

(No Model.)

G. W. BILLINGS.
Vapor Burner.

No. 238,634.

Patented March 8, 1881.

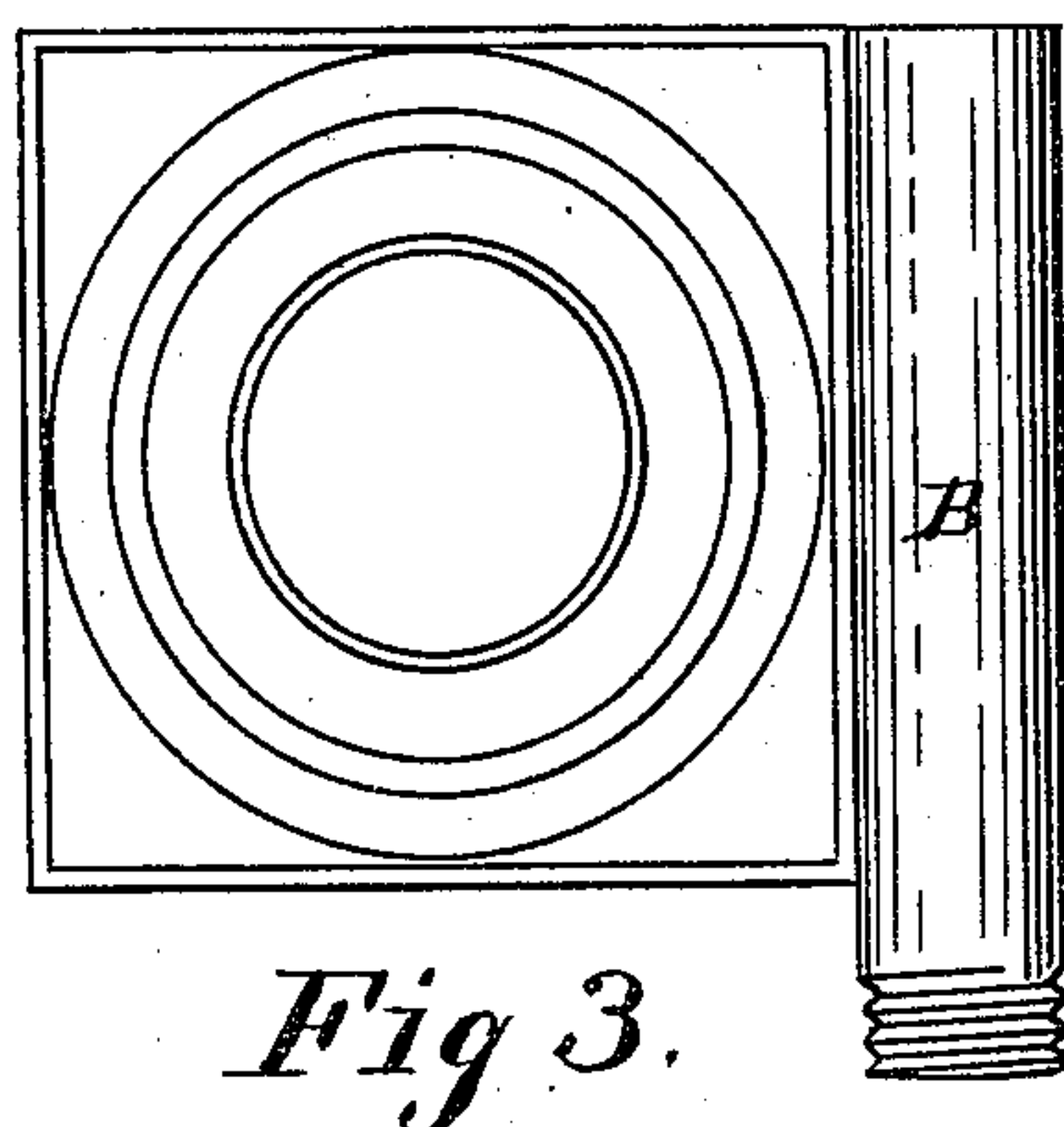


Fig 3.

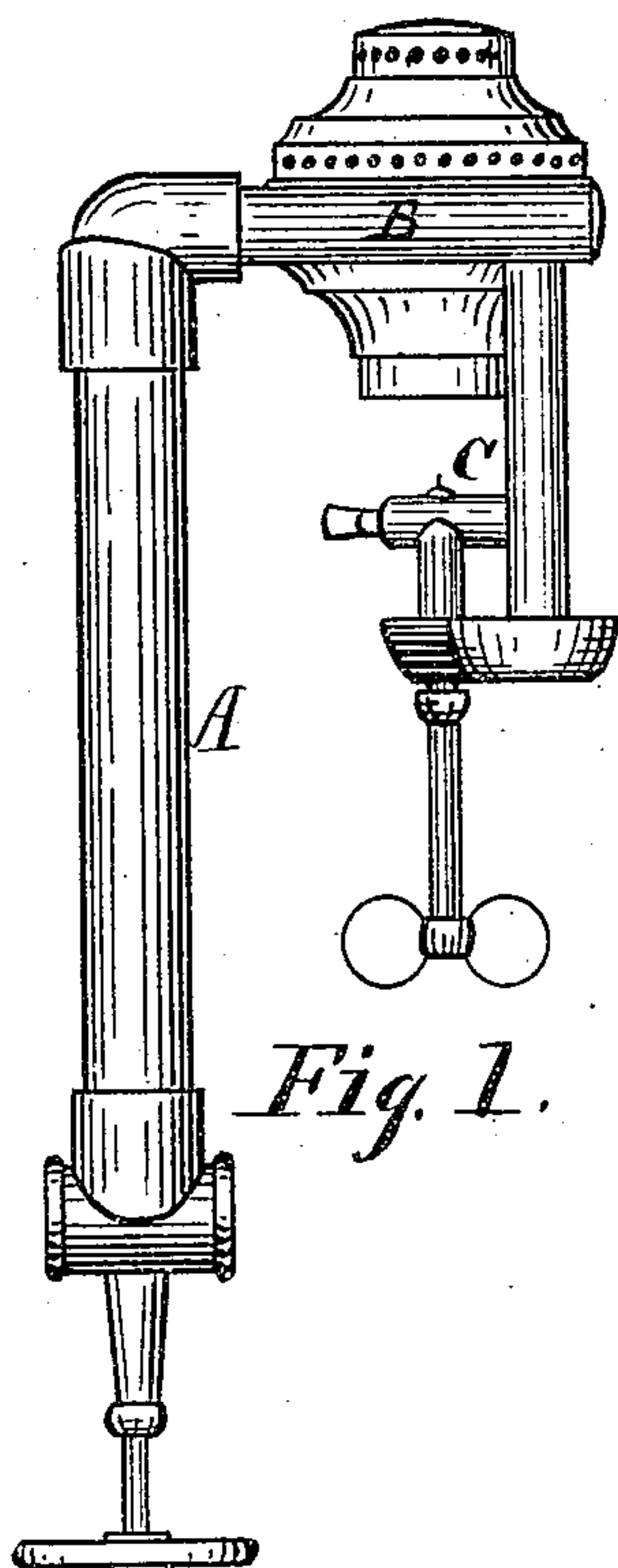


Fig. 1.

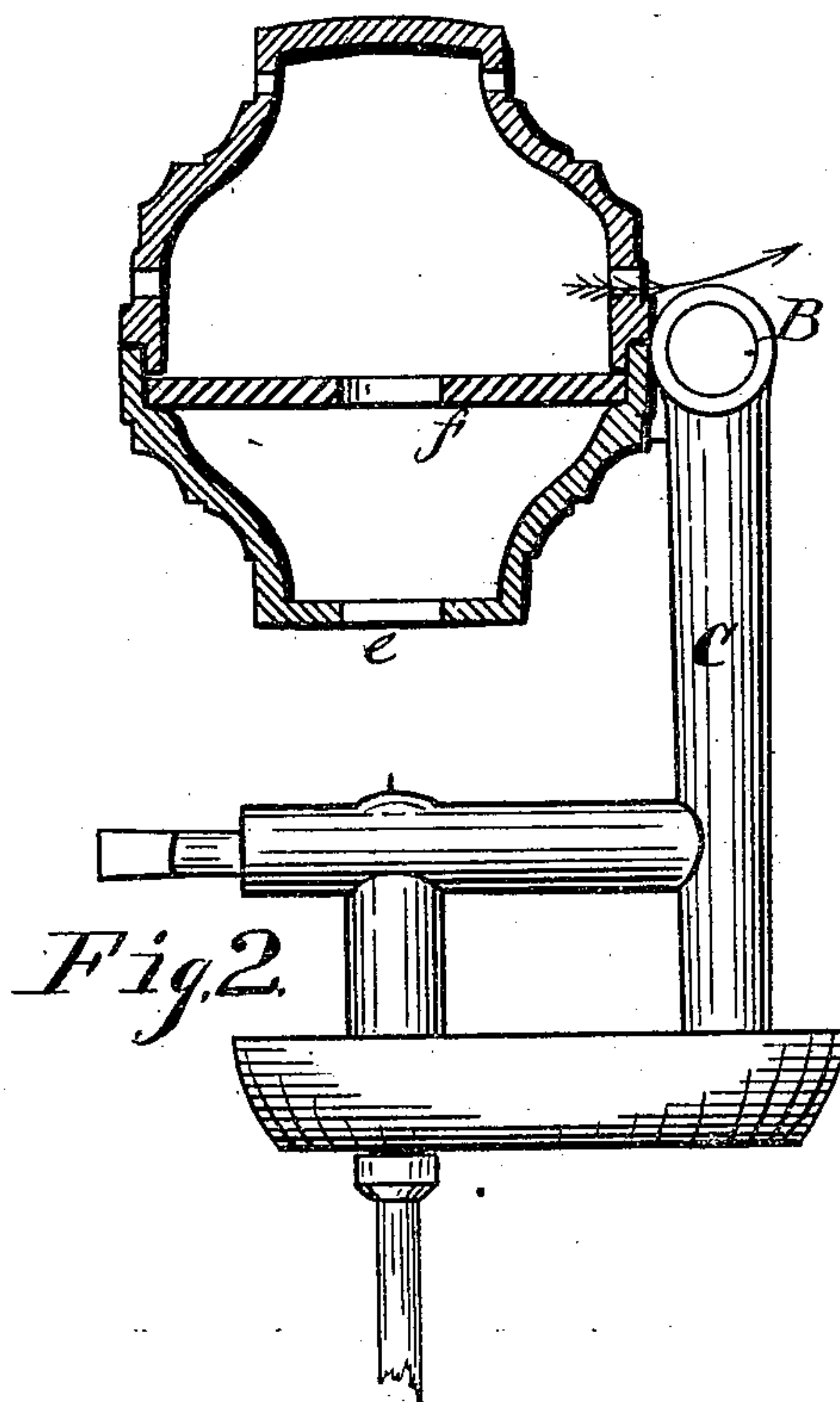


Fig. 2.

Witness
Frank R. Tibbitts
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Inventor:
George W. Billings
By Geo. W. Tibbitts, atty.

UNITED STATES PATENT OFFICE.

GEORGE W. BILLINGS, OF CLEVELAND, OHIO, ASSIGNOR TO OTIS D. CROCKER, OF SAME PLACE.

VAPOR-BURNER.

SPECIFICATION forming part of Letters Patent No. 238,634, dated March 8, 1881.

Application filed July 26, 1880. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. BILLINGS, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Vapor-Burner, of which the following is a specification.

In the drawings, Figure 1 is a side elevation. Fig. 2 is a sectional view of the burner. Fig. 3 is a top view.

The nature and object of this invention will fully appear in the subjoined description, when considered with reference to the accompanying drawings.

A is a perpendicular tube attached to a T-joint for connecting it to lead pipe from fount.

B is a pipe attached by elbow to pipe A, and has a rectangular pipe, C, leading down and under the burner, provided with jet-orifice, needle-valve, and heater-cup.

The burner consists of two hollow cones having round tops and having square bases. The lower and inverted cone has an opening, *e*, in its apex. This cone is secured, at one of its square sides, to and alongside of the pipe B, and situated so as to bring the opening *e* directly over the jet-orifice. The upper cone is of the same form as the lower, excepting that the top is closed, and it is provided with two rows of perforations—one row near the top, and the other row in the four square sides of the base. The said perforations in the side next to the pipe B are designed to supply heat to said pipe for generating vapor. At the point of intersection of said cones is placed a diaphragm, *f*, having a central opening the same size of opening *e*

in the lower cone. This diaphragm divides the space within the two cones horizontally into two chambers, the upper chamber being the mixing-chamber. The object of the diaphragm is to prevent the obstruction of the central column of vapor in its passage to the top of the mixing-chamber by the back action of the vapor after it has broken up from contact with top of said chamber, and to direct the vapor to the lower row of perforations to be there consumed, whereby the lower jets of flame are increased in volume.

The operation of this is as follows: The vapor from the jet-orifice issues into the lower cone, where the oxygenization takes place, thence through the diaphragm into the upper cone, and is burned at the perforations, one row of flame-jets supplying heat for generation by impinging against the pipe B as they pass over it, while they also are employed for the same purpose that the others are.

Having described my invention, I claim—

The herein-described vapor-burner, consisting of the two cones constructed in the form shown, placed base to base, and having the diaphragm *f* at their points of union, in combination with the pipe B, with its arm C, having the needle-valve, jet-orifice, and heater-cup, whereby one row of the flame-jets at one side of said cone supply heat to the generator, in the manner shown, and for the purpose specified.

GEORGE W. BILLINGS.

Witnesses:

GEO. W. TIBBITTS,
E. W. LAIRD.