

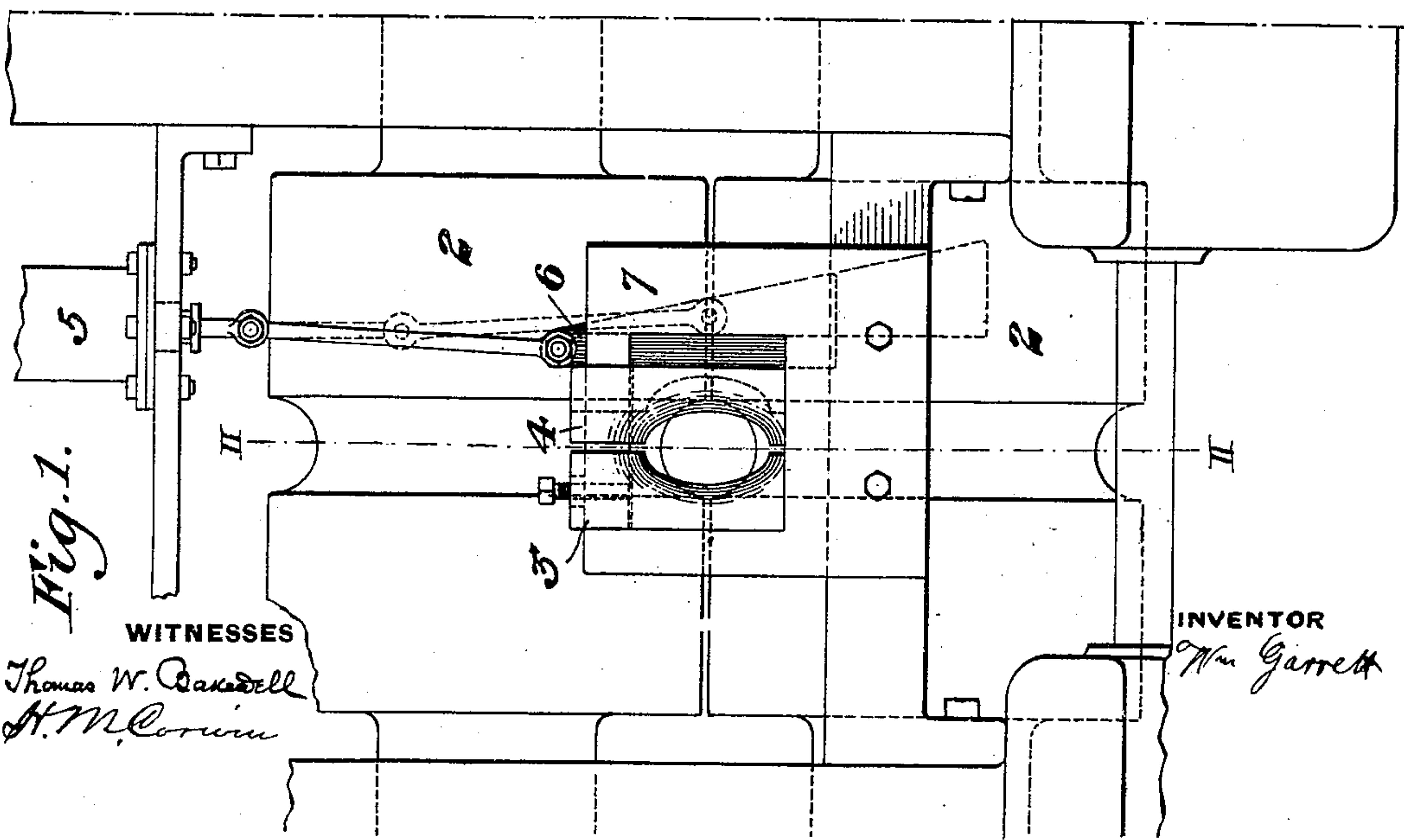
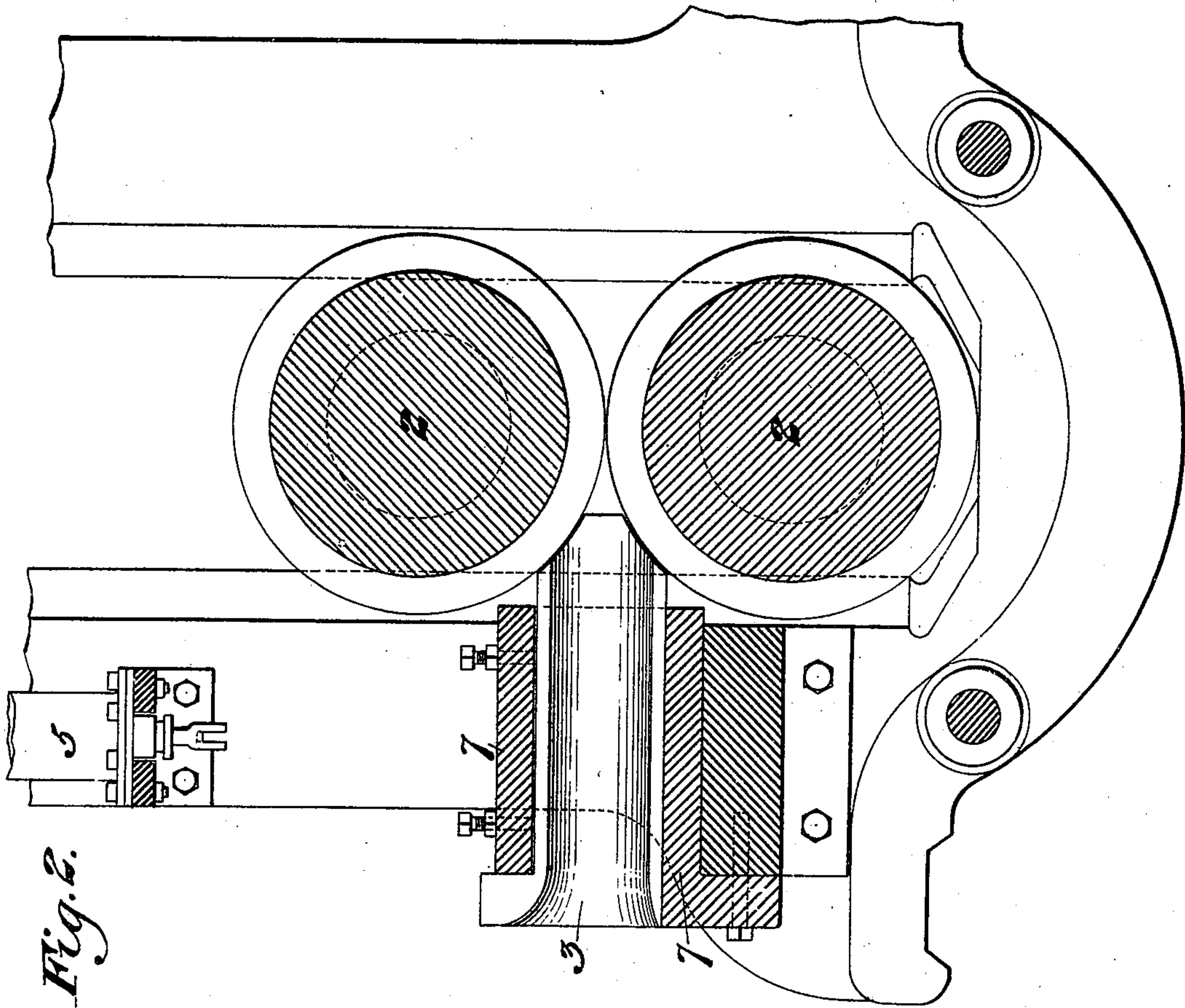
No. 629,718.

Patented July 25, 1899.

W. GARRETT.
GUIDE FOR ROLLS.

(Application filed June 24, 1898.)

(No Model.)



WITNESSES

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WILLIAM GARRETT, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-HALF TO
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GUIDE FOR ROLLS.

SPECIFICATION forming part of Letters Patent No. 629,718, dated July 25, 1899.

Application filed June 24, 1898. Serial No. 684,362. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM GARRETT, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful
5 Improvement in Guides for Rolls, 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—

10 Figure 1 shows in front elevation a rolling-mill having guides constructed in accordance with my invention. Fig. 2 is a vertical section on the line II II of Fig. 1.

The object of my invention is to make it
15 practicable to roll metal of round cross-section and of large diameter—such, for example, as is used for shafting, &c.—in the same way and with the same facility as is used in rolling bars of small section. Heretofore the
20 work of rolling such large bars has been done by what is known as “rolling by hand”—that is, the rolls have been provided with round grooves, and in entering the piece from one pass to the other the bar had to be turned
25 each time at a right angle in order that at each pass a fin formed at the preceding pass might be effaced. It was further necessary in such operation for the workmen to hold the piece during its passage through the rolls
30 in proper position in order to prevent it from turning down, as is apt to occur owing to the roundness of the groove. Round bars of less diameter than two inches have generally been rolled by “guides,” in which the operator enters the piece between perfectly-fitting guides,
35 and after it has been inserted in the guides he may release it, as the guides themselves will hold it in position. It is evident that if a round bar, say, six inches diameter were
40 required, this method could not be followed, because of the closeness of the guides and the difficulty of introducing the heavy metal thereinto, although it dispenses with a good deal of unnecessary labor owing to the weight of
45 the section and the intense heat given off by the bar. It is also well known that in rolling round bars by hand there is a limit to the length of the bar to be rolled owing to the difficulty there is in holding the piece up in
50 its proper shape while passing through the

round grooves without guides, while in rolling by guides there is practically no limit to the length that can be obtained. For instance, in rolling rods a round rod can be rolled over two thousand feet long, whereas
55 in rolling by hand it is rarely that bars are rolled to exceed thirty feet long.

My invention makes the use of guides, with their attendant advantages, applicable in the manufacture of round bars of large section,
60 thus rendering their manipulation easier and cheaper and less laborious, and thus increasing the output. In order to explain this clearly, we will suppose that I have a reversing rolling-mill, upon which I desire to roll,
65 say, round bars about six inches in diameter. I may with my improvement take an ingot that will weigh about five thousand pounds, more or less, reduce it down to a square about six and three-fourths inches in cross-section,
70 enter it into oval-shaped groove, then from that oval-shaped groove into a round groove, through which it is finished, between a pair of guides. Instead of using stationary guides, as heretofore, I employ guides one of which
75 at least is movable toward and from the other, and I use a freely-movable wedge acting on the movable guide and actuating mechanism under the control of the operator, whereby
80 the wedge may be moved freely in either direction and the guide closed at will upon the metal piece or freed therefrom. When the piece is introduced, I open the guides to permit its introduction by hand or by the use of
85 suitable feeding appliances, and when the piece has been introduced the guides are closed upon it in order to hold it in proper position.

In the drawings, 2 2 represent the rolls of a two-high mill, and 3 3 are guides, which are
90 set opposite the pass of said rolls. Both of these guides may be movable; but, as shown in the drawings, the guide 3 is fixed and the guide 4 is movable horizontally toward and away from it. This motion is effected by
95 suitable mechanism, which may be a hand-lever or a motor, such as the cylinder 5, having an appropriate controlling-valve, the piston of the cylinder being connected with the
100 guide by wedge 6 bearing at one side against

the guide and the other side against a stationary frame or box 7. When the wedge is raised, the guides are brought together. When the wedge is lowered, the guides are
5 free to be separated. It will be understood that the inclination of the wedge may be reversed, if desirable, or instead of a wedge other devices for connecting the motor with the guide may be employed, the only requi-
10 site being that there shall be a device, such as a motor or lever, by which the motion of the guide may be positively effected.

The guides may be employed not only with a two-high mill, as shown in the drawings,
15 but on a continuously-rotating three-high mill.

When the bar is to be introduced into the rolls, the guides are opened, and by means of the feed-rollers or other mechanism the piece
20 is introduced thereinto. Where the rolls are stationary, the piece is brought into contact with the rolls, the guides then closed, and the rolls started; but where, as in a three-high

mill, the rolls are rotated continuously the piece after being turned up is introduced by
25 the feed-rollers through the guides, and as soon as it touches the rolls the guides are closed.

I claim—

A guide for rolls, said guide being made in
30 parts, one of which at least is movable to and from the other, a freely-movable wedge acting on the movable guide, and actuating mechanism connected with said wedge and under the control of the operator, whereby the wedge
35 may be moved freely in one direction to close the guide upon the metal piece or moved in the reverse direction to free the guide; substantially as described.

In testimony whereof I have hereunto set
40 my hand.

WILLIAM GARRETT.

Witnesses:

THOMAS W. BAKEWELL,
G. I. HOLDSHIP.