

UNITED STATES PATENT OFFICE.

WERNER VON BOLTON, OF CHARLOTTENBURG, GERMANY, ASSIGNOR TO SIEMENS & HALSKE A. G., OF BERLIN, GERMANY, A CORPORATION OF GERMANY.

PROCESS OF HARDENING TANTALUM.

No. 925,988.

Specification of Letters Patent.

Patented June 22, 1909.

Application filed March 20, 1908. Serial No. 422,354.

To all whom it may concern:

Be it known that I, WERNER VON BOLTON, a subject of the Czar of Russia, and residing at Charlottenburg, near Berlin, Germany, have invented a certain new and useful Process for Hardening Tantalum, of which the following is a specification.

The subject-matter of the present invention is a process for hardening tantalum.

10 In accordance with the invention, silicium is employed as hardening agent. It has been found that silicium has the best hardening action when it is employed in quantities between 1 per cent. and 10 per cent. of the
15 quantity of tantalum which is to be hardened, because the hardening action of silicium increases considerably when the addition is increased above 1 per cent. without the other good properties of the metal, particularly its ductility, being impaired to any
20 extent worth mentioning. With additions of 2 per cent. to 3 per cent. of silicium, for ex-

ample, a material having great ductility and considerable hardness is obtained. As compared with an addition of 3 per cent., an addition of 5 per cent. only slightly increases the hardness, but the ductility is diminished.

What I claim as my invention and desire to secure by Letters Patent is:

1. The herein described process for hardening tantalum, which consists in adding to tantalum less than 10 per cent. and more than 1 per cent. of silicium.

2. The herein described process for hardening tantalum, which consists in adding to tantalum 3 per cent. of silicium.

In testimony whereof I have signed my name to this specification in the presence of two witnesses.

WERNER VON BOLTON.

Witnesses:

WOLDEMAR HAUPT,
HENRY HASPER.