J. Q. BIRKEY.

GAS STOVE.

No. 185,720. Patented Dec. 26, 1876.

Fig. 1.

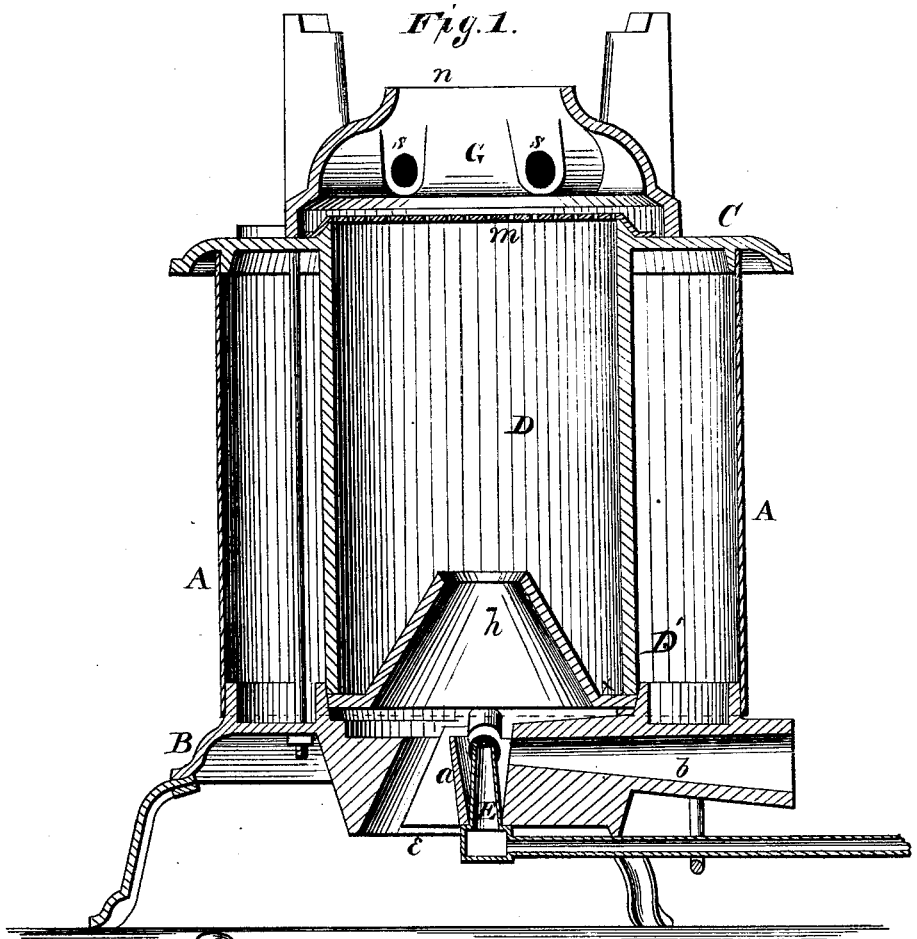


Fig. 2.

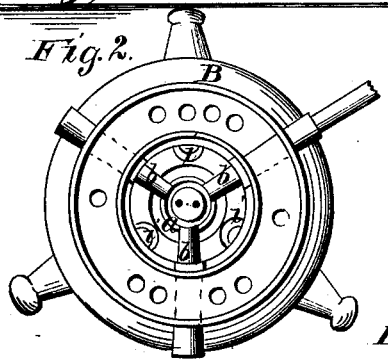


Fig. 3.

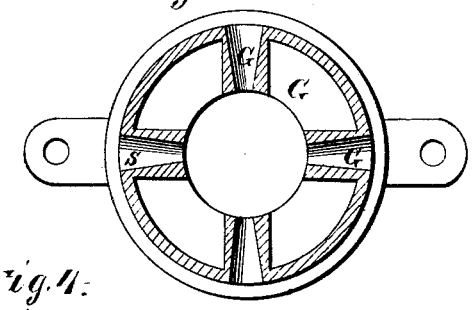
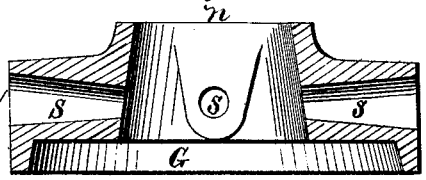


Fig. 4.



WITNESSES

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JOHN Q. BIRKEY, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN GAS-STOVES.

Specification forming part of Letters Patent No. **185,720**, dated December 26, 1876; application filed November 23, 1876.

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 do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

The nature of my invention consists in certain improvements upon the gas-stove for which Letters Patent No. 167,058 were granted to me August 24, 1875, 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 drawing, which forms a part of this specification, and in which—

Figure 1 is a vertical section of my improved gas-stove. Fig. 2 is a plan view. Fig. 3 is a horizontal section through the top cap, and Fig. 4 is a vertical section of the same.

A represents the body of my stove, secured to the bottom B and top C, the bottom being supported upon suitable legs. In the bottom or base 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 in the interior with a central hub, *a*, with radial ribs *b b*, said ribs being bored out to form tapering tubes or passages, contracting from the outer ends inward, and forming complete blow-pipes or openings to conduct the atmospheric air to the tip of the gas-burner E. The air-spaces *e e* between the tubes or pipes *b b* are inclined or contracted inward toward the tip, so as to draw the cold air inward to the burner. Other apertures or openings *i i* are formed in the bed-plate B of a peculiar shape, for conducting the air on an incline to the gas-tip E, and the air thus conducted unites with the gas, so as to insure perfect combustion at the top of the interior cylinder D. Within the upper part of the lower cylinder D′ is placed a diaphragm, *x*, formed with a hollow truncated cone, *h*, within which the cold air let in through the several apertures, as described, and the gas from the tip E, are retarded and intimately mixed, and being forced by a natural draft to ascend through the narrow aperture in the top of the cone *h* into the main cylinder D. Over the top opening of the cylinder D is placed a wire-gauze or perforated sheet-metal 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 the top of the cap G, which forms an air-chamber for the purpose of heating the gas and air that has passed through the diaphragm, the upper end *n* of the cap forming a chimney for the flame. By these means a perfect combustion is obtained, leaving no gas to be wasted.

In the cap G are apertures *s s*, tapering from the outside inward, which act as blow-pipes or feeders to the flame, and at the same time acting to keep up the perfect combustion gained.

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

1. In combination with the base of the stove and its central hub through which a gas-burner passes, the diaphragm *x*, which is surmounted with the truncated hollow cone *h* above the burner, as and for the purposes set forth.

2. In a gas-stove, the bottom plate B, provided with the horizontal radial tapering tubes *b b*, and the inclined or tapering openings *a i*, with the gas-burner in the center thereof, in combination with the truncated hollow cone *h*, formed in the center of the diaphragm *x*, substantially as and for the purposes herein set forth.

3. The cap G, provided with the radial tapering tubes *s s*, in combination with the cylinders D and A, and the perforated diaphragm *m*, substantially as and for the purposes herein set forth.

JOHN Q. BIRKEY.

Witnesses:

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D. R. PATTERSON.