

UNITED STATES PATENT OFFICE.

RICHARD KÜCH, OF HANAU, GERMANY.

PROCESS OF ELECTRICALLY CONNECTING PLATINUM WIRES OR SHEETS WITH NON-METALLIC BODIES.

SPECIFICATION forming part of Letters Patent No. 684,695, dated October 15, 1901.

Application filed November 24, 1899. Serial No. 738,135. (No specimens.)

To all whom it may concern:

Be it known that I, RICHARD KÜCH, a subject of the Emperor of Germany, and a resident of Hanau, Germany, have invented a new and useful Process of Establishing a Direct Electrical Connection Between Platinum in Wire or Sheet Form and Non-Metallic Bodies, of which the following is a specification.

Heretofore difficulty has been met with when using non-metallic bodies in incandescent lights to make a connection between the glow-body and leading-in wires which would withstand the very high temperature here found and prove constant. By my process, however, this trouble is entirely eliminated and a direct constant electrical connection established.

The process is as follows: The platinum wire leading into the bulb is bent at that end to which the filament is to be connected so as to form a coil, into which the non-metallic filament can be loosely slipped. Should the platinum be in sheet, a hole is made in the sheet through which the non-metallic filament can be loosely passed. The filament is then passed into the coil, (or hole, as the case may be.) This filament may consist of small tubes or bars of chalk, magnesia, or other non-smelttable oxids and adapted to act as glow-bodies. The end, therefore, slipped into the coil or hole is next tipped with a concentrated solution of soluble or a watery broth of the salts of the platinum metals, and the joint tipped, as just described, is heated to a glow, whence a metal or loose sponge is deposited. The solution aforesaid fills the space between the platinum wire or sheet and the glow-body, and even penetrates somewhat into the pores of the latter. The double salts of chlorids of ammonia of platinum and also the amin, as chlorates of iridium of the platinum metals, are applicable for forming the connection.

This metal sponge, (formed from the metallic salts,) as hereinbefore stated, forms a conducting metallic connection between the platinum and the glow-body. It is now only necessary to harden this sponge to make it durable. This last step is made by placing the platinum wire or sheet with the non-metallic body now attached by the said sponge before a suitable blowpipe, where a small amount of some easily-smelting metal is absorbed or alloyed with the sponge, thereby strengthening the connection and rendering it durable.

If one had employed the salts of platinum aforesaid, then excepting nickel, copper, gold, and still lighter smelting metals, only palladium or palladium platinum alloys can be used for the strengthening, whereby the wire to which the body is fastened can consist of pure platinum.

Should platinum be desired for strengthening the connection, the metal sponge aforesaid must be deposited from some metal of the platinum group smelttable at higher temperatures—as, for example, iridium—while the wire (or sheet) must be of rhodium, iridium, or an alloy of these with platinum.

Having now described my invention, what I claim as new, and desire to protect by Letters Patent, is—

The herein-described process which consists in loosely connecting platinum wire to a non-metallic non-smelttable oxid, smearing the end of this body with a solution of platinum or platinum salts, heating the same to a glow to form a metallic connection, then hardening and strengthening by alloying, as set forth.

In testimony whereof I have hereunto set my hand this 3d day of October, 1899.

RICHARD KÜCH.

Witnesses:

HEINRICH HERAEU,
JEAN GRUND.