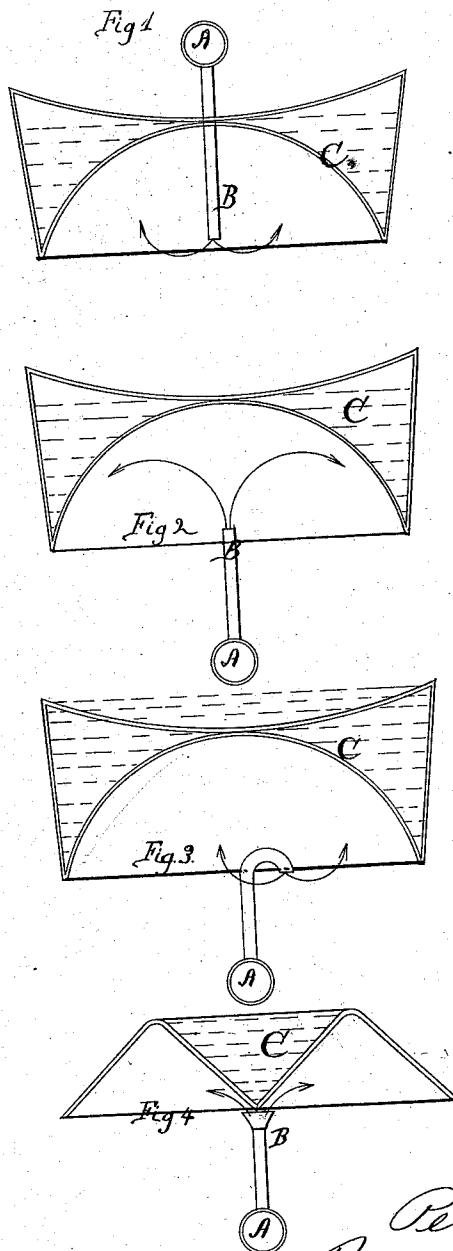


P. NEFF.  
Apparatus for Making Lamp-Black.

Patented May 11, 1875.

No. 163,027.



Witnesses

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# UNITED STATES PATENT OFFICE.

PETER NEFF, OF GAMBIER, OHIO.

## IMPROVEMENT IN APPARATUS FOR MAKING LAMP-BLACK.

Specification forming part of Letters Patent No. **163,027**, dated May 11, 1875; application filed March 8, 1875.

*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 mechanism designed for employment in the manufacture of lamp-black, and more particularly to a combination, with suitable burners, either erect or inverted, of condensing-domes, the said domes located over the burners, and filled with water, whereby the surface is kept always cool.

In the drawings, Figure 1 represents a condensing-dome, with the burners dependent therefrom. Fig. 2 shows similar domes, with the burners erect. Fig. 4 shows a variation in the form of a condensing-dome, whereby the gas is cooled immediately as it issues from the burners.

A is a pipe for conveying the gas to the burners B. C is the condensing-dome, constructed upon its upper side to hold water, which may be made to rest upon or run over the domes. The under sides of the domes are made concave in form, so as to condense the smoke arising from the burning oil or gas, permitting it to more readily deposit itself upon the said concave surfaces.

It is apparent that the burners may be inverted, so as to pass down through the top of the dome, or ascend beneath the dome, and then curve downward, so as to deliver its jet in a downward direction, whereby the burner itself will act to spread the flame and create a hollow volume of gas, which shall burn only on its surface; or the said burners may stand erect beneath the said domes, and be provided or not with disks located in the top of the said burners, whereby the gas is spread. In fact, any kind of burner may be employed beneath the said concave surface or descending domes, which contain water for the purpose of cooling and condensing the

smoke, and causing it to deposit its carbon upon the said concavity beneath without departing from the principle of my invention. So, also, the form of the dome may be altered, as shown in Fig. 4, so that only a portion of the said concave surface is filled with water upon its upper side. The device shown in Fig. 4 may be an outer cone, and provided with an inner cone, the apex of which may be projected into the mouth of the wide-top burner, serving the purpose of a disk to spread the gas as it leaves the burner, and, at the same time, to rapidly cool it and cause it to burn at a low temperature, thereby consuming the smallest amount of carbon, and not permitting it to rise and burn at a point.

The domes can be cleaned from time to time by a brush or any other suitable apparatus, whereby the lamp-black is removed and dropped into removable boxes underneath. To facilitate the ready sweeping or scraping of the surface, as above set forth, it may be sometimes advisable to employ the burners that rise from beneath, instead of those that pass through and depend from, the domes; and, also, the form of dome shown in Fig. 1 is of very practicable shape, because of the ease with which it may be cleaned by the employment of a traveling brush or box for collecting the said lamp-black.

It is necessary that the said domes or concave surfaces above the burners should come down on all sides, in order that the smoke or products of combustion arising into them will not readily flow therefrom, but will, by the downward-projecting sides, be impeded, and will permit them to deposit a large portion of their charge upon the said concave surfaces; and the said surfaces should also be so constructed that, after the smoke has arisen into them, it will, after depositing its charge, escape from beneath the edges of the said concave surfaces, and then be permitted to rise and pass into other condensing apartments.

I am aware that it is not new to burn the products of combustion beneath the surface, the said surface being kept cool with water; but heretofore such surfaces have not been made to descend on all sides, so as effectually to impede the progress of the products of combustion, and by so condensing them cause

them to deposit their charge to a great extent, but, on the contrary, have permitted the free escape of the said products. And I am also aware that surfaces of that nature have been made both flat and curved. I do not, therefore, claim such devices, and they do not serve the objects of my invention; but

What I do claim is—

In the manufacture of lamp-black, the combination, with the burner or burners B, of overhanging domes or concave surfaces C, filled with water upon their upper sides, the

edges of the said domes or concave surfaces made to project downward on all sides, to impede the progress and condense the products of combustion therein, 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:

ANNA LEWIS,

E. CLIFFORD NEFF.