May 1, 1934. K. HUMPOLETZ 1,957,014

PETROLEUM WICK BURNER

Filed Nov. 9, 1929

Fig. 1

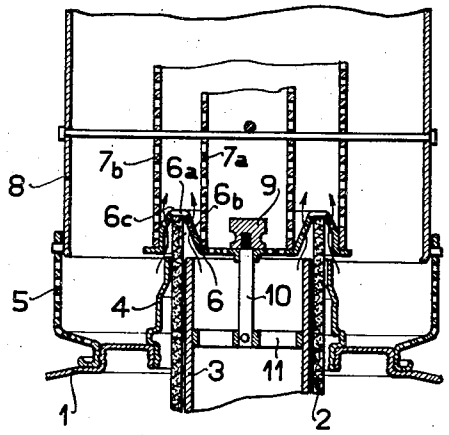


Fig. 2

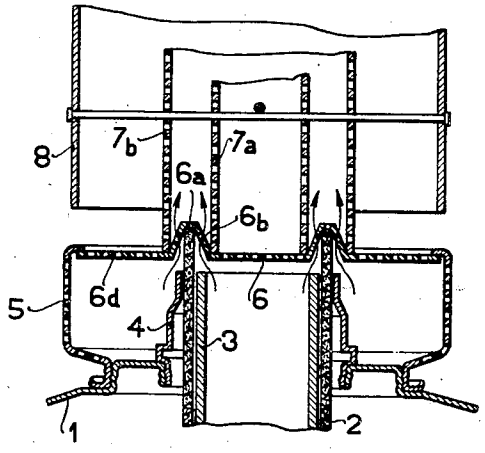
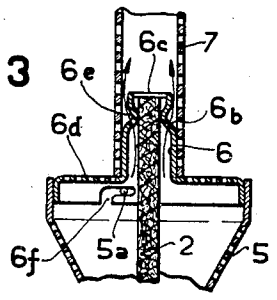


Fig. 3



K. Humpoletz
INVENTOR

By: Marks & Clerk
Attys.

Patented May 1, 1934 1,957,014

UNITED STATES PATENT OFFICE

1,957,014

PETROLEUM WICK BURNER

Karl Humpoletz, Vienna, Austria, assignor to the firm of Lampen- und Metallwarenfabriken R. Ditmar Gebrüder Brünner A. G., Vienna, Austria, a joint-stock company of Austria

Application November 9, 1929, Serial No. 406,075
In Austria November 10, 1928

1 Claim. (Cl. 158—94)

This invention relates to petroleum wick burners for non-luminous flame of the type wherein a flame regulator surrounds the top end of the wick projecting out of a wick guide and carries a combustion chamber enclosing the flame. The flame regulator is provided with one or more apertures above which the flame burns, which flame is prevented by said flame regulator from striking back to the portion of the wick between said regulator and the wick guide.

In arrangements hitherto known said flame regulator rests loosely upon the top end of the wick and it is, therefore, difficult to secure a correct position of the regulator relatively to the wick. When the regulator is in an incorrect position excess air may then pass into the flame between the flame regulator and the top end of the wick, thereby causing soot-bearing strips in the flame.

The invention has for its object to fix the flame regulator so that it acts as a stop for the travel of the wick. By raising the wick, the upper end of the latter strikes against the flame regulator held in correct position whereby the top end of the wick is enlarged and fills completely the apertures of the regulator, so that passing of an uncontrolled amount of excess air into the flame is automatically prevented.

Some modifications of devices for fixing the position of the flame regulator are illustrated in the accompanying drawing. In the drawing Fig. 1 is a sectional elevation of the device, Fig. 2 is a sectional elevation of a modified form of the device. Fig. 3 is a sectional elevation of another modified form of the device, in which the flame regulator is secured to a stationary part of the burner.

1 denotes the uppermost part of the fuel reservoir, 2 the round wick, 3 and 4 guiding tubes for the wick, 5 a ring connected to the fuel reservoir, and 6 the flame regulator. The latter is provided with apertures 6*a* which leave uncovered the top end of the wick and which are separated from each other by bridge-pieces 6*c*, and air-supply apertures 6*b*, provided in the side walls; 7*a* and 7*b* are the perforated jackets which are mounted upon the flame regulator and surround the combustion chamber. 8 is a protective casing releasably connected with the ring 5 for keeping away gusts of wind, this casing being united with the casings 7*a* and 7*b* into a unitary whole, by means for example of a transverse rod passing through them.

The travel of the wick is limited in this construction by a positioning nut 9, which can be screwed upon a guiding pin 10 rigidly connected with the inner wick guiding tube by a bearing 11.

When turning the wick 2 up, its upper margin is pressed against the apertures 6*a* of the flame regulator 6, and the latter is thereby pressed against the suitably adjusted positioning nut 9. The wick then fills the apertures 6*a* completely and bears against the bridge pieces 6*c* and against the walls of the flame regulator bounding the apertures 6*a*. In this way on the one hand the upward movement of the wick is limited, and on the other hand access of air through the apertures 6*a* is prevented. The apertures 6*b*, however, for the admission of air and petroleum vapours into the combustion chamber remain free.

The air necessary for the complete combustion of the petroleum vapours passes on the one hand through the inner air-supply pipe formed by the wick tube 3, through the perforated bottom of the flame regulator and through the holes in the jacket 7*a*, and on the other hand through the ring 5 and the outer jacket 7*b* into the combustion chamber.

For ignition purposes the jackets 7*a*, 7*b* and 8 are raised, and the wick is turned up until the edge of the wick presses against the apertures 6*a* of the flame regulator.

By rotating the positioning nut 9 the correct position of the flame regulator in relation to the wick margin can easily be effected. This position remains constant when the burner is repeatedly employed, and the flame is steady.

In the constructional example according to Fig. 2 the limiting stop is in permanent connection with the fuel reservoir 1 and is formed by the bent upper edge of the burner ring 5. The flame regulator 6 is provided with a perforated annular flange 6*d* which surrounds the latter and which strikes in its highest position against said edge of the ring 5, when the turned up wick has entered the flame regulator 6 and has closed the holes 6*a* therein, the end of the wick being somewhat expanding in breadth.

The example of construction according to Fig. 3 shows a flat wick burner, the wick of which is surrounded by a flame regulator 6, which under its upper end, which is open and bridged over by bridge pieces 6*c*, has a constriction 6*e*, and under the latter the air-admission apertures 6*b*, through which the air necessary for combustion passes into the combustion chamber surrounded by the perforated jacket 7 and to the flame, whereas uncontrolled amounts of superfluous air which would cause sooting of the flame are kept

away by the wick bearing against the constriction.

A perforated cap 6*d* forming one piece with the flame regulator 6 is provided with an angle slot 6*f*, into which a pin 5*a* projecting inwardly from the ring 5 is movable in the manner of a bayonet joint, thereby fixing the flame regulator. In this case the flame regulator does not move with the wick but is already secured in a definite position corresponding to the uppermost position of the wick during the operation of the burner.

What I claim is:—

A petroleum wick burner, comprising a fuel container, a wick guide, a wick projecting out of said guide, a flame regulator spaced from said wick guide and having the form of a sleeve embracing and extending over the top of the wick and diverging downwards, said flame regulator having apertures leaving uncovered the top end of the wick, and other apertures arranged below the first named apertures and serving for the passage of air and petroleum vapors developed from said wick, perforated walls forming a combustion chamber arranged above said flame regulator, supporting means cooperating with the flame regulator for detachably holding the flame regulator in a fixed position with respect to the wick guide and container and the last mentioned apertures opening into the combustion chamber.

KARL HUMPOLETZ.