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ALLOY

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1 Claim. (Cl. 75—1)

The present invention relates to improvements in alloys. One object of the invention is the provision of an alloy in which metallic calcium is one of the ingredients.

It is a known fact that metallic calcium is useful in the production of high vacua, and that it does not react with rare gases such as argon, and can therefore be employed to separate the argon from nitrogen.

It is also known that when mixed with lead it greatly increases the tensile strength thereof and its resistance to deformation, and that it is also a deoxidizer for copper, being preferred to silicon in that it alters the conductivity of the metal very little, while silicon affects it markedly.

It is therefore desirable to use metallic calcium in several ways, or in several compositions, in accordance with the use to which it is to be put.

A composition for use as lamp filament or the cathode of a glow lamp, or as an alloy to produce with steel a stainless steel, is composed preferably of the following:

	Percent
Nickel	33⅓ to 95
Chromium	2½ to 33⅓
Metallic calcium	2½ to 33⅓

It is also possible to substitute copper for nickel in the above, or divide the nickel and copper 50% each, or in equal quantities, or molybdenum and chromium may be used 50—50 in the above formula.

When the above mentioned formula is utilized as an element in conjunction with iron or steel, producing in the latter a stainless steel of relatively greater hardness, and which can be mixed in the present manner of projecting by air-pressure guns, the alloy into the ladle of molten metal. In this instance the metallic calcium disintegrates, does its deoxidizing and is converted into lime which rapidly rises to the slag, the other metals of the alloy remaining blended or scattered throughout the mass, and resulting in the stainless, relatively hard steel.

What is claimed is:

An alloy composed of nickel 33⅓ to 95%; chromium 2½ to 33⅓% and metallic calcium 2½ to 33⅓%.

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