Jan. 31, 1928. 1,657,904

T. C. RUSSELL

ELECTRIC LIGHTER

Filed Nov. 30, 1925

Fig. 1

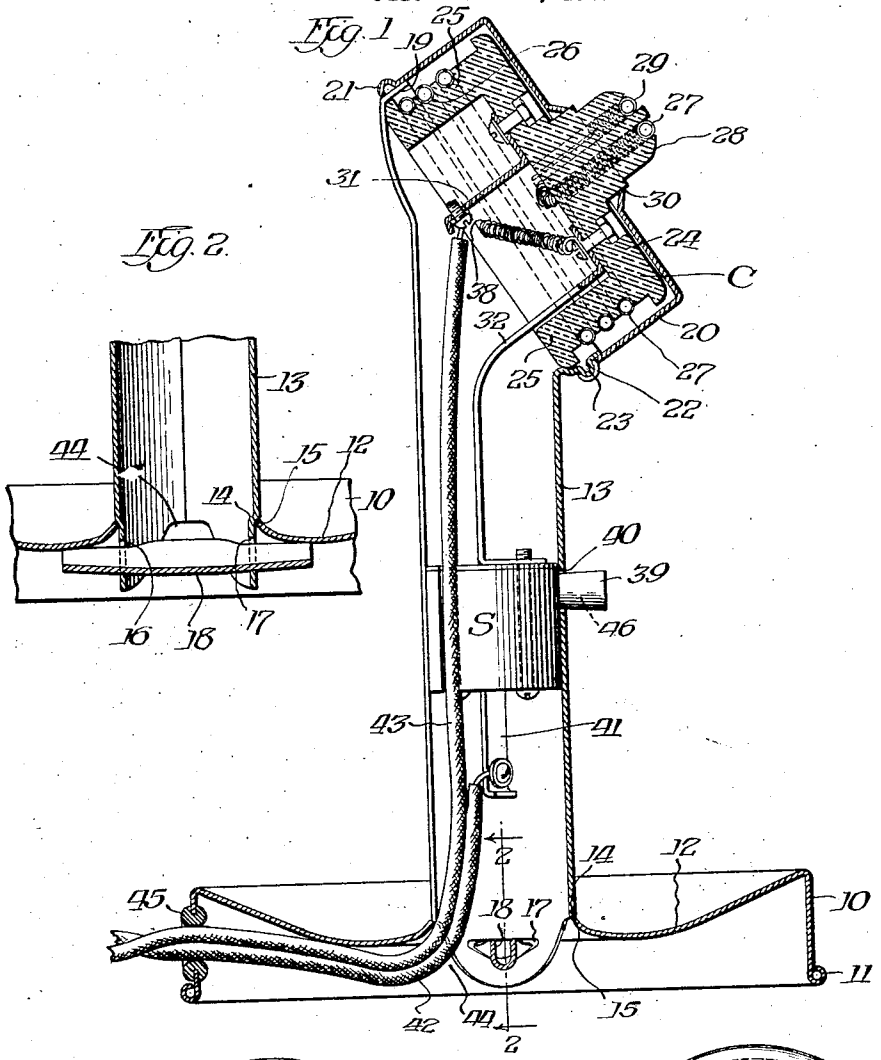


Fig. 2

Fig. 4

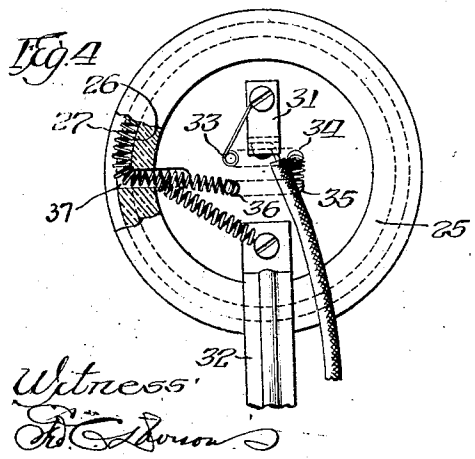
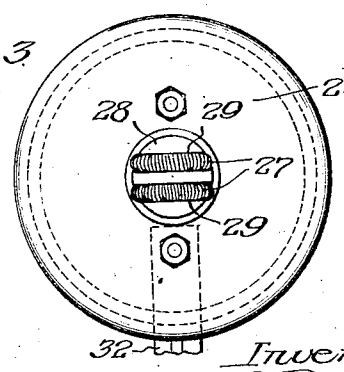


Fig. 3



Witness:

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UNITED STATES PATENT OFFICE.

THOMAS C. RUSSELL, OF CHICAGO, ILLINOIS.

ELECTRIC LIGHTER.

Application filed November 30, 1925. Serial No. 72,207.

My invention relates to electric lighters of that type in which a length or section of a resistance conductor furnishes the lighting heat. The main object of the invention is to produce a simple, efficient and conveniently manipulated device which will readily light cigars and cigarettes but which is particularly useful and efficient for lighting and relighting pipes.

Another object of the invention is to make the general contour and shape of the device that of a desk telephone whereby to provide a substantial supporting base, a pedestal or grip section, and a head in which the heat producing element is located.

Another important feature of the invention is the localization of the heat producing element entirely within the head of the device and the elimination of resistance or transformer structures in the base of the device where such structure might become dangerous when overheated.

Another important feature of the invention is the provision of a lighting nose or lug on the head of the device on which nose or lug a section of the heating element is arranged to be accessible for the lighting of cigars and cigarettes and particularly for being inserted into the bowl of a pipe to cause lighting thereof.

Another important object is to provide simplified and inexpensive construction involving the use of sheet metal for practically the entire structure.

The above and other features of my invention are incorporated in the structure shown on the drawing, in which,

Figure 1 is a vertical diametral sectional view of the complete device;

Figure 2 is a sectional view on plane 2—2, Figure 1;

Figure 3 is a front elevational view of the heating element supporting core, and

Figure 4 is a rear view of such core and heating element supporting structure.

The supporting frame shown comprises the cylindrical base 10 having the stiffening bead 11 around its lower edge and having the dished top wall 12. This base preferably is stamped from a single piece of sheet metal.

The pedestal or grip part 13 is also stamped integral from sheet metal and at its lower end this cylindrical grip part is radially contracted to form the annular shoulder 14 for seating against the material surrounding the opening 15 at the center of the base top wall 12. The end of the grip part below the shoulder 14 has the opposite openings 16 and 17 for the insertion of a wedge pin or frame 18, the pin or frame engaging against the underside of the base top wall 12 to rigidly and securely hold the base part and grip part together.

At its upper end the cylindrical grip part 13 is expanded to form a cylindrical seat 19 extending in a diagonal plane, the seat receiving the cylindrical closure cap 20. The cap is detachable, it having the peripheral bead 21 provided with one or more notches 22 which when in registration with projections 23 on the seat 19 will permit withdrawal of the cap. However, when the cap is rotated to carry its notches away from the projections, the cap will be locked to the grip part.

The supporting block or core for the resistance element seats in the frame 19 and comprises the front wall 24 and the annular flange 25, the flange having the helical groove 26 for receiving the resistance element 27 shown in the form of a wire helix. The support C is of some electrically non-conducting and heat refractory material such as porcelain. Extending axially from the front wall thereof is the nozzle or lung 28 having one or more grooves 29 for receiving the resistance or heat producing elements. The housing cover 20 has the opening 30 through which the nozzle projects and the nozzle is of such diameter and length that it may be inserted in the bowl of a pipe to bring the heated resistance conductor into contact with the tobacco to cause ignition thereof. The resistance helix extends from the terminal brackets 31 and 32 secured against the rear sides of the front wall 24. As shown, the groove 29 extends across the outer end and along the sides of the nozzle and the resistance helix extends from the terminal 31 through the hole 33, then around one of the nozzle grooves 29 and back through the hole 34, then through the hole 35 and around the other nozzle groove and back through hole 36 from where the helix extends through the passageway 37 to the exterior of the core and then through the helical groove 26 and then back through the hole 38 to connect with the terminal 32. The terminal 32 is secured to the switch mechanism S supported in the grip part 13 and controlled by a push button 39 projecting

through the opening 40 into the grip part. The other terminal of the switch mechanism connects with the terminal bracket 41 to which is secured one of the conductors 42 of a cord circuit whose other conductor 43 connects with the terminal brackets 31. To accommodate the cord conductors within the base 10, the lower end of the grip part 13 is cut away to leave passageway 44 through which the cord conductors extend. A rubber bushing 45 lines the opening in the base through which the cord extends to the exterior and to a suitable terminal plug (not shown) for insertion in a terminal socket.

The resistance of the heating element 27 is such that it can be connected directly across the current supply circuit without the interposition of resistance or a transformer. In order to localize the heat at the nozzle for lighting purposes, the helix turns are brought close together where they pass through the grooves 29 in the nozzle. When it is desired to use the device, it is grasped at the grip part 13 and the switch button 39 is depressed. Current will immediately flow through the heating element and cause the sections thereof in the nozzle grooves to come quickly to a glow and the nozzle turns are held against the cigar or cigarettes for ignition or the nozzle is inserted into the bowl of the pipe to ignite the tobacco therein. The device frame work being of comparatively thin sheet metal, it will be very light and can therefore be readily handled.

After removing the cover 20, the resistance element supporting frame C together with the switch mechanism may be readily removed from the frame structure for repairs or replacement, the push button 39 being preferably detachably secured on the end of the arm 46 extending from one of the switch parts, which can be readily pushed inwardly upon removal of the button so that the switch frame may be drawn out of the housing structure together with the support C.

Changes and modifications can be made without departing from the spirit of the invention, and I claim as follows:—

1. In an electric lighter, the combination of a support having a pipe entering extension thereon, said extension having a plurality of grooves in its face, a heat element in the form of a wire helix secured on said support and extending through said extension grooves, the turns of said helix being closer together in the grooves on said extension whereby to localize the heat at said extension, and means for connecting said heat element with an electrical circuit.

2. In an electric lighter, the combination of a support having a pipe entering ex-tension thereon, said extension having a groove in its face, a heat element in the form of a wire helix secured on said support and extending through said groove, the turns of said helix being closer together in said groove whereby to localize the heat at said extension, and means for connecting said heat element with an electrical circuit.

In witness whereof, I hereunto subscribe my name this 25th day of November, 1925.

THOMAS C. RUSSELL.