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UNITED STATES PATENT OFFICE.

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BRUSH FOR GENERATORS, ETC.

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This invention relates to brushes for electric generators and motors and pertains more particularly to a brush made of an alloy and comprising a new article of manufacture.

The objects of my invention are to make a brush of such composition that it will have greater density and consequently less electrical resistance than brushes made by baking the oxide of metals in the presence of a deoxidizer.

A further object is to produce a metallic brush that will be self-lubricating and also inexpensive to manufacture.

Brushes of this kind have been heretofore made in practice from a mixture of the oxides of copper, tin, lead etc. with graphite, the mixture pressed into solid form and then baked in the presence of a deoxidizer. This results in a somewhat porous brush structure.

My improved brush is denser and has less electrical resistance. It is made of a mixture of approximately equal parts of metallic copper and metallic lead. These two metals are melted together and then either molded into brushes by die or sand casting, or casting in permanent molds, or formed into a bar by extruding, the bar being subsequently sheared to the desired length for brushes.

The proportions may vary within reasonable limits from the above quantities, but the mixture should contain more than forty per cent copper and more than forty per cent lead.

The lead makes the completed brush practically self-lubricating.

I am aware that various mixtures of lead and copper have been made for other purposes, but I am not aware that an alloy of these two metals in the proportions specified has been used for the production of self-lubricating generator and motor brushes. My method avoids the use of metallic oxides, the baking furnace and the deoxidizer.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. As an article of manufacture, a brush made of a cast metal alloy consisting of metallic lead and metallic copper in substantially equal proportions.

2. An electrical commutator brush composed of an alloy of copper and lead, with not less than about 40 per cent lead.

3. An electrical commutator brush, composed of an alloy of copper and lead, with not less than about 40 per cent lead, and substantially free from carbon or graphite.

In testimony whereof, I affix my signature.

ARTHUR A. SCHUPP.