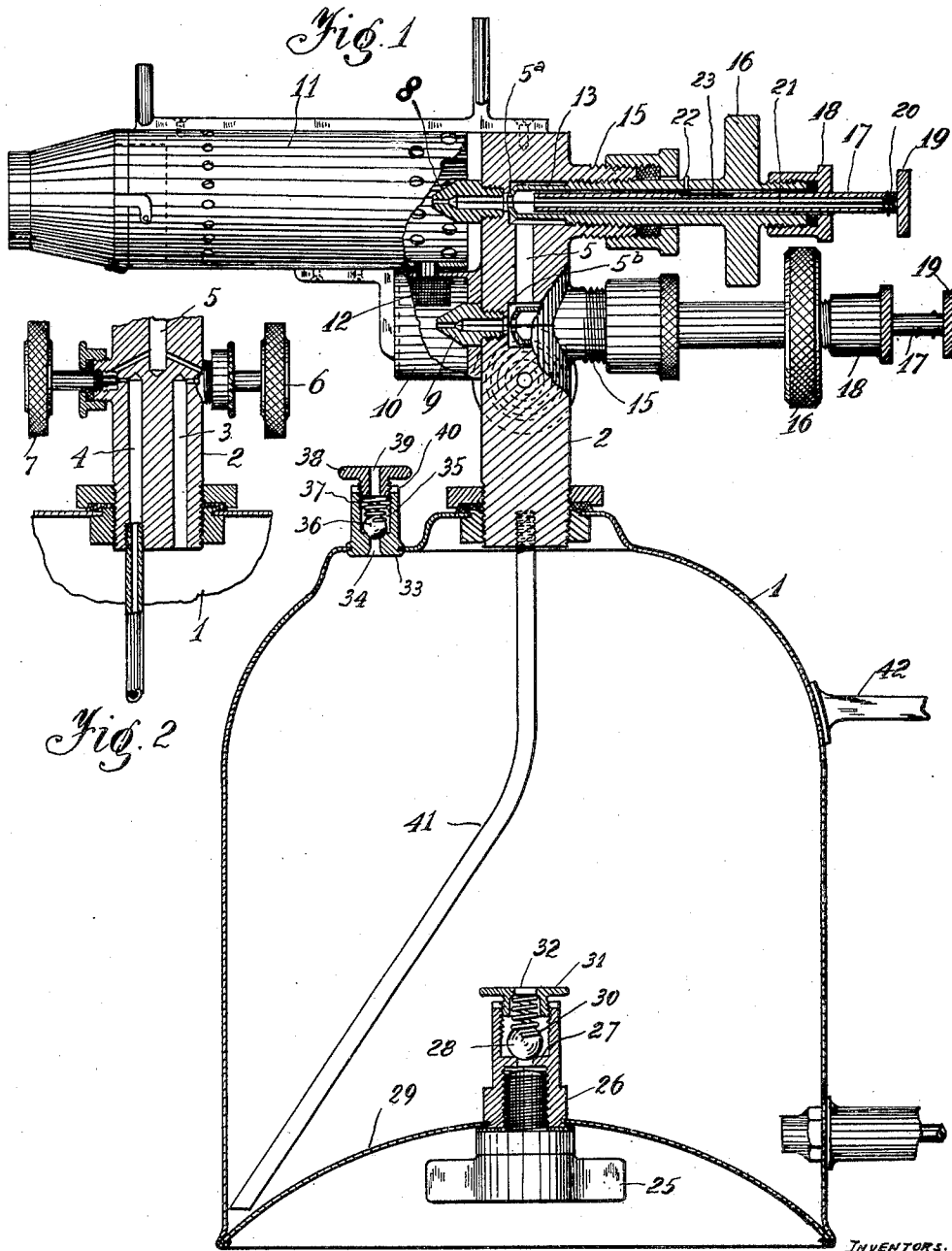


C. H. ALLEN AND J. B. ANDERSON.
 BURNER CLEANING DEVICE FOR BLOWTORCHES.
 APPLICATION FILED AUG. 5, 1920.

1,390,264.

Patented Sept. 13, 1921.



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UNITED STATES PATENT OFFICE.

CHARLES H. ALLEN AND JAMES B. ANDERSON, OF PITTSBURGH, PENNSYLVANIA.

BURNER-CLEANING DEVICE FOR BLOWTORCHES.

1,390,264.

Specification of Letters Patent. Patented Sept. 13, 1921.

Application filed August 5, 1920. Serial No. 401,347.

To all whom it may concern:

Be it known that we, CHARLES H. ALLEN and JAMES B. ANDERSON, citizens of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania have invented certain new and useful Improvements in Burner-Cleaning Devices for Blowtorches, of which the following is a specification.

This invention relates to burner cleaning devices for blow torches and more particularly to a torch adapted for utilizing liquefied gas as fuel.

One of the main objects of the invention is to provide a burner for torches so constructed as to enable the use of fuel in either gaseous or liquid form, as desired, and clean the burner during the use of the torch. Further objects will appear from the detailed description.

In the drawings:—

Figure 1 is a central vertical sectional view through a torch constructed in accordance with our invention, parts being shown in elevation.

Fig. 2 is a fragmental sectional view through the standard and associated parts.

Referring to Figs. 1 and 2, the tank 1 is provided with an opening through its top wall through which is secured, in any preferred or suitable manner a cylindrical standard 2 provided with two ducts 3 and 4 extending approximately one-third of the length of the standard. These ducts communicate, at their upper ends, with a main duct 5 extending axially of the standard, suitable valves 6 and 7 being provided for controlling communication between this main duct and the auxiliary ducts 3 and 4, respectively.

A main burner 8 is secured in the standard and communicates with duct 5 at the upper end thereof, a pilot burner 9 being positioned below the main burner and also in communication with this duct. This pilot burner is inclosed by a casing 10 depending from a perforated mixer or manifold 11 secured to the standard and extending about the main burner 8 in the known manner. An opening is provided through the top of casing 10, a suitable screen 12 being inserted in this opening, to permit lighting of the main burner from the pilot light of the pilot burner, as will be understood.

The flow of fuel from duct 5 to burner 8 is controlled by a valve 13 threaded through

a nipple 15 projecting from the standard and provided adjacent its outer end with a knurled wheel 16. This valve is of tubular construction to slidably receive a tubular member 17 open at its inner end and slidable through a packing gland 18 of suitable type provided at the outer end of the valve. A knurled disk 19 is detachably secured to the outer end of member 17 by means of a central stem 20 threaded into the outer end of the same. This stem is provided with an axial bore in which is secured the outer end portion of a fine long cleaning wire or needle 21 the inner end of which is tapered to a fine point so as to readily enter the opening of burner 8, the needle being disposed substantially coaxial with this opening as illustrated. Movement of member 17 in either direction is limited by a pin 22 secured in valve 13, the inner end of this pin projecting into a groove 23 in the outer face of member 17. By reciprocating member 17 the cleaning wire 21 may be caused to enter and effectually clean out and open the fuel opening of burner 8 and, as the wire is much smaller than this opening, this cleaning out of the fuel opening of burner 8 may be performed while the torch is in use without materially interfering with the amount of flame and heat produced. A valve and cleaning means similar to those described are provided for regulating the flow of fuel to, and cleaning, the pilot valve 9.

The bottom 29 of tank 1 is concaved to accommodate the head of a plug 25 threaded into a valve casing 26 secured through bottom 29 centrally thereof. This casing is provided with a web 27 which is centrally apertured and ground to provide a seat for a ball valve 28 normally held seated by a coil spring 30 confined between the valve and a cap 31 threaded into the upper end of casing 26, this cap being provided with a central aperture 32 through its top. A valve casing 33 is secured through the top of the tank and is provided with a bore 34 through its lower end, this bore communicating with a valve chamber 35 in which is mounted a ball valve 36 for normally closing the upper end of the bore. This valve is held seated by a coil spring 37 the upper end of which presses against a plug 38 threaded in the upper end of casing 33 and provided with an axial bore 39, this plug being secured in adjustment by a jam nut

40 so as to vary the pressure exerted by the spring on the valve to suit conditions.

In practice, the gas in liquid form is introduced into the tank through valve casing 5 26, plug 25 being removed for this purpose and replaced when the desired amount of liquefied gas has flowed into the tank. When the liquefied gas is placed in the tank, it will tend to vaporize, the gas vapor collecting 10 in the upper portion of the tank and creating sufficient pressure, within a comparatively short time, to prevent further vaporizing of the gas the greater portion of which remains in the lower portion of the tank 15 in its liquid state. A bent tube 41 is secured in the lower end of duct 4 of standard 2 and extends to within a short distance of the bottom of the tank adjacent the periphery thereof so as to be immersed in the liquid 20 gas. By opening valve 7, valve 6 being closed, the gas in liquid form may be supplied to either one or both of the burners, as desired, and by reversing this operating the gas in its gaseous form may be supplied 25 to the burners. To permit ready flow of the fuel to the main burner 8 in the event that the valve for the pilot burner is closed, duct 5 is provided with an enlargement or chamber 5^b forming a by-pass about the valve 30 body, and a similar chamber 5^a is provided at the upper end of the duct to accommodate the nose or point portion of valve 13.

There may be changes made in details of construction and arrangement of different 35 parts of the invention without departing from the field and scope of the same, and we

intend to include all such variations, as fall within the scope of the appended claims, in this application in which a preferred form only of our invention is disclosed.

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What we claim is:—

1. In a device of the character described, a burner, a valve for controlling the supply of fuel to the burner, said valve being of tubular construction, a tubular member slid- 45 able in the valve, a disk having a stem detachably secured in the outer end of said tubular member and a thin flexible cleaning wire secured in said stem and disposed in alinement with the fuel opening of the 50 burner so as to be insertible therethrough by slidably reciprocating said tubular member.

2. In a device of the character described, a burner, a valve for controlling the supply 55 of fuel to the burner, said valve being of tubular construction, a tubular member slidable in the valve, a disk having a stem detachably secured in the outer end of said tubular member and a thin flexible cleaning 60 wire secured in said stem and disposed in alinement with the fuel opening of the burner so as to be insertible therethrough by slidably reciprocating said tubular member and means to limit the inward and out- 65 ward movements of said slidable tubular member.

In testimony whereof we affix our signatures.

CHARLES H. ALLEN.
JAMES B. ANDERSON.