

UNITED STATES PATENT OFFICE.

HERMANN JACOB FRIEDERICH NIEWERTH, OF HANOVER, PRUSSIA,
GERMANY.

METALLIC ALLOY OR COMPOUND IN PRODUCING THE SAME.

SPECIFICATION forming part of Letters Patent No. 332,736, dated December 22, 1885.

Application filed December 8, 1884. Serial No. 149,776. (No specimens.)

To all whom it may concern:

Be it known that I, HERMANN JACOB FRIED-
ERICH NIEWERTH, a subject of the Emperor of
Germany, and a resident of Hanover, in the
5 Kingdom of Prussia and German Empire.
have invented certain new and useful Im-
provements in Metallic Alloys or Compounds
in Producing the Same, of which the follow-
ing is a specification.

10 The objects of my improvements are the
alloying of heavy metals with sulphurets of
heavy metals by adding conveniently alkali
metals or alkaline-earth metals and the pro-
ducts of such alloying processes.

15 To alloy a heavy metal or alloys of heavy
metals with a sulphuret of a heavy metal, I
dissolve the latter in molten zinc, thus pro-
ducing an alloy of zinc with a sulphuret of an-
other heavy metal. When such alloys are
20 molten together with other heavy metals, the
products of such melting process will be al-
loys of great strength and resisting force and
of very bright colors. The zinc may be easily
removed from the alloys by cupellation. In
25 some cases the dissolution of the sulphuret of
the heavy metal in zinc may be entirely omit-
ted, and the sulphuret dissolved directly in
the heavy metal or the alloy of heavy metals.

30 When alkali metals or alkaline-earth met-
als are to be introduced in alloys of heavy
metals and sulphurets of heavy metals, the
sulphuret of the alkali metal or alkaline-earth
metal desired is added in portions to the molten
heavy metal or alloy of heavy metals. The
35 reaction generated by such addition is a very
vehement one. Therefore each dose of the
sulphuret of the alkali metal or alkaline-earth
metal introduced into the molten metal or al-
loy ought to be very small, as otherwise the
40 whole mass contained in the furnace or the
crucibles would be blown out. During the in-
troduction of the sulphuret of the alkali metal

or alkaline-earth metal into the molten heavy
metal or alloy of heavy metals a decomposi-
tion of the sulphuret takes place, as its sulphur
unites with a part of the heavy metal or met- 45
als, while the nascent alkali metal or alkaline-
earth metals enter in chemical combination
with the heavy metal or metals, whereby all
danger of destroying the alkali metals or alka-
line-earth metals by combustion is prevented. 50
The sulphuret of the heavy metal thus pro-
duced is entirely dissolved in the molten metal
or alloy.

Having thus fully described my invention 55
and the best means I know to carry it out into
practice, what I desire to claim and secure by
Letters Patent is—

1. The process of alloying heavy metals
with the sulphurets of metals, which consists 60
in first dissolving the sulphuret of the metal
in molten zinc, then mixing the product with
the heavy metals desired to form the alloy in
their molten condition, and finally removing
the zinc by cupellation, substantially as set 65
forth.

2. The process of alloying heavy metals
with the sulphurets of metals, which consists
in adding to the heavy metals desired to form
the alloy in their molten condition small quan- 70
tities of the sulphuret of an alkaline metal, so
that the decomposition of the said sulphuret
takes place gradually, and the sulphur and
nascent alkali are enabled to combine with
the said heavy metals, substantially as set 75
forth.

In testimony that I claim the foregoing as
my invention I have signed my name, in
presence of two witnesses, this 20th day of
November, 1884.

HERMANN JACOB FRIEDERICH NIEWERTH.

Witnesses:

ALEXANDER SPECHT,
DIEDRICH PETERSEN.