

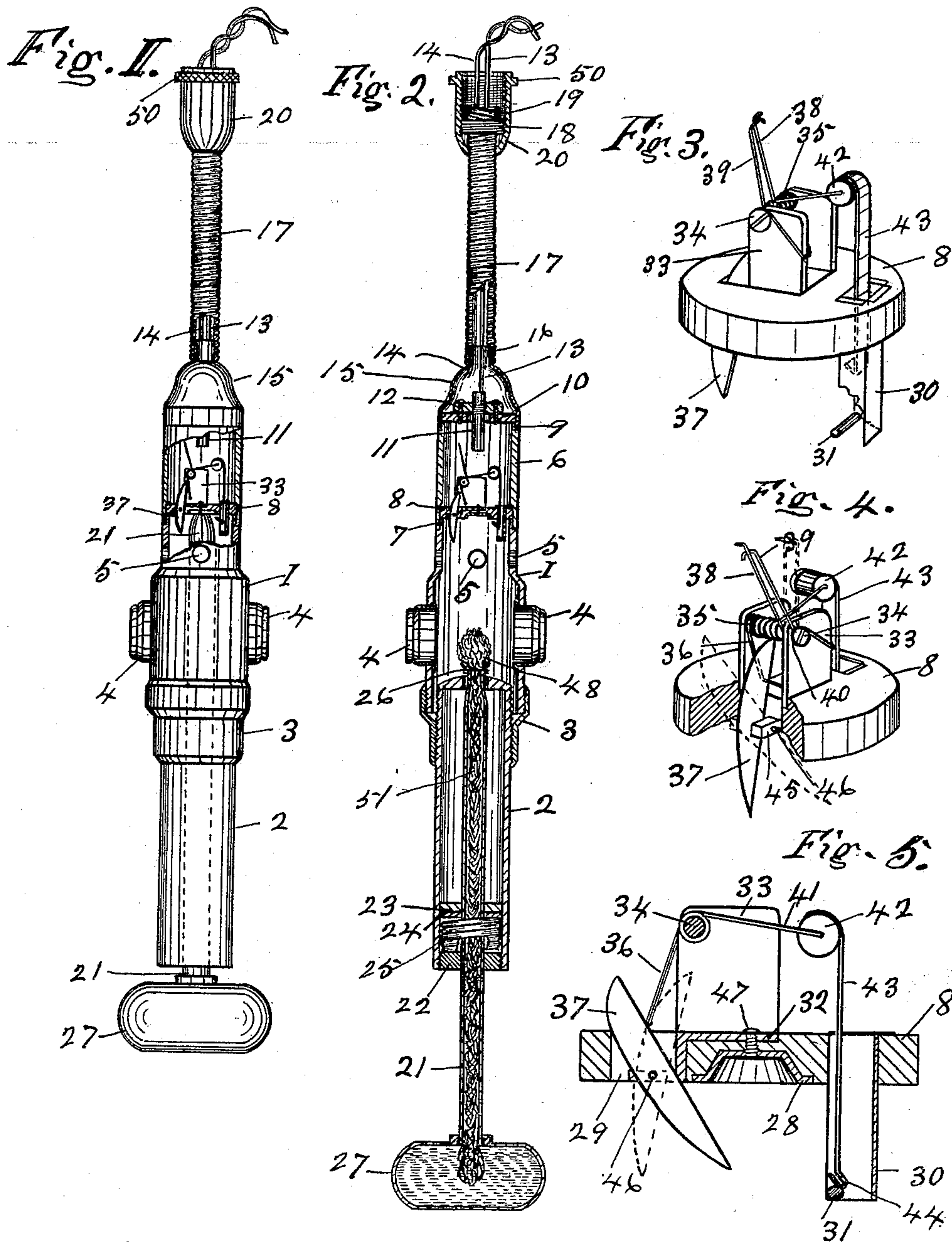
No. 624,218.

Patented May 2, 1899.

W. F. KESSLER.
ELECTRIC CIGAR LIGHTER.

(Application filed Sept. 9, 1898.)

(No Model.)



WITNESSES:

Edelinde Kearns
Blanche Hippenhamer

William F. Kessler INVENTOR

BY *Chapin Denny*
His ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM F. KESSLER, OF AUBURN, INDIANA.

ELECTRIC CIGAR-LIGHTER.

SPECIFICATION forming part of Letters Patent No. 624,218, dated May 2, 1899.

Application filed September 9, 1898. Serial No. 690,546. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. KESSLER, a citizen of the United States, residing at Auburn, in the county of De Kalb, in the State of Indiana, have invented certain new and useful Improvements in Electric Cigar-Lighters; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in electric cigar-lighters.

The object of my invention is to provide an improved self-lighting and self-extinguishing electric cigar-lighter of simple and economical construction and superior utility, specially adapted for use in cigar-stores or smoking-rooms, and possessing a novel mode of operation, as well as an increased convenience, efficiency, and reliability in use.

My invention consists of a vertical two-part shell suspended from a proper support by a flexible connection and having diametric openings adjacent to the flame, through which the cigar is inserted, a spring-pressed and vertically-movable wick-tube concentrically mounted in the said shell by a swiveled connection and provided upon its lower end with an oil or fluid receptacle, an improved means for so suspending the lighter as to relieve the flexible portion of the weight of the lighter, and an improved means for establishing and breaking the electrical connection between the terminals.

In the accompanying drawings similar reference-numerals indicate like parts.

Figure 1 is a side view of my improvement broken away in part to show the arrangement of the sparking mechanism. Fig. 2 is a vertical section of the same. Figs. 3, 4, and 5 are enlarged details of the views of the sparking mechanism.

The main body of my improvement consists of two tubular portions 1 and 2 of proper dimensions, rigidly but detachably united in concentric relation by a screw-threaded coupling 3, Fig. 2. The upper portion 1 has its lower end externally screw-threaded and has a plurality (preferably two) of lateral diamet-

ric openings. In each of these openings is rigidly secured a short protruding tube 4 of sufficient diameter to conveniently admit the end of a cigar for lighting. The upper portion of the said section 1 is preferably contracted in size, as shown, and has a series of small radial apertures 5 at a proper distance above the said tube 4 for the free escape of the products of combustion. The upper end of said tubular section 1 is provided with an annular externally-screw-threaded extension or flange 7 of reduced thickness, whose inner face is flush with that of the adjacent section 1. A third tubular section 6 has its lower end reduced in thickness and internally screw-threaded and adapted to fit the said flange 7 by a screw-threaded connection. Upon the upper end of this flange 7 and in a proper annular recess formed in the lower end of said section 6 by reducing the thickness thereof is arranged a circular insulating plate or block 8 of proper dimensions, preferably of porcelain, which is firmly but detachably secured in position when the tubular sections 1 and 6 are united, as shown in Figs. 1 and 2. Upon this plate 8 is arranged the means for establishing and breaking electrical connection between the terminals hereinafter described.

The upper end of the section 6 is provided with a terminal flange or extension 9 of reduced thickness, having its outer face screw-threaded. Upon the top of the flange 9 is arranged a circular metal plate 10, having a central opening adapted to contain the screw-plug 11, which has its upper end externally screw-threaded and provided with a circular plate 12, of proper insulating material, mounted thereon by a screw-threaded connection, as shown. This plate 12 is then rigidly secured to the upper face of the said plate 10. The said opening in the plate 10 is of greater diameter than the plug 11, leaving an annular space about said plug in said opening, whereby the said plug is perfectly insulated from said plate 10. To the upper end of the plug 11 the inner end of the wire conductor 13 is electrically connected, its other end being connected to an open-circuit battery. (Not shown.) The inner end of the other wire 14 is soldered to the inner face of the cap 15, which is electrically connected to the wick-

tube, whose inner end forms one of the terminals. The conical cap 15 has its lower end internally screw-threaded and is adapted to fit the said flange 9 and is provided upon its contracted upper end with a short tubular extension 16, through which pass the said insulated wire conductors 13 and 14. Over this extension 16 is loosely fitted the lower end of the coiled spring 17, containing the said insulated wire conductors. Adjacent to the upper end of the said coil-spring 17, which forms a flexible connection between my improved lighter and its support, is arranged the externally-threaded nut 18, of greater diameter than the said spring, which is secured in position by a knot 19 or other proper manner. The hollow conical or acorn-shaped anchor-cap 20 is internally screw-threaded and is adapted to form a screw-threaded connection with the said nut 18 and conceal the adjacent end of said coil-spring 17. The anchor-cap 20 is first slipped down over the upper end of the said spring 17, the nut 18 next placed in position and secured by the said knot 19, and the cap 20, having an annular milled flange 50 at or near its upper end, is screwed upwardly on the nut 18 until the said nut, as well as the end of the said spring, is inclosed and concealed by said cap 20. In the upper end of said cap 20 the free end of any suitable supporting-arm can readily be secured by a screw-threaded connection or coupling. It is obvious that by this construction the said spring or flexible connection 17 is firmly secured against longitudinal strain or derangement and is entirely relieved of the weight of the lighter. The said tubular portion 2 has its closed upper end provided with a circular concentric opening adapted to loosely admit and contain the vertically-movable spring-pressed wick-tube 21, which is loosely mounted in the said tubular shell 2. The shell 2 has its upper end externally screw-threaded for the said internally-threaded coupling 3 and has its lower end internally screw-threaded and closed by the screw-threaded plug 22, which has a central circular opening adapted to loosely contain the lower portion of the said metallic wick-tube, which is provided at or near the middle of its length with a rigid collar 23 and also with a loose washer 24, arranged adjacent to the lower face of said collar, Fig. 2, and adapted to retard or ease the ascent of the wick-tube upon its return movement. In the lower portion of the shell 2 is arranged a coil-spring 25 of proper tension, having its lower end bearing against the said plug 22 and its upper end bearing against the washer 24, whereby the said wick-tube is normally supported in the elevated position shown in Fig. 1. The said wick-tube is slightly reduced in diameter at its upper end and provided with a terminal annular flange 26, for the purpose hereinafter described.

To the open lower end of the wick-tube is rigidly secured in any proper manner, pref-

erably by a screw-threaded connection, as shown, the cylindrical oil-receptacle or fluid-reservoir 27, of any desired contour and of any proper material, though preferably of the oblong cylindrical form shown and of transparent glass. In this wick-tube is arranged a proper wick 51, whose upper end protrudes above the said flange 26 and whose lower end is in contact with the contents of the fluid-reservoir, as shown. The said porcelain plate 8, arranged as above described, is provided upon its lower face with a central circular recess, preferably cup-shaped, in which is rigidly fixed a metallic lining or plate 28, Fig. 5. This recess forms a gas-chamber, and the plate 28 forms an extinguishing-cap. The plate 8 is also provided upon opposite sides of the said recess with vertical slots, in one of which is suspended a pendent metallic boxing or casing 30, open at both ends and upon its inner face and provided at or near its lower end with a rigid pin 31, fixed in the opposite sides thereof, at or near its open face. The said plate 8 has a shallow recess, in which is arranged a metallic plate 32, Fig. 5, having opposite upright sides 33. Near the top of said sides is fixed a pin 34, on which is mounted a coil-spring 35 between the said sides, having a pendent loop 36, Fig. 4, adapted to engage the upper portion of the pivoted sparking-lever 37 and having one free end 38 arranged in an upright position and sustained in such position by a holding engagement with the upright free end 39 of a second coil-spring 40, loosely mounted upon one end of said pin 34, adjacent to the outer face of one of said sides 33, the other end of said spring 40 being hooked over one edge of the said side 33. The other end 41 of said spring 35 is arranged in an oblique position and has its extremity bent to a right angle therewith. Upon this extremity of said end 41 is loosely mounted a small cylindrical block or pulley 42, of wood or other insulating material, preferably having upright flanges upon the ends thereof. Upon the pulley 42 is fixed the curved or hooked upper end of the vertical operating-lever 43, whose lower portion hangs suspended in the said casing 30 and whose lower end is provided with a flattened inclined loop or hook 44, Fig. 5, adapted to be engaged and actuated by the said wick-tube in its descent, as hereinafter explained. The said plate 32 has a bifurcated extension 45 arranged in the said slot 29. In this bifurcation the said sparking-lever is pivotally mounted on a pin 46, approximately midway its ends, and normally hangs free in a vertical position. The said plate 32 and the said plate 28 are rigidly secured in position by the holding-screw 47, Fig. 5.

The operation and manner of employing my invention are obvious, and, briefly stated, are as follows: When it is desired to light a cigar, the operator seizes the oil-receptacle as a handle, pulling down upon the same against

the tension of the coil-spring 25 to its lowest limit, as seen in Fig. 2, thereby igniting the upper end of the wick, the flame 48 having thus located directly between the said tubular opening 4, in which the end of a cigar can readily be inserted to a contact with the said flame. The flexible coil-spring 17 permits a free movement of the lighter in any direction, and the swiveled connection of the wick-tube by permitting it to turn freely in its bearings prevents any undue wearing thereof at any particular point. The ignition of the wick is produced as follows: The lower hooked end of the pendent lever 43 projects normally into the path of the annular flange 26 of the wick-tube and forms a holding contact with the same during the descent of the wick-tube until the inclined hook 44 comes into contact with the fixed pin 31, as shown in Fig. 5, whose function is to disengage the hook 44, whereupon the said lever 43 automatically resumes its normal position under the tension of the said spring 40. This downward pull on the lever 43 also forces outwardly the said loop or arm 36 of the spring 35 against the upper end of the sparking-lever 37, Fig. 5, thereby bringing the lower end of the sparking-lever into contact with the upper end of the wick-tube, and also simultaneously bringing the end 39 of the spring 40 into contact with the said terminal plug 11, closing the circuit, consisting of the wire conductor 14, leading from the battery, the body of the lighter, the wick-tube, the sparking-lever, the plate 32, the pin 34, the spring 35, the plug 11, and the wire conductor 13, all of which are momentarily electrically connected just prior to the time when the said lever 43 is at its lowest limit of holding engagement with the upper end of the wick-tube. As the wick-tube descends the hook 44 of the lever 43 is disengaged from the upper end of the wick-tube by coming in contact with the said pin 31, Fig. 5. Immediately prior to the said disengagement of the hook 44 the lower end of the sparking-lever 37 under the tension of the spring-loop 36 escapes past the upper end of said wick-tube, breaking the circuit and forming the spark, which ignites the wick and produces the flame 48.

No shock to the operator can occur in use, as no current flows in the circuit except at the moment that the spark is thrown.

When the hook 44 escapes its holding engagement with the wick-tube, the sparking-lever and the spring-arms 38 and 39, as well as the lever 43, immediately resume their normal position under the tension of the spring 40.

When the operator has lighted his cigar from the flame 48, he releases his hold upon the liquid-receptacle 27, whereupon the wick-tube resumes its normal position under the tension of the coil-spring 25, which brings the burned portion of the wick into the said recess lined by the plate 28, which not only forms a snuffing-cap, which extinguishes the flame, but also forms a gas-chamber, whose

contents aid in ignition in a well-understood manner. This gas-chamber also permits the wick to project at all times sufficiently above the wick-tube for ready ignition when the spark is thrown.

As the amount of oil consumed at each operation of my improvement is not appreciable, replenishing of the said receptacle 27 is necessary only at long intervals of from twelve to eighteen days. The oil-receptacle is refilled by removing the wick-tube.

Obviously the described means for closing the circuit may be variously modified within the scope of my invention, and the sparking-lever may, if desired, be electrically connected to the plug or electrode 11 at all times without affecting in the least the operation of my invention, if the cap 28 be insulated from the plate 32.

Having thus described my invention, what I desire to secure by Letters Patent is—

1. In an electric cigar-lighter, a hollow internally-screw-threaded anchor-cap having an annular milled flange upon its perimeter, the said cap being adapted to form a screw-threaded connection with the free end of a proper supporting-arm, and also to so inclose the upper end of the flexible section of the lighter as to firmly secure it against longitudinal strain, and to relieve said section of the weight of the lighter; in combination with an annular externally-screw-threaded nut 18 arranged in said cap as shown; the conductor-wires 13 and 14 adapted to support the weight of the lighter; a knot 19 in said insulated conductor-wires 13 and 14; and the flexible arm 17.

2. The combination of an internally-screw-threaded anchor-cap 20, adapted to inclose the upper end of the flexible section of a cigar-lighter, as shown; an annular externally-screw-threaded nut 18 arranged in said cap by a screw-threaded connection adjacent to the upper end of said section; a flexible arm 17 arranged as described; and means for securing said cap firmly in position on the upper end of the flexible arm.

3. Means for making and breaking the electrical connection between the terminals in an electric cigar-lighter, consisting of a fixed terminal; a plate of insulating material fixed in said lighter in proximity to said terminal and provided upon its lower face with a snuffing-cap in cooperative relation to a properly vertically-movable wick-tube; a vertically-movable wick-tube arranged as shown; a pendent insulated lever yieldingly mounted upon said plate, and having its free end normally arranged in the path of the said wick-tube, and adapted for a holding engagement therewith; means for automatically disengaging said lever from the said wick-tube at a predetermined point in its movement; a sparking-lever pivotally mounted in said plate as shown; means for pressing said sparking-lever into contact with the adjacent end of the wick-tube upon the descent thereof;

and means for electrically connecting said sparking-lever with said terminal.

4. Means for closing the circuit between the terminals in an electric cigar-lighter, and
5 throwing the igniting-spark, consisting of a vertically-movable wick-tube; an insulating-plate fixed in said lighter at or near the upward limit of the wick-tube's movement; a sparking-lever pivotally mounted in said
10 plate and adapted to close the circuit and throw the spark as described; means for pressing said lever into electrical connection with the adjacent end of the wick-tube which constitutes one of the terminals; and means
15 for electrically connecting said lever to the other electrode immediately before the spark is thrown.

5. In an electric cigar-lighter an insulated pendent lever whose lower free end normally
20 projects into the path of the vertically-movable wick-tube and engages therewith; a vertically-movable wick-tube arranged as described; a sparking-lever arranged as shown and adapted to close the circuit and throw
25 the spark as described; means for operatively connecting said lever with the sparking-lever; and means for releasing said pendent lever from its holding engagement with the wick-tube subsequent to the throwing of the igni-
30 tion-spark.

6. In an electric cigar-lighter, a vertically-movable spring-pressed wick-tube mounted in its containing-shell by a swiveled connection for the purpose specified, having upon
35 its outer end a fixed oil-receptacle and having its inner end adapted to serve as one of the terminals, and also adapted to actuate the sparking-lever; and a sparking-lever arranged as shown, and adapted to close the cir-
40 cuit and throw the spark as described.

7. In an apparatus of the class described a sectional shell-body united longitudinally as shown, provided with radial openings for the purpose specified, and provided with a fixed
45 insulated terminal as shown; a coil-spring 17, arranged as shown; the insulated wire conductors arranged in said spring and having

their respective ends electrically connected to the said terminal and to the said shell-body; the anchor-cap 20; the nut 18 in said
50 cap and abutting the adjacent end of said spring; means for firmly securing said nut in position; a spring-pressed wick-tube vertically movable in said shell adapted to form one of the terminals and provided with a fixed
55 oil-receptacle; and means for electrically connecting said terminals automatically upon the downward movement of the wick-tube.

8. In an electric cigar-lighter, means for making and breaking the electrical connec-
60 tion between the terminals consisting of the horizontal plates apertured as shown, and removably mounted in the lighter-body, and provided upon its lower face with a snuffing-cap, as described; a metallic plate 32 fixed
65 in said plate, having upright sides in which is fixed a pin 34, and provided with a bifurcated extension 45; a coil-spring 35 loosely mounted upon said pin having a pendent loop or arm 36, and having one of its free ex-
70 tended ends adapted to contact with one of said terminals; means for normally holding said free end out of such contact; a block or pulley 42 loosely mounted upon the other free end of said spring; a pendent boxing 30 hav-
75 ing a fixed pin 31 therein for the purpose specified; a pendent lever 43 mounted upon said pulley arranged in said boxing and having upon its free end a hook for the purpose described; a vertically-adjustable wick-tube
80 21 arranged as described and a sparking-lever pivotally mounted in said bifurcation normally in vertical arrangement under the influence of gravity, and adapted to throw an electric spark by contacting the vertically-
85 adjustable wick-tube under the tension of the said arm 36.

Signed by me, at Fort Wayne, Allen county, State of Indiana, this 5th day of September, A. D. 1898.

WILLIAM F. KESSLER.

Witnesses:

JAMES P. CHAPMAN,
ADELAIDE KEARNS.