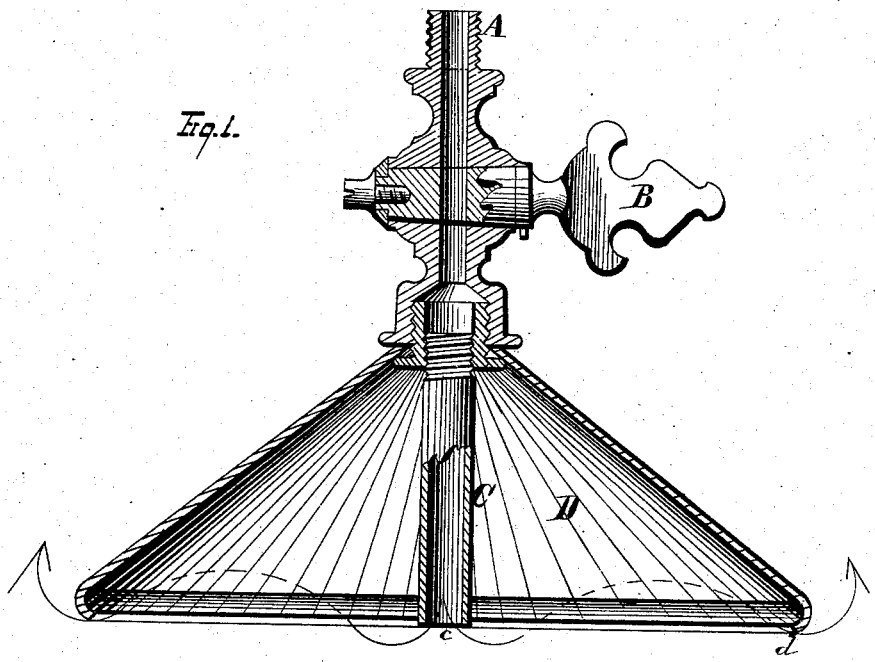
P. NEFF.

Gas-Burner for the Manufacture of Lamp-Black.

No. 160,787. Patented March 16, 1875.

Fig. 1.



WITNESSES

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UNITED STATES PATENT OFFICE.

PETER NEFF, OF GAMBIER, OHIO.

IMPROVEMENT IN GAS-BURNERS FOR THE MANUFACTURE OF LAMP-BLACK.

Specification forming part of Letters Patent No. **160,787**, dated March 16, 1875; application filed January 25, 1875.

CASE A.

To all whom it may concern:

Be it known that I, PETER NEFF, of Gambier, in the county of Knox and State of Ohio, have invented certain new and useful Improvements in the Manufacture of Lamp-Black; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an inverted burner and dome, for use in the burning of gases in the manufacture of lamp-black.

This present application forms one of a number of applications for patents made by me, for certain improvements in gas-burners for use in the manufacture of lamp-black; and the invention consists in a burner provided with a wide open mouth, of a diameter preferably equal to or greater than the orifice through which the gas is fed to the burner, and a dome attached thereto, or to be used in connection therewith, the said burner made to extend down through the top of the dome, so as to permit its gas to escape in a downward direction.

In the drawing, Figure 1 is a cross-sectional view of a burner and dome combined in accordance with my invention.

A is a feed-pipe, for feeding the gas to the burner. B is the stop-cock by which the rapid flow of gas is governed. C is a burner, with its mouth *c* equal to or greater than the orifice from which the gas is fed to the burner. The burner C is made to project, preferably, downward about to the plane of the lower edge of the dome, though this position may be varied, as desired. D is a dome, through the top of which the burner passes, so that gas escaping from the burner is burned beneath the dome. The dome D may or may not have a flange, *d*, upon its edge, of any suitable form, to prevent the smoke from easily escaping from the dome. The dome D may also be of any desired shape, so that it extends downward in a canopy form over the burner.

The operation of the device is as follows: Gas passing through the orifice in the stop-cock B is permitted to escape freely through the open mouth in the inverted burner C. It then rises and is burned beneath the dome. The dome quickly fills with smoke and the flame is smothered, so as to cause the gas to burn at a low temperature, and so as to permit the flame to be fed with oxygen only near the lower end of the burner. The burner serves to separate the gas as it flows back from the mouth *c*, so as to spread it out into a thin surface. The oxygen being fed to the gas along this thin surface consumes the same at low temperature, and the flame is not permitted to rise to a point, nor is the thin wall fed with oxygen upon both its sides, in either of which cases the heat would become so intense as to burn up the carbon. But this construction consumes the gas without burning up much of its carbon, and the latter is permitted to deposit a portion of itself within the dome, while the remaining portion is permitted to escape under the edge of the dome, and to pass thence to other localities, where it is permitted to deposit the balance of its charge.

This combined burner and dome is equally applicable to all kinds of mechanism wherein burners are employed for burning gas in the manufacture of lamp-black.

Instead of employing a single burner in combination with a single dome, there may be several burners combined with the same elongated dome, and the said burner or burners may not necessarily be provided with the enlarged mouth *c;* but any style of inverted burner combined in this manner with a dome would produce to a certain degree the desired effect. I find, however, that the open mouth *c* is the best form—that is, such a mouth as is equal to or greater than the orifice through which gas is fed to the said mouth, by which arrangement the gas is permitted to escape freely from the burner.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a dome, D, of an inverted burner, C, substantially as and for the purpose described.

2. The combination, with a dome, D, of an

inverted burner, C, with a wide open mouth, *c*, substantially as and for the purposes described.

3. The combination, with an inverted burner, C, and dome D, of a flange, *d*, substantially as and for the purpose described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

PETER NEFF.

Witnesses:
FRANCIS TOMNEY,
H. T. HOWER.