

# UNITED STATES PATENT OFFICE.

GEORG PREUSS, OF CHARLOTTENBURG, GERMANY.

## METHOD OF MAKING DYNAMO-BRUSHES.

No. 906,928.

Specification of Letters Patent.

Patented Dec. 15, 1908.

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*To all whom it may concern:*

Be it known that I, GEORG PREUSS, an engineer, subject of Prussia, residing at 48 Kantstrasse, Charlottenburg, Germany, have  
5 invented new and useful Improvements in Methods of Making Dynamo-Brushes, of which the following is a specification.

In making such dynamo-brushes as consist of carbon and metal, the attainment of  
10 an intimate cohesion between the carbon and metal causes difficulties, while such a cohesion is absolutely necessary to make such brushes fit for use.

The present method relates to a manner of  
15 making dynamo-brushes which consist of carbon and metal in intimate combination. In accordance with my present invention the graphite is used in a state-like that obtained by the so called nitric acid reaction. Namely,  
20 if graphite is moistened with nitric acid and afterwards heated, it swells up considerably and worm-like forms, which under some circumstances are many centimeters in length, are formed. It may be possible to obtain  
25 such form of graphite with another treatment than the above described. These forms are extremely plastic and are provided electrically or otherwise with a metal coating. The reaction mentioned, by which also a purification of the graphite is obtained, does not appear with every carbon having the appearance of graphite, but only with pure graphite as distinguished from so-called graphite. The  
30 graphite-metal bodies produced without any organic agglutinants in the manner described  
35 which are of great plasticity, are now pressed in molds either heating them so considerably that the softening metal firmly combines or with less heating holding them together in a

firm shape by means of a solder. Such carbon-brushes conduct the electric currents very well, protect the commutator and wear away very little.

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

1. In a method of making dynamo-brushes  
45 consisting of carbon and metal the process of moistening pure graphite with nitric acid and afterwards heating the same, the graphite forms resulting by this treatment being  
50 provided with a metal coating, this combination of graphite and metal being then pressed in molds, substantially as described.

2. In a method of making dynamo-brushes  
55 consisting of carbon and metal the process of moistening pure graphite with nitric acid and afterwards heating the same, the graphite forms resulting by this treatment being  
60 provided electrically with a metal coating and then formed and pressed to brushes, substantially as described.

3. In a method of making dynamo-brushes  
65 consisting of carbon and metal the process of moistening the graphite with nitric acid and afterwards heating the same, the graphite forms resulting by this treatment being provided with a metal coating, this combination being then intensely heated and formed and pressed to brushes, substantially as described.

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

GEORG PREUSS.

Witnesses:

OSKAR ARENDT,  
HENRY HASPER.