W. A. HINES, W. J. CURRY, J. D. MISKELLY & S. A. MARSHALL.

GAS AND OIL BURNER.

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1,112,797. Patented Oct. 6, 1914.

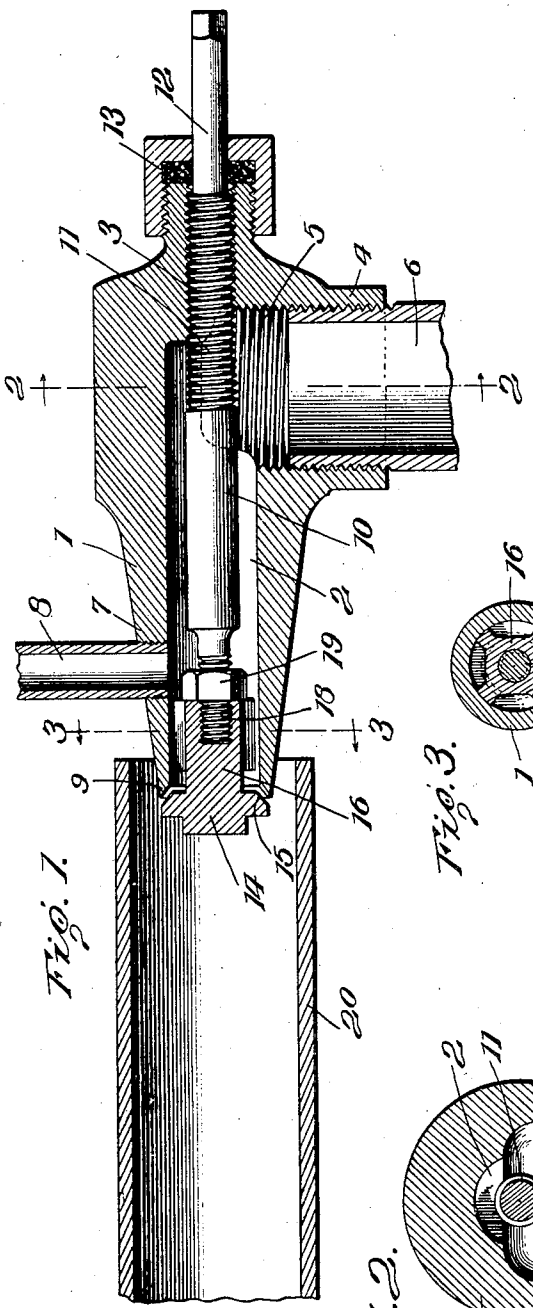


Fig. 1.

Fig. 3.

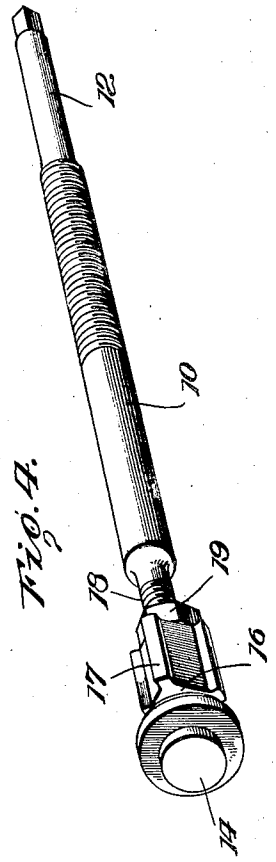


Fig. 4.

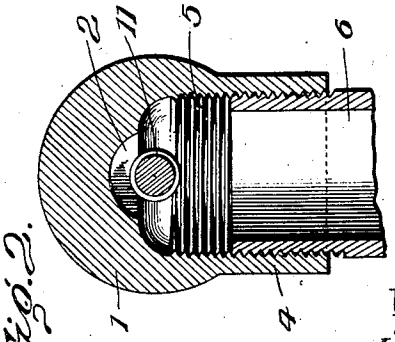


Fig. 2.

Witnesses

Inventors

W. A. Hines.
W. J. Curry.
J. D. Miskelly.
S. A. Marshall.

By

Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM A. HINES, WILLIAM J. CURRY, JOHN D. MISKELLY, AND SAMUEL A. MARSHALL, OF NEW CUMBERLAND, WEST VIRGINIA; SAID MARSHALL ASSIGNOR TO WILLIAM A. ANDREWS, OF EAST LIVERPOOL, OHIO.

GAS AND OIL BURNER.

1,112,797. Specification of Letters Patent. Patented Oct. 6, 1914.

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To all whom it may concern:

Be it known that we, WILLIAM A. HINES, WILLIAM J. CURRY, JOHN D. MISKELLY, and SAMUEL A. MARSHALL, citizens of the United States, residing at New Cumberland, in the county of Hancock and State of West Virginia, have invented certain new and useful Improvements in Gas and Oil Burners, of which the following is a specification.

This invention relates to gaseous and liquid fuel burners and has as its object to provide a burner adapted for the use of gas or liquid fuel, which burner may be readily and quickly adjusted to increase or decrease the supply of fuel and at the same time increase or decrease the jet or blast from the ignited fuel.

Another aim of the invention is to provide a burner of the type mentioned which may be readily and conveniently taken apart and its parts easily reassembled after having been cleaned or repaired, and incidently the invention aims to so construct the burner that it will consist of but very few parts assembled in such a manner as not to be liable to get out of order.

In the accompanying drawings: Figure 1 is a vertical longitudinal sectional view embodying the present invention, the same being adapted for liquid fuel. Fig. 2 is a vertical transverse sectional view on the line 2—2 of Fig. 1. Fig. 3 is a similar view on the line 3—3 of Fig. 1, the tube 20 being removed. Fig. 4 is a detail perspective view of the valve of the burner.

The burner embodying the present invention includes the usual head or casing 1 which constitutes also the valve casing of the burner. This casing 1 has the usual bore 2 which extends lengthwise thereof and is reduced and threaded at the rear end as at 3 to receive the valve stem in a manner to be presently explained. Upon its under side the casing 1 is formed or provided with a downwardly projecting tubular extension 4 interiorly threaded as at 5 to receive the end of a pipe 6 through which compressed air, steam or gas may be supplied to the burner head, it being observed that the bore 2 is in communication at its rear end with the bore of the tubular extension 4. In its upper side, the head 1 adjacent its forward end is formed with an opening 7, the wall of which is threaded to receive a pipe 8 through which oil may be supplied to the burner head in the event that the burner is to consume liquid fuel, in which event compressed air or steam will be supplied to the burner head through the pipe 6. The manner of adjusting the burner for the consumption of the gaseous fuel will presently be explained. At the forward end the bore 2 is flared, or in other words, the forward end edge of the head 1 is beveled so as to form a valve seat 9.

The valve of the burner includes a stem 10 which for a portion of its length is threaded as at 11 and adjustably fitted in the bore 3, the stem beyond its threaded portion being reduced in diameter as at 12 and being fitted through a packing gland 13 upon the rear end of the burner head. The rear end of the portion 12 of the valve stem is squared, as shown in Figs. 1 and 4, for the application of any suitable handle whereby the stem may be rotated.

The head of the valve is indicated at 14 and is beveled as at 15 to fit the valve seat 9 and this head is provided with a rearwardly extending neck 16 having radial ribs 17 which engage against the bore 2 and which serve to center the neck 16 and bevel head 15 with relation to the bore 2 and valve seat 9 respectively. The valve stem 10 at its forward end is threaded into the rear end of the neck 16 as indicated at 18 and a nut 19 is fitted upon the threaded portion 18 of the said stem and, being jammed against the end of the neck, serves to hold the parts in locked position.

The numeral 20 denotes a burner tube into which the discharge end of the burner head is to be fitted, in the manner shown in Fig. 1.

In the foregoing description of the invention it will be understood that when the burner is to consume liquid fuel, the same is supplied by way of the pipe 8, compressed air or steam being supplied by way of the pipe 6 for the purpose of atomizing the liquid fuel upon its issuance from the discharge end of the head. It will be apparent that the atomized fuel will issue in a spray between the valve head 15 and valve seat 9 and may be ignited at the outlet end of the burner tube 20. It will further be apparent that the valve may be adjusted so as to regulate the amount of fuel discharged from the burner head and that such adjustment

of the valve will also serve to increase or decrease the jet of flame.

When the burner is to be adapted for the consumption of gaseous fuel, the pipe 8 is to be disconnected and a suitable plug is to be fitted in the opening 7, thereby closing this opening, and the gaseous fuel is then to be fed to the burner head through the pipe 6 and issuance from the discharge end of the head into the burner tube 20 will draw air into the space between the said end of the burner head and the wall of the tube 20 which air will, of course, be mixed with the fuel.

Having thus described the invention what is claimed as new is:

In a fuel burner of the class described, having a burner head formed with a fuel passage therein and formed at its discharge end with a valve seat, a valve coacting with said head and having a neck extending into the passage and having radially disposed ribs, said ribs extending to the periphery of the valve, means for adjusting said valve and neck with relation to the head, a fuel supply pipe opening into said passage, a fuel supply pipe also opening into said passage rearward of the first named fuel supply pipe, and a burner tube into which the discharge end of the burner head projects, said burner tube being concentric to the discharge end of the burner head and larger than the same to permit the entrance of air, the entrance end of said burner tube being adjacent to the discharge end of the head.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM A. HINES. [L. S.]
WILLIAM J. CURRY. [L. S.]
JOHN D. MISKELLY. [L. S.]
SAMUEL A. MARSHALL. [L. S.]

Witnesses:
P. PIUZZIULI,
JOHN C. CONN.