Aug. 28, 1923. 1,466,403

F. C. KNAPP

CARBIDE SOLDERING TORCH

Filed June 22, 1922

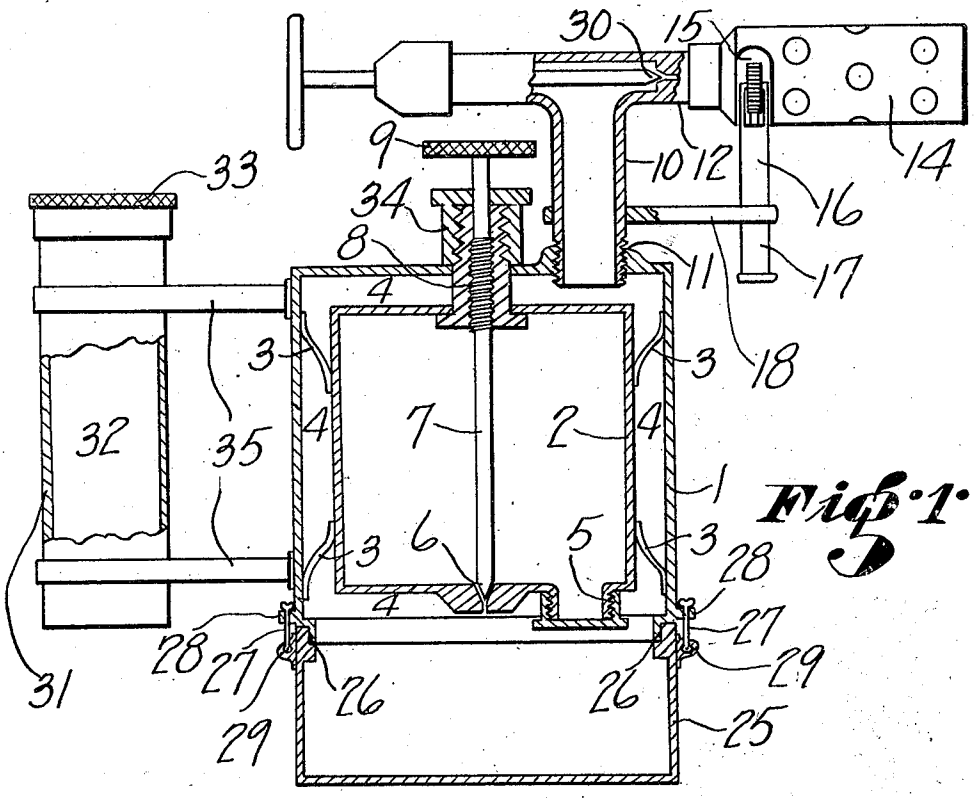


Fig. 1.

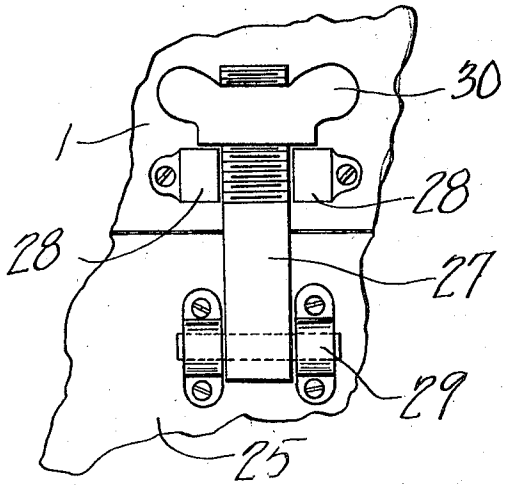


Fig. 2.

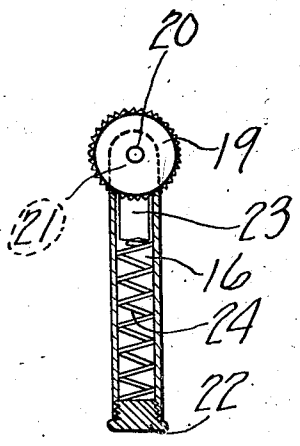


Fig. 3.

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UNITED STATES PATENT OFFICE.

FRED C. KNAPP, OF RAHWAY, NEW JERSEY.

CARBIDE SOLDERING TORCH.

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To all whom it may concern:

Be it known that I, FRED C. KNAPP, a citizen of the United States, residing in the city of Rahway and State of New Jersey, have invented new and useful Improvements in Carbide Soldering Torches, of which the following is a specification, reference being had to the accompanying drawings.

This invention is a soldering torch for the use of plumbers and other mechanics, and the object is to provide an instrument of this nature which employs calcium carbide and water for the purpose of generating acetylene as a fuel for the torch, the gas being lit by means of a spark struck from a flint or the like. Other objects and advantages will be developed in the course of this specification.

In the drawing:

Figure 1 is a vertical section through the torch.

Figure 2 is a detail of the fastening for securing the carbide tank to the casing of the torch.

Figure 3 is a detail of the lighting device.

The invention consists of a hollow body or case 1, preferably cylindrical, within which is mounted the water tank 2. The tank 2 is smaller than the outer casing on all dimensions, and is supported in position within the case 1 by brackets 3, so as to leave intervening gas chambers and passages 4 between the two. The tank 2 is entirely enclosed but is provided with a screw-capped filling port 5 at the under side, and this tank is filled by inverting it so as to bring the port 5 uppermost. A needle valve 6 is mounted in the under side of the tank 2 for allowing the water to drip downward as desired. An interiorly threaded sleeve 34 is mounted through the tops of the tank 2 and casing 1, and the valve stem 7 of the valve 6 is threaded at its upper end and passes through the sleeve 34 by means of a threaded engagement therewith indicated at 8. A knob 9 is mounted at the end of the stem 7 for turning same. The outer case 1 is open at its lower end and a tubular neck 10 is mounted through its top end by means of a threaded engagement 11, and thus an exit is provided for the gas from the passages 4. The usual blow-torch 12 with valve 13 and blast tube 14 is rigidly mounted at the top of the neck 10 and therethrough communicates with the gas passages 4. A transverse slot 15 is cut out at the under side of the back end of the tube 14, and the flint lighter 16 is mounted therein. The lighter is made up of a tube 17 supported from the neck 10 by a bracket 18. A serrated wheel 19 is journaled at 20 within a fork 21 at the top of the tube 17, so that the periphery of the wheel slightly projects laterally through the slot 15, thus giving a thumb hold on the wheel. The lower end of the tube 17 is interiorly threaded to engage a threaded cap 22. A flint 23 is supported within the tube 17 and up against the wheel 19 by means of a coil spring 24 set within the tube.

A carbide tank 25, open at the top side, is adapted to be detachably locked to the lower end of the body 1 by forming complementary slide joints 26 around their respective edges, and mounting lock bolts 27 at opposite sides, same being pivoted at 29 to the tank 25, and releasably engaging the bifurcate brackets 28 on the body 1. Thumb screws 30 threadedly engage the free ends of the bolts 27 as means for firmly locking the elements together. A handle 31 is bracketed at 35 to the case 1, and this handle may be hollow as shown at 32 and furnished with a removable cap 33, so that this hollow handle can be used as a reserve box for carbide.

In use the tank 2 is filled with water and the tank 25 with carbide. The valve 6 is opened to allow the required amount of water to flow into the tank 25. The gas generated flows up through the passages 4 through the valve 13 into the tube 14. The operator rotates the wheel 19, the serrated periphery of which strikes a spark upon the flint 23, through frictional engagement. This spark ignites the gas flowing through the tube 14. By operating the valves 6 and 13 so that more gas is generated than is consumed, a pressure is maintained in the body 1 which forces the gas out through the valve 13 with the required force and so as to burn with a blue flame.

While I have herein described a certain specific method of constructing and assembling the elements of my invention, it is understood same may be varied in minor details, not departing from the spirit of my invention as defined in the appended claims.

I claim:

1. An acetylene soldering torch, comprising a casing closed at top and open at bot-

tom; a blast tube and valve on the casing and communicating interiorly therewith, the tube having a transverse slot through its under side; a flint lighter supported from the casing and including a tube having a forked end extended within the slot, a serrated wheel journaled in the forked end of the tube and a flint supported in the tube against the serrated wheel; a substantially smaller water tank bracketed within the outer casing, and thus forming surrounding gas passages, said tank having a filling port and an outlet valve in its under side; a threaded sleeve mounted through the top ends of the inner tank and outer casing; a valve stem controlling the outlet valve in the water tank and passing up through the sleeve and being threaded for engagement therewith; a carbide tank open at top and detachably mounted to the under side of the casing; and a hollow handle attached to the casing, said handle having a removable cap.

2. An acetylene soldering torch, comprising a casing open at the bottom; a blast tube on the casing and interiorly connected therewith, same having a transverse slot through its under side; a flint lighter operatively supported within the slot of the tube and embodying a serrated wheel pressed against a flint; a relatively small water tank mounted within the casing, same having a filling port and outlet valve in its under side; a valve stem controlling the outlet valve and extended up through the tops of the tank and casing; an open topped carbide tank adapted to detachably engage the bottom of the casing; and a handle for the casing.

3. An acetylene soldering torch; comprising an enclosed water tank; a substantially larger, open bottomed casing mounted over the water tank and forming intervening gas passages; a blast tube on the casing and communicating with the said gas passages; a flint lighting device mounted in the blast tube; a carbide tank below the casing; means for filling the water tank; means for admitting water from the water tank into the carbide tank; and a handle for the apparatus.

4. In a soldering torch embodying a blast tube having a transverse slot formed therein and employing gas as a fuel, a lighting device therefor comprising a tube having a forked end extended within the slot; a serrated wheel journaled in the forked end of the tube and protruding laterally; and a flint within the tube and spring pressed against the wheel.

5. An acetylene soldering torch comprising separate water and carbide tanks and surrounding casing to form gas passages, the latter communicating with the carbide tank; a blast tube communicating with the gas passages; means for filling the water tank, means for admitting water therefrom into the carbide tank; and a handle for the apparatus.

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Witnesses:
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