

(No Model.)

W. P. CARSTARPHEN, Jr.
ELECTRIC CIGAR LIGHTER.

No. 497,263.

Patented May 9, 1893.

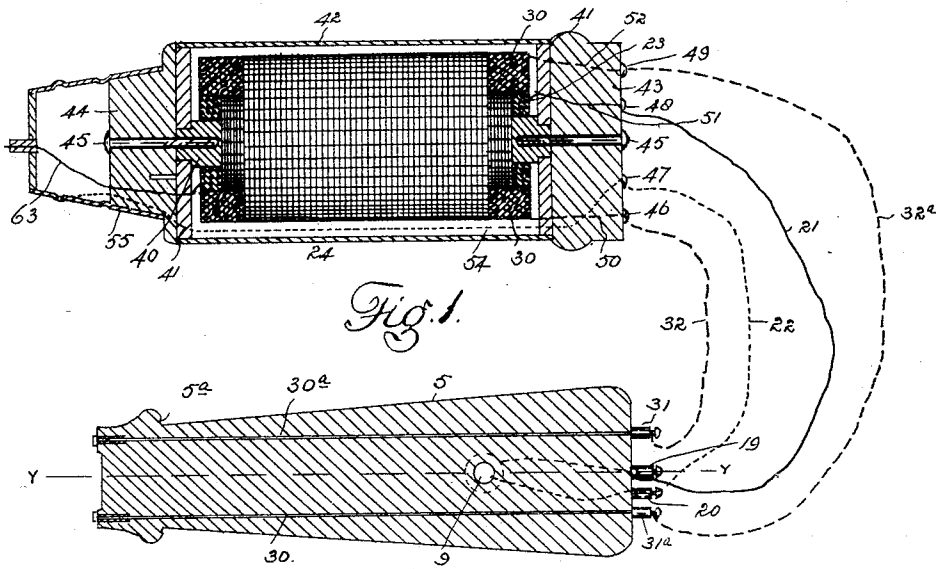


Fig. 1.

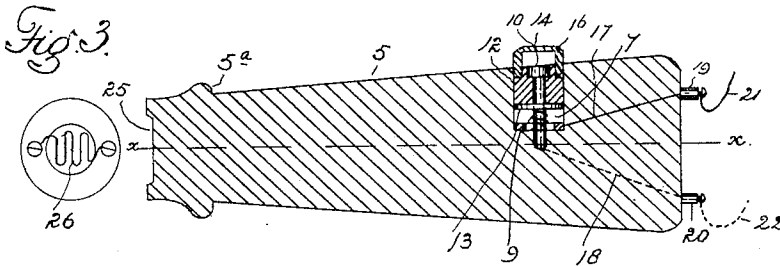


Fig. 2.

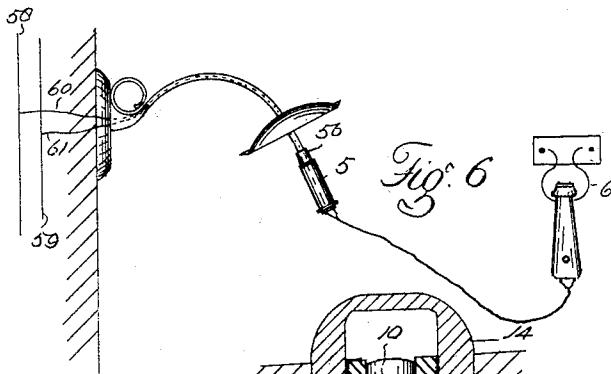


Fig. 3.

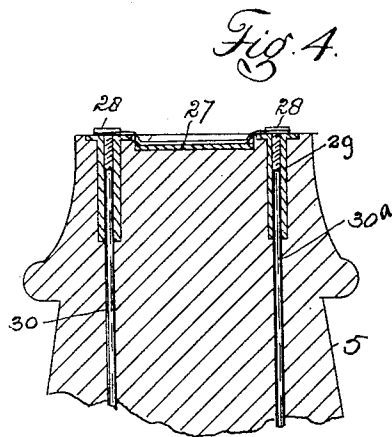


Fig. 4.

WITNESSES:
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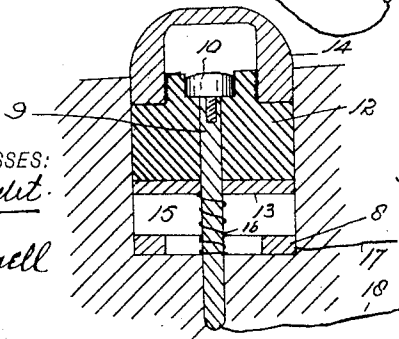


Fig. 5. INVENTOR
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UNITED STATES PATENT OFFICE.

WILLIAM P. CARSTARPHEN, JR., OF DENVER, COLORADO, ASSIGNOR OF TWO-THIRDS TO JAMES E. GREGG, OF SAME PLACE, AND RICHARD W. WEBB, OF SANTA FE, TERRITORY OF NEW MEXICO.

ELECTRIC CIGAR-LIGHTER.

SPECIFICATION forming part of Letters Patent No. 497,263, dated May 9, 1893.

Application filed November 7, 1892. Serial No. 451,259. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM P. CARSTARPHEN, Jr., a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Electric Cigar-Lighters; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in cigar lighters and the object of the invention is to provide a device of this class which shall be simple in construction, economical in cost, reliable, durable and efficient in use. This lighter is specially designed for use in electric light circuits carrying alternating currents and in combination with a transformer in which the co-efficient of transformation is so regulated as to make this use practicable, the pressure or voltage of the current being properly reduced.

To these ends the invention consists of the features, arrangements and combinations hereinafter described and claimed, and the same will be fully understood by reference to the accompanying drawings, in which is illustrated an embodiment thereof.

In the drawings, Figure 1 is a longitudinal section taken through the lighter and transformer, and showing them electrically connected. The section through the lighter is taken on the line $x-x$, Fig. 2 which is a similar section taken on the line $y-y$, Fig. 1. Fig. 3 is an end view of the lighter extremity of the handle. Fig. 4 is an enlarged fragmentary section showing the manner of attaching the lighter proper to the handle. Fig. 5 is an enlarged view in detail of the circuit making and breaking mechanism located in the handle. Fig. 6 is an elevation on a small scale showing the lighter in the incandescent circuit, the transformer being located in the lamp socket.

Similar reference characters indicating corresponding parts or elements of the mechanism

in the several views, let the numeral 5 designate the handle preferably formed of some suitable insulating material and provided near the lighter extremity with a circumferential shoulder 5^a whereby it may be supported when inserted in a suitable holder 6. In the handle 5 is formed a recess 7 in which is located the circuit making and breaking mechanism. In the bottom of the recess is placed a ring 8 preferably composed of metal and provided with a screw head 10 inserted in a threaded recess formed in the top of the pin 9 which forms a guide for the insulating plug 12 to the bottom of which is attached the disk 13 preferably composed of metal. To the outer extremity of plug 12 is secured the projecting top 14.

Disk 13 is normally separated from ring 8 by a space 15 in which is located a spring 16 surrounding the pin 9. One extremity of this spring engages the bottom of the recess and the other extremity, the under surface of the disk 13. By pressing upon projection 14 disk 13 is brought in contact with ring 8. It will be observed that the disk 13 engages the pin while the ring is separated therefrom. Hence the electric circuit is normally broken between terminals 17 and 18, leading respectively to the pin and the ring, while the circuit is closed by pressing upon projection 14 and moving the disk 13 downward to engagement with the ring. Conductors 17 and 18 lead to binding posts 19 and 20 respectively, secured to the base of the hand piece. To one of the binding posts 19 and 20 leads a conductor 21 from the primary coil 23 of the transformer 24, while to the other binding post leads a conductor 22, connected with the other branch of the main circuit. To one extremity of handle 5 which is suitably recessed therefor, is secured the lighter proper 25, composed of some suitable material as platinum, offering such resistance to the current that the same becomes incandescent the instant the circuit is closed. This lighter is preferably placed upon a layer 27 of asbestos or other suitable noncombustible material, forming a poor conductor for the heat from the lighter. The extremities of the lighter are secured to the hand piece by means of screws

28, entering the tubular contacts 29, located in recesses formed in the extremity of the handle. To contacts 29 lead conductors 30 and 30^a from binding posts 31 and 31^a to which
5 lead conductors 32 and 32^a from the extremities of the secondary coil of the transformer.

By pressing upon projection 14 of the handle and closing the primary circuit, a current is passed therethrough from the supply circuit and a current induced in the secondary coil. This induced current passes through and incandesces the lighter, since the latter is located in the secondary circuit.

I have shown in the drawings my improved
15 transformer adapted to fit the socket of the incandescent lamp. This transformer, however, is not claimed broadly in this application but forms the subject matter of another application, Serial No. 451,258, and bearing
20 even date herewith. Hence the use of this lighter is not limited to its employment in connection with this particular transformer, but may be employed with any suitable construction in which the co-efficient of transformation is properly regulated.

In Fig. 1 the coils of my improved transformer are shown partially in elevation and partially in section. They are wound upon an iron spool of a core or spindle 40 having
30 heads 41 secured to its extremities. These heads are engaged and the coils covered by a cylindrical iron shell 42 completing the magnetic circuit. To the extremities of the iron spool are secured insulating heads 43 and 44
35 by screws 45. To head 43 are secured binding posts 46, 47, 48 and 49 to which lead the terminals 50 and 52 of the secondary coil, the terminal 51 of the primary coil and the conductor 54 leading from the metal thimble 55.
40 This conductor and the coil terminals are connected respectively with conductors 32, 32^a, 21 and 22 through the medium of the binding posts. The metal thimble 55 is fashioned to fit the socket 56 of the incandescent lamp.
45 Conductor 54 and one terminal 63 of the primary coil connect with the branch wires 60 and 61 of the main circuit wires 58 and 59. Hence the primary coil is placed in the incandescent circuit by inserting thimble 55 in the
50 socket 56 as shown in Fig. 6.

Having thus described my invention, what I claim is—

1. The combination with a transformer of a cigar lighter consisting of a hand piece provided with an incandescing lighter located in the secondary circuit of the transformer and circuit making and breaking mechanism located in the primary circuit, of the transformer, said mechanism being concealed within
60 a recess formed in the hand piece and consisting of a ring, a pin and a movable part connected with the pin, the movable part being provided with a piece of conducting material and normally separated from the ring which
65 is also a conductor and a spring located be-

tween the ring and the movable part and normally breaking the primary circuit of the transformer in which said mechanism is located whereby as the movable part is pressed the current induced in the secondary coil is
70 passed through the lighter, substantially as described.

2. The combination of a transformer composed of an iron spool having heads located at the extremities of the spindle or core, primary and secondary coils wound upon the
75 spool, the one interior and the other exterior, and a concentric iron shell engaging the heads of the spool and covering the coil, and a cigar lighter consisting of a hand piece provided
80 with an exposed incandescing lighter located in the secondary circuit of the transformer, and circuit-making and breaking mechanism concealed within the hand piece and located
85 in the primary circuit whereby as the last named circuit is closed the current induced in the secondary coil is passed through the lighter, substantially as described.

3. The combination of a transformer composed of an iron spool upon which are wound
90 the primary and secondary coils, the one upon the other, the outer concentric iron shell closing the magnetic circuit, one extremity of the device being fashioned to fit the socket of an incandescent lamp whereby the primary coil
95 is connected with the lamp circuit by insertion in the socket, and a cigar lighter consisting of a hand piece having an incandescing lighter located in the secondary circuit of the transformer and circuit making and breaking
100 mechanism located in the primary circuit, substantially as described.

4. The combination of a transformer consisting of a spool composed of magnetic material upon which the coils are wound, an outer
105 magnetic shell covering the coils and closing the magnetic circuit and a cigar lighter having the burner located in the secondary circuit and the circuit making and breaking mechanism located in the primary circuit,
110 substantially as described.

5. The combination of a transformer consisting of a magnetic spool upon which the coils are wound, an outer concentric magnetic shell, insulating blocks secured to the extremities of the spool and a thimble attached to one
115 of these blocks and adapted to fit the socket of an incandescent lamp and connect the coils with the main circuit, and a cigar lighter having its burner located in the secondary circuit
120 and its circuit making and breaking mechanism located in the primary circuit, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM P. CARSTARPHEN, JR.

Witnesses:

WM. MCCONNELL,
G. J. ROLLANDET.