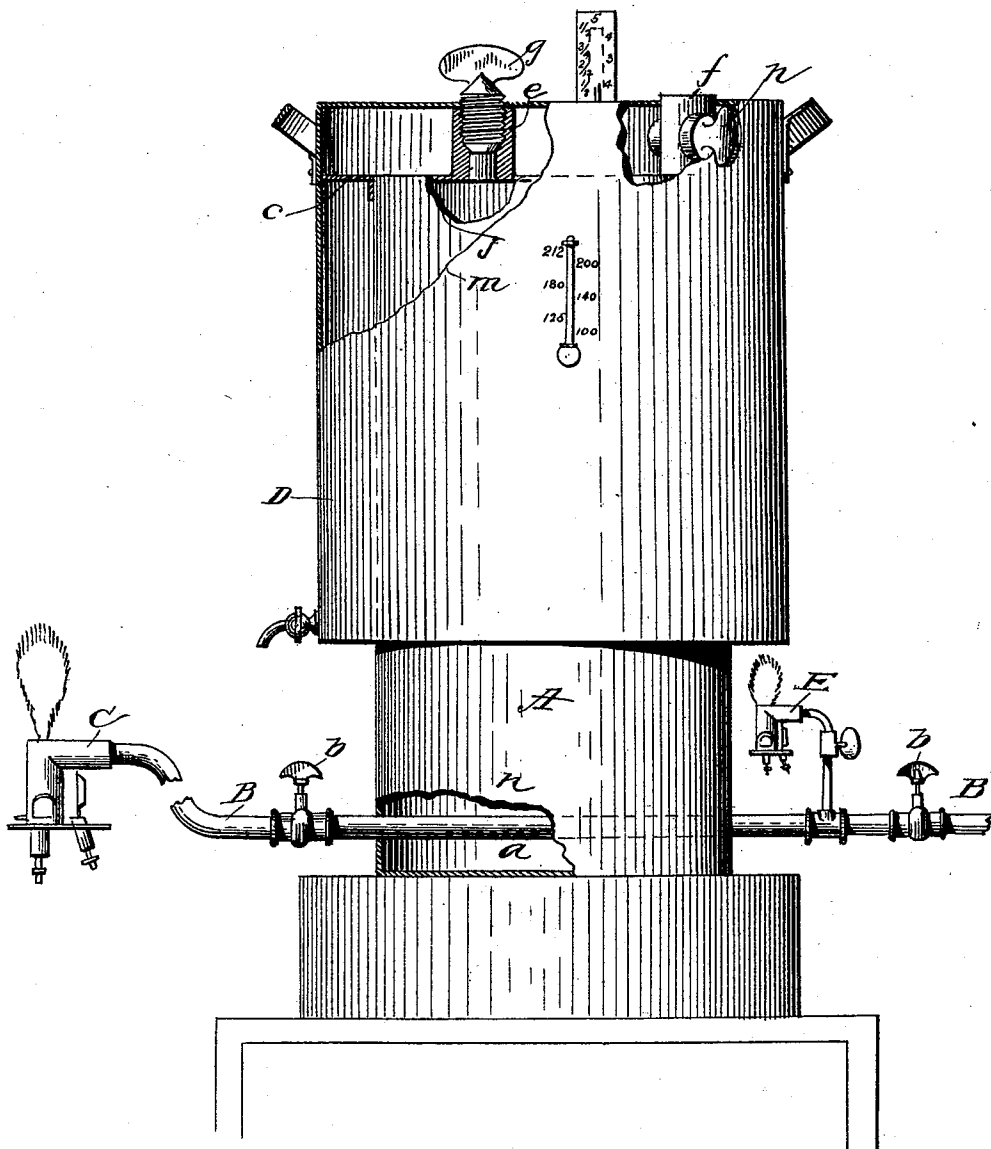


(No Model.)

J. H. MATHEWS.
TANK FOR HYDROCARBON BURNERS.

No. 496,661.

Patented May 2, 1893.



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UNITED STATES PATENT OFFICE.

JOSEPH H. MATHEWS, OF CANTON, OHIO.

TANK FOR HYDROCARBON-BURNERS.

SPECIFICATION forming part of Letters Patent No. 496,661, dated May 2, 1893.

Application filed September 19, 1892. Serial No. 446,260. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH H. MATHEWS, a citizen of the United States, and a resident of Canton, county of Stark, State of Ohio, have invented a new and useful Improvement in Tanks for Hydrocarbon-Burners, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

My invention relates to an improvement in tanks for hydrocarbon burners, which consists in providing devices by which the temperature of the hydrocarbon to be consumed may be raised, and to a limited extent vaporized in the tank, to produce pressure by which the fluid is driven from the tank to the burner with such force as to supply the required amount to the burner, and to obviate the necessity of an air blast.

The object of my invention is to provide a burner of great power of use in assaying ores, also for use in laboratories, dental offices and for jewelers, which will operate for a number of hours, consecutively, inexpensively and of itself.

With these ends in view my invention relates to certain features of construction and combination of parts as will be hereinafter described and pointed out in the claims.

The drawing is a side elevation, partly sectional of a hydrocarbon tank illustrating my invention.

A, indicates the tank which may be made of any suitable material and of any desired dimensions to contain a given amount of gasoline or other suitable hydrocarbons, having at its bottom portion a through pipe B, provided with apertures *a* by which the fluid may enter the pipe without sediment, so liable to be found in such fluids and so fatal to the operation of burners suitable for the uses hereinbefore referred to.

C, represents a burner which may be of the form shown or of any of the well known and approved generator vapor burners, and *b* is a valve by which the supply of hydrocarbon to the burner is regulated.

I have for the purpose of this application shown the supply-pipe B, extended across and out from opposite sides of the tank A, for the purpose of heating two furnaces, but

as the capacity of the hereinafter described devices to supply the pressure as well as the fluid is unlimited. Many pipes may radiate from said tank to as many furnaces, all of which may be attended by one person who may at the same time assay several samples of ore.

The particular feature of my invention relates to the provision of an outside tank jacket D, which consists of a cylindrical portion placed about and spaced from the tank A as shown, the bottom of the cylinder perforated to pass over the tank, to which it is secured, either with solder or rivets, the top of the said jacket to project a distance above the top portion of the tank as shown, the two parts secured in position at the top portion by the stays *c*. Pipes *e* and *f* project upwardly from the top portion of the tank A, as shown, the former having an inlet through which the hydrocarbon is supplied, said pipe *e* having a turn valve *g* to close said pipe, and the latter having a key, or pet-cock *h* through which the air or gas may escape while filling. A small burner E, is placed under the jacket as shown receiving its supply of gasoline from the pipe B.

In operation the tank A, is filled with gasoline or other light hydrocarbon, and the jacket filled with water about and over the top of the tank. The burner E is lighted, the flame directed against the bottom portion of the jacket will raise the temperature of the water in the jacket and about the tank to a desired degree of temperature indicated by a thermometer by which the gasoline is warmed and vaporized to produce a pressure in the tank by which the gasoline is driven to the burner with great force, by which a greater volume of heat may be produced and uniformly maintained and in every way giving a better result, and at less cost. The cutaway portion *j* shows an interior portion of the tank A, and the cutaway portion *m* and *n* show interior portions of the jacket.

The tank may be scaffolded as shown in the drawing or placed upon a table adapted to be raised or lowered by devices similar to those used to raise the table in vertical drill presses.

Having thus fully described the nature and object of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a hydrocarbon tank of a water jacket surrounding the upper portion of said tank, and having its base projecting laterally beyond the sides of the tank
5 a burner pipe in communication with said tank, and burners, one of which is located beneath the said laterally projecting base of the water jacket to heat the water contained therein.

10 2. The combination with a hydrocarbon tank, a water jacket surrounding the same, a supply pipe projecting from the top of said

tank, a valve to close said pipe, an air or gas escape pipe, a cock for closing it, a pipe *a* in communication with said tank and burners B 15 and C, the latter of which is arranged to direct its flame against the water jacket.

In testimony whereof I have hereunto set my hand this 27th day of August, A. D. 1892.

JOSEPH H. MATHEWS.

Witnesses:

W. K. MILLER,
CHAS. R. MILLER.