

# UNITED STATES PATENT OFFICE.

EDWIN JENKINS AND ALEXANDER LAW, OF MELBOURNE, AND WILLIAM PRICE, OF CARLTON, VICTORIA.

## PROCESS OF ANNEALING CHILLED AND OTHER IRON CASTINGS.

SPECIFICATION forming part of Letters Patent No. 282,728, dated August 7, 1883.

Application filed June 27, 1883. (No specimens.)

*To all whom it may concern:*

Be it known that we, EDWIN JENKINS and ALEXANDER LAW, both subjects of the Queen of Great Britain, residing at Exhibition Street, 5 Melbourne, in the British colony of Victoria, founders, and William Price, also a subject of the Queen of Great Britain, residing at Pitt Street, Carlton, in the said colony, iron-worker, have invented a new and useful Improved 10 Process of Annealing Chilled and other Iron Castings; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to 15 make and use the same.

Our improved process of annealing chilled and other iron castings consists, essentially, in suddenly immersing them when at a given temperature in a liquid, and the object is to 20 make them so that they can be punched, bored, tapped, and so on as readily as wrought metal. At present they are too brittle for this kind of treatment; but by our process 25 they are converted into such a condition as to be readily manipulated in this way. The particular point in the process is the temperature at which the metal is to be dipped into the liquid. This point is just when it is reduced to a dull red heat, when the redness is 30 about to disappear. The liquid in which it is immersed may be of any character not known to be inimicable to the character of iron—such as acids or acid salts—but we have obtained the best results from a solution of treacle and 35 water at a specific gravity of 1.005.

When the castings can be taken from the chill or from the sand sufficiently hot for the process, we dip them directly into the liquid; but when they cannot retain the proper heat for the act of dipping, we reheat them in an 40 oven or chamber a little beyond the necessary temperature, and then allow them to cool to the point of dull redness, as before described, when we plunge them into a liquid, as before stated, and allow them to cool, when the process is completed. 45

We have tried various kinds of liquids in which to dip the castings, and found them all to answer more or less well so long as acids and acid salts were avoided; but we have 50 found that the solution of treacle and water at the gravity we have mentioned gives the best results. We do not, however, confine ourselves to any particular kind of liquid in which to dip the castings; but 55

What we believe to be new, and therefore claim as our improved process of annealing chilled and other iron castings, is—

The sudden immersion of such castings when at a dull red heat in a liquid, and in preferably 60 a liquid consisting of treacle and water of a specific gravity of 1.005, substantially as and for the purposes herein described and explained.

EDWIN JENKINS.  
ALEXANDER LAW.  
WILLIAM PRICE.

Witnesses:

G. W. KNOTTS,  
WALTER SMYTHE BAYSTON.