

A. HOWELLS, W. GARRETT & J. R. HOWELLS.
 MACHINE FOR STRAIGHTENING IRON BARS.
 No. 173,858. Patented Feb. 22, 1876.

Fig. 1

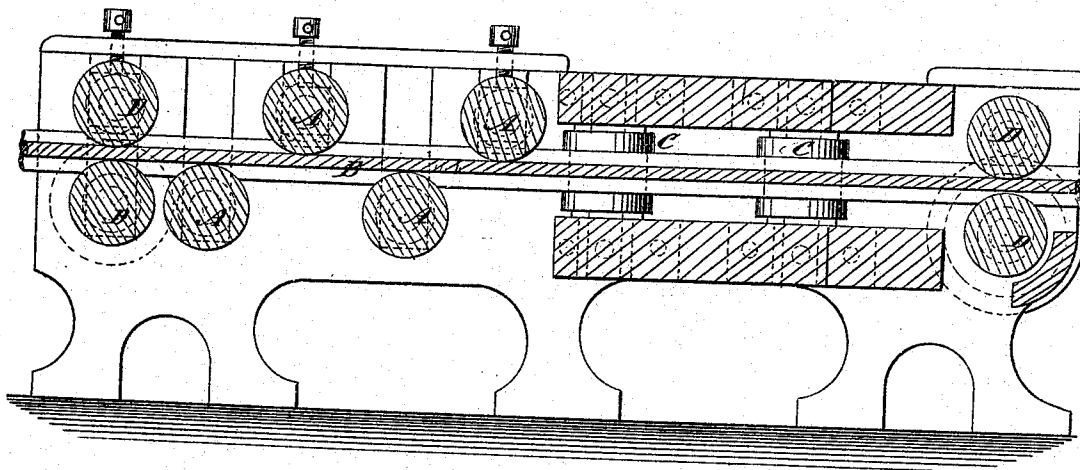


Fig. 2

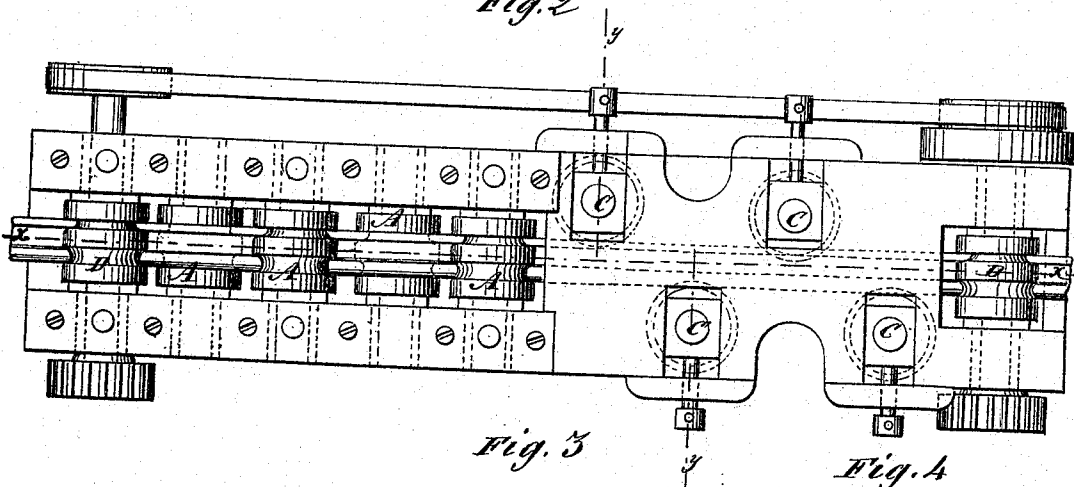


Fig. 3

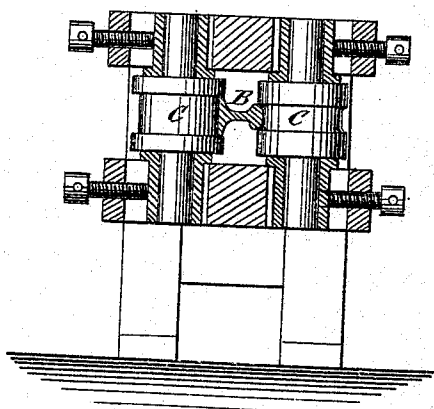
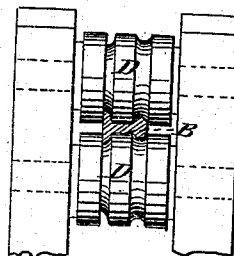


Fig. 4



WITNESSES:

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UNITED STATES PATENT OFFICE.

AQUILA HOWELLS, WILLIAM GARRETT, AND JOHN R. HOWELLS, OF
CLEVELAND, OHIO.

IMPROVEMENT IN MACHINES FOR STRAIGHTENING METAL BARS.

Specification forming part of Letters Patent No. **173,858**, dated February 22, 1876; application filed
January 3, 1876.

To all whom it may concern:

Be it known that we, AQUILA HOWELLS, WILLIAM GARRETT, and JOHN R. HOWELLS, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and Improved Machine for Straightening Metal Bars, of which the following is a specification:

Our invention consists of two series of straightening-rollers, one of which is for bending the bars horizontally, and the other for bending them vertically, combined in one machine, together with rollers for drawing or forcing the bars between the bending-rollers, the rollers of each series being grouped together separately from the others, instead of alternating with them, as in other bending-machines, whereby the bending or straightening in the different direction is done separately, which enables the work to be done with less power and less strain on the machinery than when done simultaneously in both directions by alternate horizontal and vertical rollers.

Figure 1 is a longitudinal sectional elevation of our improved machine, taken on the line *x x* of Fig. 2. Fig. 2 is a plan view. Fig. 3 is a transverse section taken on line *y y* of Fig. 2, and Fig. 4 is an end elevation.

Similar letters of reference indicate corresponding parts.

A represents the series of horizontal rollers for bending or straightening the bars B vertically. C represents the series of vertical rollers for bending or straightening the bars horizontally, and D represents the drawing-rollers for forcing the bars between the straightening-rollers. The upper horizontal rollers are adjusted, and have adjusting-boxes and adjusting-screws for setting them for bars of different sizes, and the vertical rollers of both sides are adjustable for the same purpose.

In this example the rollers are grooved suitably for bending railroad-rails, for which the machine is more especially designed; but it is also applicable for bars of any form, the grooves being shaped accordingly.

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

The combination of the group of alternating horizontal rolls A A with the group of alternating vertical rolls C C and the feed-rolls D, as and for the purpose specified.

AQUILA HOWELLS.
WILLIAM GARRETT.
JOHN R. HOWELLS.

Witnesses:

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