UNITED STATES PATENT OFFICE.

WILLIAM L. REYNOLDS AND CALVIN HASKELL, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN MANUFACTURE OF WIRE.

Specification forming part of Letters Patent No. **205,764**, dated July 9, 1878; application filed April 8, 1878.

To all whom it may concern:

Be it known that we, WILLIAM L. REYNOLDS and CALVIN HASKELL, residents of St. Louis, Missouri, have made a new and useful Improvement in the Mode of Devitriolizing Wire and other forms of Iron and Steel, of which the following is a full, clear, and exact description.

In the manufacture of wire it is customary, after the wire is annealed, to place it in a bath of diluted vitrol for the purpose of removing the scale, dirt, and any foreign matter that may be upon it. The wire becomes very brittle from being in the vitriol-bath, probably owing to the absorption, by the wire, of hydrogen generated during the chemical reaction which takes place when the wire is immersed in the acid; and to toughen it again, and to neutralize and speedily remove the effect of the hydrogen, it is the practice to subject the wire subsequently to a treatment that devitriolizes it.

Two devitriolizing processes have commonly been used—the hot-air process, which consists in exposing the wire for six or seven hours to air heated to 200° or 300°, and the cold-water process, which consists in soaking the wire for two or three days in cold water.

The first-named process is objectionable, in that it requires considerable time, and the wire, after undergoing it, has frequently to be cleaned again. The last-named process is also open to serious objection, because of the great length of time needed for its completion.

The present invention is an improvement upon the processes referred to. Much less time is required, and the wire comes out in a clean bright condition.

It consists substantially as follows: After removing the wire from the vitriol-bath it is boiled in water from two to three hours, at the expiration of which time the wire is thoroughly devitriolized. In addition thereto it is entirely free from discoloration, and is cleaner even than when treated by the cold-water process.

The boiling of the water may be effected in any suitable manner, preferably by means of a steam-jet passing into the water, and it may be carried on in any suitable vessel. The same result is in a measure produced by hot water, or water that is not quite up to the boiling-point; but the hotter the water is the sooner the devitriolizing is effected.

While the present improvement is especially valuable in the manufacture of wire, it is also useful in devitriolizing other forms of iron and steel that have been previously vitriolized.

We are aware that iron, after being pickled in an acid bath, has, to neutralize the acid, been subsequently immersed in an alkaline bath.

We claim—

The herein-described mode of devitriolizing wire and other forms of iron and steel, which consists in boiling or steeping the metal in hot water, substantially as described.

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Witnesses:
CHAS. D. MOODY,
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