

United States Patent Office.

HOWELL W. WRIGHT, OF TAUNTON, MASSACHUSETTS, ASSIGNOR TO ALBERT FIELD TACK COMPANY.

Letters Patent No. 106,977, dated August 30, 1870.

IMPROVEMENT IN COATING TACKS AND NAILS WITH COPPER.

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, HOWELL W. WRIGHT, of Taunton, in the county of Bristol and State of Massachusetts, have invented an Improvement in the Manufacture of Tacks and Nails; and I hereby declare that the following is a full, clear, and exact description of the same.

Large quantities of tacks and small nails, made entirely of copper, are employed for various purposes where it is desired to avoid the rust which forms upon tacks or nails composed wholly of iron, and also where they are to be clinched after being driven.

The cost of these copper tacks and nails, however, greatly exceeds that of those made of iron, and this difference of cost amounts to a considerable sum where great numbers are used.

My invention has for its object to enable me to produce a tack or nail equally as good as, and possessing all the advantages belonging to one made entirely of copper, and at less than one-half its cost, and consists in a tack or nail formed of iron, and afterward coated with a sufficient thickness of copper by the process of electroplating, a superior article being thus produced, which will not be subject to rust, and can be afforded at a low cost.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

Ordinary tacks or nails made of iron are first annealed, so that they may be bent or clinched if desired. They are then placed within a revolving drum or "tumbler," in which they are cleaned and polished by friction, one with another.

After being removed from the tumbler, the tacks or nails are electroplated with copper, the operation being continued until a sufficient thickness of this metal has been deposited upon them.

I have found by experiment that the desired result is obtained by depositing upon the tacks or nails a quantity of copper equal to from one to ten per cent. of their weight, but the quantity may be varied according to circumstances.

Tacks or nails made as above described are stiffer and stronger, and, on that account, superior to those made entirely of copper, can be clinched or bent, and are entirely free from any liability to rust, no acid being employed in the process of manufacture, while they can be furnished at less than one-half the cost of those made entirely of copper, which have been used in many cases, heretofore, in preference to those composed of iron, only on account of their not being subject to rust.

The operation of electroplating is performed in the following manner:

From twenty-five to two hundred and fifty pounds of tacks or nails are taken from the tumbler and placed upon a metallic plate, and the whole placed within the tank containing the plating solution. The electric current is then applied in the usual manner, and the mass of tacks or nails stirred, in order that they may be evenly coated with the copper; or the tacks or nails may be placed within a perforated metallic cylinder, which is arranged to revolve within the tank containing the plating solution.

I am aware that nails have been coated with a thin film of copper, applied by dipping the nail in a solution of sulphate of copper, but the acid contained therein tends to rust the iron and eat through or remove the coating. I, therefore, lay no claim to a tack or nail so coated; but

What I do claim as my invention, and desire to secure by Letters Patent, as a new article of manufacture, is—

A tack or nail, formed of iron, and afterward electroplated with copper, substantially as and for the purpose described.

Witness my hand this 20th day of July, A. D. 1870.

HOWELL W. WRIGHT.

Witnesses:

N. W. STEARNS,
W. J. CAMBRIDGE.