

UNITED STATES PATENT OFFICE.

HENRY G. O'NEILL, OF LOUISVILLE, KENTUCKY, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE STANDARD ELECTRIC HEAT, LIGHT, AND POWER COMPANY, OF MAINE.

ALLOY.

SPECIFICATION forming part of Letters Patent No. 485,423, dated November 1, 1892.

Application filed January 30, 1892. Serial No. 419,809. (No specimens.)

To all whom it may concern:

Be it known that I, HENRY G. O'NEILL, a subject of the Queen of Great Britain, and a resident of Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Alloys for Use in the Manufacture of Wire for Electrical Appliances and for other Purposes; and I do 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.

This invention has relation to an improvement in metallic alloys; and the principal object of the invention is to produce an alloy of exceedingly-high electrical resistance, which, being manufactured in wire or strip form, will present a conductor which by virtue of this high resistance will evolve from a given electrical current a greater amount of heat than, it is believed, has yet been obtained by means of the metallic conductor or wires heretofore employed. It is also designed to produce in this alloy a material which will resist oxidizing influences, and which, while it has great tensile strength, will possess anti-fusion properties, so as to withstand intense heat.

This alloy is principally designed for use in the form of wire in the construction of electrical-heating apparatus, rheostats, and other electrical appliances of character requiring a conductor of this nature.

For this alloy I take eight (8) parts of a com-

position consisting of ninety-two (92) per cent. of copper, seven (7) per cent. of tin, and one (1) per cent. of diatomaceous earth or silicon. To these eight parts of the composition described I add six (6) parts of nickel and three (3) parts of zinc. These materials or ingredients are reduced in a crucible and cast in a bar, which may be by ordinary means drawn into wire form, this being the principal form in which this alloy will be manufactured.

For the purposes of producing in the alloy greater ductility without lessening the resistance I may sometimes add to the alloy a little platinum—say about one per cent.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

1. The alloy having qualities of anti-fusion and great electrical resistance, consisting of copper, tin, silicon, nickel, and zinc, in the proportions substantially as specified.

2. The composition consisting of copper, tin, silicon, nickel, zinc, and platinum, substantially in the proportions and for the purposes specified.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY G. O'NEILL.

Witnesses:

GEO. H. PARMELEE,
GEO. M. ANDERSON.