

# UNITED STATES PATENT OFFICE.

WALTER RÜBEL, OF LUDWIGSBURG, GERMANY.

## ALLOY.

SPECIFICATION forming part of Letters Patent No. 697,544, dated April 15, 1902.

Application filed December 2, 1901. Serial No. 84,405. (No specimens.)

*To all whom it may concern:*

Be it known that I, WALTER RÜBEL, a subject of the King of Würtemberg, residing at Ludwigsburg, Kingdom of Würtemberg, German Empire, have invented a new and useful Improvement in Alloys, of which the following is a specification.

In order to improve the technological properties of aluminium without increasing its specific gravity, a proportion of four to seven per cent. phosphorus is, according to the present invention, added to the aluminium. The density and firmness of the same are thereby substantially increased and an extremely tough substance is obtained. An alloy of aluminium with phosphorus containing the above-mentioned proportion of the latter forms an excellent substitute for tombac and all other similar alloys, gives a very sharply-defined casting, and only contracts to the extent of one to one and one-half per cent. at the utmost. Another thing in favor of this alloy is the fact that phosphorus is comparatively cheap compared, for instance, with magnesium. Moreover, there is the further advantage that its color is not blue, as is the

case with alloys of aluminium and magnesium, but silvery. The facts that the alloy does not easily oxidize and that it can be soldered also deserve mention.

I am aware that alloys composed of aluminium and phosphorus containing at least about twenty-five per cent. of phosphorus are known. The present invention, however, relates to an alloy containing from four to seven per cent. of phosphorus, since only by this percentage the properties above mentioned can be reached.

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

An alloy composed of aluminium and phosphorus containing from four to seven per cent. of phosphorus.

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

WALTER RÜBEL.

Witnesses:

HERMANN GAUSKAKE,  
ERNST ENTUMAR.