

UNITED STATES PATENT OFFICE.

WALTER RÜBEL, OF BERLIN, GERMANY.

ALLOY.

SPECIFICATION forming part of Letters Patent No. 743,566, dated November 10, 1903.

Application filed July 31, 1903. Serial No. 67,717. (No specimens.)

To all whom it may concern:

Be it known that I, WALTER RÜBEL, engineer, a subject of the Emperor of Germany, residing at 77 Petersburgerstrasse, Berlin, in the Empire of Germany, have invented certain new and useful Improvements in Alloys, of which the following is a specification.

This invention has reference to alloys; and it has for its object the production of an improved aluminium-copper-cadmium alloy which differs in various essential points from known alloys and presents increased utility.

It is well known that pure aluminium can only be fashioned with the greatest difficulty, owing to its extreme softness, so that the employment of this metal in industry has probably reached its limit. It is true that by the addition of copper this softness may be removed; but an addition of six per cent. of copper is sufficient to make the alloy thus formed so hard that it cracks like glass, so that, like pure aluminium itself, it cannot be used to any great extent in practice. Mixtures of aluminium with nickel and cobalt with the addition of cadmium are also known, in which the cadmium imparts to the alloy, which of itself is not brittle, increased ductility.

Now according to my invention I can produce a novel alloy of aluminium, copper, and cadmium which combines the good properties of pure aluminium and of the copper-aluminium alloy, while it does not present the bad qualities of these substances. An alloy of this kind is formed if, for example, four parts of copper are melted together with

2.5 parts of cadmium and 93.5 parts of aluminium or if six parts copper, 3.5 parts cadmium, and 90.5 parts aluminium are similarly treated. Notwithstanding the fact that in the latter case the proportion of copper is considerably greater than six per cent., as there are six parts of copper to 90.5 parts of aluminium, the mixture produced is not brittle and is well adapted for fashioning, while at the same time the prejudicial softness of aluminium is avoided.

An aluminium-copper-cadmium alloy in the above proportions furnishes (contrary to what is the case with the known aluminium-copper alloy) an entirely clean casting which is not dull or colored, so that the subsequent treatment of the casting is considerably facilitated. The alloy, as already stated, is very tough and easy to work and is therefore specially adapted for those articles which are first of all cast and then submitted to a mechanical operation.

What I claim, and desire to secure by Letters Patent of the United States, is—

An alloy consisting of aluminium, copper and cadmium, substantially in the proportions and for the purposes hereinbefore described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WALTER RÜBEL.

Witnesses:

DAGOBERT LANDENBERGER,
HENRY HASPER.