

UNITED STATES PATENT OFFICE.

LUDWIG MACH, OF BERLIN, GERMANY.

PROCESS OF MAKING ALUMINIUM ALLOYS.

SPECIFICATION forming part of Letters Patent No. 662,952, dated December 4, 1900.

Application filed August 8, 1900. Serial No. 26,256. (No specimens.)

To all whom it may concern:

Be it known that I, LUDWIG MACH, a subject of the Emperor of Austria-Hungary, residing at 133 Wilhelmstrasse, Berlin, in the
5 Empire of Germany, have invented certain new and useful Improvements in or Relating to a Process of Manufacture of a Workable Aluminium Alloy, of which the following is a specification.

10 This invention relates to a special process designed to render aluminium more workable or more serviceable to the trade than it has been hitherto; and it consists of a modification of the process for which Letters Patent
15 were sought on July 12, 1899, under the Serial No. 723,559. According to what is described in that application the workability of the aluminium is enhanced by adding from
20 hundred parts of aluminium and by afterward subjecting the alloy thus obtained to a mechanical condensing process. Aluminium treated in this manner is conspicuous for the
25 readiness wherewith it may be wrought by means of cutting-tools. Subsequent experiments, however, have led me to the discovery that the same result is attainable by bringing the metal to the requisite degree of density
30 not by mechanical condensation, but by sudden solidification or concretion by chilling, though, as in the prior method of treatment, from two to ten parts (per cent.) of magnesium must be added to attain the desired object.

35 The process is carried out as follows: One hundred parts of aluminium are alloyed with

from two to ten parts of magnesium and this alloy cast in sheet-metal (tin-plate) molds from castings of corresponding shape. The molds are then moved backward and forward
40 in running water, their metal-receiving orifices being left open. Hydrochloric acid or mercury might be used instead of water, if preferred. In the course of my investigations it has been ascertained that this particular material or alloy is excellently adapted
45 for casting, while owing to its high degree of density it is workable with tools with remarkable facility as compared with pure aluminium, being similar in this to the aluminium
50 treated by the method which was described in the application of July 12, 1899, Serial No. 723,559. If, on the other hand, the melted aluminium alloy of from two to ten parts of magnesium to every one hundred
55 parts of aluminium be concreted or "set" by a slow process, the castings will smear or smudge in being worked; but this drawback may be immediately removed by rapid chilling.
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I claim—

A process of manufacture of a workable aluminium alloy consisting in adding from two to ten parts of magnesium to every one hundred parts of melted aluminium and then
65 suddenly chilling the alloy thus obtained.

Signed this 25th day of July, 1900, at Berlin, Germany.

LUDWIG MACH.

Witnesses:

WOLDEMAR HAUPT,
OTTO SCHULTZ.