2 Sheets--Sheet 1.

P. NEFF

Lamp-Black Apparatus.

No. 166,936. Patented Aug. 24, 1875.

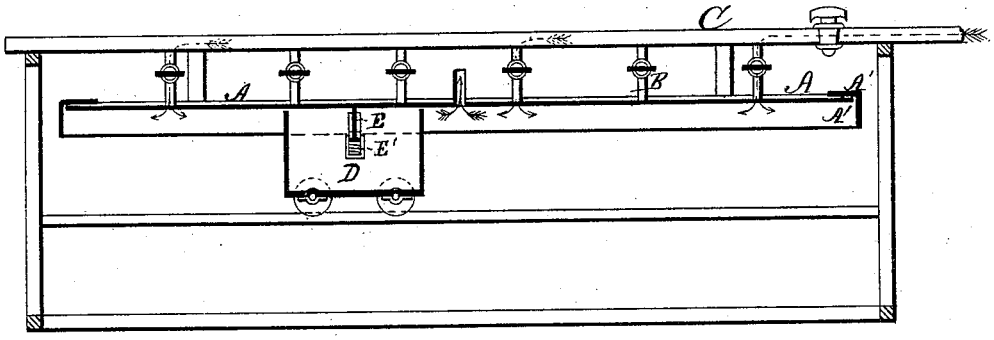


Fig 1

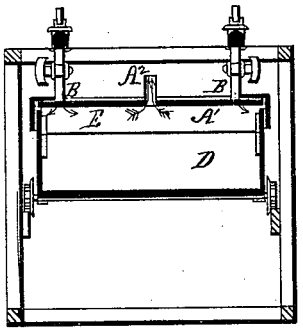


Fig 2

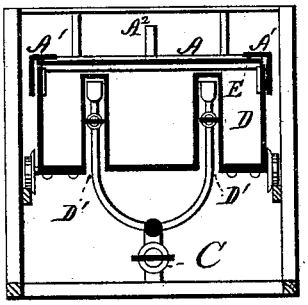


Fig 3

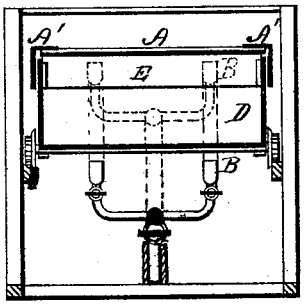


Fig 4

Witnesses

Walter Miller

Wm. Ewart

Inventor

Peter Neff

By Legget & Legget

Attorneys

2 Sheets--Sheet 2.

P. NEFF

Lamp-Black Apparatus.

Patented Aug. 24, 1875.

No. 166,936.

Fig. 5.

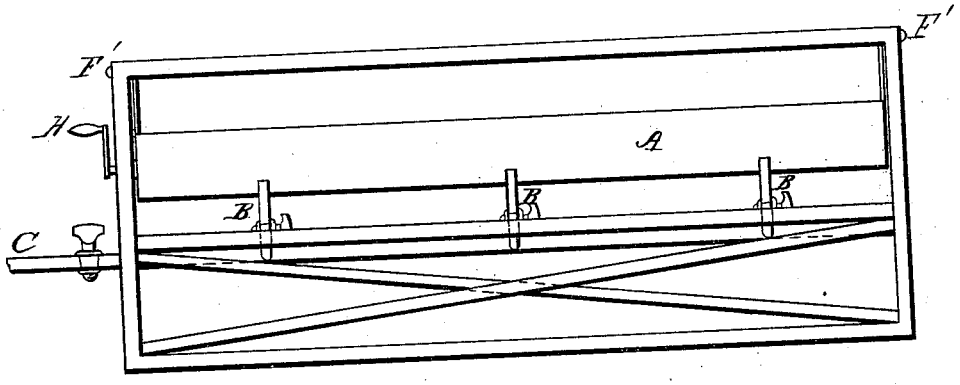
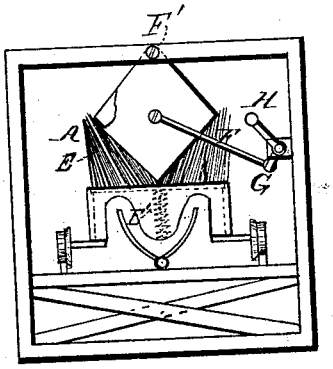


Fig. 6.



Witnesses

Walter Miller

W. B. Ewart

Inventor

Peter Neff.

By Leggett & Leggett

Attorneys

UNITED STATES PATENT OFFICE.

PETER NEFF, OF GAMBIER, OHIO.

IMPROVEMENT IN LAMP-BLACK APPARATUS.

Specification forming part of Letters Patent No. **166,936**, dated August 24, 1875; application filed June 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 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 improvements in apparatus for the manufacture of lamp-black; and consists, first, in a peculiar way of forming the surface upon which the lamp-black is deposited with removable plates, caps, or rims at the edges, whereby it can be readily changed from a concave surface to a flat surface, in order to facilitate cleaning off the deposits; second, in adapting the burners beneath the concave surfaces, or other surfaces upon which the lamp-black is deposited, so they may be raised and lowered, in order to permit a traveling car to be passed between the burners and the surfaces for removing the deposits; third, in adapting a car to suit burners that are permanently fixed, so that the said car may be passed along beneath the surface upon which the deposits are made without interfering with the burners; fourth, in forming the surfaces above the burners convexed in shape toward the burners; fifth, in providing the said convexed surfaces, or other surfaces upon which the deposits are made, with mechanism whereby they may be turned to one side away from the burners, in order to facilitate cleaning the deposits therefrom; sixth, in providing cars for collecting the lamp-black, the said cars being provided with spring brushes or scrapers for scraping the deposits from the surfaces, as hereinafter more fully set forth and claimed.

In the drawings, Figure 1, Sheet 1, is a side elevation of an apparatus for making lamp-black with inverted burners; Fig. 2, Sheet 1, an end view and cross-section of same. Fig. 3, Sheet 1, represents a car provided with recesses for avoiding the stationary burners. Fig. 4, Sheet 1, is a similar view, representing facilities for elevating and depressing the burners, so as to permit an ordinary car to pass. Fig. 5, Sheet 2, is a view, in side elevation, of an apparatus which is a variation of my invention, wherein the condensing-surface above the burners is convexed toward them. Fig. 6, Sheet 2, is an end view of same, representing mechanism whereby the condensing-surface may be tilted away from the burners to facilitate cleaning.

A is a surface, upon which the lamp-black is collected. This surface may be flat, and provided with caps at the edges, which project down upon all sides of the said surface, making it in reality a surface presenting a concavity downward, the said depending caps or rims at the edges serving to arrest the draft and cause greater deposits to be made upon the said surface; but, when it is desired to clean the said surface A, the said caps A^1, at the edges thereof, may be removed, so as to be out of the way.

Instead of making the surface A as above described, it may be made to present a convex surface downward, as shown in Figs. 5 and 6.

When the surface is thus convexed toward the burners it may very readily be kept cool by causing a circulation of water on its upper side.

B are burners. C is a feed-pipe, through which natural gases, or the products from which lamp-black is obtained, are conveyed to the burners. D is a car, the object of which is to travel beneath the surface upon which the lamp-black is deposited, scraping therefrom and collecting the said deposits. The car D travels upon suitable railways, as indicated. D′ in Fig. 3 are recesses formed longitudinally of the car, so as to permit the car to pass along over the burners and scrape the deposits from the surface A. These recesses are only necessary when the burners B are permanent—that is, when there is no means provided for removing them out of the way.

As the car passes along over these burners it is apt to extinguish the flames. For the purpose of relighting the same a torch or flambeau may be attached in suitable position at the end of the car.

E is a scraper or brush, located transversely across the top of the car, which scrapes or brushes the deposits from the surface A. The

scraper or brush is provided with a spring or springs, E′, which gives to the scraper or brush a yielding pressure against the surface A.

In Fig. 4 is represented a device for facilitating the passage of the car D. It consists simply in making the main C and the burners B adjustable—that is, capable of being lowered down, so as to permit the car to pass freely above the burners beneath the surface A.

In Figs. 5 and 6, F represents a shaft attached to the surface A, the surface A being swung or suspended from a pivot, F′. The shaft F is connected with the crank-arm G, which crank-arm is operated by a handle, H. The object of this construction is as follows: When the burners are made permanent—that is, not capable of being removed from the surface A—it is frequently very difficult to clean the plates, because of the proximity of the flames; but by suspending the said surface, as indicated in Figs. 5 and 6, and connecting it with some mechanism like that shown at F, G, and H, or any other suitable mechanism that will effect the purpose, the said surface may be tilted or swung away from the flames a sufficient distance to admit of readily cleaning the deposits therefrom. Of course, the mechanism F G H is not the only mechanism that can be employed. In the case shown, where the convexed surfaces are employed extending down between the burners, the crank H enables the operator, by turning it partially, to force first one surface away from the flames, then, by turning the crank further, to force the other surface away from the flames, and they can thus be alternately cleaned.

The convexed surface shown in Figs. 5 and 6 is not the only form of convex surface that may be employed, but instead thereof any shape or style of surface which presents a convexity toward the burners may be employed without departing from my invention. So also they may be of sufficient length to suit any number of burners, and the burners may be arranged in any desired form—that is, they may rise from beneath or depend from above. In the latter case they may or may not pass down through the convexed surface.

Where the convex surfaces are employed the flames readily glance therefrom, and the deposits on the said surfaces are not so great as when the surfaces are either flat or concave. The lamp-black, therefore, that is deposited directly upon the convex surfaces is of a different grade from that deposited directly either upon the concave or flat surfaces.

The products of combustion that escape beyond the convex surfaces may be collected, and caused to deposit their charge in any of the various ways described in my several Letters Patent for the manufacture of lamp-black not necessary here to enumerate.

When the concave surface is employed, as in Fig. 1, the pipes A^2 or holes through the surface A should be located at intervals, the object of which is not to create a material draft through the same, yet is sufficient to govern the general course of the escaping products of combustion. I find the device shown in Fig. 1 to be very efficient. The burners project only to the lower side of the surface A, so that a scraper may pass along the surface without touching the burners, and with burners of this character I do not limit myself to any particular form of surface A. It may be in that case either flat, concave, convex, or of any other desired shape.

What I claim is—

1. In an apparatus for the manufacture of lamp-black, the combination, with the burners B, of a convex surface located above the flames from the said burners, with its convexity toward the said flames, substantially as and for the purpose described.

2. The combination, with the burners B, and a surface, A, located above the flames from the said burners to receive the deposits of lamp-black, of adjustable depending caps A^1 at all the edges of the said surface, substantially as and for the purpose described.

3. The combination, with burners B and surface A, of a car, D, with recesses D′, to permit it to pass by the burners, substantially as and for the purpose described.

4. In an apparatus for the manufacture of lamp-black, the combination, with depositing-surface A, of burners B, located beneath the same, the said burners made adjustable, so as to be removed from the said surface to facilitate cleaning off the deposits, substantially as and for the purpose described.

5. The combination, with the convex surface A, substantially as described, of car D, scraper or brush E, and spring E′, substantially as and for the purpose described.

6. In an apparatus for the manufacture of lamp-black, the combination, with the burners B, of the convex surface A, substantially as described, the said surface A being readily removable from the burners, for the purpose of facilitating the cleaning of deposits therefrom, substantially as and for the purpose described.

7. The combination, with the burners B, of the suspended surface A, shaft F, and crank G H, substantially as and for the purpose described.

8. In an apparatus for the manufacture of lamp-black, the combination, with a depositing-surface, of burners projecting from the back of the said surface, just through, but not beyond, the said depositing-surface, 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:
NAVAPA W. NEFF,
E. CLIFFORD NEFF.