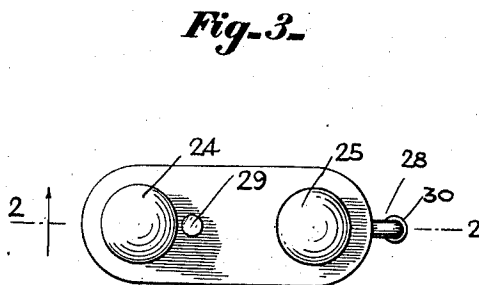
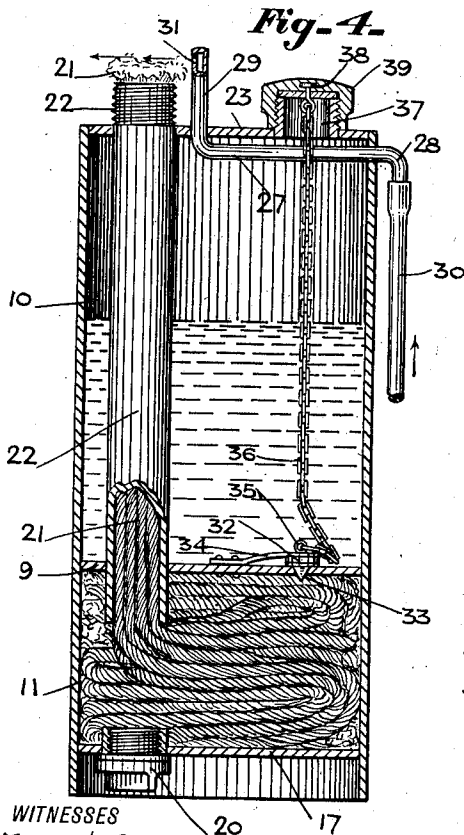
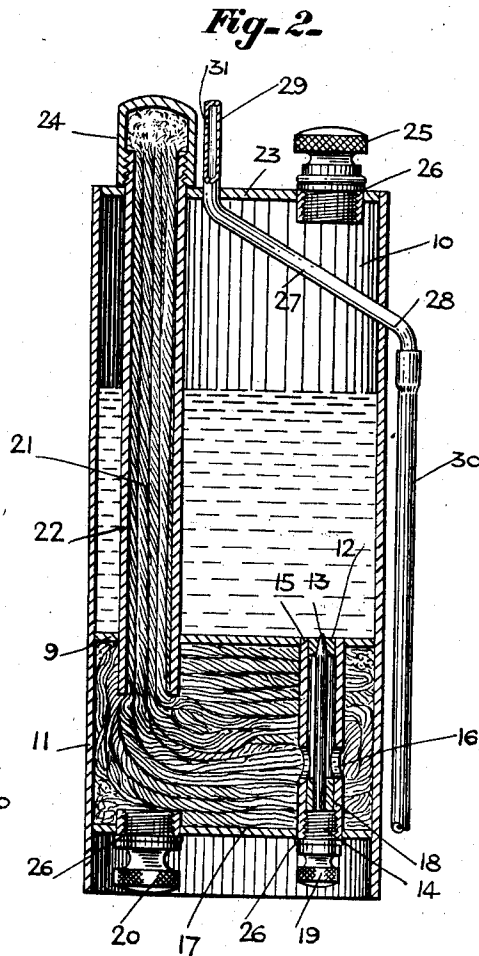
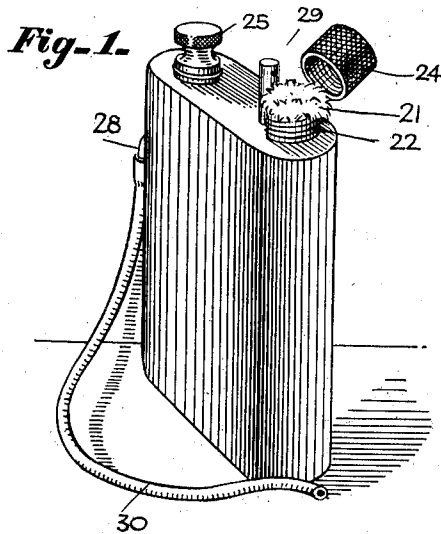


A. J. EDDY.
BLOWPIPE TORCH.
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1,044,362.

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WITNESSES
Frank C. Palmer.

E. J. Eddy

INVENTOR
Albert J. Eddy
BY *Mund Co*
ATTORNEYS

UNITED STATES PATENT OFFICE.

ALBERT JACOB EDDY, OF LONG BRANCH, NEW JERSEY, ASSIGNOR OF ONE-HALF TO
FLOYD W. GASKIN, OF LONG BRANCH, NEW JERSEY.

BLOWPIPE-TORCH.

1,044,362.

Specification of Letters Patent.

Patented Nov. 12, 1912.

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To all whom it may concern:

Be it known that I, ALBERT J. EDDY, a citizen of the United States, and a resident of Long Branch, in the county of Monmouth and State of New Jersey, have invented a new and Improved Blowpipe-Torch, of which the following is a full, clear, and exact description.

Among the principal objects which the present invention has in view are: to provide means for preventing the boiling over of fluid liquid, or super-saturation of the supply wick therefor; to provide means for manually supplying the fuel to the wick; to provide a blow-pipe, the parts whereof are protected by the body structure of the torch; and to provide simplified means for threading the wick in the torch structure.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a perspective view of a torch constructed and arranged in accordance with the present invention; Fig. 2 is a vertical section taken on the line 2—2 in Fig. 3; Fig. 3 is a top plan view of the torch; and Fig. 4 is a vertical section showing a modified form of the invention.

As seen in the drawings, the body portion of the torch is constructed in an oval shape, to form a flattened body adapted for transportation in the pocket of the user.

The body is divided by a partition 9, to form a fluid-containing chamber 10 and a wick-containing chamber 11. The chambers 10 and 11 have communication only through the orifices formed in a valve plug 12. The plug 12 is bored to provide a sharply-tapered orifice or seat for a needle-valve 13. The stem of the valve 13 is provided with a screw-threaded section 14, the threads whereof register with threads formed in the end of a tube 15. The tube 15 is furnished with side openings 16, said openings forming a communication with the chamber 11.

The tube 15 is structurally connected with the partition 9 and the bottom 17. The tube has structurally mounted therein the plug 12 and a plug 18, the former, as above stated, forming a valve-seat for the valve 13, and the latter forming a guide for the stem of the said valve, it being bored to provide a passage for said stem. The openings 16 are

located above the plug 18, as seen best in Fig. 2 of drawings. The plug 18 in this manner serves to obstruct the opening through the tube 15, and to divert the fluid into the chamber 11 when the valve 13 is removed from its seat in the plug 12. To manipulate the valve 13, the stem is provided with a milled nut 19. It will be noted that the nut 19 is raised above the lower edge of the body casing of the torch, the bottom 17 being removed from the lower edge to provide a recess for the nuts 19 and 20.

The lower end of the wick 21 is packed in the chamber 11, the strands thereof being wrapped about the tube 15 in the manner shown best in Fig. 2, and about the lower end of a tube 22. It will be noted that the tube 22 and the opening in the bottom 17, which is normally closed by the milled nut 20, are in line, which arrangement facilitates the threading of the wick 21 through the tube 22. In placing the wick in the torch, the end of the wick is passed through the opening in the bottom 17 closed by the nut 20, and into and through the tube 22, until the end of the wick is raised above the end of said tube, where the same protrudes above the top 23 of the body of the torch.

The exposed end of the wick is normally covered by a cap 24, said cap having a screw-threaded section, the threads whereof register with threads formed on the exposed end of the tube 22. When the wick is thus adjusted in the tube 22, the surplus or free end thereof is packed through the opening in the bottom 17, and arranged therein in the manner shown in the drawings, any convenient device or tool being used for packing the same. After the lower end of the wick is thus packed, the milled nut 20 is adjusted to position and tightly secured therein, to prevent any leakage of free fuel from the chamber 11.

The fuel usually employed in torches of this class is alcohol. The supply is normally carried in the chamber 10, and is introduced therein through an opening in the top 23, normally closed by a milled nut 25. Each of the nuts 19, 20 and 25 is provided with a washer 26. The washers 26 are constructed of any suitable material adapted for the particular service to which they are applied.

The principal service in which the torch is employed is for soldering or heating mate-

rials upon which the mechanic is at work. To direct the flame, and to augment the same, a blow-pipe 27 is provided. In the present instance, the blow-pipe 27 is extended through the chamber 10, and is provided with two exposed ends 28 and 29. Both ends are held as close to the body structure of the torch as possible, to avoid damage by being struck or pressed upon by extraneous objects or obstacles.

To the end 28 is usually connected a rubber pipe 30, which is used as a mouthpiece by the mechanic to direct a stream of air through the pipe 27 and the orifice 31 formed in the side of the end 29 adjacent and facing the exposed end of the tube 22. The end 29 is closed above the orifice 31. It will be noted that when the cap 24 is mounted in position, as seen best in Figs. 2 and 3 of drawings, the end 29 is fairly protected from being injuriously struck or bent.

In the operation of the invention as above described, the wick 21, being in position, is primed or saturated with alcohol from the chamber 10, by manipulating the nut 19, to move the valve 13 from the seat in the plug 12. The alcohol then flows through the tube 15 and the opening 16, to the wick 11, saturating the same, and being carried by capillary attraction to that portion of the wick which is in the tube 22, until the entire wick, up to and including the tufted end under the cap 24, is permeated with the alcohol. When the wick has become sufficiently saturated, the nut 19 is manipulated to close the valve 13 on its seat, and to thereby prevent the flow of alcohol from the chamber 10 to the chamber 11. The cap 24 is now removed, and a flame is applied to the tufted or exposed end of the wick. In the employment of the torch, the mechanic, by placing the free end of the rubber pipe 30 in his mouth, causes a steady draft of air transverse the flame from the wick 21, drawing said flame, as in a blow-pipe, to a pencil or point. When, in the course of operation, the flame indicates that the wick 21 requires an additional supply of fuel, this is accomplished by removing the valve 13, to allow a supply of alcohol in the chamber 10 to pass into the chamber 11. After each manipulation of the valve 13 to permit the flow of fuel from one chamber to the other, the valve is closed, the purpose of the present construction being to avoid the over-supply of fuel due to the expansion caused by the heat of the flame in the chamber 10, to force the fuel through the wick 21 faster than the same is consumed by the flame, resulting in the so-called "boiling over" or "fluffing off" of flaming portions of the fuel.

In the modified form shown in Fig. 4 of drawings, the tube 15 and valve 13 and parts connected therewith are dispensed with, and substituted therefor is a disk valve 32, at

the lower side of which is provided a tapered spur 33. The spur 33 fits within, to close, an orifice formed in the partition 9, which orifice is substituted for the seat in the valve plug 12 of the preferred construction, above described. In the modified form, the disk valve 32 is normally maintained in seated relation by a spring 34. To unseat the disk valve 32 to permit the transfer of the fuel from the chamber 10 to the chamber 11, there is attached to the disk valve 32, by means of an eyelet 35, a chain 36. The chain 36 is furnished with a swivel eyelet 38, as seen in Fig. 4. The eyelet 38 is secured pivotally in position upon a screw cap 39, the threads whereof register with threads formed on the extension 37. When using the modified form of the invention, the operation varies only in that, to renew the supply of fuel to the chamber 11, and the wick 21 contained therein, the cap 39 is removed, and the chain 36 connected therewith is raised until the disk valve 32 is lifted to expose the orifice normally closed by the spur 33. When the chain 36 is released, the spring 34 re-seats the disk valve 32, to close and maintain closed, said orifice.

It will be noted that any pressure due to expansion of the fluid in the chamber 10 operates to seat the disk valve 32 in closure position above the orifice in the partition 9.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. A torch such as described, having an elliptical tubular body, a partition intermediate the ends of said body to form in superposed relation a liquid fuel storage chamber and a wick storage chamber, a manually controlled valve mounted in said partition to transfer the fuel from the fuel storage chamber to the wick storage chamber, and a wick guide tube extending completely through said fuel storage chamber and opening into said wick storage chamber and beyond the end of said body to provide radiating surface within said fuel storage chamber.

2. A torch such as described, having an elliptical tubular body, a partition intermediate the ends of said body to form in superposed relation a liquid fuel storage chamber and a wick storage chamber, a manually controlled valve mounted in said partition to transfer the fuel from the fuel storage chamber to the wick storage chamber, a wick guide tube extending completely through said fuel storage chamber and opening into said wick storage chamber and beyond the end of said body to provide radiating surface within said fuel storage chamber, and a nut closed opening in the end of said wick storage chamber alined with said wick opening for feeding the wick to said tube.

3. A torch such as described, having an elliptical tubular body, a partition intermediate the ends of said body to form in superposed relation a liquid fuel storage chamber and a wick storage chamber, a manually controlled valve mounted in said partition to transfer the fuel from the fuel storage chamber to the wick storage chamber, a wick guide tube extending completely through said fuel storage chamber and opening into said wick storage chamber and beyond the end of said body to provide radiating surface within said fuel storage chamber, and a blow pipe tube mounted in and extending through said fuel storage chamber, the delivery end of said blow pipe tube being extended through the end wall of said fuel storage chamber in juxtaposed relation to the exposed end of said wick tube. 30 35 40

4. A torch such as described, having an elliptical tubular body, a partition intermediate the ends of said body to form in superposed relation a liquid fuel storage chamber and a wick storage chamber, a

manually controlled valve mounted in said partition to transfer the fuel from the fuel storage chamber to the wick storage chamber, a wick guide tube extending completely through said fuel storage chamber and opening into said wick storage chamber and beyond the end of said body to provide radiating surface within said fuel storage chamber, and a blow pipe tube mounted in and extending through said fuel storage chamber, the delivery end of said blow pipe tube being extended through the end wall of said fuel storage chamber in juxtaposed relation to the exposed end of said wick tube, the opposite end of said blow pipe tube being extended through the side wall of said chamber and disposed in parallel relation thereto. In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALBERT JACOB EDDY.

Witnesses:

CHARLES CORN,
FLOYD GASKIN.