

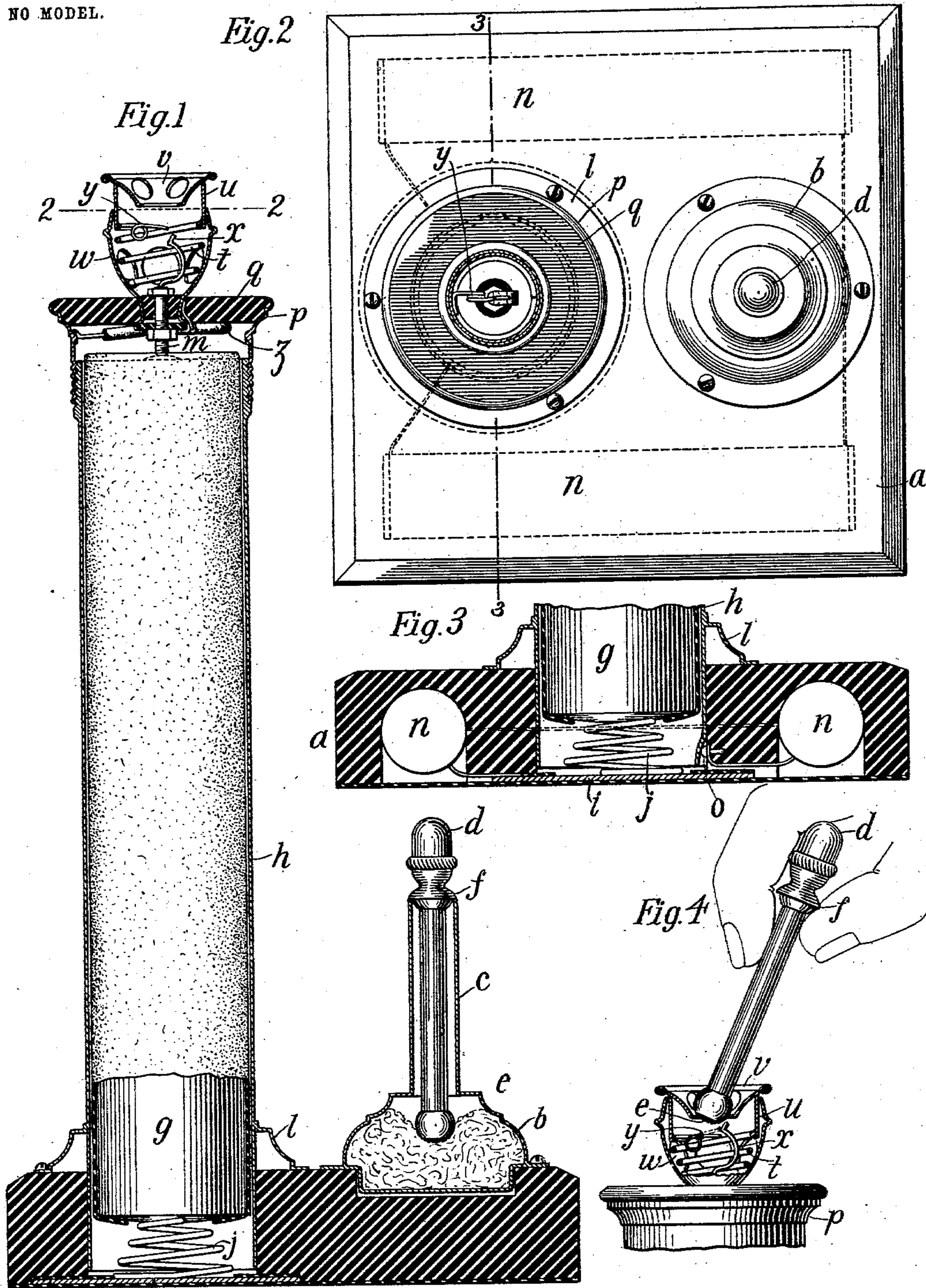
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PATENTED NOV. 10, 1903.

C. HUBERT.  
ELECTRIC LIGHTER.

APPLICATION FILED MAR. 17, 1903.

NO MODEL.



Witnesses:  
*Raphaël Petter*  
*Henry Barnes*

Inventor  
*Conrad Hubert*  
by *Henry D. Williams* Atty



# UNITED STATES PATENT OFFICE.

CONRAD HUBERT, OF NEW YORK, N. Y.

## ELECTRIC LIGHTER.

SPECIFICATION forming part of Letters Patent No. 743,724, dated November 10, 1903.

Application filed March 17, 1903. Serial No. 148,179. (No model.)

*To all whom it may concern:*

Be it known that I, CONRAD HUBERT, a citizen of the United States, residing at the borough of Manhattan, city of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Electric Lighters, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to electric lighters or igniters, and has for its objects increased effectiveness of the igniting operation and the ignition by an electric sparking action of a torch containing alcohol as the inflammable fluid, the attainment of effective ignition with a simplification of the manual part of the operation of ignition, and the realization of other advantages, as will hereinafter more fully appear.

According to my invention I employ sparking electrodes controlled by a movable part to make and break an electric circuit to form a spark, and the movable part is actuated by an inflammable torch, and I provide retract-  
ive means for retracting the movable part to normal position, and I provide for making a spark during the movement in which the igniting means is actuated by the torch and for making another spark during the retract-  
ive movement of the igniting means, and thus attain a double sparking action with two sparks in rapid succession. According to my invention the movable part has a shield which receives the thrust of the torch, but keeps the inflammable part of the torch in a proper igniting position, so that the sparking action will not be impaired by the torch. According to my invention I provide inflammable-fluid-supplying means for the torch which will prevent the dropping of the inflammable fluid upon the electrodes.

My invention also includes various improvements in the construction and combination of parts.

I will now describe the construction embodying my invention shown in the accompanying drawings, and I will thereafter point out my invention in claims.

Figure 1 is a vertical central section of a lighter embodying my invention. Fig. 2 is a plan view of the same in partial section on the line 2 2 of Fig. 1. Fig. 3 is a longitudinal

section of the lower part of the device on the line 3 3 of Fig. 2. Fig. 4 is a partly sectional elevation of the upper part of the device, also showing the torch in igniting position.

My lighter is shown as comprising a base, a reservoir and torch-holder, and a column which forms a receptacle for a battery. The column is provided with a removable cap having an insulated top plate, and the sparking device is carried by the top plate.

The base *a* is preferably of non-conductive material, and the reservoir *b* is secured thereto in any suitable manner and is filled with a spongy or absorptive material saturated with an inflammable fluid. The torch-holder *c* comprises a tubular projection from the reservoir through which the reservoir may be filled. The torch *d* has a handle or shank which is provided with a shoulder *f*, adapted to abut against the top of the torch-holder *c* and act as a stopper for the reservoir, and has an inflammable part *e*, comprising a suitable wick or other fluid-absorbing device.

The base *a* has a pocket formed therein into which extends the lower end of the battery-receptacle *h*. The bottom of this pocket is provided with a metallic or conductive plate *i*, suitably insulated from the walls of the battery-receptacle, and within this pocket, between the conductive plate *i* and the bottom of the battery *g*, is located a metallic spring *j* for the purpose of establishing electrical contact between the battery and the plate *i*. The column *h* or battery-receptacle is of conductive material, and its lower end enters the pocket, but does not penetrate to the bottom thereof, and is held in such position by the shoulder or flange *l*. The base is also provided with recesses for sparking coils *n n*, which are connected in series in the sparking circuit by juncture with the bottom plate *i* and by the wedging contact of the conductive walls of the column *h* against a pin *o*, which is connected with one of the coils *n*.

The sparking device is carried by the top plate *q* of the cap of the column or battery-receptacle *h*. One of the electrodes, *x*, of the sparking device extends up from a post *m*, which is secured in the top plate *q* and makes contact with the upper terminal of the battery *g*. The other electrode, *y*, is carried by a movable part *u*, having a cupped shield *v*



with perforations or openings therein and sliding in a support or standard *w*, also having perforations or openings therein, and a metallic spring *t* is secured at its upper end to the movable part *u* and is secured at its lower end to the standard *w* and conducts the current from the standard to the movable part, the standard being connected by a wire *z* to the metallic thimble *p* of the cap of the column *h*, and the thimble *p* having a threaded engagement with the column *h*. The perforated support *w* for the movable part constitutes an envelop inclosing the sparking electrodes at the sides and permitting only sufficient air to enter for the proper ignition and combustion of the torch, and the shield *v* similarly incloses the sparking electrodes at the top.

The electrodes *x* and *y* are normally out of contact with each other and are also out of contact with each other when the movable part *u* is depressed by the torch to lowest position, as shown in Fig. 4. Therefore the circuit is open both in the normal position and in the only other position in which the parts are liable to be maintained for a substantial interval of time, and thus waste of battery-power is prevented. The circuit is closed and opened during the torch-actuated downward movement of the movable part and during the spring-actuated retractive movement thereof, the electrode *y* being shown as a spring-finger and electrode *x* as having an edge and the spring-finger springing over the edge in each of these movements.

The use of alcohol as the inflammable fluid is highly desirable in devices of this character, the devices now in use employing naphtha as the inflammable fluid being objectionable because of the odor of the flame and because of the dangerous nature of the inflammable fluid. One of the difficulties attending the use of alcohol has been the self-evaporative and cooling action of the fluid, and where the alcohol is permitted to drop upon or come in contact with the electrodes this evaporative action effects such a reduction of temperature that ignition is extremely difficult. It is important, therefore, that the torch shall not at any time carry so much inflammable fluid that it will drop it upon the working parts, and it is also important to quickly produce successive sparks, so that the heat resulting from the first spark will assist in ignition by the following spark. The first-mentioned advantage is attained by the employment of the absorptive material in the fluid-reservoir *b*, as above described, so that the inflammable part of the torch will be in contact with this absorptive material and will not be wet beyond the point of saturation by the inflammable fluid and also by the employment of the shield *v*, which receives the inflammable end of the torch and holds it in proper position relatively to the electrodes *x y*, but out of contact with these electrodes. The second-mentioned advantage is

attained by the construction of the electrodes *x* and *y* so that a spark is made while the movable part *u* is being depressed and another spark is made while the movable part *u* is being retracted from depressed position.

It is obvious that various modifications may be made in the construction shown and above particularly described within the spirit and scope of my invention.

What I claim, and desire to secure by Letters Patent, is—

1. An electric lighter having sparking electrodes, a movable shield controlling the sparking movement of the electrodes, and an inflammable torch, the movable shield being adapted to receive the thrust of the torch.

2. An electric lighter having a movable shield, retracting means controlling the movable shield, an inflammable torch, the movable shield being adapted to be actuated by the torch, a sparking electrode controlled by the movable shield, and another sparking electrode, one of such electrodes having a projecting part with which the other electrode is adapted to make and break contact during both the torch-actuated and retractive movements.

3. An electric lighter having a movable shield, retracting means controlling the movable shield, an inflammable torch, a sparking electrode controlled by the movable shield, and another sparking electrode, the movable shield being adapted to receive the thrust of the torch, and one of the electrodes having a projecting part with which the other electrode is adapted to make and break contact during both the torch-actuated and retractive movements.

4. An electric lighter having sparking electrodes, a movable shield controlling the sparking movement of the electrodes, a torch having an absorptive inflammable part, the movable shield being adapted to receive the inflammable part of the torch above the sparking electrodes and to be actuated by the torch, and absorptive torch-charging means.

5. An electric lighter having sparking electrodes, a movable shield with ventilating-openings therein and controlling the sparking movement of the electrodes, an envelop for the electrodes also having ventilating-openings therein, and an inflammable torch, the movable shield being adapted to receive the thrust of the torch.

6. An electric lighter having a movable shield with ventilating-openings therein, retracting means controlling the movable shield, a sparking electrode controlled by the movable part, another sparking electrode, an envelop for the electrodes also having ventilating-openings therein an inflammable torch, the movable shield being adapted to receive the thrust of the torch and one of the electrodes having a projecting part with which the other electrode is adapted to make and break contact during both the torch-actuated and retractive movements.



7. An electric lighter having a movable part carrying a cupped shield with ventilating-openings therein, a retracting-spring controlling the same, a resilient sparking electrode  
5 carried by the movable part, another sparking electrode, a support for the movable part enveloping such electrodes and having ventilating-openings therein, and an inflammable torch.

10 8. An electric lighter having sparking electrodes, a movable part carrying a shield with ventilating-openings therein and controlling the sparking movement of the electrodes, the electrodes being located below the shield, an  
15 envelop for the electrodes also having ventilating-openings therein, a torch having an absorptive inflammable part, and absorptive torch-charging means.

9. An electric lighter comprising sparking

electrodes, a column of conductive material 20 supporting the same and adapted to form a battery-casing, a base receiving the lower end of the column, resilient means at the foot of the column for connecting with one terminal of the battery, and one or more spark-coils 25 located in the base and connected to the resilient terminal and also connected to the conductive column, one of the sparking electrodes being carried by a post adapted to connect directly with the other battery-terminal, 30 and the other sparking electrode being connected to the conductive column.

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

CONRAD HUBERT.

Witnesses:

HERBERT H. GIBBS,  
HENRY D. WILLIAMS.