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2,012,143

CIGAR LIGHTER

Filed Oct. 15, 1931

Fig. 1.

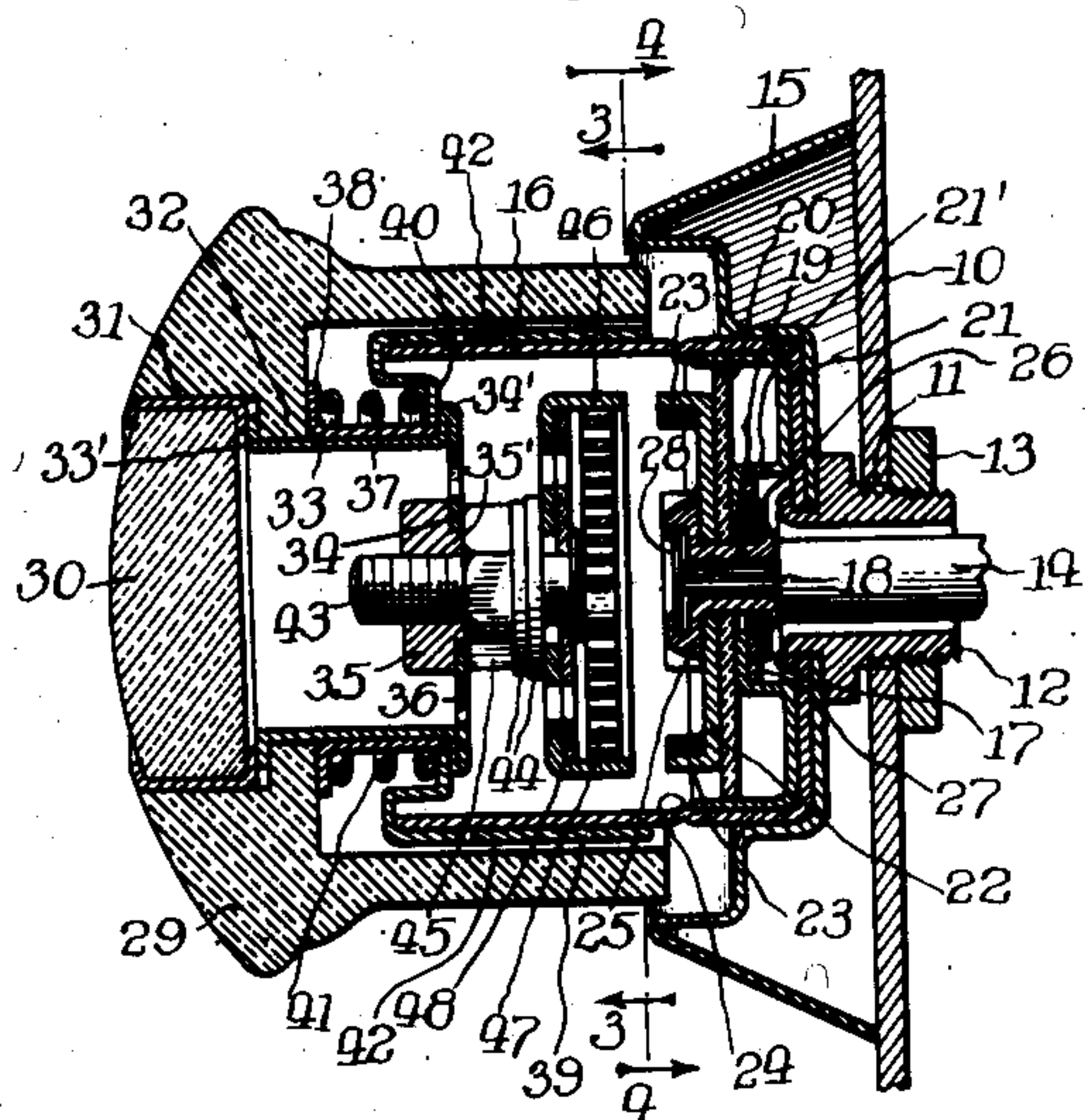


Fig. 3.

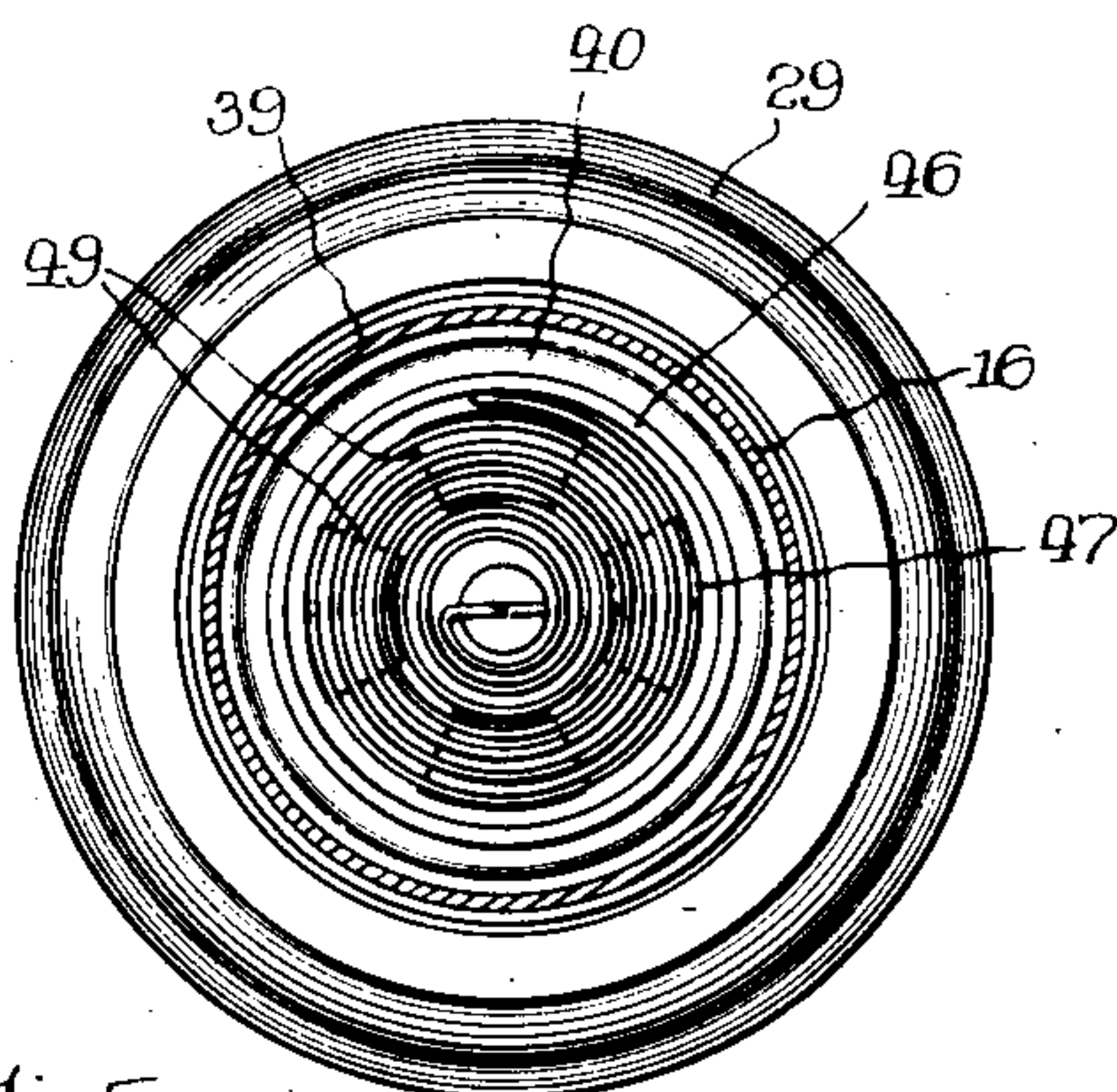


Fig. 5.

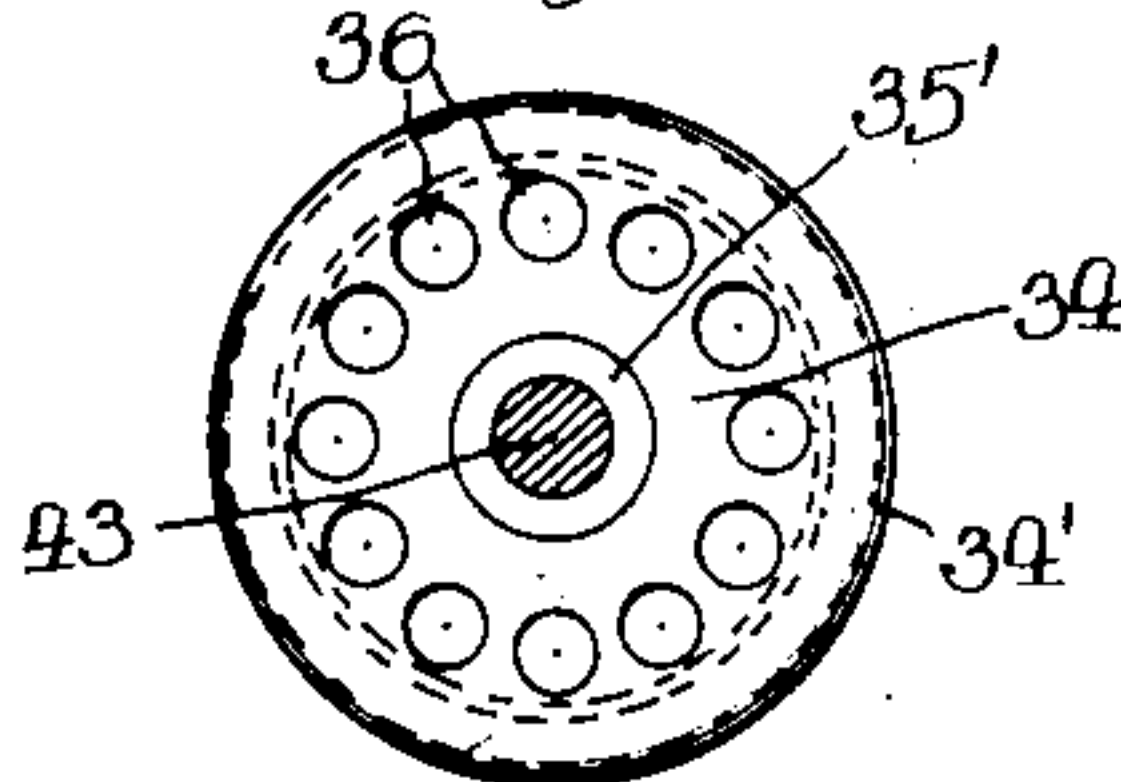


Fig. 2.

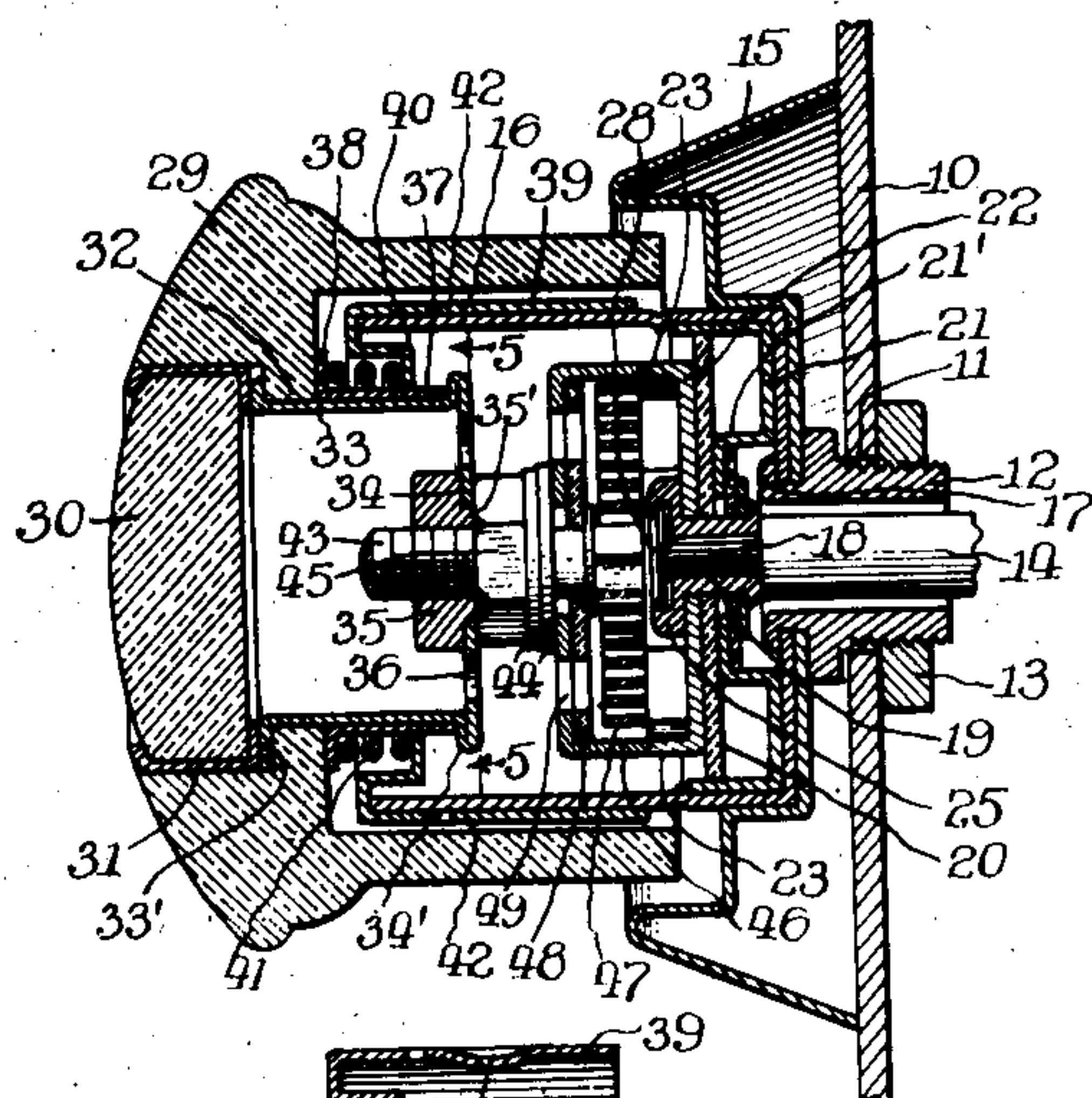


Fig. 4.

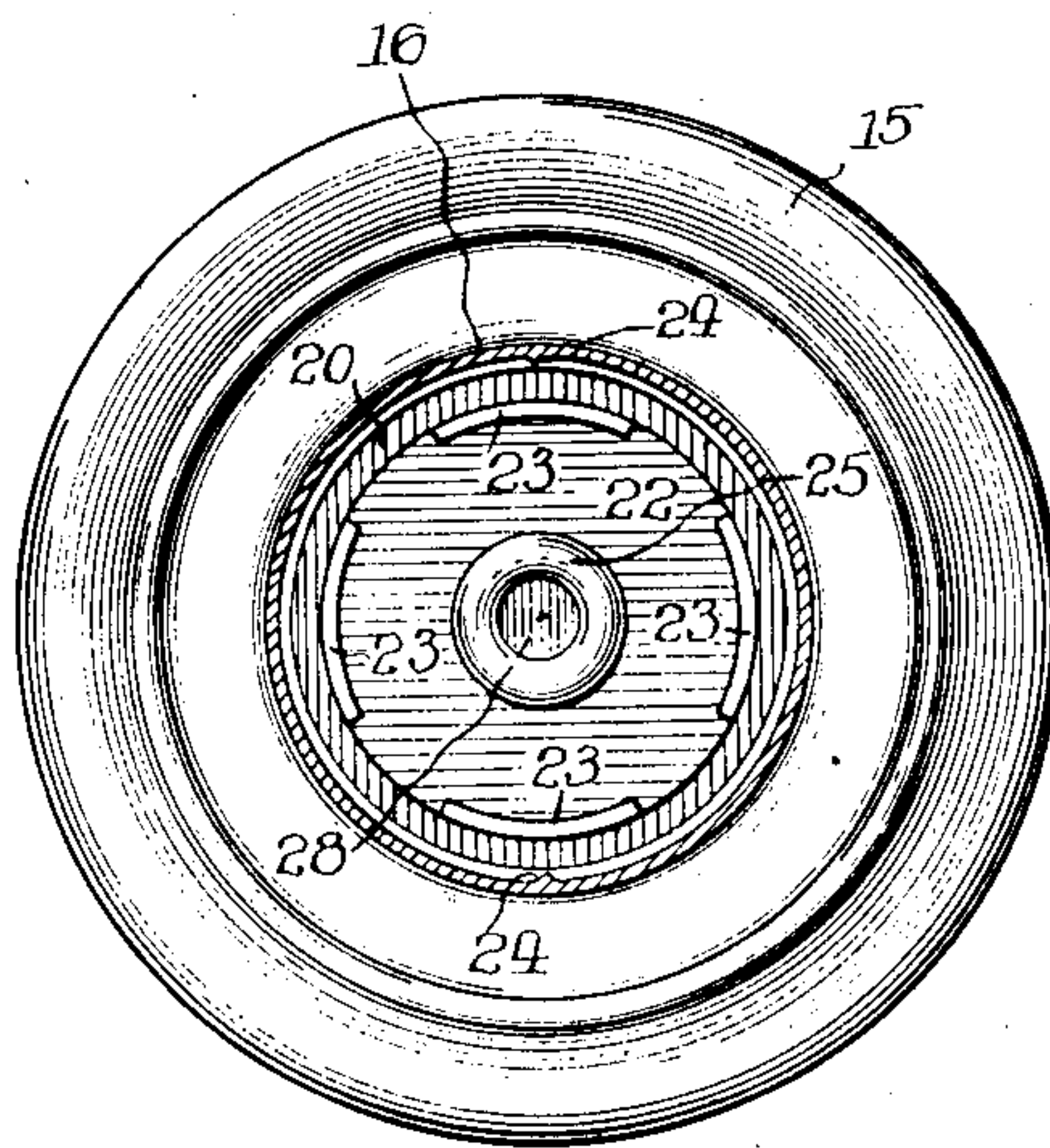
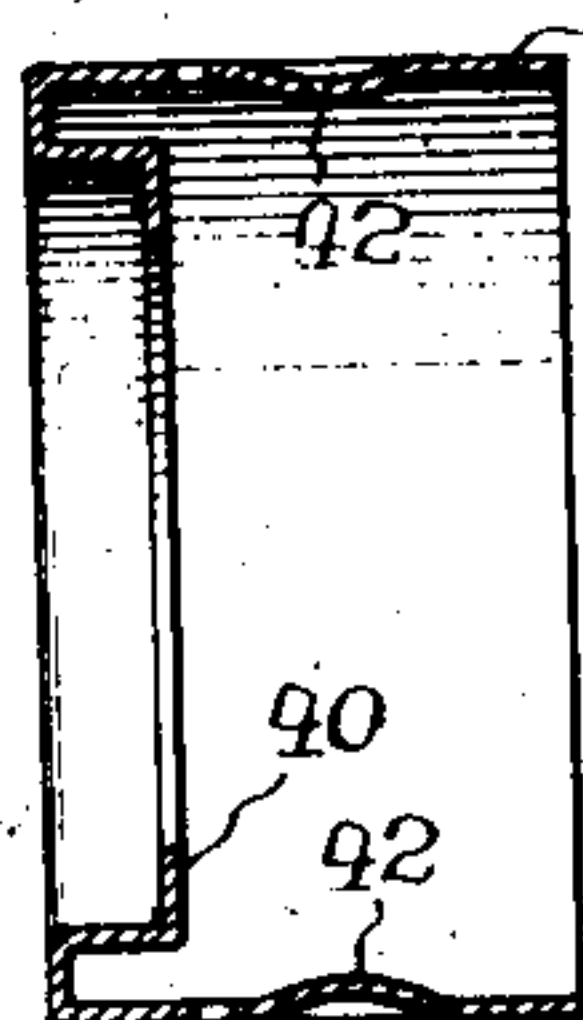


Fig. 6.



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UNITED STATES PATENT OFFICE

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CIGAR LIGHTER

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Application October 15, 1931, Serial No. 568,949

3 Claims. (Cl. 219—32)

This invention relates to electric cigar lighters of the "wireless" type, and has reference more particularly to that class of such igniters wherein the igniter coil is mounted within the chamber of a hollow knob, and the front wall of the latter is provided with a central opening, preferably closed by a window, through which light rays from the igniter coil are visible.

The purpose or object of the invention is to provide an improved cigar lighter of this type well adapted to signal its incandescent condition, automatically maintain a normally separated condition of the contact members, and maintain a secure grip of the removable unit on the stationary unit against accidental displacement or jarring off, at the same time permitting easy application and removal.

The invention, in a preferred embodiment thereof, is illustrated in the accompanying drawing, in which—

Fig. 1 is a longitudinal axial section, showing the contacts separated.

Fig. 2 is a similar view showing the knob pushed inwardly, and the contacts closed.

Figs. 3 and 4 are transverse sections on the lines 3—3 and 4—4 of Fig. 1.

Fig. 5 is a transverse section on the line 5—5 of Fig. 2.

Fig. 6 is a perspective detail of a friction sleeve that is mounted in the removable member of the device.

Referring to the drawing, and describing first the stationary unit or holder, 10 designates a fragment of the usual sheet metal instrument board, formed with a hole 11 in which is mounted the threaded shank of a thimble 12 secured in place by a nut 13. Through the thimble 12 is led the usual insulated circuit conductor 14 from the positive side of the battery. On the reduced inner end or neck of the thimble 12 is mounted the countersunk face of an escutcheon ring 15 that lies in contact with the instrument board 10, and nested in the countersunk face of the escutcheon ring and also mounted on the neck of the thimble 12 is a hollow sheet metal post 16; the escutcheon ring and post being locked on the thimble 12 by swaging down the end of the neck over the base of the post 16, as shown at 17. The inner end of the circuit conductor 14 beyond the thimble 12 is stripped to expose the wire 18, which, in the present instance, consists of a twisted strand of fine copper wires, and on this exposed end of the circuit line is mounted a short metal sleeve 19. Fitted onto the sleeve 19 is an insulation disc 20, the periphery of which

fits within a cup-shaped spacing member 21, which latter snugly fits within the hollow post 16, lying against the bottom wall of the latter, said cup-shaped member 21 being formed with a forwardly offset central portion 21' that encircles the sleeve 19. Also mounted on the sleeve 19, and lying against the forward face of the insulation disc 20, is an annular contact terminal comprising a disc 22 (Fig. 4) formed with four spaced forwardly projecting contact fingers 23. Cup-shaped member 21 may be locked in place by a plurality of indented lugs 24 formed in the circumferential wall of the hollow post 16. The forward end of the sleeve 19 is formed with a head 25 having a central countersink, and its rear end is swaged over a brass washer 26 that, in turn, lies against an insulation washer 27 bearing against the offset central portion 21' of the cup-shaped member 21, whereby the members 21, 20 and 22 are all securely clamped together as a unit on the circuit conductor. To lock the end of the latter in the sleeve 18, the strands are spread into the counter-sink of the sleeve head, a thin washer 28 is then laid over the ends of the strands, and the metal of the head is then swaged down over the disc 28. It will thus be seen that the contact terminal 22 is in metal contact with the circuit line through the metal sleeve 18, while the cup-shaped member 21 and the hollow post 16 are insulated from the circuit line.

Describing next the removable or portable unit, 29 designates a hollow knob of bakelite or other nonconducting material, the front or face wall of which has a central opening therethrough, the outer end of which opening is enlarged to form a seat for a translucent window 30 of plain or colored glass, amber, or other translucent material that is preferably mounted in a thin metal shell 31 set in the enlarged end of the opening. The knob 29 is formed, behind the window 30, with an internal annular rib 32. Fitted within the rib 32 and extending inwardly thereof is a hollow supporting member, the outer open end of the cylindrical wall 33 of which is swaged over the outer side of the rib 32, as shown at 33'. The supporting member has at its inner end a transverse wall 34 that is formed with a central hole into which is driven a low boss 35' formed on the face of a nut 35, whereby the nut is locked on said wall. The wall 34 is further formed with a circular row of holes 36 (Fig. 5), the purpose of which is to permit the light rays to pass from the igniter coil through the supporting member to and through the window 30. The wall 34 is extended beyond the diameter of the cylindrical por-

tion 33 to form an abutment flange 34' functioning as hereinafter described. Encircling the cylindrical wall 33 is a sleeve 37 formed at its outer end with a flange 38 which abuts against the inner side of the rib 32. Encircling and slidable on the hollow post 16 is a friction sleeve 39 formed with a laterally offset transverse wall 40 that is centrally apertured to slidably engage over the sleeve 37 and normally abuts against the flange 34', and between the flange 38 and the wall 40 is a coil compression spring 41. As best shown in Fig. 6, the friction sleeve 39 is formed with a plurality of inwardly struck fingers 42 that, as the friction sleeve is telescoped over the post 16, are expanded into the plane of the friction sleeve, and thus afford a friction grip on the post.

Mounted in the nut 35 is a screw 43 that projects inwardly of the transverse wall 34 of the supporting member, and clamped thereon between the head of the screw and insulation washers 44 by means of a nut 45 is a cup-shaped contact member 46. Within this contact member is the usual igniter coil 47, one end of which is anchored to the head of the bolt 43, while the other end is anchored in the circumferential wall of the contact member 46. The bottom wall of the contact member 46 encircles the screw 43 with clearance, as shown, so as to be out of electrical contact with the latter. Between the bottom wall of the contact member 46 and the igniter coil 47 is a mica washer 48, and this washer and the bottom wall of the contact 46 are formed with registering openings 49, best shown in Fig. 3, to permit the passage of the light rays from the igniter outwardly through the holes 36 of the supporting member to and through the window 30.

The spring 41 normally maintains the contacts 23 and 46 separated, as shown in Fig. 1. When the knob is pushed inwardly, the spring 41 is compressed, and the contacts are closed, as shown in Fig. 2. The current then flows from the circuit conductor 18 through sleeve 19, contacts 23 and 46, igniter coil 47, screw 43, nut 35, walls 34 and 33 of the supporting member, sleeve 37, spring 41, friction sleeve 39, and post 16 to escutcheon ring 15 and thence to ground through the metal instrument board 10. From the foregoing it will be seen that the sleeve 37 forms a part of the grounding circuit, and it also, through its abutment against the inner side of the rib 32, cooperates with the flange 33' in supporting and centering the cylindrical body 33 of the supporting member.

When the igniter has become incandescent, the knob is withdrawn bodily from the post 16, and when subsequently replaced, the spring 41 automatically maintains the removable unit sufficiently retracted to insure separation of the contact members. When the removable unit is withdrawn the friction sleeve 39, of course, comes with it, being clamped and centered between the inner end of the spring 41 and the abutment flange 34' of the supporting member.

I claim:

35 1. In a cigar lighter of the type described, the combination with a stationary hollow sheet metal post, and a contact member within the latter, of

a removable igniter-carrying unit adapted for telescoping engagement with said post, comprising a hollow knob formed with an opening through its front wall, a cylindrical supporting member mounted in said opening formed at its inner end with a transverse wall having an annular abutment flange, a friction sleeve formed at its outer end with a transverse wall apertured to encircle said supporting member and slidable over the latter, said sleeve being in frictional sliding contact with said post and spaced from the surrounding portion of said knob, a thrust spring encircling said supporting member and forcing said transverse wall against said abutment flange, and an igniter coil and cooperating contact member mounted on the transverse wall of said supporting member.

2. In a cigar lighter of the type described, the combination with a stationary hollow sheet metal post, and a contact member within the latter, of a removable igniter-carrying unit adapted for telescoping engagement with said post, comprising a knob formed with an opening through its face wall and an internal annular rib surrounding said opening, a cylindrical supporting member mounted in said opening formed at its outer end with a flange engaged with the outer wall of said rib and at its inner end with a transverse wall having an annular abutment flange, a sleeve mounted on said supporting member formed with an annular flange abutting against the inner side of said rib, a thrust spring encircling said sleeve, a friction sleeve telescoping over said post and formed with an apertured transverse wall slidably mounted on said first-named sleeve and clamped between said spring and said abutment flange, and an igniter coil and cooperating contact member mounted on the transverse wall of said supporting member.

3. In a cigar lighter of the type described, the combination with a stationary hollow sheet metal post, and a contact member within the latter, of a removable igniter-carrying unit adapted for telescoping engagement with said post, comprising a knob formed with an opening through its face wall and an internal annular rib surrounding said opening, a window closing the outer end of said opening, a cylindrical supporting member mounted in said opening behind said window, said supporting member formed at its outer end with a flange engaged with the outer wall of said rib and at its inner end with an apertured transverse wall having an annular abutment flange, a sleeve mounted on said supporting member formed with an annular flange abutting against the inner side of said rib, a thrust spring encircling said sleeve, and at its outer end bearing against the annular flange of the latter, a friction sleeve telescoping over said post and formed with an apertured transverse wall slidably mounted on said first-named sleeve and clamped between the inner end of said spring and said abutment flange, and an igniter coil and cooperating contact member mounted on the transverse wall of said supporting member.

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