May 9, 1950 S. BURSHSTEIN 2,506,774

CIGARETTE LIGHTER

Filed Nov. 15, 1946

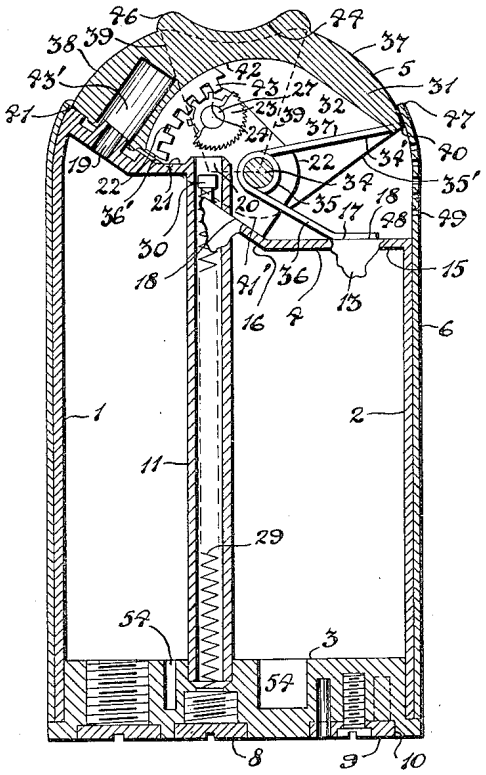

FIG 1

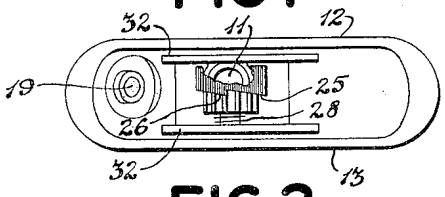

FIG 2

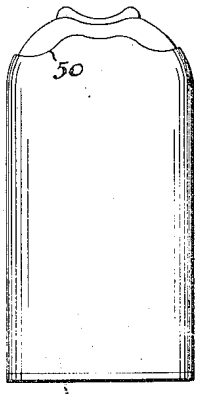

FIG 3

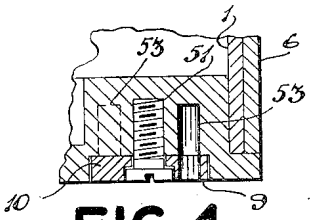

FIG 4

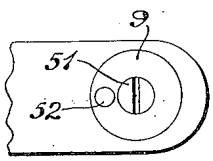

FIG 5

Inventor
SHOEL BURSHSTEIN
By: Autenrieth Rauch & Co
his Atty's.

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CIGARETTE LIGHTER

Shoel Burshstein, Winnipeg, Manitoba, Canada

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2 Claims. (Cl. 67—7.1)

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My invention relates to improvements in cigarette lighters, an object being to provide a device of the character herewithin described which is of symmetrical and pleasing appearance from which all possible dirt-collecting projections, exposed recesses, ledges, corners and dirt and dust admitting cracks and openings have been eliminated, which fits the hand, accommodating itself to a natural and comfortable action by the thumb on the snuffer in such a way that upon opening the snuffer, the flame is a maximum distance away from the thumb.

A further object of the present invention is to provide a lighter which is so designed that the snuffer thereof may be opened, and the wick ignited regardless of which side of the bifacial casing is in opposition to the thumb since the thumb is as efficiently manipulable in a counter-clockwise arc as in a clockwise arc.

A further object of the present invention is to provide a precision lighter wherein the rotating components are mounted in bronze bearings and so designed that the flame does not decompose the surrounding metal which is so structured as to avoid any interception of the flame.

A further object is to provide a lighter of the character herewithin described which, in this design is particularly well suited to use with pipes in view of the location of the wick a maximum distance from the thumb in the ignited position.

A further object is to provide a device of the character herewithin described in which a quantity of spare flints may be carried and easily dispensed when needed, all without interfering with the tabulate, smooth and solid appearance of the device as-a-whole.

With the foregoing objects in view, and such other objects and advantages as will become apparent to those skilled in the art to which this invention relates as this specification proceeds, my invention consists essentially in the arrangement and construction of parts all as hereinafter more particularly described, reference being had to the accompanying drawings, in which:

Figure 1 is a sectional elevation of my cigarette lighter.

Figure 2 is a plan of my lighter with the snuffer removed.

Figure 3 is a side elevation of my lighter.

Figure 4 is a fragmentary sectional elevation illustrating my spare flint magazine.

Figure 5 is an underside fragmentary representation of my spare flint magazine.

In the drawings like characters of reference indicate corresponding parts in the different figures.

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My invention consists of a tablet-shaped or tabulate casing 1 comprised of the bifacial surrounding wall 2, a sole-plate 3, and a cover-plate 4. Surmounting the above said casing is a snuffer collectively designated 5 enclosing the pyrophoric assembly later to be described, the casing 1 being surrounded by a mantle collectively designated 6.

The sole-plate 3 is planar and provided with the screw threaded or fuel replenishing cap 7, a screw-threaded flint-tube cap 8, and the rotatable disc 9 forming part of my spare flint magazine collectively designated 10. Co-axial with the cap 8 is a flint-tube 11 which extends parallel with the surrounding wall 2 of my casing, but as clearly exemplified in Figure 1, is offset with respect to the longitudinal axis of the casing, as well as being offset with respect to the faces 12 and 13 of the surrounding wall as clearly exemplified in Figure 2.

The cover-plate 4 is obtusely angulated at the vertex 14 so that one of the surface portions 15 lies parallel with the plane of the sole-plate 3, while the surface portion 16 is diagonal with respect to the plane of the sole-plate, or in other words inclined upwardly and outward from the vertex 14. The upper edge 15 of the surrounding wall 2 is coincident with the cover-plate 4, and similarly angulated, thus providing the side 18 which lies parallel with the sole-plate 3, and the inclined or diagonal side 19.

The flint-tube 11 opens onto the inclined surface portion 16 of my cover plate 4 while adjacent the upper outer end of the surface portion 16 is a wick-aperture 19, but it is to be understood that in referring to my cover-plate 4 as obtusely angulated, I disregard the promontories formed by the projecting part 20 of flint-tube 11, the shoulder 21 adjacent thereto and the surrounding flange 22 of aperture 19 as being insufficiently important, structurally, to influence the substantial accuracy of the above said term.

Projecting upwardly from the casing 2 in the plane of the faces 12 and 13 are bearing plates 22 on which my snuffer 5, and a coaxial flint-wheel 23 and flint-wheel drive pinion 24 are journalled. The above said wheel and pinion are in side-by-side contact via the complementarily ratcheted walls 25 and 26 respectively, the members 23 and 24 being free on the shaft 27 with the pinion 24 held in contact with flint wheel 23 by means of the light spring 28.

Within the flint-tube 11 is a spring 29 at the upper end of which is a floating head 30 bearable against a flint projecting from the upper open end of the wick-tube against the flint-wheel 23.

Such spring 29, together with the wheel and pinion 23 and 24, the flint-tube 11, the wick and its aperture 19, and a conventional flint, I consider to constitute the pyrophoric assembly aforesaid.

Proceeding now to describe in detail my flint wheel rotating and snuffing component 5, the same will be seen to comprise the multi-curved over-spanning portion 31 which is of fairly massive cross-section, and the cheek plates 32 by means of which the component is pivoted for rotation about the point 33, on the stub shaft 34 the ends of which extend into the plates 22. A spring 34' of the configuration clearly illustrated encircles the shaft 34 via the spiral portion 35 thereof with the arms 36 and 37 bearing downwardly and upwardly against the cover-plate 4 and the portion 31 of the component respectively.

The contour of my component is what I designate as plurarcuate, internally nodal, obtusely, and eccentrically sectorial, such a figure being one in which the adjacent side edges 35' and 36' of the cheek plates 32 are of unequal length, and in which the two arcs 37 and 38 adjoining them would if produced intersect inwardly, and are internally tangential to the arc of a concentric sector of radius length greater than that of either side.

Thus, in the case of my snuffer, it will be observed that the arcs 37 and 38 are circumscribed between the radii 39 and the ends 40 and 41 respectively. The edges 35 and 36, however, converge towards the vertex 41' which is directly below the axis of rotation 33 and offset with respect to the axis of symmetry. Side 36 is longer than side 34, and is provided with the snuffer per se designated 43', but the arc of the interior surface 42 is concentric with respect to the rotary axis 33, and has secured thereto the concave rack 43 the teeth whereof mesh with the teeth of pinion 24.

Obviously, the overspanning contour of my snuffing component, instead of being continuously curved or formed by a plurality of intersecting curves having either interior or exterior nodes, may if desired be polygonal, and accordingly in certain of the claims appended hereto I designate such overspanning contour as ambilinear to embrace both a configuration of straight lines, a single curve or a plurality of curves.

It will be observed that I position a thumb grip 44 at the apex of my snuffer, the said grip by virtue of its concavity defining, with the radii 39 and the line 35 what I designate as a figure of inversely arcuate, frusto-sectorial configuration, terminating at the ends thereof in the rounded cusps 46.

From the foregoing it will be apparent that when my snuffer is rotated in a clockwise direction with respect to the accompanying Figure 1, the wick-aperture 19 will be exposed, the wick projecting therethrough being ignited by rotation of the flint-wheel 23 by rack 33 against a flint projecting from the tube 11. The snuffer may be rotated until the right-hand cusp 46 comes up against the shoulder 47 of mantle 6 and during such rotation it will be apparent that the sectorial space 48 normally existing between side 34 and the surface portion 15 becomes occupied by the overlying portion of the snuffer. In this context it is to be noted that the vertical row of spaced apertures 49 are provided in that portion of the mantle 6 which encloses space 48 to provide the necessary oxygen for ignition.

By reference to the accompanying Figures 1 and 3 it will be particularly noticed that the upper edge 50 of my mantle 6 projects above the upper edge of the surrounding wall 2 so that when the snuffer is in the closed position illustrated, the interior structure thereof is sealed against the entrance of dirt and dust from the pockets of the user to the maximum practicable extent and thus my mantle functions as a dust-proof enclosure concealed within which is the entire mechanism of my lighter with the exception of the exposed part of the overspanning portion 31, which is of unitary configuration and uninterrupted by any dust lodging cracks or openings.

My spare flint magazine 10 comprises the aforesaid rotatable disc 9 which, as will clearly be perceived from Figures 1 and 4 is countersunk into the sole plate 3 and there held rotatably by means of the screw 51. Offset to one side of the disc 9 is an aperture 52 alignable with a plurality of spaced drillings 53 arranged annularly and at spaced intervals around the screw 51 within the thickness of the sole plate. From this arrangement it will be apparent that I am able to retain a substantial supply of spare flints within the several drillings 53, and discharge same simply by rotating the disc 9 into alignment with one or other of the drillings. In areas of the sole plate 3 where material of the thickness indicated is unnecessary, the same should be hogged-out to lighten my device as indicated at 54.

Since many modifications can be made in the invention herein described and since the accompanying drawings have been prepared only to illustrate the relative arrangement and interaction of parts and not with regard to accuracy of dimensions for manufacturing purposes which in view of this disclosure I consider to entail merely mechanical skill together with the skill of the mechanical draftsman, and since many apparently widely different embodiments of this invention may be made within the spirit and scope of the accompanying claims without departing from such spirit and scope it is intended that all matter contained in the accompanying specification shall be interpreted as illustrative only and not in a limiting sense and I desire only such limitations placed thereon as justice dictates.

What I claim as my invention is:

1. A single-action lighter having a tablet-shaped casing comprising a surrounding wall, a sole-plate and a cover-plate at the ends thereof, said cover-plate when viewed in side elevation being seen to be obtusely and eccentrically angulated with the interior angle on top, one side, the shorter, lying parallel to the plane of said sole-plate, and the other, the longer, extending diagonally upwards and away from the vertex of the angle between the two sides, said diagonal side having a wick-aperture therein, a flint-tube extending through said casing parallel with said wall but offset on the wick-aperture side of the longitudinal casing-axis, said tube opening onto said cover-plate between said vertex and said wick-aperture, a flint-wheel adjacent said flint-tube opening, an adjacent pinion engageable with said flint-wheel, and a snuffing and flint-wheel actuating component having a contour when considered in side elevation, and in closed position, being obtusely and eccentrically sectorial, and having a pair of obtusely angulated edges of unequal length both diverging upwardly from the vertex of the angle thereof, an overspanning surface between the said edges, said over-

spanning surface being curved to the contour of two arcs of similar curvature when struck about a pair of horizontally spaced centrepoints equidistant upon either side of the said longitudinal casing-axis, the longer side of said cover-plate and the longer edge of said component being contiguous and parallel when the component is in closed position, said component being mounted for rotation on said casing substantially vertically above the vertex of the angle formed by the sides of said cover-plate eccentrically to said longitudinal casing-axis, co-incidentally with one of said centrepoints, and at the vertex of an equilateral triangle the base angles whereof touch the edges of said component, a snuffer per se on the longer edge of said component in rotary alignment with said wick-aperture, an arcuate, internally toothed rack within said component and similarly movable therewith for actuating said pinion upon the manual rotation of said component into open position, and spring means for automatically returning said component to snuffing or closed position after manual release from open position, said casing having at least one air-intake aperture therein between the said shorter side of said

cover-plate, and the shorter edge of said snuffing and flint-wheel actuating component.

2. The device as defined in claim 1 which includes a mantle surrounding said cover-plate, said mantle projecting substantially above the plane of said cover-plate substantially all around the perimeter thereof.

SHOEL BURSHSTEIN.

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