

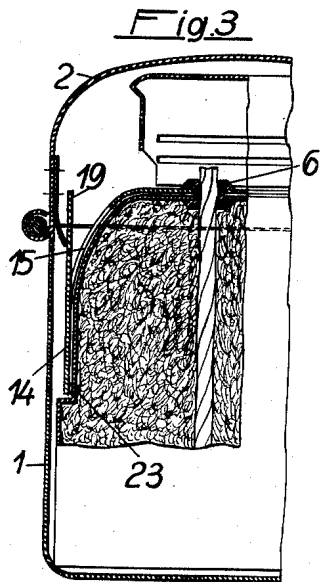
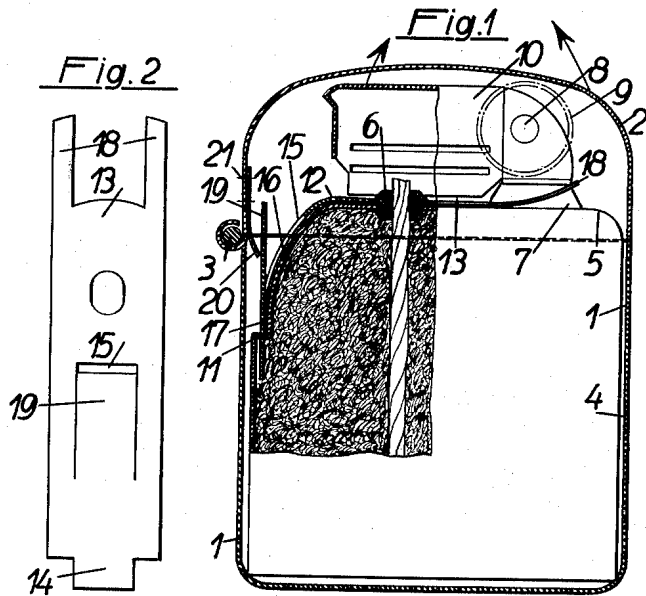
Oct. 15, 1957

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2,809,511

LIGHTER COVER BIASING SPRING

Filed Dec. 10, 1954



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2,809,511

LIGHTER COVER BIASING SPRING

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Application December 10, 1954, Serial No. 474,542

2 Claims. (Cl. 67-7.1)

This invention relates to spring assemblies comprising a leaf spring fixed to a normally stationary structure, which may have a first member movably arranged relative thereto on one side of said stationary structure and on the other side said structure may carry pivot means mounting a lever member having two lever arms one of which is adapted to engage said stationary structure in one limiting position of said lever member, whereas the leafspring may comprise two outer portions engaging said first member and the other arm of said lever member, respectively, to perform independent spring functions.

The invention will be described hereinafter for illustration with reference to its use in a lighter, in which said normally stationary structure comprises a casing having a narrow side wall and a fuel tank positioned in said casing and having a top wall and a narrow side wall facing and spaced from said narrow side wall of the casing, and in which one arm of said lever member forms a cover movable into a closed position, whereas a wick holder is affixed on the top wall of said fuel tank.

Known lighters of this type comprise a leaf spring which is fixed to the fuel tank and with one outer portion engages the other arm of the lever or cover member whereas with the other outer portion it secures a windguard, forming the first movable member and mounted on the friction wheel shaft of the lighter, in its effective position.

It is an object of the invention to provide a spring assembly of the type described, which provides for a relatively large spring force to be exercised by one of said outer spring portions, e. g. on the cover, in spite of a relatively short length of the spring.

It is another object of the invention to provide a spring assembly of the type described which requires relatively little space.

Other objects of the invention will become apparent as the specification proceeds.

It is a feature of the invention to provide in a spring assembly which comprises a normally stationary structure and a leaf spring having a central portion fixed to said stationary structure and two outer portions for performing independent spring functions, the combination of means holding one of said outer portions for at least part of its length in engagement with said stationary structure, and a lug integral with said one outer portion and projecting from the surface thereof between said central portion and the outer end of said length part held in engagement with said stationary structure, said lug being arranged to perform the spring function of said one outer portion.

It is another feature of the invention to provide a spring assembly in a lighter comprising a casing having a narrow side wall, a fuel tank positioned in said casing and comprising a top wall and a narrow side wall facing and spaced from said narrow side wall of said casing, a wick holder affixed to said top wall, and a cover member pivotally mounted on said casing at the top end of said narrow side wall thereof and movable into a closed position,

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said cover member having two lever arms one of which forms a cover movable into a closed position, said spring assembly comprising a leaf spring having a portion affixed to said top wall by means of said wick holder and an outer portion extending between said narrow side walls of said casing and tank and held for part of its length in engagement with said narrow side wall of said tank, said outer portion being formed with a lug projecting from the surface thereof between said affixed portion and the outer end of said length part held in engagement with said side wall, said lug being arranged to engage the other arm of said cover member in said closed position to exercise thereon a force tending to hold said cover in said closed position.

According to the invention the leaf spring, which is connected to the fuel tank and at least partly extends along the top wall and the adjacent narrow side wall of the fuel tank, is formed at a point intermediate the ends of the spring with a lug which is bent, e. g., from a U-shaped cut provided in the spring and which engages the cover in the closed position thereof at an edge close to the pivotal axis of the cover.

The invention is illustrated in the drawing, which shows two different constructions and modes of fixation of the leaf spring in lighters.

Fig. 1 is a side view showing the lighter partly in longitudinal section,

Fig. 2 shows a first embodiment of a leaf spring for the lighter of Fig. 1, in extended, straight form.

Fig. 3 is a longitudinal sectional view showing part of the lighter provided with a leaf spring having an outer end which is rigidly affixed by a spot weld to the narrow side wall of the fuel tank.

The casing 1 is closed by a cover 2 pivoted on hinge 3 and contains the fuel tank 4, which can be pulled out (Fig. 1). The tank has fixed to its top end wall 5 the wick holder 6 and a bearing bracket 7 with the friction wheel shaft 8, on which the friction wheel 9 is rotatably and the windguard 10 is pivotally mounted. A leaf spring 12 engages with its upper or first outer part 13 the top end wall 5, with the end of its lower or second outer portion 14 the narrow side wall 17, facing the cover hinge 3, and an inwardly extending transition wall 16 of the fuel tank. The bent-up forked end 18 of the spring portion 13 (Fig. 2) bears in the manner known on the shorter arm of the windguard to hold it in its effective position. The second outer portion 14 of the leaf spring has a U-shaped cut 15, from which is bent a lug 19, which engages the free inner edge 20 of a lug 21 affixed to the cover 2 and projecting inwardly from the hinge 3. As with the known lighters of the type described, the outer portion 14 of the spring exercises on the cover 4 a turning moment in the closing sense by its resilient engagement with the lug 21. In the present case, this resilient engagement is effected by means of the lug 19.

The upper portion 13 of the leaf spring may be affixed to the end wall 5 most simply by means of the wick holder 6 engaging the central portion of the spring, whereas the spring portion 14 is fitted with its lower end, which is suitably of reduced width, in a transverse slot 11 of the side wall 17 of the tank in the first embodiment.

Alternatively, the spring may be connected to the tank by rivets, spot welds, or soldered joints, if this is convenient in manufacture.

In the embodiment shown in Fig. 3 the lower end of the spring portion 14 is rigidly connected by a spot weld 23 to the narrow side wall of the tank.

What I claim is:

1. A spring assembly in a lighter comprising a casing having a narrow side wall, a fuel tank positioned in said casing and comprising a top wall and a narrow side wall facing and spaced from said narrow side wall of

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the casing, and a cover member pivotally mounted on said casing and having a lever arm, said spring assembly comprising a leaf spring having a central portion fixed to the top wall of said fuel tank, and two outer portions for performing independent spring functions, one of said outer portions extending between said narrow side walls of said casing and tank and having an outer end which is rigidly and non-removably affixed to said narrow side wall of said tank, said one outer portion being formed with a U-shaped cut and with a lug bent from said cut, said lug being arranged to engage the lever arm of said cover member in its closed position to exercise thereon a force tending to hold said cover in said closed position.

2. A spring assembly in a lighter comprising a casing having a narrow side wall, a fuel tank positioned in said casing and comprising a top wall and a narrow side wall facing and spaced from said narrow side wall of the casing, and a cover member pivotally mounted on said casing and having a lever arm, said spring assembly

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comprising a leaf spring having a central portion fixed to the top wall of said fuel tank, and two outer portions for performing independent spring functions, one of said outer portions extending between said narrow side walls of said casing and the tank and having an outer end which is rigidly and nonremovably affixed by a spot weld to said narrow side wall of said tank, said one outer portion being formed with a U-shaped cut and with a lug bent from said cut, said lug being arranged to engage the lever arm of said cover member in its closed position to exercise thereon a force tending to hold said cover in said closed position.

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