

Aug. 7, 1951

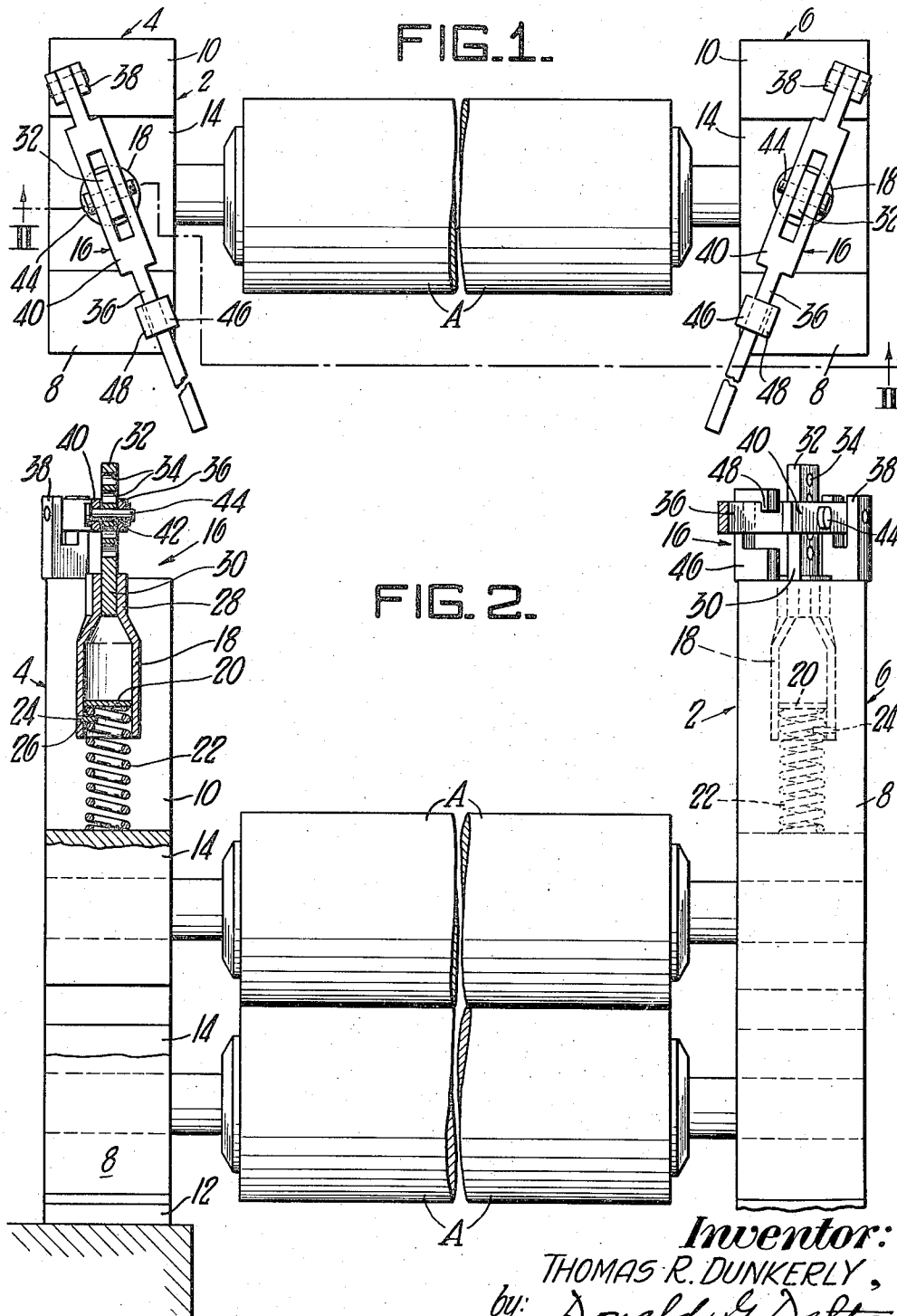
T. R. DUNKERLY

2,563,224

ROLL COMPRESSION ASSEMBLY

Filed April 24, 1950

2 Sheets-Sheet 1



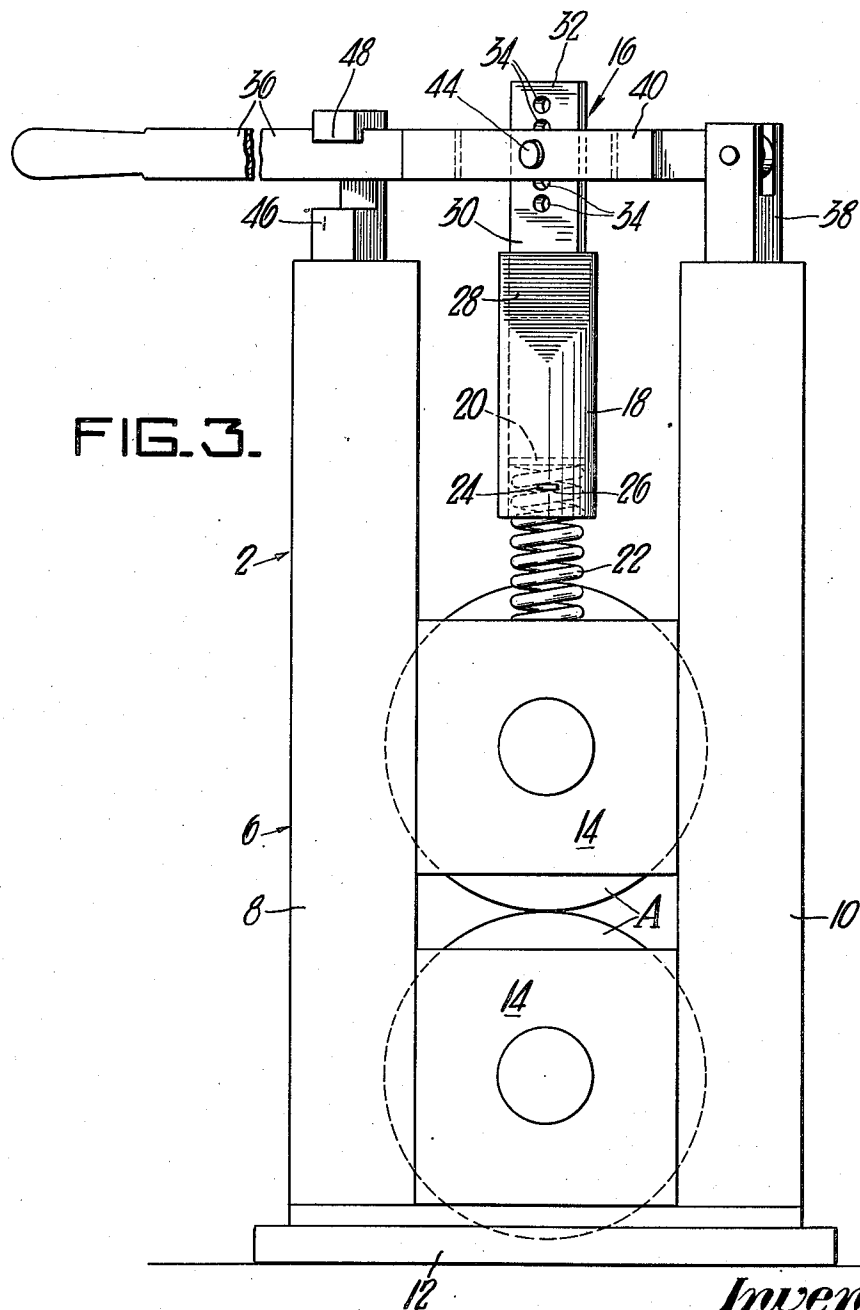
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UNITED STATES PATENT OFFICE

2,563,224

ROLL COMPRESSION ASSEMBLY

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2 Claims. (Cl. 15-102)

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The present invention relates to a roll-pressure assembly and more particularly to an assembly for adjusting and maintaining the roll pressure in a wiper roll stand.

In the processing of strip steel, it is often necessary to remove excess moisture from the surface of the strip after cleaning or pickling treatments. The usual practice is to pass the strip through a wiper roll unit consisting of a pair of rubber covered rolls carried in a conventional roll stand.

Prior to my invention, roll pressure in the wiper roll stand was maintained by compression springs and was adjusted by a screw and hand-wheel arrangement well known to those versed in the art. With this conventional arrangement, considerable time as required to dismantle, remove and reassemble the pressure-adjusting mechanism when a roll change was necessary. Another disadvantage inherent in this arrangement was the high initial cost of construction of the equipment due mainly to the necessity of machining the adjusting screws and the bearing boxes.

It is accordingly an object of my invention to provide a roll-pressure assembly for adjusting and maintaining the compression between two rolls in a roll stand which will permit speedy and facile roll compression adjustment and which may be speedily removed to permit rapid roll changes.

It is a further object of my invention to provide a roll-pressure assembly which is rugged in construction and inexpensive to manufacture.

These and other objects will be more apparent after referring to the following specification and attached drawings, in which:

Figure 1 is a plan view of a roll stand embodying the invention;

Figure 2 is an elevational view showing the roll-pressure assembly of the invention in cross section; and

Figure 3 is a side elevational view.

Referring more particularly to the drawings, reference numeral 2 indicates generally a roll stand having a pair of wiping rolls A disposed therein. The roll stand 2 consists of two spaced housings 4 and 6. Each housing is made up of a pair of spaced upright frame members 8 and 10 supported on a common base 12. A pair of roll-neck bearing boxes 14 is slidably disposed between the frame members 8 and 10 in vertical alignment, as best seen in Figure 3. This construction is conventional except for the novel pressure assembly of my invention, indicated

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generally by the reference numeral 16, the details of which will now be described.

Reference numeral 18 indicates a tubular member having a disc 20 welded near the lower end thereof to form a bearing surface for a compression spring 22 which is disposed in the lower end of the tube 18 and projects downwardly therefrom. The spring 22 is retained in the end of tube 18 by a small rectangular slug 24 which is inserted through an opening 26 in the wall of the tube 18 and welded in position to secure the first turn of the spring between the slug 24 and the disc 20.

The upper end 28 of tube 18 is flattened to accommodate a flat bar 30 which may be welded therein. A portion 32 of the bar 30 projects upwardly from the tube 18 and is provided with a plurality of holes 34 arranged in vertical alignment. A positioning lever 36 is disposed across the tops of the frame members 8 and 10. Lever 36 is pivotally supported at one end by a clevis 38 which is mounted on the upper surface of the frame member 10. Lever 36 is provided with a slotted portion 40 which is adapted to receive the projecting portion 32 of bar 30. A transverse hole 42 is provided through the slotted portion 40. Hole 42 is so positioned that it will register with any of the holes 34 depending on the amount of compression desired, as will be more fully explained hereinafter. A pin 44 is inserted through the hole 42 and the aligned hole 34 to connect the lever 36 with the bar 30. A latch 46 is mounted on the top of frame member 8 diametrically opposite the clevis 38. Lever 36 extends from its pivotal connection in clevis 38 to beyond latch 46. Latch 46 is provided with a shoulder 48 so that it may positively retain the lever 36 in locked position and prevent its disengagement while under load.

In operation, the compression between the two rolls A may be easily adjusted by removing the pin 44, disengaging the lever 36 from latch 46, and adjusting the position of tube 18 in relation to the lever 36. If a greater amount of compression is required, the lever is raised so that hole 42 registers with one of the upper holes 34; and if a lesser amount of compression is desired, the lever is adjusted so that hole 42 registers with one of the lower holes 34.

In the event of a roll change, lever 36 is moved down and outwardly to clear shoulder 48 on the latch 46 and is then raised to release the spring pressure. The pin 44 is removed and the lever 36 is raised clear of the housing top. The integral tube, bar and spring assembly is then

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removed, thus affording free access to the rolls for removal.

While one embodiment of my invention has been shown and described, it will be apparent that other adaptations and modifications may be made without departing from the scope of the following claims.

I claim:

1. In a roll stand having a pair of rolls disposed therein, said roll stand including a pair of spaced housings each consisting of a pair of base supported spaced upright frame members having two roll-neck bearing boxes slidably disposed therebetween in vertical alignment, the improvement in each of said housings for compressing said rolls which comprises a tubular member disposed between and parallel to said frame members, a spring carried by said tubular member and projecting from the lower end thereof to bear against the upper bearing box, a bar projecting upwardly from the top of said tubular member, a clevis mounted on the top of one of said frame members, a latch mounted on the top of the opposite frame member, a slotted lever having one end pivotally mounted in said clevis and extending therefrom to said latch, said lever being adapted to receive the projecting end of said bar in the slotted portion thereof, and means for connecting said bar with said lever, said latch being adapted to hold said lever in locked position.

2. In a roll stand having a pair of rolls disposed therein, said roll stand including a pair of spaced housings each consisting of a pair of base supported spaced upright frame members having two roll-neck bearing boxes slidably disposed therebetween in vertical alignment, the improvement in each of said housings for compressing said rolls which comprises an elongated tube dis-

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posed between said upright frame members spaced above said bearing boxes with its long axis parallel with said frame members, a disc disposed across the interior of said tube spaced from the bottom end thereof, a compression spring mounted in the lower end of said tube with its one end bearing against said disc and its other end bearing against the top of the upper bearing box, means for holding said spring in said tube, a bar attached to and projecting upwardly from the upper end of said tube, said bar having a series of vertically aligned holes through the projecting end thereof, a clevis mounted on the top of one of said upright frame members, a latch mounted on the top of the opposite frame member in a position diametrically opposed to said clevis, and an elongated lever arm extending from said clevis to said latch, said lever being pivotally connected to said clevis at one end and adapted to be locked in said latch adjacent its other end, a slotted portion on said lever arm intermediate its ends for receiving the projecting end of said bar, said slotted portion having a transverse hole therethrough adapted to register with the holes in the projecting end of said bar and receive a pin therein to couple said lever arm with said bar.

THOMAS R. DUNKERLY

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