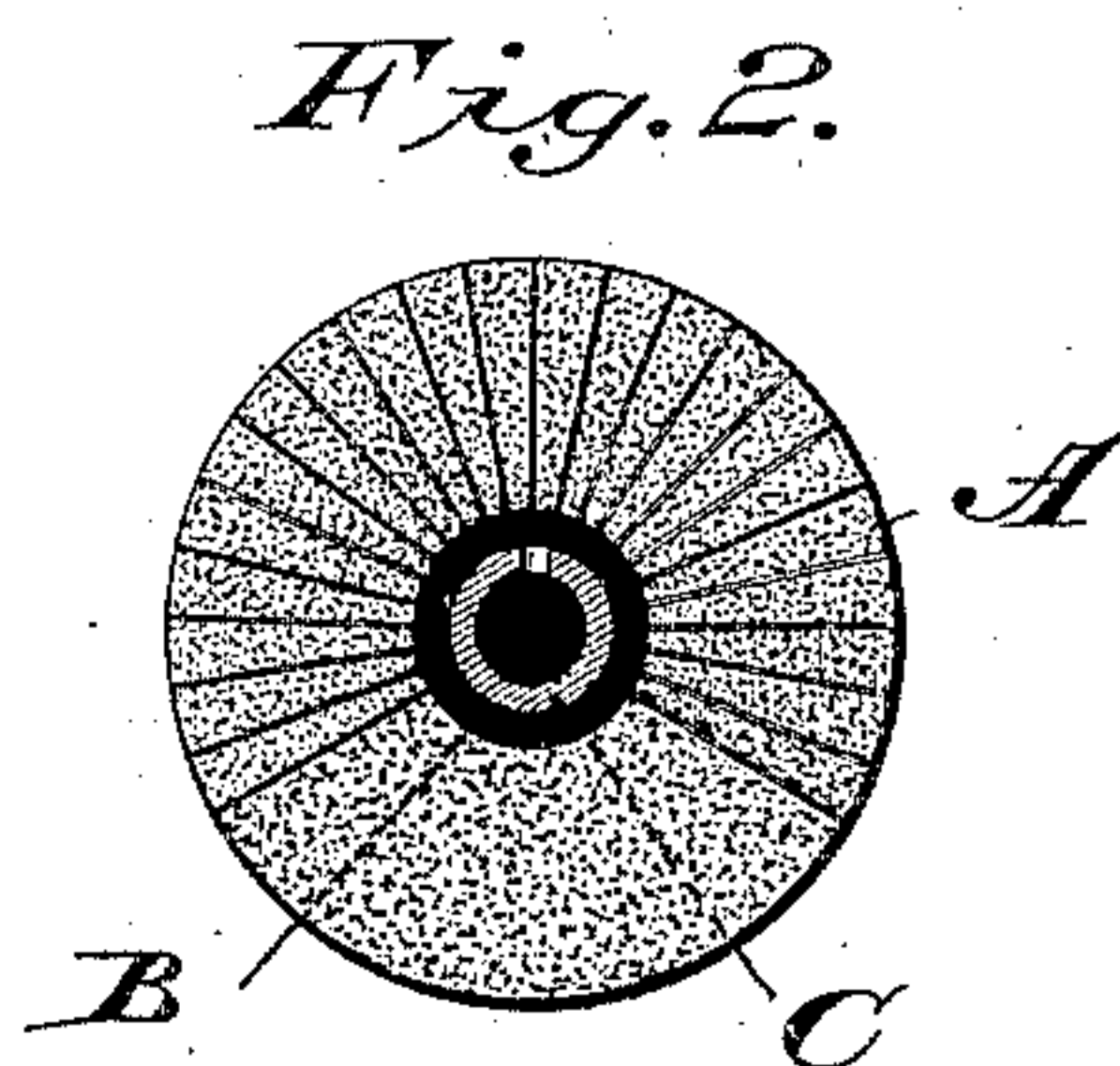
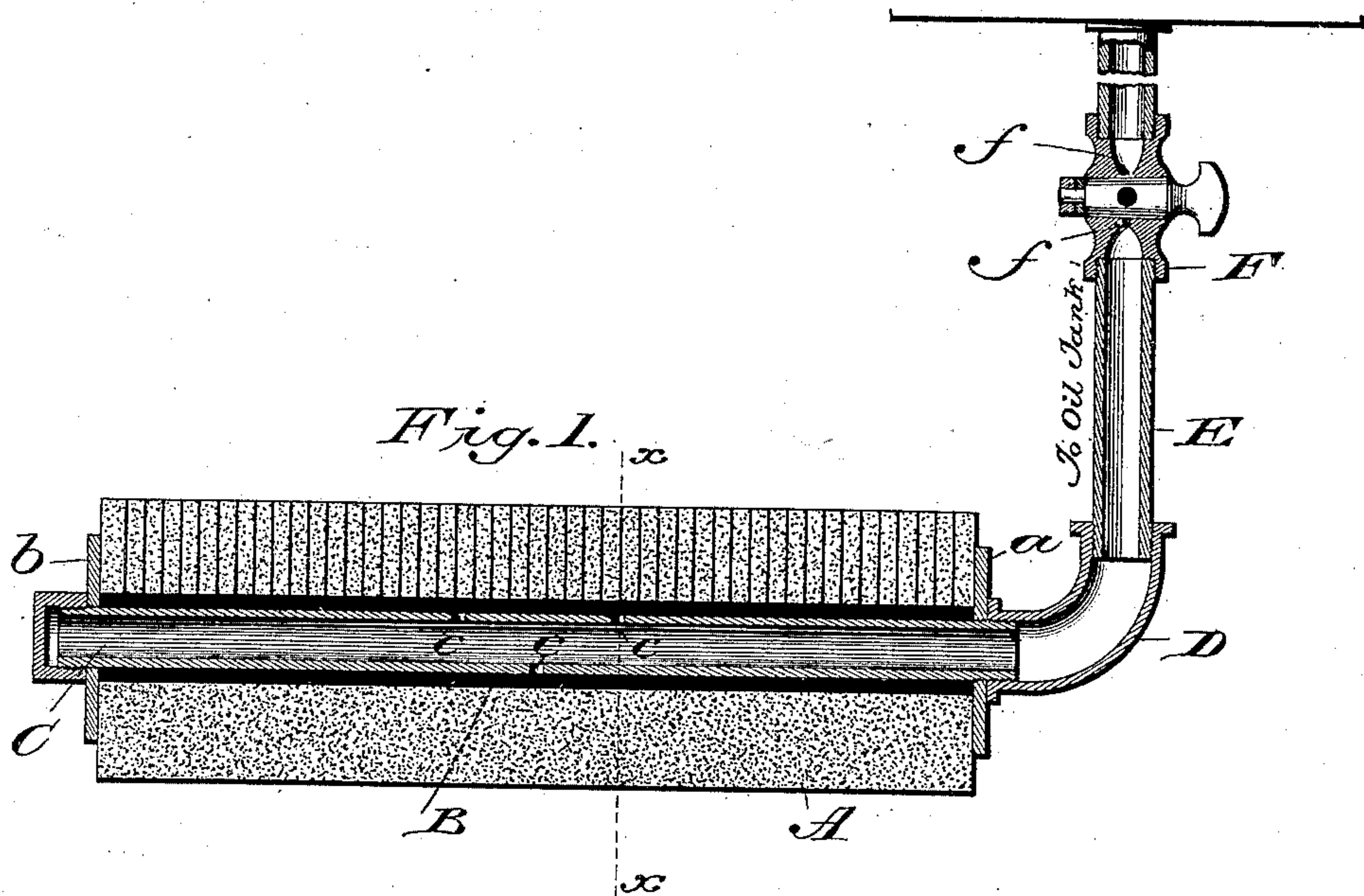


(No Model.)

J. BARROW.  
OIL BURNER.

No. 474,282.

Patented May 3, 1892.



Jacob Barrow.

Inventor

Witnesses *L. S. Elliott.*  
*E. M. Johnson*

— by *J. H. Barrow*  
Attorney



# UNITED STATES PATENT OFFICE.

JACOB BARROW, OF WINDFALL, INDIANA.

## OIL-BURNER.

SPECIFICATION forming part of Letters Patent No. 474,282, dated May 3, 1892.

Application filed August 27, 1891. Serial No. 403,841. (No model.)

*To all whom it may concern:*

Be it known that I, JACOB BARROW, a citizen of the United States of America, residing at Windfall, in the county of Tipton and State of Indiana, have invented certain new and useful Improvements in Oil-Burners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in crude-oil burners.

The object of the invention is to provide a means for effectively utilizing hydro-carbon oils for heating purposes; and the invention consists in a burner made up of absorbent and refractory material, into which the hydro-carbon oil is fed and formed into gas, which is consumed by the burner when ignited; and the invention further consists in the construction and combination of the parts, as will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a longitudinal sectional view of a burner constructed in accordance with my invention, and Fig. 2 is a sectional view through the line *xx* of Fig. 1.

A designates the burner, preferably made up of fire-clay, which is porous, an absorbent, and a conductor. This burner is cylindrical in form and is provided at its upper portion with minute perforations, through which the gas generated, as hereinafter described, passes. The burner is provided with a central chamber or compartment B, within which is held centrally a pipe C by means of the heads *a* and *b*. This pipe is provided with two or more apertures *c c* at its upper part and a less number of apertures at its lower portion, these apertures being preferably located centrally, as shown. To one end of the pipe C is secured a coupling D, from which extends a vertical section of pipe E, and to said pipe E is secured a valve or cut-off F, each side of the plug thereof being provided with minute perforations *f*. Above the valve is secured a

supply tank and pipe in the usual manner, said tank being adapted to contain crude oil or other suitable hydrocarbon oil.

In operation, when the valve is properly turned small particles of the oil will flow into the pipe E and coupling D and be formed into a combustible gas, a certain percentage of the oil flowing into the pipe C. The oil which finds its way into the pipe C will pass through the apertures *c* into the gas-chamber, and coming in contact with the heated fire-clay of the cylinder A, will be vaporized and form a combustible substance. The gas generated will pass through the apertures *c c* into the chamber and find its way therefrom through the small apertures in the upper part of the cylinder. It will be noted that in operation the cylinder A is kept at a high temperature and that a chamber is provided between the burner or fire-clay and the pipe C, into which a sufficient supply of gas is stored and held.

I am aware that prior to my invention it has been proposed to provide a burner for natural gas with a perforated supply-pipe and a porous sleeve surrounding the pipe constituting the burner, and I do not claim such construction, broadly, as my invention, as such a device, though answering well for natural gas, will not advantageously serve for burning crude or hydrocarbon oils.

It will be obvious that when my device is in use the burner will be heated to a high temperature, and that the oil as it drops into the chamber provided with the pipes D and E will be rapidly vaporized or formed into gas, and that by providing very small apertures in the valve-seat and having the pressure of the oil above said valve the pressure caused by vaporizing the oil and forming it into gas will not escape through the tank, as would be the case were apertures not provided in the burner.

If desired, the under side of the burner, which is not provided with apertures, may be coated with suitable material, so that when the burner is saturated with oil it will not escape but be retained by the burner, it being noted that the burner should retain a sufficient quantity of oil to generate the desired amount of heat necessary for the production of gas from crude oil.

Having thus described my invention, what I claim is—

1. In a burner for gas generated from oil, the combination of a supply-pipe, a porous sleeve surrounding said pipe, said sleeve having minute apertures or perforations in its upper portion connecting with a chamber between the supply-pipe and the exterior of the burner, substantially as set forth.

2. In a burner for gas generated from oil, the combination of a hollow or longitudinally-apertured sleeve of porous material, having minute apertures or perforations in its upper portion which extend from the longitudinal

aperture therein to the exterior of said sleeve, a supply-pipe maintained centrally within said sleeve and connected with an oil supply, said supply-pipe having apertures *c c*, and threaded ends, to which are attached heads *a* and *b*, substantially as shown, and for the purpose set forth.

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

JACOB BARROW.

Witnesses:

E. W. JOHNSON,  
H. S. BEALL.