

# UNITED STATES PATENT OFFICE.

L. W. KELLEY, OF BRUNSWICK, OHIO.

## IMPROVED COMPOUND FOR TEMPERING STEEL SPRINGS, &c.

Specification forming part of Letters Patent No. 51,728, dated December 26, 1865.

*To all whom it may concern:*

Be it known that I, L. W. KELLEY, of Brunswick, in the county of Medina and State of Ohio, have invented certain new, useful, and Improved Chemical Compounds for Tempering Steel Springs, Knives, Edge-Tools, &c.; and I do hereby declare that the following is a full and complete description of the same.

My improvement relates to a chemical compound for tempering springs, knives, edge-tools, &c., as hereinafter described, whereby I obtain the desired temper by immersing the article, after it has been heated to the proper degree, in the compound and allow it to remain in the same until it is about cold, when it is taken out and immersed in cold water, whereby the article receives the desired temper for knives, edge-tools, &c.

The relative proportions of the ingredients may be changed without altering the nature of the invention.

In making this compound I take three ounces gum-arabic, three ounces saltpeter, (nitrate of potassa,) two ounces common salt, (chloride of sodium,) two ounces white glue. I then

first mix the above ingredients with one-half an ounce of acetic acid until it is fully chemically combined. Then, after the ingredients and acetic acid are mixed, they are put into one gallon of right or whale oil and fully combined.

In tempering spring-steel, if it is of the first quality, it should be heated to a cherry red; but if of a poorer grade it is heated to a higher degree. Cast-steel is heated to a dark cherry red for knives and edge-tools; but for mill-picks a light cherry red, nearly white heat. After the steel is heated it is put into this compound and is left until it is nearly cold, when it is taken out and put into cold water, and is then ready for sharpening, &c.

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

The chemical compound, as herein set forth, for the purpose described.

L. W. KELLEY.

Witnesses:

W. H. BURRIDGE,  
J. HOLMES.