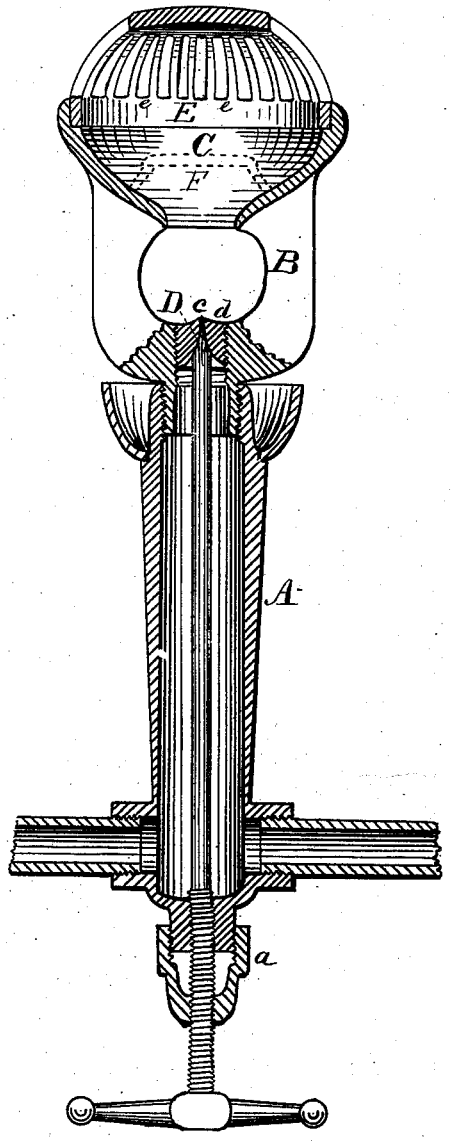
C. H. PRENTISS.
VAPOR-BURNERS.

No. 194,561. Patented Aug. 28, 1877.

Fig. 1.



Witnesses
Geo. W. Gibbs
Samuel Ostenhold

C. H. Prentiss. Inventor

By
Attorneys

UNITED STATES PATENT OFFICE.

CHARLES H. PRENTISS, OF CLEVELAND, OHIO.

IMPROVEMENT IN VAPOR-BURNERS.

Specification forming part of Letters Patent No. **194,561**, dated August 28, 1877; application filed June 11, 1877.

To all whom it may concern:

Be it known that I, CHARLES H. PRENTISS, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Vapor-Burners, which improvements are fully set forth in the following specification and accompanying drawing, in which—

Figure 1 is a vertical section of my new burner.

The object of my invention is to produce a burner in which there shall be a perfect vaporization of gasoline without conducting the heat beyond the generating-chamber any farther than necessary, and also to produce a perfect and complete combustion of the vapor for heating.

These and other objects are sought to be accomplished, as will be seen in the following description in detail.

In the drawing, A is the generating-chamber. It consists of a tube, having connections for attaching to the leading-pipe at the lower end, below which is a valve screw-socket, provided with a packing-box, *a*, to prevent leakage.

It will be observed that the tube A is thick at the top, and is tapered down to the lower end to a thin shell. The object of this is to make the metal thin at the lower end, so as not to conduct heat lower down than is needed, the thicker metal at the top retaining the heat.

B is a yoke, the upper part of which has cast with it cup C, with an opening in the bottom between the arms of the yoke.

In the base of the yoke, where it joins the tube A, is the jet-orifice *c*, in which is a peculiar valve-seat, *d*, for the needle-valve D. The seat *d* consists of a brass bushing, screwed into its place in the yoke, the aperture in which, it will be seen, instead of being a straight taper, has curved sides, the object of which is to protect the point of the valve by relieving it of its bearing at the extreme point, and make the bearing below, at the shoulder, so that the wear upon the point, and the liability of its breaking or enlarging the orifice, is overcome. These curved sides also serve to guide the valve into its seat.

The upper edge of the cup C has an annular rabbet, in which is fitted a cap or cover, E, having apertures or slots *e e* in its sides, which are the exits for the vapor, and are where the combustion takes place.

The form of the cup and the form of the slots are an essential feature in producing a perfect combustion, because they offer the least obstruction to the exit of the vapor, thus making more heat, for when these jets of flame, emerging from the slots, strike the bottom of the cooking-vessel, they spread into a wide sheet of flame, whereby the full power of the burner is utilized at the very place most needed or required.

No jets of flame are employed for specially heating the generator A. The metal becoming heated, and by its construction retaining the heat, is found sufficient for that purpose.

In place of the cap or cover E, a disk, F, set into the cup C, supported by two or three legs over the opening in the bottom of the cup, may be substituted, by which a broad sheet of flame is the result. The curved sides of the cup serve to direct it upward against the bottom of the cooking-vessel.

I do not here lay claim, broadly, to this disk F, it being substantially shown in a prior patent.

The yoke in this description is designed to be of malleable iron, thus requiring the brass bushing. If the yoke be of brass, the bushing would not be needed, but I make the valve-seat the same.

Having described my invention, I claim—

1. The combination, in a vapor-burner, of the generating-tube A, constructed as described, the yoke B, and the cup C, formed with said yoke, substantially as specified.

2. In a vapor-burner, the yoke B, terminating in the cup C formed therewith, the combination and arrangement being substantially as shown and described.

3. In a vapor-burner, the combination of the yoke B, the cup C formed therewith, and the cap E, having slots *e*, all constructed and arranged substantially as shown and described.

C. H. PRENTISS.

Witnesses:

GEO. W. TIBBITTS,

SAMUEL OSTERHOLD.