No. 664,334. Patented Dec. 18, 1900.

J. M. MOREHEAD.

MANUFACTURE OF CARBID OF CALCIUM.

(Application filed Dec. 12, 1899.)

(No Model.)

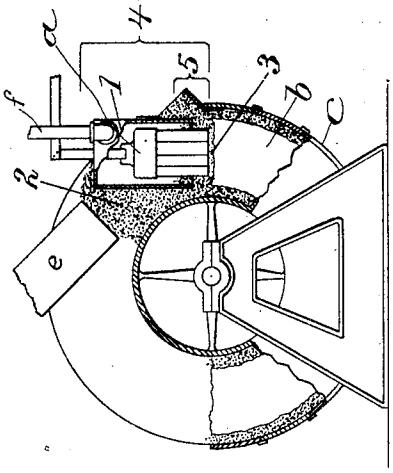


Fig. 2

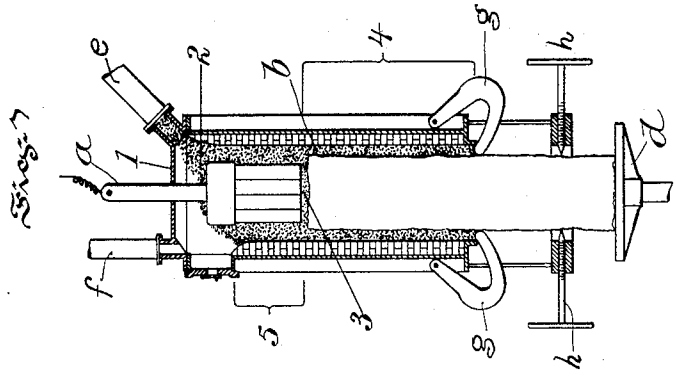


Fig. 1

Witnesses:
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by
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN M. MOREHEAD, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE UNION CARBIDE COMPANY, OF SAME PLACE.

MANUFACTURE OF CARBID OF CALCIUM.

SPECIFICATION forming part of Letters Patent No. 664,334, dated December 18, 1900.

Application filed December 12, 1899. Serial No. 740,049. (No specimens.)

To all whom it may concern:

Be it known that I, JOHN M. MOREHEAD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in the Manufacture of Carbid of Calcium and the Like, of which the following is a specification.

The object of this invention is to provide a simple, reliable, and efficient method of excluding air from an electric furnace, such as a carbid-furnace, and of controlling and guiding the escaping gases, whereby the carbons and holders are protected from burning and the volume of gas from the furnace is reduced so that comparatively little dust escapes from the furnace.

To this and other ends the invention comprises the method hereinafter described and claimed.

In the drawings I have illustrated apparatus in connection with which my method may be practiced, and in which—

Figure 1 is a view, principally in section, illustrating a vertical furnace; and Fig. 2 is a similar view illustrating a rotary furnace.

In the drawings, 1 is a hood provided with means for carrying off the evolved gas, which in the case of calcium carbid is carbon monoxid.

2 indicates the raw material.

The neighborhood or region in which the reduction or combination occurs I shall designate the "zone of reduction," and it is indicated by the reference-numeral 3 upon the drawings. Surrounding the zone of reduction is raw material, and it is arranged so as to present a comparatively great mass of it for excluding air from the zone of reduction and a comparatively small mass of it for permitting the evolved gas to escape into the hood 1. The path of opposition is indicated at 4 and the path of low opposition at 5. Clearly gas evolved in the neighborhood of the lower ends of the carbons will find its way by the path of least opposition 5, and the path of high opposition 4 will exclude air. Since the air is excluded, the gas, which is carbon monoxid, will not burn. Therefore the carbons and their holders are not unduly heated, and the volume of gas which leaves the furnace is comparatively small, and hence cannot carry away from the furnace any considerable quantity of dust. Moreover, the gas itself can be used at some point outside of the furnace instead of being simply consumed within the furnace, to the injury of some of its parts.

The furnace illustrated in the drawings may be briefly described as follows:

a indicates the electrodes, arranged the one behind the other, so that only one is seen in the drawings, and they are equipped with suitable electric connections.

b is a carbid-chamber. In Fig. 2 it is revoluble and provided with detachable coverplates *c*, and in Fig. 1 it is cylindrical and provided with a movable elevator *d*.

e is a feed-pipe through which the raw material may be introduced.

f is a gas-offtake pipe.

g indicates pivotal devices for sustaining the upper part of the product after the lower part has been cut off by the set-screws *h*.

It will be obvious to those skilled in the art to which my invention appertains that modifications may be made in details without departing from the spirit thereof. Hence I do not limit myself to the precise construction and arrangement of parts hereinabove set forth, and illustrated in the accompanying drawings; but,

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

In the art of electrochemistry the improvement which consists in passing a current of electricity and thereby establishing a region of reduction under a gas-tight hood, feeding raw material under the hood into the region of reduction, removing the product downward from under the hood, embedding the skirt of the hood in the raw material and thereby creating and maintaining a seal between the skirt of the hood and the product for excluding air from the hood and for permitting of the downward movement of the product and for directing and confining gas in the hood, and withdrawing the gas through the hood, substantially as described.

In testimony whereof I have hereunto signed my name.

JOHN M. MOREHEAD.

In presence of—

GRACE B. HURLBUT,

W. J. JACKSON.