

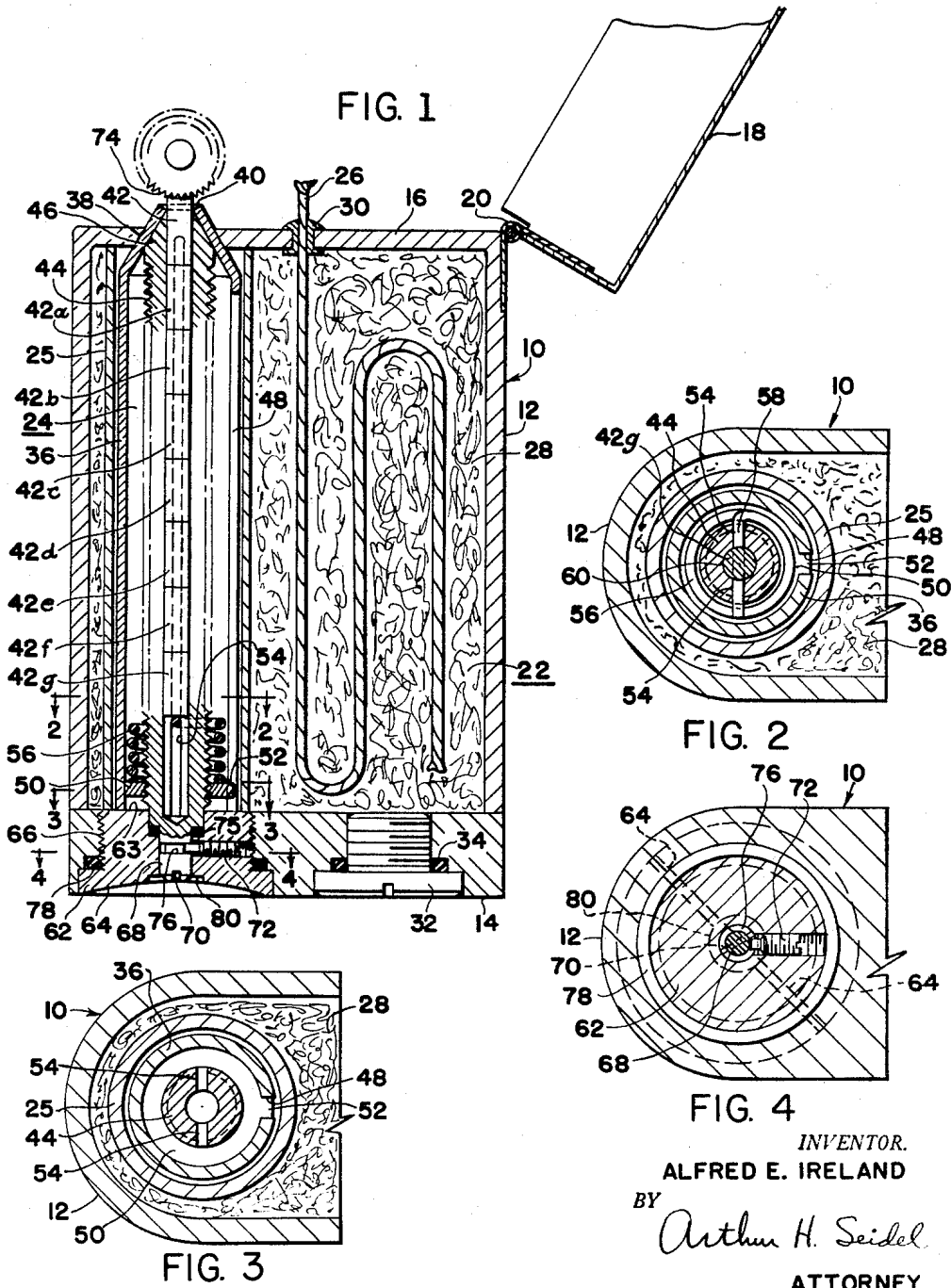
April 19, 1960

A. E. IRELAND

2,932,960

CIGARETTE LIGHTER

Filed Aug. 18, 1958



INVENTOR.
ALFRED E. IRELAND
BY
Arthur H. Seidel
ATTORNEY

1

2

2,932,960

CIGARETTE LIGHTER

Alfred E. Ireland, Oaklyn, N.J.

Application August 18, 1958, Serial No. 755,758

5 Claims. (Cl. 67-7.1)

The present invention relates to a cigarette lighter, and more particularly to a cigarette lighter having a flint supply of great capacity.

A wide variety of cigarette lighters have been proposed having a flint capacity sufficient for a plurality of flints. However, in the main, these prior lighter constructions have not proved to be satisfactory for at least one of several reasons.

Thus, in most prior constructions, the flints are spring-urged upwardly by spring means in which the spring tension exerted by the spring varies as the supply of flints becomes exhausted. Generally, in prior constructions, the spring tension exerted by the spring means on the flints decreases as the supply of flints becomes exhausted.

In other constructions, the loading of the reservoir or container for the flints is difficult. Still other disadvantages include the possibility of loss of fluid through the flint reservoir, complex construction of the flint reservoir, etc.

This invention has as an object the provision of a novel cigarette lighter.

This invention has as another object the provision of a cigarette lighter having a large flint capacity.

This invention has as a still further object the provision of a cigarette lighter of foolproof construction in which positive feeding of the flints is achieved.

Other objects will appear hereinafter.

For the purpose of illustrating the invention there is shown in the drawings a form which is presently preferred; it being understood, however, that this invention is not limited to the precise arrangements and instrumentalities shown.

Referring to the drawings wherein like reference characters refer to like parts:

Figure 1 is a vertical sectional view through the cigarette lighter of the present invention.

Figure 2 is a sectional view taken on line 2-2 of Figure 1.

Figure 3 is a sectional view taken on line 3-3 of Figure 1.

Figure 4 is a sectional view taken on line 4-4 of Figure 1.

Referring to the drawings, the cigarette lighter of the present invention is designated generally as 10. Such cigarette lighter 10 comprises the casing or housing 12, of any desired shape or contour. The casing 12 comprises the base 14 and the top 16. A cover 18 for the cigarette lighter 10 is hinged by means of hinge 20 in operative juxtaposition to the top 16.

The casing 12 includes a wick compartment 22 and a flint compartment 24.

The wick compartment 22 comprises the wick 26 which is surrounded with the usual fluid retaining filter 28, which may comprise cotton batting or similar means, in which the fluid fuel, such as a low boiling petroleum distillate is carried. The wick 26 projects through the wick bushing 30 which is carried on the top 16 of cas-

ing 12. A refueling plug 32 is provided on the base 14 of casing 12, such refueling plug 32 being threaded into the base 14 and being in liquid-tight communication with the wick compartment 22 when received within the base 14. The liquid-tight seal between the refueling plug 32 and the base 14 is maintained by the O-ring 34 which is provided intermediate the refueling plug 32 and an O-ring receiving recess in the base 14.

The construction of the cigarette lighter 10 set forth above is generally of conventional construction to the extent which the same has been given so far, and it is to be understood that any one of the wide variety of modifications to such construction which are known to the art may be made.

The flint compartment 24 is disposed within the wick compartment 22 and comprises an imperforate outer tube 25 for retaining the interior of the flint compartment 24 out of communication with the wick compartment 22. Elongated tube 36, which extends from the base 14 to the top 16, is concentrically disposed within outer tube 25.

The uppermost portion 38 of tube 36 is tapered outwardly from the top towards the bottom. Preferably, the uppermost portion 38 of tube 36 is metallurgically joined as by brazing to the top 16 of casing 12. The lips 40 of tube 36 serve as a guide for the uppermost flint 42 carried within the flint compartment 24. Within the tube 36 is disposed the flint holder 44. The flint holder 44 is a hollow threaded bolt, which is threaded along substantially its entire length and is provided with a bore of sufficient diameter to nestingly receive a plurality of flints 42, 42a, 42b, et seq., eight flints 42 being shown received within the flint holder 44 in the illustrated embodiment. The uppermost end portion 46 of flint holder 44 is not threaded, but is matingly tapered with the uppermost portion 38 of tube 36, such uppermost end portion 46 of flint holder 44 being received against the uppermost portion 38 of tube 36.

The tube 36 is provided with a vertical slot 48 which extends for substantially the entire height of the tube 36. A nut 50 is threadably secured to the threads on the flint holder 44. Nut 50 is provided with an ear 52 which is received within the slot 48. By virtue of the reception of the ear 52 in the slot 48, rotation of the flint holder 44 will cause the nut 50 to ascend or descend on the flint holder 44. The flint holder 44 is provided with a pair of opposed slots 54 and 54 which extend vertically for a major portion of the height of flint holder 44. A coil spring 56 is carried on the nut 50 and has its uppermost free end 58 disposed within the bore 60 in flint holder 44. The free end 58 of coil spring 56 extends through both of the slots 54 with the tip of free end 58 being supported on the coil spring 56, as shown in Figure 2. The coil spring 56 serves as a follower, its free end 58 engaging the bottommost face of the bottommost flint 42g and spring-urging the flints 42 . . . 42g upwardly. The coil spring 56 embraces the flint holder 44 which serves to guide it.

The flint holder 44 is supported at its bottommost portion by the basal cap 62 which is threadably received within the base 14. The end face 63 is juxtaposed to the end of tube 36, as seen in Figure 1. The basal cap 62 comprises a bored screw having a concave face having a slot 64 for receiving the end of a screw driver, and threads 66 on its stem, which threads 66 mate with mating threads in the base 14.

The flint holder 44 comprises a solid rod end projection 68 which extends through the basal cap 62. The projection 68 is notched at 70 to permit the flint holder 44 to be rotated.

The projection 68 is provided at a spaced distance

3
above notch 70 with a circular notch 76 within which the key set screw 72 projects. The set screw 72 serves to guide the rotation of the projection 68.

A spark wheel 74 is rotatably mounted a spaced distance above the lips of the tube 36 for engagement with the flint 42.

The basal cap 62 may be provided with an O-ring receiving recess within which an O-ring 75 may be received intermediate the shoulder of flint holder 44 which is juxtaposed to the basal cap 62 and the end face of the basal cap 62. An O-ring receiving recess may be provided in the base 14 below the threads 66 to receive an O-ring 78.

The center portion of the concave face of basal cap 62 is counterbored at 80 to facilitate insertion of a tool into the notch 70.

The operation of the cigarette lighter 10 of the present invention is as follows:

The flints 42 . . . 42g are loaded into the flint holder 44 by unscrewing the basal cap 62 from the base 14 and removing the flint holder 44 and basal cap 62 from the cigarette lighter 10, and loading the flints into the mouth of the flint holder 44. During the loading of the flint holder 44, the nut 50 should be positioned near the bottom of the slot 48.

When the flint or flints are loaded into the flint holder 44, the flint holder 44 and the basal cap 62 are inserted into the cigarette lighter 10 and the basal cap 62 is threadably secured into the base 14. The requisite degree of tension can be exerted on the flint or flints within the flint holder 44 by rotation of the flint holder 44 through inserting the head of a small tool, the edge of a coin, or a fingernail into the notch 70 of projection 68 of flint holder 44 and rotating the flint holder 44 in that fashion.

As the flint supply within the flint holder 44 becomes expended due to usage by engagement with the spark wheel 74, the flint holder 44 may be rotated as above-indicated to spring urge the portion of the flint or the topmost flint against the spark wheel 74. Since the nut 50 may follow the flint or flints up the flint holder 44, a constant degree of spring pressure may be exerted on the flint or flints in this fashion. The alignment of the flint or flints with the spark wheel 74 is insured by the alignment of the mating tapers of the uppermost end portion 46 of flint holder 44 and uppermost portion 38 of tube 36.

The present invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof and, accordingly, reference should be made to the appended claims, rather than to the foregoing specification as indicating the scope of the invention.

I claim:

1. A cigarette lighter comprising a casing having a base and a top, a spark wheel rotatably mounted on the top of said casing, a flint compartment within said casing, said flint compartment comprising a tube, said tube having a vertical slot in its wall, a flint holder within said tube, said flint holder having a blind bore open at its top, the outside surface of an appreciable portion of said flint holder being threaded, a nut mounted on the threads of

4
the outside surface of said flint holder, said nut including an ear which projects into the slot in the wall of said tube, a vertical slot in the wall of said flint holder in communication with the bore of said flint holder, spring means seated on said nut and projecting into the bore of said flint holder through said slot, and means for rotatably supporting said flint holder within said tube, said last mentioned means being selectively removable from said casing.

2. A cigarette lighter in accordance with claim 1 in which the means for rotatably supporting the flint holder within the tube comprises a bored screw which is threadably received within the base of the cigarette lighter, with a projection from the flint holder extending through the bore in said screw.

3. A cigarette lighter in accordance with claim 2 in which the upper portion of the tube is formed to matingly receive the upper portion of the flint holder and to retain the flint holder in operative alignment.

4. A cigarette lighter in accordance with claim 3 in which the spring means comprises a coil spring which embraces the flint holder with one end of said coil spring being engaged with the nut and the other end of said coil spring extending through the slot in the wall of the flint holder into its bore.

5. A cigarette lighter comprising a casing having a base and a top, a spark wheel rotatably mounted on the top of said casing, a flint compartment within said casing, said flint compartment comprising a tube having an inwardly tapering upper portion, the lips of said inwardly tapering upper portion being disposed beneath the spark wheel, a vertical slot in the wall of said tube, a flint holder within said tube, said flint holder having a blind bore open at its top, the top of said flint holder being inwardly tapered and matingly nested within the inwardly tapered upper portion of the tube, the outside surface of an appreciable portion of said flint holder being threaded, a nut mounted on the threads of the outside surface of said flint holder, said nut including an ear which projects into the slot in the wall of said tube, a vertical slot in the wall of said flint holder in communication with the bore of said flint holder, a coil spring embracing said flint holder, one end of said coil spring being engaged with said nut and the other end of said coil spring extending through the slot in the wall of the flint holder into its bore, a basal cap removably received within the base of said casing, with a projection from said flint holder extending through said basal cap, said projection including means for facilitating the rotation of said flint holder.

References Cited in the file of this patent

UNITED STATES PATENTS

55	2,638,763	D'Alton	May 19, 1953
	2,744,401	Salzer	May 8, 1956

FOREIGN PATENTS

60	56,510	France	July 23, 1952
		(Addition to 999,283)	
	931,780	France	Nov. 3, 1947