

1,425,362.

F. E. BINGHAM.
BLOWTORCH.
APPLICATION FILED MAY 19, 1921.

Patented Aug. 8, 1922.

FIG. 1.

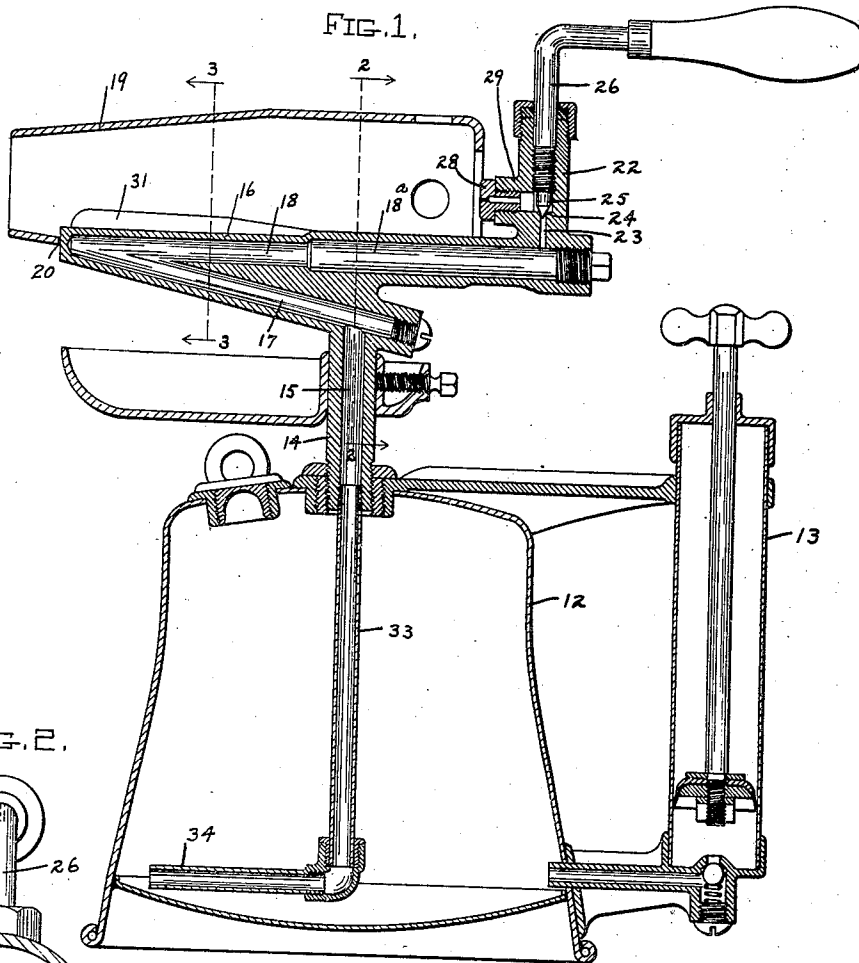


FIG. 2.

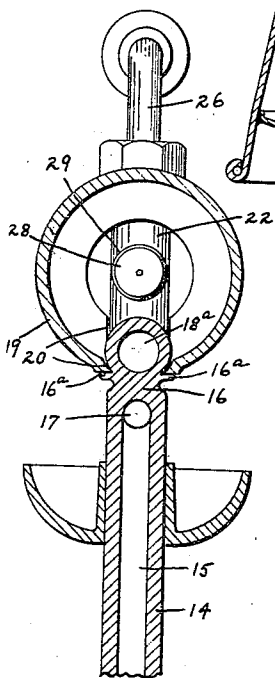
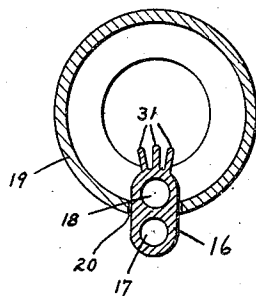


FIG. 3.



INVENTOR

F. E. Bingham

by Wright, Brown, Lundy & May

ATTORNEYS

UNITED STATES PATENT OFFICE.

FORREST E. BINGHAM, OF NEW BEDFORD, MASSACHUSETTS.

BLOWTORCH.

1,425,362.

Specification of Letters Patent.

Patented Aug. 8, 1922.

Application filed May 19, 1921. Serial No. 470,839.

To all whom it may concern:

Be it known that I, FORREST E. BINGHAM, a citizen of the United States, residing at New Bedford, in the county of Bristol and State of Massachusetts, have invented new and useful Improvements in Blowtorches, of which the following is a specification.

This invention relates to a plumber's blow torch, which includes a supply tank for gasoline, a conduit communicating therewith, a portion of the conduit constituting a gas producer, and a combustion chamber associated with the conduit and arranged to receive flame projected from the conduit burner, and to cause the flame to act on the gas produced portion of the conduit, a needle valve being provided to regulate the delivery of gas to the burner.

The invention is embodied in the improvements hereinafter described and claimed, relating to the construction of the conduit and needle valve, the arrangement of the combustion chamber relatively thereto, and to means for conducting gasoline from the bottom portion of the tank.

Of the accompanying drawings forming a part of this specification,—

Figure 1 is a vertical sectional view of a blow torch, embodying the improvements.

Figure 2 is a section on line 2—2 of Figure 1, looking toward the right.

Figure 3 is a section on line 3—3 of Figure 1, looking toward the left.

The same reference characters indicate the same parts in all of the figures.

The gasoline tank 12 and the air pump 13 associated therewith to exert air pressure on the gasoline in the tank, may be of any suitable construction.

Fixed to the top of the tank is an angular substantially T-shaped conduit including an upright shank portion 14, having a bore 15, and a substantially horizontal head portion 16, having an angular bore 17, 18, said head constituting a gas producer arranged substantially at right angles with the shank portion.

19 represents a substantially horizontal tubular combustion chamber, having a longitudinal opening 20 (Figures 2 and 3), in its lower side, occupied by a part of the head portion 16. The longitudinal axis of the combustion chamber is above the head portion, so that the latter is heated by flame projected through the chamber by the burner hereinafter described, to vaporize

liquid flowing through the angular bore, without objectionably obstructing the path of the flame. The combustion chamber is attached to the head portion, as indicated by Figure 2.

The head portion 16 is extended from the inner end of the combustion chamber, and provided with an upright conduit branch or terminal 22, having a restricted bore 23, and an upwardly facing valve seat 24.

25 represents a vertically arranged needle valve adapted to close downwardly on said seat, and provided with a shank 26 having a suitable handle which may be either a hand wheel or an arm having a hand grip.

The terminal 22 is provided with a laterally projecting burner 28 communicating with an enlargement of the bore of said terminal, above the valve seat, and arranged to project a jet of flame horizontally into and through the combustion chamber. The burner is detachably connected with a socketed nipple 29 projecting from the terminal 22, and is suitably spaced thereby from the valve seat, so that the action of the valve and valve seat is not affected by expansion and contraction due to heat at the burner.

The head portion 16 is provided with a fin or fins 31 (one being shown by Figure 1, and three by Figure 3), projecting into the combustion chamber and located in the path of the flame, said fins absorbing heat and conducting it to the bore of the head portion to facilitate the vaporization of liquid and the production of gas therein, without objectionably obstructing or retarding the jet of flame. The rear end of the bore portion 18 is preferably enlarged to form an expansion chamber 18^a for the gas generated in the head or producer, the valve-controlled bore 23 communicating with said chamber.

To the shank portion 14 of the conduit is attached a conduit extension 33, extending nearly to the bottom of the tank, and provided with a swivelled terminal 34 arranged at an angle with the extension, and adapted to swing freely thereon, so that when the tank is held in an inclined position, the terminal will move by gravity to the lowest part of the inclined tank, and take up nearly all of the gasoline.

The opening 20 is extended from the forward portion of the combustion chamber 19 to and through the rear end thereof, so that the portion of the chamber containing said

opening is sufficiently resilient to permit the edges of the opening to be sprung apart, and receive between them the larger portion of the head 16, containing the expansion chamber 18^a, and then close on the head below said larger portion. The head is provided with ears 16^a which intersect portions of the surface of the head to form notches, into which the edges of the opening 20 are adapted to spring. The combustion chamber is thus secured to the head without independent fastenings.

1 claim:—

1. A blow torch comprising a fuel tank; a substantially T-shaped conduit including an upright shank portion fixed to the tank and having a vertical bore, and a substantially horizontal head portion constituting a gas producer, arranged substantially at right angles with the shank portion, and having an angular bore and upwardly projecting fins; and a substantially horizontal combustion chamber having a longitudinal opening in its lower side, occupied by a part of the head portion and by said fins, the longitudinal axis of the chamber being above said head portion so that the latter and the fins are heated by flame in the combustion chamber, to vaporize liquid flowing through said angular bore without objectionably obstructing the path of the flame.

2. A blow torch comprising a fuel tank, a substantially T-shaped conduit including an upright shank portion fixed to the tank and having a vertical bore, and a substantially horizontal head portion constituting a gas producer, arranged substantially at right angles with the shank portion, and having an angular bore, and a substantially horizontal combustion chamber having a longitudinal opening in its lower side, occupied by a part of the head portion, the longitudinal axis of the chamber being above said head portion so that the latter is heated by flame in the combustion chamber, without objectionably obstructing the path of the flame, the head portion being extended from the inner end of the combustion chamber and provided with an upright conduit terminal having an upwardly facing valve seat, a vertically arranged needle valve cooperating with said seat, and a lateral burner above the valve seat, arranged to project a jet of

flame horizontally into and through the combustion chamber, the burner being engaged with a laterally projecting nipple on the terminal, whereby the burner is spaced from the valve seat, so that the action of the seat and valve is not affected by expansion and contraction.

3. A blow torch comprising a fuel tank; a substantially T-shaped conduit including an upright shank portion fixed to the tank and having a vertical bore, and a substantially horizontal head portion constituting a gas producer, arranged substantially at right angles with the shank portion, and having an angular bore, and a substantially horizontal combustion chamber having a longitudinal opening in its lower side, occupied by a part of the head portion, the longitudinal axis of the chamber being above said head portion so that the latter is heated by flame in the combustion chamber, without objectionably obstructing the path of the flame, the rear end of the bore in the head portion being enlarged to provide an expansion chamber communicating with the burner.

4. A blow torch comprising a fuel tank; a substantially T-shaped conduit including an upright shank portion fixed to the tank and having a vertical bore, and a substantially horizontal head portion constituting a gas producer, arranged substantially at right angles with the shank portion, and having an angular bore, and a substantially horizontal combustion chamber having a longitudinal opening in its lower side, occupied by a part of the head portion, the longitudinal axis of the chamber being above said head portion so that the latter is heated by flame in the combustion chamber, without objectionably obstructing the path of the flame, the rear end of the bore in the head portion being enlarged to provide an expansion chamber communicating with the burner, the said head portion being provided with grooves into which the edges of the opening in the combustion chamber are adapted to spring, and thereby secure the combustion chamber to the head portion.

In testimony whereof I have affixed my signature.

FORREST E. BINGHAM.