

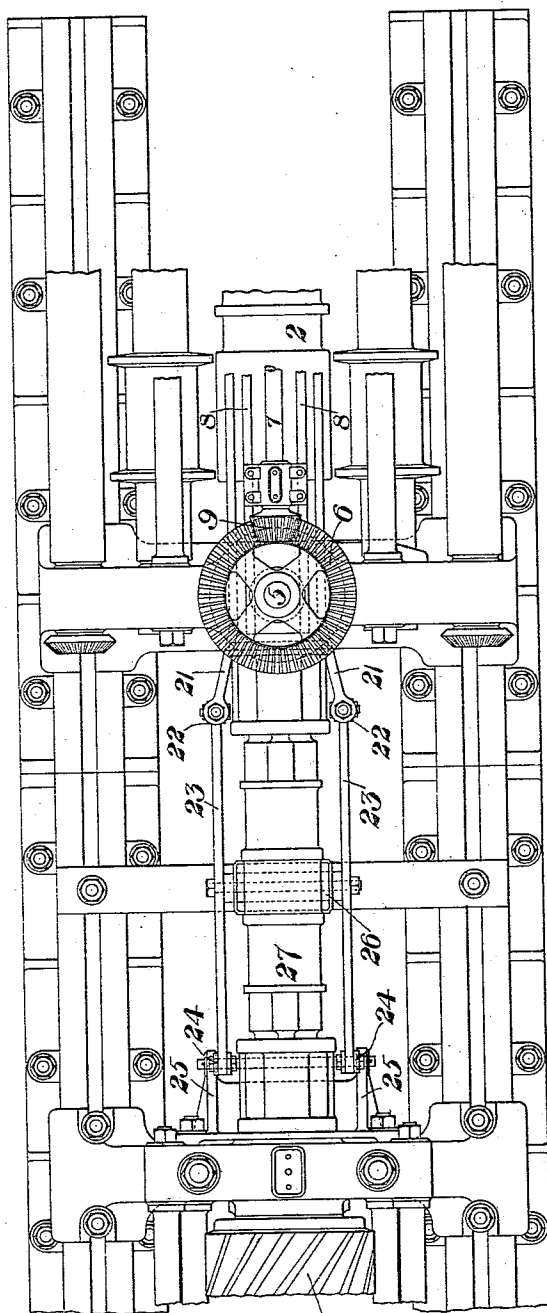
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3 Sheets—Sheet 1.

G. W. McCLURE.
ROLLING MILL ADJUSTMENT.

No. 557,861.

Patented Apr. 7, 1896.



WITNESSES

Thomas W. Baxendale
Warren M. Bvartz

Fig. 1.

INVENTOR

G. W. McClure

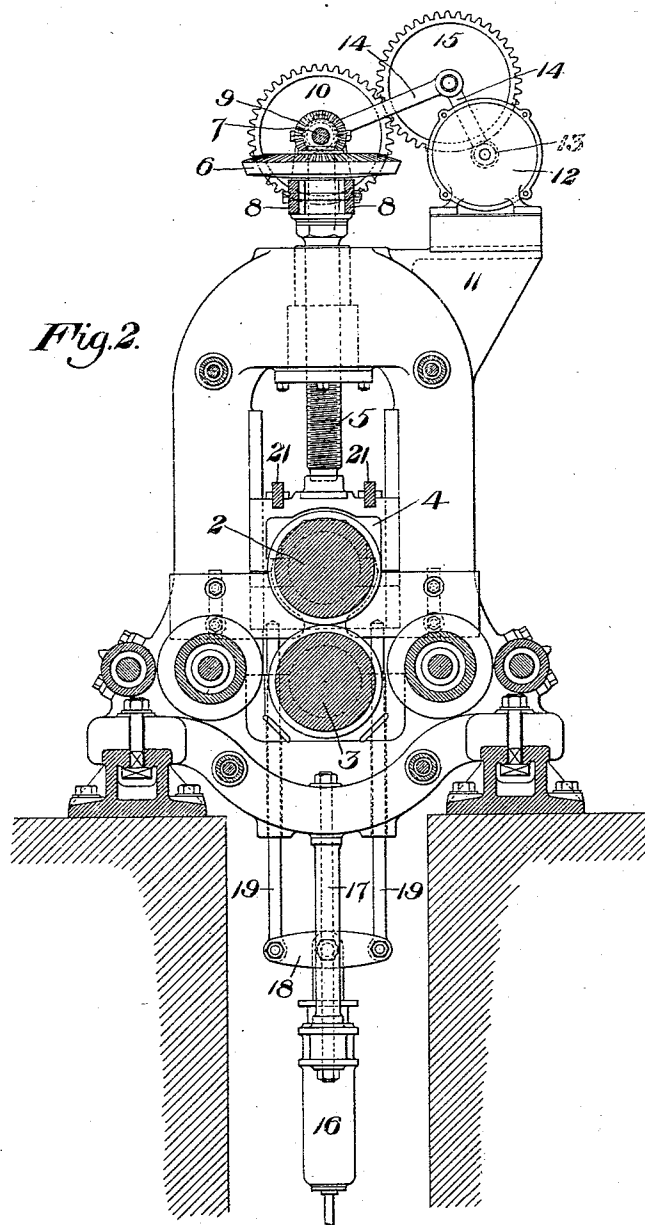
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WITNESSES

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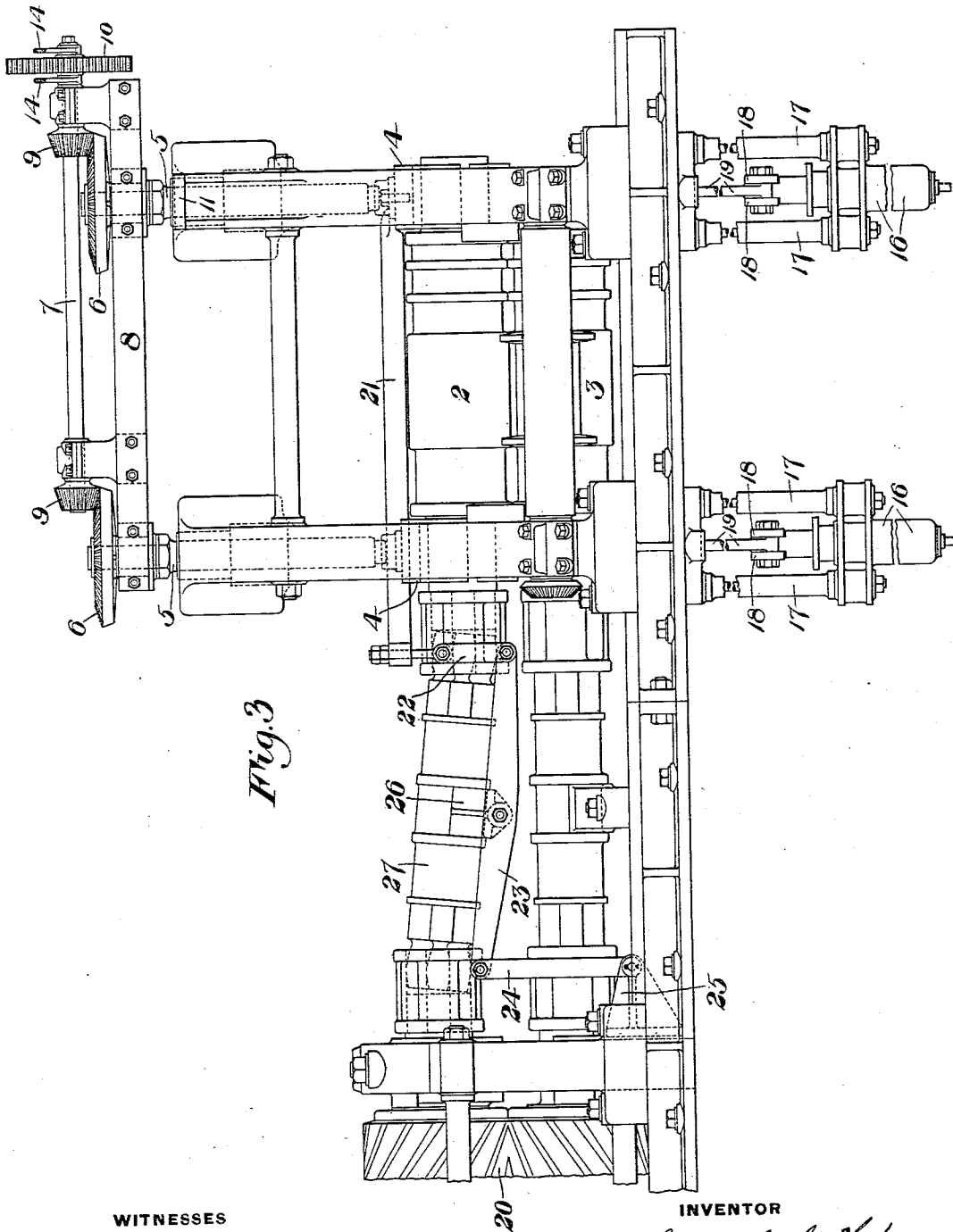
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UNITED STATES PATENT OFFICE.

GEORGE W. MCCLURE, OF PITTSBURG, PENNSYLVANIA.

ROLLING-MILL ADJUSTMENT.

SPECIFICATION forming part of Letters Patent No. 557,861, dated April 7, 1896.

Application filed April 22, 1895. Serial No. 546,610. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. MCCLURE, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in 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, partly broken away, of a two-high mill constructed in accordance with my invention. Fig. 2 is a vertical transverse section, and Fig. 3 is an elevation, of the mill and its connections.

My invention relates to the means for adjustment and the connections of the rolls in rolling-mills, and is designed to afford a simple and effective means for operating the adjusting-screws for the movable roll.

In the drawings, 2 represents the movable upper roll, and 3 the stationary lower roll, of a two-high mill. The bearings 4 of the upper roll slide vertically in the housings as usual, and upon their upper faces bear the vertical adjusting-screws 5, which extend upwardly through the housings and terminate in bevel-wheels 6. A horizontal shaft 7, carried in bearings mounted upon the horizontal bars 8, which are supported upon the screw-shafts, carries bevel-wheels 9, intermeshing with the wheels 6, and at its outer end this shaft carries a toothed actuating-wheel 10.

Upon a bracket 11, secured to the housing, is mounted an electric motor 12, having a pinion 13, and connecting the shaft of the motor with the shaft 7 are the two-armed lever-bars 14, in the angled portions of which is mounted a shaft carrying a toothed wheel 15, which engages the wheel 10 and pinion 13.

It is evident that when the motor is operated motion is communicated to the vertical screw-shafts, and as their bevel-wheels rise and fall the shaft 7 and its supporting-bars 8 are raised or lowered. The lever-bars doing such motion swing about the motor-shaft as a fulcrum, and in all positions a rotary movement is transmitted through the wheel 15.

To move the roll-bearings upwardly and hold them in adjusted position, I provide the motive cylinders 16, supported in hangers 17, the plungers of which cylinders are pivotally connected to the cross-heads 18, which are provided with supporting-bars 19 for the bearings of the upper roll. Constant pressure is maintained in these cylinders, thus

forcing the bearings up against the screws and holding the upper roll in any adjusted position. To support the flexible connection between the upper roll and the driving-pin 20, I secure to the bearings of the upper roll the parallel bars 21, which are spread apart at their outer protruding ends, and are provided with depending links 22, which pivotally connect with a cradle 23, pivoted at their other ends to vertical links 24, which in turn are pivoted to brackets 25 upon the pinion-housings or other fixed point, so as to allow the central bearing to accommodate itself to the position of the spindle. The cradle 23 is provided with a central bearing 26 for the spindle 27 of the flexible connection, this bearing moving with the spindle as the upper roll is moved up or down.

The advantages of my invention will be apparent to those skilled in the art, since the adjustment of the rolls is accomplished with ease and accuracy, while the connections are greatly strengthened and the movement of the upper roll made positive in character.

Many changes may be made in the form and arrangement of the parts by the skilled mechanic without departure from my invention as defined in the following claims.

I claim—

1. The combination with a roll having movable bearings, of screw-shafts arranged to adjust said bearings, a cross-shaft carried by and arranged to actuate the screw-shaft and having a gear-wheel, an actuating-wheel, and a traveling gear-wheel arranged to constantly intermesh therewith and communicate motion therefrom to the gear-wheel upon the cross-shaft; substantially as described.

2. The combination with a roll having movable bearings, of screw-shafts arranged to adjust said bearings, a cross-shaft carried by and arranged to actuate the screw-shafts and having a gear-wheel, an actuating-shaft, lever-arms pivotally connecting the cross-shaft and the actuating-shaft, and a wheel pivoted in the lever-arms and connecting the cross-shaft gear-wheel with a wheel upon the actuating-shaft; substantially as described.

In testimony whereof I have hereunto set my hand.

GEORGE W. MCCLURE.

Witnesses:

THOMAS W. BAKEWELL,
W. B. CORWIN.