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UNITED STATES PATENT OFFICE

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LIGHT METAL ALLOY

No Drawing. Application filed January 31, 1931, Serial No. 512,745, and in Great Britain February 7, 1930.

The object of the present invention is to provide an aluminium and silicon alloy having improved physical and casting properties.

Accordingly our improved alloy consists of an aluminium silicon alloy in which the silicon content is from 8 to 13% to which is added nickel in an amount equal to ½ to 3½% of the total content. These percentages are by weight.

The preferred proportions are three per cent nickel, eleven per cent silicon and the remainder aluminium.

In a convenient manufacture we first make an aluminium silicon alloy with a 13% silicon content and make an alloy of aluminium and nickel with a 20% nickel content.

We take 85 pounds of the former and 15 pounds of the latter which when melted together gives the preferred proportions indicated above.

We find the tensile strength of this alloy is considerably greater than that of ordinary aluminium silicon alloy, whilst its ductility is eminently satisfactory. Further, its yield point is raised; its hardness is increased; and its machining properties which are usually poor in silicon alloys are remarkably improved.

The casting properties of the alloy are also much better; chilling, generally speaking, being entirely eliminated.

The alloy lends itself very well to the well known modification process by means of metallic sodium or sodium of salts whereby a coarse structure can be converted to a fine grain silky one.

I claim:—

1. An improved light metal alloy containing by weight 86% of aluminium, 11% of silicon and 3% of nickel.

2. An alloy consisting of 0.5 to 3.5 per cent of nickel, 8.0 to 13.0 per cent of silicon, the balance being aluminium.

In testimony whereof I affix my signature.

PERCY PRITCHARD.