

# UNITED STATES PATENT OFFICE.

FRITZ BLAU, OF BERLIN, GERMANY, ASSIGNOR TO DEUTSCHE GASGLÜHLICHT AKTIEN-GESELLSCHAFT (AUERGESELLSCHAFT), OF BERLIN, GERMANY.

PRODUCING METALLIC INCANDESCENT BODIES FOR ELECTRIC GLOW-LAMPS.

No. 916,659.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that I, FRITZ BLAU, chemist, a subject of the Emperor of Austria-Hungary, and a resident of Berlin, Germany, have invented certain new and useful Improvements in Producing Metallic Incandescent Bodies for Electric Glow-Lamps, and do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improved method of producing metallic incandescence bodies for electric glow lamps.

This invention relates to the production of metallic electric incandescence bodies such as the metallic filaments of electric glow lamps particularly those of tungsten prepared by heating the crude filaments to white heat in an atmosphere that will not attack the final product. This heating is effected in order to make the individual particles of the incandescence body sinter together as completely as possible, so as to prevent any further change in the dimensions of the filament or its resistance when the lamp is used. The operation of heating to whiteness is preferably performed in a gas consisting of a mixture of nitrogen and hydrogen. This gas, being inert relatively to the final product, will not attack it. Considerable inconvenience is produced thereby, however, especially with the very thin filaments, as irregular deformations of an extensive nature, often making the incandescence body quite useless, are produced. These deformations assumed very serious proportions until I found

that they were due to the use of an alternating current, a current of this kind, with a frequency of about fifty alternations per second having been available and used at first. Alternating current was then replaced by a continuous or direct current, with the result that such irregular deformations ceased to occur at all. A difference consequently exists between continuous or direct and alternating current, in its action on the filaments in course of manufacture, and the application of a continuous or direct current to the process of sintering at white heat is accompanied by great technical advantages. According to the present invention, therefore, the said sintering process is effected by means of a continuous or direct current, instead of by the apparently equivalent alternating current, in order to obviate the irregular deformations occurring with the latter.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States of America is:—

A method of producing metallic incandescence bodies for electric glow lamps, consisting in sintering the crude filaments in a gas inert relatively to the final products, at a white heat obtained by passing a continuous or direct current through such bodies substantially as and for the purpose described.

In testimony that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

FRITZ BLAU.

Witnesses:

WOLDEMAR HAUPT,  
HENRY HASPER.