UNITED STATES PATENT OFFICE.

WILLIAM E. RICE, OF WORCESTER, MASSACHUSETTS.

LUBRICANT FOR WIRE.

SPECIFICATION forming part of Letters Patent No. 270,338, dated January 9, 1883.

Application filed September 30, 1882. (No specimens.)

To all whom it may concern:

Be it known that I, WILLIAM E. RICE, of Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in the Preparation of Wire for Drawing; and I declare the following to be a description of my said invention sufficiently full, clear, and exact to enable others skilled in the art to which it appertains to make and use the same.

The object of my invention is to provide a material, solution, or bath for preparing and coating wire preliminary to its being passed through the drawing-dies, whereby a coating can be formed that will adhere uniformly and tenaciously to the surface of the wire, that will protect and lubricate the dies in a very complete and perfect manner, and which can be made and used with facility and economy. These objects I attain by the use of talc as an ingredient of the coating-bath, or in combination with a solution of salt in which the wire is immersed previous to drawing, as more fully hereinafter set forth, the particular subject-matter claimed being hereinafter definitely specified.

In the composition of my improved solution or coating-bath I employ preferably the following-named materials as ingredients, viz: water, about one hundred and seventy-five to two hundred gallons; common salt or sodium chloride, one hundred pounds; finely-pulverized talc, fifty pounds. The salt is dissolved in water, and the pulverized talc is first mixed with water and afterward mixed with the brine or salt solution.

The quantities specified are such as will give good results in practice; but I do not desire to confine myself to the exact proportions named, as the several quantities may be varied, according to the density, strength, or consistency of bath required for any class of wire.

When used the bath is preferably heated to about 200° Fahrenheit, more or less. The wire, in coils on reels, is dipped or immersed in the bath in ordinary manner, remaining in the solution sufficient time to become heated to about the same temperature as the bath, when, upon removal therefrom, the coating material immediately solidifies upon the surface of the metal in a uniform film, the water being evaporated by the heat of the wire and solution. The wire is then placed in a heated room to avoid any absorption of moisture that might otherwise occur, from whence it is taken to the drawing-dies, as required, to be drawn in the ordinary manner.

By the term "talc" in this specification I desire to include the substances commonly known as "French chalk," "soapstone" or "steatite," or such as are wholly or principally composed of talc.

Among the advantages incident to the use of my improved coating may be mentioned the following: The coating is very durable, adheres firmly to the surface of the wire, and withstands a greater number of drawings than ordinary coating solutions, while it permits of the wire being reduced a greater degree at each "draw" or passage through the dies. The talc, being of a smooth, greasy nature, protects the surface and prevents friction. It is hard, smooth, free from grit, and the dies are thus preserved for longer service. The several substances are cheap and easily procurable in quantities of large amount, so that the bath is comparatively inexpensive for making up, while its working is attended with less labor and trouble than the ordinary baths, thus effecting economy in cost and facility in the process of wire-drawing.

Talc or steatite may be employed in other mixture than that above specified for coating wire with beneficial results; but I prefer the solution described.

I am aware that salt has heretofore been used in baths for coating wire preparatory to drawing it, and I do not therefore herein make claim, broadly, to the use of such substance.

What I claim as of my invention, and desire to secure by Letters Patent, is—

1. The improvement in the preparation of wire for drawing, which consists in applying to the wire a surfacing or coating composed of or containing talc or steatite, for the purpose set forth.

2. The improved wire coating or bath, consisting of a mixture composed of talc and salt in solution.

Witness my hand this 25th day of September, A. D. 1882.

WILLIAM E. RICE.

Witnesses:

CHAS. H. BURLEIGH,

CHAS. A. CONNAN.