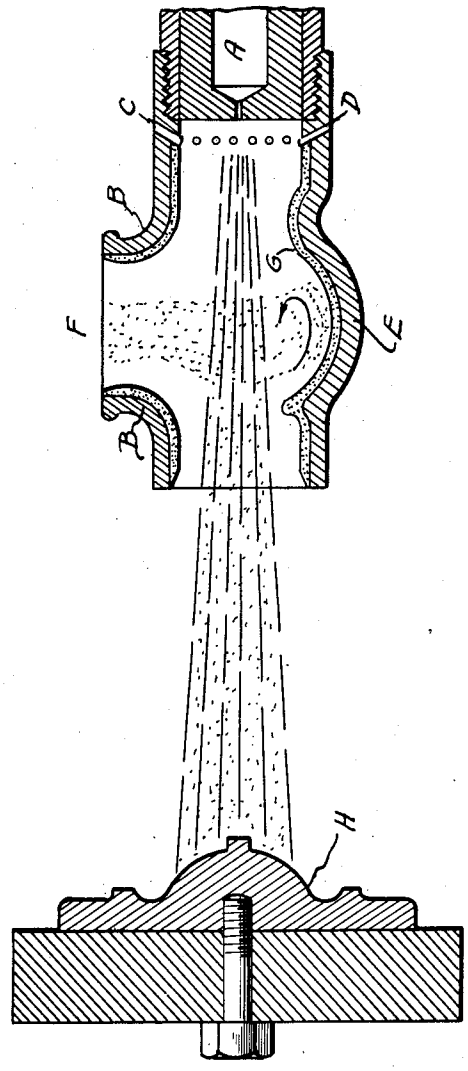
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S. M. UDALE ET AL

METHOD OF PROTECTING THE SURFACE OF METAL MOLDS

Original Filed May 6, 1922



STANLEY M. UDALE
DANIEL H. MELOCHE
INVENTORS.

BY Stanley M Udale.
ATTORNEY.

Patented Jan. 26, 1926.

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UNITED STATES PATENT OFFICE.

STANLEY M. UDALE AND DANIEL H. MELOCHE, OF DETROIT, MICHIGAN.

METHOD OF PROTECTING THE SURFACE OF METAL MOLDS.

Original application filed May 6, 1922, Serial No. 559,076. Divided and this application filed May 23, 1925. Serial No. 32,279.

To all whom it may concern:

Be it known that we, STANLEY M. UDALE and DANIEL H. MELOCHE, citizens of the United States, residing at 893 Lothrop Ave., and 2490 Hazelwood Ave., Detroit, respectively, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Methods of Protecting the Surface of Metal Molds, of which the following is a specification.

This invention relates to improved means for the protection of surfaces of metal molds used in the continuous production of metal castings. This invention consists essentially in the application to a permanent mold of a refractory coating applied by means of a blow torch.

The molds are preferably made of cast iron and the chief object of this invention is to provide means for the protection of the surfaces of such molds when used for the production of gray iron castings.

The actual method practiced by the applicants is shown in the figure, in which a pipe A is connected to a regulable supply of oxygen and acetylene. The pipe A is threaded into the casing B, which is preferably lined with a refractory coating. Air entrances C and D may be provided as required. A depression E is located in the casing B forming a crater. Opposite this crater E is the opening F, through which the refractory powder is fed into the crater E. The casing B and crater E are protected by a refractory lining G. The amount of oxygen and the area of the air openings C and D are regulated so that an intensely hot flame results. H represents a permanent master positive mold which is to be protected by means of a refractory coating.

The flame is directed against the molds H and as the refractory powder is highly heated as it travels toward the mold through the flame it therefore arrives at the mold in a highly heated state and as the mold is also heated by the flame directed upon it, the refractory substance adheres to the mold. The refractory particles, which are very finely divided, are at a white heat when they strike the heated mold, which accounts for the fact that they do adhere firmly enough so as to protect the molds during repeated use. Moreover, the iron is softened slightly by the heat, whereas the hardness of the refractory particles is not appreciably diminished.

In actual use the life of the refractory coating is extended by protecting it with a layer of lampblack applied in a well known manner by means of a smoky flame.

One of the refractory substances which we have found very satisfactory is magnesium oxide.

The function of the crater G is to catch particles not carried directly into the flame, heat these particles, and by means of the violent eddy in this crater to return these particles to the flame.

This application is a divisional application of our Patent #1,536,952, issued May 5th, 1925.

What we claim is:—

The method of protecting the metal surface of permanent iron molds, which consists in heating the surface of the iron molds by means of the flame of a blow torch directed against the surface of the said molds and injecting into the flame powered magnesium oxide, whereby the particles of magnesium oxide are carried against the surface of the iron molds which are thereby coated with the magnesium oxide.

In testimony whereof we affix our signatures.

STANLEY M. UDALE.
DANIEL H. MELOCHE.