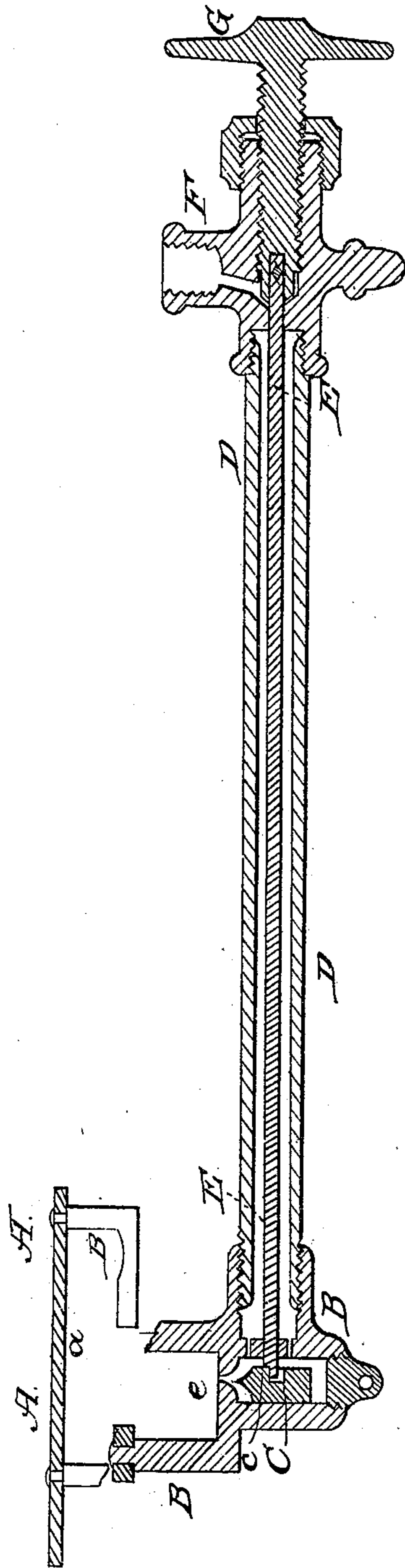


H. W. DOPP.

Apparatus for Burning Coal Oil.

No. 37,436.

Patented Jan. 20, 1863.



witnesses
J. Forsyth.
Theodore Meyer.

Inventor
H. W. Dopp

UNITED STATES PATENT OFFICE

H. WILLIAM DOPP, OF BUFFALO, NEW YORK.

IMPROVEMENT IN APPARATUS FOR BURNING COAL-OIL FOR HEATING PURPOSES.

Specification forming part of Letters Patent No. 37,436, dated January 20, 1863.

To all whom it may concern:

Be it known that I, H. W. DOPP, of the city of Buffalo, county of Erie, and State of New York, have invented a new and Improved Mode of Burning Coal-Oil for Heating Purposes; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

A is a distributing-plate, perforated, but having a solid center, *a*, by which the vapor to be burned is arrested.

B is a generator, conducting heat to the generating-tube D.

C is a valve, provided with a needle point in its center for graduating purposes. This valve is operated by means of a crank-pin playing into a groove running across said valve, as seen at C.

D is a vaporizing-tube, which receives sufficient heat to produce vaporization by conduction from the distributing-plate A and generator B.

E is a shaft provided with a crank-pin on one end and a square pin on the other end. This crank-pin lies in a cam-groove in valve C, and the square pin is connected with the screw-valve G by means of a square hole in the center of the valve G, so arranged that the square pin may slide in or out. By turning the shaft by means of the screw-valve G an up-and-down motion is transferred to valve C, through the crank-pin operating in the cam-groove in said valve C.

F is a throttle-valve body, to which is attached the generating-tube D.

G is a throttle-screw or screw-valve which controls the supply of oil, and being provided with a square hole in its center couples or connects large E and G, and transfers motion to shaft E and valve C.

To operate this heating apparatus, a reservoir of coal-oil is placed in connection with it by means of ordinary tubing, at an altitude of two or more feet, and leading to the throttle-valve F. Sufficient heat is then to be applied to the generator B and tube D by means of an alcohol torch till vaporization is effected. This is ascertained by partially opening the screw-valve G, and thus admit-

ting a slight flow of oil from the reservoir above into the tube D, which, if there be sufficient heat, is immediately converted into vapor, and at the same time passes through the small orifice *e*, which is left partly open by the partial withdrawal of the needle-point attached to valve C, when the screw-valve G is first partially opened. This vapor, as it rises from the orifice, mingles with the atmosphere, and is ignited at *e* by means of the alcohol torch used for the first vaporization, and burns with great rapidity and power, free from smell or smoke, underneath the distributing-plate A. The plate A thus becomes thoroughly heated by the action of the burning vapor immediately beneath it, and conducts sufficient heat now to the generator B and generating-tube D to keep up a steady supply of vapor. And now the valve G, which was at first but partially opened, is to be opened to its full capacity, and the orifice *e*, by the same means and at the same time, is also left fully open by the total withdrawal of the needle-point, and thus a full flow of oil is admitted into the tube D, which is gradually converted into vapor by the accumulated and sustained heat obtained in the mode above described.

I wish to be understood as not claiming any particular mode or mechanical device, for my improvement may be varied without changing the principle of my invention.

I claim—

1. The distributing plate A, with solid center *a*, and generator B, or their equivalent, so arranged that the vapor shall escape from one or more small orifices into the unconfined atmosphere, and be arrested by means of the solid part of plate A, or its equivalent, for the purpose of causing its combustion after it is thus arrested, sufficient heat being obtained thereby to keep up continuous vaporization, substantially as described.

2. The combination of the crank-pin and the cam-groove to obtain an up-and-down motion of the graduating-valve C, substantially as and for the purpose herein described.

H. WM. DOPP.

Witnesses:

J. FORSYTH,
TH. MEYER.