

UNITED STATES PATENT OFFICE.

GUSTAV PALIS, OF ELBERFELD, GERMANY.

PROCESS OF PRODUCING COPPER ALLOYS.

SPECIFICATION forming part of Letters Patent No. 647,726, dated April 17, 1900.

Application filed September 5, 1899. Serial No. 729,432. (No specimens.)

To all whom it may concern:

Be it known that I, GUSTAV PALIS, manufacturer, of 79 Wiesenstrasse, Elberfeld, in the Empire of Germany, have invented a
5 Process of Producing Copper Alloys; and I do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement.

10 The objects of this invention are to obviate the powerful generation of gases, and the partial oxidizing and liquation which has been observed hitherto in the production of copper alloys and casts made therefrom.

15 The process is as follows: About one thousand grams of copper, seventy-five grams of iron, and seventy-five grams of manganese are melted together. For a deoxidizing composition I mix together equal quantities of
20 chlorid of ammonium, carbonate of magnesia, and sodium carbonate, making this mixture into a pulp by manipulation with a ten-per-cent. solution of phosphoric acid sufficient in quantity for that purpose. This pulp is then
25 dried and formed into cakes or pieces each containing fifteen grams. One of these pieces is then added to the quantity of metallic alloy above stated. Five hundred (500) grams of zinc are then added and the melting process
30 is continued till the zinc is volatilized.

This process, as above described, produces steel-brass. In producing German silver I substitute five hundred grams of nickel and twenty-five grams of cobalt for the iron and
35 manganese, the quantities and procedure in other respects being the same.

It is of course obvious that the resulting

copper alloy may be varied very greatly by varying the proportions of the ingredients or substituting one ingredient for another, as in
40 the instance last above given, within the scope of the process herein described and claimed.

Hereupon to eliminate the residue of the gases and oxids the metal-bath is removed from the furnace and rotated and reciprocated, the result being gaged in some convenient way.
45

Hereupon the usual casting in molds follows.

The metal castings produced by the above
50 process are entirely free from gas, oxids, and liquation.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed,
55 I declare that what I claim is—

The process for producing copper alloys free from gas oxids and other undesirable substances, consisting in the following steps: first, melting copper, iron and manganese together; secondly, adding deoxidizing material thereto; thirdly, adding zinc after the
60 deoxidizing material has been absorbed and continuing the melting until the zinc is volatilized; and finally, agitating the molten mixture until the gases and oxids have been given
65 off, substantially as set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

GUSTAV PALIS.

Witnesses:

R. A. JAHN,
OTTO KÖNIG.