

No. 719,694.

PATENTED FEB. 3, 1903.

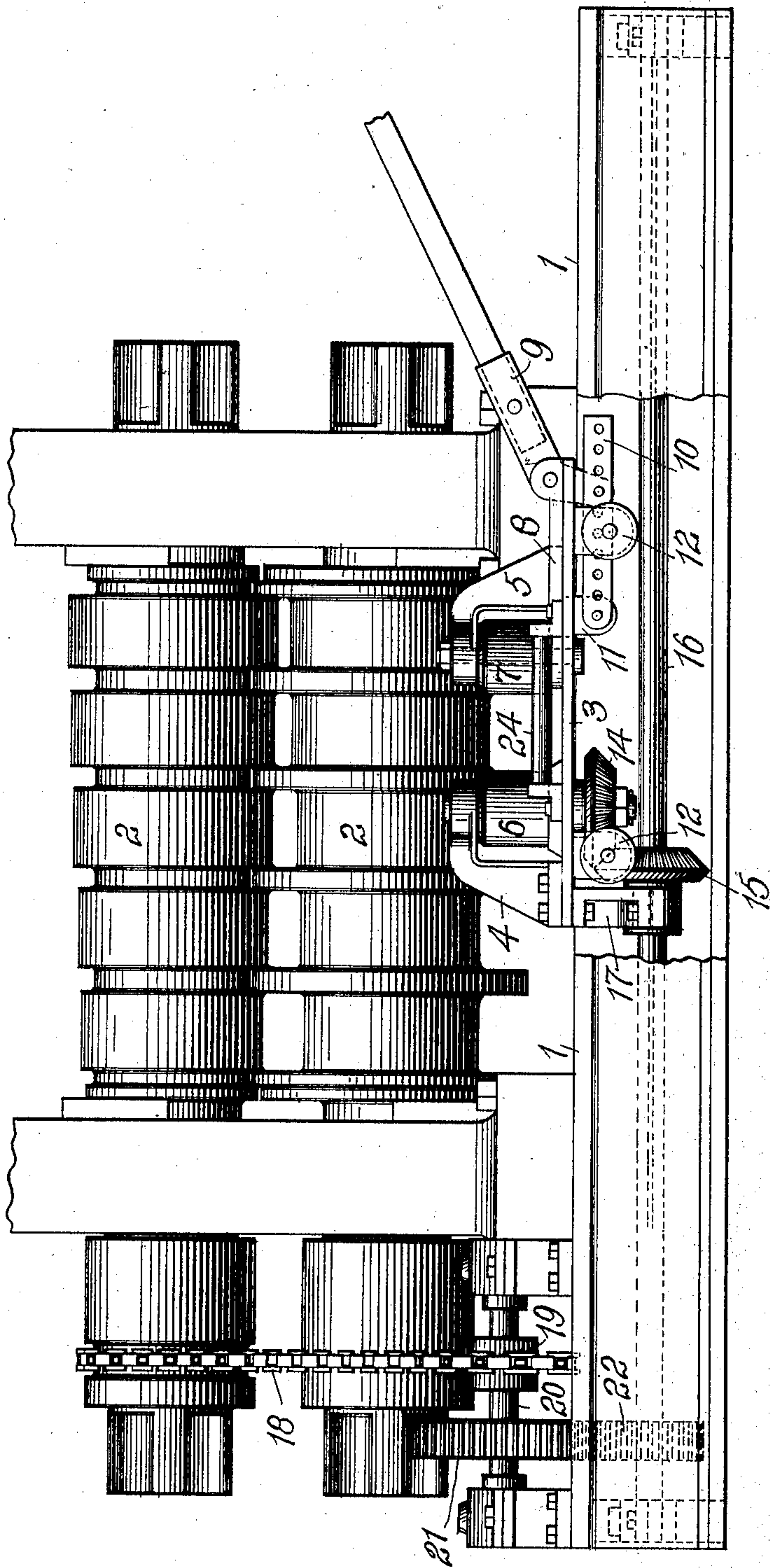
J. J. PURCELL.
FEED MECHANISM FOR ROLLING MILLS.

APPLICATION FILED JAN. 16, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

FIG. 1.



WITNESSES:
Herbert Bradley
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INVENTOR
John J. Purcell
by *Samuel S. Wolcott* Att'y.

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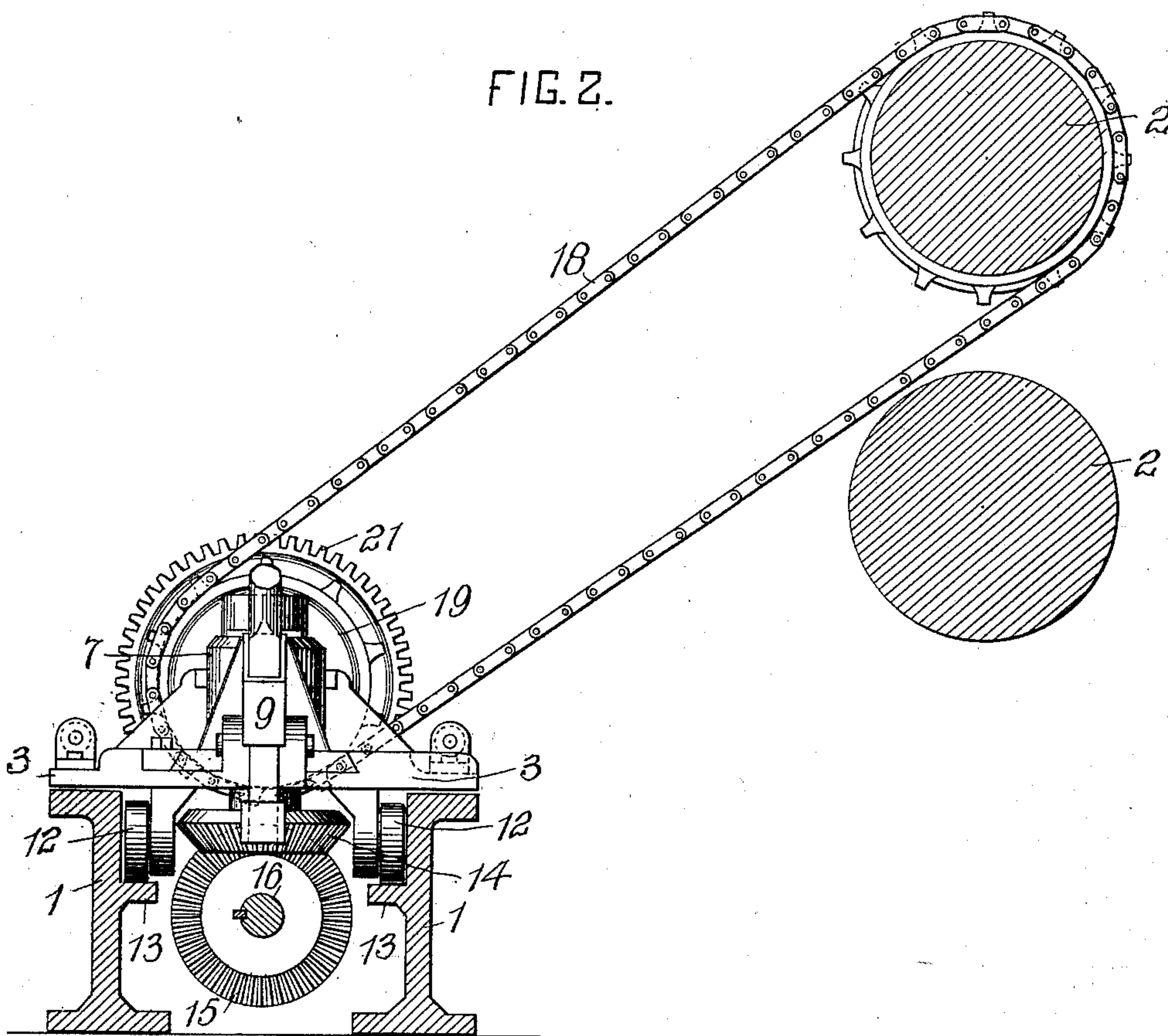
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FEED MECHANISM FOR ROLLING MILLS.

APPLICATION FILED JAN. 16, 1902.

NO MODEL.

2 SHEETS—SHEET 2.

FIG. 2.



WITNESSES:

Herbert Bradley
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INVENTOR

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UNITED STATES PATENT OFFICE.

JOHN J. PURCELL, OF ALLEGHENY, PENNSYLVANIA, ASSIGNOR TO LOCKHART IRON AND STEEL COMPANY, OF MCKEES ROCKS, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

FEED MECHANISM FOR ROLLING-MILLS.

SPECIFICATION forming part of Letters Patent No. 719,694, dated February 3, 1903.

Application filed January 16, 1902. Serial No. 90,004. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. PURCELL, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Feed Mechanism for Rolling-Mills, of which improvements the following is a specification.

The invention described herein relates to certain improvements in feed mechanism for rolling-mills. It has heretofore been the practice in operating mills rolling relatively small sections to employ a catcher on the rear side of the mill for the purpose of catching and returning the article to the roller, the return-pass being made either over or under the rolls. This return-pass involves a great deal of labor and loss of time.

The object of the present invention is to provide a feed mechanism which will grip the article as it passes from between the rolls and return it to the front of the rolls for another reducing-pass.

The invention is hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a rear elevation of a rolling-mill having my improvements applied thereto; and Fig. 2 is a sectional view on a plane indicated by the line II II, Fig. 1, the housing being omitted for convenience of illustration.

In the practice of my invention guide-rails 1 are arranged in the rear of the rolls 2 and in suitable relation thereto as regards the return-feed of the article in a horizontal plane at one side—i. e., above or below the plane in which the article moves while being operated on by the rolls 2. On these rails is mounted the buggy 3, provided with suitable bearings 4 and 5 for the vertical feed-rolls 6 and 7. The bearings 4 are preferably formed on or secured to the buggy 3, while the bearings 5 are formed on or secured to a slide 8, mounted in suitable guides formed on the buggy. This slide 8 is connected in any suitable manner to an operating mechanism—such, for example, as that shown—consisting of a lever 9, pivotally mounted on the buggy and having one end adjustably connected by a link 10 to

a lug 11, projecting down from the slide. By this means the roller 7 can be shifted toward and from the other feed-roller, as required. For convenience and ease of shifting the buggy is provided with friction-rollers 12, adapted to roll back and forth on supporting-edges 13, formed on the guide-rails. One of the feed-rollers, as 6, has its lower journal extended downwardly, and on such extended journal is secured a beveled pinion 14, adapted to intermesh with a corresponding pinion 15, mounted upon the shaft 16, extending along parallel with the guide-rails and having suitable bearings secured to such rails. The pinion 15 is connected with the shaft, as by a spline and key, in such manner as to permit of the movement of the pinion along the shaft while caused to rotate therewith. In order to effect the movement of the pinion 15 with the slide, and thus maintain it in engagement with the pinion of the roller 6, the hub of the pinion 15 is extended on one side, and it is gaged by a bracket 17, extending down from the slide. While the shaft 16 may be rotated in any suitable manner, it is preferred to effect its rotation in the desired direction to effect a return of the article to the front of the rolls by one of the reducing-rolls. To this end a chain 18 passes around a suitable portion of one of the rolls or its driving connection and around a sprocket-wheel 19 on a counter-shaft 20. On this counter-shaft is secured a pinion 21, adapted to intermesh with a pinion 22 on the shaft 16. By this means the driving-shaft 16 and the feed-rollers, one or both, are maintained in constant rotation as long as the reducing-rolls are being driven.

In the operation of my improvement the buggy is shifted by means of the lever into line with the pass through which the article is to be fed from the front to the rear, and the feed-rolls are separated a distance greater than the width of the article or pass operating on the article. As the article passes out from between the rolls it will drop between the feed-rollers 6 and 7, and the catcher immediately bears down upon the lever, so that the article will be gripped between the feed-rollers, which by their rotation will immediately feed it back under the rolls to the front

of the same in position to be caught by the roller and passed again between the rolls. In order to facilitate the return movement of the article, a friction-roller 24 is mounted in 5 suitable bearings on the buggy and in such relation to the feed-rollers that the article will be supported by the friction-roller during the return-pass.

I claim herein as my invention—

10 1. The combination of a rolling-mill and a feed mechanism constructed to grip and return the article to the front of the rolls in a horizontal plane at one side of the plane of bite of the rolls, and arranged to receive the 15 article as it drops from between the rolls, substantially as set forth.

2. The combination of a rolling-mill having two or more reducing passes or grooves, and feed mechanism arranged below the plane of 20 bite of the rolls, and adjustable along the same, substantially as set forth.

3. The combination of a rolling-mill, rotating feed-rollers rotating in a direction to effect a reverse movement of the article toward the front of the mill, means for shifting 25 the rollers along the rolls, and means for moving one of the rollers toward and from the other roller, substantially as set forth.

4. The combination of a rolling-mill, a 30 buggy movable along the rolls, vertically-arranged feed-rollers, mounted on said buggy, means for driving one of said rollers in a direction to effect a reverse movement of the article toward the front of the mill, and 35 means for shifting one of said rollers toward and from the other, substantially as set forth.

In testimony whereof I have hereunto set my hand.

JOHN J. PURCELL.

Witnesses:

DARWIN S. WOLCOTT,
F. E. GAITHER.