

# United States Patent Office.

HIRAM TUCKER, OF NEWTON, MASSACHUSETTS.

Letters Patent No. 103,527, dated May 24, 1870.

## IMPROVEMENT IN SURFACING CAST-IRON.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, HIRAM TUCKER, of Newton, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Surfacing Articles of Cast-Iron; and I do hereby declare that the following is a description of my invention sufficient to enable those skilled in the art to practice it.

This invention relates to ornamentally protecting and surfacing cast-iron articles, which are so formed as to present adjacent parts in relief and depression, such inequalities in the form of the surface being produced by casting from a pattern; and

My invention consists in the process to be described, and in the products resulting from such process.

Commonly, I make the parts adjacent to each other, which are to be ornamentally colored, in contrast, and are to be protected from atmospheric and other extraneous influences, in substantially parallel surfaces, so that the outer surfaces, or the surfaces in relief, or the tracery, may be easily ground, filed, or otherwise finished by an abrading or cutting action.

The depressed surfaces are simply cleansed from sand or other considerable roughness or foreign matter, and then the entire surfaces which will be presented to view are coated with any suitable colored varnish, paint, or lacquer, of desired hue, having, also, considerable body, and being, preferably, opaque, so as to form a complete covering, which may be left to harden and dry, by evaporation, in the atmosphere; or said covering may be hastened in its hardening by the action of a suitable degree of heat; and such covering may be applied in one or more coats, as may be desired.

Then the prominent surfaces are cleansed from the coating so applied, and are polished by abrasion or cutting, so as to present the metallic luster of the cast-iron, and a smooth, fair surface, which is then coated with a transparent or semi-transparent colored varnish, or, if desired, may be first bronzed, as described in my patent No. 40,964, of December 15, 1863, and then varnished; or it may be oxidized and varnished, or it may be covered with a colored lacquer, and then varnished, the metallic luster and the

smoothness of the raised surfaces acting on their transparent or partly transparent coating, somewhat in the manner of a foil on an imposed gem or paste, though to a less degree.

Articles of metal having adjacent raised and sunken surfaces, have heretofore been coated with paints, lacquers, &c, these being afterward removed from the raised surfaces, which were, then or before, polished and left exposed, involving much care and labor, when the attempt is made to keep such polished surfaces from oxidation. But where, as in my invention, the raised brightened surfaces are protected from the air, they give no trouble on account of rusting, and the peculiar color and luster of the metal are disguised or changed, by coloring the varnish to be applied, or by the bronzing process referred to, or by oxidizing or lacquering the surface which has been brightened, before applying varnish, so as to resemble to the view, metals or alloys of greater cost.

In some cases, the process may be slightly varied with advantage, without departure from my invention, as, by polishing the raised surfaces before coating with paints, &c., and then the coating may be wiped off from the raised polished surfaces before it is set, or it may be scraped off after it is dry; but, in any case, the raised polished surfaces are to be colored and protected by varnish.

With care, the paint, &c., may be applied only to the depressed surfaces, whether the raised surfaces are polished before or after the sunken surfaces are coated.

I claim—

The described process of ornamenting and protecting the surfaces of cast-iron articles formed with sunken and raised parts, substantially as and for the purpose specified.

Also, as a new manufacture, articles of cast-iron, formed as described, superficially protected and colored in contrast, as set forth.

HIRAM TUCKER.

Witnesses:

J. B. CROSBY,  
M. W. FROTHINGHAM.