UNITED STATES PATENT OFFICE.

RUDOLPH JOHN PESCHKO, OF YORK, PENNSYLVANIA.

PRECIOUS-METAL ALLOY.

1,169,753. Specification of Letters Patent. Patented Jan. 25, 1916.

No Drawing. Application filed March 12, 1915. Serial No. 13,897.

To all whom it may concern:

Be it known that I, RUDOLPH JOHN PESCHKO, a citizen of the United States, residing in York, county of York, State of Pennsylvania, have invented a Precious-Metal Alloy, of which the following is a specification.

My invention relates to alloys particularly designed for use as substitutes for platinum in the manufacture of jewelry, scientific instruments, dental supplies and electrical apparatus, one object being to provide alloys which while cheaper than platinum shall not be inferior to it for the purposes noted, as regards certain of their qualities.

It is further desired to provide alloys which, with possible exception of those containing from 70% to 80% of gold, shall possess a color such as will render them indistinguishable from platinum, it being particularly desired that said alloys be relatively soft, easily workable, shall possess a tensile strength higher than that of platinum, shall be capable of receiving a high polish, and shall have wearing qualities practically equal to those of platinum.

In carrying out my invention I fuse together platinum, palladium, and gold, and while the proportions of these metals may be considerably varied without departing from my invention, in a typical case I employ particularly for dental supplies, an alloy containing 10 parts of platinum, 30 parts of palladium and 60 parts of gold. The palladium is employed mainly for the purpose of increasing the bulk of the product for a given weight thereof as well as for the purpose of making the resulting alloy workable and the gold is used mainly for the purpose of reducing the cost of the product.

If it be desired to produce an alloy having an increased tensile strength and greater hardness than those described above, I may add such metals as ruthenium, iridium, osmium, or rhodium in the proportion of from $\frac{1}{10}$% to 2%, it being noted that one of these hardening metals may be used alone or several of them together may be employed.

For the purpose of making the alloy, an oxy-gas flame or an electric furnace may be employed, with a lime, magnesium or graphite crucible, although the actual method of procedure in combining the metals constituting my alloy forms no part of the present invention.

It is to be noted that all of the above described alloys are practically insoluble in mineral and organic acids, with the possible exception of the high silver allows which are slowly attacked by nitric acid and boiling sulfuric acid. All of the alloys are soluble in aqua regia. A valuable feature of the alloys resides in the fact that they do not discolor or oxidize in air at temperatures below their melting points and will in every case take a high polish equal or superior to that characterizing platinum.

I claim:—

1. An alloy containing 10 parts of platinum, 30 parts of palladium and 60 parts of gold.

2. An alloy containing platinum, palladium, gold and a metal having the property of increasing the tensile strength of the alloy, the gold being in excess.

3. An alloy containing platinum, palladium, and an excess of gold.

4. An alloy containing platinum, palladium, and an excess of gold, with from $\frac{1}{10}$% to 2% of a hardening metal.

5. An alloy containing platinum, palladium, and an excess of gold, with from $\frac{1}{10}$% to 2% of iridium.

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

RUDOLPH JOHN PESCHKO.

Witnesses:
A. B. SEIFERT,
EDWARD J. LOUCKS.