

UNITED STATES PATENT OFFICE.

ADAM MASSOTT, JR., OF MUTTERSTADT, GERMANY, ASSIGNOR TO FRITZ ANDRE, OF HAARDT,
NEAR NEUSTADT a/H, GERMANY.

PROCESS FOR PREPARING STEEL OF HIGH GRADE FROM ORDINARY IRON.

No. 861,999.

Specification of Letters Patent.

Patented July 30, 1907.

Original application filed January 23, 1906, Serial No. 297,530. Divided and this application filed September 21, 1906.
Serial No. 335,608.

To all whom it may concern:

Be it known that I, ADAM MASSOTT, Jr., merchant, a subject of the King of Bavaria, and a citizen of the German Empire, residing at Mutterstadt, in the Palatinate, Germany, have invented certain new and useful Improvements in Processes for Preparing Steel of High Grade from Ordinary Iron; and he does hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a process for preparing steel of high grade from ordinary iron and inferior grades of steel, and is a division of pending application, Serial Number 297,530, filed January 23, 1906, for manufacture of steel from ordinary iron, and in response to the requirement of the Patent Office made in such pending application under date of March 12, 1906.

The object of the invention is to provide from ordinary iron and inferior grades of steel, a high grade of steel possessing substantially the qualities of the best crucible steel and possessing marked economy in the cost of materials and labor employed.

In carrying out the process, forming the subject matter of this application, the iron to be converted is packed in a retort in and in immediate contact with a powder composed of the following ingredients in substantially the proportions named by weight, to wit:—300 parts yellow ferrocyanid of potassium, 200 parts size prepared from leather parings, 200 parts powdered charcoal, 180 parts colophony, 20 parts soda, and 40 parts finely screened earth.

While the proportions above given are found from experiment and experience to be those best adapted for producing the highest grade of steel with the least expenditure of labor, it is obvious that the exact proportions may be somewhat varied without departing from the spirit of the invention.

The retort in which the iron and the component powder are packed is of any approved and convenient form and arranged to be closed hermetically and when so packed and closed, the retort and its contents, are heated in any convenient and approved manner to a white heat or incandescence, at which heat it is maintained for approximately five hours, unless it is desired to only partially convert the iron mass by forming a steel outer surface with a soft iron inner core, in which case the time required is lessened.

It is found that 2 parts of the powder by weight is required for 7 parts by weight of the metal, and when heated, as described, for the length of time mentioned, the retort, with its contents, is permitted to cool without opening, whereby the steel therein contained and packed in the powder is prevented from becoming misshapened or warped by the heating or cooling process, and is cooled in exactly the same shape in which it was inserted in the retort.

What I claim is:—

1. The method of manufacturing steel from ordinary iron and inferior grades of steel consisting in heating the metal in an air tight retort to a white heat, in contact with a material composed of ferrocyanid of potassium, charcoal powder, colophony, soda, finely screened earth and size made from leather parings.

2. The process of manufacturing steel from ordinary iron and inferior grades of steel consisting in heating the mass in an air-tight retort to a white heat and in contact with the material in powdered form composed by weight substantially of 300 parts ferrocyanid of potassium, 200 parts size made from leather parings, 200 parts powdered charcoal, 180 parts colophony, 20 parts soda, and 40 parts finely screened earth.

In testimony whereof, I affix my signature, in presence of two witnesses.

ADAM MASSOTT, JUN.

Witnesses:

H. W. HARRIS,

LOUISA LEHRITTER.