Nov. 26, 1957 F. W. BRYANT 2,814,190

PYROPHORIC LIGHTER

Filed Jan. 11, 1955

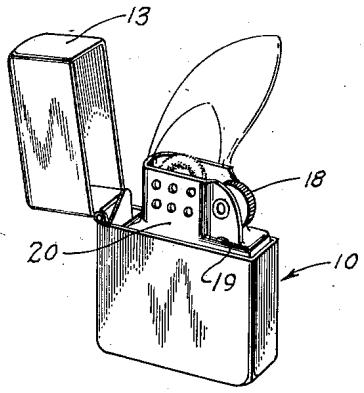

Fig. 1

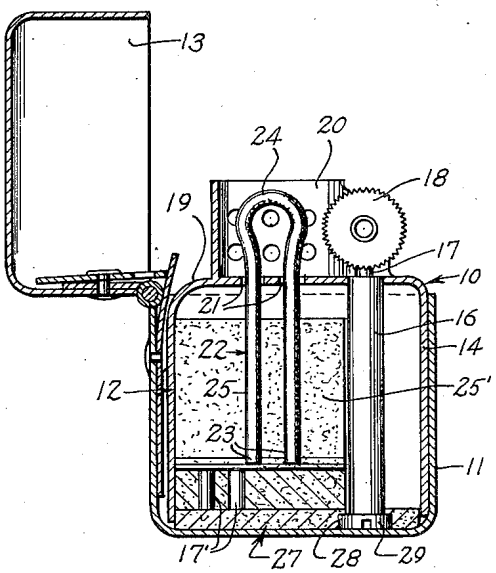

Fig. 2

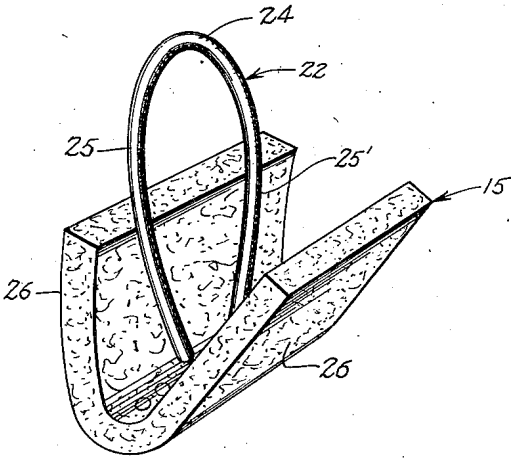

Fig. 4

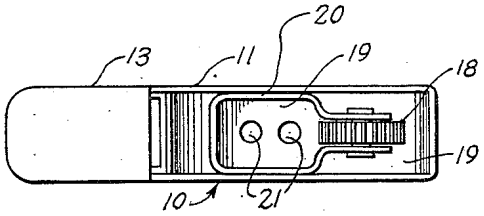

Fig. 6

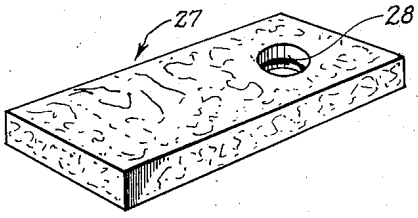

Fig. 5

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2,814,190

Patented Nov. 26, 1957

2,814,190

PYROPHORIC LIGHTER

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Application January 11, 1955, Serial No. 481,066

1 Claim. (Cl. 67—7.1)

This invention relates to pyrophoric lighters and more particularly to the construction and operation of the wick employed therein, and it consists in the constructions, arrangements and combinations herein described and claimed.

The cardinal object of the invention resides in the fabrication of a wick in the form of an elongated absorbent body bent intermediate the length thereof to form a loop and presenting a pair of leg members which are housed in the fuel chamber of the lighter, one leg member being positioned in alignment with the abrasive wheel for creating the spark for igniting the wick, the other leg being in direct alignment with the first leg member, but removed therefrom, the first leg member thus intercepting charred flint dust created by the abrasive wheel and maintaining the second leg member free of flint dust or carbon deposits.

A further object of the invention is the provision of a wick having a vertically positioned bight portion within the combustion chamber of the lighter, one vertical leg of the bight portion protecting a second leg thereof from flint dust accumulation, thus insuring ignition of the second leg, the flame developed following the contour of the bight portion and thereby forming a flame which is strong and of substantial area.

A still further object of the invention is the provision of a lighter wherein the wick of the lighter is in the form of a loop thereby eliminating loose or frayed ends within the combustion chamber, thus preventing flooding of the combustion chamber which results in lighter failure.

Additional objects, advantages and features of invention will be apparent from the following description considered in conjunction with the accompanying drawing, wherein,

Figure 1 is a perspective view of the lighter embodying my construction of wick.

Figure 2 is a vertical section through the lighter.

Figure 3 is a top plan view thereof with the wick removed.

Figure 4 is a perspective view of a liquid gaseous absorbing pad and illustrating the position of the leg members of the wick, the pad, and

Figure 5 is a perspective view of a closure pad for the igniting unit.

In the present instance I have illustrated and described the wick as embodied in a conventional pocket lighter, but the invention is not so limited, since the principle may be embodied in table or other types of lighter devices.

Reference is first made to Figures 1 and 2, wherein a lighter **10** is shown, consisting of a housing **11** having an open top for reception of the igniting unit **12** which is removably retained within the housing. The housing **11** includes a hinged closure **13**, spring-tensioned to hold the closure in open and closed positions, as is customary.

The igniting unit **12** comprises a casing **14** which is open at the bottom to receive an absorbent pad **15**, for storage of lighting fluid. The casing **14** is also provided with a tube **16** for supporting a flint **17** against an abrasive wheel **18** which is rotatably mounted upon the wall **19** of the casing. Also mounted upon the wall **19** there is a chimney or combustion chamber **20** which functions in the usual manner.

The wall **19** is provided with a pair of apertures **21** of appropriate diameter, arranged in spaced longitudinal relation, in direct alignment with the periphery of the abrasive wheel **18**, said apertures being positioned approximately medially of the combustion chamber **20**.

A wick **22** of elongated form and constructed from woven or braided asbestos is employed, the free ends **23** of which are threaded downwardly through respective apertures **21** formed in the top wall of the casing, so as to occupy positions within the casing **14**. Thus, a bight portion **24** is formed in the wick, the leg portions **25** and **25'** of which are frictionally retained within the apertures **21**. Preferably the bight portion is of a height stopping on a line with the upper edge of the combustion chamber or at a level slightly higher than the upper periphery of the abrasive wheel **18**.

As best seen in Figure 4, the pad **15** is of U-shaped formation, the side walls **26** readily receiving the leg portions **25** and **25'** of the wick therebetween when the pad is inserted through the open bottom of the casing **14**. The pad **15** will secure the legs of the wick against displacement and insure thorough saturation of the wick with lighting fluid.

A rectangular absorbent base or pad **27** closes the open bottom of the casing **14** and is apertured at one end as at **28** for reception of the lower end of the tube **16**. The securing element or screw **29** for tensioning the flint **17** will secure the pad in proper position within the casing. The pad **15** may be formed with pockets for storing additional flints **17'**.

When filling the unit **12** with lighting fluid, the unit **12** is removed from the housing **11** and held in an inverted position. The pad **27** may be flexed in the direction of the screw **29** so as to expose the pad **15**. Lighting fluid may then be applied to the pad **15** until properly saturated, the walls **26** transferring fluid to the leg portions **25** and **25'** as well as the bight portion **24**.

The free end of the pad **27** is then released and returned to close the open bottom of the casing **14**. The pad **27** obviously prevents seepage of fluid into the housing **11** when replaced therein.

From experience, it has been found that lighters embodying a single wick, loose or frayed ends are inherent which tend to provide an over abundance of fluid in the combustion chamber which contributes to lighter failure; also, where a single wick is employed, when the abrasive wheel is actuated, flint dust accumulates on the wick and the aperture through which the wick passes, which is another reason for lighter failure. However, by forming the wick as a closed loop or bight portion, the leg **25'** of the wick which is in direct line with the abrasive wheel, will intercept flint dust so that the leg **25** will remain clean and free of any deposits and will therefore be properly lighted; and when so ignited, the flame will follow the contour of the bight portion producing a flame which is strong and of substantial area.

While I have shown and described a preferred form of the invention, this is by way of illustration only, and I consider as my own all such modifications in construction as fairly fall within the scope of the appended claim.

I claim:

In a pyrophoric lighter, a housing having an open top, an igniting unit positioned within said housing and including a casing having an open bottom portion, an absorbent pad mounted in said casing, a tube extending through said casing, a flint supported by said tube, an abrasive wheel rotatably supported by said casing and engaging said flint, said casing further including a top wall provided with a

pair of spaced apart apertures therein, said apertures being arranged in direct alignment with the periphery of the abrasive wheel, said apertures being spaced inwardly from the ends of the top wall, a wick of substantially U-shape including a pair of spaced parallel legs extending through said apertures and extending down into said casing, said wick further including an upper curved bight portion, the top of said bight portion lying in a plane which is at substantially the same level as the top of the abrasive wheel, said pad being of U-shape so as to provide spaced apart wall portions for receiving the legs of the wick therebetween when the pad is inserted through the open bottom of the casing, said pad serving to secure the legs of the wick against displacement and insuring thorough saturation of the wick with lighting fluid, a rectangular absorbent base closing the open bottom of the casing and being apertured at one end for receiving the lower end of said tube, a securing element for securing the base within said casing, the walls of said pad serving to transfer fluid to the legs of the wick, the leg of the

wick which is in direct line with and closest to the abrasive wheel serving to intercept flint dust so that the other leg will remain clean and free of any deposits and will therefore be properly lighted, and when so lighted, the flame will follow the contour of the bight portion to produce a flame which is strong and of substantial area.

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