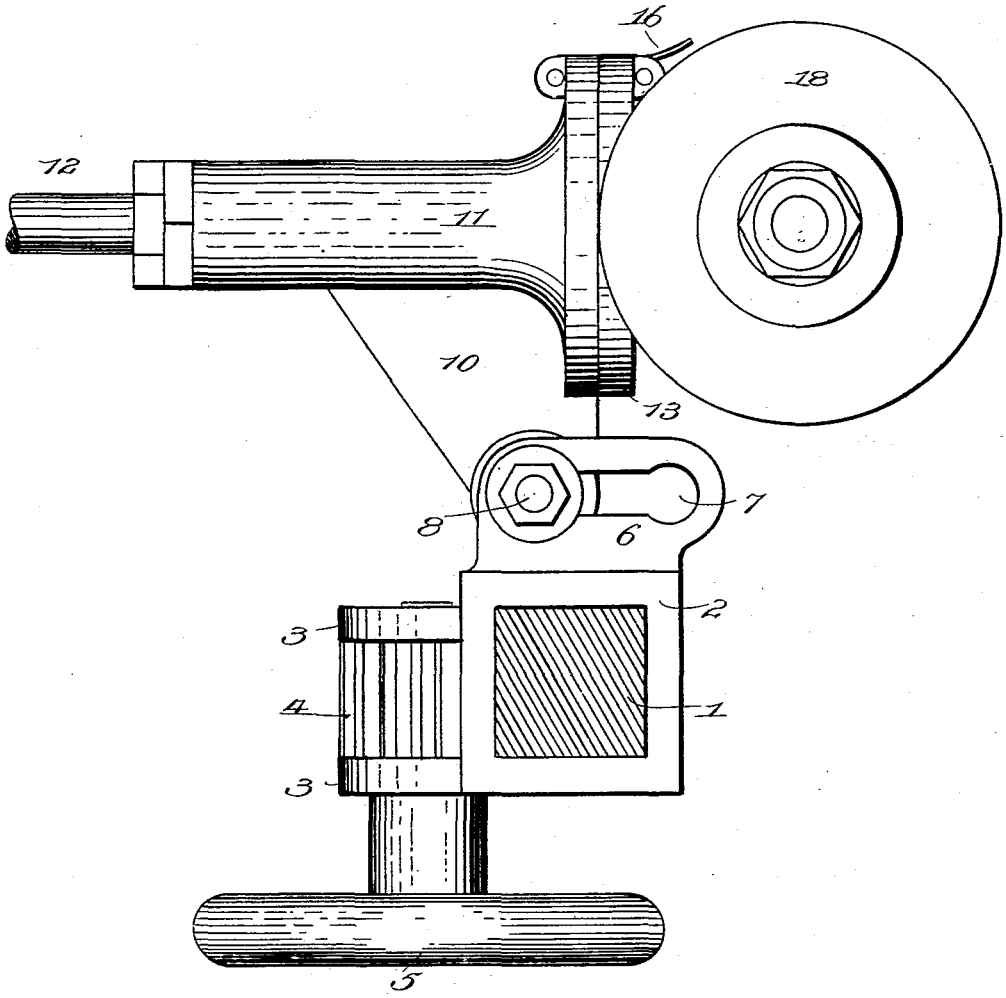
(No Model.) 3 Sheets—Sheet 1.

R. G. PILKINGTON.

APPARATUS FOR DRESSING OR POLISHING ROLLS.

No. 573,528. Patented Dec. 22, 1896.

Fig. 1.



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(No Model.) 3 Sheets—Sheet 2.

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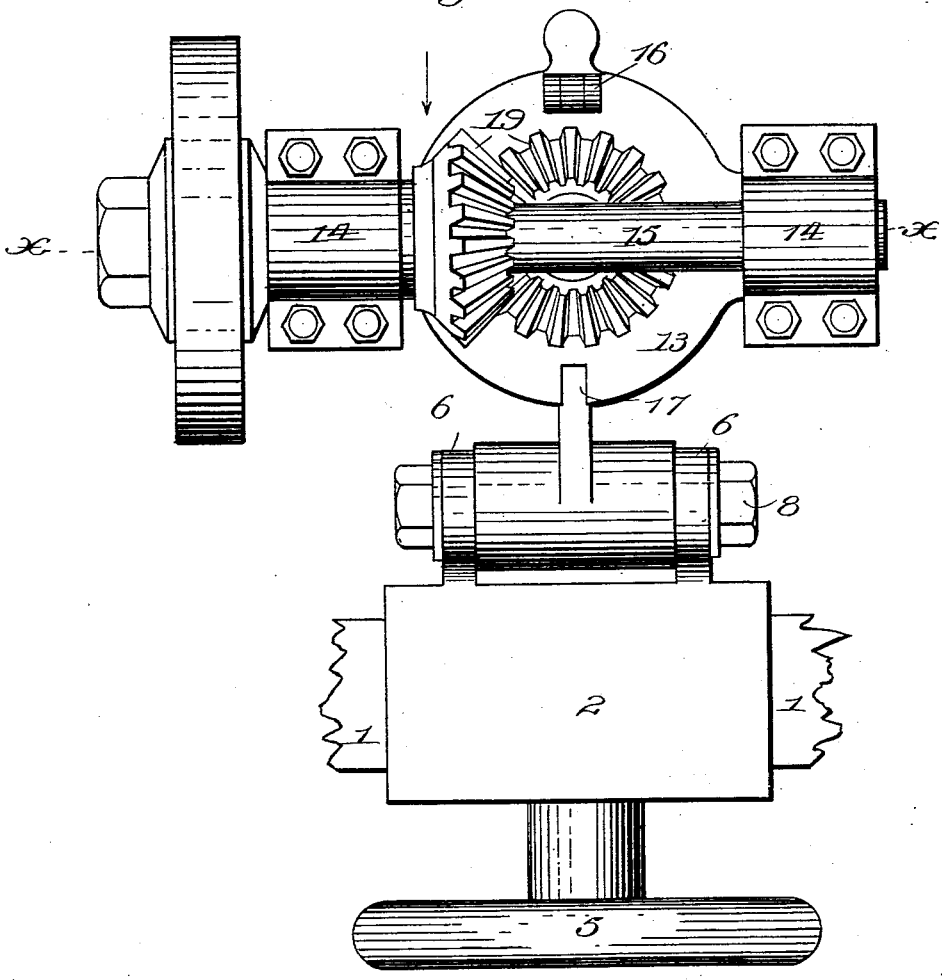
Fig 2



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(No Model.) 3 Sheets—Sheet 3.

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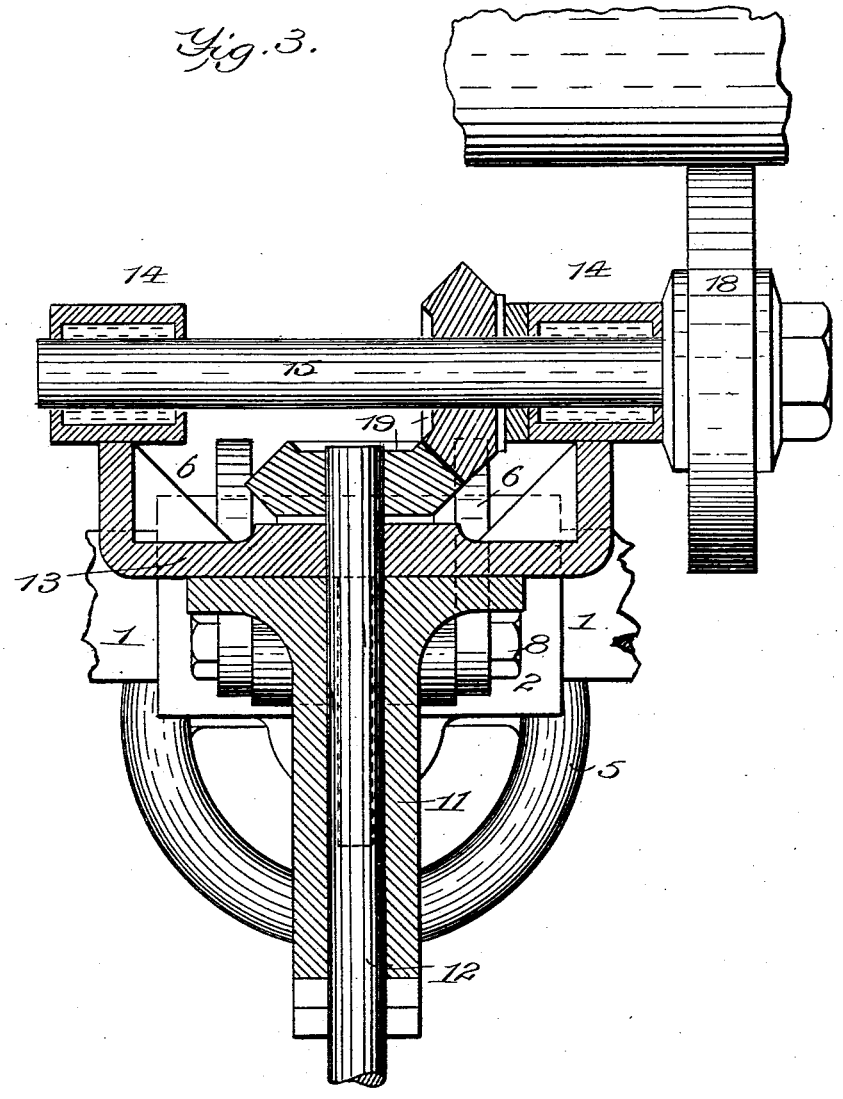
Fig. 3.



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UNITED STATES PATENT OFFICE.

ROBERT G. PILKINGTON, OF ST. LOUIS, MISSOURI.

APPARATUS FOR DRESSING OR POLISHING ROLLS.

SPECIFICATION forming part of Letters Patent No. 573,528, dated December 22, 1896.

Application filed July 29, 1896. Serial No. 600,975. (No model.)

To all whom it may concern:

Be it known that I, ROBERT G. PILKINGTON, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Apparatus for Dressing or Polishing Rolls; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of apparatus embodying my invention, the horizontal support and guide-bar being shown in transverse section and the power-shaft broken off. Fig. 2 is a front elevation, looking in the direction of the arrow, Fig. 1, the horizontal support and guide-bar broken off at each side of the bracket-frame; and Fig. 3 is a horizontal section on the line *x x*, Fig. 2, looking in the direction of the arrow on said Fig. 2.

Like symbols refer to like parts wherever they occur.

My invention relates to means for truing, dressing, and polishing the rolls of metal-working mills, and has for its object the production of a simple and efficient readily-portable apparatus which may be employed to true, dress, or polish any portion or the whole length of the roll without removing the roll from the housing, disconnecting it from its power, or even stopping the rolls. The methods heretofore commonly practiced for this purpose have involved either the removal of the rolls from their housings to a special lathe used for the purpose and their treatment therein or the disconnection of the usual power and the application of slow worm-gearing, all of which involved heavy labor and loss of time, or the application of concave clamp-blocks and abrading-powder to the rolls while in position in the housing and driven by their usual gearing, which resulted in great friction and frequently developed so high heat as to interfere with the proper working of the rolls, or the application to the rolls while in their housings of special dressing devices of a cumbersome character and more or less slow in operation. To overcome these several objections and secure a comparatively light, simple, and efficient apparatus, rapid in its operation and which may be readily applied to and removed from the roll-housings or equivalent supports adjacent to the rolls to be dressed, I have combined with a suitable horizontally-adjustable bracket-frame a rocking arm for the operative tool, said arm being laterally adjustable on its support, and such a construction or its equivalent embodies one feature of my invention. I have also combined with the rocking arm which carries the power-shaft a rotating disk or face-plate which carries the bearings of the abrading or polishing roll or like tool, whereby the tool may be reversed to dress or polish the roll on opposite sides of the vertical center of the roll, and such a construction or its equivalent embodies a second feature of my invention.

There are other minor features of invention, all as will hereinafter more fully appear.

I will now proceed to describe my invention more fully, so that others skilled in the art to which it appertains may apply the same.

In the drawings, 1 indicates a horizontal guide-bar of sufficient length to extend between the housings of a metal-working mill and which may be detachably supported thereon or upon any suitable independent supports therefor. Movable longitudinally thereon is a bracket-frame 2, which may be provided with ears 3, in which is journaled a pinion 4, controlled by a hand-wheel 5, said pinion 4 to engage a rack on or in the side of the guide-bar 1, or any other well-known means of causing the bracket-frame 2 to traverse the guide-bar 1 may be adopted at the will of the constructor. Projecting from the bracket-frame 2 are other parallel ears 6 6, slotted, as at 7, to provide for the reception and lateral adjustment of a through-bolt 8, which forms the pivot of a rocking or vibrating arm 10 and provides for the vibration of said arm, as well as for its adjustment across the bracket-frame 2, to or from the axis of the roll to be dressed.

The rocking arm 10 is provided with a sleeve 11 at right angles to bracket-frame 2, (and the axis of the roll to be dressed or polished,) which constitutes a bearing for the power-shaft 12.

12 indicates a shaft journaled in and projecting from the sleeve 11, to be driven by any suitable power, preferably by a flexible connection or one which will allow of the free vibration of arm 10 without detaching the

power, and journaled on said power-shaft at its inner end and abutting against the inner end of sleeve 11 is a disk 13, provided with bearings 14 14 for the shaft 15 of the abrading or polishing tool. The disk 13 being free to rotate on shaft 12 can be turned a half-revolution, so as to bring the dressing or polishing tool on either side of the power-shaft, and thus facilitate the dressing of a roll for its entire length or at any given point.

Upon the inner end of the sleeve 11 is a locking link and cam or equivalent catch 16, adapted to engage the disk 13 by notches 17 or otherwise, and thus secure the disk in the desired position.

Power is transmitted from power-shaft 12 to shaft 15 of the abrading or polishing tool 18 by miter-gearing 19 or its equivalent.

The operation of the device is as follows: The lateral adjustment of the rocking arm 10 to or from the axis of the roll to be dressed is accomplished by moving its pivot-bolt 8 to the desired position in slot 7, and the position of the abrading-roll with relation to the vertical central line of the roll and power-shaft is accomplished by rotating the disk 13 and locking it in position, after which the arm is vibrated or rocked forward until it rests in position on the roll to be dressed, after which the power is applied to shaft 12 and the abrading-tool is caused to traverse the roll by shifting the bracket-frame 2 longitudinally of the guide-bar 1.

The construction hereinbefore pointed out results in the production of a simple, portable, easily-manipulated, and very effective mechanism for dressing and polishing metal-working rolls which have become bruised and defaced in use without removing the rolls from their housings or deranging the gearing of the rolls, and in a very expeditious manner as compared with the methods now commonly practiced.

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

1. In a machine for dressing or polishing rolls the combination with a suitable support, of a laterally-adjustable vibrating arm, and a power-shaft and tool-shaft journaled thereon; substantially as and for the purposes specified.

2. In a machine for dressing or polishing rolls, the combination with an adjustable bracket-frame, of a laterally-adjustable vibrating arm, and a power-shaft and tool-shaft journaled on said arm; substantially as and for the purposes specified.

3. In a machine for dressing and polishing rolls, the combination with a vibrating arm, of a power-shaft journaled thereon, a disk loosely journaled on the power-shaft and abutting against the vibrating arm, means for locking the disk to the sleeve, and a tool-shaft journaled on the disk; substantially as and for the purposes specified.

4. In a machine for dressing or polishing rolls, the combination with a movable bracket-frame, of a laterally-adjustable vibrating arm mounted thereon, a power-shaft journaled on said arm, a disk journaled on the power-shaft, a tool-shaft journaled on the disk, and means for locking the disk to the vibrating arm; substantially as and for the purposes specified.

In testimony whereof I affix my signature, in presence of two witnesses, this 27th day of July, 1896.

ROBERT G. PILKINGTON.

Witnesses:
E. G. CROFTON,
CHAS. S. BROWN.