

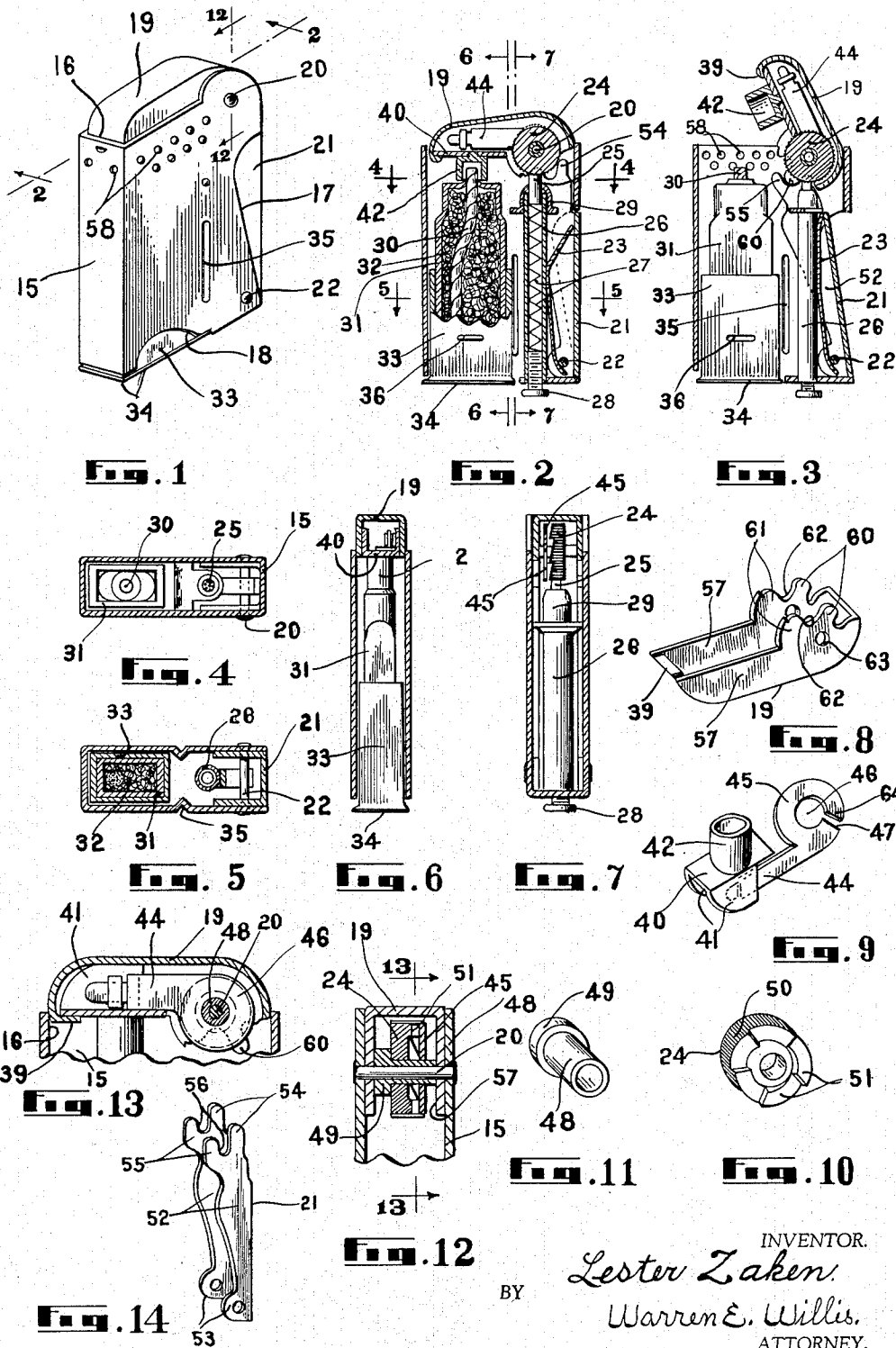
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CIGARETTE LIGHTER

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CIGARETTE LIGHTER

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4 Claims. (Cl. 67—7.1)

This invention relates to devices for igniting cigars, cigarettes, etc., etc., and is filed as a substitute for my abandoned application, filed October 29, 1936, Serial No. 108,139.

An object of the invention is in the construction of a lighter characterized by a tubular casing having an open top and open side portions, a cover to close the top, the cover being hingedly mounted near one end on the casing, and an actuator extending along the open side hingedly mounted near its bottom and associated with the cover in a manner to raise the cover upon being pressed inwardly and to lower the cover when moved outwardly.

A further feature is in the provision of an abradant wheel arranged coaxially with respect to the cover and mounted to move along with the cover when the cover opens.

Another purpose is to provide means for normally urging the actuator into an outward position so that the cover is normally pressed into its closed position.

Further aims are provided in means for mounting and operating the abradant wheel that it may not rotate when the cover is moved to its closed position and thus prevent the production of sparks during such period; also to provide a wick lighting means within the casing adapted to be ignited by sparks from the action of the abradant wheel and pyrophoric material contained in a compartment within the casing.

These and analogous objects are accomplished by the novel and practical construction, combination and arrangement of parts hereinafter described and illustrated in the accompanying drawing, constituting a material component of this disclosure, and in which:

Figure 1 is a perspective view of an embodiment of the invention.

Figure 2 is a longitudinal sectional view looking downward approximately on line 2—2 of Figure 1.

Figure 3 is a view similar to Figure 2, but showing the cover raised and the interior parts in side elevation.

Figure 4 is a transverse sectional view taken on line 4—4 of Figure 2.

Figure 5 is a transverse sectional view taken on line 5—5 of Figure 2.

Figure 6 is a longitudinal sectional view taken on line 6—6 of Figure 2.

Figure 7 is a similar sectional view taken on line 7—7 of Figure 2.

Figure 8 is a perspective view of the cover in detail, looking from its under side.

Figure 9 is a perspective view of the bracket carried in the cover, in a reversed position.

Figure 10 is a perspective view of the abradant wheel.

Figure 11 is a similar view of the wheel bearing.

Figure 12 is a fragmentary sectional view taken on line 12—12 of Figure 1, drawn to an enlarged scale.

Figure 13 is a fragmentary sectional view taken on line 13—13 of Figure 12.

Figure 14 is a perspective view of the actuator in detail.

Referring in greater detail to the drawing, the device comprises a tubular casing 15 having an open top 16, an open side 17 and an open bottom 18.

A cover 19 is provided for closing the open top, the cover being hingedly engaged by a pivot pin 20, near one of its ends to the casing 15.

An actuator 21 extends along the open side 17 of the casing and is hingedly mounted near its bottom on a pivot pin 22, set in the casing; the actuator is associated with the cover 19 in such manner as to raise the cover when pressed inwardly and to lower the same when moved outwardly.

A bent flat spring 23 is arranged to urge the actuator normally outward.

An abradant wheel 24 is rotatably mounted on the pin 20, within the casing and is movable with the cover 19 when the cover is raised to its open position.

A pyrophoric alloy, or flint plug 25, is slidably mounted in a tube 26 within the casing and pressed against the wheel by a spring 27 enclosed in the tube and is adjusted by a screw 28 threaded into the lower end of the tube, which is supported at its upper end by a bracket 29 set in the casing walls.

A wick 30 is contained in an upright receptacle 31 of rectangular cross section, that is loosely filled with absorbent material 32 and any preferred burning fluid.

The lower portion of the receptacle is frictionally and telescopically held in a container 33, having an enlarged base flange 34, the container being maintained in position at one side of the casing by inreaching grooves 35; the container 33 is removable through the open bottom of the casing by grasping the flange 34, and is provided with pressed out lugs 36 to retain it centrally in the casing.

Formed on the front end wall of the cover 19 is an inreaching lug 39 to engage a plate 40 having down-turned side walls 41, and set in the

plate is a tubular snuffer 42 adapted, when the cover is closed, to cover the extending end of the wick 30 and seat on the upper surface of the container 32, thereby preventing entrance of air and extinguish the flame of the wick.

Attached to one of the side walls 41, is a flat bar 44, its opposite end 45 shaped circularly and provided with a central opening 46 having a slit 47 by which it may be passed over the pin 20 and arranged alongside the wheel 24.

Rotatably mounted on the pin 20 is a sleeve 48 having at one end an integral collar 49, and journalled on the sleeve is the abradant wheel 24.

The peripheral surface of wheel is provided with short longitudinal teeth 50, adapted to engage the spring pressed sparking material 25 as the wheel is rotated. The front side face of the wheel is formed to produce ratchet shaped teeth 51 by which it is rotated by the actuator 21, which will now be described in detail.

The actuator 21 consists of a flat plate having parallel inturned side walls 52 terminating in nodes 53 perforated to turn on the pivot pin 22, while at its upper end are rounded forks 54—55 having between them recesses 56.

The cover 19 is shaped to present similar parallel side walls 57, curved at each end and adapted to pass between the side walls of the casing, which are plurally perforated, as at 58, along their upper portions.

The side walls have raised projections 60—61, between which are recesses 62 and contain perforations 63 to permit rotation on the pivot pin 20.

By referring to Figures 2 and 3 it will be seen that the recesses 56 of the actuator are fitted to receive the projections 60—61 of the cover side walls, and that the forks 54—55 contact the outer edges of the projections 60—61 in the manner of gear teeth so as to raise the cover 19 when the actuator is pressed inwardly, as clearly shown in Figure 3.

Conversely, when pressure on the actuator is released, the spring 23 operates to press the actuator outwardly and thereby cause the cover to close.

It is also to be noted that the snuffer arm 44 is integral with the split spring washer 45, and the outturned tooth 64, adjacent the slit 47, engages the ratchet teeth 51 of the abradant wheel 50, so that as the cover is closed the spring tooth 64 passes over the ratchet teeth, but upon opening the cover rapidly the tooth 64 operatively engages the ratchet teeth 51, transmitting an instant, fast, semi-rotative movement, sufficient to produce sparks from the pyrophoric substance 25, the sparks flashing across the casing to cause ignition of the wick 30.

Although the foregoing is descriptive of the best known embodiment of the invention, it will be understood that such changes and modifications may be made as come within the scope and spirit of the claims hereto appended.

Having thus described the invention and set forth the manner of its construction and application, what is claimed as new and sought to secure by Letters Patent, is:

1. In a pyrophoric lighter comprising a body having a hollow cover pivotally mounted at one end adapted to be opened and closed, an abradant wheel coaxially mounted with said cover and adapted to contact pyrophoric material to cause a spark when said cover is opening, a bracket in the hollow of said cover held therein by a turned over end of said cover and in frictional contact

with its side portions, one of said side portions being formed with slots dividing off a strip portion, teeth formed on one side of said wheel, and a pawl arranged coaxially with said cover having an arm engaged beneath said strip portion to turn along with the cover and having its other end operative with said teeth to turn said wheel when said cover is opening and to idle over said teeth when the cover is closing so that said wheel maintains a stationary position.

2. In a pyrophoric lighter, a body having an opening in its bottom, an abradant wheel rotatably mounted in the top of said body above said opening, a transverse bracket set in said body below said wheel, a dome-shaped portion formed on said bracket intermediate of its ends extending toward said wheel and having a central opening, a tubular member engaging said body through the opening therein and having one of its ends engaging into the dome-shaped portion of said bracket to hold said tubular member in position in said body, and sparking material resiliently mounted in one end of said tubular member and extending through the opening in said dome-shaped portion to contact said wheel thereby to produce a spark when said wheel is rotated.

3. In a pyrophoric lighter having a body, a cover pivotally mounted at one end of said body adapted to be opened and closed, an abradant wheel coaxially mounted with said cover to contact material adapted to cause a spark when said cover is opened, a bracket in the hollow of said cover held in position by a turned over end of said cover, said bracket frictionally engaging the inside of said cover one of said side portions being formed with slots defining a strip portion, teeth formed on one side of said wheel, a pawl arranged coaxially with said cover and having an arm engaged beneath said strip portion to turn along with the cover and having its other end adapted to rotate, said wheel when said cover is opened and to idle over said teeth when the cover is closed so that said wheel maintains a stationary position, said pawl being of circular construction at its end in contact with said teeth and having an opening at its center, and a slot formed therein between said opening and the outer edge of said circular portion forming a spring cam adapted to engage said teeth.

4. In a pyrophoric lighter, a body having an opening in its bottom, an abradant wheel rotatably mounted in the top of said casing above said opening, a transverse bracket mounted in said body below said wheel, a dome-shaped portion formed on said bracket intermediate of its ends and extending toward said wheel and having a centrally disposed opening, a tubular body engaged into said body through said first mentioned opening and having one of its ends engaging into the dome-shaped portion of said bracket to hold said tubular body in position in said body, sparking material resiliently mounted in one end of said tubular body and extending through the opening in said dome-shaped portion adapted to engage said wheel to produce a spark when said wheel is rotated, said resilient mounting comprising a spring in said tubular body to engage said material, and a screw in the other end of said tubular body to control the tension with which said spring urges said material against said wheel.

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