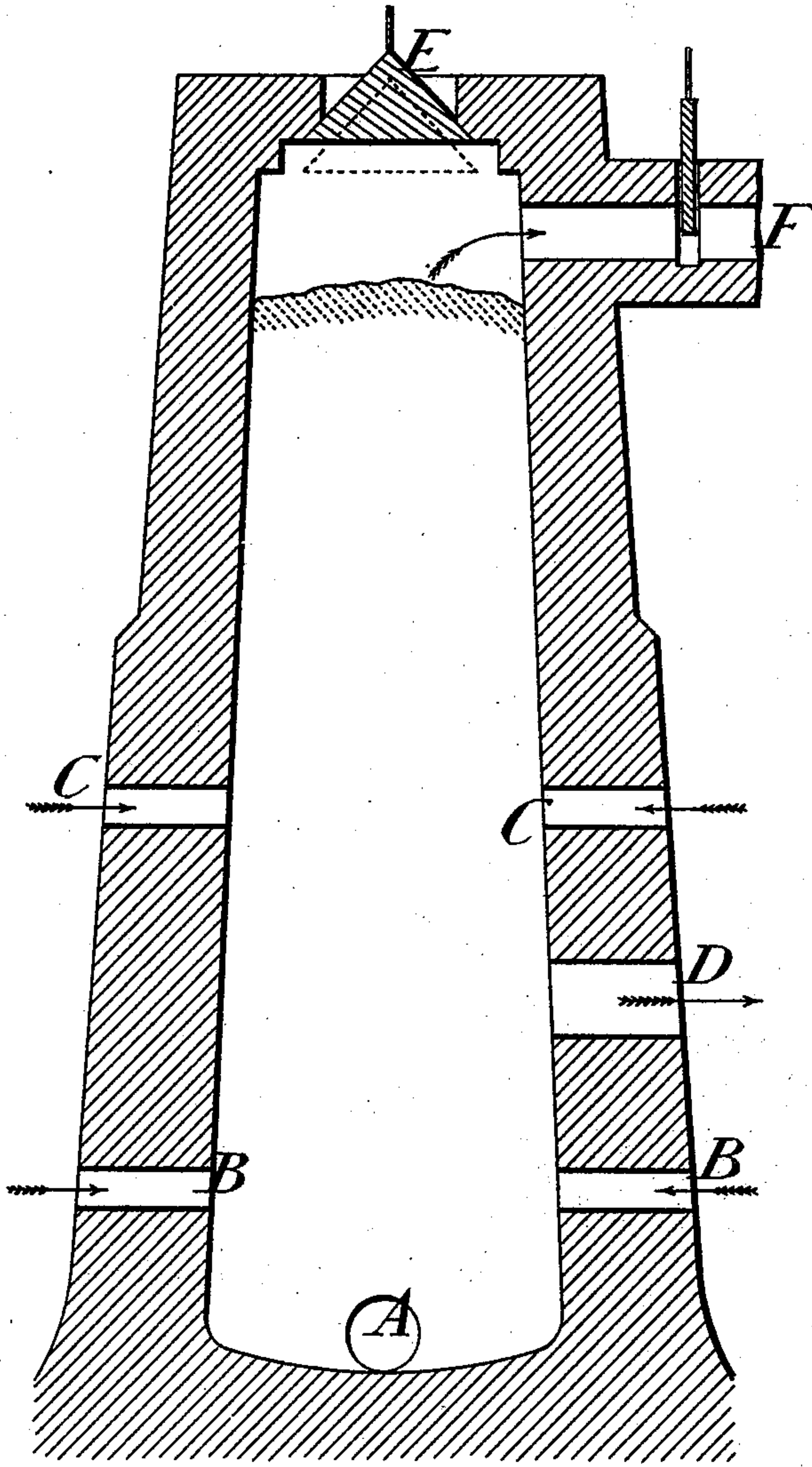


(No Model.)

W. McD. MACKAY.
PROCESS OF MAKING POTASSIUM CYANID.

No. 539,279.

Patented May 14, 1895.



Witnesses.
G. W. Rea.

Albert Everett.

Inventor.

William M^cDonnell Mackey

By

James L. Norris.

Atty.

UNITED STATES PATENT OFFICE.

WILLIAM McD. MACKEY, OF LEEDS, ENGLAND.

PROCESS OF MAKING POTASSIUM CYANID.

SPECIFICATION forming part of Letters Patent No. 539,279, dated May 14, 1895.

Application filed December 5, 1894. Serial No. 530,917. (No specimens.) Patented in Belgium November 26, 1894, No. 112,891; in Luxemburg November 26, 1894, No. 2,180; in Italy December 15, 1894, LXXIV, 49; in Austria January 11, 1895, No. 45/119; in Canada January 17, 1895, No. 47,946, and in India February 15 and February 21, 1895, No. 366/94.

To all whom it may concern:

Be it known that I, WILLIAM McDONNELL MACKEY, a citizen of Ireland, residing at 32 Victoria Chambers, South Parade, Leeds, in the county of York, England, have invented new and useful Improvements in Making Potassium Cyanid, (for which I have obtained Letters Patent in Austria, dated January 11, 1895, No. 45/119; in Belgium, dated November 26, 1894, No. 112,891; in Canada, dated January 17, 1895, No. 47,946; in India, dated February 15 and February 21, 1895, No. 366/94; in Italy, dated December 15, 1894, LXXIV, 49, and in Luxemburg, dated November 26, 1894, No. 2,180,) of which the following is a specification.

It is known that by treatment of alkaline compounds such as those of potassium, and carbonaceous matter in a furnace with an air blast, an alkaline cyanid such as potassium cyanid is formed, but it has hitherto been found difficult to produce it economically when the process is carried on as a furnace operation on a large or commercial scale.

This invention relates to means of producing and collecting potassium cyanid, which is effected as follows:

A furnace is provided preferably vertical in the form of a cupola such as is illustrated by the accompanying drawing, showing a vertical section. This furnace, which by preference has a basic lining, has at the bottom a tapping hole A,—somewhat above it a blast tuyere or set of tuyeres B, at a higher level another tuyere or set of tuyeres C. Between the two tuyeres there is an outlet D connected to any known suitable condensing and collecting apparatus. At the top of the furnace there is a feeding door E, and a passage F provided with a valve or damper which may be more or less opened as an outlet for products of combustion. This furnace is charged with carbonaceous matter such as coal, coke, charcoal,—or mixtures of these and with potassium carbonate or other compound of potassium which is capable of being reduced by heating with carbonaceous matter.

On first starting, the carbonaceous matter alone is employed using only the lower blast and when the contents of the furnace are sufficiently ignited the upper blast is also employed. The potassium compound is thereafter added with the fuel, the process then going on continuously. The combustion maintained by the upper blast and the passage upward of its products, or of a portion of them, have the effect of thoroughly drying and heating the material as it descends.

The two blasts, which are preferably heated, and the outlet at the top may be so adjusted that more or less of the products of the combustion maintained by the upper blast may descend through the material below. The potassium cyanid formed at the hot zone near the lower tuyeres, with, perhaps, cyanid formed near the upper tuyeres and descending therefrom, passes in a state of vapor or fume along with the other products through the lateral outlet D to be condensed, collected, and cooled in any known manner.

The furnace may be inclined.

Having thus described the nature of my invention and in what manner the same is to be performed, I claim—

The herein described method of producing and collecting potassium cyanid, by subjecting in a furnace a mixture of carbonaceous matter and a suitable compound of potassium to the action of the blasts from two tuyeres or sets of tuyeres so arranged relatively to an outlet for the cyanid vapor or fume that the mixture is dried and heated by the combustion maintained by the one blast before being acted on by the combustion maintained by the other blast.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 23d day of November, A. D. 1894.

WILLIAM McD. MACKEY.

Witnesses:

OLIVER IMRAY,
JNO. P. M. MILLARD.