To all whom it may concern:

Be it known that I, Joseph F. Ernst, a citizen of the United States, residing at Youngstown, in the county of Mahoning and State of Ohio, have invented a new and useful Roll Cleaner or Polisher, of which the following is a specification.

Generally speaking, this invention relates to rolling mills, and more particularly to tin plate mills.

Those familiar with the operation of these mills understand the difficulties attending such operation, by reason of foreign substances accumulating and adhering to the surface of the roll, and the object of my invention is to provide a simple, economical and efficient means for polishing the rolls through the medium of an abrasive surface secured to a carrier adapted to travel back and forth throughout the length of the roll, on guide bars adjacent, and running parallel with the rolls.

In the accompanying drawings, which represent a preferred embodiment of my invention,—

Figure 1 is a front elevation of a set of rolls embodying my invention.

Figure 2 is an end view, partially in section, on line 2—2 Figure 1.

Figure 3 is a transverse section through the carrier 17 on line 3—3 Figure 1.

Figure 4 is a partial end view, showing the operating wheel 3, the motor M and the bracket 7, on one end of the housing, holding the guide bars 15.

Figure 5 is a fragmentary perspective view, showing the yoke 16 and the stem 19 of the carrier 17, and also the bracket 7 on the opposite end of the housing, carrying the guide bars 15.

Figure 6 is a fragmentary view, showing the engagement of the guide bars 15 with their adjustable holding brackets 7. See line 6—6 Figure 2.

Figure 7 is a view of bracket 7,—the central boring 8, being shown in dotted line.

H and H' represent the opposite ends of the mill housing, and R and R' represent the upper and lower rolls, respectively.

Secured to the platform P is the standard S, and journaled in the upper end of the standard, as at 1 (Figure 4) is the shaft 2, carrying at one end of the grooved wheel 3, and at the opposite end the driving pulley 4.

Beneath the platform P is the motor M, which is connected with the driving pulley 4 by belt or cable 5. It is obvious, of course, that this connection may be made by either cog or friction gear if desired.

Adjacent the upper roll R (Figure 2) is the obliquely disposed slot 6 cut through the housing H, and secured to the outside of housing H is the bracket 7. Bracket 7 is provided with a central longitudinal bore 8, in which is slidably mounted the stem 9 or piston 9, carrying the cross-head or holding bar 10 provided with the sockets 11, as shown in Figure 1.

As shown in Figure 2, the central boring 8 in the bracket 7 does not extend clear through, but stops sufficiently short to leave the head 12 having a central threaded opening 13 in which is mounted the adjusting screw 14. The bracket 7 is so attached to the housing as to bring the sockets 11 in the cross-head 10 to register with the slot 6. The opposite housing H' is provided with a similar slot and bracket holding and adjusting device.

15—15 represent what I have termed "guide bars," running parallel with each other, as well as with the roll, passing through the slots 6, and rigidly secured in the sockets 11 of the cross-heads or holding bars 10.

It is clear that with this arrangement the guide bars can be adjusted in their relation to the roll.

Slidably mounted upon the guide bars 15—15 (Figure 3), by means of the oppositely disposed yoke members 16, is the carrier 17, also provided with a central longitudinal boring 18, in which is slidably mounted the stem or piston 19 carrying the abrasion block 20. Seated in the boring 18 is coil spring 21, the tension of which may be regulated by the screw 22.

Attached to one end of the carrier 17, at 23, is the cable 24, which passes through the housing H, around the grooved wheel 3, back through housings H and H', around the idler 25 carried by bracket 26, back through housing H', and is attached to the opposite end of carrier 17, as at 27.

To regulate the tension of this cable I provide the idlers 28 and 29', respectively, carried on one end of spring controlled arms 28 and 29', respectively, the opposite ends of which are swingingly mounted in the brackets 30 and 30', respectively, secured to the housing H.

Wheel 3 is provided with a series of cir-
In a roll polishing device, in combination with a roll journaled in its housings, a pair of parallel bars adjustably mounted upon said housings, a carrier adapted to hold a polishing block slidably mounted upon said bars, a cable, the opposite ends of which are attached to the opposite ends of said carrier, a driving pulley for said cable, a reversing motor to drive said pulley, and means for automatically reversing said motor through the movement of said driving pulley.

3. In a roll polishing device, in combination with a roll journaled in its housings, means for adjusting said bars with reference to the roll, a carrier adapted to hold a polishing block slidably mounted upon said bars, a cable, the opposite ends of which are attached to the opposite ends of said carrier, a driving pulley for said cable, and means for reversibly rotating said driving pulley.

4. In a roll polishing device, in combination with a roll journaled in its housings, a pair of parallel bars adjustably mounted upon said housings, a carrier adapted to hold a polishing block slidably mounted upon said bars, a cable, the opposite ends of which are attached to the opposite ends of said carrier, a driving pulley for said cable, and means for regulating the tension of said cable.

5. In a roll polishing device, in combination with a roll journaled in its housings, a pair of parallel bars adjustably mounted upon said housings, a carrier adapted to hold a polishing block slidably mounted upon said bars, a cable, the opposite ends of which are attached to the opposite ends of said carrier, a driving pulley for said cable, a reversing motor, and means for automatically reversing said motor through the movement of said driving pulley.

JOSEPH FILLMORE ERNST.

Witnesses:

JAMES M. CAMMACK,

Geo. E. Robinson.