May 6, 1924. 1,493,008

W. P. THOMAS

CIGAR LIGHTER IGNITER

Filed May 17, 1923

Fig 1

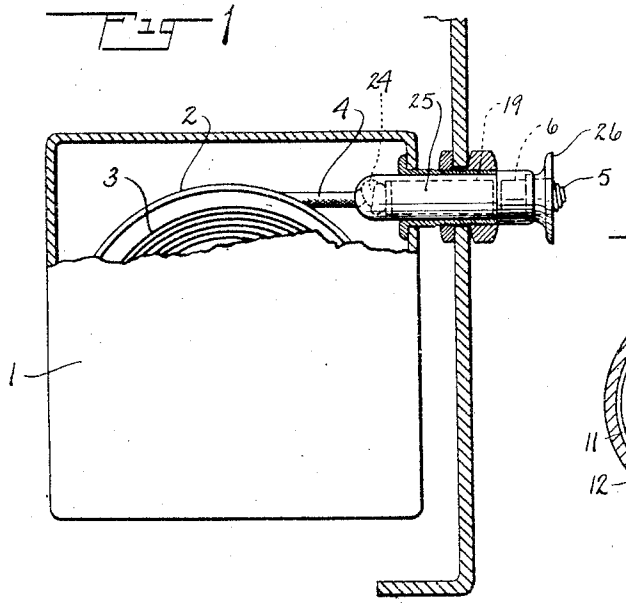


Fig 4

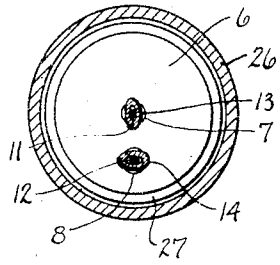


Fig 2

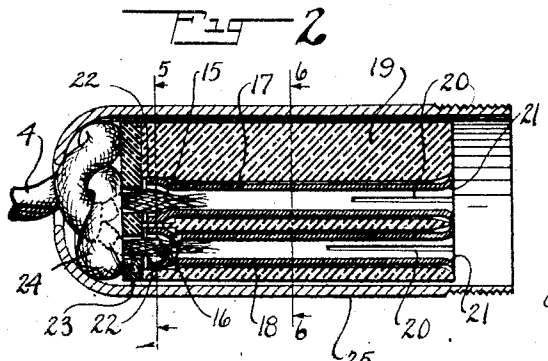


Fig 3

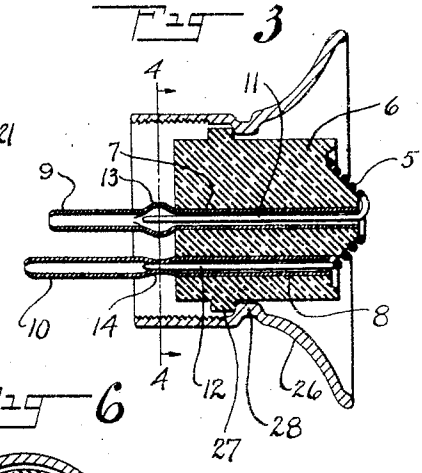


Fig 5

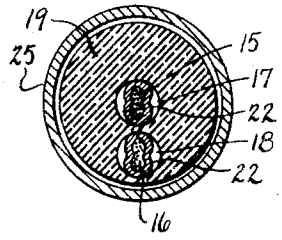
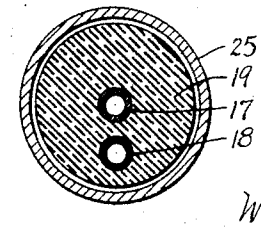


Fig 6



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UNITED STATES PATENT OFFICE.

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CIGAR-LIGHTER IGNITER.

Application filed May 17, 1923. Serial No. 639,530.

To all whom it may concern:

Be it known that I, WILLIS P. THOMAS, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Cigar-Lighter Igniters, of which the following is a full, clear, and exact description.

My invention relates to cigar lighter igniters and has for its object to produce an igniter in which the electrical connections are made without soldering, riveting or the like. It further has for its object to provide an igniter in which the heating element is carried by a base and together with the base may be easily inserted in or removed from socket terminals so as to be easily renewable. It further has for its object to provide an igniter having a resistance carried by a base and a socket and means for holding the two parts together in such a manner that the electrical conductors connected to the socket are relieved from strain at the point of connection with the socket.

The following is a description of an embodiment of my invention reference being had to the accompanying drawings, in which,

Figure 1 shows in side elevation, with parts broken away, a cigar lighter having an igniter embodying my invention;

Figs. 2 and 3 are longitudinal sections of the parts of the igniter showing the internal construction thereof;

Fig. 4 is a section on the line 4—4, Fig. 3;

Fig. 5 is a section on the line 5—5, Fig. 2; and

Fig. 6 is a section on the line 6—6, Fig. 2.

Referring more particularly to the drawings 1 is the casing of the cigar lighter containing a reel 2 and a spring 3 which acts to wind up the cable 4 and permit the same to be pulled off the reel when the igniter is being used, suitable means, not shown, being provided for controlling the making and breaking of the circuit through the heating element so that the circuit is made when the igniter is withdrawn and broken when the conductor is again wound upon the reel.

The igniter comprises a heating element 5 carried by a base 6 of lava or other suitable heat-resisting insulating material. The base 6 has two longitudinally extending perforations in which are metallic tubular members 7 and 8 having rearward projections 9 and 10. Into these tubular members extend the terminals 11 and 12 of the high resistance wire heating element 5. These elements extend beyond the rear of the base 6 and at the points 13 and 14 the tubular members 7 and 8 are compressed so as to tightly grip the terminals 11 and 12 of the resistance element and form an intimate engagement therewith so as to result in a good electrical connection, this gripping action being mechanical and making it unnecessary to use solder, rivets or the like. This is particularly desirable in connection with the resistance element since the wire is small and hard to handle and the space is limited.

15 and 16 are the terminals of the two insulated conductors of the cable 4. The ends of these conductors 15 and 16 enter the rear ends of tubular members 17 and 18 respectively, these tubular members being contained in holes extending lengthwise in an insulating base 19 which may be made of fibre or the like. The forward ends of these tubular members are slotted as at 20. They have their ends slightly turned over as at 21, but not so as to interfere with the free movement of the jaws formed by the slots 20. The rear ends of these tubular members are compressed as at 22, shown more clearly in Fig. 5, so as to grip the ends of the conductors 15 and 16 and form good electrical engagements therewith. The expanded forward ends and compressed rear ends hold the tubular members 17 and 18 within their base. At the rear of the base portion 19 is a perforated disk 23 made of insulating material through which the conductors 15 and 16 pass. Immediately to the rear of this disk a knot 24 is formed in the cable 4 constituting an abutment or stop for the purpose hereinafter described.

25 and 26 are two separable portions of a casing for the two bases above referred to. The portion 25 has a perforation at its rear end through which the cable 4 passes and with the inward periphery of which the knot 24 makes engagement so that the strain placed upon the cable 4 is taken up by the abutment formed by the knot 24 and

does not come upon the connections formed by the compressions 22.

In assembling the igniter the tubular members within the base 19 are electrically connected to the conductors 15 and 16 and the base is then drawn into the shell member 25 and thereafter the ends 9 and 10 of the members carried by the base 6 are inserted in the corresponding tubular socket members 17 and 18. The member 26 is then screwed upon the screw-threaded outer end of the shell member 25. The base 6 is provided with an external flange 27 which is engaged by an internal flange 28 on the member 26 so that the two bases 6 and 9 together with the parts carried thereby are held in fixed relation to one another.

When the tubular members 7 and 8 are clamped upon the terminals 11 and 12, they are by such clamping held within their corresponding perforations in the base 6, even though their fit in said perforations is not a tight fit. It is preferable, however, to have the tubular members 7 and 8 fit tightly within the perforations in the block 6 so as to relieve the strain upon the connections at 13 and 14 when the base 6 is being removed. These connections, however, are sufficiently strong to hold the resistance element 5 to its seat upon the base 6.

From the foregoing it will be seen that the connections in this igniter are made without the use of solder, rivets and the like: that the parts can easily be assembled: that a new resistance together with its supporting base can be easily substituted for an old one when necessary: and that a strong and durable igniter with convenient means for easily renewing the resistance element is provided.

As will be evident to those skilled in the art my invention permits of various modifications without departing from the spirit thereof or the scope of the appended claims.

What I claim is:

1. In an electric cigar lighter the combination of a base, a resistance carried thereby, flexible conductors, tubular contacts between said resistance and said conductors forming electrical connections between said conductors and resistance, a stop upon said conductors, and a carrier engaging a rearwardly facing portion of said stop and a forwardly facing portion of said base and holding said tubular contacts against separation from adjacent conducting portions of the circuit.

2. In an electric cigar lighter, an insulating base having a perforation from end to end, a resistance mounted thereon having a terminal extending through said perforation, a tubular contact surrounding said terminal and having a portion entering the rear end of said perforation and a portion projecting beyond the rear of said base, said tubular contact being compressed so as to engage said terminal, in combination with a socket composed of a base of insulating material having a longitudinally extending perforation, a tubular contact within said perforation surrounding the rearward end of said first contact, a conductor connected to said second tubular contact, a stop on said conductor adjacent to the rear face of said socket base, and a two-part holder having its parts removably secured together, one part engaging a rearwardly facing portion of said stop and the other facing a forwardly portion of the first mentioned base.

3. In an electric cigar lighter, an insulating base having a perforation from end to end, a resistance mounted thereon having a terminal extending through said perforation, a tubular contact surrounding said terminal and having a portion entering the rear end of said perforation and a portion projecting beyond the rear of said base, said tubular contact being flattened so as to engage said terminal.

4. In an electric cigar lighter, an insulating base having a perforation from end to end, a resistance mounted thereon having a terminal extending through said perforation, a tubular contact surrounding said terminal and having a portion entering the rear end of said perforation and a portion projecting beyond the rear of said base, said tubular contact being flattened by compression so as to engage said terminal, the compression of said tubular contact being located at a distance from its rear end.

5. In an electric cigar lighter, an insulating base having a perforation from end to end, a resistance mounted thereon having a terminal extending through said perforation, a tubular contact surrounding said terminal and having a portion entering the rear end of said perforation and a portion projecting beyond the rear of said base, said tubular contact being flattened by compression so as to engage said terminal, the compression of said tubular contact being located at a considerable distance from its rear end, and closely adjacent to the rear face of said base.

6. In an electric cigar lighter an insulating base having two perforations extending through the same from end to end, a high resistance wire, mounted upon said base, having a portion on the face thereof and having its two ends extending into said perforations, respectively, tubular contacts having portions within said perforations and surrounding said ends, respectively, said contacts projecting from the rear of said base, said tubular contacts being flattened so that portions of their inner walls engage said ends.

7. In an electric cigar lighter an insulating base having two perforations extending through the same from end to end, a high

resistance wire, mounted upon said base, having a portion on the face thereof and having its two ends extending into said perforations, respectively, tubular contacts having portions within said perforations and surrounding said ends, respectively, said contacts projecting from the rear of said base, said tubular contacts being flattened so that portions of their inner walls engage said ends, one of said perforations being located on the axis of said base, and the other perforation being eccentric thereto.

WILLIS P. THOMAS.