

UNITED STATES PATENT OFFICE.

BERNARD LAUTH, OF HOWARD, PENNSYLVANIA.

METHOD OF PREPARING STEEL-NAIL PLATES.

SPECIFICATION forming part of Letters Patent No. 328,590, dated October 20, 1885.

Application filed June 4, 1885. Serial No. 168,437. (No specimens.)

To all whom it may concern:

Be it known that I, BERNARD LAUTH, a citizen of the United States, and a resident of Howard, Centre county, Pennsylvania, have
5 invented an Improvement in the Process of Preparing Steel-Nail Plates, of which the following is a full, clear, and exact description.

My invention has for its object the preparation of steel-nail plates (which have been
10 rolled from old steel rails) to be cut into nails; and it consists in the art of preparing steel-nail plates for cutting the same into nails—to wit, inclosing the plates in a close box to protect them from the action of the atmosphere,
15 inserting said box of plates in a furnace, and subjecting the plates to substantially a white heat, and then allowing said plates to cool down gradually in the same or another heated furnace or oven, or in a pit, after which
20 the plate may be cut into nails. This process has the effect of rendering the plates ductile and soft, much more so than is accomplished by simply raising them to the heat employed in the process of annealing steel and iron.

By my process I am enabled to utilize old
25 worn-out steel rails, whether they contain more or less carbon, and I dispense with the necessity of remelting such rails and casting them into blooms or ingots preparatory to rolling
30 them. I take the old worn-out Bessemer steel rails and roll them down to small-sized strips, hoops, or nail-plates. I then place these plates in a closed box to protect them from the action of the atmosphere, which plates are
35 then heated in a furnace until they reach substantially a white heat, which, when the box is of iron, can be determined by the box reaching that heat. The furnace-fire is then allowed to cool down, to permit the gradual cooling
40 ing down of the plates, after which the latter will be found to be ductile and soft to a degree fitting them to be cut into nails in any of the nail-cutting machines well known in the art. I prefer to let the box and its contents
45 remain in the furnace until the latter and the former cool down together, as this will make

the plates very soft; but the box can, if desired, be removed from the furnace and allowed to cool gradually in a pit or other oven. The plates should not be exposed to the air
5c until they have cooled in the box. If a very high white heat is attained, there will be danger of welding the plates together, so such high heat should be avoided.

I am well aware that steel has been annealed
55 for various purposes, and also that steel has been rolled into nail-plates, but the latter has been steel very low in carbon, so as to be ductile. By my process the old high-grade steel rails, high in carbon, can be used without re-
60 melting, rolled into nail-plates, and then, after the treatment I have above described, can be easily cut into nails by any of the means well known in the arts.

These nails will be superior to the iron or
65 steel and combined iron and steel nails now in use, as they will be of high-grade steel, and upon test will be found to possess the qualities of ductility and softness above named to a degree giving them characteristics distin-
70 guishing them from other nails.

The nail-plate preparatory to cutting is sheared into strips.

The box in which the plate is placed should be capable of withstanding ordinary furnace-
75 heat.

What I claim is—

The improvement in the art of preparing steel-nail plates for cutting the same into
80 nails, to wit, inclosing the rails in a close box to protect them from the action of the atmosphere, inserting said box of plates in a furnace, and subjecting the plates to substantially a white heat, and then allowing said plates to
85 cool down gradually in the same or in another heated furnace or oven, or in a pit, substantially as described.

BERNARD LAUTH.

Witnesses:

GEORGE E. BUCKLEY,
WM. H. CARSON.

Correction in Letters Patent No. 328,590.

It is hereby certified that in Letters Patent No. 328,590, granted October 20, 1885, upon the application of Bernard Lauth, of Howard, Pennsylvania, for an improvement in the "Method of Preparing Steel-Nail Plates," an error appears in the printed specification requiring the following correction: In line 80 the word "nails" should be stricken out and the word *plates* inserted instead; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 19th day of January, A. D. 1886.

[SEAL.]

H. L. MULBROW,
Acting Secretary of the Interior.

Countersigned:

M. V. MONTGOMERY,
Commissioner of Patents.