No. 703,706. Patented July 1, 1902.

J. A. MEYER.

CRUDE OIL BURNER.

(Application filed Nov. 23, 1901.)

(No Model.)

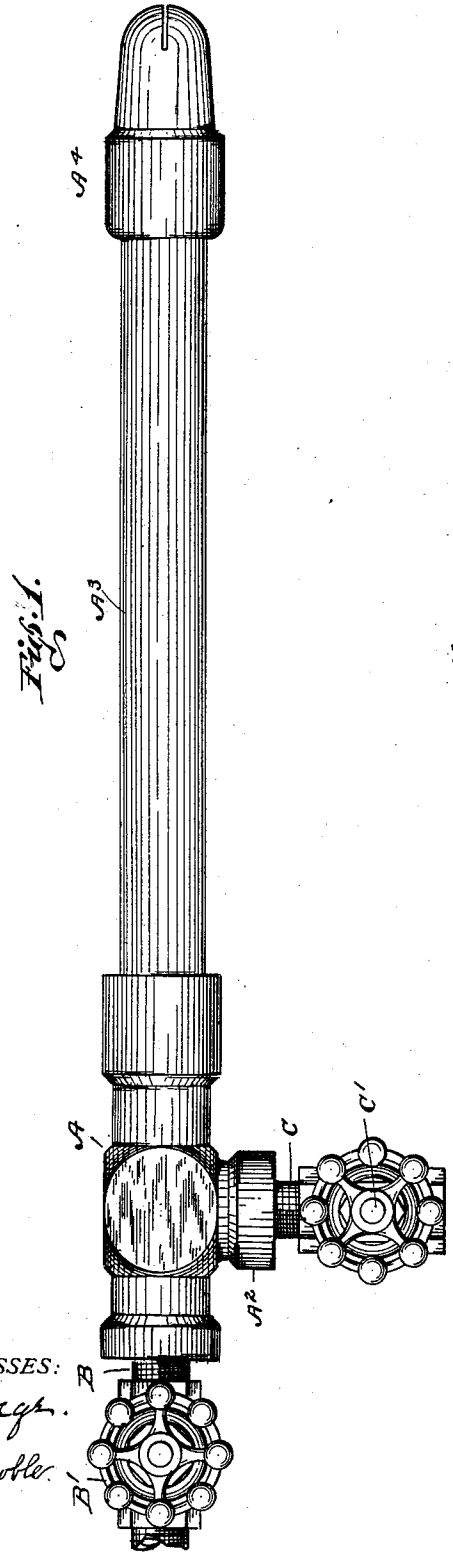


Fig. 1.

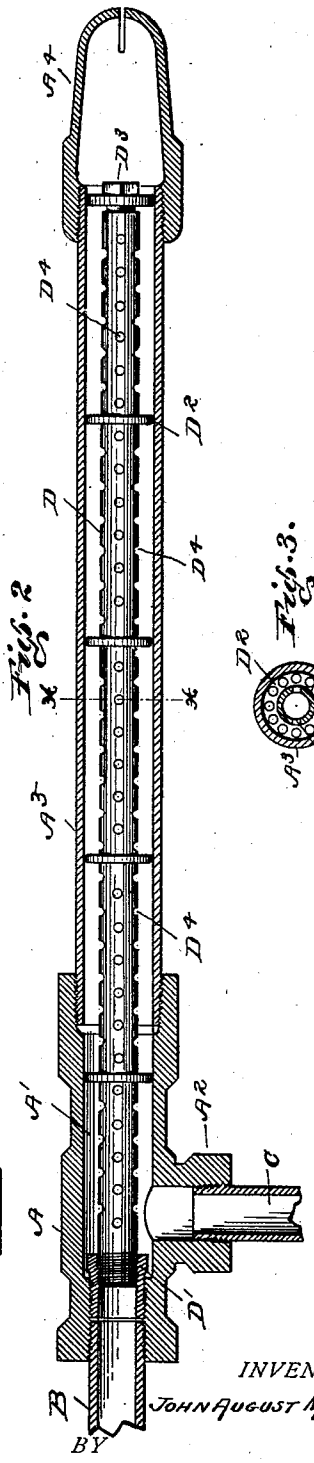


Fig. 2.

Fig. 3.

WITNESSES:

F. E. Birge.

W. W. Noble.

INVENTORS.

JOHN AUGUST MEYER

BY

E. G. Siggers & Co.

ATTORNEYS.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN AUGUST MEYER, OF SAN FRANCISCO, CALIFORNIA.

CRUDE-OIL BURNER.

SPECIFICATION forming part of Letters Patent No. 703,706, dated July 1, 1902.

Application filed November 23, 1901. Serial No. 83,468. (No model.)

To all whom it may concern:

Be it known that I, JOHN AUGUST MEYER, a citizen of the United States, residing at 128 Ferris avenue, in the city and county of San Francisco and State of California, have invented certain new and useful Improvements in Crude-Oil Burners; and I do hereby declare the following to be a full, clear, and exact description of said invention, such as will enable others skilled in the art to which it most nearly appertains to make, use, and practice the same.

This invention relates to improvements in "crude-oil burners" in which the oil is ejected by steam-pressure. This class of burners has hitherto been subject to the disadvantage of an ununiform admixture of the oil and steam, resulting in poor combustion and an inconstant steam-pressure, necessitating frequent readjustment of the burner. To overcome this disadvantage and to provide a simple effective burner is the object of this invention, which consists of an elongated barrel terminating in a nozzle or tip screwed into a T member into which the oil is properly introduced, and a perforated steam-pipe extending through the center of the said barrel with annular perforated collars disposed at intervals along the length of said steam-pipe.

In the drawings, Figure 1 is a side elevation of a burner constructed in accordance with this invention. Fig. 2 is a longitudinal cross-section of the same, the perforated steam pipe and collars thereon being shown in full lines. Fig. 3 is a vertical cross-section on the line *x x*, Fig. 2.

In the description with reference to the drawings similar letters of reference apply to similar parts throughout the various views.

In construction the invention consists of the T member A, a solid block of metal cast in the form shown having the internal bore A′, into which the steam-pipe B is screwed in the rear, and the oil-pipe C, screwed into the annular extension A^2 at the bottom, both leading into the barrel A^5. Screwed into the forward opening of the bore A′, forming a continuation of the same, is the pipe A^3, terminating in the tip A^4. Screwed into the bushing D′, screwed into the bore A′, abutting the steam-supply pipe B, is the perforated steam-pipe D, upon which at intervals are rigidly secured the perforated annular collars D^2. The end of the perforated steam-pipe D is closed by the plug D^3. The burner is preferably constructed throughout of brass or bronze, as best calculated to withstand corrosion and heating.

In the operation of the burner the best results are obtained by feeding the oil under pressure. This may be accomplished by a number of well-known methods—such as the water-lift, &c.—gravitation being unreliable. The steam blowing through the perforations D^4 in the pipe D mixes with the body of oil surrounding the same, forming an intimate admixture, dividing the oil into atomic particles, which are kept violently agitated in their passage through the perforations D^5 in the various collars D^2, issuing through the last of these into the tip A^4, from which it escapes into an atomized spray which burns without soot, the combustion being clear and transparent. In thus mixing the steam (or air) with the oil before ignition it is possible to cut the flame down to any desired volume by regulating the proportion of steam and oil respectively controlled by the valves B′ C′. It has been demonstrated that this burner can throw a flame reaching under a boiler and back through the tubes or can be shut down to a mere pilot-light, the quality of flame being the same in each instance. This is not possible in burners depending upon the mixture of the steam and oil after liberation.

Having thus described this invention, what I claim, and desire to secure by Letters Patent, is—

An oil-burner comprising the following parts, to wit: a barrel terminating in a discharge-tip, a pipe having numerous perforations and of appreciably smaller size than said barrel and located therein, perforated collars located at intervals on the perforated pipe and extending between the pipe and the barrel, means for supplying oil to the interior of the barrel and around the perforated pipe, and means for supplying steam to the interior of said perforated pipe.

In testimony whereof I have hereunto set my hand this 22d day of October, 1901.

JOHN AUGUST MEYER.

Witnesses:
BALDWIN VALE,
GEO. F. HATTON.