

UNITED STATES PATENT OFFICE.

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METHOD OF REMOVING CARBON FROM METALLIC FILAMENTS.

No. 905,402.

Specification of Letters Patent.

Patented Dec. 1, 1908.

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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 Method of Removing Carbon from Metallic Filaments, of which the following is a specification.

The present invention relates to the manufacture of electric incandescent lamps, and an important object is to provide a particularly simple and certain method of removing carbon from metallic filaments containing the same.

Generally speaking, metallic filaments, for example, tungsten filaments, can be easily formed of metallic powders or powders of metallic compounds with the aid of an agglutinant which can be carbonized. The removal of the carbon which is brought into the filament by the agglutinant has, however, heretofore been connected with difficulties of many kinds. Either the filaments were themselves severely attacked, or the method employed was troublesome and expensive. In accordance with the present invention, on the contrary, the carbon can be removed very quickly and simply when the filament is made incandescent in acetic acid vapors. Preferably the filament, attached to electrodes, is brought into the receiver of an air-pump, and a small basin containing glacial acetic acid is simultaneously placed in the receiver, or the receiver is connected through a tube with a receptacle containing glacial acetic acid. After a sufficiently perfect vacuum has been

made, the glacial acetic acid evaporates, and if the filament is now made incandescent by passing an electric current through it carbon is rapidly removed from it.

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

1. Method of removing carbon from metallic filaments consisting in highly heating the filament containing carbon in an atmosphere of acetic acid vapors.

2. Method of removing carbon from metallic filaments consisting in highly electrically heating the filament containing carbon in an atmosphere of acetic acid vapors.

3. Method of removing carbon from metallic filaments consisting in passing an electric current through and heating the filament containing carbon to incandescence in an atmosphere of acetic acid vapors.

4. Method of removing carbon from metallic filaments consisting in placing the filament containing carbon in the receiver of an air-pump which is connected with a receptacle containing glacial acetic acid, in diminishing the pressure in the receiver by means of the air-pump whereby the acetic acid is vaporized, and in heating the filament to incandescence in the vapors of acetic acid.

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

WERNER VON BOLTON.

Witnesses:

HENRY HASPER,
WOLDEMAR HAUPT.