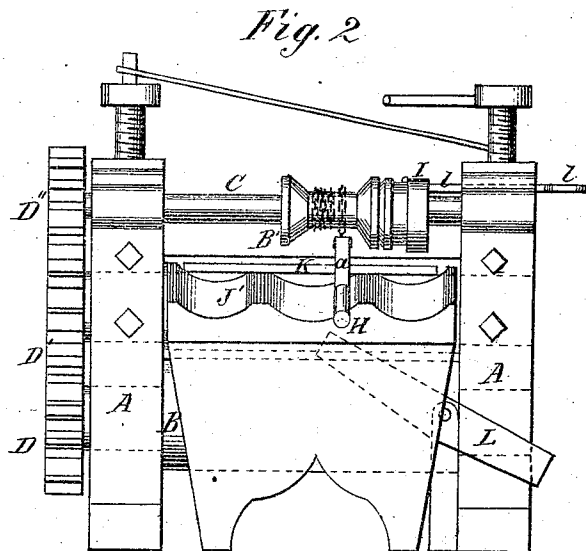
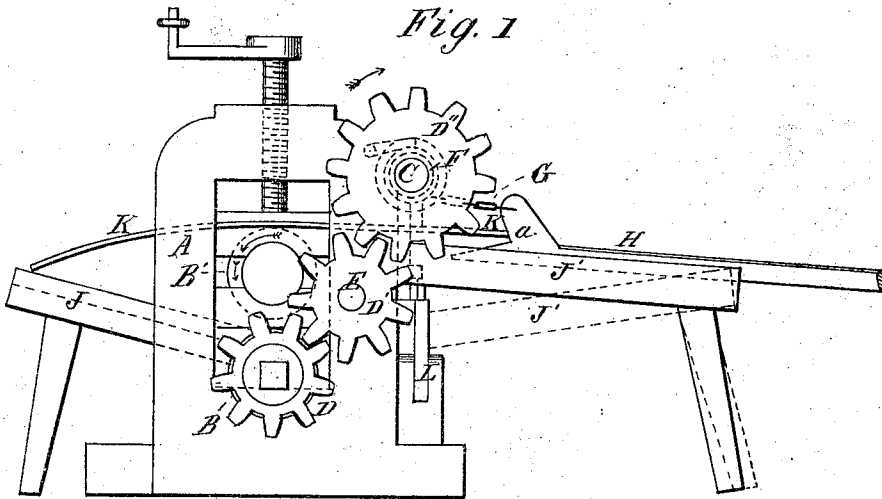


WILLIAM H. BROUGH.

Improvement in Rolling Mills.

No. 119,693.

Patented Oct. 10, 1871.



Witnesses
Thomas J. Dewey
Isaac P. Wendell

6" 3" 0 1ft.
Scale

Inventor
William H. Brough,
By his Attorney
Stephen Utick.

UNITED STATES PATENT OFFICE.

WILLIAM H. BROUGH, OF COATESVILLE, PENNSYLVANIA.

IMPROVEMENT IN ROLLING-MILLS.

Specification forming part of Letters Patent No. 119,693, dated October 10, 1871.

To all whom it may concern:

Be it known that I, WILLIAM H. BROUGH, of Coatesville, in the county of Chester and State of Pennsylvania, have invented certain Improvements in Chain-Connection for returning iron to the fore-plate of a Rolling-Mill, of which the following is a specification:

The invention consists in the combination and arrangement of a roller and chain and connected drag-rod with the rolls in such a manner that by bringing the drag-rod into connection with the back end of the pile or plate when it has passed through the rolls, and the chain-roller being caused to rotate and wind up the chain, the iron is returned over the upper roll to the fore-plate to be again passed through the rolls, as hereinafter described. The device may be used either in front or back of the rolls, as may be desired.

Figure 1 is an end elevation of a pair of rolls with the improvement attached. Fig. 2 is a rear elevation of the same.

Like letters in both figures indicate the same parts.

A A are the housings. B is the lower, and B' the upper roll. C is a shaft, which is geared with the roll B by means of the spur-wheel D, on one end of the same, the intermediate wheel D', on the stud-shaft E, and the wheel D'' on the shaft C, as represented. I do not, however, confine myself to the mode represented of conveying the motion to the shaft C, as other modes may be adopted of communicating power to the same which may answer as well. The shaft C is provided with a roll or spool, F, to which one end of the chain G is attached. The outer end of the chain is connected to the drag-rod H, which is manipulated, as hereinafter described, for connecting it with the iron for the return of the latter to the rolls. The roller F fits loosely on its shaft C, so that the latter may turn freely therein when the iron is being passed between the pressing-rolls. I is a friction-clutch for fasten-

ing the roller F when the chain G is to be used for the return of the iron, as represented in the drawing. The clutch is operated by means of the bent rod L. J is the fore-plate for conveying the iron to the rolls B B', and J' the apron on which it is carried back over the upper roll.

The operation of the device is as follows: The chain-roll F is allowed to turn freely on its shaft C during the passage of the iron through the rolls. As soon as the iron has passed through the rolls, the apron J' is brought into its elevated position, as seen in the drawing, by the use of the lever L, and the friction-clutch I is applied to wind up the chain G, and the operator, by taking hold of the rear end of the drag-rod H, brings it into the position represented in the drawing, with its catch *a* against the rear end of the pile or plate K, as seen in Fig. 1, and holds it in that position until it has been returned over the upper roll B'. Then the clutch I is withdrawn from its connection with the chain-roll F and the bar is drawn back by the attendant, unwinding the chain G ready for another operation, the apron J' being at the same time lowered to the position represented by dotted lines to receive the iron in its passage through the rolls; and so on the operations are continued.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination and arrangement of the chain-roller C, chain G, and drag-bar H with the rolls B and B', the stationary table J, movable table J', lever L, and friction-clutch I, for the return of the iron to the front of the rolls, substantially in the manner above described.

In testimony that the above is my invention I have hereunto set my hand and seal this 9th day of August, 1871.

WILLIAM H. BROUGH. [L. S.]

Witnesses:

STEPHEN USTICK,
THOMAS J. BEWLEY.

[65]