

(No Model.)

J. J. THOMAS.

MACHINERY FOR ROLLING RECTANGULAR BARS FROM OLD RAILS.
No. 253,787.

Patented Feb. 14, 1882.

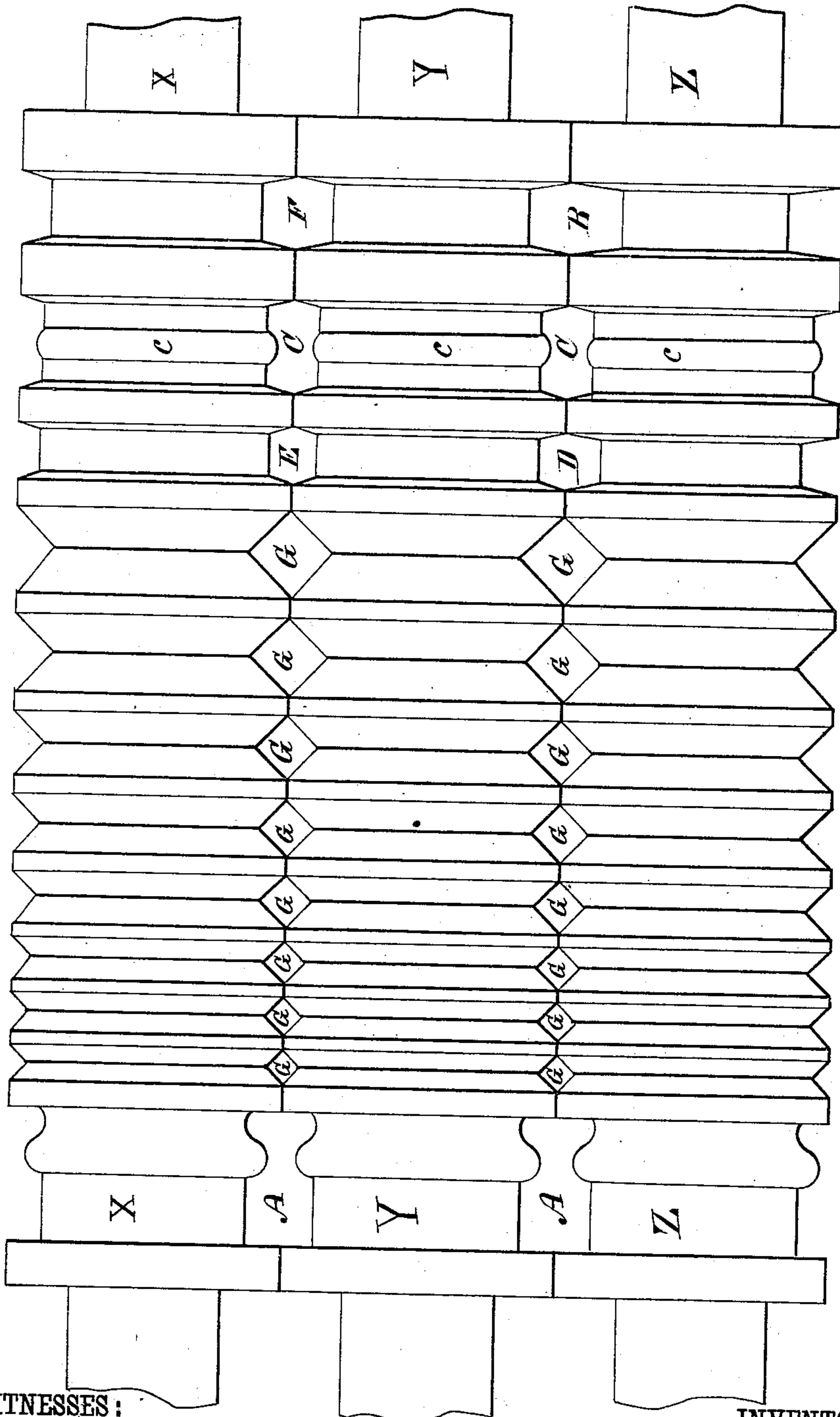
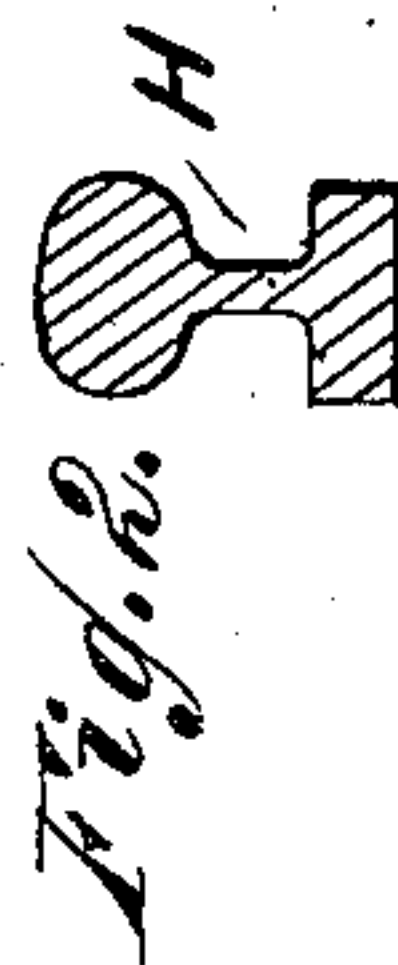


Fig. 1.



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JOHN J. THOMAS, OF ZANESVILLE, OHIO.

MACHINERY FOR ROLLING RECTANGULAR BARS FROM OLD RAILS.

SPECIFICATION forming part of Letters Patent No. 253,787, dated February 14, 1882.

Application filed November 18, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. THOMAS, of Zanesville, in the county of Muskingum and State of Ohio, have invented new and Improved Machinery for Rolling Old Railroad-Rails into Bars, of which the following is a full, clear, and exact description.

The object of my invention is to facilitate rolling old railroad-rails or pieces of the same into merchantable bars.

The invention consists in a set of grooved rollers forming passes of the shape of a pear-head rail with a thickened base, a series of decreasing regular and irregular hexagon passes and flat hexagon passes with recesses in the flat side, and also a series of square reducing-passes gradually decreasing in size.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal elevation of my improved machinery for rolling old railroad-rails into bars. Fig. 2 is a cross-sectional elevation of a pear-head rail. Fig. 3 is a cross-sectional elevation of a shanghai or high rail.

The rolling-machine is provided with three grooved rollers, X Y Z, of the same size and diameter and the same arrangement of the grooves. The rollers form a pass, A, having the shape of a pear-head rail with a very thick and high base. The lower roller, Z, and the middle roller, Y, also form an irregular hexagon pass, B, of which two sides are longer than the other—that is to say, the groove in the roller Z is deeper than the corresponding groove in the roller Y. Between the rollers X and Y a hexagon pass, F, slightly smaller than the pass B, is formed, the sides of the hexagon being about equal—that is, the grooves in the rollers X and Y have the same depth.

An irregular hexagon pass, D, smaller than the pass B, is formed between the rollers Y and Z, and a still smaller regular hexagon pass, E, is formed between the rollers X and Y. Between the passes E and F and D and B respectively I have arranged a flat hexagon pass, C, having the ends beveled, and formed with concave recesses in the flat sides, such recesses being formed by the convex beads or

ridges c, formed on the rolls, the passes C thus rolling concave grooves in the flat sides of the billet. Between the passes E and F and the passes A, I have arranged a series of square reducing-passes, G, gradually decreasing in size.

The operation is as follows: To convert a pear-head rail, H, into a square or other merchantable bar, I proceed as follows: The rail being cut to the proper length, it is thoroughly and uniformly heated and passed through the pass A, the pass B, and the pass F, and is thus formed into a billet, which can be passed through the passes or grooves G, which gradually reduce its cross-section to such an extent as may be desired. The shanghai or high rail J requires more labor. After being cut to the desired lengths it is heated and successively passed through the passes A B C D E, and is thereby formed into a billet, which can be passed through the passes or grooves G, which gradually reduce its cross-section. The pass A flattens down and thickens the base without lapping it, thereby avoiding seams in the billet, which is of great importance. The pass B presses the head down and thickens the shank. The pass F does the same, and forms the pear-head rails into such a perfect billet that no further manipulation is required but the reduction of the cross-section to the desired size.

By means of the above-described machine the pieces of rail are converted into bars in a single heat, for the decrease and change in the cross-section takes place in such a rational manner and so rapidly that the iron or steel cannot cool before it has passed entirely through the machine.

I do not limit myself to the precise location of the passes in the roll-train as above set forth.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. In a machine for rolling old railroad-rails into bars, the rolls X Y Z, constructed, substantially as shown and described, with ridges and grooves adapted to form the several passes A, B, F, D, E, and G, as set forth.

2. In a machine for rolling old railroad-rails

into bars, the rolls X, Y, and Z, provided with the passes A, having the shape of a pear-head rail having a thick base, the hexagonal passes B, F, D, and E, and the flat hexagonal passes C and the ridges c, forming concave recesses in the flat sides of the billet passing through the passes C, substantially as herein shown and described, and for the purpose set forth.

3. In a machine for rolling old railroad-rails,

the rolls X Y Z, provided with passes or grooves A, in the shape of a pear-head rail with a thickened or upset base, substantially as herein shown and described, and for the purpose set forth.

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Witnesses:

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