Oct. 29, 1935. C. J. LAGERHOLM 2,019,433

PYROPHORIC LIGHTER

Filed Oct. 25, 1930 2 Sheets-Sheet 1

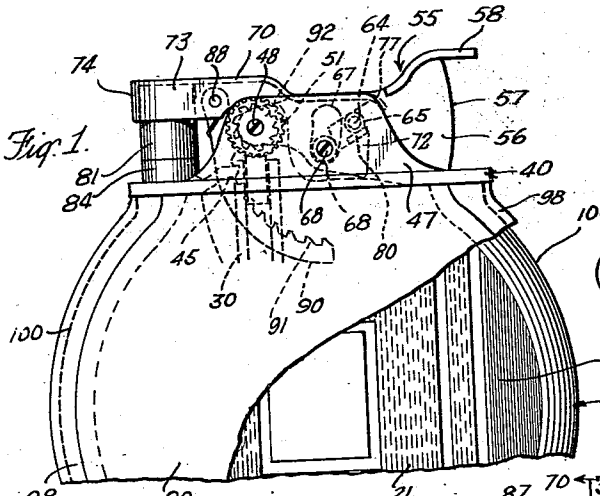

Fig. 1.

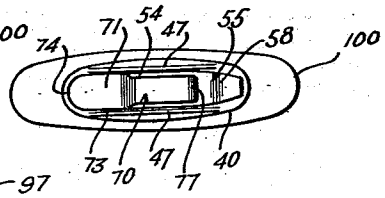

Fig. 4.

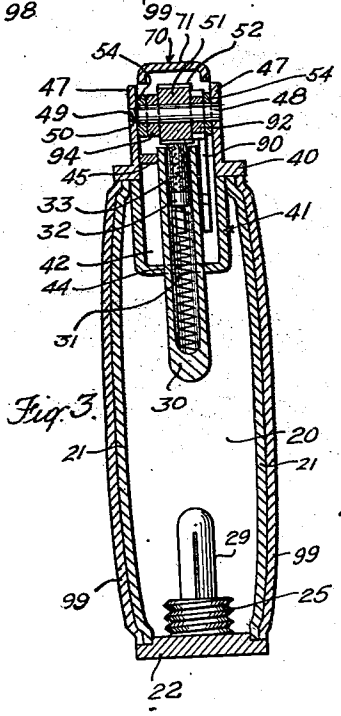

Fig. 3.

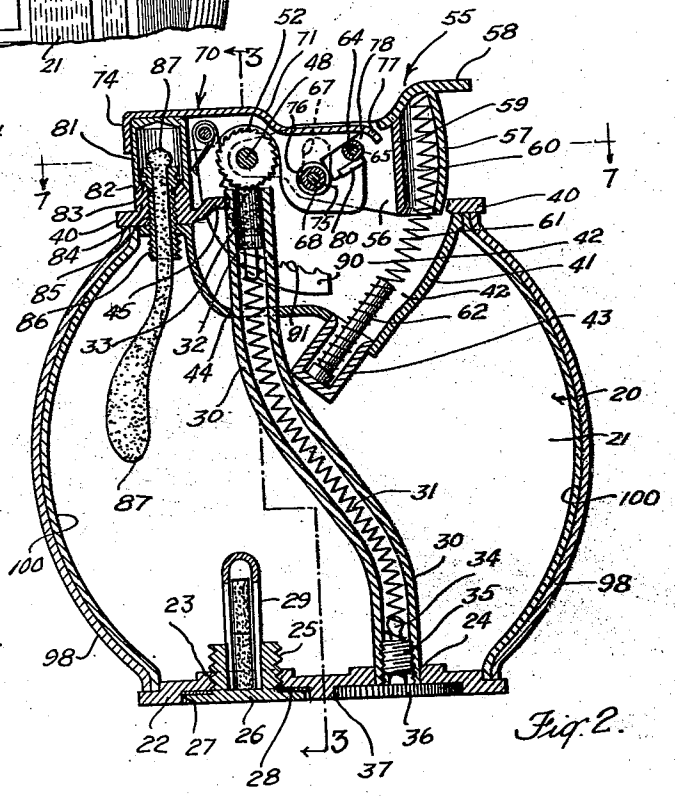

Fig. 2.

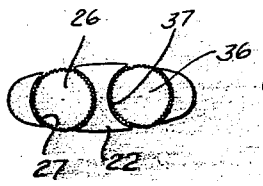

Fig. 5.

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PYROPHORIC LIGHTER

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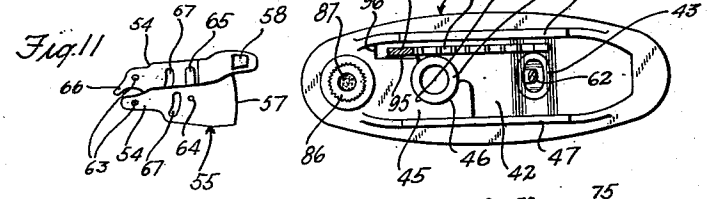

Fig. 11

Fig. 6.

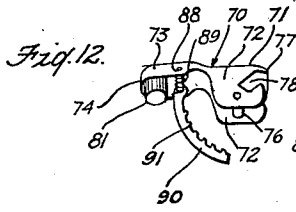

Fig. 12.

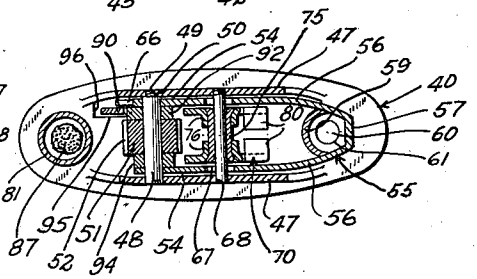

Fig. 7.

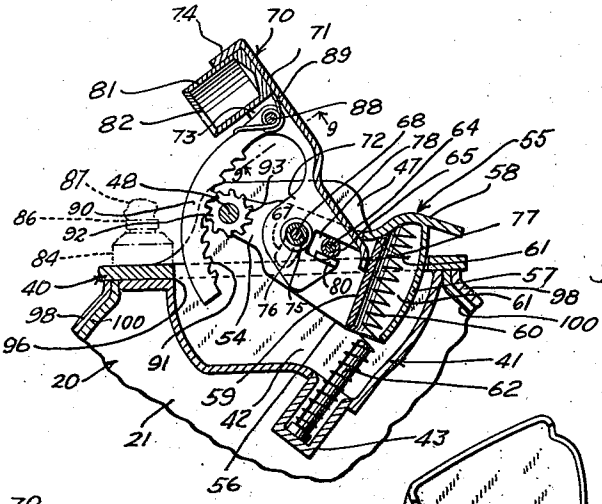

Fig. 8.

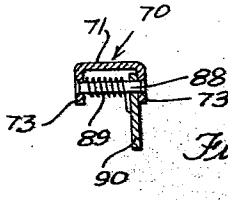

Fig. 9.

Fig. 10.

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2,019,433

UNITED STATES PATENT OFFICE

2,019,433

PYROPHORIC LIGHTER

Carl Julius Lagerholm, Attleboro, Mass., assignor to Evans Case Company, North Attleboro, Mass., a corporation of Massachusetts

Application October 25, 1930, Serial No. 491,116

15 Claims. (Cl. 67—7.1)

This invention relates to lighting devices and more particularly to a device in which a wick is ignited by sparks mechanically produced.

One of the objects of the invention is to provide a device of the character indicated which shall be of durable construction and absolutely reliable and lasting in operation. Another object of the invention is to provide a device of the character indicated of sturdy construction and having parts readily susceptible of manufacture in large quantities at reasonable cost. Another object of the invention is to provide a device of this character which at one operation produces enough sparks to ignite the wick several times over in order that a light may be obtained under the least favorable circumstances met with in practice. Another object of the invention is to provide a device of this character in which there is a minimum amount of friction and wear of the parts. Another object of the invention is to provide a compact and readily portable lighter that will be neat and attractive in appearance. Another object of the invention is to eliminate, in a device of this character, the possibility of dirt and other foreign matter obtaining entrance to the working parts. Another object of the invention is to provide a lighter of the above-mentioned character adapted to prevent injury to the finger or thumb of a user when operating the device. Other objects will be in part obvious or in part pointed out hereinafter. This application is a continuation in part of my copending application Serial Number 359,740, filed May 2, 1929.

The invention accordingly consists in the features of construction, combinations of elements, and arrangements of parts, as will be exemplified in the structure to be hereinafter described, and the scope of the application of which will be indicated in the following claims.

In the accompanying drawings, in which is shown one of various possible embodiments of the mechanical features of this invention,

Figure 1 is a side elevation on an enlarged scale of approximately the upper half of a pocket lighter constructed in accordance with the invention,

Figure 2 is a vertical sectional view through the lighter through substantially the widest part thereof, also showing the parts enlarged,

Figure 3 is a cross sectional view on the same scale as Figures 1 and 2 and taken on the line 3—3 of Figure 2.

Figure 4 is a plan view, on a smaller scale, of the lighter as seen from the top in Figure 1,

Figure 5 is a view, on a smaller scale, of the bottom plate of the lighter as seen from the bottom of Figure 2.

Figure 6 is a plan view of the top wall and mechanism-containing well of the lighter, showing the parts on the same scale as in Figure 1,

Figure 7 is a horizontal sectional view taken on the line 7—7 of Figure 2,

Figure 8 is a fragmentary vertical sectional view similar to the upper portion of Figure 2 but showing the finger piece depressed and the snuffer raised,

Figure 9 is a fragmentary sectional view taken on the line 9—9 of Figure 8,

Figure 10 is an isometric view of one of the two shells which together form the fuel tank,

Figure 11 is an isometric view of the finger piece member, and

Figure 12 is an isometric view of the snuffer member and ratchet rack.

Similar reference characters refers to similar parts throughout the several views of the drawings.

Referring now more particularly to Figures 1, 2, 3, and 10, I provide a fuel tank 20 which desirably consists of a pair of shells 21 of the shape indicated in Figure 10 suitably fastened together as by solder. The shells 21 may be produced in quantity by pressing them out of sheet metal with a die. The fuel tank 20 has a bottom wall 22 having a pair of orifices 23 and 24. The orifice 23 is threaded and is normally closed by means of a threaded closure plug 25 having a disc-like bottom 26 provided with a knurled edge. The disc portion 26 fits in a depression 27 provided for it, which depression 27, however, is of such diameter that the knurled portion extends at the sides beyond the bottom wall 22, as is clearly shown in Figure 5, so that the closure 25 may be readily unscrewed. Liquid fuel is introduced into the tank 20 through the orifice 23 which thereafter may be closed by the closure 25, a leather washer 28 being provided in the depression 27 to form a tight seal. The threaded portion of the closure 25, as is clearly shown in Figure 2, is hollow and receives a container 29 for extra pieces of pyrophoric metal. As is better shown in Figure 3, the container 29 may comprise a cylindrical member split down the center with a closed top, as such a member is adapted to be frictionally held in the hollow portion of the closure 25 by reason of the tendency of its side walls to expand.

Again referring to Figure 2, the orifice 24 has secured in it, desirably by solder, the lower end of a tube 30. The tube 30 contains a spring 31 the upper end of which is coiled about the shank of a plunger 32 engaging a piece 33 of pyrophoric metal or other substance adapted to produce sparks. The bottom end of the spring 31 is coiled about a knob 34 formed on the upper end of a threaded member 35 adapted to be screwed into the lower end of the tube 30 which is internally threaded for that purpose. The

threaded member 35 has a knurled disc portion 36 similar to the knurled disc portion 26 and adapted to seat in a recess 37, the knurled portion of the disc 36 extending beyond the sides of the bottom wall 22, as is shown in Figure 5. Thus the screw 35, the spring 31, the plunger 32 and the pyrophoric metal 33 may be removed from the tube 30 at any time for the purpose, for example, of replacing a worn or very much reduced piece of pyrophoric metal with a fresh piece.

Referring now to Figures 2 and 3, the top of the fuel tank 20 is sealed by a top wall flange portion 40 which may be secured to the fuel tank by solder. Extending downwardly from the top wall flange portion 40, and desirably also soldered to the shells 21 of the fuel tank 20 as well as to the top wall flange portion 40, are the walls of a member 41 which forms a somewhat irregular shaped well 42, the sides and bottom of the well 42, the flange 40 and a short capped tube 43, the purpose of which will hereinafter be made apparent, forming the upper closure for the fuel tank 20.

The tube 30 extends through an opening 44 in the bottom wall of the member 41 and the upper end of the tube 30 is supported by a platform 45 extending inwardly from the flange 40, the platform having, as is best shown in Figure 6, a partial orifice 46. The tube 30 is made fast to the platform 45 and the bottom of the member 41, and the opening 44 is sealed against the escape of fuel from the tank 20 by soldering or in any other suitable manner.

Desirably integrally formed with the top wall flange portion 40 are a pair of upwardly extending side members 47, 47 which are best shown in Figures 6 and 8. Extending between these side members 47, 47, and near the front thereof, as is best shown in Figures 7 and 8, is a shaft 48, one end of which, as 49, is threaded and the other end of which has a slot therein. The threaded end 49 of the screw 48 fits in a threaded hole 50 formed in one of the side plates 47, while the other end of said screw 48 passes through an aligned hole in the other side member 47.

Referring more particularly to Figures 3 and 7, journaled on the shaft 48 so as to be freely rotatable thereon is an abrasive wheel 51 which, as is best shown in Figure 2, desirably has teeth 52 resembling ratchet teeth. The abrasive wheel 51 is in contact with the upper end of the pyrophoric metal 33 which is urged against the teeth 52 by means of the spring 31; when the abrasive wheel 51 is rotated in a clockwise direction as viewed in Figure 2, portions of the pyrophoric metal 33 are torn from the body thereof and form a shower of sparks directed to the left in said figure.

As best shown in Figures 7 and 8, there are likewise freely journaled on the shaft 48 a pair of flat side arms 54, 54 forming the forward part of a finger piece member 55. This finger piece member 55 is shown in perspective in Figure 11, and consists of the aforesaid flat side arms 54, 54 joined together by skirt portions 56 and a back 57, the arms, the skirts and the back being desirably an integral piece. As is better shown in Figures 1 and 11, resting on the top of the skirt portions 56 and the back 57 is a finger engaging portion 58 which may be fastened to the said skirt and back portions as by soldering. This finger piece portion 58 closes over part of the space between the two skirt portions 56 and the back wall 57. Referring now to Figure 8, a member 59 is secured to the inside of the skirt portions 56, 56 and the finger portion 58, and all these parts together form a closure 60 for a spring 61. The bottom of the spring 61 fits in the tube 43 at the bottom of the well 42, while a rod 62 desirably fits inside the spring 61 extending at least part way up in it in order to prevent said spring from collapsing. It will thus be seen that the spring 61 maintains the finger piece 55 in the position shown in Figure 2, but that said finger piece may be readily depressed by pressure on the portion 58. The front ends of the arms 54, 54 are provided with holes 63, 63 through which the shaft 48 passes, and when the finger portion 58 is depressed the entire finger piece 55 swings downwardly around the shaft 48 as a pivot; the skirt portions 56 and the back 57 move into the well 42, and it is here noted that the shape of the back 57 and the skirt portions 56, 56 and the opening to the well 42 is such that in any position of the finger piece 55 the well is substantially closed, thus preventing dirt from getting into the well 42. At the same time, by the provision of the skirts 56 and the back portion 57, the user is prevented from pinching his own fingers.

As is best shown in Figures 8 and 11, extending between the skirts 56, 56 of the finger 55 is a pin 64 the ends of which fit in holes provided in said skirt portions. On this pin 64 is a roller 65 the purpose of which will be hereinafter explained. On the front of the farther arm 54, Figure 11, is a downwardly extending lug 66 the purpose of which will also be hereinafter explained. Still referring to Figure 11, opposite each other in the arms 54, 54 of the finger piece member 55 are a pair of arcuate slots 67, 67, the curve of which is drawn on a radius extending from the pivot stud 48, and through the slots 67 extends a shaft 68 (see now Figure 7) upon which is pivotally mounted a snuffer member 70.

The snuffer member which is generally designated by the numeral 70 is shown in perspective in Figure 12 and may be best comprehended from a comparison of that figure with Figures 2 and 8. It comprises a top portion 71 merging into a pair of downwardly extending side portions 72, 72 at one end, and side portions 73, 73 merging into a rounded downwardly extending front portion 74 at the other end. All the portions so far named may readily be produced from a single piece of sheet metal. The entire back portion of the snuffer member 70 fits within the side portions 54, 54 and the skirts 56, 56 of the finger piece member 55, the pin 68 passing through holes in the sides 72 of the snuffer member and being preferably journaled in a sleeve 75 (see Figure 7) which extends between said side portions 72 and is suitably expanded at the ends to hold it in position there being desirably inwardly expanded portions 76 of the side members 72 to form a wide support for the sleeve 75. Thus the snuffer member 70 is pivotally mounted on the pivot shaft 68 which in turn is fastened to the upwardly extending side members 47 provided by the top flange member 40 of the lighter, and the bearing is a wide one, making the action free and involving a minimum of friction.

Referring to Figures 7, 8, and 12, the rear portion of the top plate 71 of the snuffer member 70 is bent over at 77 and fits beneath the forwardly extending end of the finger portion 58 of the finger piece member 55. A pair of slots 78, 78 are formed in opposite sides of the downwardly extending portions 72, 72 of the snuffer

70, and the metal cut away to make these slots is forced inwardly to form seat portions 80, 80 for the reception of the roller 65 that is journaled on the pin 64 of the finger piece member 55. When the finger piece member 55 is depressed, the roller 65 will press downwardly the back side of the snuffer member 70, by engagement with the seats 80, 80, and said seats are so close to the pivot pin 68 for the snuffer member 70 that depression of the finger piece 55 to the extent indicated in Figure 8 will raise the snuffer member 70 through a considerable arc and distance. Furthermore, such movement is accompanied with very little friction by reason of the provision of the roller bearing 65. Referring to Figures 2 and 8, the bent over portion 77 forms a protective seal to prevent foreign matter being caught in the mechanism of the lighter without in any way interfering with its action. It also renders the lighter more pleasing in appearance as viewed from the top.

At the front of the snuffer member 70 and received within the downwardly extending side walls 73, 73 and the rounded front portion 74, as is clearly shown in Figures 2, 8, and 12, is a snuffer cap 81 consisting of a cylindrical member with a beveled lower lip 82. As is best shown in Figure 2, the beveled lower lip 82 of the snuffer member 81 is adapted to seat against a mating beveled portion 83 provided on an upwardly extending projection 84 formed on the top wall flange 40. In this portion 84 is a threaded opening 85 which extends into the inside of the fuel tank 20, and fitting in this opening is a threaded bushing 86 inside of which is a wick 87. The upper part of the wick 87 is normally received inside the snuffer cap 81, while the bottom thereof extends into the inside of the tank 20 which is desirably filled with cotton wool, not shown. When the finger piece 55 is depressed, the snuffer cap 81 is raised and sparks are directed by rotation of the abrasive wheel 51 on the pyrophoric metal 33 against the wick 87 so that the wick is ignited and provides a flame, the snuffer 81 being carried well out of the way by depression of the finger piece 55, as is well shown in Figure 8. When the snuffer cap 81 is in the position shown in Figure 2, the fuel is effectively sealed in the tank 20, the cap bearing firmly against the seat 83 by the pressure of the spring 61 transmitted through the roller 65 and the top of the slots 78, 78. Specific features of the portion 84 and the bushing 86 are claimed in my copending application Serial Number 359,740, hereinbefore referred to.

I have provided a device for causing rotation of the sparking wheel 51 whenever the snuffer member 70 is rocked into open position, and this device is so organized that there is no tendency of the sparking wheel 51 to rotate in the reverse direction when the parts spring back to original position, and moreover, the lighter may be lighted by only a partial movement of the finger piece 55. Referring now particularly to Figures 1, 8, and 12, extending between the side members 73 of the snuffer member 70 is a pin 88 upon which pin is mounted a spring 89, one end of which presses against the bottom of the top piece 71 of the snuffer member 70 and the other end of which is looped around portion of an arcuate ratchet rack 90. This ratchet rack is pivotally mounted upon the pin 88 and has ratchet teeth 91 which are located on the inside of the curve in engagement with a ratchet wheel 92 that is rigidly fastened to the abrasive wheel 51. The teeth 93 of the ratchet wheel, as is best shown in Figure 1, face in a direction opposite to that of the teeth 52 of the abrasive wheel 51, while the teeth 91 of the ratchet rack face in the proper direction to cause rotation of said ratchet wheel when the ratchet rack 90 is moved upwardly. One or more teeth of the ratchet rack 90 will catch one or more teeth 93 of the ratchet wheel 92 after only a limited movement of the snuffer member 70 upwardly. In fact it has been found that as many as three successive lightings of the wick 87 can be effected by a single movement of the finger piece portion 58 from its upper to its lowermost position. Nevertheless and notwithstanding, there is no tendency of the ratchet rack 90 to rotate the ratchet wheel 92 when the snuffer is moving downwardly because the respective teeth 91 and 93 readily slide over each other. Referring particularly to Figure 3, there is desirably provided a washer 94 between one arm 63 and the abrasive wheel 51 so that the abrasive wheel 51 and the ratchet wheel 92 may turn with very little friction other than that caused by the pyrophoric metal 33.

It should be observed that not only is the snuffer member 70 moved through a relatively wide arc when the finger portion 58 is moved from top to bottom, but that the size and position of the ratchet rack 90 in relation to the diameter of the ratchet wheel 92 is such that depression of the finger portion 58 results in a very considerable angular movement of the abrasive wheel 51. By a quick depression of the finger portion 58 a high velocity may be imparted to the abrasive wheel 51.

Referring now particularly to Figures 6 and 7, the ratchet rack 90 is guided laterally on one side by the edge 95 of the platform 45, so that said ratchet rack cannot directly encounter the teeth 52 of the abrasive wheel 51. The ratchet rack 90 is prevented from moving forwardly beyond a distance sufficient to allow it to clear the teeth 93 of the ratchet wheel 92 when moving downwardly by one edge 96 of the top wall flange portion 40. The downwardly extending lug 66 on the front of one of the arms 54 effectively guides the ratchet rack 90 on the other side, and prevents its teeth from catching in the front of this arm or in any other part other than the teeth 93 of the ratchet wheel 92. The spring 89 urges the teeth 91 of the ratchet rack 90 into engagement with the teeth 93 of the ratchet wheel 92, but the shape of the ratchet rack 90 and its relation to the pivots 64 and 88 and the ratchet wheel 92 is such that there is a natural tendency when the snuffer 70 is moving upwardly for the teeth 91 and 93 to engage each other. Many of the advantages of the construction shown would be retained if a friction tending to restrain turning of the ratchet rack 90 on the pin 88 were substituted for the spring 89.

As is indicated on the right hand side of Figure 1, the shells 21 preferably have chasing 97 in any attractive design formed on their outer surfaces. At each end of the fuel tank 20 is glued a piece of leather 98, and overlapping these leather portions, as is best shown in Figure 1, are pieces of leather 99 which adhere firmly to the shells 21 by reason of the chasing on said shells, the glue or other adhesive having a strong affinity for metal with an irregular surface. Thus the entire article is a leather covered article and is very attractive in appearance, and furthermore, when the leather wears out or becomes soiled, it may be stripped off and the article is still attractive in appearance

by reason of the chasing 97. The fuel tank has bulges 100 at both ends, which give it somewhat the appearance of a watch and also a very great capacity for holding fuel. The shape of the mechanism at the top of the lighter and its protective features are such that there is little tendency of any of its parts to catch in the pocket of the user, and the wide bulges 100 further form a protection to prevent catching of any of the parts in the pocket. The fuel tank shells 21 likewise desirably bulge in the other two dimensions, as shown in Figures 3 and 4.

The lighter may be operated by holding it in one hand and depressing the finger engaging portion 58 with the thumb of the same hand or with a finger, whereupon the snuffer member 70 rises, uncovering the wick 87, and the abrasive wheel 51 rotates, sending a shower of sparks from the pyrophoric metal 33 onto the wick 87, which then ignites and produces a steady flame. The lighter is easy to operate by reason of the roller 64 which eliminates friction and operation thereof produces such a strong shower of sparks owing to the rapid rotation of the sparking wheel 52 that ignition is certain even under difficult conditions by reason, among other things, of the strong box-like construction of the finger piece and snuffer. Even after long and hard usage the mechanism operates easily, there being no tendency of any part to jam or break. By reason of the long space provided for the spring 61 it can be made to have ample tension so as to maintain the cap 81 firmly against the beveled seat 83 effectively preventing evaporation of fuel when the lighter is not being used.

It will thus be seen that there has been provided by this invention an article and apparatus in which the various objects hereinabove set forth, together with many thoroughly practical advantages, are successfully achieved.

As many possible embodiments may be made of the above invention and as many changes might be made in the embodiment above set forth, it is to be understood that all matter hereinbefore set forth, or shown in the accompanying drawings, is to be interpreted as illustrative and not in a limiting sense.

I claim:

1. In construction for lighters and the like, in combination, a fuel compartment, means forming a well in the top of said fuel compartment, a wick extending through the top of said fuel compartment substantially adjacent said well, sparking apparatus related to said top adjacent said wick and adapted to throw sparks on said wick when actuated, a lever member pivotally mounted above said well and having its pivotal axis located on the side of said sparking apparatus opposite said wick, said lever member and said sparking apparatus being interrelated so that pivotal movement of said lever member actuates said sparking apparatus, a fingerpiece mounted above said well and shaped to be depressed into said well, and means interrelating said fingerpiece with said lever member so that said lever member pivots about its axis when said fingerpiece is depressed into said well.

2. In construction for lighters and the like, in combination, a fuel compartment, means forming a well in the top of said fuel compartment, a wick extending through the top of said fuel compartment substantially adjacent said well, sparking apparatus related to said top adjacent said wick and adapted to throw sparks on said wick when actuated, a lever member pivotally mounted above said well and having its pivotal axis located on the side of said sparking apparatus opposite said wick, said lever member and said sparking apparatus being interrelated so that pivotal movement of said lever member actuates said sparking apparatus, a fingerpiece mounted above said well and shaped to be depressed into said well, means interrelating said fingerpiece with said lever member so that said lever member pivots about its axis when said fingerpiece is depressed into said well, and a spring disposed within said well and holding said fingerpiece in an extended position.

3. In construction for lighters and the like, in combination, a fuel compartment, means forming a well in the top of said fuel compartment, a wick extending through the top of said fuel compartment substantially adjacent said well, sparking apparatus related to said top adjacent said wick and adapted to throw sparks on said wick when actuated, a lever member pivotally mounted above said well and having its pivotal axis located on the side of said sparking apparatus opposite said wick, said lever member and said sparking apparatus being interrelated so that pivotal movement of said lever member actuates said sparking apparatus, a fingerpiece mounted above said well and shaped to be depressed into said well, means interrelating said fingerpiece with said lever member so that said lever member pivots about its axis when said fingerpiece is depressed into said well, and a snuffer member shaped to fit over said wick secured to said lever member.

4. In construction for lighters and the like, in combination, a fuel compartment, means forming a well in the top side of said fuel compartment and closed off therefrom, a pair of spaced ear members extending above the top of said compartment adjacent said well, a wick extending through the top of said compartment, sparking apparatus located adjacent said wick and including a member rotatably mounted between said ear members, a lever member mounted between said ear members, the pivotal axis thereof being on the side of said sparking apparatus opposite said wick, means forming a connection between said sparking apparatus and said lever member so that pivotal movement of said lever member actuates said sparking apparatus to throw sparks on said wick, a fingerpiece pivotally mounted between said ear members and having its pivotal point on the same axis as the rotating member of said sparking apparatus, said fingerpiece adapted to move downwardly into said well about its pivotal point, and means forming an interconnection between said fingerpiece and said lever member so that downward movement of said fingerpiece into said well pivots said lever member upwardly with respect to the top of said compartment.

5. In construction for lighters and the like, in combination, a fuel compartment, means forming a well in the top side of said fuel compartment and closed off therefrom, a pair of spaced ear members extending above the top of said compartment adjacent said well, a wick extending through the top of said compartment, sparking apparatus located adjacent said wick and including a member rotatably mounted between said ear members, a lever member mounted between said ear members, the pivotal axis thereof being on the side of said sparking apparatus opposite said wick, means forming a connection between said sparking apparatus and said lever member so that pivotal movement of said lever member

actuates said sparking apparatus to throw sparks on said wick, a fingerpiece pivotally mounted between said ear members and having its pivotal point on the same axis as the rotating member of said sparking apparatus, said fingerpiece adapted to move downwardly into said well about its pivotal point, means forming an interconnection between said fingerpiece and said lever member so that downward movement of said fingerpiece into said well pivots said lever member upwardly with respect to the top of said compartment, and a snuffer member shaped to fit about said wick and connected to the end portion of said lever member.

6. In construction for lighters and the like, in combination, a fuel compartment, means forming a well in the top side of said fuel compartment and closed off therefrom, a pair of spaced ear members extending above the top of said compartment adjacent said well, a wick extending through the top of said compartment, sparking apparatus located adjacent said wick and including a member rotatably mounted between said ear members, a lever member mounted between said ear members, the pivotal axis thereof being on the side of said sparking apparatus opposite said wick, means forming a connection between said sparking apparatus and said lever member so that pivotal movement of said lever member actuates said sparking apparatus to throw sparks on said wick, a fingerpiece pivotally mounted between said ear members and having its pivotal point on the same axis as the rotating member of said sparking apparatus, said fingerpiece adapted to move downwardly into said well about its pivotal point, means forming an interconnection between said fingerpiece and said lever member so that downward movement of said fingerpiece into said well pivots said lever member upwardly with respect to the top of said compartment, and a spring disposed within said well and pressing against said fingerpiece.

7. In construction for lighters and the like, in combination, a fuel compartment, means forming a well in the top side of said fuel compartment and closed off therefrom, a pair of spaced ear members extending above the top of said compartment adjacent said well, a wick extending through the top of said compartment, sparking apparatus located adjacent said wick and including a member rotatably mounted between said ear members, a lever member mounted between said ear members, the pivotal axis thereof being on the side of said sparking apparatus opposite said wick, means forming a connection between said sparking apparatus and said lever member so that pivotal movement of said lever member actuates said sparking apparatus to throw sparks on said wick, a fingerpiece pivotally mounted between said ear members and having its pivotal point on the same axis as the rotating member of said sparking apparatus, said fingerpiece adapted to move downwardly into said well about its pivotal point, means forming an interconnection between said fingerpiece and said lever member so that downward movement of said fingerpiece into said well pivots said lever member upwardly with respect to the top of said compartment, and a spring disposed within said well and pressing against said fingerpiece, said spring being spaced from the axis of the rotating member of said sparking apparatus to hold said fingerpiece in an extended position.

8. In construction for lighters and the like, in combination, a fuel compartment, means forming a well in the top side of said fuel compartment and closed off therefrom, a pair of spaced ear members extending above the top of said compartment adjacent said well, a wick extending through the top of said compartment, sparking apparatus located adjacent said wick and including a member rotatably mounted between said ear members, a lever member mounted between said ear members, the pivotal axis thereof being on the side of said sparking apparatus opposite said wick, means forming a connection between said sparking apparatus and said lever member so that pivotal movement of said lever member actuates said sparking apparatus to throw sparks on said wick, a fingerpiece pivotally mounted between said ear members and having its pivotal point on the same axis as the rotating member of said sparking apparatus, said fingerpiece adapted to move downwardly into said well about its pivotal point, means forming an interconnection between said fingerpiece and said lever member so that downward movement of said fingerpiece into said well pivots said lever member upwardly with respect to the top of said compartment, a snuffer member shaped to fit about said wick and connected to the end portion of said lever member, and a resilient member disposed within said well and pressing against said fingerpiece to hold said fingerpiece in its extended position substantially above said well.

9. In construction for lighters and the like, in combination, a fuel compartment, means forming a well in the top side of said fuel compartment and closed off therefrom, a pair of spaced ear members extending above the top of said compartment adjacent said well, a wick extending through the top of said compartment, sparking apparatus located adjacent said wick and including a member rotatably mounted between said ear members, a lever member mounted between said ear members, the pivotal axis thereof being on the side of said sparking apparatus opposite said wick, a rack pivotally connected to said lever member adjacent the rotating member of said sparking apparatus and extending into said well, means interrelating said rack with said rotating member so that when said lever member pivots about its axis away from said sparking apparatus said rotating member is rotated, a fingerpiece mounted between said ear members above said well on the side of the axis of said lever member opposite from said sparking apparatus, and means forming a mechanical connection between said fingerpiece and said lever member so that pivotal movement of said lever member is effected when said fingerpiece is depressed into said well to move said lever member away from said sparking apparatus.

10. In construction for lighters and the like, in combination, a fuel compartment, means forming a well in the top side of said fuel compartment and closed off therefrom, a pair of spaced ear members extending above the top of said compartment adjacent said well, a wick extending through the top of said compartment, sparking apparatus located adjacent said wick and including a member rotatably mounted between said ear members, a lever member mounted between said ear members, the pivotal axis thereof being on the side of said sparking apparatus opposite said wick, a rack pivotally connected to said lever member adjacent the rotating member of said sparking apparatus and extending into said well, means interrelating said rack with said rotating member so that when said lever member pivots

about its axis away from said sparking apparatus said rotating member is rotated, a fingerpiece mounted between said ear members above said well on the side of the axis of said lever member opposite from said sparking apparatus, means forming a mechanical connection between said fingerpiece and said lever member so that pivotal movement of said lever member is effected when said fingerpiece is depressed into said well to move said lever member away from said sparking apparatus, and a snuffer member secured to said lever member shaped and positioned to fit over said wick when said lever member is in its lowered position.

11. In construction for lighters and the like, in combination, a fuel compartment, means forming a well in the top side of said fuel compartment and closed off therefrom, a pair of spaced ear members extending above the top of said compartment adjacent said well, a wick extending through the top of said compartment, sparking apparatus located adjacent said wick and including a member rotatably mounted between said ear members, a lever member mounted between said ear members, the pivotal axis thereof being on the side of said sparking apparatus opposite said wick, a rack pivotally connected to said lever member adjacent the rotating member of said sparking apparatus and extending into said well, means interrelating said rack with said rotating member so that when said lever member pivots about its axis away from said sparking apparatus said rotating member is rotated, a fingerpiece mounted between said ear members above said well on the side of the axis of said lever member opposite from said sparking apparatus, means forming a mechanical connection between said fingerpiece and said lever member so that pivotal movement of said lever member is effected when said fingerpiece is depressed into said well to move said lever member away from said sparking apparatus, and resilient means disposed within said well and adapted to press against said fingerpiece.

12. In construction for lighters and the like, in combination, a fuel compartment, means forming a well in the top side of said fuel compartment and closed off therefrom, a pair of spaced ear members extending above the top of said compartment adjacent said well, a wick extending through the top of said compartment, sparking apparatus located adjacent said wick and including a member rotatably mounted between said ear members, a lever member mounted between said ear members, the pivotal axis thereof being on the side of said sparking apparatus opposite said wick, a rack pivotally connected to said lever member adjacent the rotating member of said sparking apparatus and extending into said well, means interrelating said rack with said rotating member so that when said lever member pivots about its axis away from said sparking apparatus said rotating member is rotated, a fingerpiece mounted between said ear members above said well on the side of the axis of said lever member opposite from said sparking apparatus, means forming a mechanical connection between said fingerpiece and said lever member so that pivotal movement of said lever member is effected when said fingerpiece is depressed into said well to move said lever member away from said sparking apparatus, a snuffer member secured to said lever member shaped and positioned to fit over said wick when said lever member is in its lowered position, and a spring member disposed within said well and pressing against said fingerpiece.

13. In construction for lighters and the like, in combination, a fuel compartment, means forming a well in the top side of said fuel compartment and closed off therefrom, a pair of spaced ear members extending above the top of said compartment adjacent said well, a wick extending through the top of said compartment, sparking apparatus located adjacent said wick and including a member rotatably mounted between said ear members, a lever member mounted between said ear members, the pivotal axis thereof being on the side of said sparking apparatus opposite said wick, means forming a connection between said sparking apparatus and said lever member so that pivotal movement of said lever member actuates said sparking apparatus to throw sparks on said wick, a fingerpiece pivotally mounted between said ear members and having its pivotal point on the same axis as the rotating member of said sparking apparatus, said fingerpiece adapted to move downwardly into said well about its pivotal point, and means forming a pin and slot connection between said fingerpiece and said lever member so that downward movement of said fingerpiece into said well pivots said lever member upwardly with respect to the top of said compartment.

14. In construction for lighters and the like, in combination, a fuel compartment, means forming a well in the top side of said fuel compartment and closed off therefrom, a pair of spaced ear members extending above the top of said compartment adjacent said well, a wick extending through the top of said compartment, sparking apparatus located adjacent said wick and including a member rotatably mounted between said ear members, a lever member mounted between said ear members, the pivotal axis thereof being on the side of said sparking apparatus opposite said wick, means forming a connection between said sparking apparatus and said lever member so that pivotal movement of said lever member actuates said sparking apparatus to throw sparks on said wick, a fingerpiece pivotally mounted between said ear members and having its pivotal point on the same axis as the rotating member of said sparking apparatus, said fingerpiece adapted to move downwardly into said well about its pivotal point, means forming a pin and slot connection between said fingerpiece and said lever member so that downward movement of said fingerpiece into said well pivots said lever member upwardly with respect to the top of said compartment, and a snuffer member shaped to fit about said wick and connected to the end portion of said lever member.

15. In construction for lighters and the like, in combination, a fuel compartment having a well formed in the top side thereof, a wick extending from said fuel compartment adjacent said well, sparking apparatus adjacent said wick, a pair of levers pivotally mounted above said well and adapted to move into said well, and means interrelating said sparking apparatus with said levers whereby actuation of said levers operates said sparking apparatus.

CARL JULIUS LAGERHOLM.