

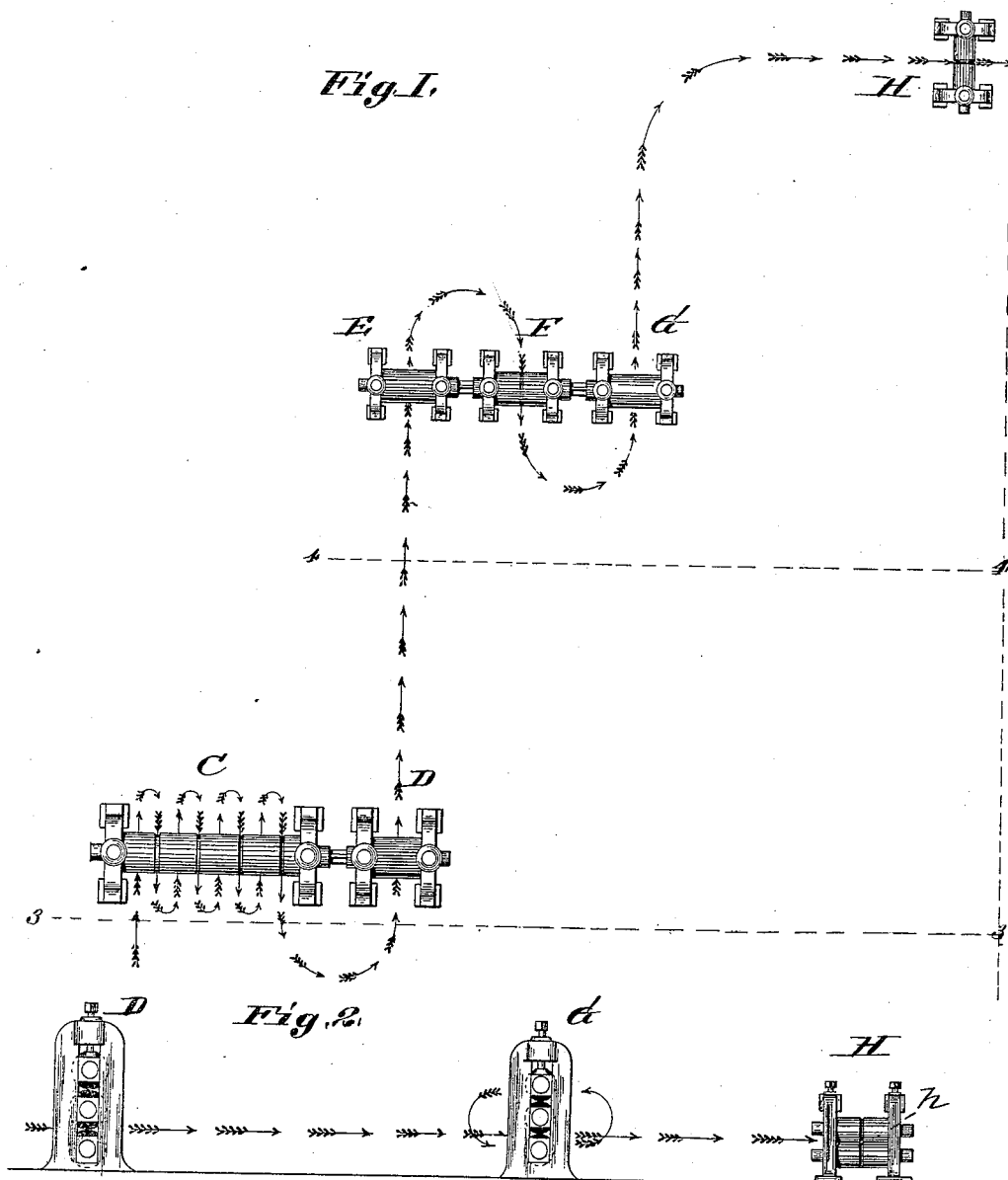
(No Model.)

2 Sheets—Sheet 1.

T. A. MEYSENBURG & W. GARRETT.
ROD ROLLING MILL.

No. 419,592.

Patented Jan. 14, 1890.



Attest:
W. C. Sanford
John K. Kerner

Inventors:
Theodore A. Meysenburg
William Garrett
by C. D. Moody
att'y

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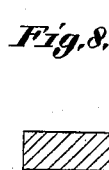
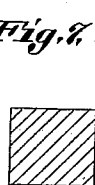
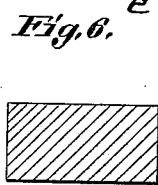
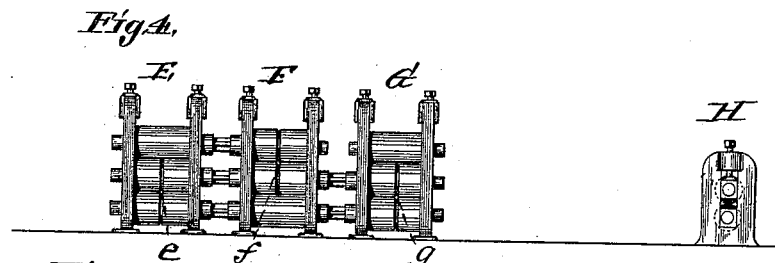
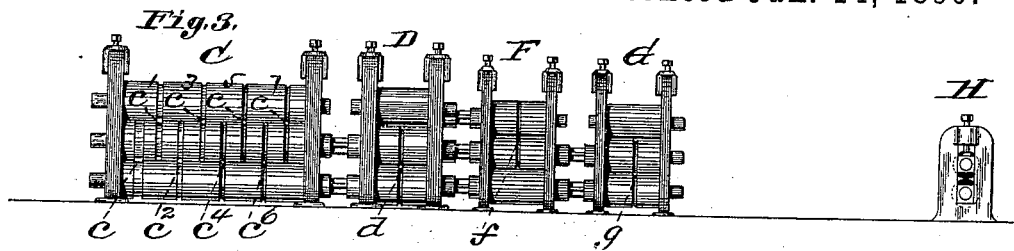
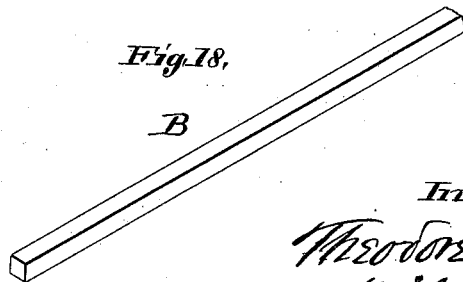


Fig. 18,

B



Attest:
John H. Kerner

Inventors:
Theodore A. Meysenburg
William Garrett
by *C. D. Moody*
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UNITED STATES PATENT OFFICE.

THEODORE A. MEYSENBURG, OF ST. LOUIS, MISSOURI, AND WILLIAM GARRETT, OF CLEVELAND, OHIO.

ROD-ROLLING MILL.

SPECIFICATION forming part of Letters Patent No. 419,592, dated January 14, 1890.

Application filed May 4, 1888. Serial No. 272,789. (No model.)

To all whom it may concern:

Be it known that we, THEODORE A. MEYSENBURG, of St. Louis, Missouri, and WILLIAM GARRETT, of Cleveland, Ohio, have jointly made a new and useful Improvement in Spike-Rod-Making Machinery, of which the following is a full, clear, and exact description.

The improvement relates to that class of spike-rod-making machinery in which the spike-rods are made from old-rail piles or steel billets. In such machinery, as the rolls have hitherto been made and combined into a train, seventeen passes have been needed to reduce the pile or billet to the desired rod, and so much time is thereby consumed a reheating of the metal becomes necessary. Aside from the objection to the time consumed in the protracted operation, the metal of old rails is liable to lose strength by continued reheating.

By means of the present improvement the operation of reducing an old-rail pile or steel billet is shortened, and but a single heating of the metal suffices.

It consists in so constructing the roughing-rolls and so combining them into a train with the finishing-rolls, all substantially as is hereinafter shown and explained, as to provide for a greater reduction of the metal while in the roughing-rolls than hitherto has been attainable, and so as to enable the reduction of the pile to a spike-rod to be accomplished with thirteen passes and the operation of reducing the metal to be a continuous one, all as set forth in the annexed drawings, making part of this specification, in which—

Figure 1 is a plan of the improved train, the line of arrows indicating the movement of the metal. Fig. 2 is an elevation of the train from the line 2 3, Fig. 1. Fig. 3 is an elevation of the train from the line 3 3, Fig. 1; and Fig. 4 is an elevation of the principal portion of the finishing-rolls from the line 4 4, Fig. 1. Fig. 5 is an end elevation of the old-rail pile from which the spike-rod is produced; and Figs. 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, and 18 respectively represent the shapes the metal assumes successively in passing through the train. All of said last-

named views are cross-sections, saving the last, which is a view in perspective.

The same letters of reference denote the same parts.

A, Fig. 5, represents the old-rail pile from which the spike-rod B, Fig. 18, is produced.

C, Figs. 1 and 3, represents the roughing-rolls. They have eight passes c c' c^2 c^3 c^4 c^5 c^6 c^7 , shaped as shown in Figs. 6, 7, 8, 9, 10, 11, 12, and 13, respectively, and the metal as it is passed through them is shaped accordingly—that is, in the pass c the pile is reduced to an oblong two and five-eighths inches by four and five-eighths inches; in the next pass c' it is reduced further to about a square two and five-eighths inches by two and nine-sixteenths inches; in the next pass c^2 to an oblong one and nine-sixteenths inch by two and eleven-sixteenths inches; in the next pass c^3 to a square one and five-eighths inch each way; in the next pass c^4 to a square one and three-eighths inch each way; in the next pass c^5 to a square one and one-quarter inch each way; in the next pass c^6 to a square fifteen-sixteenths of an inch each way, and in the next pass c^7 to a square thirteen-sixteenths each way—that is, considered generally, nineteen-twentieths of the entire reduction is accomplished by means of the roughing-rolls. The thirteen-sixteenths rod now formed is carried from the roughing-rolls around to a two-high rolls D, Figs. 1, 2, and 3, arranged at the side of the roughing-rolls and preferably in line therewith, and by means of the single pass d therein the rod is further reduced. The rolls D are sixteen inches in diameter, and from them the reduced rod is carried to and passed through the only pass e , Fig. 3, of the rolls E, Figs. 1 and 4, which are located opposite and about fourteen feet from the rolls D, and the rod thereby further reduced. The rod is then passed through the single pass f of the rolls F and then through the single pass g of the rolls G, Figs. 1, 3, and 4, both of which are at the side and in line with the rolls E, and which, with the rolls E, are twelve inches in diameter. The rod is reduced again and again in the passes f g , respectively, and from the rolls G the rod is carried around to the

isolated rolls H, which are nine inches in diameter, Figs. 1, 2, 3, and 4, and by means of the single pass *h* therein the spike-rod nine-sixteenths inch square is finally produced, and all at a single heating.

The advantage of the rolls constructed and arranged as described is that but one heating of the rail-piles from which the spike-rod is made is, by means of said construction and arrangement, rendered necessary, thus obviating the injury to the metal caused by reheating, and saving time, as but thirteen passes are necessary to complete the rod.

We claim—

The herein-described spike-rod-making mechanism, comprising the roughing-rolls C, having the passes *c c' c² c³ c⁴ c⁵ c⁶ c⁷*, the rolls D, aligned with the roughing-rolls at one end

and having but one pass, the finishing-rolls E F G, aligned with each other parallel to the rolls D and each having but one pass, and the finishing-rolls H, set at right angles to the rolls E F G and having but one pass, the passes of said rolls gradually decreasing in size from the pass *c* to that of the rolls H, substantially as specified.

THEODORE A. MEYSENBURG.
WILLIAM GARRETT.

Witnesses to signature of Theodore A. Meysenburg:

C. D. MOODY,
JOSEPH LATHROP.

Witnesses to signature of William Garrett:

JOHN F. WILSON,
F. S. PACKARD.