

(No Model.)

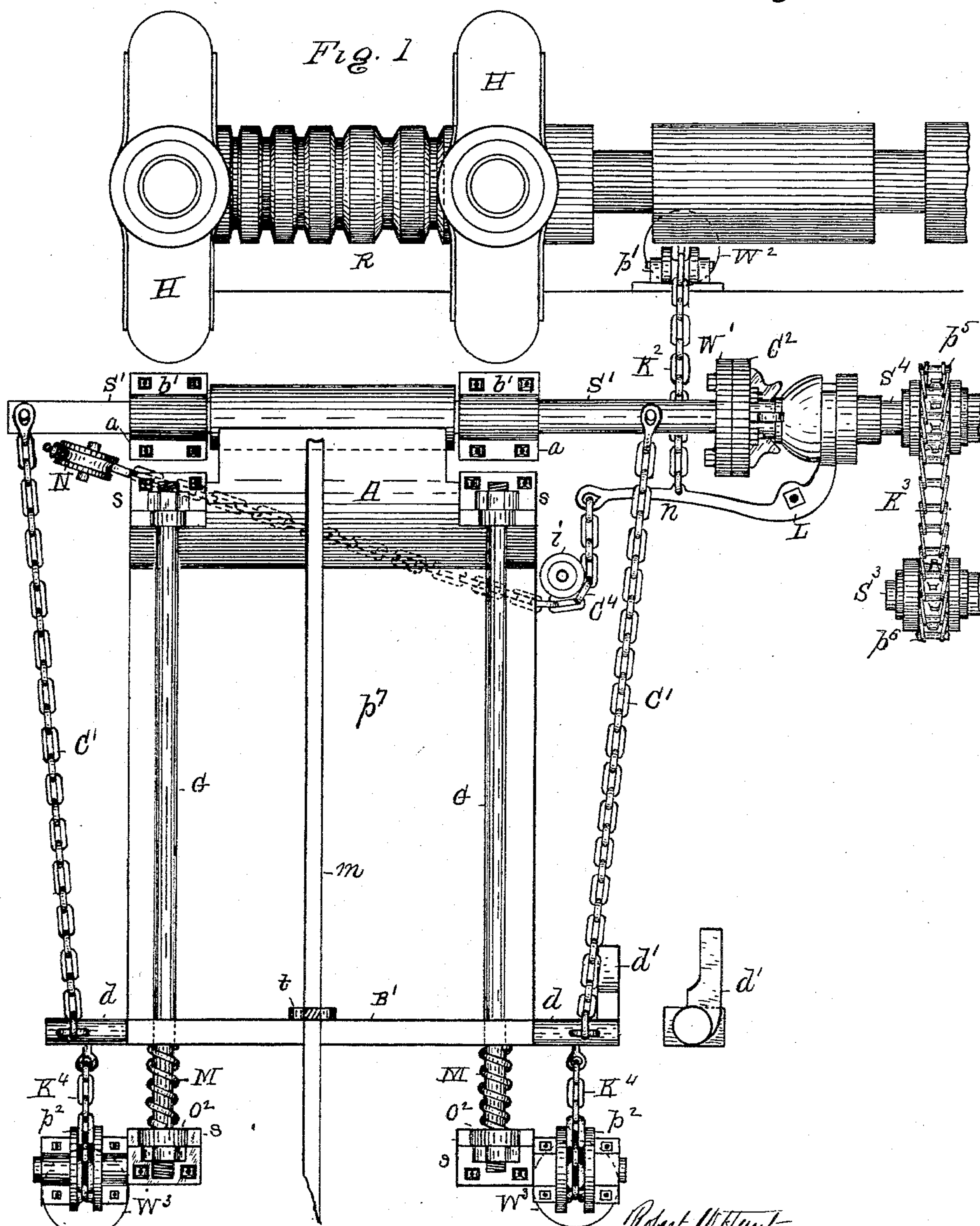
2 Sheets—Sheet 1.

R. W. HUNT & M. M. SUPPES.

FEEDING MECHANISM FOR ROLLING MILLS.

No. 323,510.

Patented Aug. 4, 1885.



WITNESSES:

Stanley M. Holden.
Jm. E. Saxe

Robert W. Hunt
Maximilian M. Suppes

INVENTORS

BY

William E. Nagan ATTORNEY

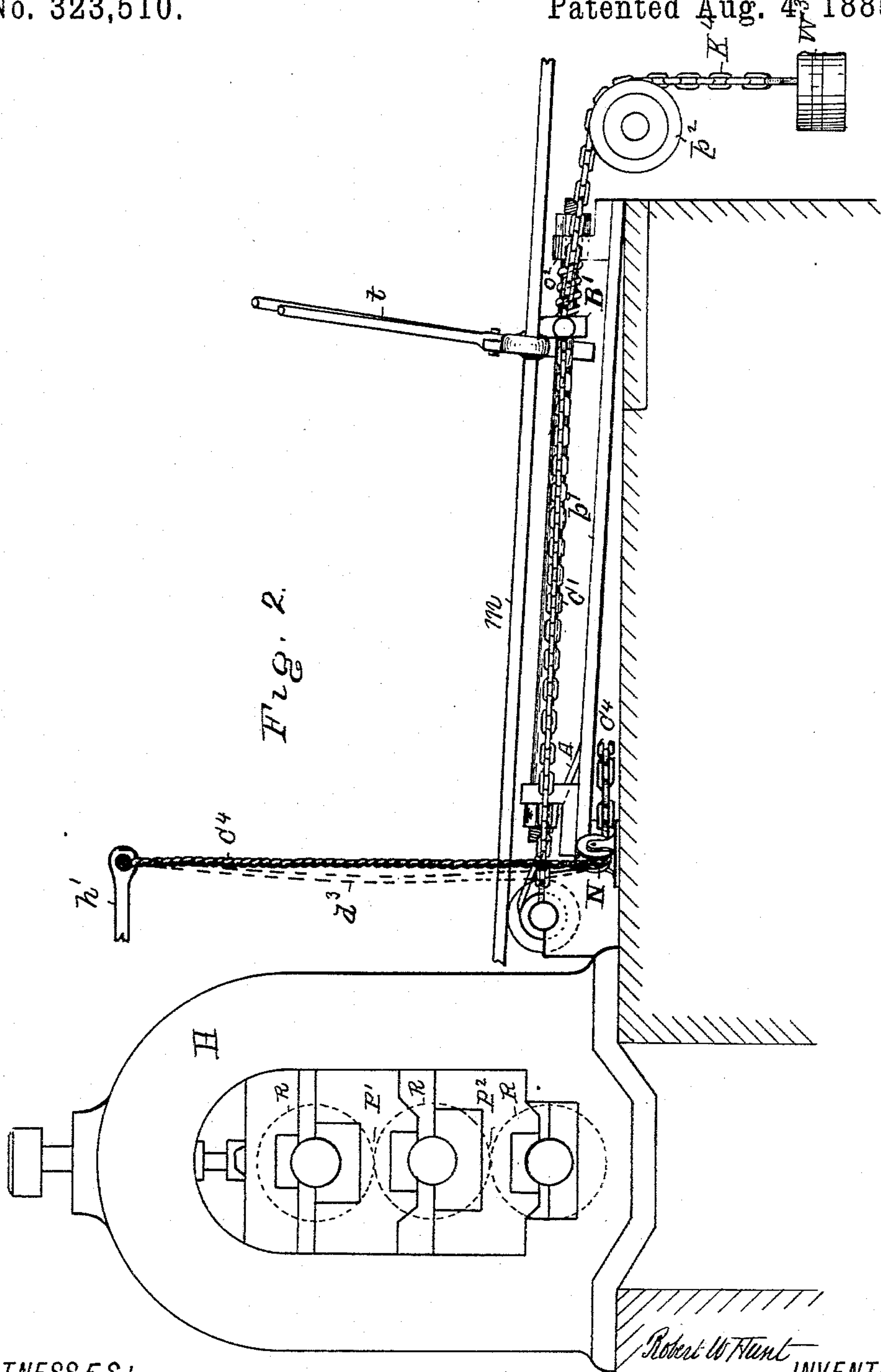
(No Model.)

2 Sheets—Sheet 2.

R. W. HUNT & M. M. SUPPES.
FEEDING MECHANISM FOR ROLLING MILLS.

No. 323,510.

Patented Aug. 4, 1885.



WITNESSES:

Stanley M. Holden.
Am A. Laxe.

Robert W. Hunt
Maurice M. Suppes

INVENTORS

BY

William E. Nagan ATTORNEY

UNITED STATES PATENT OFFICE.

ROBERT W. HUNT AND MAXIMILIAN M. SUPPES, OF TROY, NEW YORK; SAID SUPPES ASSIGNOR OF ONE-SIXTH OF HIS RIGHT TO SAID HUNT.

FEEDING MECHANISM FOR ROLLING-MILLS.

SPECIFICATION forming part of Letters Patent No. 323,510, dated August 4, 1885.

Application filed February 5, 1885. (No model.)

To all whom it may concern:

Be it known that we, ROBERT W. HUNT and MAXIMILIAN M. SUPPES, both of the city of Troy, county of Rensselaer, State of New York, have jointly invented a new and useful Improvement in Feeding Mechanism for Rolling-Mills, of which the following is a specification.

Our invention relates to a mechanism for receiving and returning to the rolls of a rolling-mill a bar of iron or steel that is being rolled, our invention being more particularly applicable to the rolling of such merchant iron or steel as is drawn out into bars of considerable length, and in which the friction produced by the length of the bar when drawn from out the rolls has to be overcome, in returning the bar to the latter, requires that it be grasped at several points by tongs, thus necessitating the services of several mill-hands, the object of our invention being to have a stationary platform to receive that end of the bar coming last from the rolls, and mechanism connected with said platform that is operated to carry and return the bar that is being rolled, and to thus avoid the employment of several mill-hands to move it to the train.

Our invention consists, as will be more fully detailed hereinafter, in connection with its illustration, in the combination, with a stationary platform, of a carrier bar or frame adapted to be moved toward or from the rolls on guide-rods by means of connecting-chains which are arranged to wind up on a shaft, and to thus pull the carrier-bar with its load toward the rolls, a clutch arranged to connect with, so as to communicate rotation to said shaft, for winding up the chains, said clutching mechanism having a coupler-lever for operating the clutch to connect or disconnect with said shaft, a dog or means on the carrier-bar adapted to engage automatically with said clutching mechanism coupler-lever to disconnect the clutch when the carrier-bar has been drawn near enough to the rolls, and weights with chains connecting with the ends of the carrier-bar, said chains intermediately passing over pulleys for pulling back from the rolls the carrier-bar when

the clutch is disconnected, and a pulley and chain for operating the coupler-lever to put on the clutch when starting the mechanism.

Our invention also consists in the sub-combination of the parts which we illustrate and describe where they perform specific function, as will be detailed in the claims.

Accompanying this specification, to form a part of it, there are two plates of drawings, containing two figures, illustrating our invention, with the same designation of parts by letter-reference used in all of them.

Of these illustrations, Figure 1 shows a plan view of the mechanism containing our invention, with the dog that operates the tripping-lever shown in side elevation in an annex figure adjacent to the same part in the main figure; and Fig. 2 is a side elevation of the parts shown at Fig. 1.

The letters R indicate the rolls having the upper passes, p' , and the lower passes, p'' , and the letters H indicate the housings.

The letters S' indicate a shaft having its bearings at $b' b'$ in standards $a a$.

The letters p' designate a stationary platform that inclines upwardly toward the train, and A an apron, which also inclines upwardly from the platform to the top of the shaft S'.

The letter B' indicates a carrier-bar that is arranged parallel to the train, and adapted to move back and forth toward or from the train on guide-rods G G, the latter at their ends being secured to the studs $s s$.

The letters C' indicate chains, which at one of their ends are attached to the projecting ends d of the said carrier-bar and at their other ends to the shaft S', so that when the latter is rotated these chains will wind up on to the shaft S' to which they are attached, and thus draw the carrier-bar toward the train.

The letter C² indicates a clutch that makes a spline or feather connection on and with the shaft S' for horizontal movement thereon in the usual manner, the details of which, being the usual ones, are not shown in the drawings.

The letter L indicates a pivoted coupler lever, for connecting the clutch C² with the wheel W' on the shaft S' to communicate motion and rotation to the latter. This clutch receives

power from the shaft S^4 by means of the sprocket-wheel p^5 , located on the latter, the sprocket-wheel p^6 on the driving-shaft S^3 , and the chain-belt K^3 , connecting the pulleys p^5 and p^6 .

The letter K^2 designates a chain connected at one of its ends with the arm n of the coupler-lever L , which chain passes over the pulley p^7 to a weight, W^2 , with the other end of said chain attached to the latter, the function of this chain, weight, and pulley being to make the mechanism operating to disconnect the clutch prompt and efficient in its action.

The letter d' designates a dog arranged on the under side of the carrier-bar, and which is constructed to engage with an arm, n , of the coupler-lever, so as to move the latter toward the train and the clutch away from its engagement with the wheel W' , and thus arrest the movement of the carrier-bar toward the train when it has been by the chains, as before described, drawn near enough to the rolls to enter the bar being rolled.

The letter C^4 indicates a chain, which at one of its ends is suspended from a bracket, h' , and from thence passing downwardly around a pulley, N , and from the latter to pass around a pulley, i , immediately in front of the arm n of the coupler-lever L , and the operation of these parts is as follows: When the vertically arranged and pendent portion of the chain C^4 is pulled out from a perpendicular by the operator, and as indicated by the dotted line d^3 of Fig. 2, the other end of the chain, where attached to the arm n of the coupler-lever L , pulls out the latter, so as to force inwardly the other end of said lever where connected with the clutch C^2 , causing the latter to engage with the wheel W' , and thus start the shaft S' , the latter operating the carrier-bar to move toward the train by winding up the chains C' .

The letters W^3 designate weights; K^4 , chains connected thereto, and which chains are arranged to pass over pulleys p^2 , with the other ends of each of the chains connected with one of the ends d of the carrier-bar B' , the function of the said chains, weights, and pulleys being to pull back the carrier-bar away from the rolls after the tripping-dog d' has disconnected the clutch C^2 from the wheel W' .

The letters M indicate springs arranged on the guides G , the function of which is to take up the return force of the carrier-bar as acted upon by the weights W^3 , and to prevent the carrier-bar from striking too heavily against the stops O^2 O^2 when coming back to place.

The parts thus described operate conjointly in the following manner: A bar of iron or steel, m , coming from one of the upper passes of the rolls as it leaves the latter, falls so that its end nearest to the train is on the carrier-bar and platform, and when this has taken place the operator pulls upon the chain C^4 , which, by means of its connection with the coupler-lever L , causes the clutch C^2 to engage with the wheel W' on the shaft S' , which

latter immediately commences to roll up the chains C' on its circumference, and this moves the carrier-bar toward the train. Should the bar that is being rolled have unusual length, the operator grasps it with a tongs, t , which are just inside of the carrier-bar, with the outer side face of the tong-jaws immediately against the inner face of the carrier-bar, thus starting the latter with its load, removing the tongs so soon as it is fairly under motion. When the carrier-bar, thus moving toward the train, has entered the bar being rolled into the pass, and reaches the end of the lever L , the dog d' on the carrier-bar engages with the arm n of said lever, and moves it so as to disconnect the clutch C^2 from the wheel W' , and stop the rotation of the shaft S' , whereupon the weights W^3 , by means of the chains K^4 , immediately pull back the carrier-bar away from the rolls, and the weight W^2 , by means of the connected chain K^2 , so soon as the lever L is tripped by the dog d' , acts to return the clutch to a disconnected condition, the said weight W^2 acting merely to aid the dog d' .

Where bars of ordinary length are used the tongs t are not required to start the carrier-bar with its load.

While we have shown the platform p' and apron A as separated, they may be made in one part, if desired.

All that part of the platform in front of that portion of it denominated the "apron," is merely used in case the end of the bar coming from the rolls should pass so far out as to not fall upon the apron part. When this occurs the platform performs the same function as the apron, it being merely a continuation of it, in guiding the bar up to one of the lower passes.

As the carrier-bar is actuated to carry the bar being rolled in return to the train a fit coming from one of the upper passes it would perform its same function without the platform; hence we do not limit our invention as respects the operation of this carrier-bar to its combination with the platform.

Any form of clutch may be used that is actuated to rotate and connect or couple with the wheel W' of the shaft S' to communicate rotation thereto, and which clutch has a coupler-lever that can be arranged to be tripped by the dog d' of the carrier-bar for disconnecting the clutch from the shaft S' in relatively the same or in an equivalent manner.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a feeding-mechanism attachment to a rolling-mill train, the combination of the shaft S' , having the coupler-wheel W' , the clutch C^2 , constructed and connected to receive power, and made with the pivoted coupler-lever L , the chains C' C' , and the carrier-bar B' , made with the dog d' , the said parts being constructed and arranged to operate substantially in the manner as and for the purposes set forth.

2. In a feeding-mechanism attachment to a

rolling-mill train, the combination of the shaft S', made with the coupler-wheel W', the clutch C², constructed and connected to receive power, and made with the pivoted coupler-lever L, the carrier-bar B', made with the dog d', the chains K¹ K¹, pulleys p², and the weights W³, said parts being constructed and arranged to be operated substantially in the manner as and for the purposes set forth.

3. In a feeding-mechanism attachment to a rolling-mill train, the combination of the shaft S', provided with bearings and made with the coupler-wheel W', the clutch C², constructed and connected to receive power, and made with the pivoted coupler-lever L, the carrier-bar B', having the dog d', and sliding on guides G G, the chains K¹ K¹, the weight W³, the pulleys p², and the stops O² O², said parts being constructed and arranged to operate substantially in the manner as and for the purposes set forth.

4. In a feeding-mechanism attachment to a rolling-mill, the combination of the shaft S', made with the coupler-wheel W', the clutch C², constructed and connected to receive power, and having the pivoted coupler-lever L, the carrier-bar B', having the dog d', and sliding on guides G G, the chain C¹, and the pulleys N and i, said parts being constructed and arranged to operate substantially in the manner as and for the purposes set forth.

Signed at Troy, New York, this 27th day of January, 1885, and in the presence of the two witnesses whose names are hereunto written.

ROBERT W. HUNT.
MAXIMILIAN M. SUPPES.

Witnesses:

FREDERICK F. BUELL,
CHARLES S. BRINTNALL.