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LIGHTER AND FUEL THEREFOR

Filed April 7, 1934

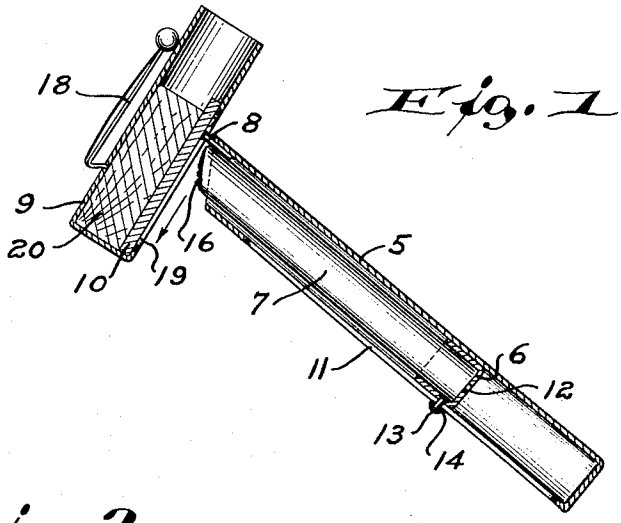
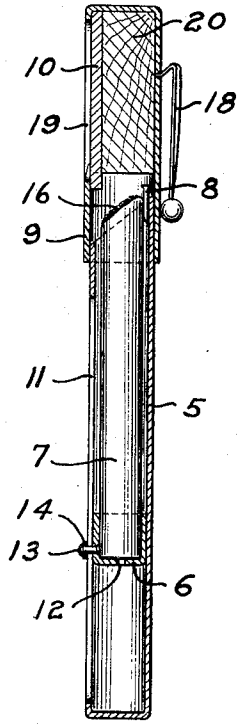


Fig. 1.

Fig. 2.



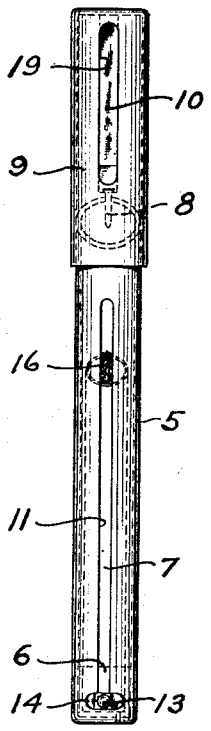
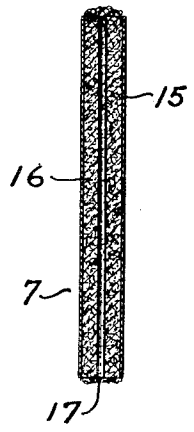


Fig. 3.

Fig. 4.



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LIGHTER AND FUEL THEREFOR

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6 Claims. (Cl. 67—7.1)

The present invention relates to improvements in the construction and operation of cigar or cigaret lighters, and to an improved fuel especially adapted for use in such devices.

An object of the invention is to provide a new and useful lighter for cigars or cigarets which is simple and compact in construction and highly effective in use.

Another object of the invention is to provide an improved fuel for cigar and cigaret lighters which can be readily ignited regardless of draft or wind conditions, and which may also be produced at minimum cost.

A further object of the invention is to provide a cigaret lighting device utilizing dry fuel in cartridge form, which can be readily manipulated and wherein the fuel may be conveniently fed toward the lighting zone or withdrawn therefrom.

An additional object of the invention is to provide a lasting and clean fuel for cigaret lighting appliances or the like which may be quickly ignited or extinguished, and the supply of which can be readily replenished.

Still another object of the invention is to provide an improved lighter which is of neat appearance and which can be carried in a pocket in the same manner as an ordinary pen or pencil.

These and other objects and advantages of the invention will be apparent from the following detailed description.

A clear conception of embodiments of the several features of the improvement, and of the mode of producing and of utilizing the improved lighter and the new fuel therefor, may be had by referring to the drawing accompanying and forming a part of this specification, in which like reference characters designate the same parts in the several views.

Fig. 1 is a central longitudinal section thru the fuel storage container and closure cap of an improved lighter, showing the parts in position preparatory to lighting the fuel;

Fig. 2 is a similar section thru the device, showing the container sealed by the closure cap;

Fig. 3 is an elevation of the lighter with the closure cap applied to the fuel container, and the fuel cartridge withdrawn from the lighting zone to the fullest extent; and

Fig. 4 is a longitudinal central section thru one of the fuel refills or cartridges.

While the invention has been shown and described herein as being specifically applied to a particular type of lighting device, it is to be understood that the improved fuel is susceptible of more general application to various types of lighters.

Referring to the drawing, the improved lighter comprises in general a tubular fuel container 5 having therein an adjustable socket 6 for removably receiving dry fuel cartridges 7, and also having a sparking point 8 secured thereto; and a closure 9 in the form of a cap cooperable with the casing 5 to conceal the fuel cartridge 7, said closure having therein a replaceable striker bar 10 with which the point 8 is cooperable to project ignition sparks directly against the exposed end of the cartridge during normal use of the device.

The tubular container 5 may be formed of metal and has an elongated slot 11 in the side thereof, and the carrier socket 6 is freely slidable within the tube and has an opening 12 therein, being provided with an adjusting pin 13 which is adapted to ride along the slot 11 to feed or to retract the fuel cartridge 7 within the container 5. The pin 13 may be provided with a small leaf spring 14 which coacts with the container 5 adjacent the slot 11 so as to maintain the socket 6 in various positions of adjustment, by friction, but this spring does not undesirably interfere with the movement of the socket along the tube.

The fuel cartridge 7 comprises an outer wrapper 15 of suitable material such as thin, highly combustible paper, embracing dry cotton or other fibrous fuel 16 which has been heat treated in a manner hereinafter specifically described. The cartridge 7 has a central air passage 17 extending from end to end thru-out the full length thereof. The diameter of the cylindrical cartridge 7 is such that it may be inserted freely within the tubular casing or container 5, leaving a slight space between said casing 5 and cartridge 7 sufficient merely for the passing of air between said casing and cartridge upward to the region of combustion 16, and so that the end of the cartridge will be frictionally confined in the socket 6 with the adjacent end of the air passage 17 exposed to the ambient atmosphere thru the opening 12 and slot 11.

The closure 9 may also be formed of metal and is adapted to snugly engage the open end of the container 5, as shown in Fig. 2, and the cap may be provided with a clip 18 for holding the device within a pocket. The striker bar 10, which is preferably formed of spark producing material such as uranium carbide, may be removably confined within the closure 9 adjacent to a slot 19 by means of a wood block 20, as shown, or otherwise; and the sparking point 8, which is carried by the container 5 and is cooperable with the bar 10, may be formed of special steel known in the trade as Flint stick.

The method of producing the fuel utilized in this improved lighting device is of extreme importance, and while this fuel is preferably produced from raw, unwashed cotton, it may obviously be produced from other similar fibrous material. The raw, unwashed cotton is first heated in a retort to a temperature of approxi-

mately eighteen hundred degrees for a period of approximately seven minutes, and the gases of distillation are burned as they are expelled thru a small gas discharge opening in the retort. After all of the moisture has been distilled from the cotton, the material is retained within the retort while sealed for a period of approximately sixty seconds. The resulting substance is a dry, highly inflammable, fibrous material, which is subsequently rolled into cylindrical form with the air passage 17 extending thru-out the length of the cylinder, and is enclosed within a wrapper 15. This fuel is practically a charcoal, each fiber being reduced to carbon, and should be kept dry before utilization in the lighter.

The fuel cartridges may be readily inserted within or withdrawn from the container 5 at any time, and when properly adjusted to expose one end of the cartridge at the open end of the tubular casing, the closure 9 may be removed and the device manipulated in the manner shown in Fig. 1 to project sparks against the exposed portion of the dry fuel. These sparks quickly ignite the exposed end of the fuel cartridge 7 and cause the fuel to glow, the glowing being augmented by the air passing thru the passage 17 of the cartridge. While the spark may produce only a slight glow, the glow quickly spreads thru-out the end of the fuel cartridge 7 and quickly becomes sufficient to ignite a cigar or a cigaret. If the glowing portion of the fuel is subjected to draft or wind, the glow becomes more pronounced and thus facilitates the use of the lighter.

From the foregoing description, it will be apparent that the invention provides a simple, compact, and highly efficient lighter, in which the flame, instead of being extinguished by draft or wind, is actually augmented. The device can be readily manipulated, and the fuel cartridges 7 are quickly and conveniently replaceable and last for a long period of time if properly utilized. The glowing fuel may be quickly extinguished by merely applying the cap closure 9 to the casing or container 5. The central passageway 17 in the fuel cartridge 7 is of relative importance in using the device since the suction produced by the smoker will cause abundant oxygen to enter the zone of lighting thru this passage, thereby maintaining the fuel 16 ignited. The process of producing the fuel is also important in order to produce the best results, and it will be apparent that the fibrous material utilized is not utilized merely as a wick for conveying other fuel to the zone of lighting, but is itself ignited and serves as the sole fuel supply.

It should be understood that it is not desired to limit the invention to the exact details of construction of the lighter and to the precise method of forming and of utilizing the fuel, herein shown and described, for various modifications within the scope of the claims may occur to persons skilled in the art.

It is claimed and desired to secure by Letters Patent:

1. A lighter, comprising, an elongated fuel cartridge of carbonized cotton fibres and having a central air passage extending throughout the length thereof, and a tubular container of somewhat larger internal diameter than the external diameter of said cartridge having one end open for the reception of said cartridge and for the ignition of one end of the cartridge, said container also having an air duct communicating with the opposite end of the cartridge for delivering air through the space surrounding said cartridge and through said air passage to the ignition end of said cartridge.

2. A lighter, comprising, an elongated cylindrical fuel cartridge having an air passage extending throughout the length thereof, a tubular container of somewhat larger internal diameter than the external diameter of said cartridge having one end open for the reception and ignition of said cartridge and having an air duct communicable with the space surrounding said cartridge and with said air passage at the constantly confined end of said cartridge, and means for feeding said cartridge along said container.

3. A lighter, comprising, an elongated cylindrical fuel cartridge having an air passage extending throughout the length thereof, a tubular container of somewhat larger internal diameter than the external diameter of said cartridge having one end open for the reception and ignition of said cartridge and having an air duct communicable with the space surrounding said cartridge and with said air passage at the constantly confined end of said cartridge, means for feeding said cartridge along said container, and means for sealing said open container end to extinguish the cartridge.

4. A lighter, comprising, an elongated cylindrical fuel cartridge of carbonized cotton and having a small central air passage extending throughout its length, a tubular container of somewhat larger internal diameter than the external diameter of said cartridge having one end open and the opposite end substantially closed but provided with an air duct communicating with the end of the space surrounding said cartridge and with said cartridge passage when said cartridge is disposed within said container, means for feeding said cartridge along said container, and means for sealing said open container end to extinguish the fuel when not in use.

5. A lighter, comprising, an elongated cylindrical fuel cartridge of carbonized cotton, and a tubular container of somewhat larger internal diameter than the external diameter of said cartridge providing an air passage between said cartridge and container and having one end open for the reception of said cartridge and for ignition of one end of the cartridge, said container also having an air duct near its opposite end and extending upwardly along the side thereof for delivering air to the ignition zone through the space surrounding said cartridge.

6. A lighter, comprising, an elongated fuel cartridge composed solely of dry carbonized cotton, and a tubular container of somewhat larger internal cross-sectional area than the greatest cross-sectional area of said cartridge providing an air passage between said cartridge and container and having an open end for the reception and ignition of the cartridge, said container also having an air admission opening remote from said end for delivering air to the ignition zone through the space surrounding said cartridge.

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