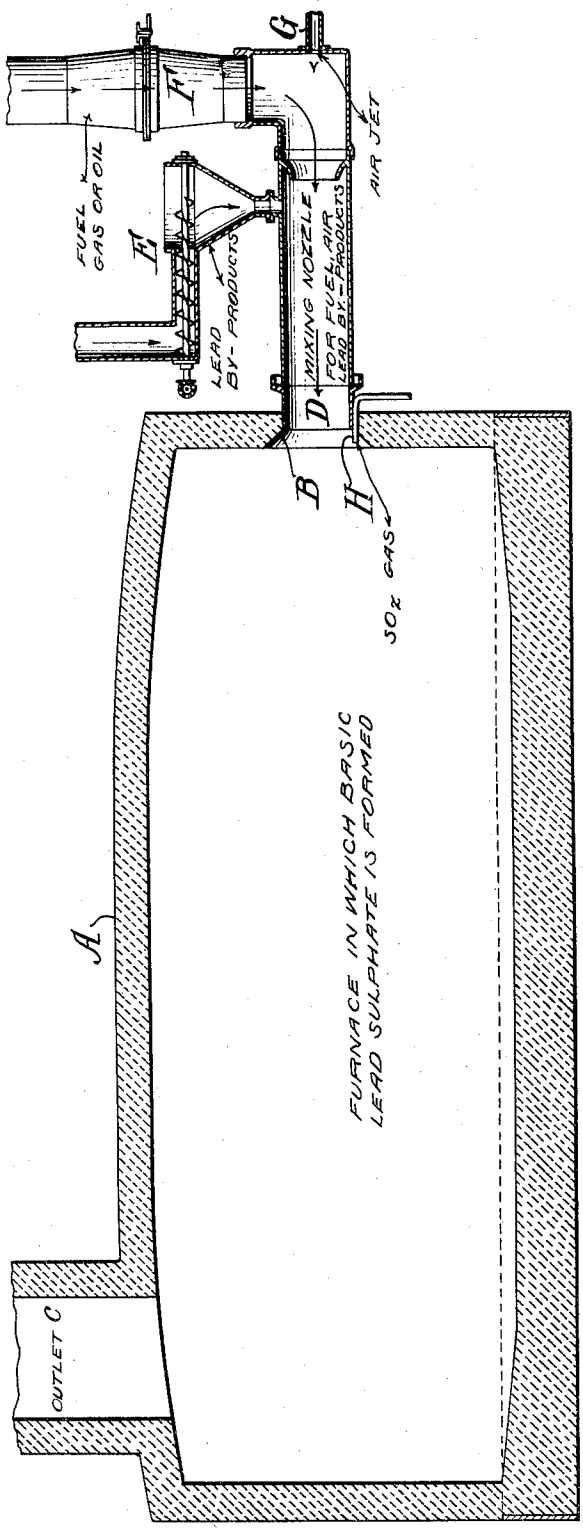
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B. S. WHITE

METHOD OF MANUFACTURING BASIC LEAD SULPHATE

Filed April 8, 1924



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METHOD OF MANUFACTURING BASIC-LEAD SULPHATE.

Application filed April 8, 1924. Serial No. 704,898.

To all whom it may concern:

Be it known that I, BERNARD S. WHITE, a citizen of the United States of America, and resident of Joplin, county of Jasper, State of Missouri, have invented a certain new and useful Improvement in Methods of Manufacturing Basic-Lead Sulphate, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part thereof.

My invention relates to the manufacture of basic lead sulphate and has for its object to utilize as a raw material for such manufacture the by-products of lead smelting operations consisting generally of mixtures of lead sulphate, basic lead sulphate, lead sulphide and sometimes lead sulphite. These lead bearing materials and some carbon occur in varying proportions, depending on the manner in which the smelting operation is carried out. Heretofore, such by-products have been utilized for the production of basic lead sulphate by a direct smelting operation in which a large proportion of their lead contents is reduced to metallic lead or they have been smelted under conditions which will reduce their lead contents to metallic lead with little or no production of lead sulphate. I have discovered that by grinding the lead by-products to a fine state of subdivision and injecting the finely divided material into a highly heated furnace together with sulphur dioxide gas and air in regulated proportion to the ascertained chemical composition of the lead by-products, a basic lead sulphate of the desired basicity and excellent quality can be produced.

In the practical use of my invention, the lead by-products available are carefully analyzed and properly mixed to give a mixed product of approximately uniform composition suitable for treatment. The mixed by-products are then finely ground and in finely divided form sprayed into a furnace chamber internally heated by an oil or gas flame and at the same time, sulphur dioxide gas and air are injected into the furnace in regulated quantity to react with a portion of the lead oxide and produce a basic lead sulphate of the desired quality.

The basic lead sulphate produced by my process from lead by-products compares favorably in quality with the basic lead sulphate heretofore produced by other methods and sold under the name Sublimed White Lead and my process results in a material economy, over previously known methods of utilizing such by-products.

In the drawing I have diagrammatically illustrated a furnace and appliances suitable for use in my process. A indicating the furnace having an opening B through which the finely divided by-products, fuel, air and sulphur dioxide gas are introduced, and an outlet C. As shown, and preferably, I introduce the fuel, gas or oil, the finely divided lead by-products and the air through a single nozzle D. E indicating a mechanism for feeding the by-products to the nozzle, F the fuel conduit leading to the nozzle and G a pipe through which a jet of air is forced into the nozzle. By this or a like device the fuel, lead by-products and air enter the furnace in a combined jet which produces the best distribution in the furnace. H indicates a pipe by which sulphur dioxide gas is introduced.

The furnace must, of course, be maintained at a proper temperature, say 1100° to 2000° F.

Having now described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. The method of treating lead by-products, consisting in large proportion of basic lead sulphate and recovered in the smelting of lead ores and products, for the economical production of basic lead sulphate of good commercial quality which consists in finely dividing the by-products, projecting them in a spray into a highly heated furnace and simultaneously projecting into the furnace sulphur dioxide gas and air in regulated quantity to react with the lead by-products and produce a basic lead sulphate of the desired basicity.

2. The method of treating lead by-products, consisting in large proportion of basic

lead sulphate and recovered in the smelting of lead ores and products, for the economical production of basic lead sulphate of good commercial quality which consists in finely dividing the by-products, mixing them with fuel and air prior to injecting them into the furnace, projecting the by-products in a spray in intimate admixture with fuel and air into a highly heated furnace and simultaneously projecting into the furnace sulphur dioxide gas in regulated quantity to react with the lead products and produce a basic lead sulphate of the desired basicity.

BERNARD S. WHITE.