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W. FENTON

1,849,795

ELECTRIC LIGHTER FOR CIGARETTES, CIGARS, AND TOBACCO PIPES

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2 Sheets-Sheet 1

Fig. 1.

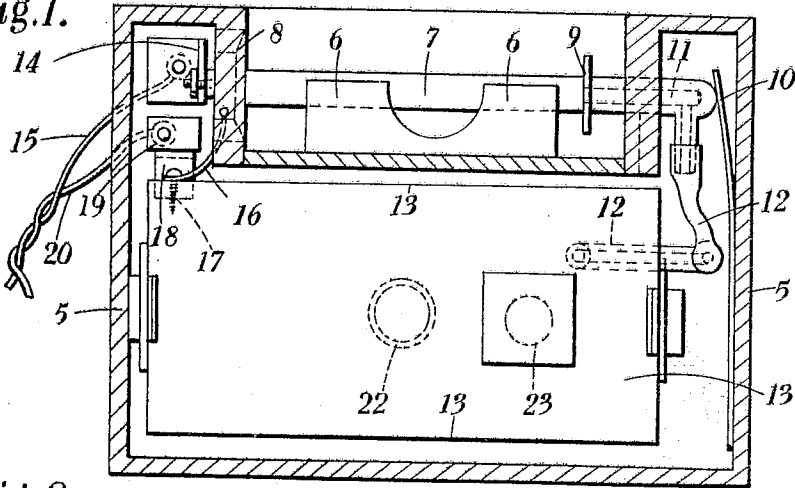


Fig. 2.

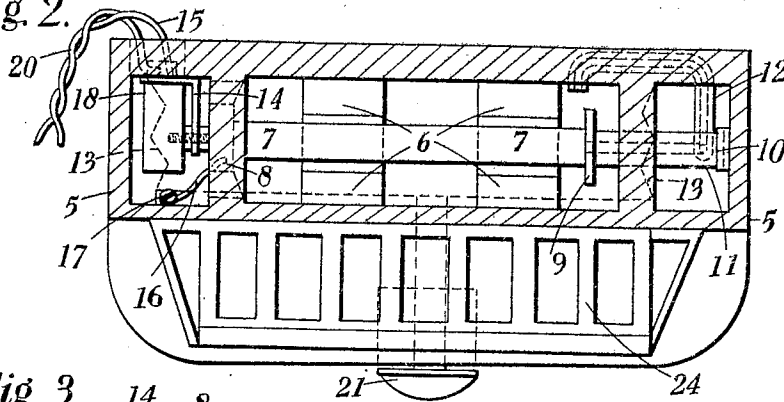


Fig. 3.

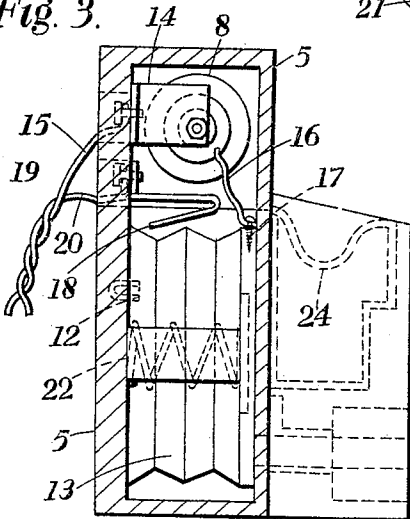
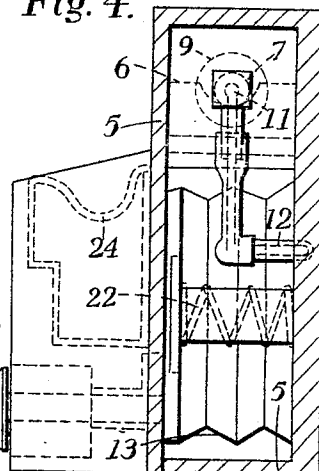


Fig. 4.



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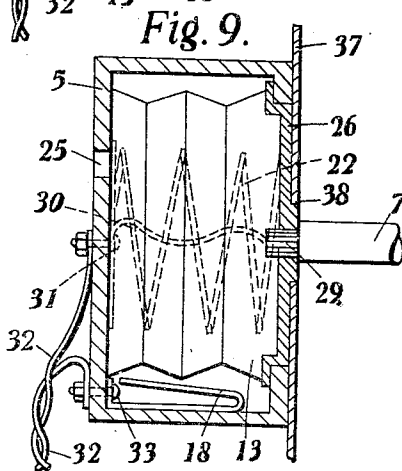
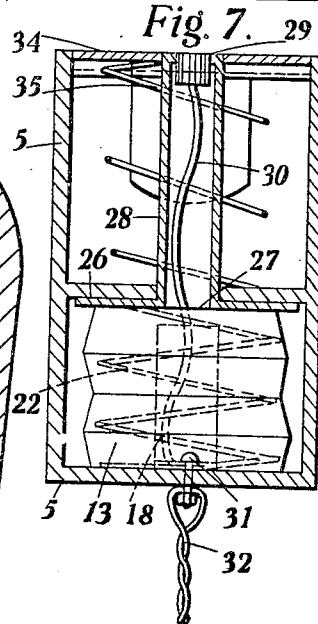
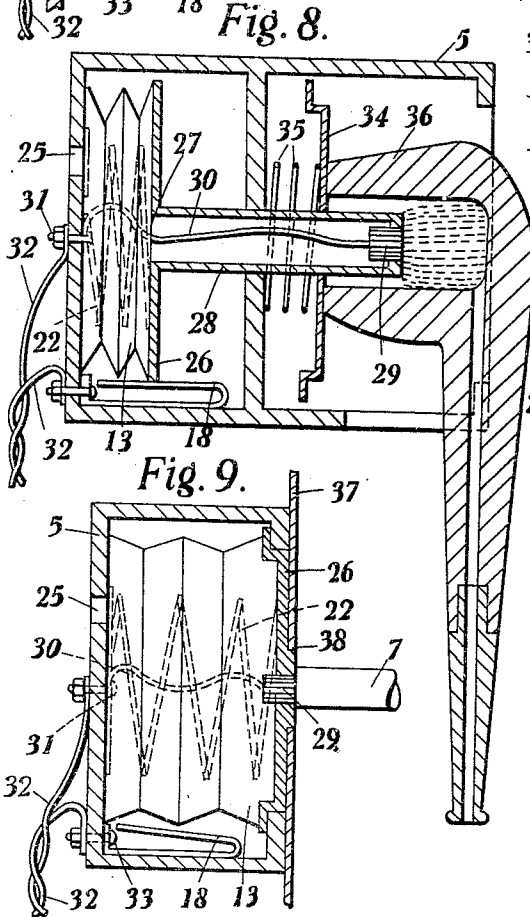
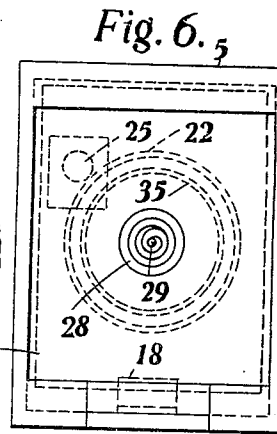
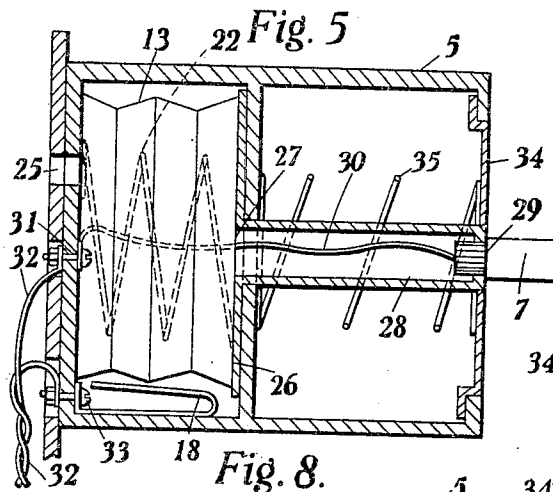
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2 Sheets-Sheet 2



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ELECTRIC LIGHTER FOR CIGARETTES, CIGARS, AND TOBACCO PIPES

Application filed February 20, 1930, Serial No. 429,912, and in Great Britain February 22, 1929.

This invention has reference to apparatus for use in lighting cigarettes, cigars or tobacco pipes. Apparatus for delivering and lighting cigarettes or the like has been provided and in such apparatus it has been proposed to provide actuating means comprising a rotating element adapted for manual rotation or forming part of a clock-work mechanism released to operated by the insertion of a coin the cigarettes or the like being thus fed singly and pressed endwise between an electric igniter at one end and a suction device at the other end for ignition before delivery.

Machines have also been made for use on motor vehicles for delivering and lighting cigarettes, and in these it has been proposed to use an electric igniter, and to provide an air current through the cigarette by suction from the intake manifold of the motor, and to such machines no claim is here made. The present invention differs from such known forms in that the article to be lighted is put into the lighting position and removed by hand, there being no automatic delivery to or from the lighting mechanism.

It has also been proposed to provide a combined cigar cutter and lighter in which one end of the cigar to be lit is inserted in an opening into a chamber, connected with a suction air pump, where the end of the cigar is cut and the pump is set in motion, an electric igniter, carried at the end of an external pivoted arm, being automatically brought down on the other end of the cigar whereby the suction of the pump draws air through the end of the cigar in contact with the lighter and thus ignites it.

The present invention however has for its object to provide a compact piece of apparatus particularly adapted for use on motor vehicles though not limited to this purpose, which can be operated with one hand and whereby the cigarette, cigar or pipe can be lighted before being placed in the mouth, the apparatus being simple in construction and operation and being concerned only with the purpose of lighting and not with delivery.

A device or apparatus according to this invention comprises a container adapted to be

mounted on the dash board of a motor vehicle, table or like support, within which an electric igniter is mounted together with means for completing and breaking an electrical circuit passing through the electric igniter, and means for blowing or drawing by suction a current of air through the cigarette, cigar or tobacco pipe while the end of the cigarette or cigar or the tobacco in the pipe is in contact with the electric igniter, the direction of the current of air being from the end of the cigarette or cigar which is in contact with the electric igniter or from the bowl of the tobacco pipe.

The invention is more particularly set forth with reference to the accompanying drawings:

Fig. 1 is a front elevation partly in section of a form of the apparatus adapted for use in lighting cigarettes and in which the current of air is produced by suction.

Fig. 2 is a plan and

Figs. 3 and 4 are end elevations partly in section from opposite ends of the form of the apparatus shown in Fig. 1.

Fig. 5 is a side elevation partly in section of a form of the apparatus adapted for use in lighting cigarettes, cigars and tobacco pipes and in which the current of air is produced by blowing and shows a cigarette in position preparatory to operating the device.

Fig. 6 is a front elevation.

Fig. 7 is a plan partly in section of the form of the apparatus shown in Fig. 5.

Fig. 8 is another side elevation partly in section of the form of the apparatus shown in Fig. 5 when in operation in lighting a tobacco pipe and

Fig. 9 is a side elevation partly in section of the form of apparatus shown in Fig. 5 modified for use in lighting cigarettes and cigars but not tobacco pipes.

Referring first to Figs. 1 to 4 of the drawings a box or container 5 is adapted to be secured in any convenient position as for instance on the dash board of a motor vehicle, table or like support. Mounted on the top of the box or container 5 is a cradle or cradles 6 which receive the cigarette 7 and support it in alignment with the electric igniter 8,

which is conveniently detachable, and a disc 9 forming the end of a suction device and the cradle or cradles 6 are so arranged that the cigarette 7 can easily be placed therein and removed therefrom.

By completing an electrical circuit through the electric igniter 8 it becomes heated and burns the end of the cigarette 7 in contact with it. The disc 9 which is detachably mounted in a tube 11 forming part of the suction device and which is slidable axially, has a spring 10 pressing upon it for the purpose of exerting a resilient pressure on the cigarette 7. The disc 9 and the tube 11 have central holes and are connected by a suitable duct 12 to a suction bellows 13.

As shown in the drawings the electric igniter 8 is connected to a suitable source of electrical current by means of a bracket 14 and a flexible wire 15 at one pole, and by a short flexible wire 16 and a screw 17, a spring 18 and a plate 19 and a flexible wire 20 at the other pole. This arrangement ensures that when the device is not in actual operation the screw 17 is not in contact with the spring 18, but when in operation the screw 17 is in contact with the spring 18 thus completing the electrical circuit and heating the electric igniter 8.

The suction bellows 13 are compressed by pressing inwards a push rod 21 against the resistance of a spiral spring 22 and the operation of compressing the bellows 13 brings the screw 17 into contact with the spring 18 thus completing the electrical circuit and heating the electric igniter 8. The electrical circuit is maintained while the bellows are under compression and expansion and is broken as the bellows 13 become fully expanded. The expansion of the bellows 13 causes a current of air to be drawn by suction through the cigarette 7. Consequently the operations of heating the electric igniter 8 and drawing the air through the cigarette 7 proceed in sequence. The bellows 13 have a one way outlet 23 which allows the escape of air as the bellows 13 are compressed and the bellows 13 expand under the action of the spring 22 to the normal position where the electrical circuit is automatically broken between the screw 17 and the spring 18.

The construction illustrated in the accompanying drawings Figs. 1, 2, 3 and 4 shows an ash tray, and cigarette rest 24 attached to the front of the device but this arrangement does not concern the essential features of the invention.

By suitably modifying the apparatus as illustrated in the accompanying drawings, Figs. 1, 2, 3 and 4, can be adapted for use in lighting cigars or tobacco pipes. For instance by substituting a concave or tapered tube or funnel for the disc 9 and tube 11 and placing this at a greater distance from the electric igniter 8, the apparatus will be

adapted for lighting cigars, and it can be made suitable for lighting tobacco pipes by arranging the electric igniter in a vertical position in a holder furnished with a spring to cause it to enter the bowl of the tobacco pipe placed on the cradle or cradles 6 and substituting a concave or tapered tube or funnel which may be of elliptical shape for the disc 9 and the tube 11 and such tube or funnel may be made of or lined with india rubber or other resilient material and flexibly attached to the duct 12.

Referring to Figs. 5, 6, 7 and 8 of the drawings wherein a further construction is shown, the box or container 5 which is adapted to be secured in any convenient position as for instance on the dash board of a motor vehicle, table or like support, has a bellows 13 mounted therein. The bellows has an inlet aperture 25 which is a one way inlet. The front of the bellows 13 is mounted on or connected to a movable panel 26 conveniently made of electricity conducting material or having an electric contact therein and at or near the centre of the movable panel is a one way outlet 27 in which is mounted a tube or vent 28 also made of electricity conducting material, or having an electricity conducting portion. In the exposed end of the tube or vent 28 an electric igniter 29 is detachably mounted. The electric igniter 29 is made and mounted in such manner that a current of air can pass through it and the igniter may be in the form of a coil or meander of wire or thin metal strip or it may be in the form of a perforated metal disc, but whatever its actual form or construction it is so mounted that electric current passes to it through the tube or vent as a conductor from one pole and by the flexible insulated wire 30 as a conductor from the other pole. The insulated wire 30 is taken from the electric igniter 29 to a stud or bolt 31 in the back panel of the box or container 5 and from this stud or bolt 31 connection is made with a suitable source of electric current by means of the flexible wire 32.

The bellows 13 is expanded by a spring 22. A contact spring 18 is mounted in the box or container 5 in such position relatively to the movable panel 26 that when the device is in its normal position, that is with the bellows expanded, the spring 18 is not in contact with the movable panel or with the electricity conducting portion thereof, but a slight compression of the bellows will bring the movable panel or portion into contact with the spring 18. The spring 18 is fixed to the back panel of the box or container by a stud or bolt 33 and from this stud or bolt, connection is made with the source of electric current by means of the flexible wire 32. When the bellows is compressed an electrical circuit is completed through the electric igniter which thereby becomes heated and the electric cir-

cuit is maintained closed while the bellows are under compression and expansion and is broken between the spring 18 and the movable panel 26 when the bellows become fully expanded as shown clearly in Fig. 5. The device is provided with a plate 34 which fits closely around the tube or vent 28 and is pressed against the front of the box or container 5 by the spring 35. When the apparatus is used for lighting a cigar of which the end is larger than the end of the tube or vent 28 or for lighting a tobacco pipe, the plate 34 prevents the escape around the edge of the tube or vent of the air which has been blown through the electric igniter by the bellows. This plate 34 may be covered with a resilient material to take up inequalities in the rim of the bowl of the tobacco pipe.

The end of a cigarette or small cigar will fit entirely within the outer circumference of the tube or vent 28 but if a cigar having an end which is larger than the end of the tube or vent has to be lit, it will fit against the electric igniter and will overlap on the face of the plate 34. Similarly the rim of the bowl of a tobacco pipe will fit entirely against the plate 34 and when either a large cigar or a pipe is thus used the plate will be depressed against the resistance of the spring 35 and this arrangement also ensures that a tobacco pipe which is only partly filled with tobacco can be pressed inwards until the tobacco in the bowl is brought into contact with the electric igniter.

By pressing a cigarette or small cigar firmly against the electric igniter and the end of the tube or vent 28 the bellows 13 will be compressed and during compression and subsequent expansion of the bellows, the electric igniter will become and remain heated as already described. During compression of the bellows air will be blown through the electric igniter and thence through the cigarette or small cigar, which by this operation will become lighted and ready for placing in the mouth, but during such operation the plate 34 will remain in its normal position. By pressing a large cigar or a pipe against the electric igniter 29 the tube or vent 28 and the plate 34, the bellows 13 will be compressed with a like result, but in this case the plate 34 will move inwards as required, as already described.

In Fig. 5 a cigarette 7 is shown in position preparatory to operating the device. In Fig. 8 a tobacco pipe 36 is shown partly filled with tobacco and in position during actual operation.

Fig. 9 illustrates a modification of the device shown in Figs. 5, 6, 7 and 8. This modified device is for use in lighting cigarettes and cigars but not tobacco pipes. It comprises a smaller box or container 5 having only one compartment adapted to be secured in any convenient position as for instance on or

behind the dash-board of a motor vehicle, or on a table or like support. When secured behind the dash-board 37 a suitable aperture 38 is cut in the dash-board to expose or receive the electric igniter 29 and to admit the end of a cigarette or cigar. The modified device comprises all other parts of the device shown in Figs. 5, 6 and 7 except the tube or vent, the plate and the spring, and it is operated in the manner described with reference to Figs. 5, 6, 7 and 8 for lighting cigarettes and small cigars.

Electric igniters as used in this invention are formed by a coil or meander of wire connected to the source of current. A convenient construction of such an electric igniter, where a pressure bellows is used, is to form a small plate or disc of mica or asbestos or any other heat resisting or insulating material having a hole in the centre through which the air current passes. The plate or disc is provided with metallic clips or contacts at its edges which will hold the ends of the coil or meander of wire and will also form contacts with the fixed fittings on the device, thus the electric igniter as a unit may easily be detached and replaced.

In a construction where a suction bellows is used, the coil or meander of wire is conveniently made of flat ribbon or strip wire and is formed into a helix having a flat or oval appearance as seen from the end. The wire so coiled is laid across the face of the mica or asbestos plate, the ends being clipped by the metal contacts thereon and the coil or meander so formed acts virtually as a tube with open ends through which the air is drawn into the cigarette, cigar or pipe when the end to be lighted is placed against the outside face of the coil or meander. With this construction it is not necessary to have a central hole in the mica or asbestos plate.

What I claim as my invention and desire to secure by Letters Patent is:—

1. Apparatus for lighting cigarettes and the like, comprising a container, a bellows disposed within said container and normally maintained in expanded condition, an electrical heating element of open-work formation mounted in the container, a tubular member communicating with said bellows, said tubular member and heating element being so disposed with relation to each other that an article to be lighted is simultaneously placed in contact with the heating element and in communication with said tubular member, means for collapsing the bellows thereby to pass a current of air through said article, and means carried by the bellows and effective during collapse thereof to close a circuit through said heating element.

2. Apparatus for lighting cigarettes and the like, comprising a container, a bellows disposed within said container and normally maintained in expanded condition, a cradle

carried by said container, an electrical heating element mounted in the container at one end of said cradle, said element being of open-work formation, a spring-pressed tubular member disposed at the opposite end of said cradle in alinement with said heating element and in communication with said bellows, said cradle being adapted to support an article to be lighted with opposite ends of said article in contact respectively with the heating element and said tubular member, means for collapsing the bellows, and means carried by the bellows and effective during collapse to close a circuit through the heating element.

3. Apparatus for lighting cigarettes and the like, comprising a container, a bellows disposed within said container and normally maintained in expanded condition, an outlet tube communicating with said bellows and adapted to transmit collapsing pressure thereto, an electrical heating element disposed in the outer end of said tube, and means carried by the bellows and effective during collapse to close a circuit through said heating element, the organization being such that pressure on the end of said tube will collapse the bellows thereby causing a current of air to flow through the tube and simultaneously bringing the heating element to incandescence.

In testimony whereof I have signed my name to this specification.

WALTER FENTON.