

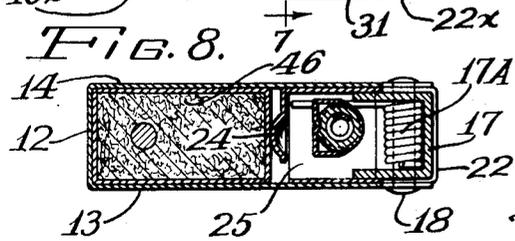
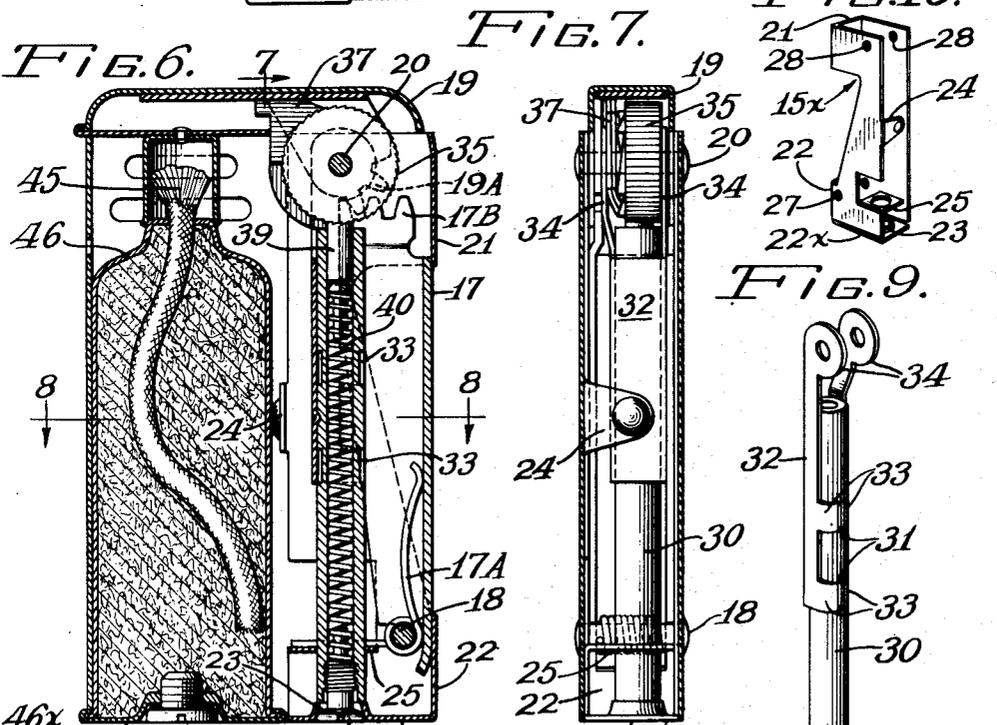
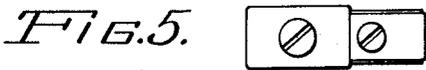
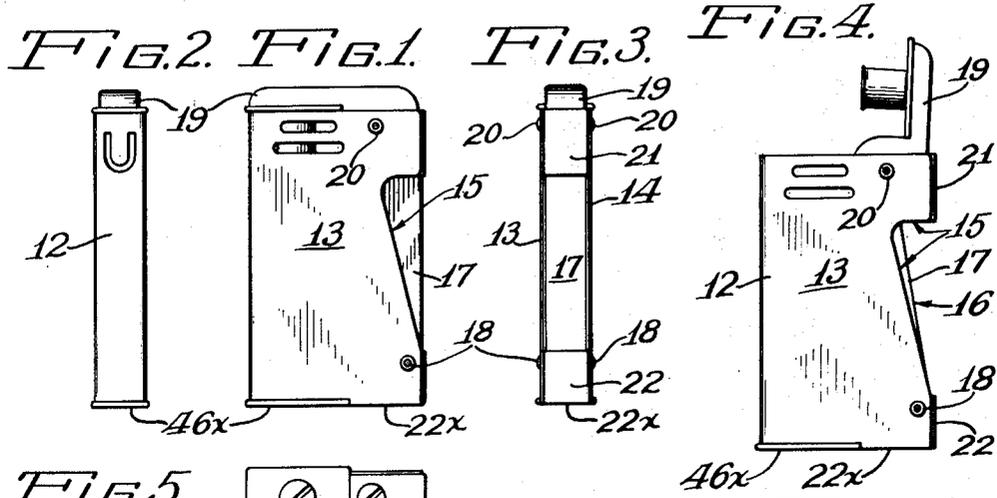
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CIGARETTE LIGHTER

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# UNITED STATES PATENT OFFICE

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## CIGARETTE LIGHTER

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4 Claims. (Cl. 67—7.1)

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This invention pertains to cigarette lighters and has as its principal object the provision of improvements in the construction and assembly of certain parts, such as a flint carrier and feed, a removable fuel cannister, a lever-type actuator, and a jacket or housing structure and assembly contrived for integration of the foregoing elements, in particular by means of two pivot pins.

Viewed from another aspect, it is an object to provide a lighter construction of a character to permit manufacturing economies in material, die, tool, and assembly costs affording a lever-type lighter which can be sold at a price considerably lower than that heretofore permitted by previous methods and constructions.

In particular, the construction hereinafter disclosed utilizes numbers of stampings and punchings formed from light gauge metal for assembly to provide a principal container or housing jacket, a flint tube and secondary jacket, an operating lever, and a cover cap and snuffer held in assembled relation by two pivot pins, one for the cover and striker wheel, and the other for the operating lever.

Additional aspects of novelty and utility relate to the flint tube and its subassembly jacket and the cooperative mounting therein and assembly therewith of the operating lever, as well as means for partially supporting this jacket and a contained flint tube by means of a pivot pin for the striking wheel which passes through and secures together both the main housing jacket and said flint tube and secondary or subassembly jacket, together with means formed integrally with the flint tube subassembly jacket providing a retaining presser for an insertable fuel cannister, and other integral formations for supporting said flint tube in the subassembly jacket cooperatively with one of the two pivot pins, as aforesaid.

The foregoing and other structural and functional novelties are illustrated in the accompanying drawing, in which:

Fig. 1 is an edgewise vertical elevation of the lighter;

Fig. 2 is a side elevation of the same;

Fig. 3 is another edgewise elevation looking from the side opposite that of Fig. 1;

Fig. 4 is an elevation like that of Fig. 2, showing the snuffer cap open;

Fig. 5 is a bottom plan view;

Fig. 6 is a vertical median section to enlarged scale;

Fig. 7 is a transverse vertical section to enlarged scale and looking in the direction of lines 7—7 of Fig. 6;

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Fig. 8 is a horizontal section to enlarged scale along lines 8—8 of Fig. 6;

Fig. 9 is a perspective detail of the flint tube assembly;

Fig. 10 is a perspective detail of the secondary or flint jacket;

Referring to Figs. 1, 2, and 3, the main housing jacket consists of a piece of thin metal formed in U-shape to provide a bight or edgewise wall 12 and a pair of opposite side walls 13 and 14 near the free vertical edges of both of which are somewhat triangular cut-aways 15 (Fig. 4 also) adjoining or flanking a vertical open side 16 normally closed in part by an actuating lever 17 carried on pivot pin 18, and which is depressible inwardly to strike the flame and pivot (on pivot pin 20) the snuffer cap or top 19 to the open position of Fig. 4.

The aforesaid open side is additionally closed in part by upper and lower bight portions 21 and 22 (Figs. 3 and 4).

The aforesaid secondary or flint-tube jacket is also formed from a light gauge metal bent in U-shape about the said upper and lower bight portions 21 and 22 (Fig. 10) with a cut-away 15X conforming for register with the cut-away 15 of the main jacket, so that the actuating lever may be exposed.

The lower bight portion 22 of the secondary jacket is bent in to provide a partial bottom closure 22X having a flint-tube support screw-hole 23 therethrough.

From one free edge of the secondary jacket is struck inwardly a presser tab 24 (Fig. 10) and an apertured flint-tube supporting lug 25. Said jacket also has aligned upper and lower pin-holes 27 and 28.

The flint-tube assembly shown in Fig. 9 consists of a tube 30 having grooves 31 near its mid-region; and a yoke strap 32 with ears 33 formed over into the grooves to seize the tube. A pair of apertured trunnion ears 34 flank the upper, open end of said tube, through which the usual flint projects.

In the assembly, the secondary jacket is fitted into the main jacket at the open side of the latter, as in Fig. 6, with the two pivot pins 18 and 20 passed through the holes 27 and 28 and corresponding holes in the main jacket, these pins being headed-over to secure the jackets together.

The snuffer cap 19 is also pivoted on the upper pin 20, as is the striker or flint wheel 35 and certain appurtenant (and conventional) ratchet pawls 37 (Fig. 7) coacting in known manner with

the snuffer cap responsive to opening and closing movements of the latter.

The secondary jacket assembly further includes the mounting of the flint tube 30, as in Figs. 6 and 7, with a lower end passed through the opening in the jacket lug 25, and the upper end supported by the upper pivot pin 20 passing through the trunnion ears 34.

In Fig. 6 the flint 39 is pressed against striker wheel 35 by a spring 40 held in tube 30 by screw 31 threaded into said tube through hole 23 in the bottom flange 22X.

The latter arrangement serves several useful purposes, including the stabilizing of the tube mounting, securing the bottom flange 22X of the secondary jacket in place, contributing to rigidification of the jacket assembly, and affording a seating and securing means for the flint screw 31, since flange 22X is somewhat springy by reason of the thinness of the metal, and hole 23 is in effect countersunk.

As in Fig. 6, the actuating lever 17 is also pivoted on the lower pin 18, along with its normalizing spring 17A, the upper end of said lever having gear teeth 17B meshing with similar teeth 19A on the snuffer cap.

By pushing lever 17 inwardly (to the left, Fig. 6), the cap is flipped open (as in Fig. 4), actuating the ratchet pawls to turn the striker wheel 35 and throw sparks onto the wick 45 in the known manner.

The fuel tank 46 (Figs. 6 and 8) is a separate member and is inserted into a cavity afforded within the main jacket, the tab 24 on the secondary or flint subassembly pressing against a side of the fuel cannister or tank to secure the latter in the lighter, it being noted in this connection that the bottom of the main jacket, being otherwise open, is closed partly by the bottom 46X of the fuel or flame cannister and partly by the bottom flange 22X of the tube jacket.

The objects and advantages of the invention may be realized by modifications of the commercial embodiment described in detail for purposes of illustration, without departing from the intended and fair scope of the annexed claims.

**I claim:**

1. In a lighter of the type having an insertable fuel cannister and a casing formed of at least two interfitting jacket members, improvements comprising to wit: a subassembly including a thin-walled, U-shaped stamping of light-gauge metal constituting one of said jackets and adapted to interfit with another said jacket adjacent said cannister, a first integral offset on said subassembly jacket constituting a presser frictionally bearing against said cannister to hold the same yieldingly in inserted position, said cannister sliding against said presser in movements into and out of the casing, said offset presser being situated to engage the cannister at a point approximately midway along the side thereof above the bottom of the casing and biased to press laterally of the in-and-out direction of movement

of the cannister so as to guide and hold the latter in operative position thereof.

2. A subassembly according to claim 1 in which said subassembly jacket has an integral bottom flange offset to constitute a partial bottom closure for said casing to complement the bottom of said cannister, in inserted condition, in defining a bottom wall for said casing, together with a second integral offset overlying said bottom flange, said second offset and bottom flanges having aligned apertures, a flint tube having one end portion seated on the apertured part of the second offset with the adjoining end of the tube fitting in register close against the aperture in said bottom flange, and a closure screw threaded into said tube through said flange aperture with a head larger than the latter aperture whereby the flange and screw afford a mutual holding action and substantial support for one end of said tube.

3. In a lighter casing structure of the class described, a subassembly casing jacket in the form of an elongated, U-shaped stamping of thin metal including a bight portion, a pair of opposite side walls adjoining said bight portion, a bottom flange projecting from said bight portion substantially between said side walls, a flint-tube flange offset from one of said side-walls to overlie said bottom flange, and a cannister-presser flange on an edge of one of said side-walls and offset to project toward the opposing side-wall, said tube flange and bottom flanges having aligned apertures respectively receiving and confronting the body and one end of a flint tube to support the lower end of the latter in operative position.

4. In a lighter structure of the class described, and including a flint tube supported at an upper end cooperatively with a striker wheel assembly, improvements comprising, to wit: a subassembly comprising a U-shaped jacket having opposite side walls joined by a bight wall and one integral bottom wall extending from the bight wall in a direction between the bottom edges of said side walls, an integral apertured flint-tube-supporting flange offset from one of the side-walls to overlie said bottom wall, a flint tube having a lower end region supportably disposed in the aperture of said tube flange, said bottom wall having a screw opening, aligned with the adjacent end of said tube, and a closure screw threaded into said end of the tube through said screw opening.

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