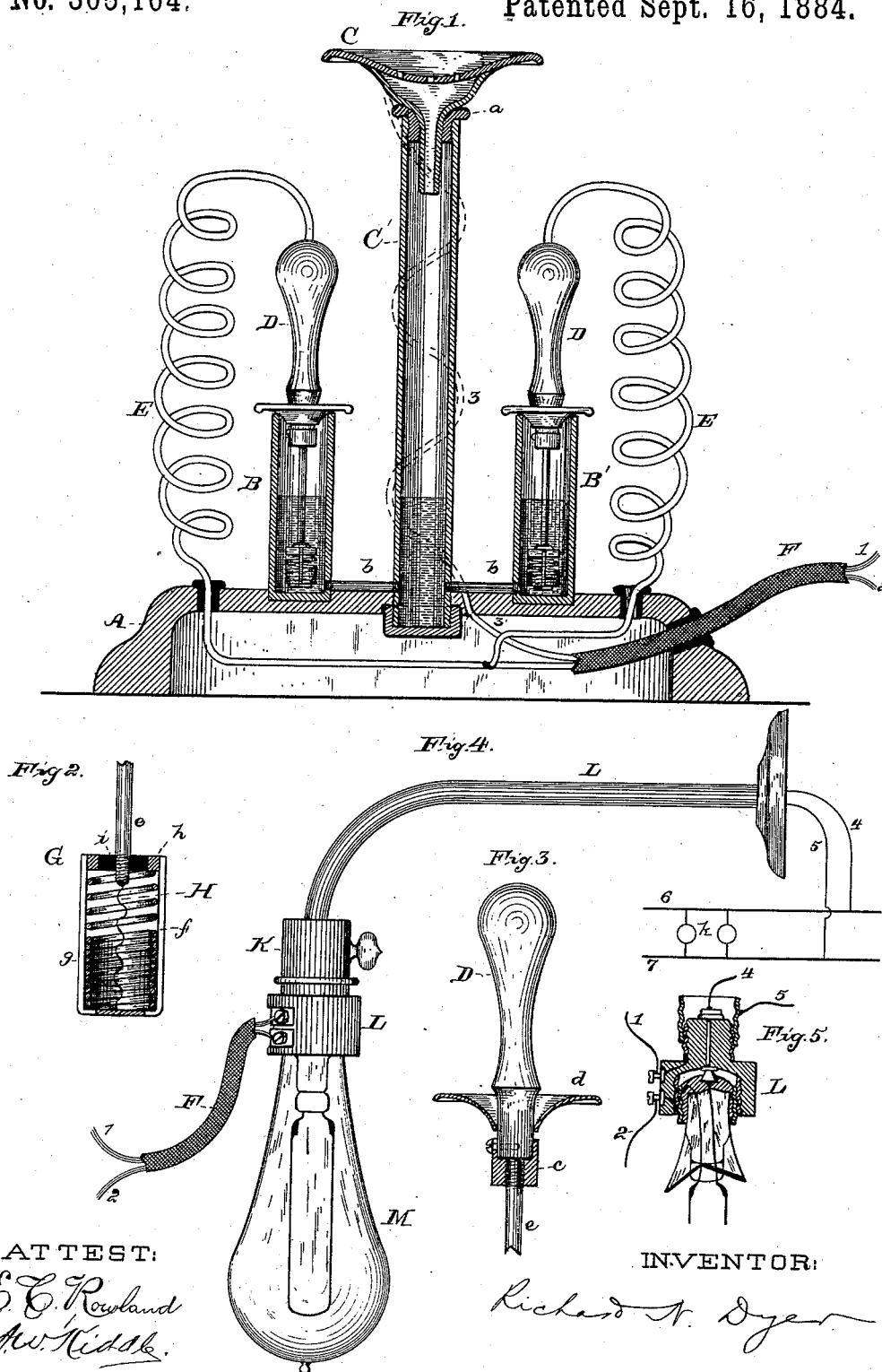


(No Model.)

R. N. DYER.
ELECTRICAL CIGAR LIGHTER.

No. 305,164.

Patented Sept. 16, 1884.



UNITED STATES PATENT OFFICE.

RICHARD N. DYER, OF NEW YORK, N. Y.

ELECTRICAL CIGAR-LIGHTER.

SPECIFICATION forming part of Letters Patent No. 305,164, dated September 16, 1884.

Application filed March 5, 1884. (No model.)

To all whom it may concern:

Be it known that I, RICHARD N. DYER, of New York city, in the county and State of New York, have invented a certain new and useful
5 Improvement in Electrical Cigar - Lighters, (Case A,) of which the following is a specification.

The object I have in view is to produce a simple and efficient contrivance for lighting
10 cigars by the employment of an electric current. The lighter is more especially designed for use in connection with the conductors of systems of lighting by electrical incandescence, but may also be operated by a galvanic battery.

15 Electrical cigar - lighters heretofore have been of two kinds—those wherein the cigar is pressed directly against wires raised to incandescence by the current, and those wherein an alcohol torch is ignited by being brought close
20 to an incandescent wire. In both of these forms of electrical cigar-lighter the automatic circuit-controllers necessitated were sources of trouble. In addition, the wire was kept incandescent during the entire time the cigar was being
25 lighted, and, since the life of the most efficient wire when raised to incandescence in air is limited, this was an objectionable feature. It being difficult to light a cigar without a flame, the first form of lighter had the peculiar objections of requiring undue time to secure a
30 light, the wire had to be raised to a high incandescence, at which it was soon destroyed, and the pressure of the cigar directly upon the highly-heated wire caused it soon to break.
35 The second form of lighter had also special objections, arising from the difficulty met with in igniting the torch by the incandescent wire. It required considerable experience to bring the torch into just the right relation with the
40 wire. The touching of the wire by the torch cooled the wire and prevented ignition, which also would not take place when the torch and wire were too far separated. The torch being held below the wire, so that the vapor would
45 rise around the wire, the ignition of the torch would cause the flame to strike the wire, and this, when the wire is incandescent, is especially destructive of it.

In carrying out my invention I employ a
50 torch, carrying alcohol or other suitable inflam-

mable material, to secure the flame which is desirable in lighting a cigar, and I light this torch by an electrical device which always bears a definite fixed relation to the evaporating-surface of the torch. This relation is secured by
55 mounting the lighting device directly upon the torch itself. I have found that the best effects are obtained when the lighting device is supported from one-eighth ($\frac{1}{8}$) to one-quarter ($\frac{1}{4}$) of an inch off of the evaporating-surface of the
60 torch. That lighting device may be an incandescent wire or a device for producing a spark or electric arc. The latter form of lighting device I do not claim specifically herein, it being embodied in another application for patent,
65 (Case B.)

To protect the lighting device from mechanical injury it is located within the torch, which is hollow, and has proper openings to give admission to air to secure ignition. The lighting
70 device is maintained a definite distance from the walls of the hollow torch, so as to secure the best effect. By this arrangement the torch ignites readily and the wire need not be raised to a high incandescence. The inclos-
75 ing of the wire within the torch has the additional advantage that if the openings are not too large the flame seeks the outside of the torch and does not strike the wire, so that if the incandescence of the wire is maintained
80 after the torch is ignited (which, however, is not intended) the flame will not add its heat to that of the current and produce a more rapid destruction of the wire. Means are also provided whereby the lighting device will be
85 in circuit only until the torch is ignited. I prefer to secure that result in the following manner: The torch is connected by a single-strand flexible conducting-cord with one side of the circuit, the other side terminating in a
90 suitable contact-surface. The torch is brought into contact with the surface to complete the circuit, the current being directed through the lighting device by reason of the fact that the torch is divided electrically into two parts
95 which are connected by the lighting device. The torch, being ignited, is removed from the contact-surface, and by this act the circuit is broken, the lighted torch being then used to
100 light a cigar, or for any other purpose for

which it may be suitable. After use, the torch is returned to the cup containing the alcohol or other inflammable material, the circuit remaining open until the torch is again touched to the contact-surface.

I prefer to construct the torch of metal for durability and cheapness, the body of the torch being divided from the stem by insulating material, and the electrical lighting device bridging this insulation, so that the circuit will be completed through it when the body of the torch is brought in contact with the other pole of the circuit. An inclosing-cage of spirally-coiled wire suitably supported I have found makes a good torch, spaces being left between the coils for a whole or portion of the length of the torch to give access to the air for ignition. If the lighting device is an incandescent wire, the entire length of the wire is protected by the surrounding cage of wire to prevent mechanical injury, and the spaces are made of such size that the flame seeks the outside of the torch and does not strike the lighting-wire after the torch is lighted.

The torch may be made of a suitable insulating material with proper metallic contacts; or the metal torch may have a small body of a material—such as asbestos—to hold more of the alcohol and give a flame for a longer time.

For the purpose of permitting the ready renewal of the torch, it is arranged to be detached from its supporting-handle. This may be done by providing the stem of the torch with a screw-thread, which turns into a metal thimble on the handle. The flexible-cord circuit-connection extends through the handle to the thimble, and is not disturbed by the detaching of the torch. The handle of the torch is of insulating material, and to protect the user a guard is provided just above the thimble, which guard may also serve as a cover to the alcohol-cup, and is preferably of conical form, so as to support the torch centrally in the cup.

Since in touching the torch to the contact-surface more or less of the alcohol runs off of it onto the surface, such surface is made concave to receive the alcohol. The contact-surface is perforated, and is connected suitably with the cup or cups of the lighter, so as to return the alcohol to such cup or cups.

The lighter is preferably made portable, and is connected with the source of electrical energy by a flexible conducting-cord; but it may be secured permanently in position as a fixture, in which case it would be connected with the source of electrical energy by ordinary insulated wire. When a galvanic battery is used, simple and direct connections therewith are employed; but when the current from a system of lighting by electrical incandescence is utilized to supply the lighter, an intervening resistance is necessary.

An electric lamp is preferably used as the resistance, and the proper connections may be

made by means of a "second" socket, such as described in Patent No. 259,115, or by other suitable means. The lamp can be located at any convenient point, as on a fixture, or hidden from sight anywhere, as beneath a counter, or in the base of the lighter. The lamp is placed directly in circuit with the lighter, and is itself only lighted for the moment, when the circuit is completed by the touching of the torch to the contact-surface.

In the accompanying drawings, forming a part hereof, Figure 1 is a vertical section of a lighter embodying my invention; Fig. 2, an enlarged sectional view of the torch; Fig. 3, an elevation of the handle of one of the torches, the thimble and guard being in section; Fig. 4, an elevation of a bracket carrying the lamp used as a resistance, with a diagram of connections; and Fig. 5, a sectional view showing the contacts and connections at the second socket.

Like letters denote corresponding parts in all the figures.

A is a suitable base, upon which are mounted alcohol-cups B B' and a concave contact-surface, C, with a perforated bottom supported upon a pipe, C', but insulated therefrom by the thimble *a*. The pipe C' is connected with the cups B B' by tubes *b*, returning the alcohol from the surface C to the cups, and connecting the alcohol-cups together, so that the supply of alcohol in them is equalized. It is evident that these parts can be assembled in any ornamental form or artistic design.

Each cup has a torch supported by a handle, D, of insulating material, provided with a screw-threaded metal thimble, *c*, at its lower end, and with a conical guard and cup-cover, *d*, above the thimble.

A flexible cord, E, having a single conductor, runs to each handle D, and through it to the thimble *c*.

F is a flexible cord carrying two conductors, 1 2, by which the lighter is connected with the source of electrical energy. In the lighter, conductor 1 is connected by a conductor, 3, with the contact-surface C, while both of the cords E are connected with conductor 2.

Each torch G has a screw-threaded stem, *e*, which turns into the thimble *c* of the handle, and from this stem is supported the inclosing-cage of the torch, composed of spirally-coiled wire *f*, and arms *g*, connected to a ring, *h*, which is supported mechanically from the stem *e*, but electrically separated therefrom by insulating material, *i*.

H is the lighting-wire, which may be of platinum, platinum-iridium, nickel, or other suitable metal, alloy, or composition. This wire is secured to the metal cage of the torch and to the stem *e*. It is located within the torch and maintains a definite relation to the evaporating-surface, as before explained.

The means for connecting the lighter with a system of lighting by electrical incandescence are shown in Figs. 4 and 5.

I is a bracket having the usual lamp-socket, K, connected by wires 4 5 with the conductors 6 7 of the system, of which *k* are the regular lamps. In the socket K is placed a second socket, L, with which the conductors 1 2 of cord F are connected. In this second socket, L, is placed a lamp, M, which is used as a resistance for the lighter, and is arranged by the connections of the second socket in series with the lighter.

What I claim is—

1. A cigar-lighter composed of a torch and an electrical lighting device carried by the torch, substantially as set forth.
2. In a cigar-lighter, a hollow torch, in combination with an electrical lighting device inclosed thereby, substantially as set forth.
3. In a cigar-lighter, a hollow torch, in combination with an incandescing lighting-wire located within the torch, substantially as set forth.
4. In an electrical cigar-lighter, the combination, with a torch, of an electrical lighting device and circuit-connections arranged to be broken when the torch is raised for use after ignition, whereby the circuit through the lighting device is broken while the torch is in use, substantially as set forth.
5. In an electrical cigar-lighter, the combination, with a torch, of circuit-connections making and breaking the circuit directly through such torch, substantially as set forth.
6. In a cigar-lighter, the combination, with a torch, of a contact-surface and circuit-connections completing the circuit directly through said torch when it is touched to said surface, substantially as set forth.
7. In a cigar-lighter, the combination of a

torch carrying an electrical lighting device, and connected with one side of the circuit, with a contact-surface connected with the other side of the circuit, substantially as set forth.

8. In a cigar-lighter, the alcohol torch carrying an electrical lighting device and made detachable from its handle, substantially as set forth.

9. In an electrical cigar-lighter wherein the torch is brought into circuit, the combination, with the metal torch, of the handle of insulating material and the handle-guard, substantially as set forth.

10. In an electrical cigar-lighter, the combination, with a torch, of a contact-surface to which the torch is touched to complete the circuit and ignite the torch, said contact-surface being concave to receive the alcohol which may run from the torch when it is touched thereto, substantially as set forth.

11. In an electrical cigar-lighter, the combination, with a torch and an alcohol-cup in which said torch rests when not in use, of a contact-surface to which the torch is touched to complete the circuit and ignite the torch, and a channel or passage-way connecting the contact-surface with the alcohol-cup, the alcohol which runs off of the torch upon the contact-surface being returned to the alcohol-cup through said channel or passage-way, substantially as set forth.

This specification signed and witnessed this 5th day of December, 1883.

RICHARD N. DYER.

Witnesses:

EDWARD H. PYATT,
WM. H. MEADOWCROFT.