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UNITED STATES PATENT OFFICE.

EDWIN F. KINGSBURY, OF RUTHERFORD, NEW JERSEY, ASSIGNOR TO WESTERN ELECTRIC COMPANY, INCORPORATED, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

METALLIC COMPOSITION.

No Drawing. Application filed September 7, 1923. Serial No. 661,519.

To all whom it may concern:

Be it known that I, EDWIN F. KINGSBURY, a citizen of the United States, residing at Rutherford, in the county of Bergen, State of New Jersey, have invented certain new and useful Improvements in Metallic Compositions, of which the following is a full, clear, concise, and exact description.

This invention relates to metallic compositions for use in connection with electrical apparatus, and its object is to provide an alloy which is relatively inexpensive and which nevertheless possesses the properties which are requisite in a metal to be used in electrical contacts and the like.

In accordance with the features of the invention, there is provided an alloy of gold and silver with a base metal. The silver is introduced in quantities sufficient to materially lessen the cost without destroying the non-tarnishing property of pure gold; and sufficient quantities of one or more base metals, such as nickel, cobalt, iron, copper, tin, and the like, are added to produce an alloy having the resistance to electrical and mechanical wear necessary in a contact metal. The amount of such base metal which may be added, however, is limited by the tendency of alloys containing a large amount thereof to have formed on them base metal oxides, which seriously increase their electrical resistance. It has been found that the tendency to form base metal oxide is present to an objectionable extent in alloys in which the atomic proportion of base metal is greater than 12%. It has also been found that the amount of gold in the alloy should be at least as great as 37 atoms in a hundred, or over 50% of the alloy by weight. The preferred atomic proportions of the metal, to be used in such an alloy is as follows:

	Per cent.
Gold	57.2
Silver	38
Base metal	4.8

Nickel has been found to be the most satisfactory base metal to be used with gold and silver to form a contact alloy; and, while any quantity of nickel between one-half of one per cent to five per cent by weight may be satisfactorily employed, the preferred alloy contains the metals in the following proportions by weight:

	Per cent.
Gold	72
Silver	26.2
Nickel	1.8

The invention claimed is:

1. A contact alloy comprising the following metals in the following proportions by weight, gold—approximately 72%, silver—approximately 26.2%, and the remainder base metal.

2. A contact alloy composed of the following metals in substantially the following proportions by weight: gold 72%, silver 26.2% and nickel 1.8%.

In witness whereof, I hereunto subscribe my name this 5th day of September A. D., 1923.

EDWIN F. KINGSBURY.