UNITED STATES PATENT OFFICE.

WILLIAM W. HUBBELL, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN ALLOY METALS FOR METRIC SILVER COIN AND SILVER-WARE.

Specification forming part of Letters Patent No. **219,265**, dated September 2, 1879; application filed April 4, 1879.

To all whom it may concern:

Be it known that I, WILLIAM WHEELER HUBBELL, of Washington, District of Columbia, have invented an Improved Alloy Metal adapted or suitable for manufactures of medals, coins, objects of art, domestic ware, and similar uses, of which the following is a specification.

The nature of my invention consists in the proportions of the metals (of gold, silver, and copper) to form the alloy, which consist of eight hundred and ninety-five and eight-tenths (895.8) parts of silver, four and two-tenths (4.2) parts of gold, and one hundred (100) parts of copper, melted and mixed together.

Alloys of gold, silver, and copper in other proportions materially different, and not practically so well adapted to all these uses, have been made, and standard silver consisting of nine parts of silver and one part of copper, adapted to similar uses, and also when coined and impressed with certain characters and issued by direction of the sovereign authority for use as money, has been made, and such coin or alloy has been again melted and used for similar manufactures; but such alloy does not possess the advantages of my improved alloy for these purposes. I improve the said alloy by substituting four and two-tenths parts of pure gold for four and two-tenths parts of pure silver, and thus convert it from a binary alloy into a ternary alloy in the proportions first stated, by which improvement I do not impair the practical bulk or value for these uses, and at the same time the compressibility, density, resistance to abrasion and to corrosion, the toughness, and capacity to receive polish are greatly increased; and also it becomes adapted or suited for an alloy to receive the impress of coined money, if so directed by law, for the reason that twenty-five grams in weight of this improved ternary alloy is intrinsically of the standard value of one hundred cents, or one dollar, and is an alloy that exhibits an even measure of the unit of metric weight, the gram, of which the kilogram is an even multiple, and is of the denomination and value of one dollar.

I make this improved alloy by melting and mixing together eight hundred and ninety-five and eight-tenths (895.8) parts of silver, four and two-tenths (4.2) parts of gold, and one hundred (100) parts of copper.

The proportions of the alloy may be very slightly varied, but not advantageously, particularly not when to be used for coin to be issued as money.

In this alloy, in the proportions I have described, the silver is employed to give the proper body of metal, the copper is employed to toughen it, and the gold is employed to make it more compressible, denser, and resistant, and otherwise improve it in all the particulars, and as a whole or entirety, as stated.

The alloys heretofore patented by me are higher in density than pure silver, and of different colors. The distinguishing character of this alloy from the alloys patented by me in the Letters Patent Nos. 191,146, 209,263, 211,630, and 211,909, consists in the color, density, and quantities of each of the metals of gold, silver, and copper, or material difference in the proportions of the alloy.

The color of this present alloy is silvery steel, not white as silver, nor bluish, nor orange-gold, as are my other alloys. The density of this present alloy is less than the density of pure silver, which is 10.50, and is more than the density of standard silver, which, under the highest compression, is 10.33. The small amount of gold in this present alloy makes it more compressible than the standard silver, which consists of nine parts of silver and one part of copper, and this present alloy of gold, silver, and copper in these proportions herein specified, on account of this greater compressibility, acquires under pressure, by rolling, hammering, or coining, a density of about 10.42.

Another advantage of this alloy is, that the same weight of pure silver is more valuable. Twenty-five grams of this alloy is worth one hundred cents. Twenty-five grams of pure silver is worth one hundred and three and eighty-four hundredths cents. This present alloy, in color, density, weight, size, value intrinsically, as well as proportions, stands by itself as an alloy or metal of ternary elements, distinct and different from all other alloys and all other metals; and to maintain this distinctive nature it admits of but very slight variations in the proportions, and not advantageously of

any variation. The proportions I have stated with precision are the best proportions for the desired steel color, and the density desired is lower than that of pure silver and higher than that of standard silver under the highest compression.

Having fully described my invention, and the best manner of using the same, what I claim is—

The alloy metal consisting of gold, silver, and copper, in or about the proportions of eight hundred and ninety-five and eight-tenths (895.8) parts of silver, four and two-tenths (4.2) parts of gold, and one hundred (100) parts of copper, substantially as described.

WM. WHEELER HUBBELL.

Witnesses:
E. HAWKINS,
JAS. A. TAIT.