

United States Patent Office.

GRANVIL RICH, OF SMITHVILLE, MISSOURI.

Letters Patent No. 77,828, dated April 28, 1868.

IMPROVED COMPOUND FOR TEMPERING CAST STEEL.

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, GRANVIL RICH, of Smithville, in the county of Clay, and State of Missouri, have invented a new and useful Compound for Tempering Cast Steel; and I do hereby declare that the following is a full, clear, and exact description thereof.

The ingredients and proportions are as follows:

I take three and one-half pounds tallow, one pound beeswax, one and one-half pint sweet oil, one and one-half ounce sal-ammoniac, pulverized, one and one-half ounce sweet spirits of nitre, and one ounce cream of tartar.

I melt the tallow and beeswax together, and then add the oil, next the tartar, then the sal-ammoniac, and lastly the nitre. I pour into the compound slowly, stirring them well while pouring; and thus the compound is completed and ready for use.

To use the above-described compound, I heat the steel or tools to be hardened to a regular or common heat used for such purposes, and harden them by immersing them in the compound while in a melted state. I then draw the temper, after rubbing or cleaning the steel or tools bright, as follows, viz:

For mill-picks and engravers' tools, I draw to a light gold color.

For plane-bits, large, heavy broad-axes, and turners' chisels, a straw color.

For adzes, large hand-axes, large taps and dies, firmer-chisels and gouges, butchers' cleavers, and bits for braces, a copper color.

For drawing-knives, socket-chisels, tools for turning iron and steel, drills for drilling iron, stone-drills, points, and chisels, a copper color tinted with blue.

For a chopping-axe or pole-axe, take all the copper from the blue tint.

For springs, I heat the spring to a cherry red, and cool it in the compound, and then hold it over the fire until the same is burned off, and then lay it down to cool.

I carefully keep all of the above-named articles from water while in a hot state.

Having thus described my invention, and the manner of using it, I claim, and desire to secure by Letters Patent—

1. The compound, as described; and for the purposes specified.
2. The process of tempering steel by the use of said compound, as described.

GRANVIL RICH.

Witnesses:

T. C. THEAKER,
ERASTUS SMITH.