March 12, 1957 HANS-HUBERT QUANDT 2,784,581

WICK ASSEMBLY

Filed Oct. 18, 1954

FIG. 1

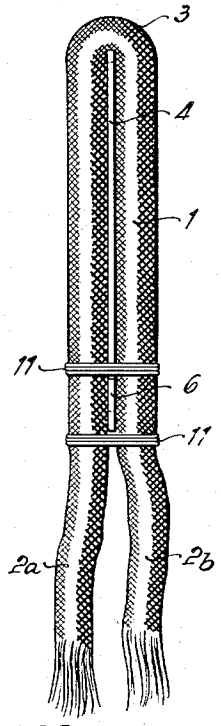


FIG. 2

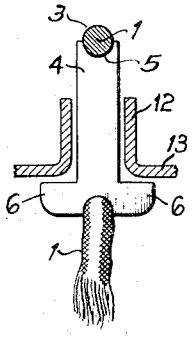


FIG. 3

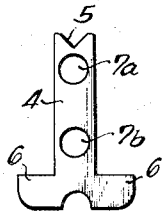


FIG. 4

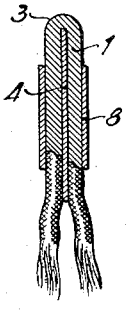
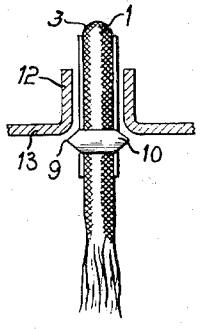


FIG. 5



INVENTOR
HANS-HUBERT QUANDT.

BY

DEZSOE STEINHERZ
HIS ATTORNEY.

United States Patent Office 2,784,581 Patented Mar. 12, 1957

2,784,581

WICK ASSEMBLY

Hans-Hubert Quandt, Karlsruhe, Germany, assignor to Rudolf Mohr, Karlsruhe, Germany

Application October 18, 1954, Serial No. 462,651

Claims priority, application Germany October 20, 1953

6 Claims. (Cl. 67—64)

This invention relates to a wick assembly, particularly for lighters.

The known wicks used in lighters are pulled through a wick guide out of the fuel tank. One end of the wick lies in the fuel tank, from which the fuel is passed by way of the wick to the burning portion formed by the other end of the wick. This arrangement has several disadvantages, one of which resides in the tendency of the material of the wick to disintegrate at the exposed free end. In lighters having a sealing cap the separated fibers enter the joint of the cap intended to extinguish the flame and to seal the lighter against an evaporation of fuel. In the joint of the cap the fibers permit of a leakage of fuel vapor. In other lighter construction, e. g. where the ignition is effected by an electrically heated incandescent body, individual threads of the wick may contact and damage the incandescent body. A catalytic effect utilized for ignition may also be impaired by fibers from the wick, which may cause poisoning.

It is an object of the invention to provide a wick assembly in which the tendency of the wick to disintegrate and give off individual fibers at the burning portion is substantially eliminated.

It is another object of the invention to provide a wick assembly which comprises means for positively locating the wick to determine the height of its exposed portion.

It is another object of the invention to provide a wick assembly which facilitates the replacement of the wick in the fuel tank.

It is another object of the invention to provide a wick assembly in which the heat of the flame produced at the burning portion is utilized in an improved manner for preheating the fuel on its way from the fuel tank through the wick to the burning portion, in order to improve the gasification of the fuel and promote the formation of a soot-free flame.

It is another object of the invention to provide a wick assembly in which the wick itself is arranged as heat insulation between the wick holder and a heat conductive member arranged to preheat the fuel.

With these and other objects in mind it is a feature of the invention to provide a wick assembly comprising a looped wick and a wick holder surrounding the loop intermediate the top bend and its limb ends.

It is another feature of the invention to provide a wick assembly comprising a support which is of greater rigidity than the looped wick and extends between the two wick limbs in engagement therewith and with the inside of the top bend of the wick.

It is another feature of the invention to provide in a wick assembly a stop member fixed to the wick and laterally outwardly projecting therefrom intermediate the top burning portion and the lower end of the wick.

It is another feature of the invention to provide a wick assembly comprising heat conductive means extending from the burning portion of the wick along the latter through the wick holder to conduct heat from the flame to the lower parts of the wick. These lower parts of the wick are preferably arranged as heat insulation between the wick holder and said heat conductive means.

According to the invention the wick extends from its one end, arranged in the fuel tank, through the wick holder, is formed into a bend constituting the burning portion at the top, and returns with its other end through the wick holder into the fuel tank. In a wick thus arranged any detrimental effect of individual threads is eliminated and the burning portion is formed by a bend, from which no fibers tend to separate.

The manipulation of the wick is facilitated by the support, which may consist of a flat strip, e. g. of metal, of higher heat conductivity and rigidity than the wick, and around which the wick is bent in the manner described hereinbefore. To prevent any undesired dislocation of the wick the support may be formed at least at its upper end with a recess, e. g. with a notch, or with holes through which the wick is passed. To replace the wick, the wick assembled with the support is pushed into the wick guide from below. To ensure the desired height of the wick a stop member may be provided, e. g. by forming the support strip in the form of a T.

Various means may be employed to hold the wick and supporting strip together. As has been mentioned the wick may be pulled through holes formed in the strip. Alternatively the wick bent over the support may be placed into a sleeve, which extends through the wick guide, e. g. of a lighter. Instead of the sleeve, a ring may be provided which is pressed flat after it has been placed on the wick. The flat portions thus obtained serve as stop members to provide for the desired height of the wick. Finally it is within the scope of the invention to connect the wick and support by a thread, wire or the like or by tying the wick ends below the support into a knot.

A wick assembled according to the invention can be replaced easily. The height of the wick is limited by the stop and the user of the lighter provided with the novel wick is prevented from pulling out one wick end or prolonging the burning portion of the wick by pulling it out partially. That practice is known to shorten the burning time owing to the increase in fuel consumption, which is objectionable just as the formation of a soot-forming flame.

Several illustrative embodiments of the invention are shown in the drawing, in which:

Fig. 1 is a diagrammatical side elevation showing the wick assembly on an enlarged scale.

Fig. 2 is a front elevation showing the wick with the support and the adjacent parts of a fuel tank shown in section.

Fig. 3 is a front elevation showing a modification of the support.

Fig. 4 is a longitudinal sectional view showing a wick assembly in which the wick and support are held together by a wick holder sleeve.

Fig. 5 is a view similar to Fig. 4 and shows a wick assembly in which the wick and support are held together by a flat-pressed wick holder ring.

The wick 1 consists in the manner known of material of relatively low heat conductivity and is arranged according to the invention with both ends 2*a* and 2*b* (Fig. 1) within the fuel tank, the top of which is indicated at 13 in Figs. 2 and 5. The burning portion of the looped wick 1 consists of the top bend 3 and for this reason has no tendency to disintegrate into fibers.

The support for the wick thus looped consists of a strip 4 of metal of relatively high heat conductivity and rigidity in comparison to the wick 1. The latter is bent over and connected to the support. To prevent a dislocation the upper part of the support 4 may be formed with a recess, e. g. a notch 5, which engages and receives the inside portion of the bend 3. Instead of or in addi-

tion to that recess the support may be formed with holes 7*a* and 7*b* through which the wick is pulled (Fig. 3). The assembly comprising the wick 1 and support 4 is stuck into the wick guide 12 of a fuel tank of a lighter. The wick guide 12 may at the same time form a wick holder. To determine the height of the burning portion and to prevent the wick from being pulled out the support 4 is provided or formed with a stop 6, e. g. by being formed like an inverted T, whose crosspiece engages the inside of the top 13 of the fuel tank (Fig. 2).

Instead of the wick guide 12, the wick holder may consist of a separate member connecting the wick 1 and support 4. That separate wick holder may consist of a thread or wire 11 tied around the limbs of the wick. Other forms of wick holders may comprise a sleeve 8 fitting around the wick limbs (Fig. 4) or a ring 10 (Fig. 5), which is compressed to form projections 9 serving as stops engaging the inside of the top 13 of the fuel tank. To prevent the wick from being pulled through the sleeve or ring, the same may be formed with internal spikes not visible in the drawing.

The heat conductive strip 4 will conduct heat from the flame produced at 3 to the lower parts of the limbs of the looped wick 1 to preheat the fuel therein. At the same time the limbs of the wick are arranged as heat insulation between the wide side faces of the strip 4 and the wick holder 8, 10 or 12, to reduce the heat transefr from the strip 4 to the wick holder.

I claim:

1. In a lighter, in combination a wick guide having a bore therethrough, and an exchangeable wick assembly comprising a wick bent sharply around the end of a strip-like wick support with the parts of the wick at opposite sides of the bend extending downwardly along the strip-like support, said support being fabricated of a material of high heat conductivity and the strip-like support being smaller in width than the bore in the wick guide and the support with the wick bent therearound being inserted into the bore of the wick guide from the underside thereof with the bent part of the wick projecting above the top of the wick guide and forming the burning point of the wick, the wick assembly being provided with an enlargement spaced from said burning point and of a size greater than said bore, said enlargement limiting the extent to which the wick assembly can be inserted into the bore and thus determining the height of the burning point of the wick above the wick guide.

2. Assembly as claimed in claim 1, wherein the wick support consists of a T-shaped metal strip, the wick being bent around the end of its vertical limb and the transverse limbs constituting the enlargement for limiting the extent to which the wick assembly can be inserted into the bore of the wick guide.

3. Assembly as claimed in claim 2, in which the wick support is provided with at least one hole through which at least one of the limbs of the wick passes.

4. Assembly as claimed in claim 1, in which the end of the wick support about which the wick is bent is provided with a recess for retaining the wick from sliding transversely of said end.

5. Assembly as claimed in claim 1, having a sleeve fitting around the bent wick and the wick support to hold the wick and wick support assembled together.

6. Assembly as claimed in claim 1, wherein the wick and wick support are held together by a surrounding ring which is compressed to form laterally and outwardly extending stops to constitute said enlargement.

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