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CIGARETTE LIGHTER

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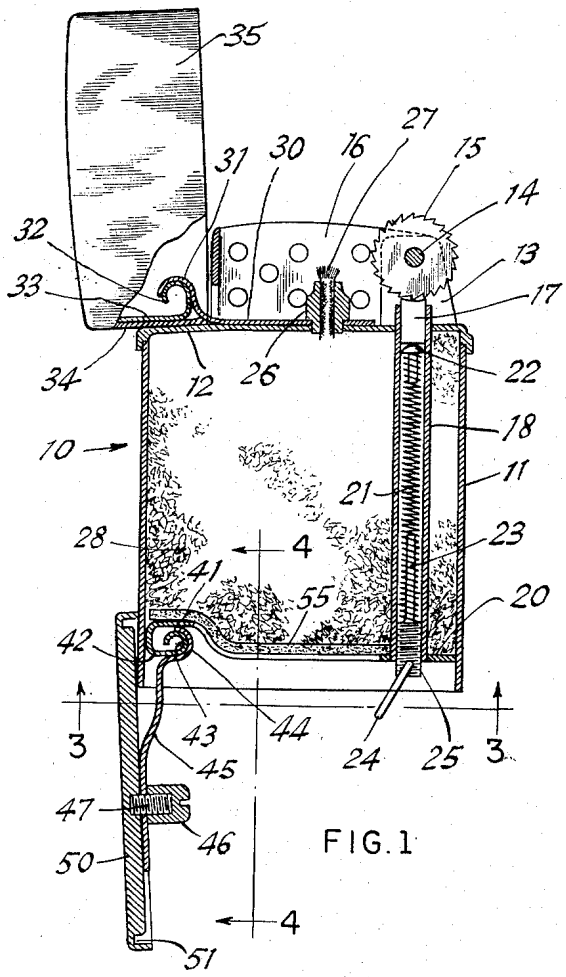

FIG. 1

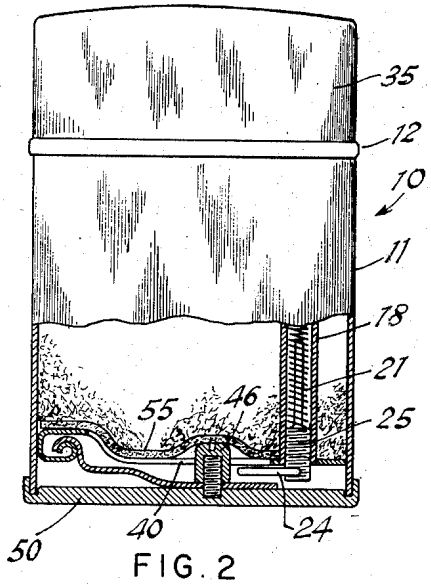

FIG. 2

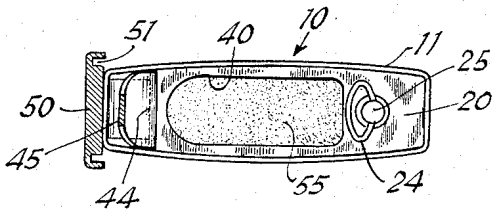

FIG. 3

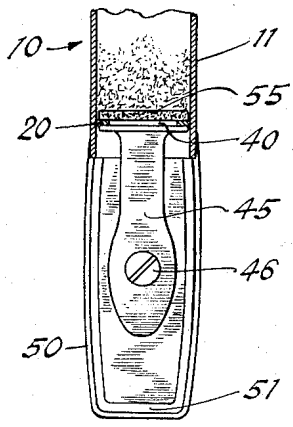

FIG. 4

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CIGARETTE LIGHTER

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3 Claims. (Cl. 67—7.1)

This invention relates to cigar or cigarette lighters and, more particularly, to a lighter of this type having improved fuel replenishing means and flint adjusting means.

Cigar and cigarette lighters generally comprise a metal housing containing absorbent material in fluid transfer relation with a wick projecting outwardly of the housing through a suitable wick holder. The combustible vapors emanating from the wick are ignitetd by sparks resulting from frictional engagement between a striking wheel and a flint which is spring biased against the wheel surface. The flint is generally mounted in a tube extending through the lighter and enclosing a coil spring engaged at its upper end with the wick and, at its lower end, with an adjusting screw threaded into the tube.

The lighter fluid is replenished by removing a threaded cap from the bottom of the lighter and pouring fluid into the filler opening. This cap has a slot engageable by a coin or a screw driver to operate the cap. The adjusting screw for the flint biasing spring has a similar cap for similar operation by a coin or screw driver. The cap for the filling opening and the adjusting screw are exposed on the bottom wall of the lighter.

In accordance with the present invention, a lighter is provided in which the bottom of the housing is provided with a closure or cap snapped by spring means to a fully open or fully closed position. The spring means includes cooperating leaf spring hinge members one secured in the housing and the other in the cap, these hinge members being formed at their free ends with telescoped cylindrically curved sections. The hinge member secured to the housing has an elongated slot or opening therethrough which is covered by a piece of absorbent fabric lying along the hinge member. The spring enclosing tube for the flint extends through and is secured to the fixed part of this hinge member.

To replenish the lighter fluid, all that is necessary is to snap open the bottom cover and pour the fluid onto the part of the fabric strip exposed through the slot in the hinge member in the housing.

Flint adjustment is easily effected by virtue of a ring or the like secured to the spring adjusting screw and exposed when the bottom cover is snapped open. As a further feature of the invention, the lighter is provided with a similar spring snapped top closure or cap.

For an understanding of the invention principles, reference is made to the following description of a typical embodiment thereof as illustrated in the accompanying drawing. In the drawing:

Fig. 1 is a vertical sectional view of the lighter in the open position;

Fig. 2 is an elevation view, partly in section, of the lighter in the closed position; and

Figs. 3 and 4 are sectional views on the correspondingly numbered lines of Fig. 1.

Referring to the drawings, the lighter **10** is formed of any suitable sheet metal and includes a reservoir or housing comprising a tubular body member **11** to which is secured a top wall member **12** having a pair of upright ears **13** carrying a pin **14** rotatably mounting a striking wheel **15**. Pin **14** also secures in place apertured wind guard **16** which is a U-shape member having the outer ends of its legs overlapping ears **13**.

Wheel **15** operates against a flint **17** mounted in a tube **18** secured through an aperture in wall **12**. The lower or opposite end of tube **18** is secured in an aperture in a leaf spring hinge member **20** described more fully hereinafter. Flint **17** is biased against wheel **15** by a coil spring **21** in tube **18**. Spring **21** has its upper end engaged with the stem of a headed pin **22** whose head engages flint **17**. The lower end of spring **21** embraces the elongated stem **23** of an adjusting member **25** threaded into the lower end of tube **18**. Adjustment of the spring pressure is effected by turning member **25** through the medium of a readily accessible ring **24** secured to the projecting lower end of member **25**. The provision of ring **24** enables the spring to be easily adjusted as compared with the usual arrangements in which a coin or screw driver must be used to operate the adjustment means.

A wick support **26** is secured in an aperture in wall **12** and has an enlarged mid-portion serving to clamp a spring hinge member **30** to wall **12**. A wick **27** extends through support **26** and, in body member **11**, is in liquid absorbing contact with the usual absorbent packing **28** saturated with the lighter fluid.

Spring **30** is in the form of a leaf spring having an upturned free end **31** curved cylindrically to embrace the mating cylindrically curved end **32** of a leaf spring **33** secured along an end wall **34** of a cap **35**. The relation of the springs **30** and **33** is such that, when cap **35** is opened, it is snapped to the position of Fig. 1 in which wall **34** engages wall **12** and, when cap **35** is moved in a closing direction, it is snapped into mating engagement with the periphery of wall **12** to enclose the operating parts of the lighter.

Leaf spring hinge **20**, and the parts associated therewith, form an important feature of the invention. This spring **20** extends from the right end wall of member **11**, as viewed in Figs. 1 and 2, parallel to the bottom edge of the lighter for the major part of its length. Spring **20** is spaced inwardly from the bottom of the lighter. Near the opposite end wall of member **11**, spring **20** is offset inwardly as at **41**, and then extends parallel to the lighter bottom to such opposite wall. The free end of member **20** is then bent downwardly along the wall and inwardly, as at **42**, with its end being cylindrically curved, as at **43**, to fit within the cylindrically curved end **44** of a cooperating leaf spring member **45** secured to bottom closure plate **50**.

Spring **20** has an elongated filler aperture **40** therein, which is closed by a strip **55**, of absorbent fabric extending along the inner surface of spring **20**. This construction eliminates the usual filter opening closed by a threaded plug or the like, and greatly facilitates replenishment of the lighter fluid supply. All that is necessary is to open plate **50**, as described hereinafter, and pour the fluid through opening **40** onto absorbent strip **55** in contact with absorbent packing **28**.

The curved free end **44** of spring **45** is offset from the inner surface of cap **50**. Spring **45** is held in position by a threaded cap **46** secured onto a stud **47** threaded into cap **50**. This cap has a rim portion, grooved as at **51**, to receive and embrace the bottom end of member **11**. The relation of springs **20** and **45** is such that, during opening movement of cap **50**, it is snapped to the position of Fig. 1 to lie against the outer surface of member **11**. During closing movement of cap **50**, it is snapped to the closed position of Fig. 2 wherein the lower edge

of member **11** seats in groove **51** to provide a substantially air-tight closure for the lighter. Cap **50** is easily swung open to provide for refilling the lighter or for adjustment of flint **17**.

While a specific embodiment of the invention has been shown and described in detail to illustrate the application of the invention principles, it will be understood that the invention may be embodied otherwise without departing from such principles.

What is claimed is:

1. A cigarette lighter comprising, in combination, a tubular housing, of metal, having a fixed top wall; absorbent material substantially filling said housing; a wick tube on said top wall having a wick therein in contact with said material; a striking wheel rotatably mounted on said top wall; a flint support tube projecting from said top wall; a flint in said support tube; means biasing said flint against said wheel for spark creating cooperation therewith; a first hinge including a first leaf spring secured within said housing adjacent and substantially closing its lower open end and having a cylindrically curved free end within said housing, and a second leaf spring having a cylindrically curved free end telescoped with that of said first leaf spring; a substantially flat cap adapted to sealingly engage and close said lower open end; said second leaf spring being secured to said flat cap for snapping of said flat cap between open and closed positions; said first leaf spring having an aperture therein;

and a piece of absorbent fabric overlying said first leaf spring and covering said aperture, and in contact with said material; whereby the lighter fuel supply may be replenished by snapping open said flat cap and pouring fuel on said piece of fabric through said aperture.

2. A lighter as claimed in claim 1 in which said support tube extends through and is secured to said first leaf spring.

3. A lighter as claimed in claim 2 including a coil spring in said support tube engaged with said flint; and an adjusting screw threaded into the lower end of said support tube to engage said coil spring, and having an adjusting head accessible on opening of said flat cap.

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