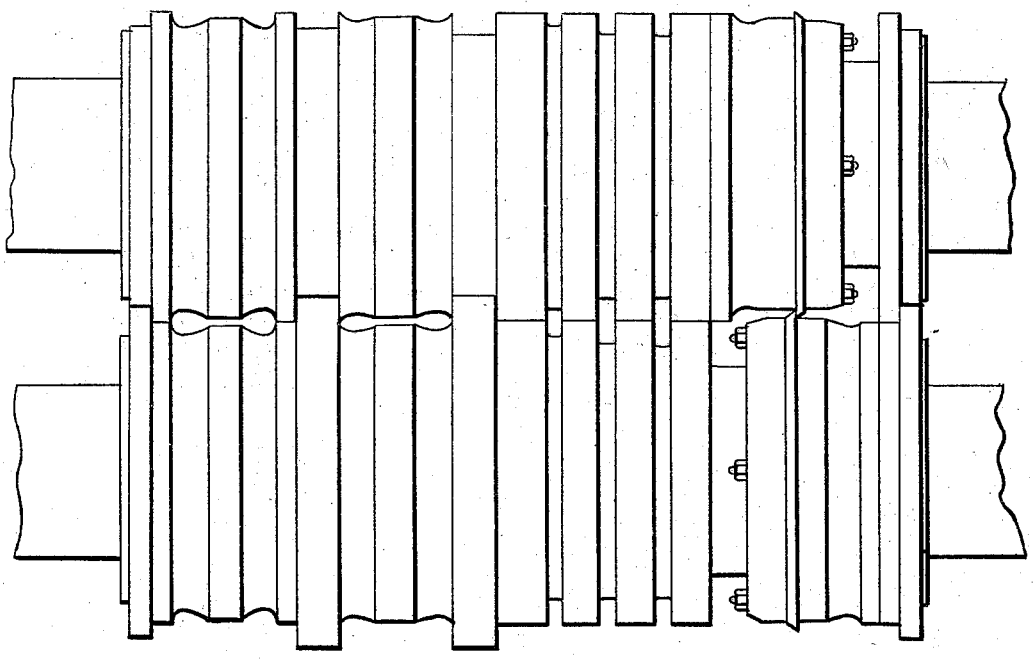
2 Sheets—Sheet 1.

J. C. HILL, A. C. PILLINER & W. WILLIAMS.

MODE OF REDUCING OLD RAILS AND FAG ENDS OF RAILS TO BARS.

No. 189,894. Patented April 24, 1877.

Fig. 1.



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By their Attorneys

Baldwin, Hopkins & Peyton.

2 Sheets—Sheet 2.

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Fig: 2.

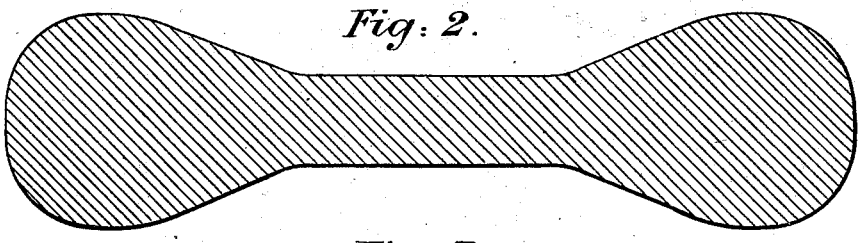


Fig: 3.

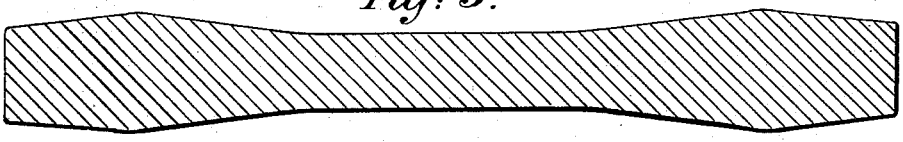


Fig: 4.

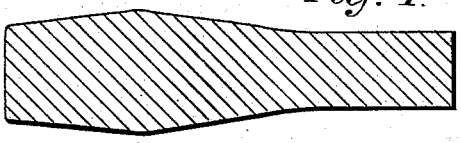


Fig: 5.

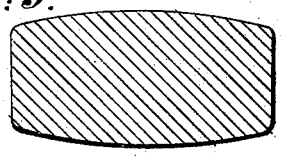


Fig: 6.

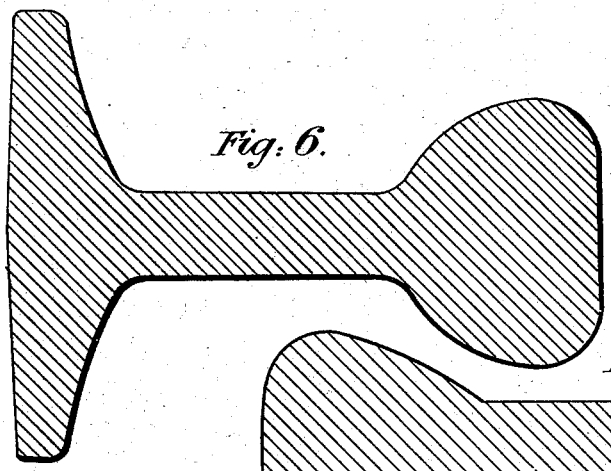


Fig: 7.

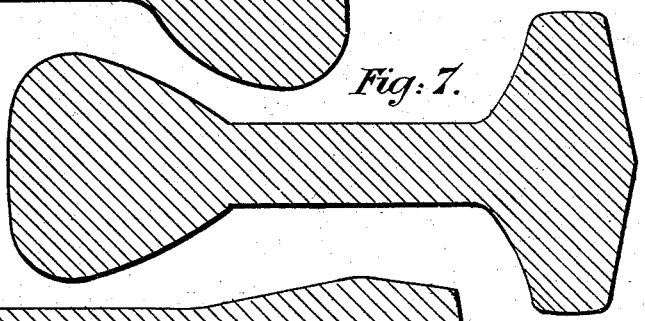
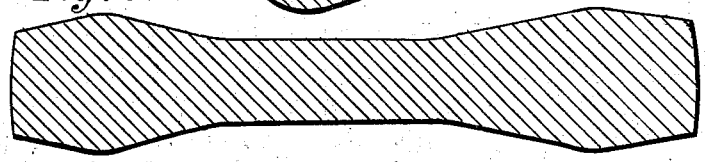


Fig: 8.



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George W. Brock.

INVENTORS:

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UNITED STATES PATENT OFFICE.

JAMES C. HILL, ALFRED C. PILLINER, AND WILLIAM WILLIAMS, OF OAKFIELDS WORKS, PARISH OF LLANTARNAM, ENGLAND.

IMPROVEMENT IN THE MODE OF REDUCING OLD RAILS AND FAG-ENDS OF RAILS TO BARS.

Specification forming part of Letters Patent No. **189,894**, dated April 24, 1877; application filed March 31, 1877.

To all whom it may concern:

Be it known that we, JAMES CHARLES HILL, of Oakfields Works, in the parish of Llantarnam, in the county of Monmouth, England, iron-master, ALFRED COLERICK PILLINER, of the same place, engineer, and WILLIAM WILLIAMS, of the same place, roll-turner, have invented new and useful Improvements in Rolling Rail-Ends and Old Rails into Billets or Bars, which improvements are fully set forth in the following specification, reference being had to the accompanying drawings.

This invention has for its object improvements in rolling rail-ends and old rails into billets or bars.

For this purpose we first pass the rail-end or short length of rail, when suitably heated, between rolls, so arranged as to reduce the dimensions of the flanges of the rail. Then we slit or divide the bar longitudinally from end to end; and, lastly, we roll the portions on edge to the form desired. We use rolls such as are shown in the annexed drawing at Fig. 1. We pass the rail-end through the eyes represented on the left-hand side of the rollers, and so flatten down the heads of the rail first to the form indicated at Fig. 2, and then to the form indicated at Fig. 3. Then the work is taken to the cutters. (Shown on the right-hand side of Fig. 1.) These are circular shearing-blades, combined with rollers. The rollers lay hold of the flattened heads on either side, and produce a further slight reduction in thickness; but the nip of these rollers is not more than is necessary to insure the work being carried forward past the shearing-blades, which divide the metal from end to end, producing two bars of the section represented at Fig. 4. These bars are at once turned on edge, and passed through the eyes represented in Fig. 1 to the left of the cutters, and thus a finished bar or billet is obtained of the section represented at Fig. 5.

In this way we produce sound bars or billets from rail ends and old rails with much greater certainty than heretofore, and with a great saving in labor.

Flat-footed rails we treat in a similar manner.

Fig. 6 shows the first reduction made in the flanges of a footed rail by rolling, as above described. Fig. 7 shows the second reduction. Fig. 8 shows the last reduction previous to splitting or dividing longitudinally. The subsequent treatment is as already described.

What we claim is—

The production of billets or bars from rail-ends and old rails by the combined processes of rolling to reduce the flanges, then dividing longitudinally, and afterward rolling on edge, substantially as hereinbefore described.

JAS. CHAS. HILL.
A. C. PILLINER.
WM. WILLIAMS.

Witnesses to the signature of the said JAMES CHARLES HILL, 9th March, 1877:

J. D. PAIN,
H. CREASE, *his clerk.*

Witnesses to the signatures of the said ALFRED COLERICK PILLINER and WILLIAM WILLIAMS, 7th March, 1877:

J. D. PAIN, *Notary Public, Newport, Mon.,*
H. CREASE, *his clerk.*