Oct. 30, 1951 A. MACBETH 2,573,669

MACHINE OR APPARATUS FOR STRAIGHTENING METAL RODS, BARS AND THE LIKE

Filed Aug. 5, 1947

FIG. 2.

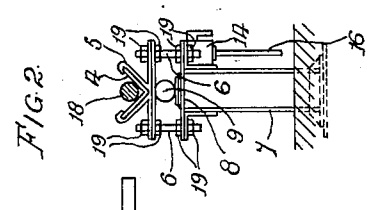


FIG. 1.

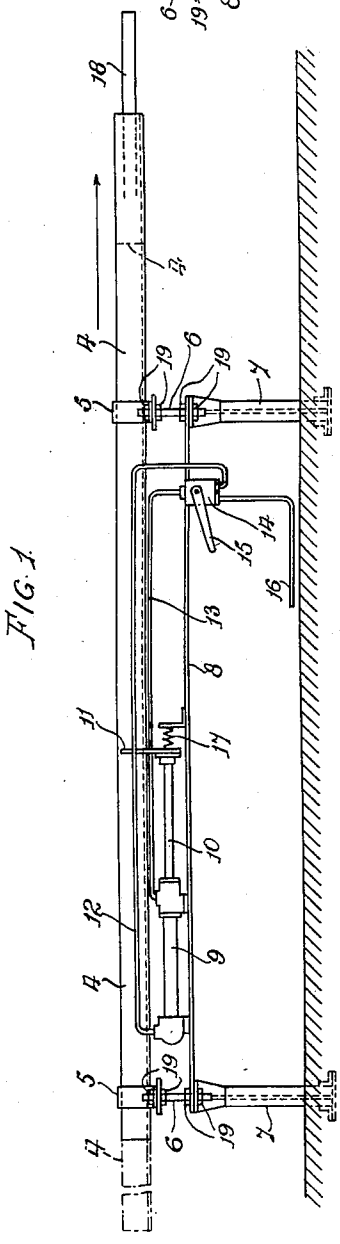
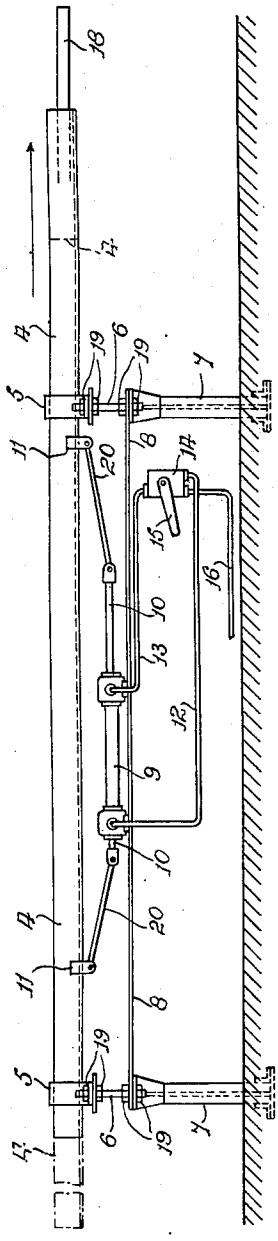


FIG. 3.



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2,573,669

MACHINE OR APPARATUS FOR STRAIGHTENING METAL RODS, BARS, AND THE LIKE

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1 Claim. (Cl. 153—60)

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This invention has reference to machines or apparatus for straightening round metal rods, bars and the like.

Round metal rods, bars and the like are commonly straightened by being acted upon in what is known as a straightening or reeling machine comprising skew rolls between which the rod, bar or the like is passed, the rod, bar or the like being caused to rotate about its axis as it travels through the rolls. Usually, the rods, bars or the like are delivered on to a stationary trough-like support along which they are pushed, generally by hand, to feed them into the skew rolls. Hand feeding entails great risk of danger to the operative concerned since he may still have hold of or be pushing on the rear end of a rod, bar or the like at the moment the forward end of same enters the nip of the skew rolls and the rod, bar or the like begins to rotate at a considerable speed.

The object of the invention is to provide an improved feeding arrangement whereby to considerably reduce, if not wholly eliminate, the risk of danger to the operative.

According to the invention a rod, bar or the like to be acted upon in a straightening or reeling machine is delivered or placed on a support so that its forward end projects therefrom and the support is moved to feed said projecting end into the nip of the rolls of the machine.

The support is mounted for reciprocation in or on suitable guides and it may be moved manually or by power.

The invention is hereinafter further described with reference to the accompanying drawings in which

Fig. 1 is an elevation of one embodiment, adapted to be operated by power,

Fig. 2 is an end view of Fig. 1, and

Fig. 3 is an elevation of a slightly modified embodiment.

In the drawings and the following description like numerals of reference indicate like parts.

Referring first to Figs. 1 and 2 of the drawings, the apparatus illustrated comprises a trough 4 of V-section mounted to slide longitudinally to and fro in guides 5 which are supported by pillars 6 on a base comprising standards 7 bridged by a platform 8. On the platform 8 there is mounted a pneumatic cylinder 9 fitted with a piston the end of the rod 10 of which is connected to a lug or the like 11 depending from the trough 4.

From the ends of the cylinder 9 pipes 12 and 13 lead to a valve 14, having an operating lever 15, for distributing air under pressure to and

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from the cylinder from a suitable supply by way of a supply pipe 16 and the pipes 12 and 13. In one position of the valve 14 it admits air under pressure to the one end of the cylinder to actuate the piston therein to advance the trough 4 towards the reeling machine and opens the other end of the cylinder to exhaust. In another position the valve reverses the connections to actuate the piston to retract the trough away from the reeling machine. In a third or "off" position the valve cuts off the supply of air under pressure and opens both ends of the cylinder to exhaust. A buffer spring 17 with which the piston rod co-acts may be provided to resiliently arrest the movement of the trough at the end of its advance. A like spring may also be provided to arrest the retraction of the trough. Alternatively, a buffer spring or springs may be provided in the cylinder 9 for co-operation of the piston.

In operation a rod, bar or the like 18 to be straightened is delivered or placed into the trough 4 (the latter being in its retracted position indicated in dot-and-dash lines in Fig. 1) so that the forward end of the bar projects from the trough to a suitable extent. The trough is then advanced to its forward position shown in full lines in Fig. 1 to feed the projecting end of the rod, bar or the like into the nip of the rolls of the machine following which the trough is retracted to its original position to receive the next rod, bar or the like.

The pillars 6 supporting the guides 5 may be screw-threaded and be adjustable by nuts 19 to adjust the height of the trough to enable rods, bars or the like of different diameters to be centralised in the nip of the rolls of the reeling machine.

In the modification shown in Fig. 3, the rod of the piston in the cylinder 9 projects from both ends of the cylinder and is connected to lugs 11 on the trough 4 by connecting rods 20. In other respects the construction and the operation of the apparatus is as described with reference to Figs. 1 and 2.

Instead of the trough being actuated by pneumatic power it may be actuated by steam or any other power or it may be actuated manually. In general pneumatic power will be found to be the most convenient means of actuation.

I claim:

A device for feeding round stock such as metal bars and rods into the nip of the rolls of a straightening machine, the feeding device comprising, in combination, an elongated substantially V-shaped trough for supporting and align-

ing stock to be straightened along a predetermined axis defined by the trough axis, the stock having freedom to spin in the trough but being constrained towards a centered position by the sloping trough walls; a base; two longitudinally spaced bearing members for engaging said trough and supporting it against tilting and with freedom of longitudinal movement relatively to the bearing members; means for adjustably mounting said bearing members on said base for adjustment in height and slope with respect to said base; a reversible servo-motor on said base engaging said trough for reciprocating it for movement towards and away from the straightening machine; and means for controlling the servo-motor.

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