

C. H. PERKINS.

Improvement in Rolling-Mills.

No. 128,748.

Patented July 9, 1872.

Fig. 1.

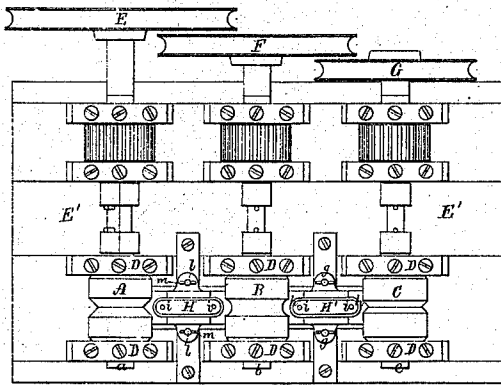


Fig. 3.

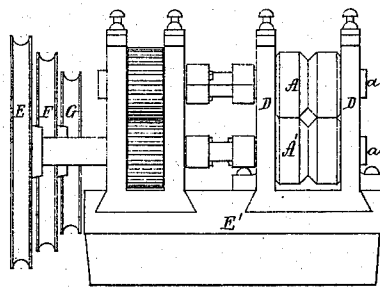


Fig. 2.

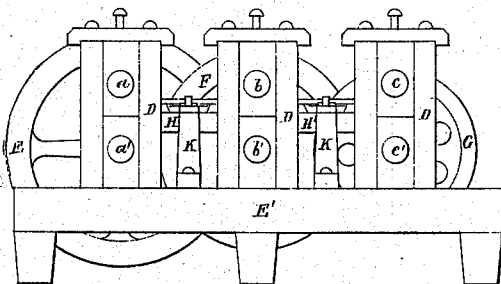


Fig. 4.

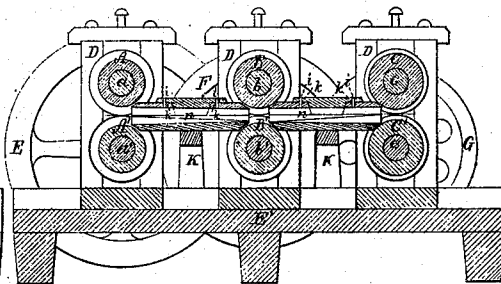


Fig. 5.

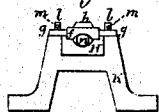


Fig. 6.

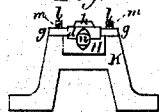


Fig. 7.

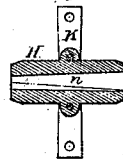
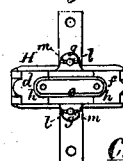


Fig. 8.



Witnesses

S. N. Piper
L. N. Billow

Charles H. Perkins.

by his attorney
R. M. Ledy

UNITED STATES PATENT OFFICE.

CHARLES H. PERKINS, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN ROLLING-MILLS.

Specification forming part of Letters Patent No. 128,748, dated July 9, 1872.

To all persons to whom these presents may come:

Be it known that I, CHARLES H. PERKINS, of the city and county of Providence, of the State of Rhode Island, have invented a new and useful Improvement in Rolling-Mills, or Machinery for Rolling Iron or other Metal; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, of which—

Figure 1 is a top view, Fig. 2 a side elevation, Fig. 3 a rear-end view, and Fig. 4 a longitudinal section, of a rolling mill or machine provided with my invention, the plane of section being taken through the rolls.

In constructing the rotary mill shown in the drawing I combine with each pair of rolls and that next succeeding it what I term a "twisting-guide," it consisting mainly of a helical channel, or a tube having a helical bore, by which the bar of iron, while passing from one pair of rolls to the next succeeding pair, will not only be guided thereto, but twisted one-quarter of a circle, more or less, as occasion may require, the same causing the iron to be rolled to better advantage than would be the case were it run from one pair of rolls to the next without having any such twist.

The drawing exhibits a rolling-machine provided with three pairs of horizontal reducing-rolls, A A', B B', and C C', arranged as shown, and having their shafts *a a' b b' c c'* supported in suitable boxes or bearings sustained by a series of standards, D D, &c., erected on a bed-plate, E'. The shaft of each roll is coupled with another shaft, which is geared to its fellow, each lower shaft being provided with a driving-wheel, as shown at E, F, and G. The mechanism of each pair of rolls in advance of the first pair is to be so constructed as, when in operation, to impart to the said rolls a velocity greater than that of the next preceding pair, in order that the extension lengthwise of the bar by the latter pair may take place without hindrance. The twisting-guides are shown at H and H', one being made precisely like the other, and each being extended between the "bits" of two next adjacent pairs of rolls.

Figs. 5 and 6 are opposite-end views of the twisting-guide H, Fig. 7 being a horizontal and longitudinal section of it. Fig. 8 is a top view of it. Its cap or upper half is to be constructed in three or any other suitable number of sections, *d e f*. The middle part *e* is furnished with ears *g g* and *h h*, projecting from it, as shown, those marked *h h* being extended over and upon the portions *d f*, and provided with tenons *i j* to enter mortises *k k* made in the said parts *d f*. The lower half of the twisting-guide is supported by a standard, K, from which projections *l l* extend up through ears *g g* and receive keys *m m*, the same serving to secure the cap down upon the lower half of the guide. The so constructing the cap and supporting it enables it to be readily applied to the two pairs of rolls and its fellow half, or removed therefrom, as circumstances may require. It saves all necessity of moving the housings and upper rolls in order to get the cap off its fellow half of the guide, all of which would be necessary were the cap in a single piece, because, owing to the rolls projecting over it at its ends, it could not be either removed from or applied to its fellow portion without first removing the rolls and their housings. The longitudinal passage *n* through the guide is represented as having what is called a "quarter-twist," or turns from end to end ninety degrees of a circle, it maintaining throughout the same area of transverse section.

I make no claim to the system of rolls and twisting-guides as shown and described in the British patent of George Bedson, dated July 2, 1872, No. 1,935.

I claim—

In a rolling-mill provided with two or more pairs of rolls and one or more twisting-guides arranged therewith, as shown and described, each of said guides as having its cap made in sections and disposed with the upper rolls, as specified.

CHARLES H. PERKINS.

Witnesses:

R. H. EDDY,
J. R. SNOW.