G. W. STENHOUSE.

HYDROCARBON BURNER.

APPLICATION FILED AUG. 7, 1915.

1,176,870. Patented Mar. 28, 1916.

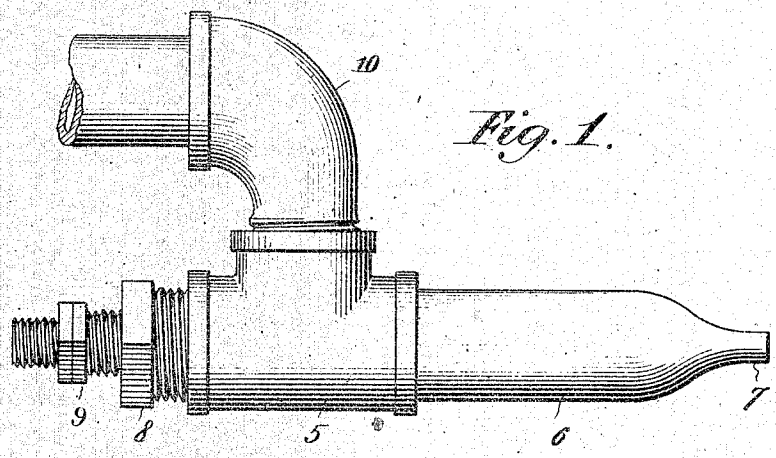


Fig. 1.

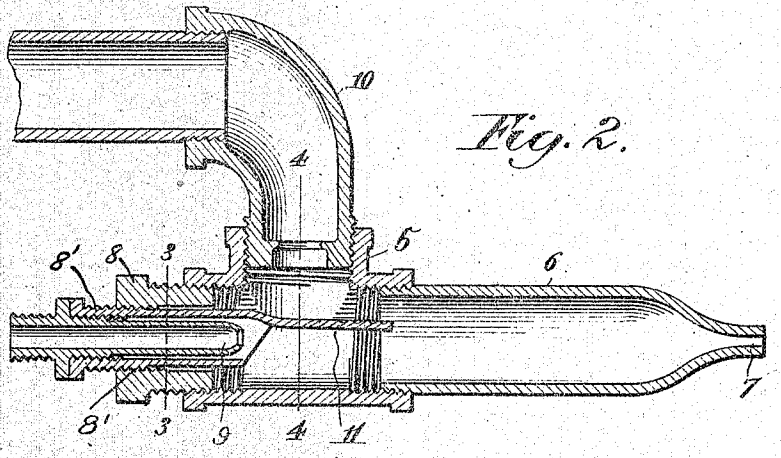


Fig. 2.

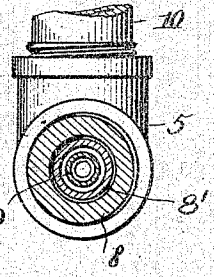


Fig. 3.

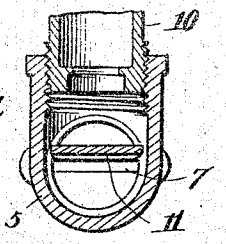


Fig. 4.

Witnesses:

C. Frink, Jr.

C. A. Parker.

Inventor,

G. W. Stenhouse.

By Victor J. Evans,

Attorney.

UNITED STATES PATENT OFFICE.

GEORGE W. STENHOUSE, OF BAYSIDE, CALIFORNIA.

HYDROCARBON-BURNER.

1,176,870. Specification of Letters Patent. Patented Mar. 28, 1916.

Application filed August 7, 1915. Serial No. 44,210.

To all whom it may concern:

Be it known that I, GEORGE W. STENHOUSE, a citizen of the United States, residing at Bayside, in the county of Humboldt and State of California, have invented new and useful Improvements in Hydrocarbon-Burners, of which the following is a specification.

The invention relates to burners, and more particularly to the class of hydrocarbon injector burners for use with boilers and furnaces.

The primary object of the invention is the provision of an oil burner of this character wherein the same will operate efficaciously and reliably for the burning of crude oil with the elimination of smoke, and which contemplates in its construction to permit it to be expeditiously and thoroughly cleaned of collected sediment when the occasion requires.

Another object of the invention is the provision of a burner of this character which is adapted to burn crude oil in connection with steam or air under pressure, and which by reason of the novel form thereof will spread the fuel or the mixture so as to afford a superior delivery and combustion without the accumulation of any hydrocarbon deposit at the nozzle or mouth of the burner, and thereby overcomes any defect incident to the use of a burner of this type.

A further object of the invention is the provision of a burner of this character which is simple in construction, thoroughly reliable and efficient in its operation, strong, durable, and inexpensive in manufacture.

With these and other objects in view, the invention consists in the construction, combination and arrangement of parts as will be hereinafter fully described, illustrated in the accompanying drawing, and pointed out in the claim hereunto appended.

In the drawing:—Figure 1 is a side elevation of a burner constructed in accordance with the invention. Fig. 2 is a longitudinal sectional view thereof. Fig. 3 is a sectional view on the line 3—3 of Fig. 1. Fig. 4 is a sectional view on the line 4—4 of Fig. 1.

Similar reference characters indicate corresponding parts throughout the several views in the drawing.

Referring to the drawings in detail, the burner comprises a union 5 in which is tapped at one end a tube forming an outer nozzle 6 provided with an elongated mouth 7 which is wider than the internal diameter of the said nozzle, while threaded in the opposite end of the union is an internally threaded nut 8 into which is tapped a tube 8′ having engaged therein a steam or air nozzle 9, the latter being adapted to be connected with a steam or air supply pipe leading from any suitable source so that the nozzle will deliver steam or air under pressure into the union 5 for co-action with the crude oil delivered therein in a manner presently described.

Tapped in the upper side of the union 5 intermediate the ends thereof is an elbow 10 which has connection with a suitable oil supply pipe leading from an oil container which is positioned at an elevation or at any suitable point remote from the burner so that crude oil will be delivered therefrom into the union 5 where it comingles with the air or steam under pressure, and under the action of the latter is discharged through the mouth 7 for ignition. The nozzle 9 through the medium of the nut 8 permits the adjustment thereof so as to position the nozzle within the union 5 to assure the perfect working of the burner and the elimination of smoke.

Formed on the inner end of the tube 8′ is a spreader plate 11 which is disposed at a slight angle within the union 5, and this plate serves to spread the air or steam and also the oil entering the said union, the plate 11 being readily adjustable by the tube 8′ which is threaded in one end of the nut, and this plate serves to assure the comingling of the steam or air and oil prior to the discharge of the fuel through the mouth 7 of the outer nozzle 6 of the burner, and thereby forms the fuel into a spray which is projected with considerable force for a relatively great distance, so that the said burner is especially adaptable for use in connection with boilers and furnaces and assures the flame reaching for a considerable distance over the surface of the boiler or within the furnace. It will be apparent that the possibility of the nozzle becoming clogged with hydrocarbon deposit is minimized and that the burner at all times is ready for use with a maximum flame capacity, the supply of steam and air and also the supply of oil being regulated in any suitable manner.

From the the foregoing description, taken in connection with the accompanying draw-

ing, the construction and manner of operation of the device will be clearly understood, and therefore a more extended explanation has been omitted.

What is claimed is:—

A burner of the class described comprising a three-way union, an outer nozzle engaged in one way of the union and having an elongated mouth, an internally threaded nut adjustably engaged in the other way in the union opposite the way receiving the said nozzle, a tube engaged in said nut and having a spreader extension, an inner nozzle tapped within said tube for delivering fluid into the path of the said spreader extension, and fluid supply means tapped in the remaining way for directing the fluid from said means on to the spreader extension.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE W. STENHOUSE.

Witnesses:

RAYMOND J. JANSSEN,

OLIVE M. STENHOUSE.