Patented Mar. 10, 1931

1,795,473

UNITED STATES PATENT OFFICE

EDWARD C. BURDICK, OF MIDLAND, MICHIGAN, ASSIGNOR TO THE DOW CHEMICAL COMPANY, OF MIDLAND, MICHIGAN, A CORPORATION OF MICHIGAN

METHOD OF TREATING MAGNESIUM

No Drawing. Application filed November 10, 1926. Serial No. 147,618.

Metallic magnesium and its alloys in exposure to the air under ordinary conditions becomes quickly covered with a deepening tarnish of dark color which detracts from the appearance and utility. This has been supposed to be an inevitable characteristic of the metal, but I have found that the difficulty arises from small traces of substances on the surface in sufficient amount to act in the presence of moisture, and apparently also direct a catalytic oxidative process; and the present invention provides a treatment preventing such action and making possible a bright lustrous surface resistance against detrimental change.

To the accomplishment of the foregoing and related ends, the invention, then, consists of the features hereinafter fully described, and particularly pointed out in the claims, the following description setting forth in detail but one of the various ways in which the principle of the invention may be used.

The articles to be treated, castings or other shaped articles, and of the pure metal or magnesium alloys substantially free from copper and cadmium, are subjected to the action of material capable of removing surface traces of such impurities present, and for this an agent of acid character is employed. I prefer sulphuric acid, although other acids, as nitric, hydrochloric, or even in some instances acid salts, as acid sodium sulphate, may be used less desirably. The articles are thoroughly exposed to the treating agent, for instance by dipping. For sulphuric acid a strength of ten to thirty per cent. is employed; a proportion of one part of 96% sulphuric to three parts of water particularly being desirable for alloys. The magnesium articles are then well washed in water, which should best be hot in order to promote the subsequent drying. The articles so treated present a smooth lustrous surface not subject to further action in average conditions in the air.

Other modes of applying the principle of the invention may be employed, change being made as regards the details disclosed, provided the steps stated by any of the following claims or the equivalent of such be employed.

I therefore particularly point out and distinctly claim as my invention:—

1. A method of treating magnesium articles, which comprises subjecting the article to the action of ten to thirty per cent. sulphuric acid, and then washing.

2. A method of treating magnesium articles, which comprises dipping the article in a bath of one part of 96% sulphuric acid and three parts of water, then washing the article in hot water, and drying.

Signed by me this 2 day of November, 1926.

EDWARD C. BURDICK.