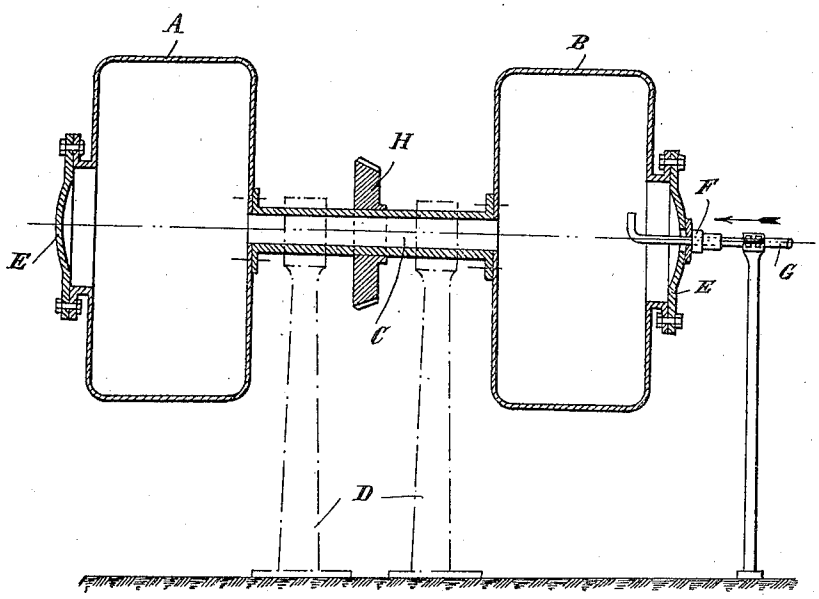
G. BRUSA.

PROCESS FOR THE MANUFACTURE OF MERCURIC OXID.

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1,397,076. Patented Nov. 15, 1921.



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UNITED STATES PATENT OFFICE.

GIACOMO BRUSA, OF TURIN, ITALY, ASSIGNOR TO GIACOMO BRUSA AND THE DOTT. V. BORELLI & CO., OF TURIN, ITALY.

PROCESS FOR THE MANUFACTURE OF MERCURIC OXID.

1,397,076. Specification of Letters Patent. Patented Nov. 15, 1921.

Application filed November 19, 1919. Serial No. 339,228.

To all whom it may concern:

Be it known that I, GIACOMO BRUSA, a subject of the King of Italy, and resident of Turin, Italy, (whose post-office address is Via Andrea Provana No. 5,) have invented certain new and useful Improvements in Processes for the Manufacture of Mercuric Oxid, of which the following is a specification.

This invention relates to a process for the manufacture of mercuric oxid, the process being based upon the decomposition, in a closed space, of mercurous nitrate by heating it, and upon the renewal of the mercurous nitrate by means of metallic mercury, oxygen and the nitrous vapors given off during the decomposition of the mercurous nitrate.

The process may thus be carried out continuously, with no consumption whatever of nitric acid, only oxygen being used.

A form of apparatus for carrying out the process is diagrammatically illustrated in the accompanying drawing which shows a section of the apparatus.

A and B are two drums connected axially together by a tubular member C which is journaled in two bearings D and rotates about its axis with the drums A and B. The member C carries a gear H which is driven by suitable gear connections (not shown) from a source of power.

The mercurous nitrate, together with a number of cast iron balls for milling it and thereby facilitating its decomposition, is placed within drum A which is heated until it reaches the temperature of decomposition of the nitrate; and within the drum B is placed a suitable quantity of metallic mercury, together with cast iron balls. Through the door E provided in the face of the drum B and through a stuffing box F passes an oxygen supply pipe G which extends into the drum B. The latter is suitably cooled, by water, to prevent excessive heating. The nitrous vapors generated in the drum A by the oxygen and the mercurous nitrate will, of course, flow through the tube C into the drum B and will come into contact with the mercury contained therein.

The formation of mercurous nitrate and NO takes place as follows:

$$N_2O_4+Hg=HgNO_3+NO$$

The NO, because of the presence of the oxygen, becomes re-converted into N_2O_4 which reacts with fresh mercury. The process is repeated until the nitrous vapors are completely absorbed.

The mercurous nitrate forms inside the drum A and its place is taken by fresh mercury, so that the process may thus be carried on continuously. The mercuric oxid obtained is already milled into a very fine powder.

The process, as described above, is not limited to the production of mercuric oxid, but may be employed for the preparation of other oxids from the decomposition of nitrates, under the same conditions as those set forth.

I claim as my invention:

1. The herein-described process of manufacturing mercuric oxid, which consists in heating mercurous nitrate in a closed vessel to effect its decomposition; and simultaneously renewing the mercurous nitrate by causing the nitrous vapors given off during decomposition to pass over metallic mercury and supplying oxygen thereto.

2. The herein-described process of manufacturing mercuric oxid, which consists in heating mercurous nitrate in a closed vessel to effect its decomposition; simultaneously supplying oxygen to a second closed vessel in communication with the first vessel and containing metallic mercury; causing the nitrous vapors given off during the decomposition of the mercurous nitrate in said first vessel to pass into contact with the mercury and oxygen in the second vessel, so as to form a fresh supply of mercurous nitrate; and renewing the first supply of mercurous nitrate therefrom.

In testimony whereof I have hereunto signed my name in the presence of two witnesses.

GIACOMO BRUSA.

Witnesses:

UMBERTO FRANCESCONI,

SECUNDO BRANLLO.