

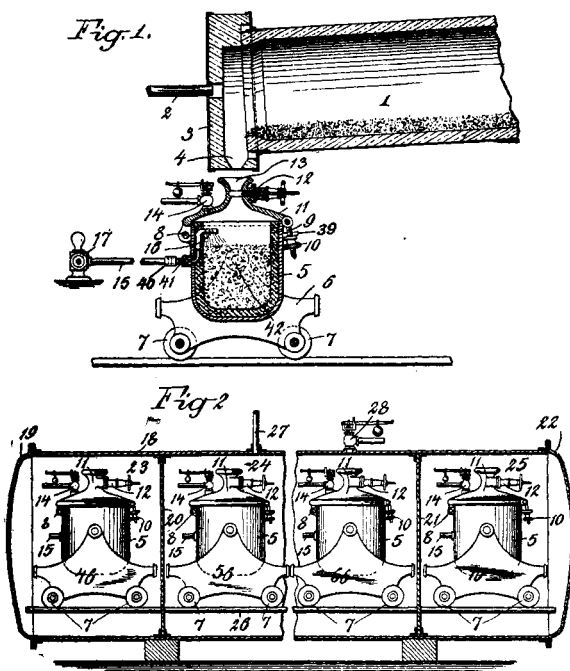
are ground to an impalpable powder. This is then fed into a furnace, kiln or shaft, heated to a temperature high enough to ignite the sulfur, preferably being fed by an air blast or drawn into the furnace by a fan or blower suction. The pulverulent ore is at once ignited, with formation of sulfurous anhydrid and metallic oxids. The finely divided metallic oxids are carried along in the furnace with the mixture of sulfurous anhydrid and air, and being in such a fine state of division, act at once as a catalyzer, converting 30-40 per cent. of the sulfurous anhydrid into sulfuric anhydrid, and at the same time the gases are purified by the removal of arsenic and the like by their intimate contact with the fine non-volatile oxids. The spent metallic oxids are then separated from the gas. The resulting sulfuric anhydrid is absorbed in strong sulfuric acid in the well-known absorption towers, and the remaining sulfurous anhydrid converted into sulfuric anhydrid by the continuance of the contact process or into hydrated sulfuric acid by the well-known chamber process.

The accompanying illustration shows the apparatus in which the process is carried out.

The inventor is Jos. McFetridge, of Vandergrift, Pa.

#### 988,724. Cement Treating Process.

This invention is a process for treating Portland cement clinker, by running the intensely heated clinker from a rotary kiln into a receiver and treating the same for the desired time with steam at high pressure generated by spraying water upon the heated material in a closed receiver or otherwise, so that the



clinker is disintegrated or made friable so as to facilitate grinding and its ageing or hydration to the desired extent is effected, that is, the free or objectionably loosely combined or lime magnesia in the clinker is hydrated or reduced to other forms.

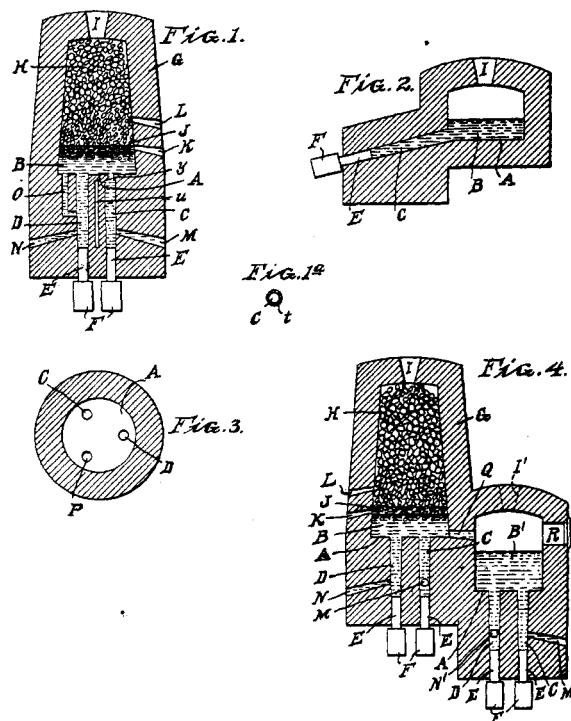
The accompanying illustration shows apparatus for carrying out this process.

The inventors are Robert W. Lesley, of Haverford, and Henry S. Spackman, of Ardmore, Pennsylvania.

#### 988,936. Electric Furnace Process and Electric Furnace.

This invention resides in an electric furnace wherein the resistor comprises a column or columns of molten material, electrodes furnishing communication with the columns, the

heat in the column resistor being communicated to the main body or mass of molten or other material under treatment by conduction from such resistor and chiefly by convection and rapid circulation; and it is a further feature of the invention that the patentee so constructs and proportions the column



resistor that the "pinch effect" in such column is availed of for causing more or less violent circulation and movement of the heated material from the columns into the mass of molten material under treatment.

The accompanying illustration is a vertical sectional view of an electric furnace in which the resistor is in the form of a column or columns of molten material contacting with the electrodes and communicating with the main mass of molten material above it.

The inventor is Carl Hering, of Philadelphia, Pa.

#### 988,963. Manufacture of Lead Oxid and White Lead.

In the manufacture of white lead from oxid by dissolving the latter in acetate of lead solution, nearly half the lead remains behind as sludge. This is owing to the oxid of lead having been fused in its manufacture, and no matter how finely it is ground afterward, this fused oxid is in large part insoluble in the acetate of lead solution.

It is the purpose of this invention to avoid the fusing of the oxid altogether by making it as a highly soluble massicot at a temperature a long way below the fusing point, and thus the difficulty hitherto experienced in working commercial litharge is avoided. Further, in the manufacture of red lead it is also very desirable to have the lead oxid in as fine a state of division as possible to avoid the fusing of the oxid, and to have every particle of the charge at the same degree of oxidation, and especially to avoid powdered lead in the charge, as the lead takes much longer to oxidize to red lead than the fused oxid, and the fused oxid much longer than the finely divided unfused oxid. It is thus impossible to bring all the lead oxid at the same time to the right color, and individual parts are too much oxidized, and others too little.

The process is defined in the patent as consisting in subjecting metallic lead to a blast of air and steam, discharging the mixed