

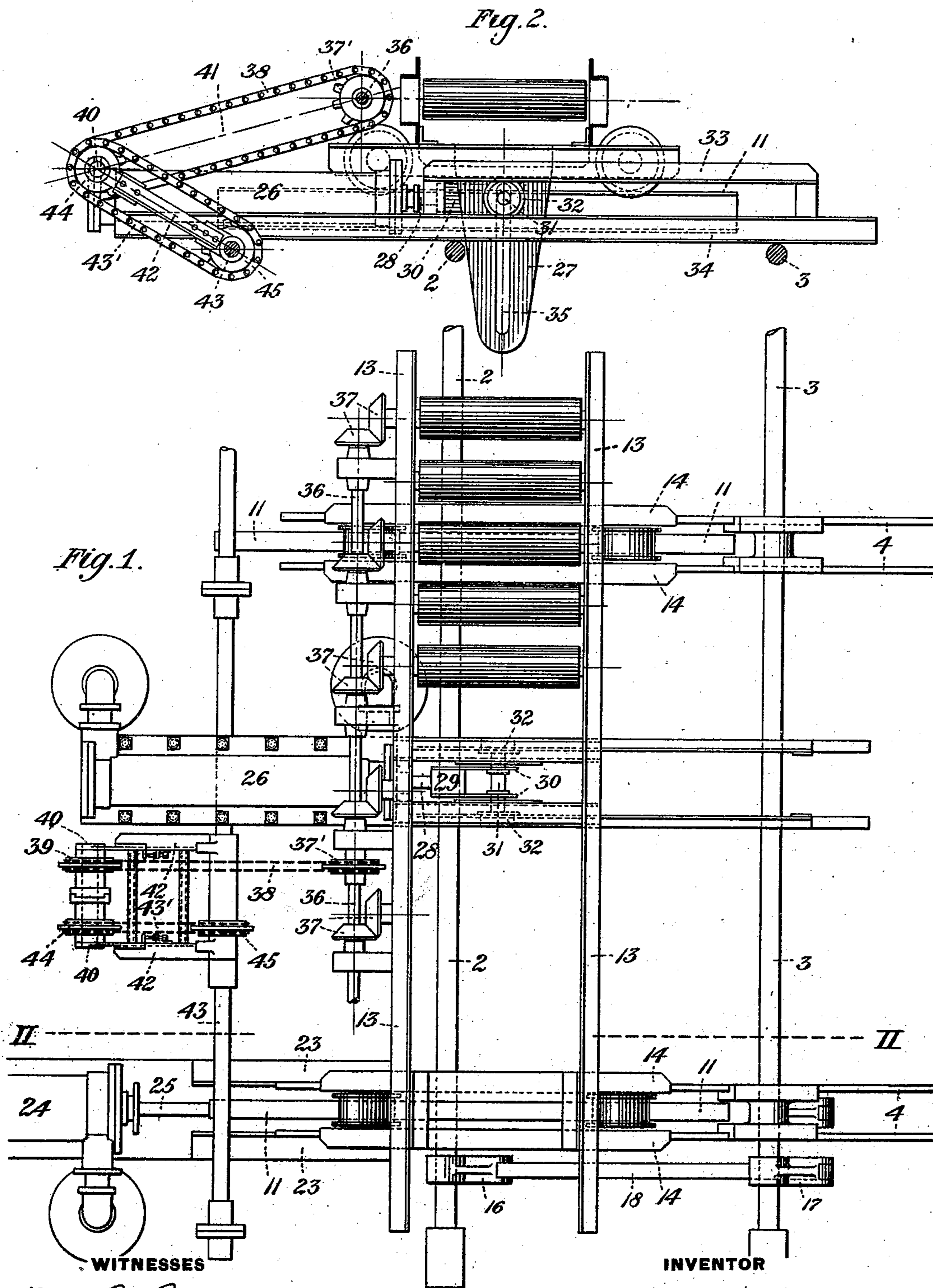
(No Model.)

2 Sheets—Sheet 1.

W. H. MADDOCK.  
FEED TABLE FOR ROLLING MILLS.

No. 504,393.

Patented Sept. 5, 1893.



WITNESSES

*W. B. Corwin*  
*W. B. Clark*

INVENTOR

*William H. Maddock*  
*by W. Baxwell & Sons*  
*his Attorneys.*

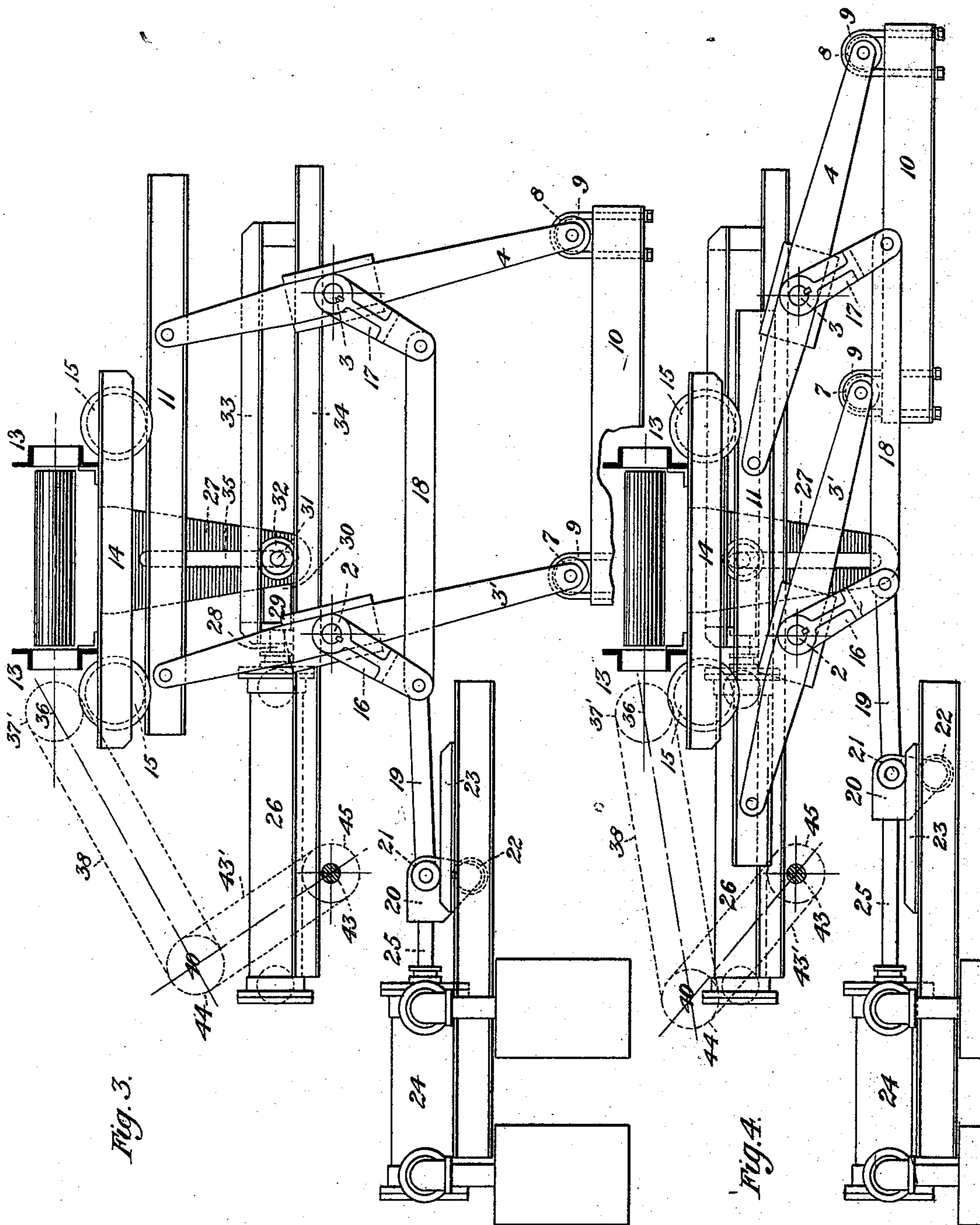
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# UNITED STATES PATENT OFFICE.

WILLIAM H. MADDOCK, OF PITTSBURG, PENNSYLVANIA.

## FEED-TABLE FOR ROLLING-MILLS.

SPECIFICATION forming part of Letters Patent No. 504,393, dated September 5, 1893.

Application filed August 3, 1892. Serial No. 442,015. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. MADDOCK, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Feed-Tables for Rolling-Mills, 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 top plan view of my improved feed-table, with a part of the rolls removed. Fig. 2 is a cross-sectional view on the line II—II of Fig. 1; and Figs. 3 and 4 are end elevations of the same, with the parts in different positions.

My invention relates to feed-tables for rolling-mills and more especially to those employed in three-high mills having a series of passes, and it consists in a series of power-driven feed-rollers supported upon a truck having a vertical and lateral movement, as well as in the construction and arrangement of parts as hereinafter more fully described and set forth in the claims.

In the drawings, in which similar numerals indicate corresponding parts, 2 and 3 are a pair of rock-shafts suitably mounted in bearings in front of the rolls, and upon these shafts are mounted a pair of levers 3' and 4, having friction-rollers 7 and 8 at their lower ends, about which take the yokes 9 carrying the beam 10, upon which a suitable amount of counterweighting material is secured. At their upper ends, these levers are pivotally connected to rails 11, upon which the truck travels. This truck consists of the side-rails 13, between which are pivoted the feed-rolls, and the cross-pieces 14 beneath the same, between which are trunnioned wheels 15 supporting the truck and traveling upon the rails 11. Keyed to the shafts 2 and 3 are the short arms 16 and 17 connected by the link 18, and to the outer end of the arm 16 is pivoted the connecting rod 19 pivoted at its other end to the cross-head 20, having the guide-wheels 21 and 22, which travel on either side of the guide 23. A motive cylinder 24, having a piston-rod 25 secured to the cross-head, serves to oscillate the shafts and move the rails 11 in a curved path. A second motive cylinder 26 above the level of the cylinder 24 and in line with the center of the truck, serves to

move the same laterally on the rails, by means of the downwardly projecting plate 27. The piston-rod 28 of this cylinder is provided with a cross-head 29, having collars 30 surrounding a shaft 31 provided with wheels 32. The wheels 32 move between the guide-ways 33 and 34, and the shaft 31 passes through the slot 35 in the plate 27. By this means the truck may be held so as to rise vertically as the track swings in its curved path, and on actuating the cross-head 29 the truck may be moved back and forth upon the rails to any desired point.

The shaft 36, trunnioned at one side of the truck and having bevel-gears 37, serves to drive the feed-rollers, and motion is communicated to the shaft through the sprocket-wheel 37', having the sprocket-chain 38 passing over a similar wheel 39 upon the swinging shaft 40. This shaft 40 is held at a certain distance from the shaft 36 by links 41, having collars taking about both shafts. Similar links 42 connect the shaft 40 with a power-driven shaft 43 at one side of and beneath the same, and a sprocket-chain 43', passing over the wheels 44 and 45, communicates power therefrom to the shaft 40 and thence to the shaft 36. It is evident that as the truck rises and falls and is moved laterally, the links 41 and 42 will open and shut like a pair of shears, without interfering with the transfer of power through the sprocket-chains.

The operation of the device is as follows: The metal being placed upon the feed-rolls, the truck is moved to any level desired by the motor 24. It is then moved laterally by the motor 26 in front of the pass desired, and the shaft 36 being actuated the feed-rollers carry the metal forward into the rolls. The truck is then raised or lowered to receive the metal as it returns through the next pass, the direction of rotation of the rollers being reversed. The truck is then raised or lowered and moved laterally to the next pass, and the operation repeated. In this way the metal may be carried to any pass of a three-high mill, as the rails are of sufficient length to include all the passes in the rolls.

The advantages of the construction are obvious to those skilled in the art. The movements of the metal are all under the control

of the operator, who works the levers operating the valves of the engines and the motor cylinders 24 and 26. The movements are all positive in character and the parts are simple and not liable to get out of order.

Many changes in the form and arrangement of the parts may be made without departure from my invention, since

What I claim is—

10 1. A feed-table for rolls comprising a carrier, driven feed-rolls thereon, a constant power connection for actuating the feed-rollers in all positions of the carrier, and means independent of the power connection for moving said carrier vertically and laterally; substantially as and for the purposes described.

15 2. A feed-table comprising a wheeled truck, pivoted levers carrying rails upon which the truck travels, means for oscillating said levers, and means for preventing lateral movement of the truck as it rises and falls; substantially as and for the purposes described.

20 3. A feed-table comprising a wheeled truck carrying driven feed-rollers, pivoted levers carrying rails upon which the truck travels, and sprocket-chains arranged to drive the feed-rollers in any positions thereof; substantially as and for the purposes described.

25 4. A feed-table comprising a wheeled truck carrying driven feed-rollers, pivoted levers carrying rails upon which the truck travels, means for holding said truck from lateral movement as the levers oscillate, and means for moving the same laterally upon the rails; substantially as and for the purposes described.

30 5. A feed-table comprising a wheeled truck carrying driven feed-rollers, pivoted levers carrying rails upon which the truck travels, a slotted plate secured to said truck, a shaft passing through said slot, and means for moving said shaft laterally; substantially as and for the purposes described.

35 6. A feed-table comprising a carrier, means for moving the same vertically and laterally, an actuating shaft supported upon the carrier, a flexible belt or chain connecting the same with a swinging shaft, and a second belt or chain connecting the swinging shaft

with a power-actuated shaft; substantially as and for the purposes described.

7. A feed-table comprising a carrier, means for moving the same vertically and laterally, an actuating shaft supported upon the carrier, a flexible belt or chain connecting the same with a swinging shaft, a second belt or chain connecting the swinging shaft with a power-actuated shaft, and links between the three shafts; substantially as and for the purposes described.

8. A feed-table comprising a wheeled truck, pivoted levers carrying rails upon which the truck travels, a motor arranged to oscillate said levers, a slotted plate projecting downwardly from the truck, a wheeled carriage having a shaft passing through said slot, and means for actuating said carriage; substantially as and for the purposes described.

9. A feed-table comprising a wheeled truck, pivoted levers carrying rails upon which the truck travels, a motor arranged to oscillate said levers, a slotted plate projecting downwardly from the truck, a wheeled carriage having a shaft passing through said slot, means for actuating said carriage, and a flexible connection arranged to rotate the feed-rollers in all positions of the truck; substantially as and for the purposes described.

10. A feed-table comprising a wheeled truck, pivoted levers carrying rails upon which the truck travels, a motor arranged to oscillate said levers, a slotted plate projecting downwardly from the truck, a wheeled carriage having a shaft passing through said slot, means for actuating said carriage, an actuating shaft supported upon the feed-roller truck, a flexible connection between the same and a swinging shaft, and a second flexible connection between the swinging shaft and a power driven shaft; substantially as and for the purpose described.

In testimony whereof I have hereunto set my hand this 14th day of July, A. D. 1892.

WILLIAM H. MADDOCK.

Witnesses:

W. B. CORWIN,  
C. BYRNES.