

(No Model.)

L. T. SMITH.  
ELECTRIC CIGAR LIGHTER.

No. 496,103.

Patented Apr. 25, 1893.

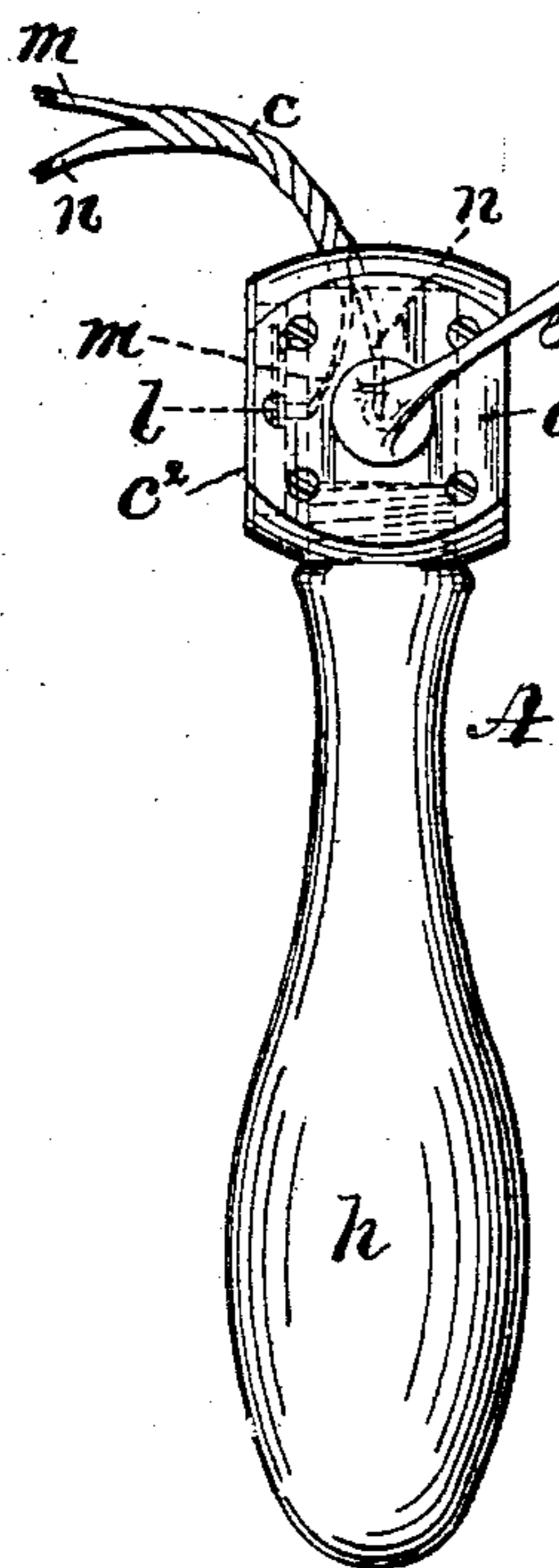


Fig 1.

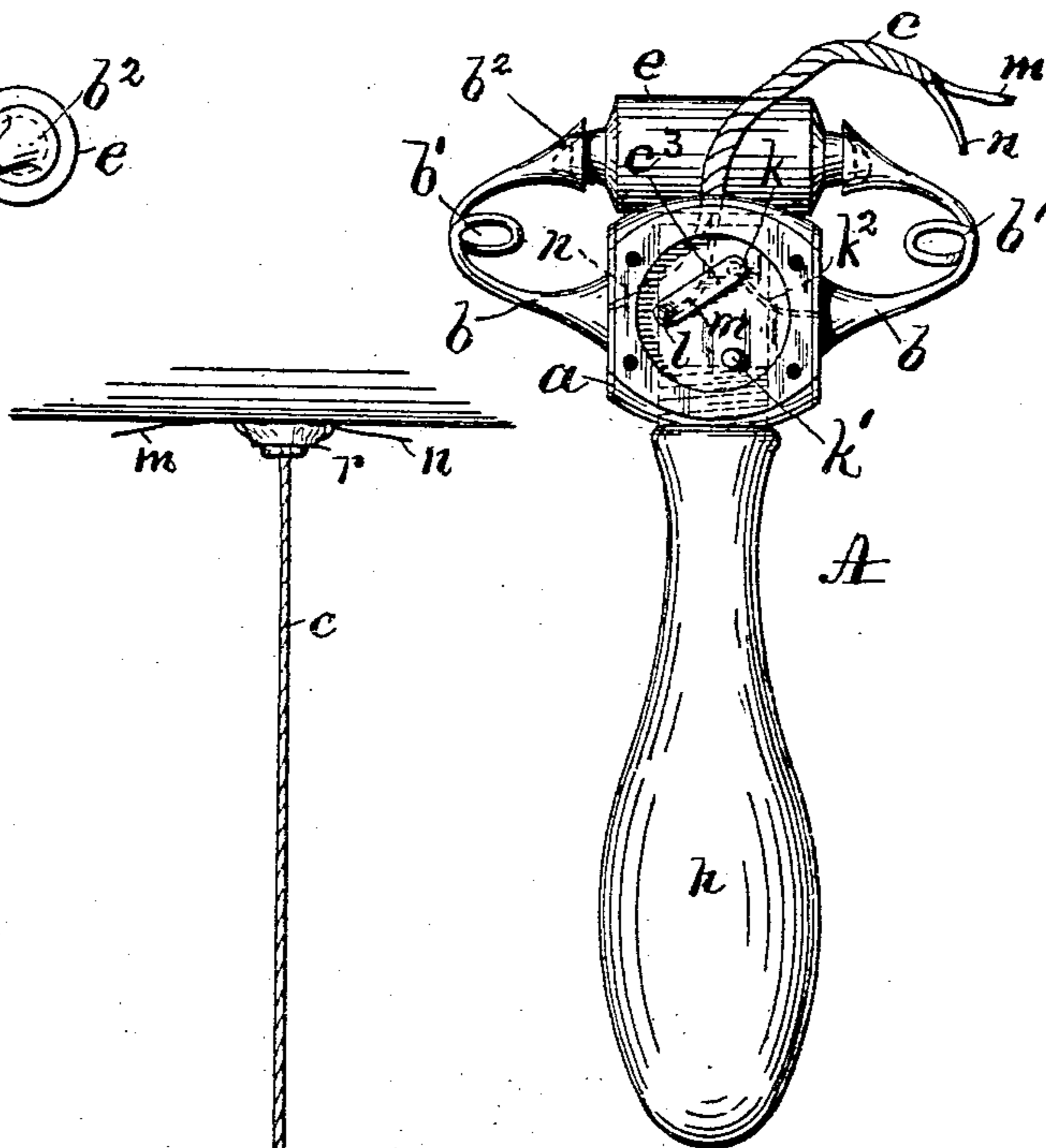


Fig 2.

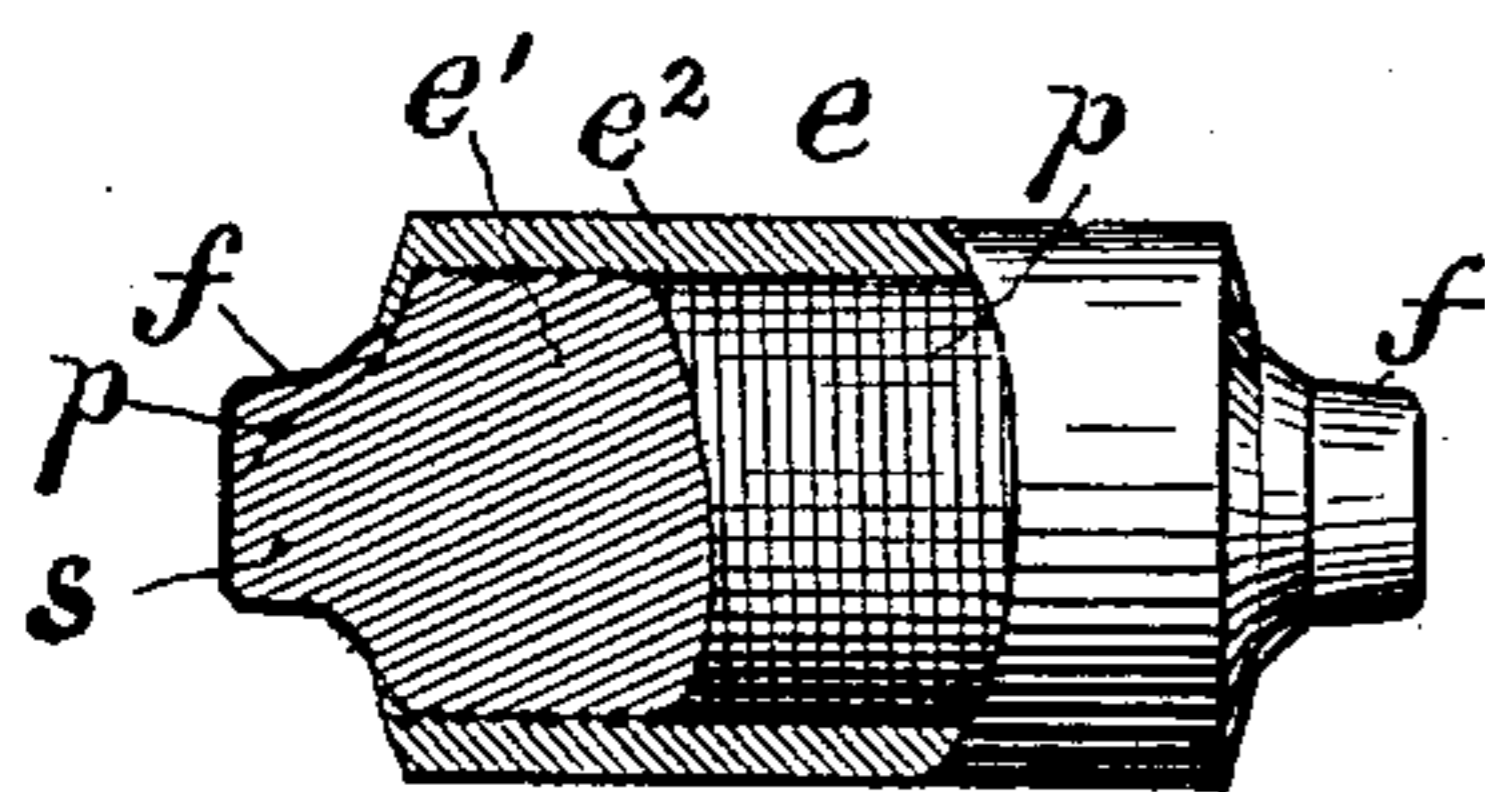


Fig 3.

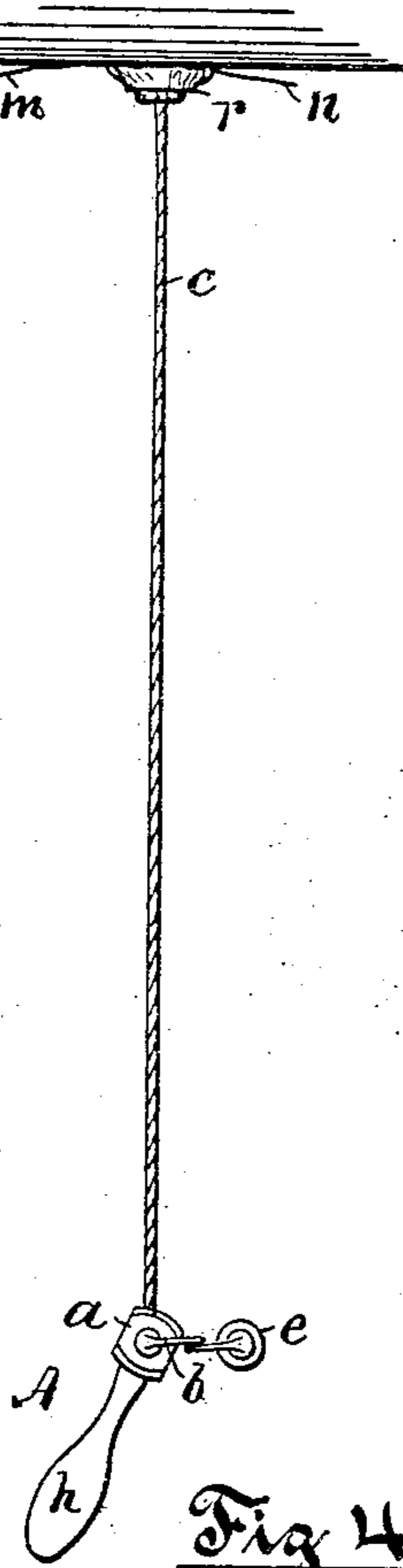


Fig 4.

Witnesses.

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# UNITED STATES PATENT OFFICE.

LAWRENCE T. SMITH, OF BARRINGTON, RHODE ISLAND.

## ELECTRIC CIGAR-LIGHTER.

SPECIFICATION forming part of Letters Patent No. 496,103, dated April 25, 1893.

Application filed October 24, 1892. Serial No. 449,804. (No model.)

*To all whom it may concern:*

Be it known that I, LAWRENCE T. SMITH, a citizen of the United States, residing at Barrington Centre, in the county of Bristol and State of Rhode Island, have invented certain new and useful Improvements in Electric Cigar-Lighters; and I do hereby 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 letters of reference marked thereon, which form a part of this specification.

My invention relates to electric cigar lighters, so called; that is lighters in which the burners are rendered incandescent by means of a current of electricity passing through them.

Hitherto in lighters of the class just referred to it has been usual to employ an exposed filament of suitable incandescing conducting material combined with an operating switch or cut out, the latter operating automatically or otherwise each time the lighter is brought into use. There are objections to such former electric lighters both in their construction and method of operation. For example,—owing to the fact that the incandescing material or filament is exposed, in order to bring it quickly to a suitable degree of heat, and to the further fact that the cigar or article to be ignited must be brought into actual contact with the glowing material, it follows that the latter is liable to be easily disarranged or broken thus rendering the device inoperative for the time being. Moreover, the gradual accumulation of ashes upon the filament operates in a measure to corrode it thus impairing its efficiency.

The employment of a switch or cut out operating each time the burner is brought into service soon wears or burns it out by reason of the arc formed each time the current is broken. It is further found that in order to use a filament having sufficient size it is necessary to employ some form of auxiliary resistance in the circuit to prevent the filament from burning out. In burners using an alternating current special forms of converters are employed, this latter construction possesses

the inherent disadvantage that it cannot be operated electrically by direct currents.

The object I have in view is to produce an electric cigar lighter in which the disadvantages before referred to are eliminated. That is to say my improved cigar lighter has no exposed filament; the current is used continuously, no switch or cut out being employed to break the current each time the device is used, and the use of a converter or auxiliary resistance mechanism is dispensed with.

My invention consists in the novel and useful construction, combination and arrangement of parts for effecting the above mentioned object, hereinafter fully described, and more particularly pointed out in the claims.

In the accompanying sheet of drawings Figure 1 is a side elevation of my improved electric cigar lighter. Fig. 2 is a front view of the same. Fig. 3 is a side elevation, in partial longitudinal central section, of the plug or burner-block, detached, and Fig. 4 is a side view, in reduced scale, showing the general arrangement of the device, ready for use.

The lighter as a whole is indicated by A, and in order to render it more convenient for the user it is provided with a handle portion *h* screwed into and depending from the head *a*. These parts I preferably make of wood, although other material may be employed. To the head *a* are also secured oppositely arranged current-conducting holders or arms *b* of metal, as brass; each as drawn being bent to form a spring *b'* and terminating at its free end in an enlarged socket *b<sup>2</sup>*; these latter face each other and are arranged to be separated to receive and hold the burner-block *e* about to be described.

The incandescing plug or burner portion *e* is composed of fire-resisting material, as for example a mixture of ground glass and fire clay suitably tempered, molded and finally baked. As drawn the burner is cylindrical and is provided with reduced ends *s* which are covered with current conducting metal caps *f*, as copper. The cylinder *e'* is wound with a number of turns of a piece of filament or wire *p*, as platinum; the several convolutions are separated from each other and the terminals of the wire are soldered or otherwise secured to

the caps  $f$  of the respective burner ends  $s$ . After being thus wound the burner is covered exteriorly along its barrel portion with a layer or coating  $e^2$  of suitable fire-resisting material, thus completely concealing and embedding the wire  $p$  therein. The plug is now completed, ready to be inserted into the two conducting arm sockets  $b^2$ , before described. I would state that practically the caps  $f$  are placed over the burner ends and are secured to the filament  $p$  after the plug has been baked. By this arrangement it will be seen that the fine wire  $p$  is not only capable of withstanding the high degree of heat necessary to bake the burner but it is completely protected, thus preventing it from corrosion, breakage and accidental displacement. Moreover, the amount of filament thus wound produces sufficient resistance in and of itself without auxiliary resistance of any kind, thereby permitting the lighter to be operated with a minimum current of electricity, the cost of the latter being correspondingly reduced.

In order to electrically connect my improved cigar lighter with the main or branch current conducting wires I prefer to suspend it at the lower end of a flexible conductor  $c$  composed of two poles  $m$  and  $n$  insulated from each other as common; the upper end of the conductor may be attached to a rosette  $r$  and connected with the circuit wires in the usual manner. The conductor  $c$  as drawn passes through the upper end of the hollow head  $a$ , one pole, say  $n$ , being bent laterally and secured to one of the spring arms  $b$ , the other pole being attached to a pin  $l$  of the switch-arm  $c^3$  let into one side of the head; the free end of said arm being adapted to engage stops or pins  $k$   $k'$ ; a short wire  $k^2$  electrically connects the pin  $k$  with the other spring arm  $b$ , as clearly indicated in Fig. 2. When in this position the current is passing through the burner  $e$ , but upon swinging the switch-arm downwardly to engage the pin  $k'$  the circuit is broken, because the current cannot pass from one pin to the other. The device works equally well without the switch; the latter is not to be operated each time the lighter is used but is simply introduced as a means for shutting off the current at night, or longer periods when the lighter is not required. In fact I prefer to so conceal the switch that the ordinary user will not be aware of its presence. In the drawings it is located in a small recess covered by a thin plate or cover  $c^2$ .

The manner of operating my improved cigar lighter is as follows,—first assuming the electric current to be passing through the device. The action of the current is to heat that portion of the surface of the burner-block  $e$ , contiguous to the spirally wound wire  $p$ , to a dull glow or dark cherry-red color. Now, in order to utilize it the user simply grasps it by the handle  $h$  and brings the burner  $e$  into contact with the cigar or other article to be ig-

nited. In fact the act of using it is substantially the same as though it were one of the well known continuously burning gas cigar lighters.

I would add that the switch-lever  $c^3$  is employed not only to break the circuit, say at night when the light will not be required, but also whenever upon occasion it becomes necessary to replace the burner  $e$  by a new one.

As before stated, in my present device the flow of the electric current through the burner-block is continuous (the current proper it is to be understood being direct, or even alternating) thereby providing an always-ready lighter, as distinguished from electric cigar lighters provided with circuit closers which automatically operate to energize or heat an exposed wire whenever the lighter is brought into use. In such former devices the wire or burner is easily damaged or rendered inoperative; moreover, the user is compelled to wait a comparatively long time for the burner to attain a sufficiently high degree of temperature necessary to ignite a cigar, in fact it is almost impossible to thus relight a cigar having its end covered with ashes even though a much greater current of electricity be employed than is required in my present lighter.

I claim as new and desire to secure by United States Letters Patent—

1. An electric cigar lighter consisting of a head portion arranged to be connected in an electric circuit, conducting holders or arms secured to said head adapted to contact with the poles of the circuit, and an incandescing plug or burner-block attached to said holders; the plug containing a non-exposed high resistance conducting wire or filament having its ends arranged to electrically engage the holders, substantially as set forth.

2. An electric cigar-lighter provided with current-conducting arms or holders, an incandescing plug or burner-block adapted to be supported by said arms composed of fire-resisting material, a non-exposed conducting wire or filament of high resistance embedded in the plug, and having the ends of said filament arranged to engage the arms, whereby an electric current may pass from one arm to the other *via* the filament contained in the interposed plug, substantially as set forth.

3. A cigar lighter adapted for continuous heating by electricity, consisting of a non-exposed conducting wire or filament of high resistance mounted in a plug or cylinder of fire-resisting material and having said plug removably secured to conducting-arms or holders mounted in a head located in an electric circuit, substantially as set forth.

4. A cigar-lighter, having a burner or plug formed of fire resisting material provided with a non-exposed conducting filament of high resistance combined with a head portion arranged to be located in an electric circuit and conducting arms secured to the head arranged to receive said plug for the purpose set forth.

5. In a cigar-lighter, the combination of con-

ducting arms adapted to be connected with the poles of an electric circuit, with an incandescing plug mounted in said arms having capped conducting ends and further provided  
5 with a non-exposed conducting filament of high resistance secured to said caps, substantially as set forth.

6. A cigar-lighter, consisting of a head or holder portion arranged to connect with the  
10 poles of an electric circuit, and a burner-block, provided with a non-exposed high resistance current conducting wire or filament, removably mounted in said head and having  
15 such wire or filament adapted to contact with the current poles for continuous heating.

7. In an electric cigar lighter, the combination of an inner block of non-conducting material, a thin wire or filament of high resistance wrapped on the outer surface of said  
20 block, said wire forming part of an electric

circuit, and an outer covering of fire-clay or other non-conducting fire-resisting material, substantially as described.

8. In an electric cigar lighter, the combination of an inner block of non-conducting material, a thin wire or filament of high resistance wrapped on the surface of said block in a helical or tortuous path, and an outer covering of non-conducting fire-resisting material, with a battery or similar source of electricity  
25 in said circuit of sufficient strength to render said outer surface incandescent, substantially  
30 as described.

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

LAWRENCE T. SMITH.

Witnesses:

GEO. H. REMINGTON,  
IDA M. WARREN.