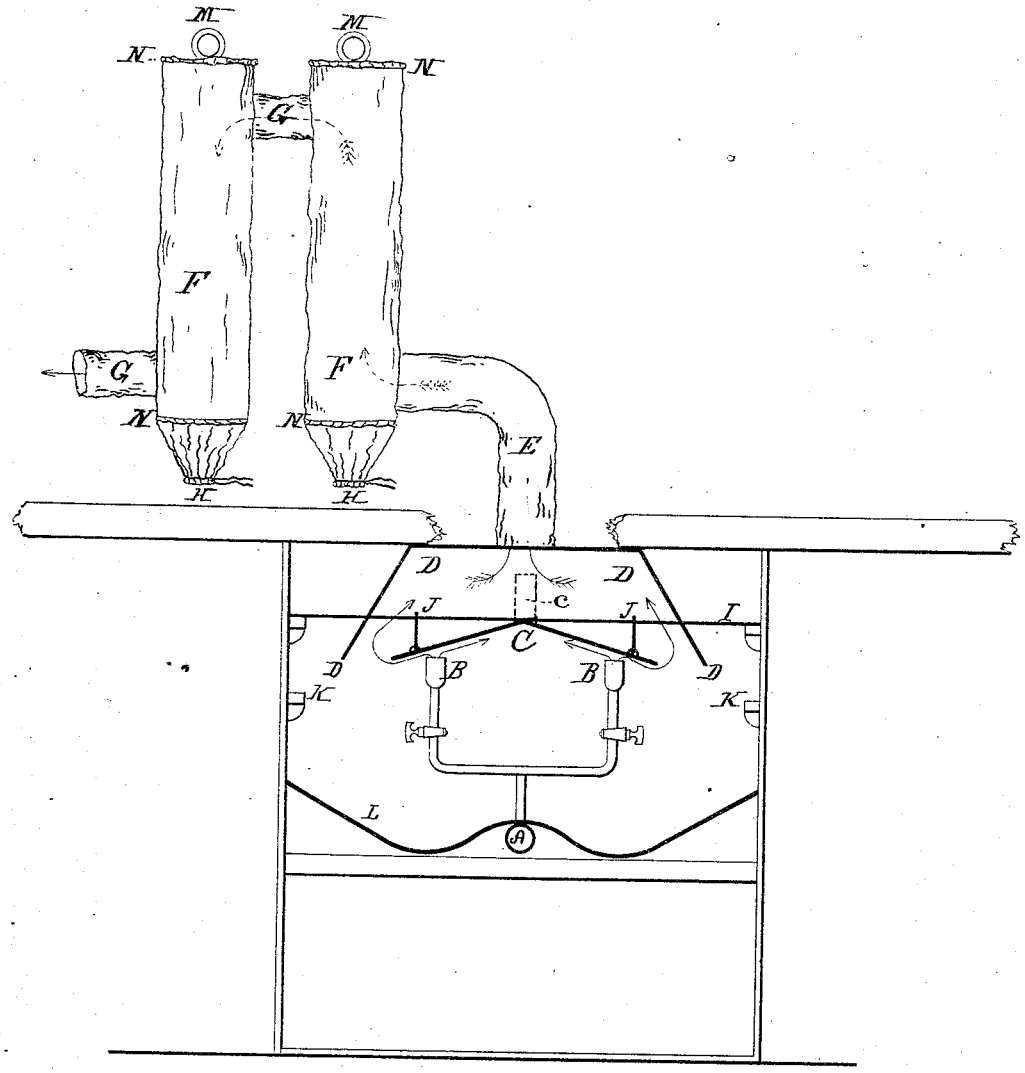
P. NEFF.

Lamp-Black Apparatus.

No. 162,679. Patented April 27, 1875.



Witnesses

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UNITED STATES PATENT OFFICE.

PETER NEFF, OF GAMBIER, OHIO.

IMPROVEMENT IN LAMP-BLACK APPARATUS.

Specification forming part of Letters Patent No. **162,679**, dated April 27, 1875; application filed April 17, 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 Apparatus for 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 improvement in apparatus for the manufacture of lamp-black from the carbureted-hydrogen gas naturally flowing from the earth, principally for utilizing such gases; and consists in combining, with a burner or series of burners, domes or bells located above said burners, wherein the lamp-black, to a large extent, is deposited. A flue or funnel-shaped passage, into which the smoke that escapes from the edges of the said bells or domes rises, and, passing thence through suitable passages, is finally permitted to deposit all, or nearly all, of its lamp or carbon black in canvas or woolen bags, substantially as hereinafter set forth and claimed.

In the drawing is presented, in section, the outlines of an apparatus embodying my invention.

It is necessary, in order that the greatest amount of lamp-black may be deposited from burning carbonaceous matter, to cause the same to be consumed at a low temperature, or at a temperature so low as just sufficient to decompose or separate the gas or the carbonaceous matter into smoke, without being of sufficient temperature to burn the carbon contained therein. Moreover, it is also desirable, in order to obtain grades of lamp-black, that the coarser or crude portions should be collected, as far as possible, in the vicinity of the burners, so the products that are not deposited in this locality may not carry with them any considerable amount of the coarser grades to be deposited with finer grades thereafter. The object of my invention is to obviate this difficulty.

A is a pipe, whereby is fed to the burner B any suitable carbonaceous matter—such as hydrocarbon gas or oil, the combustion of which is to form the lamp-black. C are domes or bells suspended above the burner or burners B, in such close proximity thereto that the gas or other matter is caused to burn at a very low temperature as it escapes from the burner or burners B. The bells or domes C may be of any suitable form, whereby an inverted concave surface is presented toward the burners, whereby the products of combustion are caused to settle and deposit their coarser contents upon the said concave surfaces. The said surfaces may, therefore, be cylindrical, A-shaped in cross-section, or of any other suitable shape. They may also be either round, and suited to one or a few burners, or they may be elongated to any extent, whereby they may be suited to a series of burners. So, also, it is not absolutely necessary that the said surfaces presented above the burners should be concaved; but the said surfaces might be flat, though a concaved surface which would offer considerable resistance to the escape of the smoke, and thereby cause it to deposit its charge, is much preferable. My invention, however, comprehends, in connection with the mechanism hereafter to be described, all said surfaces above the burners, no matter what their shapes may be, and no matter how the burners may be arranged, whether depending from the said surfaces, and no matter whether the said burners be erect or inverted. D is a canopy-shaped flue of any suitable form, and of any desired or required dimension. It extends down around the bell, dome, or surface C, so that the products of combustion, after they have deposited all that they will deposit upon the said surface C, may escape beneath the edges of the said surface into the said flue D. The draft of this flue being materially interrupted by the said dome or surface C, the products of combustion rise slowly, depositing a portion of their contents upon the walls of the said flue. What escapes being deposited in the flue D rises and passes through suitable flue E into the first of a series of bags, F, of wool, canvas, or other suitable material. The first bag F is connected with the next succeeding one by suitable flues G, so that the bags F form a connected series of any desired extent, and will, in succession, contain different grades of lamp-black. The last bag should be pro-

vided with some means of escape for the remaining gases or smoke, and also for the purpose of maintaining a slight draft through the said flues and bags.

Suitable means should be provided for cleaning the lamp-black from the domes or surfaces C, and also for cleaning the deposits from the walls of the flue or flues D and E. The canvas or woolen bags can be readily cleaned by shaking or beating, and the deposits removed therefrom through suitable traps H. In this way it is possible to collect nearly, if not all, that can be made to rise from the combustion of carbonaceous matter—such as gas or light oil—and at the same time the coarser or lower grades are caused to be deposited in and adjacent to the burning chamber, and are not carried up in the general draft into and deposited with the finer grades that are collected in the canvas or woolen bags.

In using the said invention, I prefer to employ a suitable car or traveling receptacle for collecting the lamp-black that may be scraped from the surfaces. For this purpose suitable tracks K are arranged, along which the car may traverse; and I also deem it advisable to employ a surface, L, upon which lamp-black or tar, &c., that may fall is readily collected or drained off.

The domes are suspended to rods I by hooks or other suitable devices J, and the bags are provided with loops or their equivalent, M, at their tops, and are held inflated by suitable hoops N or their equivalent.

c are openings through the top of the dome or surface C, through which a portion of the smoke or products of combustion may pass. These openings may or may not have short pipes leading therefrom upward; but they discharge into the space beneath the canopy or flue D, from which the undeposited matter is carried forward to the bags. The openings should not be so large or numerous as to create a material draft. The burners B may extend directly from the feed-pipe A, or they may spring from secondary feed-pipes that spring from the main feed-pipe A. By the latter method there may be a number of rows of burners side by side without the necessity of but one main A.

What I claim as new is—

1. In the manufacture of lamp-black, the domes or surfaces C, located over the burning carbonaceous matter, in combination with the flue or flues D and canvas or woolen bags F, substantially as and for the purpose described.

2. The combination, with the surfaces C, canopy flue or flues D, and bags F, of burners located beneath the said surfaces C, and means for feeding the said burners with oil or gas, substantially as and for the purpose described.

3. The combination, with the surfaces C, flue D, and canvas or woolen bags, of the burners B and openings *c*, substantially as and for the purposes described.

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

PETER NEFF.

Witnesses:

PETER NEFF, Jr.,

REBEKAH NEFF.