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(54) ALUMINIUM ALLOY

(54) ALLIAGE D'ALUMINIUM

(57) Abstract:

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This invention relates to aluminium alloys.

As is well known aluminium alloys containing magnesium assume technically valuable properties after a kneading operation together with additional heat treatment. Moreover considerably improved mechanical properties on heat treatment can be imparted to aluminium alloys if small quantities of lithium be first added thereto.

It has now been found that a combination of these two hardening constituents produce to a substantial extent still more favourable effects than is the case when only a single one of these constituents is added.

Thus for example, the addition of 0.4% of magnesium and 0.1% of lithium to an aluminium copper alloy containing 4.5% of copper produces mechanical strength values of more than 50 kg. per sq.mm. with an elongation of 10 to 20%. However, other combinations of magnesium and lithium, such as for example of 1.3% of magnesium and 0.2% of lithium and the like may also produce favourable results depending on the nature of the original alloy.

The composition of the original alloy may vary to some extent; thus alloys of aluminium, copper, zinc or aluminium, copper, silicon or aluminium, copper, titanium with and without additions, of for example, manganese, nickel, cadmium, silver and chromium may be mentioned as examples.

The following is a specific example of an alloy according to the present invention:

3 to 4 parts of copper,

8 to 10 parts of zinc,

0.4 to 0.8 parts of manganese,

0.05 to 0.1 parts of lithium, and

0.1 to 0.5 parts of magnesium

to which may also be added up to 1% of cadmium.

The new alloys can be modified by the usual heat
5. treatment by quenching at elevated temperatures of for example, about 500° and annealing at lower temperatures (100° and more) in a cast or kneaded state. The alloys can also be used without heat treatment, especially for casting purposes.

Having thus described my invention, I claim:-

1. As a composition of matter, an aluminum alloy including magnesium and lithium as associated constituents thereof.

2. An aluminum alloy including less than 1% of magnesium and less than .5% lithium.

3. An aluminum alloy including copper, zinc, manganese and less than 1% of magnesium together with less than .5% of lithium, the mechanical strength thereof being over 50 kg. per sq. mm. with an elongation of 10 to 20%.

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SUBSTITUTE

REMPLACEMENT

SECTION is not Present

Cette Section est Absente