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UNITED STATES PATENT OFFICE

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ALLOY

No Drawing. Original application filed September 20, 1929, Serial No. 394,119. Divided and this application filed June 23, 1931. Serial No. 546,362.

This invention relates to the manufacture of shaped articles from sheets of magnesium and magnesium alloys, and is more particularly concerned with certain high percentage magnesium alloys which are especially adapted for use in the art known as embossing, i. e. forming hollows of a predetermined shape and size. Their use, however, is not limited to manufactures of this kind, but extends to all deforming operations on sheets, which involve a plastic deformation as distinguished from a mere bending or folding of sheets or strips without a noticeable alteration of thickness.

In our copending application Serial No. 394,119, filed September 20, 1929 and entitled "Drawing hollow articles", of which this application is a divisional application, we have described and claimed a method of drawing hollow articles from sheets of magnesium and magnesium alloys which comprises drawing the sheets within a temperature range, in which the transverse properties exceed the longitudinal properties of the sheet, i. e. at temperatures amounting to at least about 270° C., and preferably about 350° C.

We have further found that the application of such temperatures not only renders possible the drawing of hollow articles from sheets of technically pure magnesium, but that the latter metal may also be hardened by the addition of limited amounts of zinc and aluminium without forfeiting its favourable properties in the process in question.

Magnesium alloys particularly suitable for this purpose contain between about 0.5 and about 3 percent of zinc, and between about 0.5 and 6.5 percent of aluminium, besides between about 0.2 and 1.5 percent of manganese, the presence of the latter metal tending to diminish the liability of the alloys to corrode without noticeably influencing their plasticity. A preferred alloy consists of about 1 percent of zinc, about 6.5 percent of aluminium, and about 0.3 percent of manganese, the balance being magnesium.

We claim:

1. An alloy in sheet form having the characteristic of being drawn or embossed consisting of, manganese between about 0.2 and 1.5 percent, zinc from about 0.5 to about 3 percent, aluminium from about 0.5 to about 6.5 percent, balance magnesium.

2. An alloy in sheet form having the characteristic of being drawn or embossed, consisting of about 1 percent of zinc, about 6.5 percent of aluminium, about 0.3 percent of manganese, balance magnesium.

In testimony whereof we have hereunto set our hands.

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