J. Q. BIRKEY.

Gas Stove.

No. 167,058. Patented Aug. 24, 1875.

Fig. 1.

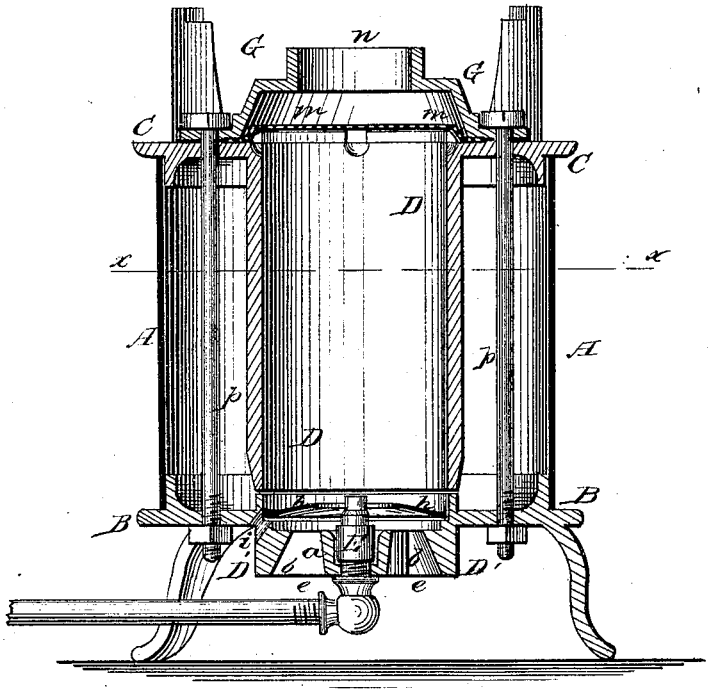


Fig. 2.

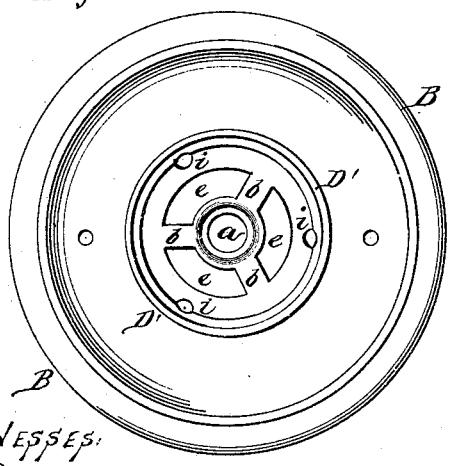
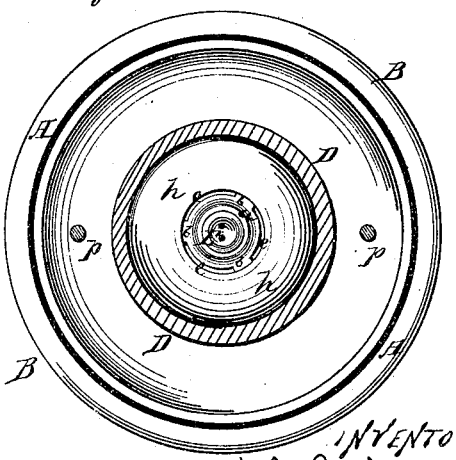


Fig. 3.



WITNESSES:
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UNITED STATES PATENT OFFICE.

JOHN Q. BIRKEY, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN GAS-STOVES.

Specification forming part of Letters Patent No. **167,058**, dated August 24, 1875; application filed July 24, 1875.

To all whom it may concern:

Be it known that I, JOHN Q. BIRKEY, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Gas-Stoves; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

The nature of my invention consists in the construction and arrangement of a gas-stove, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a central vertical section. Fig. 2 is a plan view; and Fig. 3, a cross-section on line *x x*, Fig. 1.

A represents the body or shell of my stove, secured to the bottom B and top C, the bottom being supported upon suitable legs.

In the bottom B is formed a cylinder, D′, extending above and below the same for a suitable distance, and forming a continuation of the main cylinder D within the stove, said main cylinder being attached to the top plate C, and open its full size at both ends.

The bottom cylinder D′ is formed on the interior with a central hub, *a*, with radial ribs or flanges *b b*. Through the center of the hub *a* passes the burner or tip E, to which gas is conveyed through a suitable pipe. The air-spaces E between the ribs *b* are made inclined or contracted inward toward the top, so as to draw the cold air inward to the burner. Within the upper part of the lower cylinder D′ is placed a diaphragm, *h*, so as to form an air-chamber, in which the cold air is retarded before it reaches the flame. *i i* are other holes made immediately within the cylinder for the admission of cold air. The gas and cold air intermingle, and, becoming intimately mixed, are forced by a natural draft to ascend through the narrow aperture in the center of the diaphragm *h* into the main cylinder D.

Over the top opening of the cylinder D is placed a perforated diaphragm, *m*, and over the same is a cap, G, with contracted opening *n* in the center. It will be seen that a space is left between the diaphragm *m* and G, which forms an air-chamber, for the purpose of heating the gas and air that has passed through the diaphragm, the narrow outlet *n* of the cap forming a chimney for the flame. By these means a perfect combustion of the gas is obtained, leaving no gas to be wasted.

The parts of the stove are held together by bolts *p p*, and on the top piece C are suitable standards for holding utensils. In larger stoves the air-inlets must be made larger, or additional inlets may also be made, if desired.

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

In a gas-stove, the combination, with the cylinder D D′, made in two parts, as described, of the contracted air-inlets *e e*, inlets *i i*, and annular diaphragm *h*, with the burner or tip E arranged in the center, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my own, I affix my signature in presence of two witnesses.

JOHN Q. BIRKEY.

Witnesses:
T. H. ALEXANDER,
W. C. MCARTHUR.