Jan. 1, 1952 J. M. ADAMS 2,580,499

CIGARETTE LIGHTER

Filed May 12, 1950

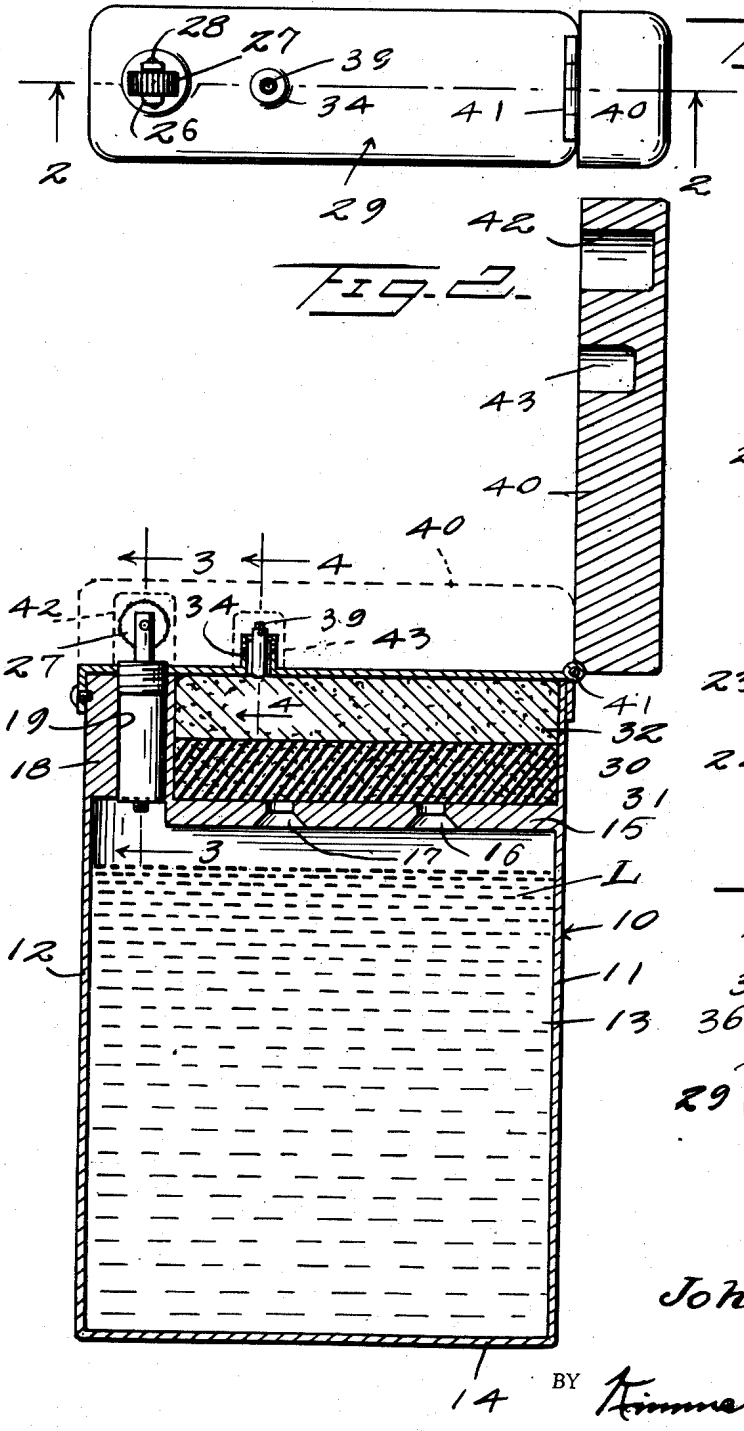

FIG. 1

FIG. 2

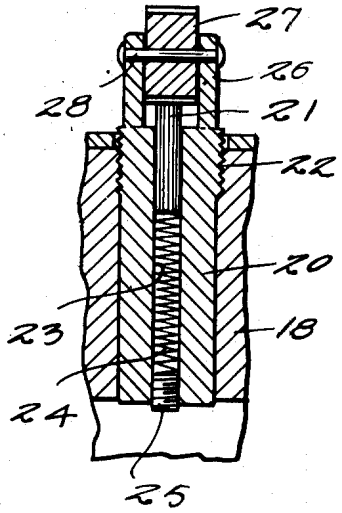

FIG. 3

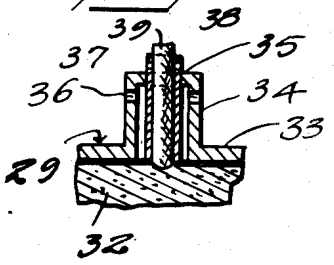

FIG. 4

INVENTOR

John M. Adams

BY Kimmel & Crowell

ATTORNEYS

Patented Jan. 1, 1952

2,580,499

UNITED STATES PATENT OFFICE

2,580,499

CIGARETTE LIGHTER

John M. Adams, Atlanta, Ga.

Application May 12, 1950, Serial No. 161,643

3 Claims. (Cl. 67—7.1)

1

This invention relates to pyrophoric devices.

An object of this invention is to provide a cigarette lighter which embodies the use of a liquid reservoir adapted to feed fuel to an absorbent pad and wick chamber with which the wick is associated. Preferably the reservoir is formed of substantially transparent material so that the amount of fuel in the reservoir will be readily visible.

Another object of this invention is to provide in a device of this kind means whereby air will be permitted to enter the pad chamber so that the fuel will readily feed into the chamber from the reservoir.

A further object of this invention is to provide in a device of this kind a wall between the reservoir and pad chamber which is formed with a pair of spaced apart openings so that fuel may flow through one opening from the reservoir to the pad chamber and air may flow from the pad chamber through the other opening into the reservoir. A sponge formed of rubber air foam or similar material is disposed in the pad chamber and has the characteristic of expanding when saturated with liquid so that the sponge will also act as a valve which, when saturated, will cut off communication between the reservoir and chamber so that the absorbent pads will not become over-saturated with liquid.

With the above and other objects in view, my invention consists in the arrangement, combination and details of construction disclosed in the drawings and specification, and then more particularly pointed out in the appended claims.

In the drawings:

Figure 1 is a plan view of a pyrophoric device constructed according to an embodiment of this invention.

Figure 2 is a sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a fragmentary sectional view taken on the line 3—3 of Figure 2.

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

Referring to the drawing, the numeral 10 designates generally a reservoir which is formed of opposite end walls 11 and 12, opposite side walls 13, and a bottom wall 14. An inner wall 15 is fixed within the reservoir or receptacle 10 being disposed between the sides 13 and extending from the end wall 11 to a point short of the end wall 12. The inner wall 15 is provided with a pair of spaced and countersunk openings 16 and 17, the purpose for which will be hereinafter described.

2

A block 18 is fixed between the side walls 13 and to the end wall 12, and is formed with an opening 19 extending downwardly into the reservoir 10. The opening 19 provides a means whereby the reservoir may be filled with liquid and also provides a means for mounting the housing 20 of a flint 21. The housing 20 is constructed in the form of a plug which is threaded as at 22 into the upper portion of the body or block 18, and the housing 20 is formed with a vertically disposed bore 23 within which the flint 21 is slidable. A spring 24 is disposed in the bore 23 and is tensioned by means of a threaded plug 25. The upper end of the plug or closure member 20 is provided with a pair of upstanding ears 26 between which an abrading wheel 27 is rotatably mounted on a shaft 28 which extends through the ears 26. A cap 29 engages over the upper end of the reservoir 10 and closes the chamber 30 which is formed above the inner wall 15. An absorbent body 31 is disposed in the reservoir 30 engaging on the upper side of the wall 15 and may be formed out of sponge rubber such as air foam or the like which has the inherent characteristic of very substantial expansion when saturated with liquid, and a second absorbent member 32 is also mounted in the chamber 30 engaging on the outer side of the sponge 31. The absorbent member 32 is constructed out of felt or fibrous and absorbent material.

The top wall 33 of the cap 29 has extending upwardly therefrom a tube or nipple 34 which is provided with an upper end wall 35 and with holes 36 below the end wall 35. A tube 37 extends through the top wall 35 being fixed in the top wall 35 and is formed with holes 38. The tube 37 provides a guide and holder for a wick 39 which extends downwardly through the tube 37 and contacts with the fibrous absorbent member 32. A cap generally designated as 40 is hingedly carried by the cap 39 as indicated at 41 and comprises a relatively solid body which is formed with a recess 42 within which the abrading member is adapted to be received and is also provided with a second recess or socket 43 within which the nipple 34 is adapted to be received. The holes 36 in the nipple 34 provide a means whereby air may enter chamber 30 about the guide tube 37 in order that when the reservoir 10 is tilted either to the right or the left as viewed in Figure 2, a liquid L in reservoir 10 will flow through the lowermost one of the two openings 16 and 17. The uppermost one of the openings 16 and 17 will admit air from chamber 30 into

reservoir 10. Preferably the reservoir 10 is formed of substantially transparent material such as plastic or the like so that the amount of liquid within the reservoir can be readily determined without unscrewing the plug 20.

In the use of this device the reservoir 10 is filled by removing the plug 20. The plug is then reinserted so as to close the bore 19, and the absorbent members 31 and 32 are moistened with the lighter fluid by tipping the reservoir 10 to the right or the left as viewed in Figure 2. The liquid will run through opening 17 if this is the lower opening into chamber 30, and air in chamber 30 will flow reversely from this chamber into reservoir 10 through upper opening 16. The moisture of upper absorbent member 32 will flow by capillary attraction to wick 39. The provision of the openings 38 in guide tube 37 will assure sufficient oxygen being fed to wick 39 so that this wick will not readily be extinguished in a draft.

It will be noted from the foregoing description that there is herein provided a lighter, more particularly for cigars, cigarettes and the like uses, which has a greater than usual fuel capacity as compared to the usual pocket lighters and wherein the fuel is contained within a transparent portion of the device whereby the supply can readily be ascertained at a glance. Furthermore, the construction is such that transfer of the fuel into the wick chamber is effected automatically merely by tipping or turning the device from vertical to either horizontal or reverse position, as would ordinarily happen when the device is carried in the pocket of the user. A further feature is that means is provided whereby excess amount of fuel feed to the wick chamber is prevented without use of release valves or similar working parts, thus at the same time by elimination of such working parts providing greater fuel space without increase in overall dimensions of the lighter.

What is claimed is:

1. A lighter comprising a housing formed of opposite side, opposite end and upper and lower walls, an inner wall dividing said housing into a lower reservoir and an upper absorbent chamber, a block extending inwardly from one end wall and said top wall, said block having an opening communicating with said reservoir and forming a filler opening, a plug threaded in said opening, an abrading member rotatably carried by said plug, a spring-pressed flint carried by said plug and engaging said abrading member, said inner wall having a pair of spaced openings communicating said reservoir with said chamber, each opening serving as an air vent when the lighter is tilted in a direction such that the other serves as a pouring opening, inner and outer absorbent members in said chamber, said inner member being comprised of a material having an expansion factor when substantially saturated such as to close and seal said openings in said inner wall, a wick, and means supporting said wick with a portion thereof projecting above said upper wall and with a portion thereof projecting into said chamber for contact with said absorbent means.

2. A lighter comprising a housing formed of opposite side, opposite end and upper and lower walls, an inner wall dividing said housing into a lower reservoir and an upper absorbent chamber, a block extending inwardly from one end wall and said top wall, said block having an opening communicating with said reservoir and forming a filler opening, a plug threaded in said opening, an abrading member rotatably carried by said plug, a spring-pressed flint carried by said plug and engaging said abrading member, said inner wall having a pair of spaced openings communicating said reservoir with said chamber, each opening serving as an air vent when the lighter is tilted in a direction such that the other serves as a pouring opening, inner and outer absorbent members in said chamber, said inner member being comprised of a material having an expansion factor when substantially saturated such as to close and seal said openings in said inner wall, a wick, a tube extending upwardly from said upper wall and formed with air intake openings above said upper wall, a wick supporting tube carried by said first tube, and a wick in said wick tube projecting into said chamber.

3. A lighter comprising a housing formed of opposite side, opposite end and upper and lower walls, an inner wall dividing said housing into a lower reservoir and an upper absorbent chamber, a block extending inwardly from one end wall and said top wall, said block having an opening communicating with said reservoir and forming a filler opening, a plug threaded in said opening, an abrading member rotatably carried by said plug, a spring-pressed flint carried by said plug and engaging said abrading member, said inner wall having a pair of spaced openings communicating said reservoir with said chamber, absorbent means in said chamber, an absorbent pad of air-foam sponge rubber between said absorbent means and said inner wall, said pad having an expansion characteristic such as to automatically close said pair of openings when said pad is substantially near saturated, a wick, and means supporting said wick with a portion thereof projecting above said upper wall and with a portion thereof projecting into said chamber for contact with said absorbent means.

JOHN M. ADAMS.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,512,885	Archambeau	June 27, 1950

FOREIGN PATENTS

Number	Country	Date
100,850	Austria	Aug. 25, 1925