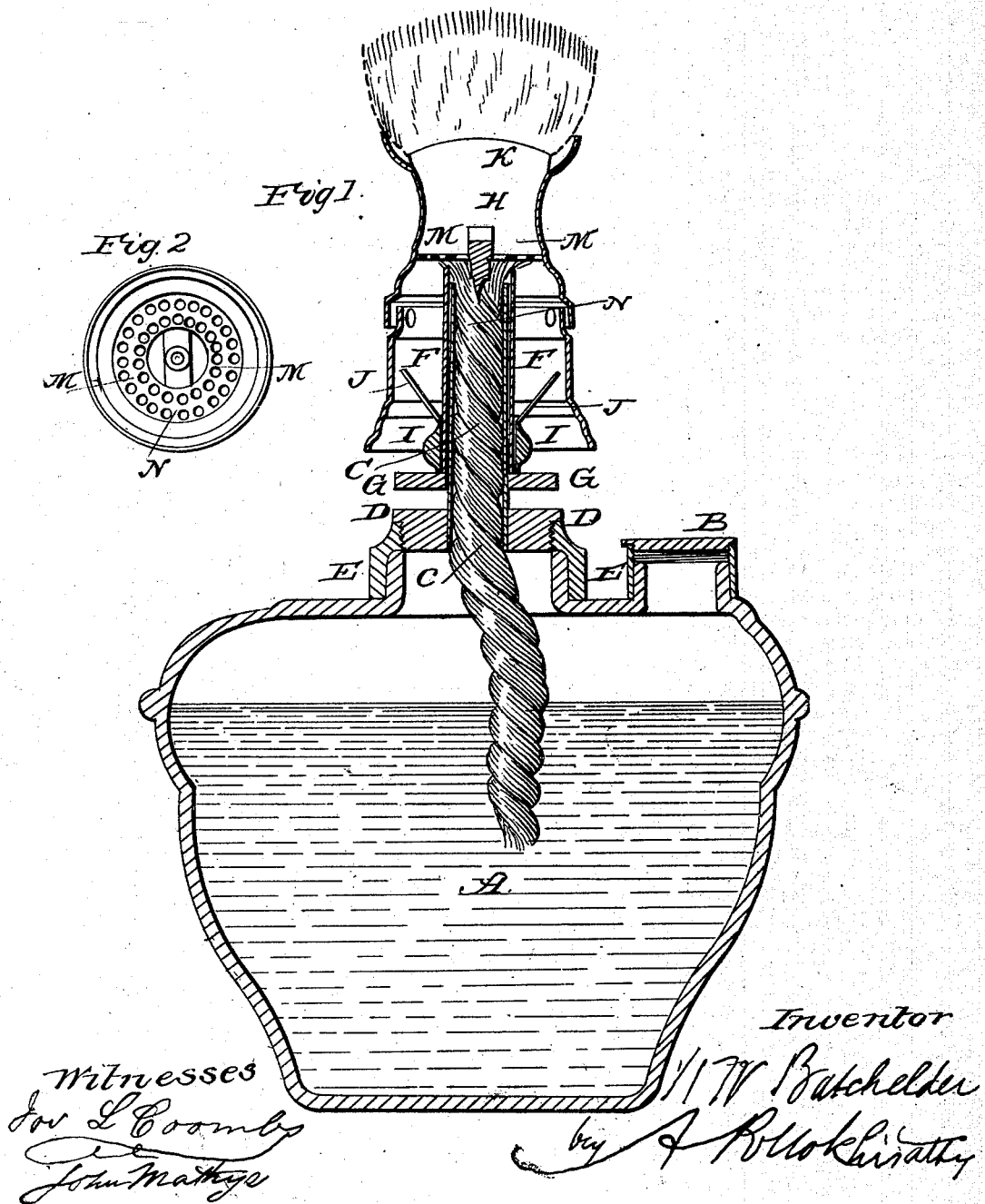


W. W. BATCHELDER.

Coal Oil Burner.

No. 47,381.

Patented April 25, 1865.



UNITED STATES PATENT OFFICE.

W. W. BATCHELDER, OF NEW YORK, N. Y.

IMPROVEMENT IN COAL-OIL BURNERS.

Specification forming part of Letters Patent No. 47,381, dated April 25, 1865.

To all whom it may concern:

Be it known that I, W. W. BATCHELDER, of New York, in the county and State of New York, have invented certain new and useful Improvements in Coal-Oil, Vapor, or Gas Burners; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a sectional elevation of a lamp with a burner constructed in accordance with this my invention attached; Fig. 2, an inverted plan view of the upper part of said burner.

My invention relates to coal oil burners in which the oil is first converted into vapor or gas, which vapor or gas is mixed with atmospheric air and burned at the part where it issues from the burner; and it consists in the employment, in combination with a tubular wick-holder and vapor or gas generating and air-mixing chamber, of a perforated plate, or the equivalent thereof, together with a metallic or other heat conductor or conductors projecting downward and dipping into the wick substantially in the manner hereinafter described, for operation as herein set forth.

To enable others to make and use my invention, I shall now proceed to describe the construction and arrangement of my said burner, and referring to the drawings.

A is the fluid reservoir or vessel which contains the coal-oil. It is provided with a screw-threaded cap, B, fitting and closing an opening, through which the oil may be poured without interference with the burner. The burner proper is composed of an upright wick-tube, C, soldered or made in one piece with the cap D, screwed onto the collar E. Upon this wick-tube is fitted, by friction or otherwise, so as to admit of vertical adjustment in relation thereto, a concentric tube, F, provided at its lower end with a flange, G, for the support of the vaporizing-chamber H. The office of this outer tube, F, is to regulate the wick, contracting or spreading it more or less, according to the volume of vapor desired to be generated. The vaporizing-chamber H is cylindro-conical, or of any convenient or suitable form, open at the bottom, so that air may have free access to the wick at the top of the wick-tube. It is for that purpose held by means of a collar, I, surround-

ing the tube F, and resting upon the flange G, and by means of bracing-wires J. The upper part of this chamber is contracted, and terminates into a flattened top, leaving a narrow slot or space, K, through which the vapors issue, spread in the form of a fan. Just below the flattened portion of the chamber, and immediately above the outer tube, E, (when the vaporizing chamber is fitted into its seat,) there is arranged a horizontal disk, M, perforated by numerous holes and provided with a metallic cone, N, held concentrically with the said disk, and so as to project downward and centrally into the wick-tube. The arrangement of this disk M is such in relation to wick-tube as to intercept the flame near the wick-tube at the blue part thereof, which is that portion of the flame which is not illuminating, but possesses great heating capacity. The disk, and consequently the cone N, which is placed or held in the midst of this heating medium, become intensely heated. When the burner is properly adjusted, this heated cone dips into the wick, and thus evaporates the oil drawn up by the capillary action of the wick and furnishes the requisite supply of vapor or gas to the burner.

To use this burner the wick is lighted first and the chamber or burner is then adjusted onto the outer tube. In a second or two the vapors are generated, which issue, duly mixed with atmospheric air, at the top of the burner, where they are burned, producing a brilliant and steady light without the aid of a chimney.

Having thus described my invention and the manner in which the same is or may be carried into effect, I claim—

The employment, in combination with a tubular wick-holder and vapor or gas generating and air-mixing chamber, of a perforated plate, or the equivalent thereof, together with a metallic or other heat conductor or conductors projecting downward and dipping into the wick, substantially in the manner herein described, for operation as herein set forth.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

WILLIAM W. BATCHELDER.

Witnesses:

A. POLLOK,
EDM. F. BROWN.