C. S. FORD.

GAS-BURNER.

No. 193,601. Patented July 31, 1877.

FIG. 1

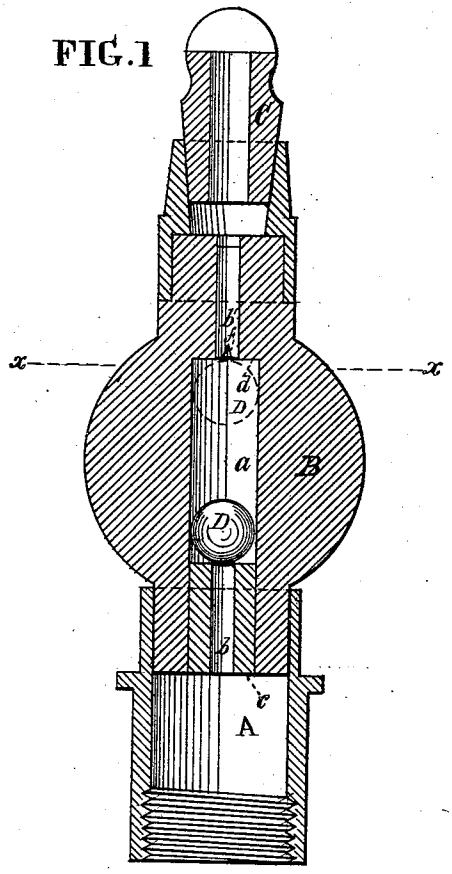
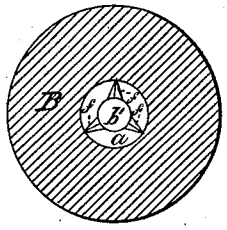


FIG. 2



Witnesses.

Thomas G. Bewley

S. R. Millett

Inventor

Charles S. Ford.

per Stephen Ustick attorney

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES S. FORD, OF PHILADELPHIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOHN J. KRODEL, OF COLUMBIA, PENNSYLVANIA.

IMPROVEMENT IN GAS-BURNERS.

Specification forming part of Letters Patent No. **193,601**, dated July 31, 1877; application filed June 21, 1877.

To all whom it may concern:

Be it known that I, CHARLES S. FORD, of the city and county of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in Gas-Burners, which improvement is fully set forth in the following specification and the accompanying drawings, in which—

Figure 1 is a vertical section of my improved burner. Fig. 2 is a cross-section at the line *x x* of Fig. 1, looking upward.

Like letters of reference in both figures indicate the same parts.

The object of my invention is to regulate the flow of gas under alternate pressures, so as to have an even and uniform flow without waste, which is incidental to stationary or fixed gas burners.

The nature of the invention consists of a glass pillar, having a vertical bore provided with a reciprocating solid wooden ball, which is capable of rising and falling therein, in combination with the base and tip, the bore being closed at its lower end, with the exception of a small central opening, which is covered by the ball when the gas is cut off, and the ball by its gravity falls thereon, and is opened by the pressure of gas, when turned, upon the lower side of the ball. The bore is closed at its upper end when the ball is up, with the exception of small openings at its periphery, of sufficient area to admit the passage of a sufficient amount of gas to the burners.

A represents the base of the burner, B the pillar, and C the tip. The base and tip are of ordinary construction, and a particular description of them is therefore deemed unnecessary.

I construct the pillar of glass on account of its transparency, so as to discover at all times the position of a reciprocating ball hereinafter described; but it may be made of any other suitable material.

The pillar has a central bore, *a*, which communicates with the bore of the base at its lower end by means of the central opening *b* of the bushing *c*, which is concave at its upper end to receive the solid wooden ball D when in its lowest position.

The ball is made of wood to give lightness thereto, and thus to insure sensitiveness to its rising and falling operations, and to prevent jar when it descends upon its seat.

The upper end of the bore *a* has a shoulder, *d*, which is concave to receive the ball when elevated by the force of the gas pressing upon its lower side, when turned on, thus closing the central opening *b'*, which communicates with the tip to prevent the flow of a large volume of gas, the requisite amount to be consumed by the burner passing through the small openings *f*, which are formed in the shoulder *d*.

The operation is as follows: When the gas is cut off from the burner the ball D descends by the force of gravity upon the upper end of the bushing *c*, and closes the central opening *b*, as seen in full lines in Fig. 1. When the gas is turned on, its pressure upon the lower side of the ball, as it flows through the central opening *b*, forces the ball upward through the bore *a* of the pillar, and presses it against the annular shoulder *d* at the upper end of the bore *a*, and thus closes the central opening *b'* to prevent the flow of a large volume of gas, as shown by dotted lines, the gas being only permitted to flow in the requisite amount to the tip C through the small openings *f* in the shoulder *d*.

I claim as my invention—

The glass pillar B, having a central bore, *a*, and a reciprocating solid wooden ball, D, within the bore, and a bushing, *c*, at its lower end, with a central opening, *b*, and a central opening, *b'*, at its upper end, with an annular shoulder, *d*, having small openings *f* for the passage of gas to the tip, in combination with the base A and tip C, substantially in the manner and for the purpose set forth.

CHARLES S. FORD.

Witnesses:

THOMAS J. BEWLEY,

STEPHEN USTICK.