

UNITED STATES PATENT OFFICE.

JOHN NELSON, OF PERU, ILLINOIS, ASSIGNOR OF ONE-THIRD TO WALTER H. MAZE AND ONE-THIRD TO RUDOLPH F. STRUEVER, OF PERU, ILLINOIS.

POLISHING-MACHINE.

No. 810,554.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN NELSON, a citizen of the United States, residing at Peru, in the county of Lasalle and State of Illinois, have invented a new and useful Improvement in Polishing-Machines, of which the following is a specification.

My invention relates particularly to machines for polishing sheet metal, and my primary object is to provide a machine of simple construction well adapted to the purpose of polishing metal in sheet form.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 represents a side elevational view of a polishing-machine embodying my improvements; Fig. 2, an enlarged broken sectional view taken, as indicated, at line 2 of Fig. 4; Fig. 3, a section taken, as indicated, at line 3 of Fig. 2; Fig. 4, a broken elevational view of the front side of the machine with the table removed; and Fig. 5, a section taken, as indicated, at line 5 of Fig. 4 and showing the relation of the sheet supporting and feeding cylinder, the feed-roll coacting therewith, and the polishing or buffing roll coacting with said cylinder.

In the construction shown, A represents the frame of a machine having side standards A' A², provided at their front portions with rearwardly and upwardly inclined guides A³; B, a sheet supporting and feeding cylinder journaled in slides B', connected with the guides A³; B², hinged extensions connected with the upper portion of the slides B' and having journaled therein a feed-roll B³; B⁴, treadle mechanism for actuating the slides B'; C, a polishing or buffing roll journaled in bearings at the upper ends of the standards A' A², and D a horizontal endless apron supported on rolls D' D², one of which is actuated by a belt D³, driven from the shaft of the feed-roll B³.

The frame of the machine is provided with side members *a*, flanking the endless apron and serving as guides for the sheets of metal as the latter are returned to the front side of the machine for a purpose to be presently described.

Each slide B' comprises an upper member *b* and a lower member *b'*, adjustably connected therewith by a right and left threaded union *b²*. Each member *b* carries a forwardly-inclined projection *b³* at its upper end, upon

which is supported the pivot *b⁴* for the corresponding member B². The parts *b³* B² are flanged on their outer surfaces, and the flanges are connected by a bolt *b⁵* and are separated by a spring *b⁶*. The construction is such that the closeness of contact between the feed-roll B³ and the supporting-cylinder B may be regulated by the bolts *b⁵*. The members *b'* rest upon eccentrics *b⁷*, (one shown,) carried by a shaft *b⁸*, journaled in the side members of the frame. The shaft *b⁸* is equipped with a sprocket-wheel *b⁹*, about which passes a sprocket-chain *b¹⁰*, having its ends connected with pedals *b¹¹* *b¹²*. The construction enables the shaft *b⁸* to be rotated in either direction, thereby to raise or lower the slides B'. The feed-roll B³ comprises a shaft *b¹³*, equipped with friction-rings *b¹⁴*, which may be of rubber. The shaft is equipped with a pulley *b¹⁵*, through which motion is imparted to it, and with a pulley *b¹⁶*, with which the belt D³ is connected.

The buffing-roll C may be of any suitable construction and comprises, preferably, a shaft *c* and body *c'*. The polishing-roll is driven in the construction shown from the shaft *b¹³*.

The endless conveyer D may be of any suitable material, and the conveyer may be driven in any suitable way. Its direction of movement is as indicated by the arrow in Fig. 1.

Projecting upwardly and forwardly from the intermediate portions of the guides A³ are brackets E, supporting a table E', whose upper surface is in a plane passing between the cylinder B and coacting feed-roll B³.

The operation will be readily understood from the foregoing description. Sheets of metal—say sheet-zinc—are supported on the table and fed by hand between the cylinder B and feed-roll B³, whence they pass between the buffing-cylinder and the cylinder B. The buffing-cylinder rotates at a very high speed, and to prevent the sheets, which are frequently very thin, from being thrown violently from the machine after the grip of the feed-roll is released the sheets are caused to overlap in the manner shown in Fig. 5, where *f* represents a sheet which is about to be discharged from the machine, and *f'* a succeeding sheet, whose rear margin overlaps the front margin of the sheet *f*. As the sheet passes from the buffing-cylinder it bends

downwardly under its own weight and is caught in a reverse position upon the endless conveyer and carried back to the front of the machine, where the operator receives it and feeds it a second time through the machine. In the second passage through the machine the sheet is reversed from its original position so that the unpolished margin is exposed to the action of the buffing-cylinder.

It is evident that the pressure exerted by the feed-roll B^3 may be regulated by simple adjustment of the bolts b^5 , and it is evident that the pressure of the buffing-cylinder may be regulated by adjustment of the connections b^2 , and when desired the slides B' may be depressed, thereby lowering the cylinder B and the feed-roll, thus withdrawing the cylinder B from contact with the buffing-cylinder.

Changes in details of construction within the spirit of my invention are contemplated. Hence no undue limitation should be understood from the foregoing detailed description.

What I regard as new, and desire to secure by Letters Patent, is—

1. In a metal-polishing machine, the combination of a frame, a buffing-cylinder journaled thereon, a sheet-supporting cylinder and a feed-roll located beneath and coacting therewith, and means for moving said sheet-supporting cylinder and feed-roll away from the buffing-cylinder, for the purpose set forth.

2. In a machine of the character set forth, the combination of a frame, a polishing-cylinder supported thereon, a slide connected with said frame, a sheet-supporting cylinder connected with said slide, and a coacting feed-roll adjustably connected with said slide, for the purpose set forth.

3. In a machine of the character set forth, the combination of a frame, a polishing-cylinder journaled thereon, slides connected with said frame, adjusting means for said slides, a sheet-supporting cylinder journaled in said slides beneath the polishing-cylinder, frame members pivotally and adjustably connected with said slides, and a feed-roll journaled in said frame members, for the purpose set forth.

4. In a machine of the character set forth, the combination of a frame, a buffing-cylinder, guides on said frame, slides of adjustable length connected with said guides, eccentrics supporting said slides, a sheet-supporting cylinder journaled in said slides, members pivotally connected with said slides, adjusting-screws connecting said members with said slides, and a feed-roll journaled in the pivoted adjustable members, for the purpose set forth.

JOHN NELSON.

In presence of—

B. J. WAUMAN,
C. F. GUENTHER.