

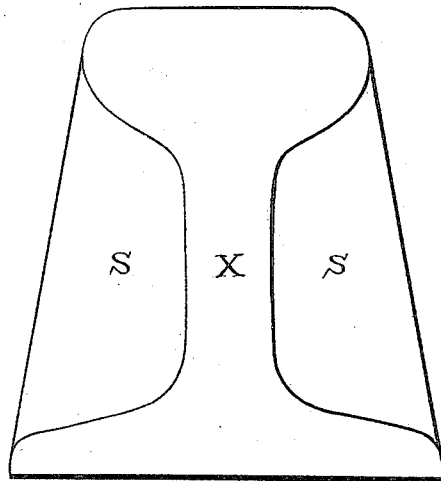
(No Model.)

W. PARKINSON.

PROCESS OF PREPARING OLD STEEL FOR REWORKING.

No. 301,147.

Patented July 1, 1884.



Attest:

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UNITED STATES PATENT OFFICE.

WILLIAM PARKINSON, OF HAMBURG, PENNSYLVANIA.

PROCESS FOR PREPARING OLD STEEL FOR REWORKING.

SPECIFICATION forming part of Letters Patent No. 301,147, dated July 1, 1884.

Application filed December 26, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM PARKINSON, a citizen of the United States, residing at Hamburg, in the county of Berks and State of Pennsylvania, have invented a new and useful Process for Preparing Old Bessemer-Steel Rails and other Steel for Reworking; and I hereby declare that the following is a full, clear, and exact description of my invention, which will enable any one skilled in the art to which it appertains to use the same.

Heretofore old steel rails have been prepared for reworking by forming them into "piles" of various shapes and then heating them to a welding-heat, a suitable flux being used, and they are then passed through the rolls and formed into new rails. When the flux is not properly applied or is not of a proper kind or quality, the finished rails are defective, entailing considerable loss. By my process I dispense entirely with the use of fluxes and produce a finished rail more uniform and perfect than can be made by any other method now in use, which is the object I desire to attain by my invention.

To show my invention clearly I refer to the accompanying drawing, in which X represents the end of an old steel rail, and S S the ends of two "billets" of the same material. It will be seen that these billets conform in shape to the sides of the old rail and fit closely against it on both sides. The old rails that are to be reworked are cut into suitable lengths, as are the billets, and one piece of old rail and two billets form a single pile. The billets are bound to the old rail with wire or metal bands, so that the pile will be held together and in proper position during the process of heating. If desired, a number of these single piles may be bound together forming a larger pile, their shape allowing them to be bound together very compactly. After forming my pile, I place it in a heating-furnace provided with a forced draft or "blast" and a chimney-damper. The blast is then turned on and the pile subjected to the heat until the surfaces of the different portions of the pile commence to fuse, all the surfaces coming in contact with each other, fusing together, and forming a sin-

gle mass of steel. At this heat steel cannot be properly rolled, as it will crumble and fall apart if pressure is put on it, and if this heat were kept up for a short time the whole pile would fuse into a molten mass, so I close the damper and shut off the blast. It is well known that the structure of steel is granular, and the pores are of course opened when it is subjected to a high temperature. The closing of the damper and blast of the heating-furnace will quickly reduce the heat of the pile, and contraction of the pores of the steel on the surfaces in contact will make the parts adhere to each other and make a solid and compact pile with a perfect union of surfaces wherever they touch each other. After this has been attained, I again increase the heat until the pile is heated to a steel heat, when it is ready for reworking into a new article of rolled steel.

My process is applicable not alone to old steel rails, but to any article made of Bessemer steel or any other steel that can be reworked. I use the billets shown, so that no part of the pile will overlap in rolling and to form a compact and solid pile.

The use of billets of various shapes in building up piles is not new, and I do not claim it; but

What I do claim, and desire to secure by Letters Patent, is—

The process of preparing old steel for reworking, as herein set forth, consisting of building a compact and solid pile formed of the old material to be worked, and suitable shaped billets all bound together, which are subjected to a high degree of heat until the contact-surfaces fuse together, then reduced in temperature until the fused joints or welds are set solid and afterward brought to a proper heat for reworking, substantially as shown and described.

WILLIAM ^{his} X PARKINSON.
mark.

Witnesses:

JAS. W. RYAN,
B. BRYSON MCCOOL.