

July 14, 1925.

1,545,954

P. J. FISCHER

CIGAR LIGHTER

Filed Oct. 5, 1920

2 Sheets-Sheet 1

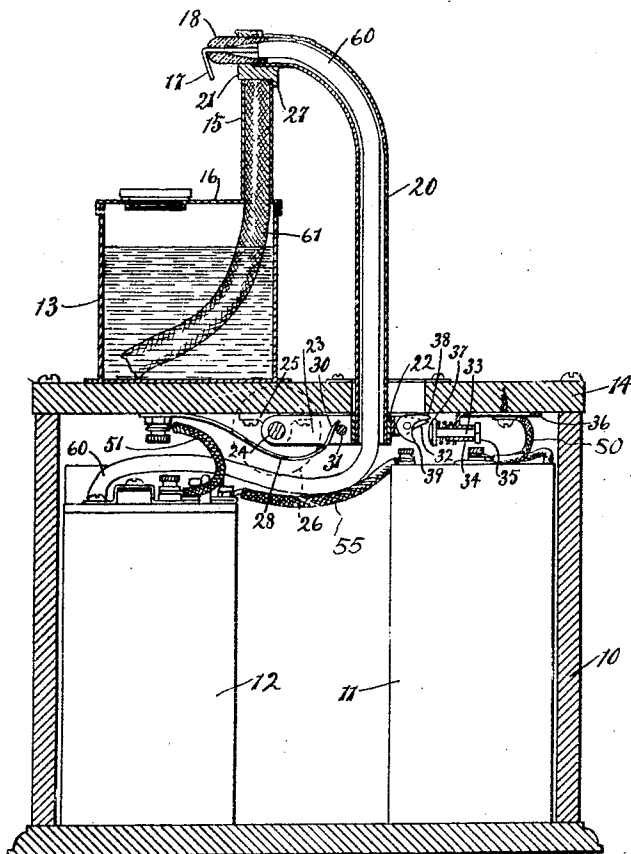


Fig. 1.

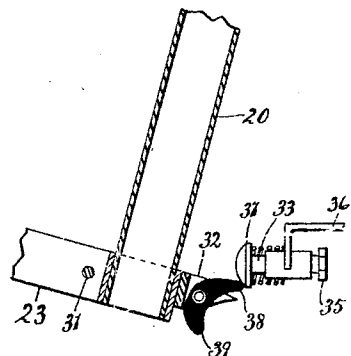


Fig. 2.

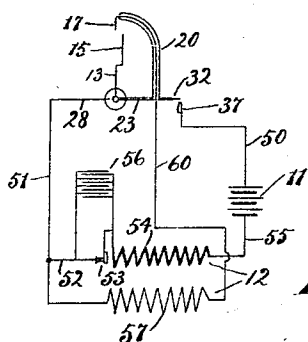


Fig. 3.

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2 Sheets-Sheet 2

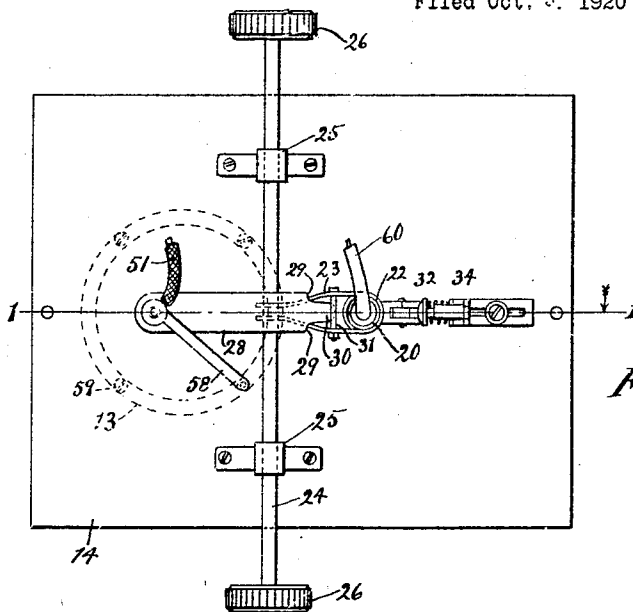


Fig. 4.

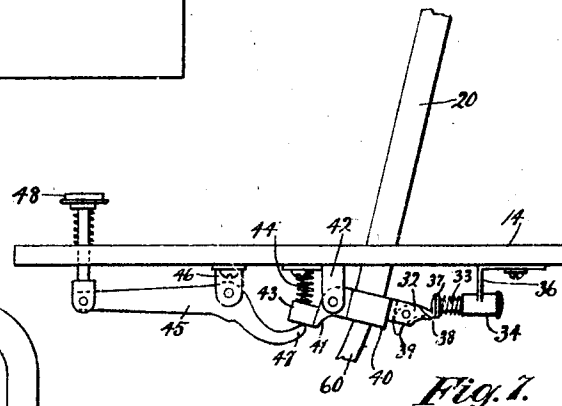


Fig. 7.

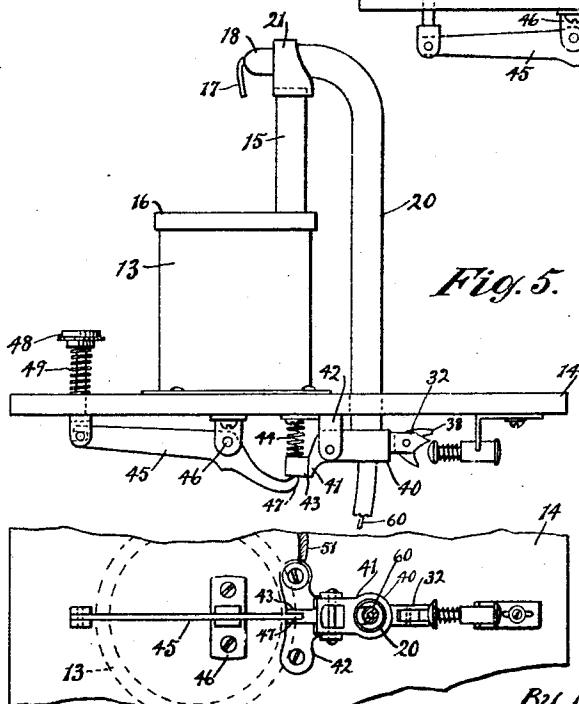


Fig. 5.

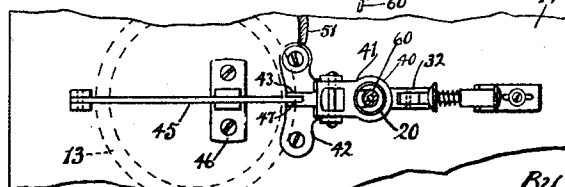


Fig. 6.

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UNITED STATES PATENT OFFICE.

PETER J. FISCHER, OF CHICAGO, ILLINOIS.

CIGAR LIGHTER.

Application filed October 5, 1920. Serial No. 414,860.

To all whom it may concern:

Be it known that I, PETER J. FISCHER, a citizen of the United States, and resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Cigar Lighters, of which the following is a specification, and which are illustrated in the accompanying drawings, forming a part thereof.

The invention relates to cigar lighters, and has as an object the provision of a device of this nature which may be used without grasping the fuel tank. A further object is the provision of an electrically ignited lighter that will not yield sparks when the movable member returns to normal position to extinguish the blaze.

An illustrative embodiment of the invention is shown in the accompanying drawings, in which

Fig. 1 is a vertical longitudinal view on the line 1—1 of Fig. 4;

Fig. 2 is a detail side view partly in section on line 1—1 of Fig. 4, showing certain of the parts in a different position from that shown in Fig. 1;

Fig. 3 is a diagram of circuits;

Fig. 4 is a bottom plan view of the cover, and the parts attached thereto;

Fig. 5 is a detail side view of the parts carried by the cover showing a modified form;

Fig. 6 is a detail bottom plan view of the parts shown in Fig. 5, and

Fig. 7 is a detail side view of some of the parts shown in Figs. 5 and 6, in a different position from that shown in Fig. 5.

A box 10 capable of containing the dry cell 11 and induction coil 12 may be utilized as a base for the device and may have a fuel reservoir, as 13, containing alcohol, gasoline or other readily inflammable fuel mounted on its cover 14. A wick tube 15 is shown projecting upwardly from the cover 16 of the reservoir 13 and the reservoir and tube should be formed of electrically conductive material in order that the wick tube may form one side of a spark gap whereby an electric spark may be produced closely adjacent the end of the wick.

An electrode 17 projecting from an insulating plug 18 is shown carried by a tube 20 projecting through the cover 14 of the box. A collar 21 which fits, and in its normal position closes the top of the wick tube,

forming an extinguisher, may be secured to the end of tube 20. A shoulder 27 on the collar is adapted to limit the return movement of the tube 20. For oscillation the tube 20 is mounted in the bight 22 of a strap 23 having its ends rigidly secured to a shaft 24 mounted in brackets 25 on the underside of the cover 14. The projecting ends of the shaft 24, at the sides of the box 10, may have knurled finger disks 26 rigidly secured thereon which may be grasped by the user to manipulate the tube 20.

To hold the tube 20 in its normal position, as shown in Fig. 1, a leaf spring, as 28, may be secured to the underside of the cover 14 and may press upwardly on the strap 23, shoulders 29 being provided to coact with the edges of the strap. To cushion the return movement of the tube, the end 30 of the leaf spring 28 may be extended beyond the shoulders 29 and may be contacted by a pin 31, carried by the strap 23, when the shoulder 27 approaches the wick tube 15.

The primary circuit of the induction coil 12 may be closed by a member 32 bifurcated for a purpose to be explained and rigidly mounted on the end of the tube 20. Coacting with said member 32 is shown a plunger 33 slidably mounted in a sleeve 34 and spring pressed toward the end of the tube 20 as far as permitted by its tail piece 35. The sleeve 34 may be mounted on the underside of the cover 14 as by a bracket 36. At the limits of the oscillatory movement of tube 20 in each direction, the member 32 is out of contact with the head 37 of the plunger, but is swept across the head by downward movement of the tube.

To save batteries it is desirable to avoid sparking upon the return movement of the tube 20, such sparking being useless as the blaze is about to be extinguished by completion of this movement. To prevent such sparking the contact of the member 32 with the head 37 of the plunger may be prevented by a device 38 in the nature of a pawl of insulating material, as fibre board. This pawl is shown as pivotally mounted between the projections of the bifurcated member 32. On the downward movement of the end of this tube 20 the pawl swings freely upward and does not interfere with the contact between the head 37 of the plunger and member 32. On the downward movement the

pawl 38 is carried quite beyond the head 37 of the plunger. Upon the return movement the pawl is prevented by contact of its tail piece 39 with the bottom of the recess between the projecting portions of member 32, from swinging freely downwardly and hence the end of the pawl will depress the plunger 33 and prevent contact thereof with member 32.

10 The form of the device illustrated in Figs. 5, 6, and 7 differs from that above described merely in the means for mounting and moving the tube 20. In this form of the device the end of the tube 20 is shown as mounted
15 in a collar 40 carrying the member 32 on one side and a projection 41 at the other side which projection is pivotally mounted in a bracket 42 secured to the cover 14. An end 43 coacts with a compressed spring 44 to
20 hold the tube 20 in normal position. To move the tube 20 to ignite the lighter a lever 45 is shown mounted in a bracket 46 and having an end 47 in engagement with part 43, which lever may be actuated by a
25 push button 48 to cause rearward movement of the tube 20. Button 48 is shown as maintained in a normally raised position by a spring 49.

The electric circuits for the device may
30 be arranged as shown in Fig. 3. When the tube 20 is swung rearwardly a circuit will be closed from battery 11 through wire 50, the head 37 of the plunger 33, contact 32, mounting 23 of the tube 20, spring 28, wires
35 51, 52, make and break 53, primary coil 54 of the induction coil 12, wire 55 to battery. A condenser 56 is bridged about the make and break 53, as is usual. The action of the vibrator, the circuit of which has just been
40 traced will be to induce current of high voltage in the secondary coil 57.

When the electrode 17 approaches the wick tube 15 a path for the high voltage current is formed from the secondary 57 of
45 the spark coil by wire 60, electrode 17, spark gap, wick tube 15, reservoir 13, metal strip 58 connected to the downward projection of one of the screws 59 used to secure the reservoir to the cover 14, as shown
50 in Figs. 4 and 6, wire 51 to the other end of the secondary coil 57. The spark jumping across the gap mentioned will ignite the fuel in the wick 61. Sparks will be formed as electrode 17 passes both sides of the end of
55 the wick tube and hence the fuel will have two opportunities to be ignited.

I claim as my invention:

1. In a cigar lighter, in combination, a relatively movable wick tube and electrode
60 carrying arm, a sparking electrode carried by the arm for cooperation with the wick tube during relative movement of said members, an inductorium having primary and secondary circuits, the said wick tube
65 and electrode being in the secondary circuit,

a pair of cooperating contacts in the primary circuit, one thereof being yielding and one of said contacts being movable with the movable one of the two first mentioned members and an insulated pawl carried by one of said contacts and cooperating with the other contact to prevent engagement of the two contacts during relative movement between the two first mentioned members in one direction.

2. In a cigar lighter, in combination, a chambered base, a relatively movable wick tube and electrode carrying arm mounted on the base, the movable one of said parts entering the chamber of the base, a rotatable operating shaft extending through the base member and having a portion thereof exposed upon the outside of the base, a fixed bearing for said shaft, an operative connection between said operating shaft and the movable one of the said two relatively movable parts, and means at each side of said base for manually rotating said shaft.

3. In a cigar lighter, in combination, a chambered base, a relatively movable wick tube and electrode carrying arm mounted on the base, the movable one of said parts entering the chamber of the base, a rotatable shaft journaled in brackets within the base, the shaft having portions projecting beyond the base and provided with knurled disks, and operative connection between said operating shaft and the movable one of said two relatively movable parts.

4. In a cigar lighter, in combination, a base, a relatively movable wick tube and electrode-carrying arm mounted on the base, an operating shaft supported by and extending through said base and having a portion projecting beyond the base, a knurled finger disk rigidly secured to the said projecting portion, and operative connection between the said shaft and the movable one of the said two relatively movable members.

5. In a cigar lighter, a fixedly mounted resilient contact member, means including a rigid contact member for engaging said resilient contact member, a source of electrical energy connected to said members, one of said members being movable relatively to the other, means for operating said movable member to cause said first named means to engage said resilient contact member in both the forward and return movement of said movable member, said first-named means adapted to keep the circuit open upon return movement of said movable member.

6. In a cigar lighter, a double contact member, a single contact member, one of said members being movable, a source of electrical energy connected to said members, means for operating said movable member to cause said members to contact during the forward movement of the movable member and means carried by one of said members for engaging

the other member for maintaining an open circuit during the return movement of the movable member.

7. In a device of the class described, a contact head, a movable member provided with a contact element for engaging said head when said member is moved in one direction

and means carried by said member and cooperating with said head to prevent the contact of said element with said head when said member is moved in the opposite direction.

PETER J. FISCHER.