

# United States Patent Office.

ACHILLE SCHMITTE AND HILAIRE ANDRE LEVALLOIS, OF PARIS. FRANCE.

*Letters Patent No. 71,072, dated November 19, 1867.*

## IMPROVED ALLOYS TO IMITATE SILVER.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that we, ACHILLE SCHMITTE and HILAIRE ANDRÉ LEVALLOIS, of Paris, France, manufacturers, have invented New Alloys, so-called "Mock-Silver," (minargent,) composed of different metals, and applications thereof; and we do hereby declare that the following is a full, clear, and exact description of the same.

Our invention consists in certain alloys composed of different metals, which alloys we designate by the name of mock-silver, (minargent,) and in the various applications of the same. This so-called mock-silver may be compared to silver at .900 standard on account of its whiteness, malleability, ductility, tenacity, sonority, and density; it is even of a superior brightness, not so liable to wear, withstands in a greater measure the emanations of sulphured hydrogen, and is less fusible.

The mock-silver (minargent) is fitted to receive all the applications of not only silver, but also of any white metal and alloy. It is composed as follows: Unalloyed copper, one thousand parts; unalloyed nickel, seven hundred parts; unalloyed tungsten, fifty parts; unalloyed aluminum, ten parts. But we do not confine ourselves to the exact above proportions, which may vary, and are only given here as a mere specimen and type of our invention.

What more particularly characterizes our mock-silver, is introducing unalloyed tungsten and unalloyed aluminum among its constitutive alloys, and the above considerable proportion of nickel, the anti-affinity of which for aluminum is well known, and which we have made alloyable. We do therefore claim not only the above typic proportions, but any proportions which in practice will answer the purpose.

We will actually describe the operation: We first melt together the first three elements, having care to cover them with some lumps of coal. We cast them in small shots, which we melt again afterwards, adding thereto the above-mentioned proportion of aluminum and one-half per cent. of a flux composed of one part of borax and one of calcic fluoride, which proportions of said flux may diminish when the fusions are more considerable.

As to the casting into ingots or moulding in sand, these operations take place in the usual way, care being taken that the material shall keep remounting, or in half ascent at least. The ingot and casting-moulds are to be smeared with some fatty bodies, such as tallow or common rosin. The forging, rolling, drawing into wires, and annealing are effected by the usual and known methods, avoiding, however, to use sulphurous fuel. As to the whitening of the material, we effect it by means of diluted sulphuric acid, and the tarnish is removed by means of nitric acid, as sold by trade.

### *Claims.*

1. The new alloy, so-called mock-silver, (minargent,) composed of different metals, as described.
2. Introducing in our so-called mocksilver unalloyed tungsten, unalloyed aluminum, and a considerable proportion of nickel, the anti-affinity of which for aluminum is well known, and which we have made alloyable.
3. And we claim not only the above-mentioned typic proportions, but also any proportions which will answer the purposes.

ACHILLE SCHMITTE,  
LEVALLOIS.

Witnesses:

DEMOS,  
A. GUION,