallic strips are carried by the said casing or container for coupling said batteries together in series.

15. A cigar or cigarette lighter as claimed in any of the preceding claims wherein means are provided for sealing the exposed end of the wick from the atmosphere when the lighter is not in use.

16. A cigar or cigarette lighter as claimed in claims 10 and 15 wherein the torch member is formed with a shoulder adapted to engage the upper end of the tube.

17. The improved electric cigar or cigarette lighter constructed and arranged substantially as hereinbefore described and illustrated in the accompanying drawings.

Dated the 14th day of April, 1936.

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1, Great James Street, Bedford Row,
London, W.C.1,
Chartered Patent Agent.

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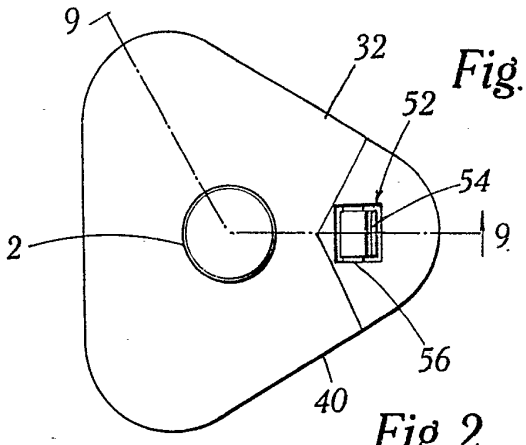
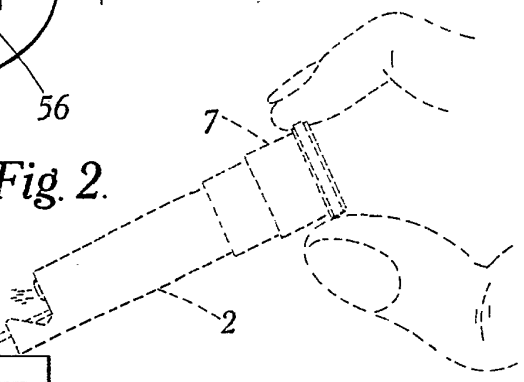


Fig. 1.



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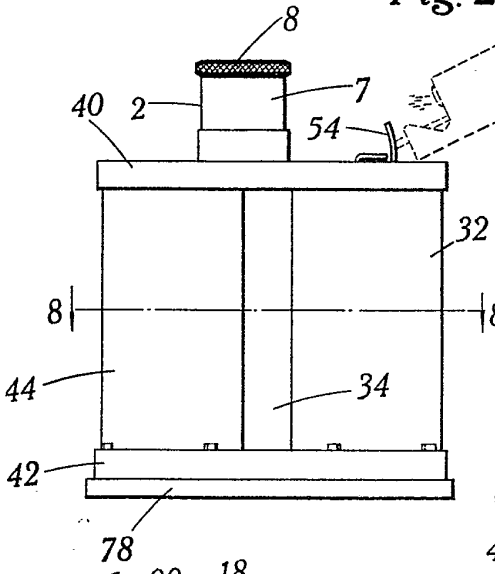
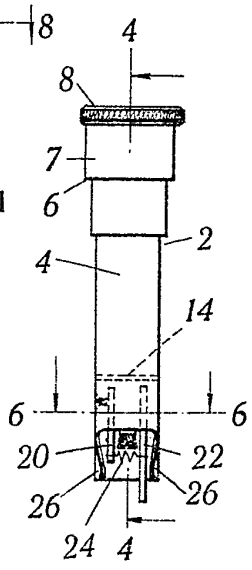


Fig. 3.



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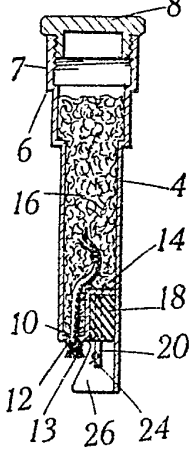

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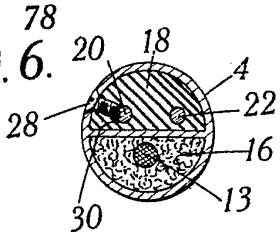
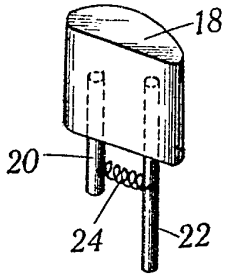


Fig. 7.



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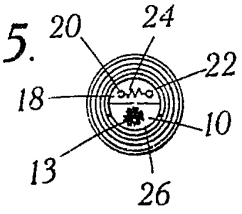

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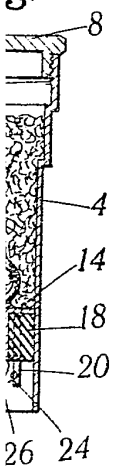
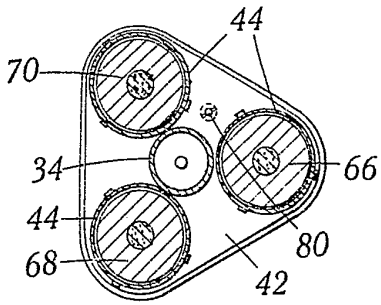


Fig. 8.



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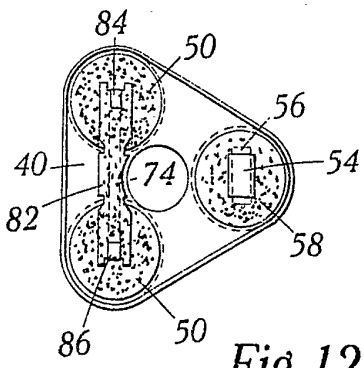

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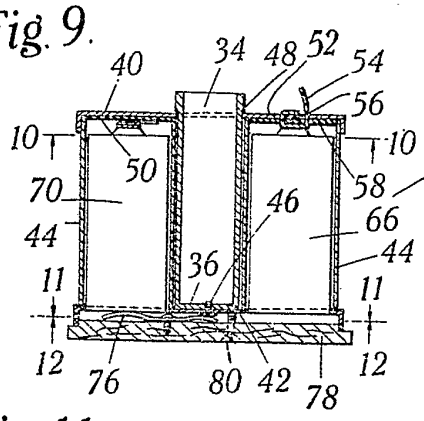

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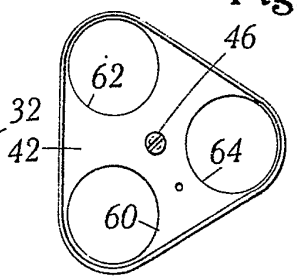

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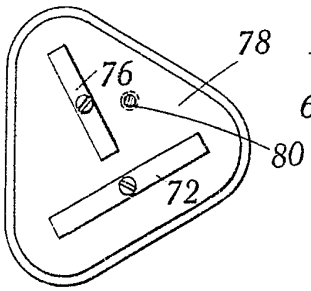
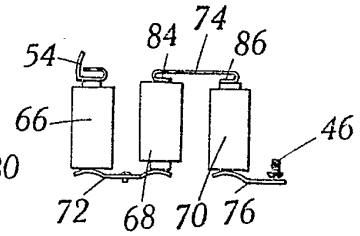


Fig. 13.



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[This Drawing is a reproduction of the Original on a reduced scale.]

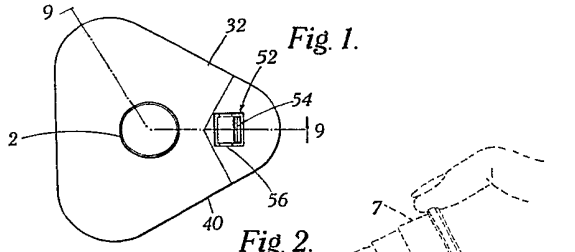

Fig. 1.

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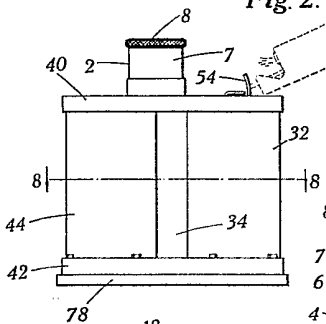

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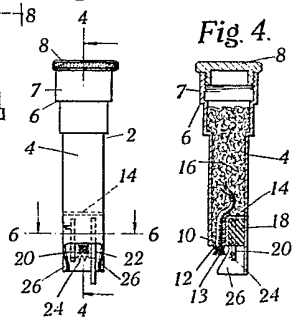

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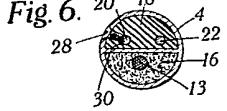

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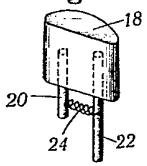

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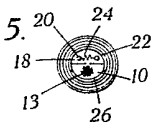

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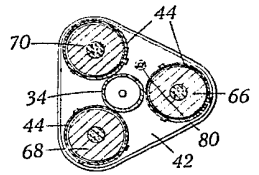

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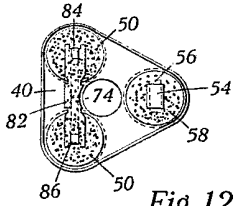

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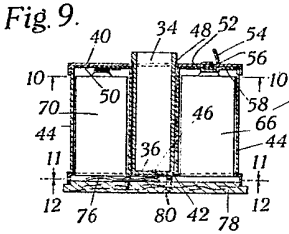

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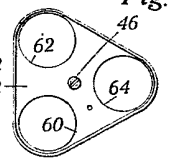

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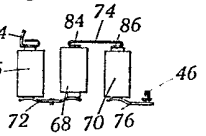

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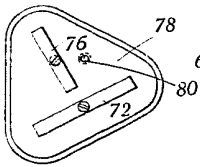

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