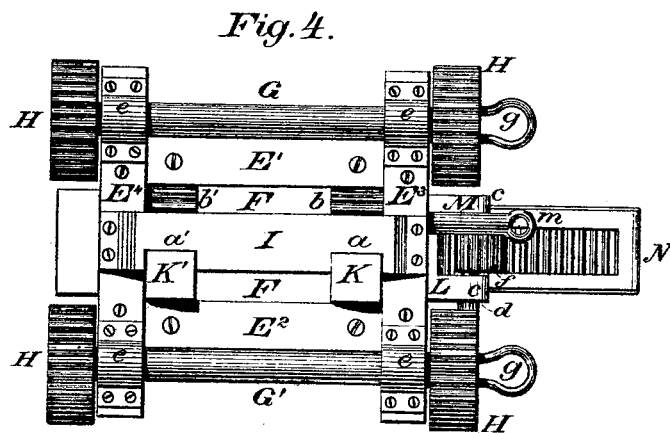
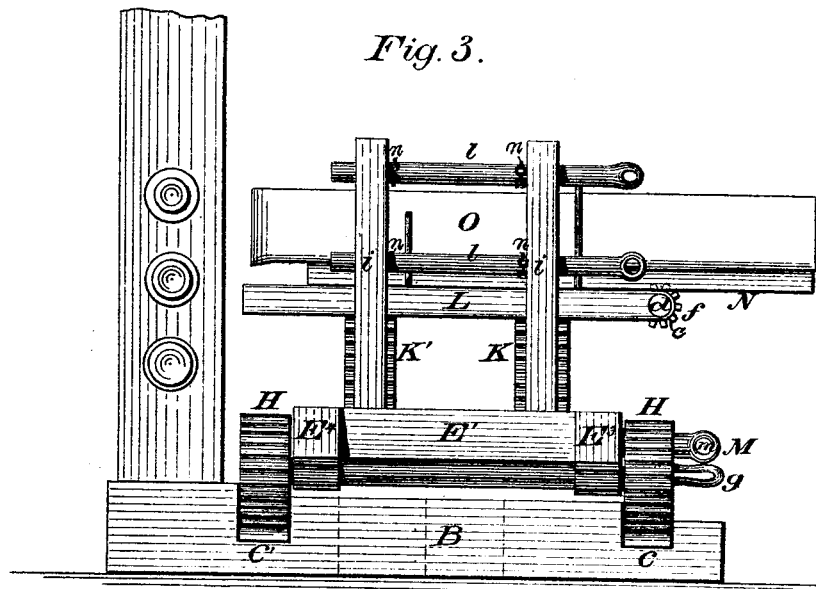




J. F. BLACK.  
APPLIANCES FOR ROLLING MILLS.  
No. 183,888. Patented Oct. 31, 1876.



Attest:  
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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN APPLIANCES FOR ROLLING-MILLS.

Specification forming part of Letters Patent No. 183,888, dated October 31, 1876; application filed June 24, 1876.

*To all whom it may concern:*

Be it known that I, JAMES F. BLACK, of Oshkosh, in the county of Winnebago and State of Wisconsin, have invented certain new and useful Improvements in Rolling-Mill Tenders; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification, and in which—

Figure 1 is a front elevation, Fig. 2 is a top plan, Fig. 3 is a side elevation, and Fig. 4 is a bottom plan, of the carriage.

Similar letters of reference indicate corresponding parts in all the figures.

This invention relates to that class of machines known as "tenders" to rolling-mills; and it consists in a new and useful construction and combination of parts, whereby two men, stationed one on each side of the machine, are enabled to handle and manipulate the bar before and during the process of rolling, in the manner and for the purpose substantially as hereinafter more fully set forth.

A A are the rolls, which are operated in the usual manner, and may be of any suitable construction. Embedded in or affixed to the floor B, in front of the rolls, and parallel thereto and to each other, are two corrugated rails or ratchets, C C', between which are the depressions or pits D D'. E is the carriage, which consists of a stout platform or frame, composed of two or more beams, E<sup>1</sup> E<sup>2</sup>, united by cross-timbers E<sup>3</sup> E<sup>4</sup>, so as to leave a central open space, denoted by F. To the under side of the cross-timbers E<sup>3</sup> E<sup>4</sup> are affixed bearings e, carrying the shafts G G', to the ends of which are affixed pinion-wheels H, cut so as to fit into the ratchets of the corrugated rails or depressions C C'. Shafts G G' terminate in bails g for the insertion of levers or crow-bars, by means of which the shafts are turned when it is desired to move the carriage in either direction. I is a beam bolted to the under side of cross-pieces E<sup>3</sup> E<sup>4</sup>, and slotted at a a in such a manner as to form two openings or guides for the vertical sliding ratchets K K'. To the top of ratchets K K' is rigidly secured the ta-

ble L, which may be raised or lowered by operating the shaft M, which is journaled in the cross-pieces E<sup>3</sup> E<sup>4</sup>, and is provided with pinions b b', that engage with the ratchets K K'. Shafts M has a bail, m, by which it may be turned by inserting a crow-bar or hand-lever. Affixed to the front end of table L are bearings c for a short shaft, d, that carries a pinion, f, which engages with the horizontally-sliding ratchet-rail N, upon which is rigidly secured the box O for the reception and handling of the iron. Box O may be moved forward or backward by operating the shaft d, by its bail d', with a hand-lever, in the same manner as the other shafts herein described. The table L, with its superincumbent weight, is kept in the position to which it may be raised, relative to the rolls, by spring-clamps h, that are secured at their lower ends to uprights i, that are mortised into, or otherwise secured to, one of the timbers E<sup>1</sup> or E<sup>2</sup> of the platform E. The tension of the spring-clamps h causes them to abut against the side of table L in such a manner that when this table, in traveling upward, reaches the eyes or bends k in the clamps h, these will slip in sidewise, under the table L, as shown in Fig. 1 of the drawing, and prevent it from falling down by its own weight after the operators let go of their levers by which they handle the lift-shaft M. The spring-clamps h may be released, when it is desired to change the elevation of table L, by turning a shaft, l, pivoted in the uprights i, and upon which are secured chains n, whose other ends are affixed to the spring-clamps h, so that by turning shaft l, the chains n are wound around it and the clamps pulled back, thereby releasing their hold upon the table L, which will either sink by its own gravity, or may be raised up higher, to reach the series of rolls next above, by operating the shaft M. The uprights i are recessed so as to afford room for the eyes k when the clamps are pulled back by chains n, preparatory to releasing the table L. Sometimes it may be desirable to arrange these retaining spring-clamps on both sides of the table, instead of on one side only, as shown in the drawing, all the clamps being operated simultaneously by a system of chains, in combination with the shaft or roller l, in a manner well under-

stood; and it is also obvious that the number of eyes or bends in the spring-clamps *h* may be varied, (only one being shown in the drawing,) so as to retain the table at any desired elevation, according to the arrangement of the rolls, without departing from the spirit of my invention.

From the foregoing description, the operation of my improved rolling-mill tender will be readily understood. The bar or bars of iron to be subjected to the process of rolling are placed in the box *O*, which, with the carriage *E*, is then moved opposite to the pair of rolls it is desired to use, by operating the shafts with bars or levers, as described. The carriage may be moved to either side by operating shafts *G G'*, and the table *L* may be raised or lowered by operating shaft *M*, so that the bar may be readily placed opposite to any one pair of rolls in the entire set. When the proper place has been reached, the table *L* and box *O* are kept firmly in the position, during the process of rolling the bar, by the spring-

clamps *h*, in the manner described, the bar being carried into the rolls by operating the shaft *d*.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

The tender or carriage for rolling-mills herein described, consisting of frame or platform *E*, shafts *G G'*, having ratchet-wheels *H*, shaft *M*, having pinions *b b'*, vertical sliding racks *K K'*, table *L*, horizontally-sliding rack *N*, carrying-box *O*, shaft *d*, having pinion *f*, and retaining-clamps *h*, the whole constructed, combined, and operating substantially as and for the purpose hereinbefore set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JAMES F. BLACK.

Witnesses:

C. D. CHURCH,  
GUSTAVE S. LUSCHER.