

Oct. 4, 1938.

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2,132,140

STOCK HANDLING APPARATUS

Filed Nov. 29, 1935

2 Sheets-Sheet 1

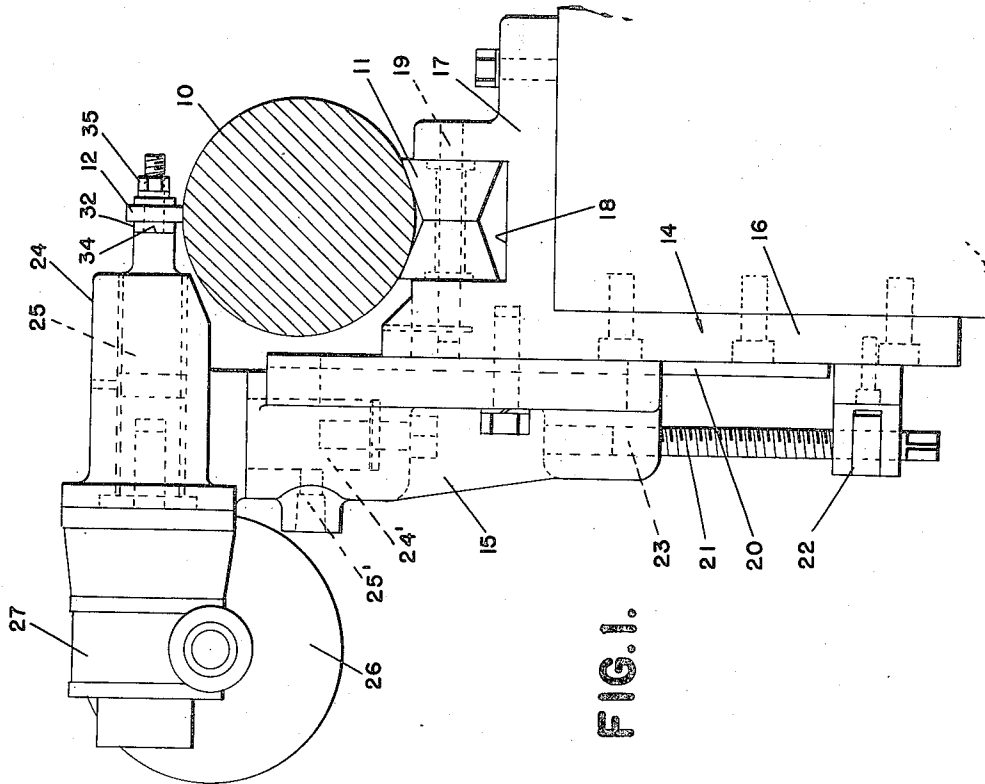


FIG. 1.

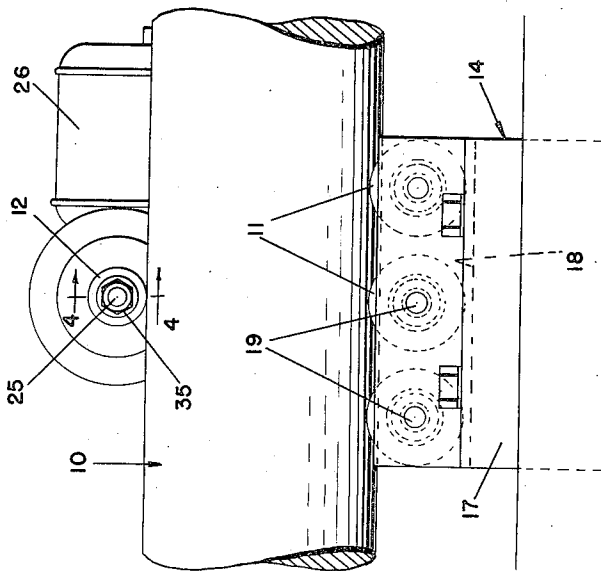


FIG. 2.

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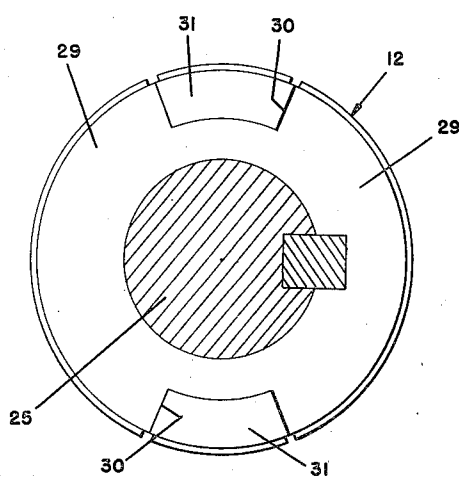
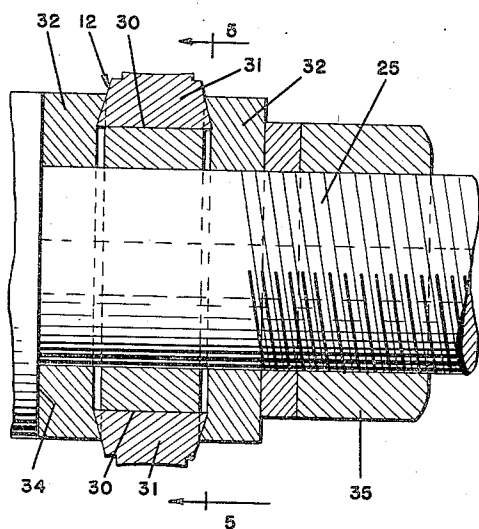
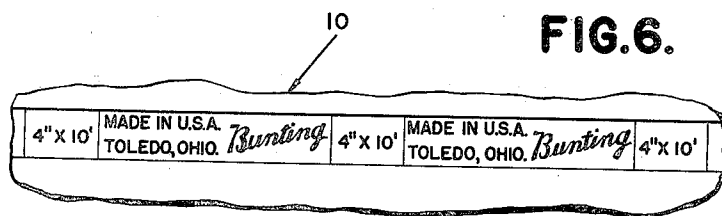
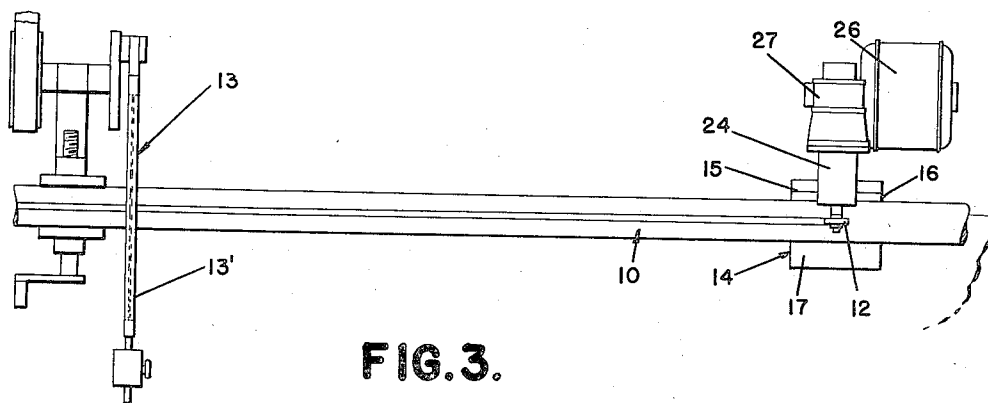
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STOCK HANDLING APPARATUS

Filed Nov. 29, 1935

2 Sheets-Sheet 2



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2,132,140

STOCK HANDLING APPARATUS

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Application November 29, 1935, Serial No. 52,242

8 Claims. (Cl. 101—3)

This invention relates generally to stock handling machines and refers more particularly to apparatus for applying certain indicia on the stock.

One of the principal objects of this invention resides in the provision of stock handling apparatus embodying means for permanently applying certain indicia on the stock as it is advanced along a predetermined path of travel.

Another advantageous feature of this invention consists in the provision of apparatus of the character set forth having anti-friction rolls for supporting the stock and having indicia applying means operable to roll the indicia in the stock in such a manner as to feed or advance the stock along a predetermined path of travel. This arrangement offers the possibility of employing the indicia applying means for the purpose of feeding the stock to a suitable metal working machine arranged in operative relation to the stock handling apparatus.

Another object of this invention resides in the provision of indicia applying means in the form of a roll having removable inserts upon which certain of the indicia is embossed. This feature is of particular importance in cases where certain of the indicia identifies a dimension of the stock since it offers the possibility of interchanging the inserts to define stock varying in the aforesaid dimension.

A further feature of the present invention resides in the provision of an indicia applying roll having diametrically opposed quadrants embossed with indicia representing standard information and having removable inserts between the quadrants embossed with the variable information.

In addition to the foregoing, the present invention contemplates adjustably supporting the indicia applying roll relative to anti-friction stock supporting rolls so as to compensate for stock of various dimensions.

The foregoing, as well as other objects, will be made more apparent as this description proceeds, especially when considered in connection with the accompanying drawings, wherein

Figure 1 is an end elevational view of apparatus constructed in accordance with this invention;

Figure 2 is a side elevational view of the construction shown in Figure 1;

Figure 3 is a fragmentary top plan view of the apparatus shown in Figure 2;

Figure 4 is a sectional view taken on the plane indicated by the line 4—4 of Figure 2;

Figure 5 is a sectional view taken on the line 5—5 of Figure 4; and

Figure 6 is an enlarged fragmentary elevational view of the stock with the desired indicia impressed therein.

The apparatus selected herein for the purpose

of illustration is designed for use in connection with cylindrical bar stock, although it will be understood, as this description proceeds, that the invention is by no means limited to this particular type of stock.

In general, a bar of stock 10 is supported upon suitable anti-friction rolls 11 shaped to support the stock laterally and cooperating with the indicia applying roll 12 to advance the stock 10 in the direction of its axis. The indicia is embossed upon the periphery of the roll 12 and the latter is mounted for vertical adjustment relative to the supporting rolls 11 to permit locating the same in a position wherein the indicia on the periphery thereof is adapted to be imbedded in the stock 10 upon rotation of the indicia applying roll 12. Inasmuch as the stock is supported upon the anti-friction rolls, and in view of the fact that the roll 12 is rotated to imbed the indicia on the periphery thereof in the stock, it necessarily follows that the stock will be advanced in the direction of its axis.

If desired, the apparatus briefly defined above may be employed in association with a metal working machine, diagrammatically illustrated by the reference character 13, for the purpose of feeding the stock relative to the machine. For the purpose of illustration, the apparatus is shown herein as operable to feed the stock to a suitable saw 13'. It will of course be understood that in the above application of indicia applying apparatus, provision must be made to periodically arrest advancement of the stock to permit the operation of the saw.

Referring now more in detail to the indicia applying apparatus, it will be noted that the latter comprises a mounting bracket 14 and a frame 15 slidably supported upon the bracket 14 for adjustment relative thereto. As shown in Figure 1, the bracket 14 is provided with a vertical portion 16 having a horizontal portion 17 extending laterally from the upper end thereof and channeled as at 18 to receive the anti-friction rolls 11. The rolls 11 are journaled upon pins 19 having the opposite ends secured within the side walls of the channel and, since the stock 10 is cylindrical, the peripheries of the rolls 11 are tapered inwardly from opposite ends thereof so as to support the stock laterally.

Upon reference to Figure 1, it will be noted that the frame 15 is slidably supported on the front face of the vertical portion 16 of the bracket and for accomplishing this result a vertically extending land 20 having inwardly tapering side walls is formed on the front face of the portion 16 for engaging a correspondingly shaped recess in the rear surface of the frame 15. The frame 15 carries the indicia applying roll 12 and accordingly, vertical sliding movement of this frame varies the position of the roll 12 relative to the

stock supporting rolls 11 mounted on the bracket 14. Accordingly, accurate adjustment of the frame 15 relative to the bracket 14 is important and is effected by means of a micrometer screw 21 mounted upon the bracket 14, through the medium of the fixture 22, and having a shank threadedly engaging the lower end of the frame 15 as at 23. Thus, it will be apparent that the frame 15 and, accordingly, the indicia applying roll 12 may be accurately positioned to compensate for stock of various dimensions by merely adjusting the micrometer screw 21.

It has been briefly stated above that the indicia applying roll 12 is carried by the frame 15 and for accomplishing this result, a housing 24 is pivotally secured to the upper end of the frame for receiving the drive spindle or arbor for the roll 12. It will be observed from Figure 1, that the drive spindle or arbor 25 is journaled in the housing for rotation about an axis extending at right angles to the axis of the stock bar 10, and that the roll 12 is secured to the forward end of the arbor in a position to engage the side of the stock opposite the supporting rolls 11. The opposite end of the arbor is connected to a suitable prime mover 26, through the medium of reduction gearing 27 and, in the present instance, the prime mover forms a unit with the reduction gearing adapted to be removably secured to the housing. In the specific embodiment of the invention, the prime mover is shown as in the form of an electric motor having a worm secured to the drive shaft thereof and adapted to mesh with a worm gear secured to the arbor 25.

As previously stated, the housing 24 is pivotally secured to the frame 15 and this is accomplished by a vertical pivot 24' normally held against movement by the set screw 25'. The arrangement is such as to permit the housing, and accordingly, the axis of the indicia applying roll, to be adjusted in a plane parallel to the plane of the axis of the stock. This feature renders it possible to impress the indicia in the stock on a spiral so as to impart a rotative movement to the stock as it is advanced.

Referring now more in detail to the particular construction of the indicia applying roll 12, it will be noted that this roll is provided with diametrically opposed quadrants 29 separated from each other by recesses 30 and having the desired indicia embossed upon the peripheral surfaces thereof. The recesses 30 are of sufficient dimension to receive inserts 31 having peripheral surfaces co-extensive with the periphery of the segments 29 and also having indicia embossed on the peripheral surfaces thereof. In the present instance, the two inserts are provided with the indicia required to display the diameter of the stock 10, and these inserts are readily removably secured in the recesses 30 so as to permit the same to be interchanged for inserts having indicia corresponding to strips of stock of different diameter. Also, in the present instance, the indicia on both of the quadrants 29 is the same and serves to identify the stock. With the specific construction of roll 12, it will be apparent that each revolution of the roll not only produces two identical identifying marks upon the stock, but will also illustrate the size of the stock at the end of each of the aforesaid marks in the manner clearly shown in Figure 6. It will, of course, be understood that the present invention is not limited to the particular indicia formed on either of the quadrants or on the inserts, since this indicia may vary in de-

pendence upon the information it is desired to convey.

Referring now to Figure 4, it will be noted that the inserts 31 are secured in assembled relation with the roll by means of a pair of collars 32 keyed to the arbor on opposite sides of the roll 12 and having the adjacent surfaces tapered inwardly for engagement with the correspondingly tapered side walls of the inserts. The forwardmost collar 32 is adapted to abut an annular shoulder 34 formed on the arbor, and the other collar 32 cooperates with a nut 35 threaded on the rear end of the arbor to secure the collars and roll 12 in assembled relation. With this construction, it will be apparent that axial displacement of the roll 12 is prevented and that the inserts are effectively secured within the recesses 30 in the roll 12 by the cooperation of the tapered opposite side walls of the inserts with the correspondingly tapered adjacent surfaces of the collars.

Thus, from the foregoing, it will be apparent that I have provided a relatively simple apparatus embodying means for accomplishing the dual function of advancing a strip of stock along a predetermined path of travel and rolling indicia in the stock during its advancement. It will also be observed that the nature of the indicia applying means is such as to permit the same to be used to feed the stock to a metal working device. It will further be noted that provision is made in the present apparatus to interchange certain of the indicia in the event it is desired to change the identification of the stock. In addition to the foregoing, provision is made for imparting a combined longitudinal and rotative movement to the stock by the indicia applying means.

What I claim as my invention is:

1. In a machine of the class described, a mounting bracket of inverted L-configuration attachable to a support, the horizontal portion of the L being provided with a transversely extending upwardly opening channel, an idler stock bar supporting roll extending across said channel and freely rotatable about a horizontal axis, the periphery of said roll being tapered inwardly from opposite ends thereof to support the stock laterally, a frame mounted to slide vertically on the vertical portion of the L and extending above the horizontal portion of said L, a housing upon the frame at its upper end, an arbor journaled in the housing about an axis substantially parallel to the axis of said stock supporting roll, a roll fixed to the arbor in vertically spaced relation to the stock supporting roll and carrying indicia for engagement with stock on said supporting roll, means for rotating the arbor including reduction gearing and a motor forming a unit with said gearing and secured to said housing, and means for adjusting said frame vertically relative to said bracket to position the indicia carrying roll the proper distance from said stock supporting roll commensurate with the diameter of said stock so as to cause said indicia carrying roll when rotated by said arbor to imbed said indicia in the periphery of said stock on said supporting roll and advance said stock on said supporting roll along a predetermined path of travel.

2. In a machine of the class described, a mounting bracket having a substantially vertical portion and a substantially horizontal portion, an idler stock bar supporting roll mounted on the horizontal portion of said bracket and freely rotatable about a horizontal axis, a frame mounted to slide vertically on the vertical por-

tion of the bracket and extending above the horizontal portion of said bracket, a housing upon the frame at its upper end, an arbor journaled in the housing about an axis substantially parallel to the axis of said stock supporting roll, a roll fixed to the arbor in vertically spaced relation to the stock supporting roll and carrying indicia for engagement with stock on said supporting roll, means for rotating said arbor, and means for adjusting said frame vertically relative to said bracket to position the indicia carrying roll the proper distance from said stock supporting roll commensurate with the diameter of said stock so as to cause said indicia carrying roll when rotated by said arbor to imbed said indicia in the periphery of said stock on said supporting roll and advance said stock on said supporting roll along a predetermined path of travel.

3. In a machine of the class described, a mounting bracket having a substantially vertical portion and a substantially horizontal portion, an idler stock bar supporting roll mounted on the horizontal portion of said bracket and freely rotatable about a horizontal axis, a frame mounted to slide vertically on the vertical portion of the bracket and extending above the horizontal portion of said bracket, a vertical pivot at the upper end of said frame, a housing mounted to swing horizontally about said vertical pivot, an arbor journaled in said housing about an axis substantially parallel to the axis of said stock supporting roll, a roll fixed to said arbor in vertically spaced relation to the stock supporting roll and carrying indicia for engagement with stock on said supporting roll, means for rotating said arbor, and means for adjusting said frame vertically relative to said bracket to position the indicia carrying roll the proper distance from said stock supporting roll commensurate with the diameter of said stock so as to cause said indicia carrying roll when rotated by said arbor to imbed said indicia in the periphery of said stock on said supporting roll and advance said stock on said supporting roll along a predetermined path of travel.

4. In a machine of the class described, a mounting bracket, an idler stock bar supporting roll carried by said bracket and freely rotatable about a horizontal axis, a frame mounted to slide vertically on said bracket and extending above the idler stock bar supporting roll, a housing upon the frame, an arbor journaled in the housing about an axis substantially parallel to the axis of said stock supporting roll, a roll fixed to the arbor in vertically spaced relation to the stock supporting roll and carrying indicia for engagement with stock on said supporting roll, means for rotating said arbor, and means for adjusting said frame vertically relative to said bracket to position the indicia carrying roll the proper distance from said stock supporting roll commensurate with the diameter of said stock so as to cause said indicia carrying roll when rotated by said arbor to imbed said indicia in the periphery of said stock on said supporting roll and advance said stock on said supporting roll along a predetermined path of travel.

5. In a machine of the class described, a mounting bracket, an idler stock bar supporting roll carried by said bracket and freely rotatable about a horizontal axis, a frame mounted to slide vertically on the bracket and extending above the idler stock bar supporting roll, a vertical pivot carried by said frame, a housing mounted to

swing horizontally about said vertical pivot, an arbor journaled in the housing about an axis substantially parallel to the axis of said stock supporting roll, a roll fixed to the arbor in vertically spaced relation to the stock supporting roll and carrying indicia for engagement with stock on said supporting roll, means for rotating said arbor, and means for adjusting said frame vertically relative to said bracket to position the indicia carrying roll the proper distance from said stock supporting roll commensurate with the diameter of said stock so as to cause said indicia carrying roll when rotated by said arbor to imbed said indicia in the periphery of said stock on said supporting roll and advance said stock on said supporting roll along a predetermined path of travel, said housing being movable by hand about its vertical pivot while said arbor is rotating to cause the axis of the indicia carrying roll to be disposed at an angle to the axis of said stock whereby the indicia will be imbedded in the stock on a spiral and will impart a rotative movement to said stock while advancing the same as aforesaid.

6. In apparatus of the class described, a mounting bracket, an idler roller rotatable about a horizontal axis on said bracket for supporting a stock bar, a frame mounted to move vertically on said bracket beside said roller, a vertical pivot on said frame, a housing mounted to swing about said vertical pivot, a drive shaft journaled in said housing about an axis substantially parallel to the axis of said idler roller, and an indicia applying roll carried by said drive shaft and engageable with the stock bar on said idler roller.

7. In apparatus of the class described, a mounting bracket having an upright portion and a substantially horizontal portion, an idler roller rotatable about a horizontal axis on the horizontal portion of said bracket for supporting a stock bar, a frame mounted to move vertically on the upright portion of said bracket beside said roller, a vertical pivot on said frame, a housing mounted to swing about said pivot in substantially parallel relation to the horizontal portion of said bracket, an arbor journaled in the housing about an axis substantially parallel to the axis of said idler roller, and an indicia applying roll carried by said arbor and engageable with the stock bar on said idler roller.

8. In a machine of the class described, a mounting bracket attachable to a support, a portion of said bracket being provided with an upwardly opening channel, an idler stock bar supporting roll extending across said channel and freely rotatable about a horizontal axis, a frame mounted to slide vertically on said bracket and extending above the idler stock bar supporting roll, a housing upon said frame, an arbor journaled in the housing about an axis substantially parallel to the axis of said stock supporting roll, a roll fixed to the arbor in vertically spaced relation to the stock supporting roll and carrying indicia for engagement with stock on said supporting roll, means for rotating the arbor, and means for adjusting said frame vertically relative to said bracket to position the indicia carrying roll the proper distance from said stock supporting roll commensurate with the diameter of said stock so as to cause said indicia carrying roll when rotated by said arbor to imbed said indicia in the periphery of said stock on said supporting roll.

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