

UNITED STATES PATENT OFFICE

HARRY KLAUSMANN, OF MAPLEWOOD, AND HENRY R. KIEPE, OF NEWARK, NEW JERSEY, ASSIGNORS TO BAKER & COMPANY, INC., A CORPORATION OF NEW JERSEY

ALLOY

No Drawing.

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The objects of this invention are to secure an alloy of palladium and other metals of the platinum group which will be harder than palladium and thus better adapted for jewelry and the like and which will also be a better color and whiter than palladium; to thus secure an alloy which can be used in place of palladium for certain purposes and be of a white and beautiful color as well as capable of resisting wear and having some temper, and to secure other advantages and results as may be brought out in the following description.

ing qualities of palladium but is of improved or whiter color.

Thus by our invention we secure advantageous results which are of great importance and value in the jewelry art and allied arts.

As we have indicated, changes and modifications may be made in the proportions of metals in our new alloy, within substantially the limitations indicated, without departing from the spirit and scope of the invention, and we do not wish to be understood as restricting ourselves except as required by the following claims when construed in the light of the prior art.

Having thus described our invention, what we claim is:

1. An alloy comprising palladium, rhodium and ruthenium in substantially the proportion of seventy-five percent (75%) to ninety-eight percent (98%) of palladium, twenty-four percent (24%) to one percent (1%) of rhodium and the rest ruthenium.

2. An alloy comprising substantially ninety-five percent (95%) of palladium, three percent (3%) of rhodium and two percent (2%) of ruthenium.

HARRY KLAUSMANN.
HENRY R. KIEPE.

In carrying out our invention we produce an alloy of palladium, rhodium and ruthenium by using the three metals together in substantially the following proportions, seventy-five percent (75%) to ninety-eight percent (98%) of palladium, twenty-four percent (24%) to one percent (1%) of rhodium and the rest ruthenium. Probably the best proportions for jewelry are ninety-five percent (95%) of palladium, three percent (3%) of rhodium and two percent (2%) ruthenium, but the proportions can be varied, within the limits above stated, to secure different degrees of hardness and gradations of whiteness, some of the advantages of our invention being secured by any proportions within the said limits.

As has been indicated, an increase in rhodium increases the whiteness or brilliancy of the alloy and an increase in ruthenium increases the hardness or wearing qualities of the alloy. Indeed, either of these two metals may be used alone with palladium, to the exclusion of the other, in proportions of twenty-five percent (25%) to one percent (1%) to seventy-five percent (75%) to ninety-nine percent (99%) of palladium, a good average working proportion being eighty-five percent (85%) of palladium to fifteen percent (15%) of either rhodium or ruthenium. With the addition of ruthenium to palladium in this way an alloy is obtained which is harder than palladium without much change in color, whereas by the addition of rhodium to palladium an alloy is obtained which has substantially the work-

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