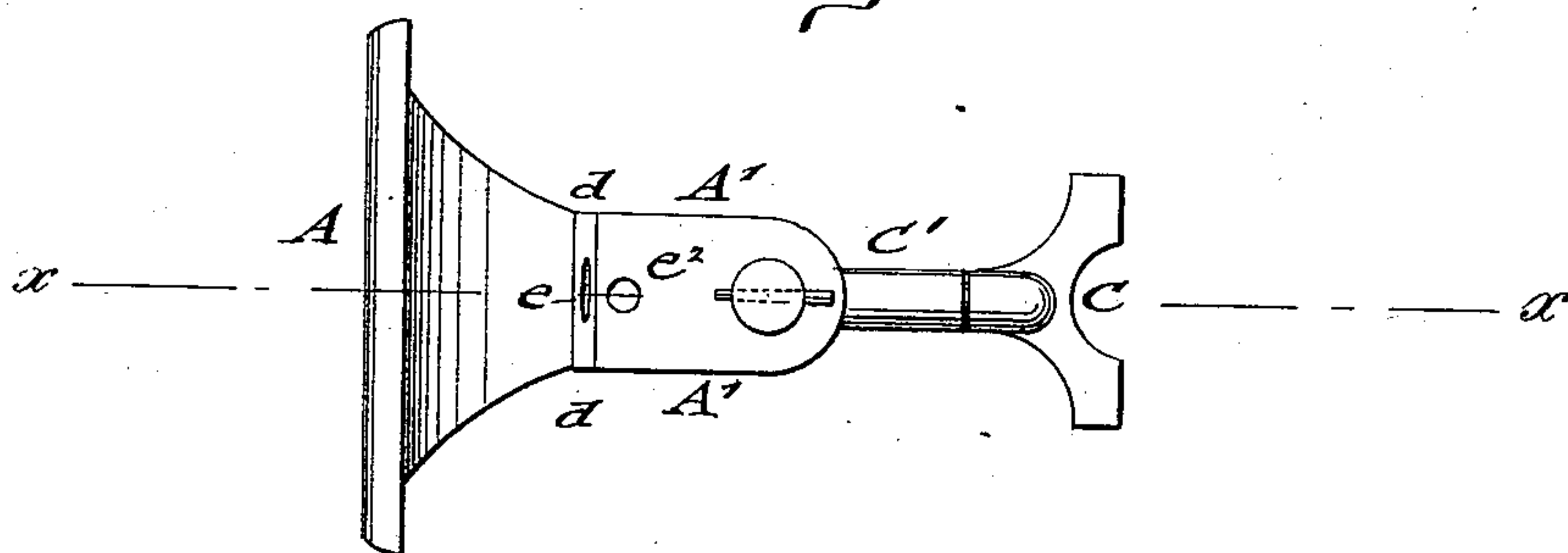


J. S. WOOD.  
Vapor-Burner.

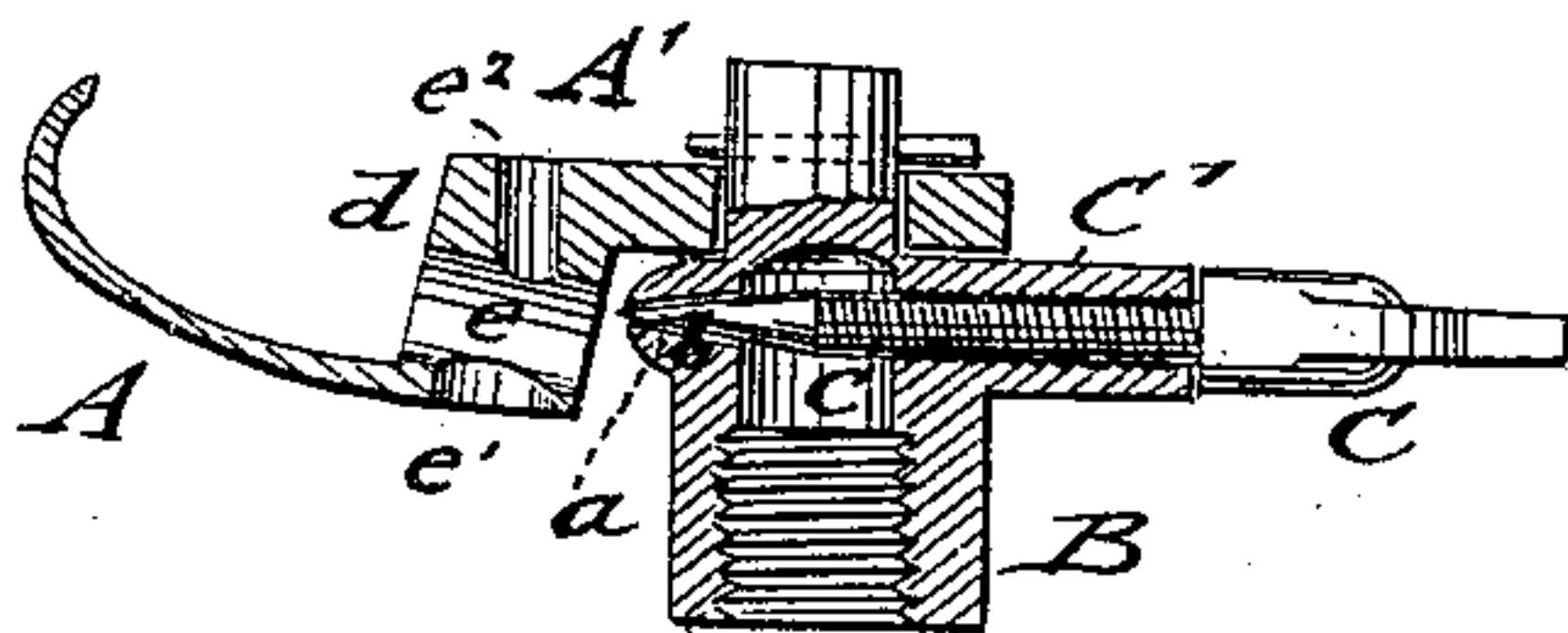
No. 226,816.

Patented April 20, 1880.

*Fig: 1.*



*Fig: 2.*



WITNESSES:

*Carl Karp.*  
*Otto Pisch.*

INVENTOR

*Joseph S. Wood.*

# UNITED STATES PATENT OFFICE.

JOSEPH S. WOOD, OF BROOKLYN, NEW YORK, ASSIGNOR TO HIMSELF AND  
DIO DEKREMEN, OF SAME PLACE.

## VAPOR-BURNER.

SPECIFICATION forming part of Letters Patent No. 226,816, dated April 20, 1880.

Application filed December 1, 1879.

*To all whom it may concern:*

Be it known that I, JOSEPH S. WOOD, of the city of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Vapor-Burners, of which the following is a specification.

This invention has reference to that class of vapor-burners in which a curved spreader-plate is used, by which the burner-tube is heated, so that the oil is changed into vapors, which, on being mixed with atmospheric air, form an illuminating-gas that burns without smoking.

The invention consists of a vapor-burner provided with a vaporizing-chamber and needle-valve, and with a spreader-plate, which is connected by a horizontal portion, parallel to the needle-valve, to the vaporizing-chamber, said spreader-plate having an offset or shoulder between the horizontal portion and its wider end portion. The offset or shoulder has an air-port in line with the needle-valve, and an air-supply orifice or orifices, which pass transversely to the air-port through the offset.

In the accompanying drawings, which illustrate my invention, Figure 1 represents a top view; and Fig. 2, a vertical longitudinal section of the same on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

A in the drawings represents a spreader-plate, which is attached by an upper horizontal portion, A', to the burner-tube B. The oil is supplied to the burner-tube from the reservoir at a suitable pressure, and the burner is lighted, in the customary manner, by igniting alcohol or oil in a cup (not shown in the drawings) surrounding the burner-tube. The oil is changed by the heat of the alcohol-flame into vapors, the latter escaping at a considerable pressure to the outside of the burner-tube through an outlet-orifice, *a*. The vapor outlet or orifice *a* is closed by a valve-cock, C, the conically-tapering end *b* of which is accurately fitted into the tapering outlet of the burner-tube. The valve-stem is threaded and adjusted in an interiorly-threaded supporting-sleeve, C', of the burner-tube.

The spreader-plate A is provided with an angular portion or offset, *d*, which extends downward from the upper portion, A', the

spreader-plate proper extending sidewise from the lower part of the offset. The spreader-plate is gradually curved upward and inward, and its width increased, so as to be widest at the outer end. In the offset *d* is arranged an air-port, *e*, in line with the vapor-orifice and valve-stem. The vapor-orifice is placed, preferably, either close to or almost inside of the air-port, to throw the jet of vapors through the same onto the upper side of the spreader-plate. In its passage through the air-port the vapor mingles with atmospheric air, which is drawn in through an air-hole, *e'*, that passes from the air-port *e* downward, and also through a second orifice, *e''*, that extends from the air-port upward to the top of plate A'. The intermingled vapors and air impinge against the curved portion of the spreader-plate and are burned at the edge of the same.

The operation of the burner is as follows: After the alcohol or oil in the heating-cup is lighted and the burner-tube heated properly thereby, the vapor passes through the vapor-orifice, through the air-port, and takes up, in its passage through the same, the required quantity of air through the air-supply holes. The illuminating-gas formed by this mixture is lighted, the flame appearing at the edge of the spreader-plate. The heat of the spreader-plate keeps the burner-tube in a heated state, so that the generation of vapor therein is continued, and thus a constant supply of gas furnished to the spreader-plate. The vapor, in its passage through the air-port, is mixed with the proper quantity of air necessary for combustion, and burns with a clear flame and without smoke.

I am aware that a spreader-plate connected with the vaporizing-chamber and adapted to receive the current of combined air and gas, which spreader-plate also serves to heat the vaporizing-chamber, is well known and has been used heretofore; but this spreader-plate required a separate air and gas directing device above the spreader-plate proper, which I wholly dispense with by the arrangement of an offset or shoulder with an air-port in one piece with the spreader-plate and extension, which shoulder is the essential feature of this invention.



Having thus described my invention, I claim as new and desire to secure by Letters Patent—

In vapor-burners provided with a vaporizing-chamber and a needle-valve adapted to regulate  
5 the flow of gas from said chamber, the combination, with said vaporizing-chamber and needle-valve, of a spreader-plate having a horizontal portion parallel to the needle-valve, by which the spreader-plate is connected to the vapor-  
10 izing-chamber, and an offset or shoulder between the spreader-plate and horizontal portion, said offset having an air-port in line with

the valve-orifice and needle-valve, and an air-supply orifice or orifices passing transversely thereto through the offset, substantially as set  
15 forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 8th day of November, 1879.

JOSEPH S. WOOD.

Witnesses:

PAUL GOEPEL,  
ADOLF DENGLE.