

W. H. RUDOLPH.  
VAPOR BURNER.

No. 98,192.

Patented Dec. 21, 1869.

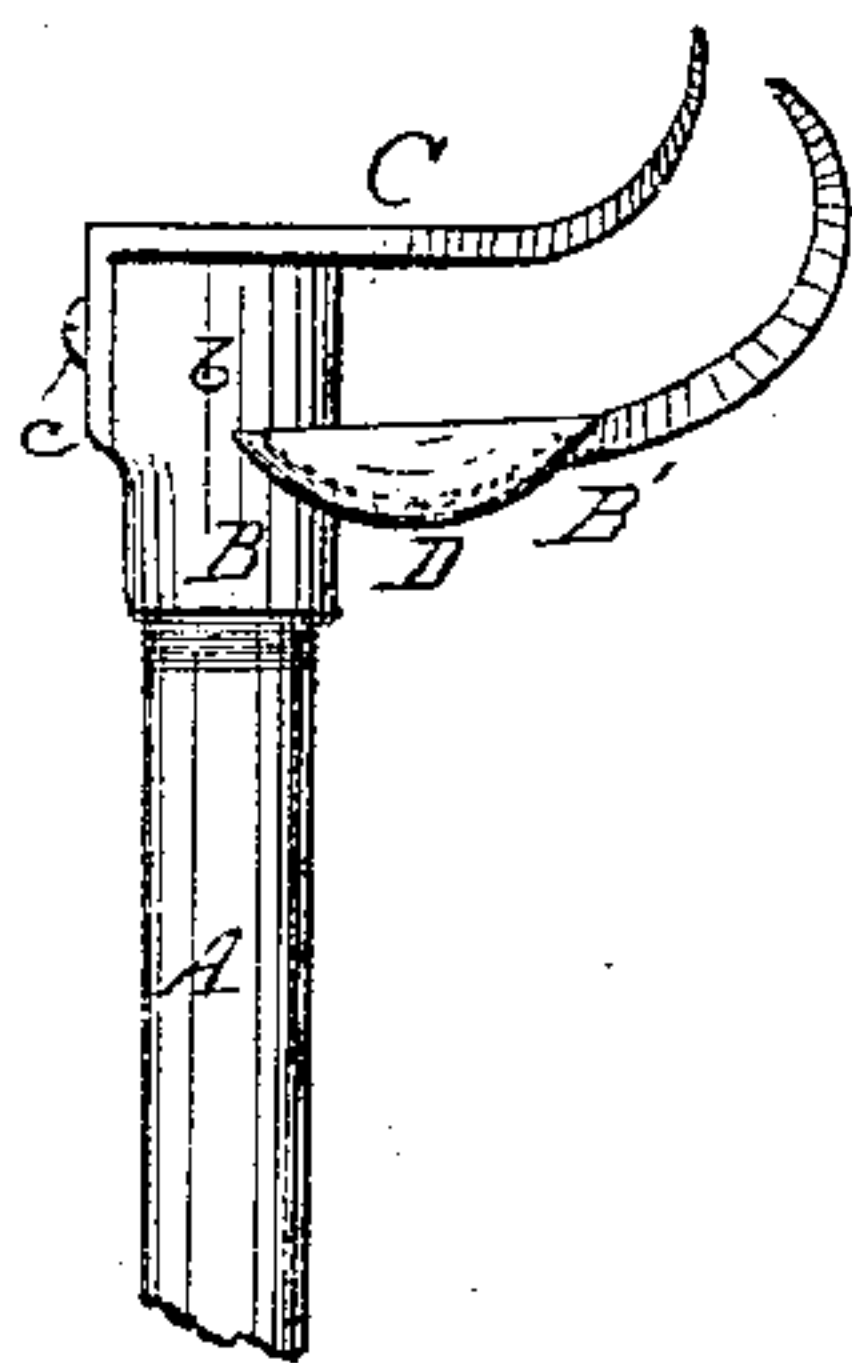


Figure 1.

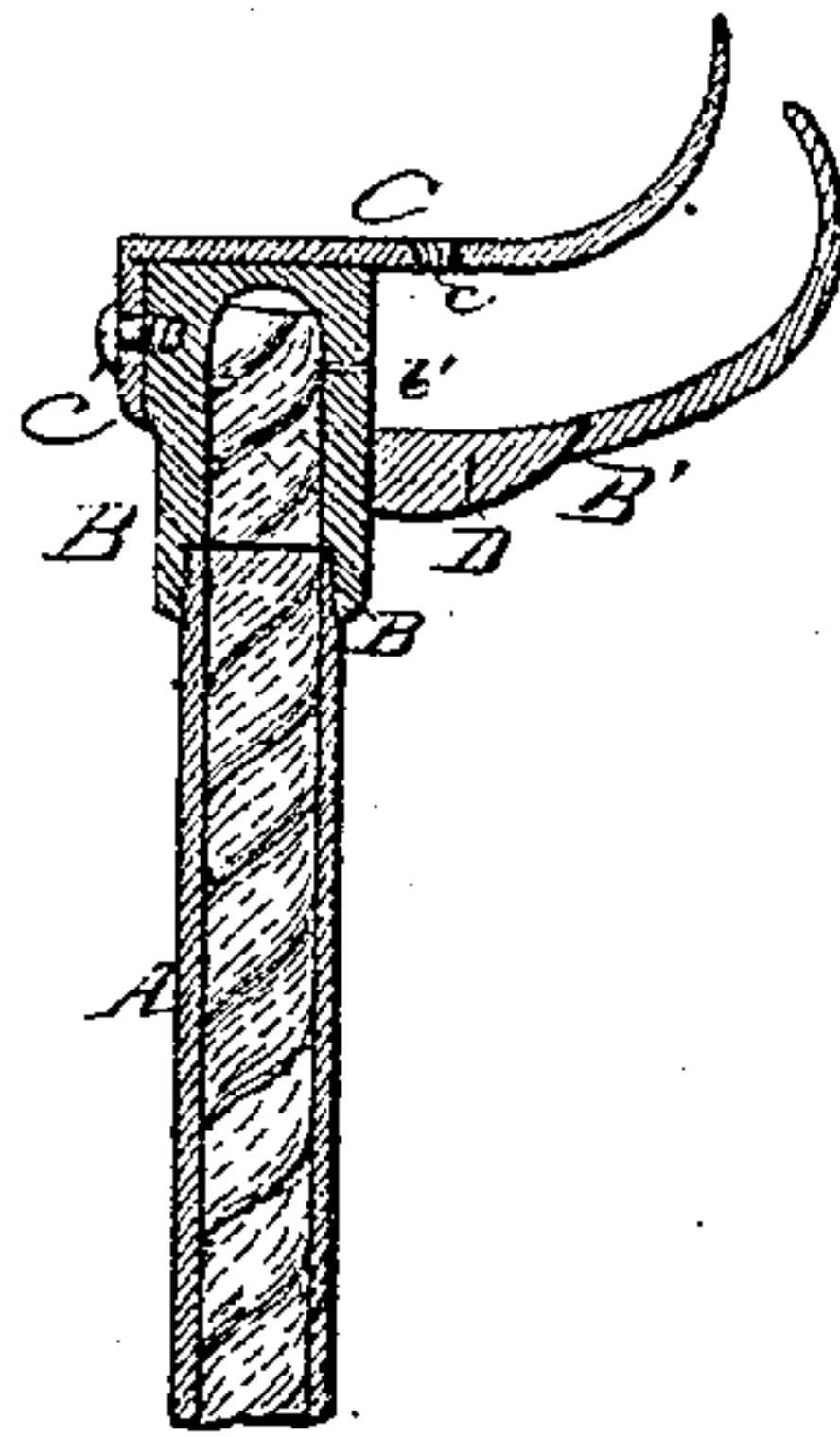


Figure 2.

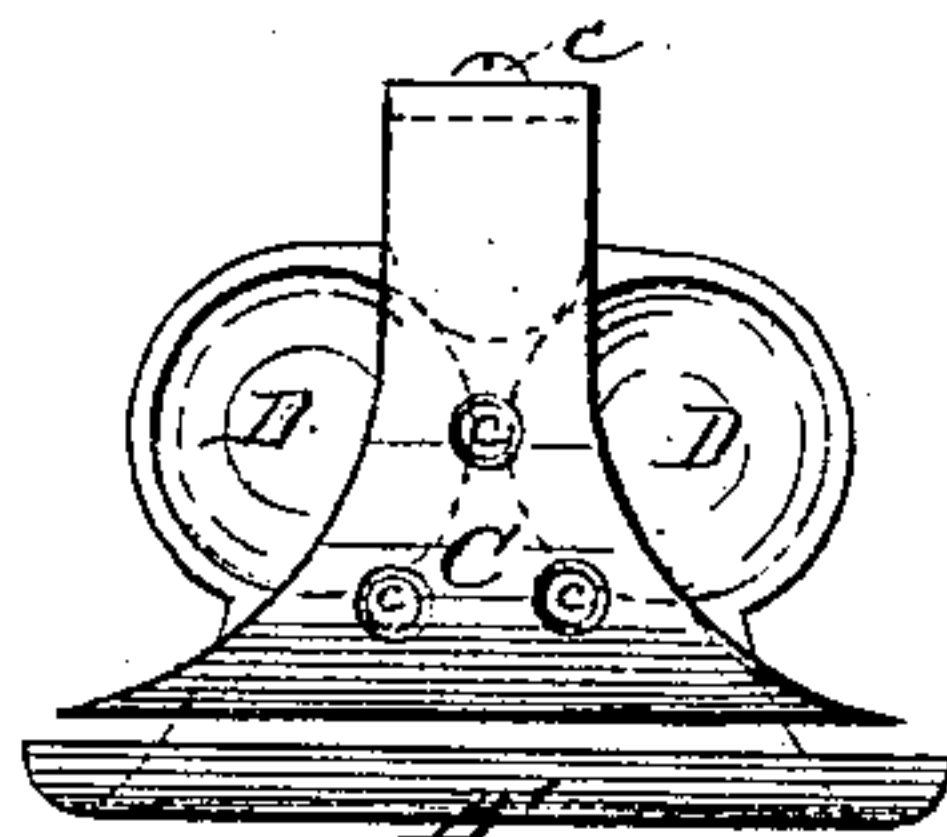


Figure 3.

Witnesses:

William W. Gerthel

Robert Burns

Inventor.

W. H. Rudolph  
by his atty  
Gerthel

# United States Patent Office.

WILLIAM H. RUDOLPH, OF ST. LOUIS, MISSOURI.

Letters Patent No. 98,192, dated December 21, 1869.

## IMPROVEMENT IN VAPOR-BURNERS.

The Schedule referred to in these Letters Patent and making part of the same

### To all whom it may concern:

Be it known that I, WILLIAM H. RUDOLPH, of St. Louis, in the county of St. Louis, and State of Missouri, have made certain new and useful Improvements in Vapor-Burners; and I do hereby declare the following to be a full and true description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

It is known that in the usual hydrocarbon-vapor burners, to ignite the oil-vapors, it is first necessary to heat the oil, to form vapor, and that during this process of heating, to produce vaporization, oil is wasted, which causes nauseous smell, and danger from its tendency to diffusion and inflammability. This to avoid, and to generally form an improved burner, is the nature of this invention.

To enable those herein skilled, to make and use my said improved burner, I will now more fully describe the same, referring to

Figure 1 as a side elevation; to

Figure 2, as a vertical central sectional elevation; and to

Figure 3, as a plan of my said burner in one of its usual forms.

In its ordinary uses, my said burner is supported upon a suitable burner-pipe, A. This is properly arranged, with a cotton or other packing, to regulate the admission of oil to the burner-orifice. The burner-pipe connects, by a suitable stop-cock, with the oil-pipe from the usual oil-reservoir or globe.

The burner proper will consist principally of a lower head-piece, B, which will usually be screwed upon the end of the burner-pipe A.

Said head-piece forms, immediately above the pipe A, a chamber, *b*, in which vapors may accumulate.

Said chamber has the discharge-orifice *b'* for the issue of vapor.

Usually cast with the head-piece B, is the jet-receiving plate B', which projects about horizontally from the head-piece, and then turns to present a curving edge, as indicated in figs. 1 and 2.

The jet of vapor, or oil, as it issues from the orifice *b'*, is received upon said plate B', and spreads thereon to a more perfect vaporization.

Above said head-piece, and flanged over against the vertical face thereof, is secured the cap-plate C. The curvature hereof is generally similar to that of the receiving-plate B', so that between said plates, a partial chamber is formed, in which the vaporization of the oil takes place very perfectly.

Perforations *c*, in the plate C, admit sufficient air

to cause a current, aiding the outward passage of the vapor between the edges of the plates B' and C.

After ignition, said vapors burn from their exit at the edges of B' and C with a bright and comparatively smokeless flame.

The proximity of the plates B' and C, and the head-piece B to said flame, causes these parts to become heated, they being made of metal, and it is this heat which vaporizes the oil as it is fed to the head-piece, or issues from the orifice *b'*.

Before the before-mentioned parts are heated, as in igniting the burner-light, in all burners of ordinary construction, a jet of oil flows to the plate B', and drips down the burner-pipe, and otherwise causes uncleanness and damage.

This to prevent, I have arranged the receiving-plate B' to form cups D, which are just below the orifice *b'*, and sidewise thereto, by acting to receive oil and prevent wastage. These cups are of great benefit. Moreover, as the same are parts of the heater-plate B', the oil therein is gradually vaporized and consumed.

The orifice *b'* is exceedingly fine, and therefore liable to clogging by sediment in unclean oils. To readily cleanse said orifice, as well as to form a more easily-constructed head-piece B, I arrange the joint-screw *c*, which secures the cap-plate C to the head-piece B in line with said orifice. The screw-hole for the nut-thread of the joint-screw will then first be drilled, and the drill for the orifice *b'* can readily be passed through the same bore; and in cleaning a choked-up orifice, the screw *c* being removed, a needle may readily be applied.

By said arrangement, I thus form a burner, which is effective to produce an economical light, and which, as an article of manufacture, is cheap and durable.

Having thus fully described my invention,

What I claim, is—

1. The head-piece B, combined with the cap-plate C and the receiving-plate B', when the latter has cups D situate both sides of the discharge-orifice *b'* of the head-piece, substantially as set forth.

2. The head-piece B, screw *c*, and orifice *b'*, when the screw *c* is placed in line with the orifice *b'*, substantially as set forth.

In testimony of said invention, I have hereunto set my hand, in the presence of witnesses.

WILLIAM H. RUDOLPH.

Witnesses:

GEORGE P. HERTHEL, Jr.,

WILLIAM W. HERTHEL.