

**CPC****COOPERATIVE PATENT CLASSIFICATION****C22F****CHANGING THE PHYSICAL STRUCTURE OF NON-FERROUS METALS AND NON-FERROUS ALLOYS**

(surface treatment of metallic material involving at least one process provided for in class [C23](#) and at least one process covered by this subclass, [C23F 17/00](#))

**C22F 1/00**

**Changing the physical structure of non-ferrous metals or alloys by heat treatment or by hot or cold working** (apparatus for mechanical working of metal [B21](#), [B23](#), [B24](#))

C22F 1/002

- . {by rapid cooling or quenching; cooling agents used therefor}

C22F 1/004

- . {Heat treatment in fluid bed}

C22F 1/006

- . {Resulting in heat recoverable alloys with a memory effect}

C22F 1/008

- . {Using a protective surface layer}

C22F 1/02

- . in inert or controlled atmosphere or vacuum (adjusting the composition of the atmosphere [C21D 1/76](#))

C22F 1/04

- . of aluminium or alloys based thereon

C22F 1/043

- . . of alloys with silicon as the next major constituent

C22F 1/047

- . . of alloys with magnesium as the next major constituent

C22F 1/05

- . . of alloys of the Al-Si-Mg type, i.e. containing silicon and magnesium in approximately equal proportions

C22F 1/053

- . . of alloys with zinc as the next major constituent

C22F 1/057

- . . of alloys with copper as the next major constituent

C22F 1/06

- . of magnesium or alloys based thereon

C22F 1/08

- . of copper or alloys based thereon

C22F 1/10

- . of nickel or cobalt or alloys based thereon

C22F 1/11

- . of chromium or alloys based thereon

C22F 1/12

- . of lead or alloys based thereon

C22F 1/14

- . of noble metals or alloys based thereon

C22F 1/16

- . of other metals or alloys based thereon

C22F 1/165

- . . {of zinc or cadmium or alloys based thereon}

C22F 1/18

- . . high-melting or refractory metals or alloys based thereon

C22F 1/183

- . . . {of titanium or alloys based thereon}

C22F 1/186

- . . . {of zirconium or alloys based thereon}

**C22F 3/00**

**Changing the physical structure of non-ferrous metals or alloys by special physical methods, e.g. treatment with neutrons**

C22F 3/02

- . by solidifying a melt controlled by supersonic waves or electric or magnetic fields