

UNITED STATES PATENT OFFICE.

CHARLES P. STEINMETZ, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

MANUFACTURE OF FILAMENTS FOR INCANDESCENT LAMPS.

988,148.

Specification of Letters Patent.

Patented Mar. 28, 1911.

No Drawing.

Application filed April 30, 1904. Serial No. 205,653.

To all whom it may concern:

Be it known that I, CHARLES P. STEINMETZ, a citizen of the United States, residing at Schenectady, in the county of Schenectady and State of New York, have invented certain new and useful Improvements in the Manufacture of Filaments for Incandescent Lamps, of which the following is a specification.

My present invention comprises a novel method for use in the manufacture of filaments for incandescent lamps, whereby the life and the efficiency of such filaments may be increased.

To accomplish the result sought I cause chemical reaction or reactions to take place such as will drive off any traces of hydrogen, hydrocarbons, silica or the like from the body of the filament. For this purpose I prefer to use fluorin. Since, however, this gas is too reactive to permit it to be conveniently applied directly to the filaments I use it with a carrier, such as iodine, which carrier is of such character that it may be easily evaporated or volatilized and carried off when the filaments are heated during the exhaustion process. The compound which I have found effective is known as pentafluorid of iodine (IF_5). By treating the ordinary carbon filaments either flashed or

unflashed with this substance, the filament being, of course, perfectly dry before such treatment is had, the impurities of the carbon are practically eliminated therefrom, while such foreign matter as may remain is easily driven off during exhaustion and heating of the filament accompanying the final stages in the production of the incandescent lamp.

I am aware that it has heretofore been proposed to use for the purpose mentioned a fluorid of boron and also to use chlorine gas. The use of the first-mentioned substance is objectionable for the reason that a deposit of boron is left in the filament, while the use of the latter substance is ineffective because of its relative chemical inactivity.

What I do claim as my invention and desire to secure by Letters Patent of the United States, is,

The method which consists in treating filaments for use in incandescent lamps with penta-fluorid of iodine.

In witness whereof, I have hereunto set my hand this 29th day of April, 1904.

CHARLES P. STEINMETZ.

Witnesses:

BENJAMIN B. HULL,
HELEN ORFORD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."