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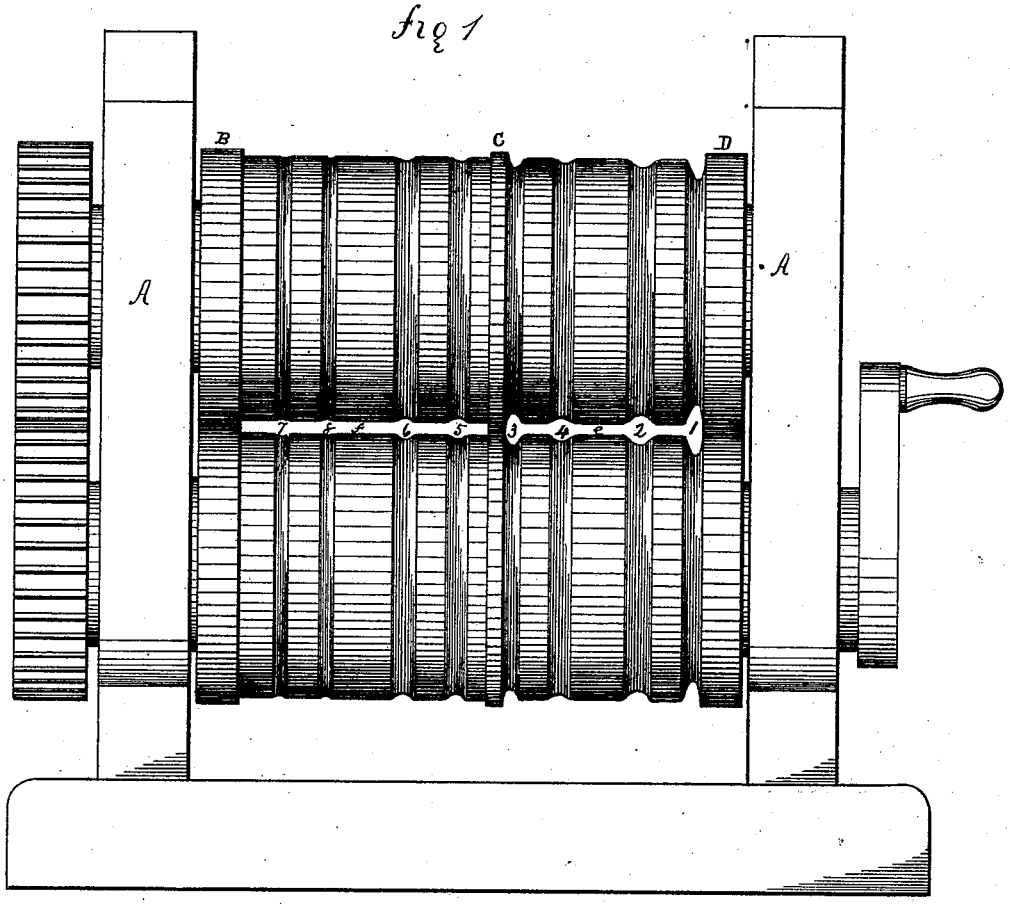
T. GLAZE & W. WESTWATER.

Re-Rolling Old Rails.

No. 205,074. **Patented June 18, 1878.**

Fig 1



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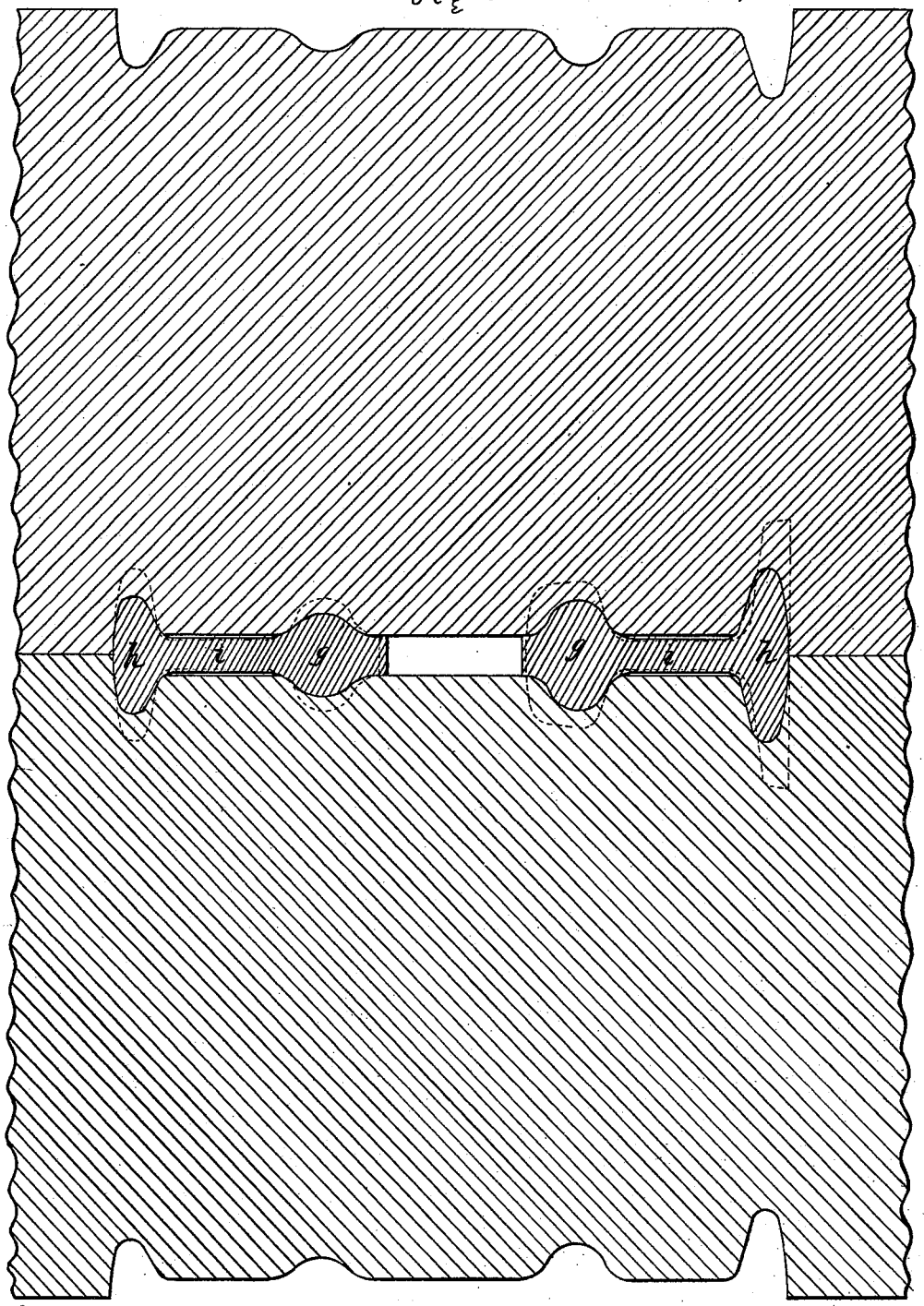
4 Sheets—Sheet 2.

T. GLAZE & W. WESTWATER

Re-Rolling Old Rails.

No. 205,074. Patented June 18, 1878.



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4 Sheets—Sheet 3.

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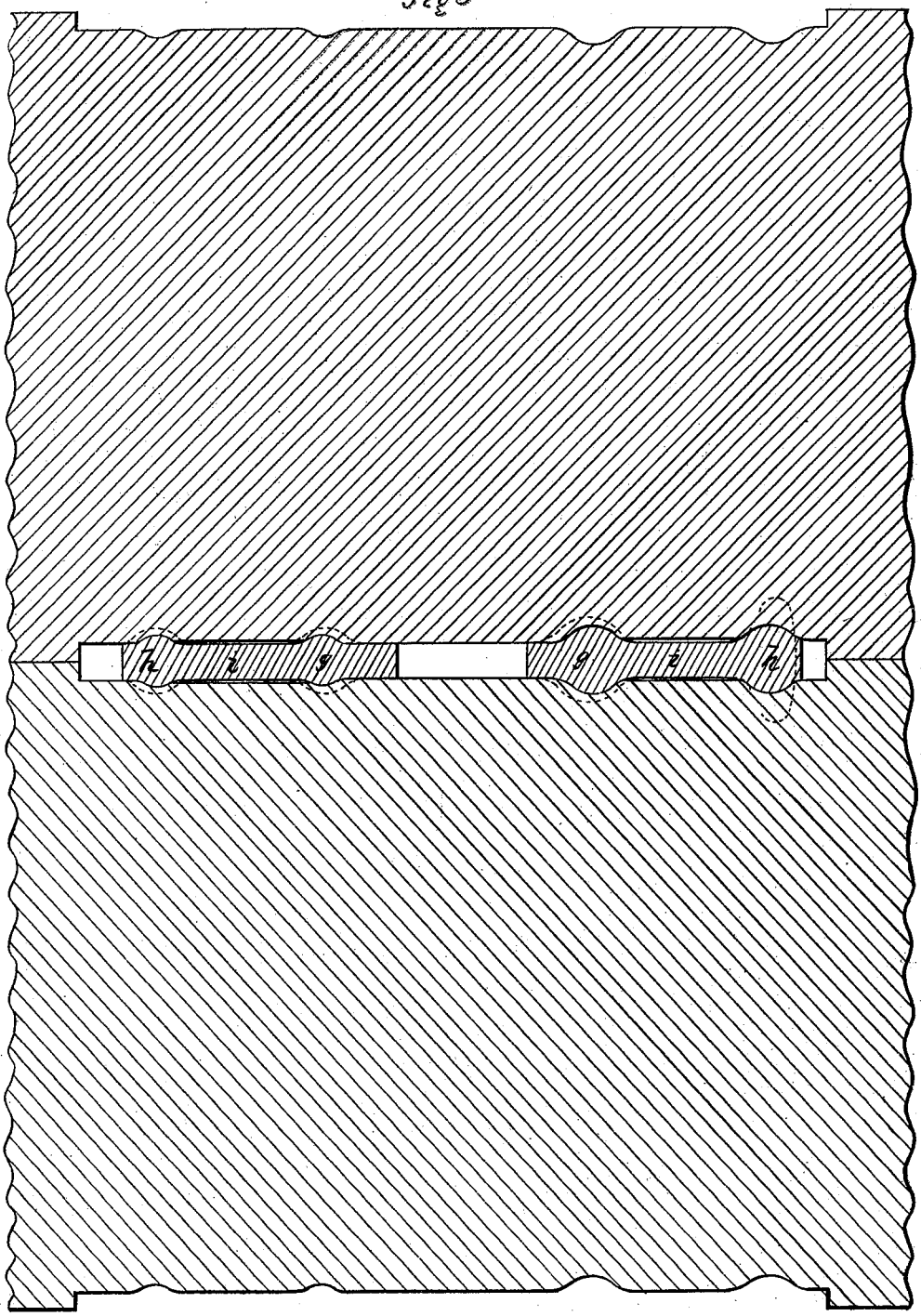
Re-Rolling Old Rails.

No. 205,074. Patented June 18, 1878.

Fig 3



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Re-Rolling Old Rails.

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Fig 8

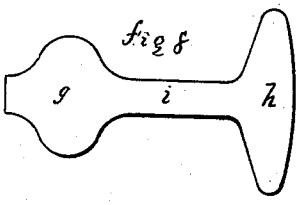


Fig 4

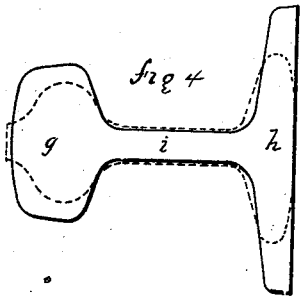


Fig 9

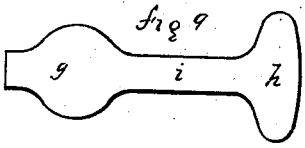


Fig 5

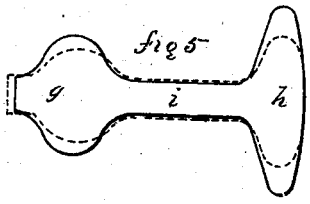


Fig 10

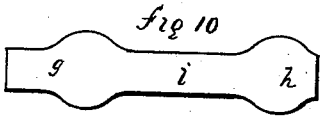


Fig 6

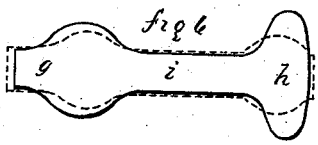


Fig 11

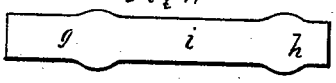


Fig 7

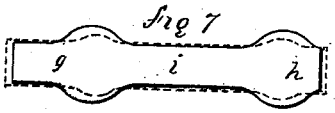
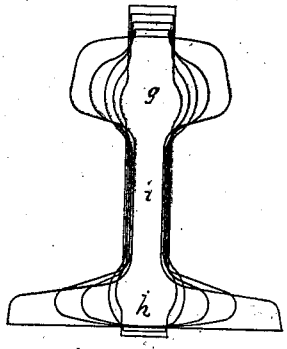


Fig 12



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UNITED STATES PATENT OFFICE.

THOMAS GLAZE AND WILLIAM WESTWATER, OF PITTSBURG, PA.

IMPROVEMENT IN REROLLING OLD RAILS.

Specification forming part of Letters Patent No. **205,074**, dated June 18, 1878; application filed April 26, 1878.

To all whom it may concern:

Be it known that we, THOMAS GLAZE and WILLIAM WESTWATER, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Process and Apparatus for Reducing Worn-Out Rails to Flat Bars; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

Our invention relates to an improvement in method and apparatus for reducing worn-out rails to flat bars by means of peculiarly-constructed rolls, which so act on the metal of the rail as to gradually cause it to assume the flat form, and at the same time retain substantially the same angle of fiber of the iron when the rails are constructed of that material, and, when constructed of steel, retaining the axis of polarity of the particles of steel, as in the original rail, by which process the worn-out rails of iron or steel may be reduced to a merchantable form of bar iron or steel without resorting to the fagoting process commonly employed in the process of utilizing worn-out rails, whereby the labor and cost attendant upon said fagoting and reworking of such worn-out rails are dispensed with and a superior article of merchantable bar iron or steel obtained.

To enable others skilled in the art to make and use our invention, we will proceed to describe its construction and operation.

In the accompanying drawings, which form part of our specification, Figure 1 represents a pair of rolls of peculiar construction, for carrying out our improved process for reducing worn-out rails to flat bars. Figs. 2 and 3 represent enlarged vertical and longitudinal sections of said rolls. Figs. 4, 5, 6, and 7 are end views of the successive forms of the worn-out rail prior to each pass through the rolls, the dotted lines in said figures representing the change of form at each pass through the rolls. Figs. 8, 9, 10, and 11 represent end views of the rail after each pass through the rolls. Fig. 12 is a diagram of the ends of the rails, showing the gradual increase in width and thickness of the web produced by each pass through the rolls.

In the drawings, Fig. 1 represents a pair of rolls mounted in housings A, and provided with collars or bearings B C D and two peculiar-shaped grooves, *e f*, the groove *e* extending from the collar or bearing C to the collar or bearing D, and the groove *f* extending from the collar or bearing C to the collar or bearing B of the rolls, the grooves *e* and *f* being so constructed that two passes of the rail are made in each groove, the rail being reversed after each pass—that is to say, the side which is undermost is, after the first pass, turned uppermost in the second pass, and in the third pass is again turned down, and in the fourth pass again turned uppermost, the final and finishing pass being through an ordinary set of plain rolls or grooves. The worn-out rail, an end view of which is represented in Fig. 4, is heated in an ordinary heating-furnace to the proper degree for rolling, *g* representing the head or tread of the rail, *h* the base, and *i* the web. In the groove *e* of the rolls the base *h* enters the part 1 and the head *g* the part 2 of the groove. After passing through said groove the rail is reversed, so that the base *h* enters the part 3 and the head *g* the part 4 of the groove *e;* and after passing the second time through the groove *e* the rail is passed through the groove *f*, the base *h* entering the part 5 and the head *g* the part 6 of said groove; and after the first pass through the groove *f* the rail is reversed, and the base *h* enters the part 7 and the head *g* the part 8 of the groove. The forms given to the rail after each pass through the grooves of the rolls are clearly shown in Figs. 8, 9, 10, and 11, and the gradual thickening up of the web and increased width of the gradually-forming flat bar is clearly shown by the dotted lines in Figs. 4, 5, 6, and 7, and in the diagram, Fig. 12, the final finish of the bar being accomplished as hereinbefore stated, viz., by a pair of ordinary plain grooves or rolls.

Having thus described the nature, construction, and operation of our improvement, what we claim is—

1. The herein-described improvement in the

art of reducing worn rails to flat or bar iron, which consists in gradually reducing, in rolls, the metal forming the head and flange of the rail without confining the web, and forcing a portion of the metal into the web and to either side of the rail, forming a bar thicker than the web and wider than the rail, substantially as set forth.

2. A pair of rolls having collars or bearings B C D and grooves *e f*, constructed substantially as herein described, and for the purpose set forth.

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