

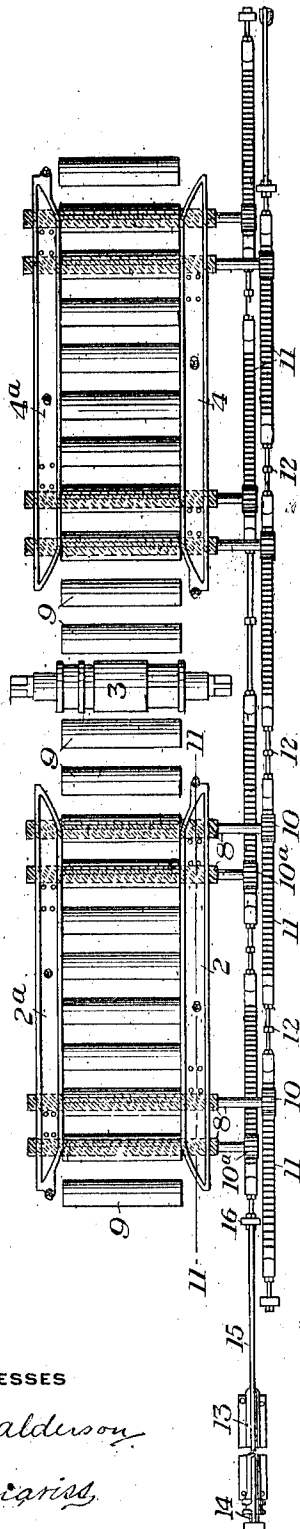
J. KENNEDY.
ROLLING MILL GUIDES.
APPLICATION FILED DEC. 5, 1911.

1,061,676.

Patented May 13, 1913.

2 SHEETS-SHEET 1.

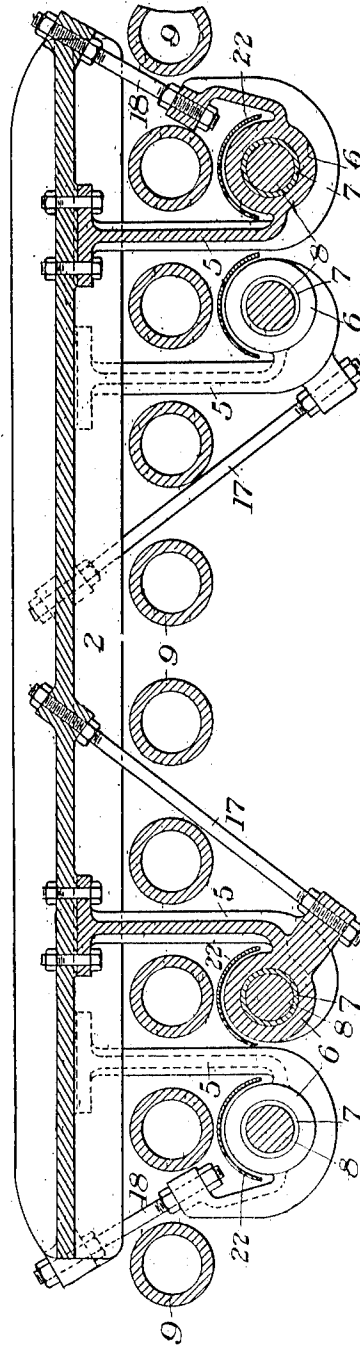
Fig. 1.



WITNESSES

R. A. Baldwin
W. J. Garriss

Fig. 2.



INVENTOR

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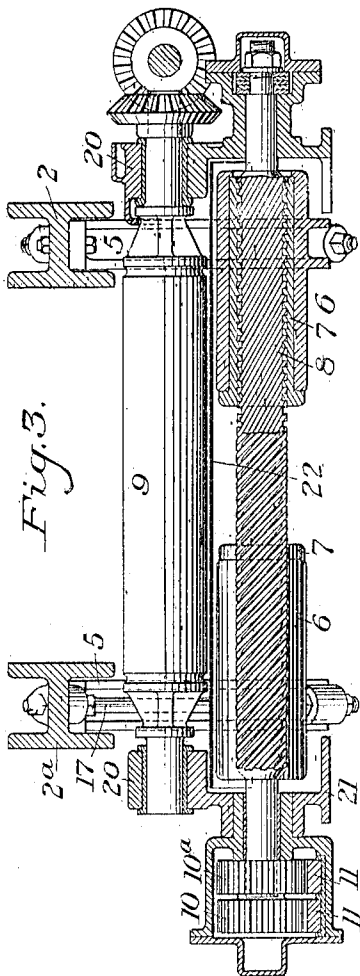


Fig. 3.

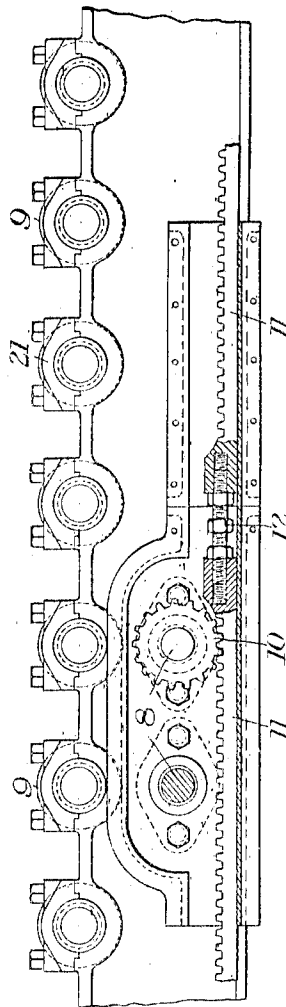


Fig. 4.

WITNESSES

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UNITED STATES PATENT OFFICE.

JULIAN KENNEDY, OF PITTSBURGH, PENNSYLVANIA.

ROLLING-MILL GUIDES.

1,061,676.

Specification of Letters Patent.

Patented May 13, 1913.

Application filed December 5, 1911. Serial No. 664,114.

To all whom it may concern:

Be it known that I, JULIAN KENNEDY, of Pittsburgh, Allegheny county, Pennsylvania, have invented a new and useful Improvement in Rolling-Mill Guides, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a diagrammatic plan view showing the preferred form of my invention; Fig. 2 is a detail longitudinal section on a larger scale taken on the line 11—11 of Fig. 1; Fig. 3 is a cross-section; and Fig. 4 is a sectional elevation showing the adjustable connections between the racks.

My invention relates to the class of rolling mill guides, and particularly to the guides such as disclosed in my U. S. Patent No. 865,047, dated September 3rd, 1907, for ingot manipulator.

The object of the invention is to simplify and improve the actuating connections for simultaneous movement of the guides on the opposite sides of the mill.

To that end the invention consists in providing sets of screws, one set giving the parallel movement to the guides at one side of the feed tables, while the other set gives the corresponding movement to the guides on the other side of the feed tables.

The invention also consists in suitable rack and pinion mechanism for simultaneous operation of the screws, in providing for adjustment between the racks for actuating the screws, and certain other features hereinafter more fully described and claimed.

In the drawings, the numerals 2, 2^a designate the laterally movable guides at one side of the mill 3, and 4, 4^a similar guides at the opposite side of the mill. These guides are supported on the uprights 5, which are preferably formed integrally with a hollow cast sleeve 6, containing bushing 7. This bushing is internally screw-threaded to receive the corresponding quick-pitch threads of screws 8 extending parallel with the rollers 9 of the feed table, and transversely of the said table and the guides. Each of the guides has two of these supporting sleeve nuts, one near either end thereof. The two screw shafts for each guide are provided with toothed wheels 10 and 10^a respectively; the wheels 10^a being in alinement, and the wheels 10 being in alinement, but the two sets being out of alinement with each other.

There are thus four wheels 10 in alinement, two of which are for the guide 2 and two for the guide 4. Similarly, there are four wheels 10^a in alinement for the guides 2^a and 4^a.

For each set of four wheels in alinement a set of four actuating racks 11 is provided, the ends of these racks being in alinement and the racks being connected end to end by turn buckles 12. By actuating the central member of these turn buckles, the racks may be suitably adjusted to bring them accurately to the proper position. To the end of each system of four connected racks, I attach a hydraulic cylinder 13, having a plunger 14 with cross-head having pull rods 15 connected to a cross-head 16 adjustably secured to the adjacent rack. By suitably admitting fluid to the cylinders for each rack system, I actuate the four screws for the two guides in alinement on the opposite sides of the mill, and thus move these guides in unison across the two feed tables, as desired. The two rack systems lie side by side, and move in any suitable guides, such as illustrated in the detail figure.

In order to take up thrust endwise of the guides, I preferably connect the guides to the sleeve nuts by angular tension bars such as shown at 17 and 18. These extend between the rollers of the table and prevent injurious strains on the standards in case the guide engages the metal being rolled while it is moving endwise.

The rollers 9 may be mounted in suitable bearings 20, carried on side plates 21, and it will be noted that the uprights 5 for the guides extend between these rollers and connect to the sleeve nuts at one side thereof. This leaves a space above the screws and nuts in which I preferably provide the semi-cylindrical shields 22, which preferably extend the entire length of the screws and nuts, and may be suitably fastened at their ends to the side plates 21. By joining the uprights to the nuts at one side thereof, I am enabled to place the screws directly under the rollers, thus affording some protection from scale which drops from the metal being rolled. And for this same purpose I am also enabled to provide the continuous shields 22, which extend lengthwise over the screws and nuts, and afford further practically complete protection from the dropping scale.

The advantages of my invention result

from the use of the quick-pitch screws for adjusting the guides laterally. Accurate parallel side movements of the alining guides in unison on opposite sides of the metal is thus obtained, with simple, cheap and positive mechanism.

I claim:—

1. A rolling mill feed table having a sliding longitudinal guide, screws arranged to effect a lateral movement of said guide, and actuating mechanism for driving the screws, said actuating mechanism being substantially parallel with the length of the guide, substantially as described.
2. A rolling mill feed table having a longitudinal guide mounted to move transversely of the table, a screw arranged to effect the transverse movement of the guide, and rack-and pinion mechanism for actuating the screw, the racks extending in the direction of the length of the table and adjacent to the side thereof, substantially as described.
3. A feed table having a transversely movable longitudinal guide, a screw connected to each end portion of the guide to effect the transverse movement thereof, a pinion on the screw shaft, and a rack for actuating the pinion; said rack extending lengthwise of the table, substantially as described.
4. A rolling mill feed table having rollers, longitudinal guides mounted to move transversely of the rollers toward and away from each other, transversely arranged screws connected to said guides, pinions on the

shafts of said screws, and racks engaging said pinions, said racks extending longitudinally of the table and adjacent to the sides thereof, substantially as described.

5. A rolling mill feed table having longitudinally extending guides mounted to move transversely of the table toward and away from each other, screws for effecting the movement of the guides, a pinion on the shaft of each screw, racks engaging said pinions to operate the screws of one guide, and other racks engaging other pinions to operate the screws of the other guide, said racks extending longitudinally of the table, substantially as described.

6. A rolling mill having a feed table at each side of the mill, each of said tables having two longitudinal guides mounted for transverse movement toward and away from each other, transversely mounted screws engaging each of said guides to effect their transverse movement, pinions attached to said screws, racks for simultaneously operating one guide at each side of the mill, and other racks for simultaneously operating the other guides, said racks extending longitudinally of the tables, substantially as described.

In testimony whereof, I have hereunto set my hand.

JULIAN KENNEDY.

Witnesses:

GEO. B. BLEMING,
R. A. BALDERSON.