(No Model.)

W. A. SWEET.

PROCESS OF MAKING WIRE.

No. 383,328. Patented May 22, 1888.

FIG. 1.

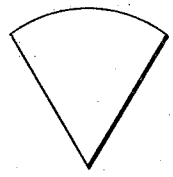


FIG. 2.

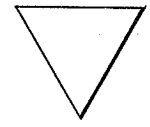


FIG. 3.

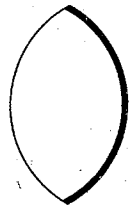


FIG. 4.

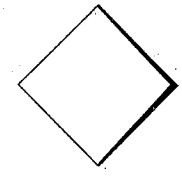


FIG. 5.

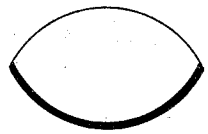
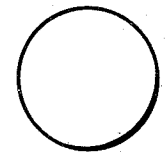


FIG. 6.



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM A. SWEET, OF SYRACUSE, NEW YORK.

PROCESS OF MAKING WIRE.

SPECIFICATION forming part of Letters Patent No. 383,328, dated May 22, 1888.

Application filed July 19, 1887. Serial No. 244,781. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. SWEET, of Syracuse, county of Onondaga, in the State of New York, a citizen of the United States, have invented certain new and useful Improvements in Processes of Making Wire or Rods for Brads, Nails, or Spikes, of which the following is a specification, reference being had to the accompanying drawings, which are presented for the purpose of illustrating the principle of my invention, and are hereinafter described.

My invention relates to the production of wire for the making of brads, nails, or spikes, and my object is to produce a cold-rolled wire of regular form—say a triangle, square, or circle in cross-section—which is hardened and stiffened by rerolling cold an annealed or hot-rolled rod of a cross-section materially different from the resultant wire; and my invention consists in the process of so doing.

In the drawings, Figures 1, 3, and 5 represent in cross-section the hot-rolled rods, and Figs. 2, 4, and 6 represent in cross-section the cold-rolled wire produced from the rods.

Hot-rolled wire is soft and bends too easily for the production therefrom of the best quality of brads, nails, or spikes; but by cold-rolling a hot-rolled rod an inherent stiffness or temper is imparted to the wire so produced, so that I can make therefrom a stiff brad, nail, or spike.

By the first step of my process I hot-roll a rod of a form materially different from that of the wire from which I make my brads, nails, or spikes. By the next step I cold-roll a rod down to the regular form of wire desired. The more irregular the rod and the more it differs from the form of the desired nail-wire the better the latter is for my purpose, because the more my cold-rolling changes the form the more I compress the fiber of the rod. For instance, in cold-rolling the Fig. 1 rod down to the form of Fig. 2, I change both the length and form of the sides, as well as the angles, changing a curved top wedge into a triangle. So in cold-rolling a Fig. 3 rod down to the form of Fig. 4, or a Fig. 5 rod to that form, I effect a great transformation both of form and texture or stiffness and temper in the nail-wire produced; and in like manner I materially change both form and texture in cold-rolling a Fig. 5 rod or a Fig. 3 rod down to a Fig. 6 wire. So the principle of my invention is the conversion of a hot-rolled rod of irregular form by cold-rolling it down to a wire of a regular form, and by such cold-rolling materially changing the form in order to produce better compression of fiber, and consequently a better degree of stiffness and temper in the wire produced and uniform throughout the wire.

I am aware that rods and shafting of circular form in cross-section have been heretofore made by first rolling the iron into that form hot, and then cold-rolling it, producing a rod or shaft of the same form, and also that wire of circular cross-section has been hot-rolled, and then spirally grooved by passing it through a ball-die rotating around the wire as it is fed through it; but neither of these is my invention, and I only claim mine to be as above specified.

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

The process, substantially as above described, of producing a stiffened wire for the manufacture of brads, nails, or spikes, consisting in cold-rolling a hot-rolled rod down to a wire of a materially-different form and of uniform stiffness.

In witness whereof I have hereunto set my hand this 2d day of June, 1887.

W. A. SWEET.

In presence of—
C. W. SMITH,
F. L. STEVENS.